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

420 Custom House
555 Battery Street
San Francisco 11, Calif.

August 3, 1954

Memorandum

To: George C. Selfridge, Chairman, Operating Committee, DMEA
Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA-3314 - Mercury
Shamrock Mining Company
Mericoma and Beeson claims
and adjacent patented land
Sonoma County, California

In accordance with your May 3, 1954, request for a field examination of the subject claims, the property was examined on June 2 and 23, 1954, by an engineer of the Bureau of Mines, and on July 1, 1954, by a geologist of the Geological Survey. The property previously - on March 10, 1953 - had been examined by a geologist from the Survey.

Attached are four copies of a report entitled "DMEA-3314, Mericoma and Beeson Claims, Shamrock Mining Company, Sonoma County, California, (Mercury)," by John D. Warne, Mining Engineer, U. S. Bureau of Mines, and E. H. Pampeyan, Geologist, U. S. Geological Survey, dated July 26, 1954.

A number of corrections in the Warne-Pampeyan report are suggested by members of the Geological Survey as follows:

Page 1 - At the end of the second line under Summary, Conclusions and Recommendations, add the phrase "and July 1, 1954."

Page 2 - The second and third sentences from the top of the page should read: "The applicant would also have 500 feet of bulldozing done along a serpentine-graywacke contact 1500 feet East of the mine. A small amount of bulldozing would be done near the No. 2 adit to explore a small cropping of mineralized rock."

Reviewed by
DMEA OPERATING COMMITTEE
8-13-54
(date)

Page 3 - At the end of first paragraph following the word "property" add "on July 1, 1954."

The first sentence of next paragraph should read: "Most of the proposed work is in connection with exploration at the Mericoma Mine; however, 500 feet of trenching is proposed for the adjoining Beeson claim held by Mr. G. D. Topliff (the applicant)."

Page 4 - In the first paragraph, line 9, the name is Swearingen.

Page 6 - In the fifth line, delete the phrase "No underground work" and substitute "A small amount of trenching."

Page 7 - Item 3(b), in third line add the word "fault" after the name Maacama.

Page 10 - In the seventh line of the first full paragraph delete the word "above" and substitute "East of." Delete "(fig. 2)."

According to the report by the examining engineer and geologist the property does not warrant assistance from the DMEA for further exploration of this property. Their report states that the spotty nature of this deposit leads one to believe that there may be more small irregular pods of mercury throughout the mineralized zone. However, the cost of exploration in all likelihood would be more than the ore produced from the property.

Mr. Roscoe Smith and I concur with the recommendations of the examining engineer and geologist.

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

Attachment

Copy to: Roscoe Smith, USGS
A. C. Johnson, Reno

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

DMEA-3314, Mericoma and Beeson Claims

Shamrock Mining Company

Sonoma County, California

(Mercury)

John D. Warne, Mining Engineer
U. S. Bureau of Mines

E. H. Pampeyan, Geologist
U. S. Geological Survey

July 26, 1954

Reviewed by
DMEA OPERATING COMMITTEE
8-13-54
(date)

REPORT OF EXAMINATION

Docket No.: DMEA-3314 (Mercury)

Name and address of applicant: George D. Topliff
241 Jones Street
San Francisco, California

Name and location of property: Shamrock Mining Company
Mericoma and Beeson Claims
Secs. 30 and 31, T. 10 N.,
R. 8 W., M/D.B.&M.,
Sonoma County, California

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Examinations of the Mericoma and Beeson (mercury) claims were made by geologists of the Geological Survey on March 10, 1953 and by an engineer of the Bureau of Mines during June 2 and 23, 1954. The applicant, Mr. George D. Topliff, was present during the examination.

The mining property is located within secs. 30 and 31, T. 10 N., R. 8 W., M.D.B. &M., Sonoma County, California. It is 8.4 miles by road from Healdsburg, Calif. (fig. 1).

The financial responsibility of the applicant is not known. His previous mining experience and application are not impressive, but he has obtained capable engineer's reports on the property.

The proposed work is on the Mericoma unpatented claim. It consists of exploring a mineralized fault zone exposed in three adits

by 400 feet of drifting, 300 feet of crosscutting, and 200 feet of raising and sinking to be done on the lowest, or Adit No. 1 level. The applicant would also have 500 feet of bulldozing work done near the No. 2 adit to explore a small cropping of mineralized rock. Total cost of the proposed program would be $29,955.00. The underground proposed exploration work is shown in figure 2.

The ore-bearing rock occurs in small pods erratically distributed. No ore reserves can be calculated, but it is inferred that unexplored parts of the fault zone may yield other pods of ore each containing a few tons of ore averaging 5 to 30 pounds of mercury per ton.

As the cost of the proposed exploration would probably be greater than the value of the ore discovered, it is recommended that the application be denied.

INTRODUCTION

The Shamrock Mining Company's mercury property was examined on March 10, 1953 by E. H. Pampeyan and D. B. Tatlock of the Geological Survey pursuant to a request for Government participation in a $32.500.00 exploration program (Docket No. DMEA-2821). A report by Pampeyan on March 31, 1953 entitled Mericoma Mine (Quicksilver) recommended denial of a loan because of the small size and erratic distribution of ore-bearing rocks in this type of deposit.

A later examination of the property was made on June 2 and 23, 1954 by John D. Warne of the Bureau of Mines in connection with

the final application, made on April 15, 1954, for a proposed project to cost $29,955 (Docket No. DMEA-3314). Prior to the final examination of the property, two upper adits of the Mericoma Mine were made accessible by the applicant for examination and sampling; and E. H. Pampeyan reexamined and completed mapping the Mericoma Mine property.

All of the proposed work is in connection with exploration at the Mericoma Mine, however, the application includes the adjoining Beeson claim and other property held by Mr. G. D. Tepliff (the applicant). This report covers the examination of the Mericoma and Beeson claims made in connection with the final proposal (docket No. DMEA-3314).

NAME AND LOCATION OF PROPERTY

The Shamrock Mining Company property consists of the Mericoma and Beeson unpatented lode claims and 44 acres of adjoining agricultural patented land. This property is located within secs. 30 and 31, T. 10 N., R. 8 W., M.D.B.&M., Sonoma County, Calif.

ACCESSIBILITY

It is accessible by roads leading 2.7 miles north of Healdsburg, California along U. S. Highway No. 101, thence 3.7 miles eastward along California State Highway No. 128 to Jimtown, 1.4 miles of graveled road northeast of Jimtown, and finally 0.6 of a mile of private mountain access road to the portal of Adit No. 1 on the Mericoma claim. The mine would be accessible by low-geared automobile throughout most of the year. (Fig. 1).

COMPETENCY OF APPLICANT

The financial responsibility of the applicant is not known, however, he states that he is able to furnish his share of the cost of the proposed exploration project. Only a small amount of mining experience is indicated by his application and his conduct during the examination, however, he claims to have worked lead and zinc prospects in northern Idaho for a period of 10 to 15 years. Capable consulting engineers and professional advice has been used by him in planning the exploration work. Mr. C. N. Schuette, Sebastopal, California and Mr. John D. Swearinger, 61 Catalpa Ave., Mill Valley, Calif., have examined the property for the applicant.

APPLICANTS PROPERTY RIGHTS

The Mericoma Claim No. 63, and the Beeson claim No. 58, are unpatented lode claims recorded in Book 2, page 235 in the Santa Rosa, Sonoma County, California recorders office. The applicant, Mr. George D. Topliff, states that he acquired these claims during 1952. In addition approximately 44 acres of adjoining agricultural patented land including the mineral rights are stated to be held under lease by the applicant from Mr. Roy F. Ward, or Maud Ward, Box 109-A, Healdsburg, Calif. The owners consent to lien can be obtained according to Mr. Topliff. Partnership in the Shamrock Mining Company consits of: George D. Topliff - 85%; Roy F. or Maud Ward, 12.5%; and Morrie Bobrow and/or Cy Weita (365 Eddy St., San Francisco, Calif.) 2.5%.

DESCRIPTION OF THE PROPERTY

No surface facilities, building, or equipment exist on the property.

Mining equipment consists of two usable mine cars, one timber car, and 300 feet of mine track in place in the lower Adit No. 1.

The main mine workings which are now accessible consist of the following: (1) Adit No. 1 (lower crosscut tunnel) - approximately 300 feet of crosscut, and 75 feet of drift southeastward along a mineralized zone. One small stope remains open above and near the face of the drift. (2) Adit No. 2 (located at about 90 feet higher elevation than Adit No. 1) - approximately 90 feet of crosscut, 60 feet of drift, and 42 feet of winze. (3) Adit No. 3 (located about 50 feet higher than Adit No. 2) - approximately 25 feet of crosscut. Most of these underground workings are barely accessible and would be unsuitable for use, with the exception of Adit No. 1 - the lower crosscut level. The workings are shown on fig. No. 2, however, a portion of the drift northwestward from the intersection of the Adit No. 1 crosscut-drift intersection has become inaccessible since the map was prepared. Several shallow prospects and old filled test pits also exist on the surface in the vicinity of the adits. All of the above work is located on the Mericoma unpatented claim.

PROPOSED EXPLORATION

The exploration program proposed by the applicant consists of

underground work and surface trenching with a bulldozer. Underground work is proposed for the No. 1 adit and would involve 300-400 feet of drifting to the southeast along the fault zone with four 50-foot raises or winzes to explore any leads found in the drift (fig. 2), and extending the No. 1 Adit crosscut 300 feet northeastward. No underground work would be done in the area above No. 2 adit to determine the extent of the silica-carbonate rock found in the small trench. More bulldozing would be done along the ridge top to uncover 500 feet of the graywacke-serpentine contact in hopes of finding quicksilver along this contact.

The applicant's proposal for underground work appears to be the best way of exploring the fault zone. Some bulldozing above the No. 2 adit would determine whether the silica-carbonate rock exposed there is in place. Bulldozing along the serpentine contact 1500 feet east of the mine would be of little value for no mineralized rock was seen along this contact. Silica-carbonate rock was found 50 feet or more east of the contact and constituted only a small part of the serpentine mass. Perhaps trenching would uncover more silica-carbonate rock in the serpentine mass, but its location is not apparent.

The spotty nature of this deposit leads one to believe that there may be more of these small, irregular pods of silica-carbonate rock scattered throughout this zone, or any other fault zone nearby. The cost of the proposed exploration program, however, would be greater than the value of quicksilver produced from these small and scattered pods.

The applicant's final proposal for an exploration project to cost $29,955.00 is summarized as follows:

	Cost
1. Repair mine access road 0.4 mile, and construct a combination office, tool, and compressor house	$1,500.00
2. Bulldoze approximately 500 feet along the surface in the vicinity of the Maacama fault to explore for ore-bearing structure, 10 day at an estimated cost of $100/day	1,000.00
3. (a) Extend the present southeast drift on Adit No. 1 level from approximately 70 feet to 470 feet - 400 feet of drifting	
(b) Extend the present Adit No. 1 crosscut an estimated 300 feet northeastward to intercept the Maacama, and to explore for other ore-bearing structures - 300 feet of crosscutting	
(c) Drive 100 feet of raise and 100 feet of shaft or winze to explore the vertical extent of the most favorable mineralized structure encountered by the above bulldozing, crosscutting or drifting work - 100 feet of raise, and 100 feet of shaft or winze	
Total estimated cost of crosscutting 300 feet, drifting 400 feet, raising 100 feet, and winzing 100 feet - total 900 feet @ $30.51/ft.	27,455.00
Total cost of proposed exploration project	$29,955.00

The application does not describe fully, or illustrate, the proposed work. After the examination, the applicant changed the quantity of underground work to be done from 500 feet to 900 feet in order to decrease the estimated cost per foot. In general, the cost estimates

were poorly prepared, and the proposed work was incompletely conceived in connection with this application, however, he did not increase the cost of the proposed project. Cost estimates as submitted by the operator to complete the proposed exploration project are summarized as follows:

a.	Independent contracts - bulldozing	$ 1,000.00
b.	Labor	9,200.00
	Supervision	5,000.00
c.	Operating materials and supplies	4,650.00
d.	Operating equipment (to be purchased)	8,605.00
e.	Equipment to be furnished	(None)
f.	New buildings (and road repair)	1,500.00
g.	Miscellaneous	(None)
Total		$29,955.00

PAST OPERATION

The applicant stated that the Mericoma and Beeson claims were originally located about 1902. The last mining work performed was during the period 1942 to 1944. They were relocated by Mr. George D. Topliff during 1952.

No records of the past production are now available. But the small stopes above the drift on the Adit No. 1 level indicates that some mercury ore was mined. The largest accessible stope indicates that about 320 tons of material has been mined. Portions of a "D" retort, a two-pipe Rossi-type retort, and condensing equipment remain on the property. This equipment is now worthless, but it serves as evidence that some mercury was produced in the past.

SAMPLING

Six samples (see fig. 2) were taken in connection with this examination and analyzed by the Bureau of Mines, Hydrometallurgical and Ore Dressing Branch, Reno, Nevada. Description and analysis of these samples are as follows:

Sample No.	Lb. Hg/T	Description
1	0.1*	1.2 feet horizontal channel from south face of drift on lower tunnel level.
2	1.7	Specimen sample of silica carbonate rock on dump of lower tunnel.
3	4.5	1-foot channel cut from mineralized silica carbonate in back of stope, south end, about 15 feet above lower tunnel level.
4	0.1*	1.2 feet horizontal channel from south face of drift on lower tunnel level - check on sample No. 1.
5	0.3	1-foot chip sample of hanging wall mineralized material from drift at its point of intersection with tunnel No. 2; about 75 feet vertically above lower tunnel level.
6	0.1*	Specimen sample of silica carbonate outcrop material exposed about 40 feet above tunnel No. 2.

*Less than.

GEOLOGY AND ORE DEPOSITS

The mine is on the southwest side of the Mayacmas Mountains about four miles southwest of the Mayacmas Quicksilver District. The rocks are predominately Franciscan chert, sandstone, graywacke, shale

and greenstones with irregular, intruded masses of serpentine; these rocks are cut by a series of northwest trending faults. Quicksilver deposits are associated with the faults.

The only ore mineral is cinnabar; it was deposited in a shear zone under an impermeable layer of fault gouge or "alta" and above a greenstone footwall, but appears to have deposited somewhat preferentially on altered serpentine or silica-carbonate rocks. Traces of cinnabar were seen in the gouge on No. 2 adit, in the silica-carbonate rock above No. 2 adit portal, and disseminated through silica-carbonate rock on the ridge top above the adits (fig. 2). At the time of this examination, no ore was seen.

The main portal of the Mericema Mine is some 350 feet southwest of the Mancama Fault (fig. 2) described by Gealey[1/].

Surface exposures are poor. Red, thin-bedded chert is exposed along the road leading to the mine, and sandstone, or graywacke, appears on the northeast side of the steep Mancama Fault Scarp. Some serpentine float was observed but none was found in place on the surface close to the mine.

The No. 1, or lowest adit (fig. 2), penetrates Franciscan greenstone, which contains some irregular pods of serpentine. The drift at the

1/ Gealey, W. K., Geology of the Healdsburg Quadrangle, California State Division of Mines Bull. 161, 1951.

end of the adit is along a fault-contact of greenstone with graywacke. The fault-contact dips steeply to the northeast, and along it a 3 to 5-foot thickness of breccia has been altered and mineralized. This sheared and altered zone contains fragments of graywacke, greenstone, serpentine, silica-carbonate rock and chert and is similar to the "alta" of other Coast Range quicksilver deposits. The faulted greenstone-graywacke contact controlled the localization of ore. During an examination in March 1953, a small pod of fractured silica-carbonate rock was exposed in the stope at the southeast end of the No. 1 level drift. This pod, measuring 1-1/2 feet by 5 feet, had films of finely crystalline cinnabar as much as two millimeters thick coating the fracture surfaces. Stopes along the fault indicate that other small ore-bearing pods might have been mined.

The No. 2 adit, approximately 90 feet higher than the No. 1 adit, passes through greenstone, a two-foot thickness of black gouge, and then into graywacke and shale. The greenstone-graywacke contact is a fault, dipping 70-80 degrees northeast, and appears to be the same fault found in the lower workings. Traces of cinnabar were seen in the gouge at the north end of the No. 2 level. A winze probably connects the No. 1 and No. 2 levels. A small trench 30 feet higher than the No. 2 adit exposed some cinnabar-bearing silica-carbonate rock, but there is doubt that this rock is in place. No serpentine or silica-carbonate rock

was cut in the No. 2 adit which passed almost under the trench.

No. 3 adit was inaccessible at the time of the geologist's examination, but the structure was exposed where the surface had collapsed into an old stope. This adit appears to have been driven along the same greenstone-graywacke contact explored in the other workings. Where exposed on this level, the fault had the same northwest strike but the dip had increased to 90 degrees. No cinnabar was seen near the No. 3 adit.

On the ridge top about 1500 feet east of the Mericoma Mine, serpentine in fault-contact with graywacke crops out over a north-south distance of several hundred feet. Some of this serpentine has been altered to silica-carbonate rock and contains traces of cinnabar. An old prospect tunnel 15 feet long passes through the silica-carbonate rock but no mining has ever been done here. No silica-carbonate rock was seen along the graywacke-serpentine contact where the bulldozing is proposed.

ORE RESERVES

The largest accessible stope (fig. 2, Sample BM-3) is roughly triangular in shape, and yielded about 320 tons of rock. Judging from the high-grade pod seen in 1953, this stope might have produced 45 to 55 flasks of mercury. Assays from the most recent examination, however, show only 4.5 pounds of mercury per ton of rock from this area, which would equal 6 to 8 flasks of mercury from the stope. The irregular

appearance of the silica-carbonate pod would suggest that only a small production could be credited to this mine.

No reserves could be estimated from the scanty showings of cinnabar on this property. The possibility of a connection between No. 1 and No. 2 levels suggests that the fault zone has been explored upwards. The downward or lateral extension of the fault zone might contain other pods of ore; however, it is impossible to predict their presence, or absence, on such meager showings. One small outcrop of questionable silica-carbonate rock was observed on the surface along the Maacama Fault. It seems likely that only a small number of scattered pods might exist in the area under consideration for exploration.

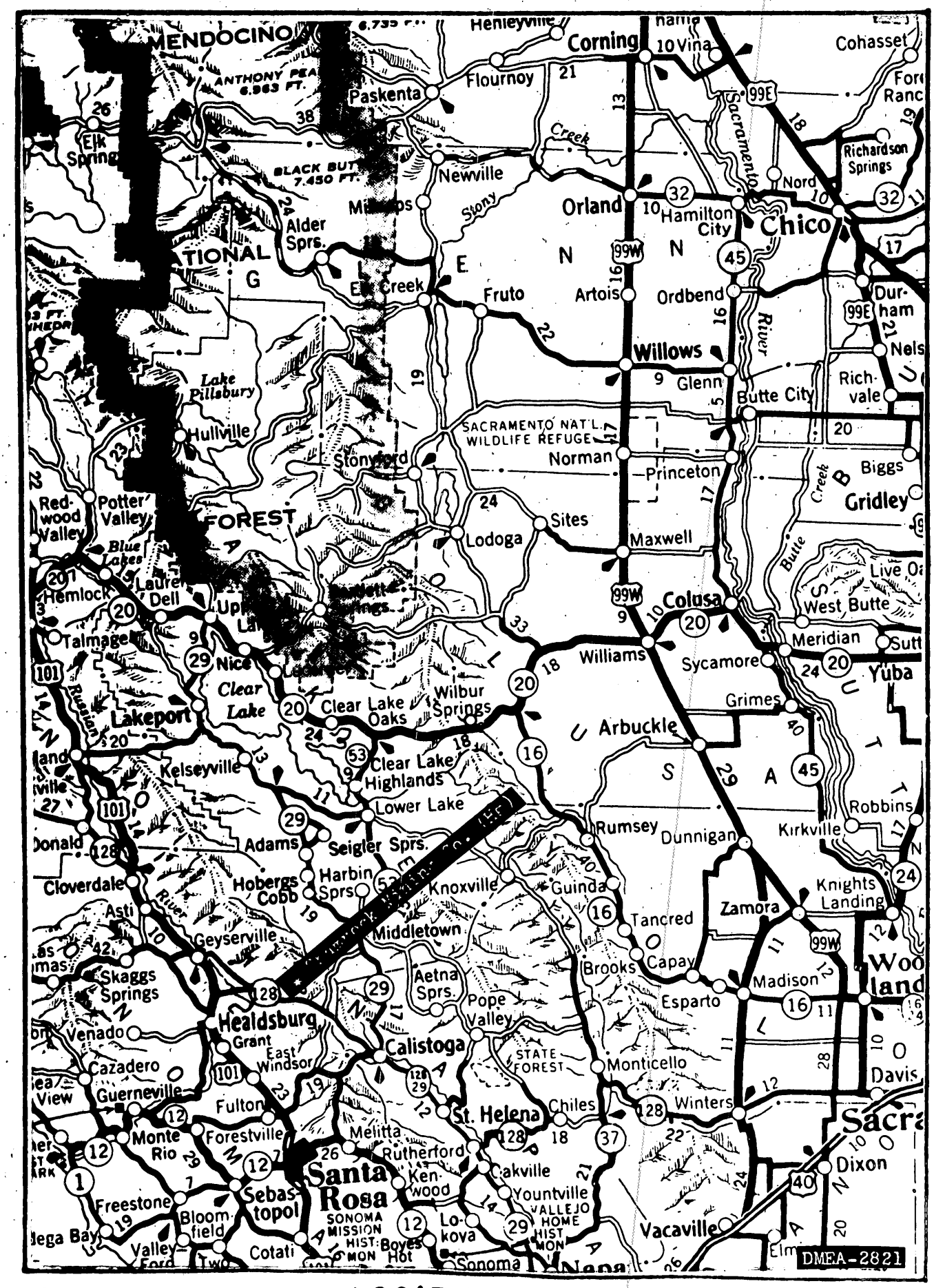
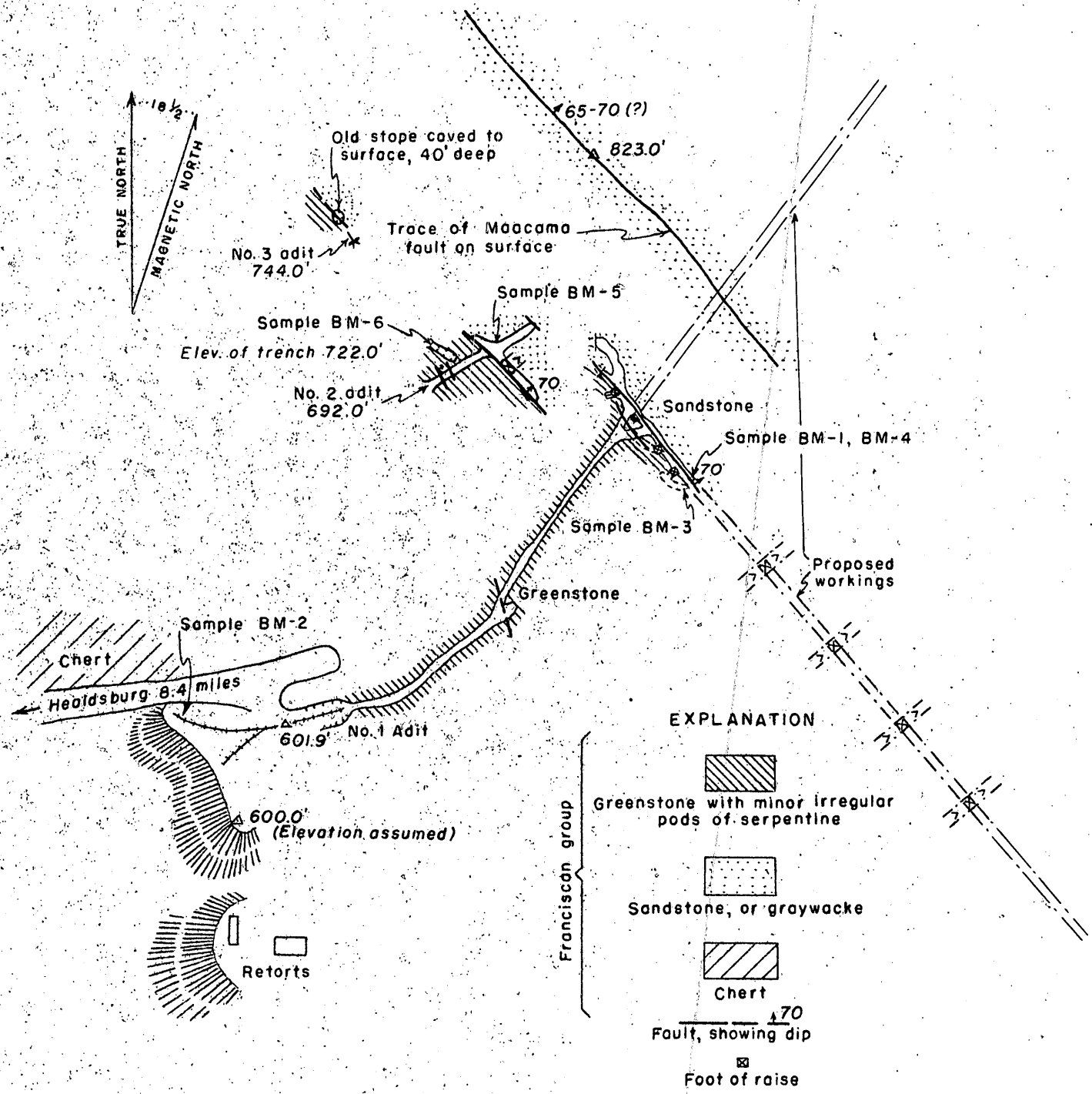


FIG. 1 LOCATION MAP



Mapped by E. H. Pampeyan and D. B. Tatlock, March 1953
with additions July 1954

MERICOMA MINE, SONOMA COUNTY, CALIFORNIA

100 0 100 200 FEET

FIGURE 2

Sur[illegible]me copy

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

FLKnouse
Ellis

Hon. William F. Knowland
United States Senate
Washington 25, D. C.

NOV 5 - 1954

Re: Docket No. DMEA-3314 (Mercury)
Shamrock Mining Company
Mericuna and Pesson claims
Sonoma County, California

My dear Senator Knowland:

This is in response to your inquiry of October 18 and the enclosed letter from Mr. David D. Topliff, dated October 15, 1954. These communications are with further reference to this Agency's denial of Government aid to explore the subject property.

Before replying to your inquiry of October 1 regarding this same question, I caused a complete review of this case by my staff, also by the Commodity Committee members of the Bureau of Mines and the Geological Survey, and the field administrative engineer and geologist. Since that time no new data has been brought to light that justifies a change in the decision rendered at that time.

Similar complaints have been received from this company through other members of the Legislative and Executive Branches of the Government concerning this question.

I regret that Mr. Topliff feels that the engineers who examined the property are not competent to examine mercury properties and render such a decision. The primary question concerning the denial of Government aid to explore this property is geological, and the geologist who examined this property, I understand, has worked for several years as assistant to a mercury specialist for the Geological Survey and has spent much of his time studying mercury deposits.

Mr. Topliff's letter is returned pursuant to your request.

It is hoped that the above will provide you with the necessary information for your reply to Mr. Topliff.

Sincerely yours,

C. O. Mittendorf

Administrator

FLKnouse/gla 11-5-54
cc to: Admr. Reading File
Docket
Messrs. H. M. Meyer, Rm. 2623
T.H. Kiilsgaard, Rm. 5224
Field Team, Region III (2)
Code 700
Enclosure Mr. Knouse

R.C.B.

Surname 700

F.L. Knouse
Ellis

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

Hon. Thomas H. Kuchel
United States Senate
Washington, D. C.

OCT 21 1954

Re: Docket No. DMEA-3314 (Mercury)
Shamrock Mining Company
Sonoma County, California

My dear Senator Kuchel:

This is in response to your inquiry of October 18, with which you enclose a letter dated October 8, 1954, from Mr. Timothy J. Crowley, an attorney for the subject Company. This communication concerns this Agency's denial of Government aid to explore the subject property.

Similar complaints have been received from this Company through the Legislative and Executive Branches of the Government concerning this question among which was one from the Honorable William F. Knowland. I am enclosing two copies of a letter dated October 7, 1954, that I sent to Senator Knowland in reply to his inquiry. This letter, I believe you will find, contains all the information you will require to answer Mr. Crowley's letter.

The copy of my letter of August 23, 1954, and Mr. Crowley's letter are returned herewith.

Sincerely yours,

C. O. Mittendorf

Administrator

FLKnouse:am
10-20-54
cc to: Admr. Reading File
Docket
Messrs. H. M. Meyer, Rm. 2623
T. M. Kiilsgaard, Rm. 5224
Enclosures Field Team, Region III(2)
Code 700
Mr. Knouse

R

TIMOTHY J. CROWLEY
ATTORNEY AT LAW
516 FOURTH STREET
SANTA ROSA, CALIFORNIA
TELEPHONE 7380

October 8, 1954

AIR MAIL

Se
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amrock Mining Company,
of a Defense Mineral
operty owned by the
ldsburg, California.

nderstand the reason for
the attached Exhibit A,
54, from the D. M. E. A.
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this property has been the
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chuette, a consulting mining
s on mercury or quicksilver
the Department of the
6 dated October 1937 as an
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2, submitted a report to my
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xploration, such as is en-
rranted. This mine is
ornia State Mineralogist's

trict, which includes parts
s in northern California,
of quicksilver since 1864,
quicksilver district in

the federal mining engineer
xploration Administration was
therefore, are of the opinion
rposes was very unfair and
umstances. I, therefore, on
ber of your staff look into
can be done to remedy it.

truly yours
thy J. Crowley
THY J. CROWLEY

Enclosure

Y

United States Senate
10/18/54

Respectfully referred to

Defense Mineral Exploration Adm.
Department of Interior

with thanks for such favorable consideration as the communication herewith submitted warrants, and for a report thereon, in duplicate to accompany return of inclosure.

By direction of

Thomas H. Kuchel
U. S. S.

ltr fr Timothy J. Crowley re application
Shamrock Mining Company

DMEA-3314

DEPARTMENT OF THE INT
Defense Minerals Administration
RECEIVED
OCT 28 1954

United States Senate

October 25, 1954

Respectfully referred to

Mr. Mithendorf
Administrator
Defense Minerals Exploration Administration
Department of Interior
with thanks for such favorable consideration as

the communication herewith submitted warrants,

and for a report thereon, in duplicate to

accompany return of inclosure.

With further reference to your letter of Oct 7
re: Docket No. By direction of
DMEA-3314 (Mercury) Shamrock Mining Company
Mericoma and Beeson claims Sonoma County, California

William F. Knowland
U. S. S.

Ltr: Mr. George D. Topliff

SHAMROCK MINING CO.,
241 Jones Street
San Francisco, Calif.

October 15, 1954

William P. Jaeger, Jr.
Administrative Assistant to
Senator William F. Knowland
Washington, D. C.

Dear Mr. Jaeger:

I wish to thank you for the interest you have taken in our getting a DEMA loan.

In reply to letter you received from Mr. Mittendorf. I believe that Mr. Mittendorf is slightly mistaken in his statement.

On our first application of June 17, 1953, I do not believe any engineer visited the property; only two men from the Geological Survey Office and, at that time, we did not exemine surface showing. Also, as per enclosed telegram you will see where loan was refused on account of end of Mercury loans, but about ten days later I received notice that our case was opened and closed that same date.

After our application of Aug. 23rd, 1954, one of the same men from the Geological Survey looked over the property. Also, and engineer from Reno Office made an examination.

As I have before stated, I understand said engineer is expert on copper mines; do not believe he has had any mercury experience.

I still defy Mr. Mittendorf to have three qualified Engineers, acquainted with mercury property, to make examination of the property.

Our property lays in West Macomas District, which is considered the best mercury producing section in California. We are right in the middle of a series of faults, which constitutes the best place to find mercury. We cannot see any further into the mountain than anyone else nor do we think Mr. Mittendorf can; all we have to go on is sufficient expert opinion and geological information.

Thanking you for your trouble, I remain

Yours truly,

/s/ George D Topliff

C
O
P
Y

George D. Topliff

OFFICE OF

THE SECRETARY OF THE INTERIOR

October 27, 1954

MEMORANDUM

TO: Mr. C. O. Mittendorf

FROM: Alene Phillips

I am sending the attached letter, written by Mr. George D. Topliff, to you to add to the file on this subject.

Since I previously wrote to Mr. Topliff I am not replying to this letter.

A.P.

241 Jones Street
San Francisco, Calif.
October 25, 1954

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT 27 1954

Miss Alene Phillips
Executive Assistant to the Sec.
Secretary of Interior
Washington, D. C.

Dear Miss Phillips:

I want to thank you for the trouble you have taken with my application for a D. E. M. A. loan. Please do not misunderstand me. It is not the fact that the loan was turned down but that we feel and believe we can prove that the decision is unfair.

In Mr. Mittendorf's letter to Senator Knowland, he states that he does not find evidence in reports by engineers, C. N. Schuette and J. D. Swearingen, that we would find sufficient ore to repay loan. If he would write Mr. C. N. Shuette, I think he will change his opinion. When I informed Mr. Schuette that the loan was refused, he was very much surprised and wanted to know why it was turned down.

How about this?

Mr. Schuette is a recognized authority on mercury mining. He has also written articles for the Government Bulletins on same. On the original application an engineer was not sent to examine the property, but instead two men from the Geological survey and they examined only the lower tunnel. On the second application, one of the men from the geological survey went over the property and an engineer from Reno came down. I have been informed that the engineer does not know mercury mining but is an expert on copper which is quite different. I still maintain that three engineers with mercury experience would recommend the loan.

Miss Alene Phillips---

The property lies in a series of faults per Plate 1, Bulletin 161 and is in the Maacama Fault Zone district which according to mineral and production maps is one of the best mercury districts in California. The lower tunnel is only in 300 feet or merely to the start of the faults. Other good indications on the property have not been touched.

All I ask is a fair examination of the property by qualified engineers, not a brush off which is what I have received. I am sending you this letter so you will know my side of the matter. I believe that I know something about mining and having had expert advice, believe this property can be developed profitably.

Mr. C. N. Schuette's address is 390 Barnett Valley Road West, Sebastapol, California, if Mr. Middledorf cares to write to him.

Thanking you again and with best wishes for your prosperity. I remain

Respectfully,

George D. Topliff

George D. Topliff

Surname 700

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

FLKnouse
Ellis

October 14, 1954

Memorandum

To: Miss Alene Phillips
Executive Assistant to the Secretary

From: C. O. Mittendorf, Administrator

Subject: Docket No. DMEA-3314 (Mercury)
Shamrock Mining Company
Mariposa and Beesom claims
Sonoma County, California

As Mr. George D. Topliff's letter of September 25, 1954, addressed to you, and previous correspondence are more in the nature of a personal inquiry, it is believed you will be better able to answer his letter provided we furnish the necessary information.

I am attaching a copy of a letter dated October 7, 1954, that I sent to the Honorable William F. Knowland in reply to a similar inquiry from Mr. Topliff. This letter, I believe, you will find contains all the information you will require to answer Mr. Topliff's letter.

C. O. Mittendorf (for

C. O. Mittendorf

Attachment

FLKnouse:am
cc to: Admr. Reading File
Docket
Messrs. H. M. Meyer, Rm. 2623
T. H. Kiilsgaard, Rm. 5227
DMEA Field Team, Region III (2)
Code 700
Mr. Knouse

[redacted]TS. (Knowlse)

"This one is on you."

Seems to me that we recd similar letter from Topliff (like one to Knowland) & that we replied recently.

Perhaps the subject reply can lift excerpts from your summary supporting our denial with the view of establishing the fact that the case was carefully reviewed in the Dir's & in Wash. —

(Hope this was a clear-cut case & not of the borderline nature)

M

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE ASSISTANT SECRETARY
WASHINGTON

October 12, 1954

To: C. O. Mittendorf

From: John G. Liebert

Would you please prepare a reply to Mr. Topliff for Miss Phillips' signature.

I can see from your letter that you don't think that he has anything worth exploring, yet in view of the tight situation with respect to mercury, we don't want to get ourselves in a box. I am wondering if your reply might possibly suggest that if Topliff exposes any better geology than was shown to our engineers at the time of our survey that we might have another look.

John
J. G. L.

C
O
P
Y

241 Jones Street
San Francisco 2, Calif.
September 25, 1954

Miss Alene Phillips
Executive Assistant to the Secratary
Office Secratary of the Interior
Washington, D. C.

Miss Phillips:

I should have written to thank you for your co-operation before now but I was waiting for a reply from D. M. E. A. but as usual all you get is a lot of hogwash. [illegible] 9/22/54

I am enclosing a copy of the letter I am sending to Senator Knowland, if you see fit I would like you to show same to Mr. Douglas McKay. As I stated in the letter I think we are getting a raw deal and I am willing to prove same as I stated in the enclosed letter.

Thanking you for your time and trouble you have taken, I remain,

Respectfully,

s/ GEORGE D. TOPLIFF

name copy

700

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

F. L. Kunze
Ellis

Hon. William F. Knowland
United States Senate
Washington, D. C.

OCT 7 1954

Re: Docket No. DMEA-3314 (Mercury)
Shamrock Mining Company
Merioona and Beeson claims
Sonoma County, California

My dear Senator Knowland:

This is in response to your inquiry of October 1, 1954, with which you enclosed a letter from Mr. George D. Topliff, a partner of the subject Company, dated September 22, and a copy of my letter to the Operator, dated August 23, 1954. These communications concern this Agency's denial of Government aid to explore the subject property.

Two applications have been submitted to this Agency for exploration aid to explore this property: (1) Docket No. DMEA-2621, George David Topliff, dated December 22, 1952, which was denied on June 17, 1953, and (2) Docket No. DMEA-3314, Shamrock Mining Company, denied August 23, 1954.

Each denial for exploration aid was based not only on a site examination of the property by a geologist of the Geological Survey, and a mining engineer of the Bureau of Mines familiar with these types of mineral deposits, but the Applicant's proposal was carefully considered by this Agency's Field Team, the commodity engineers of the Bureau of Mines and geologists of the Geological Survey, and also by this Agency's Washington staff.

It is the unanimous conclusion of these engineers and geologists that a small quantity (a few tons) of mercury ore may be found by the Applicant's proposed exploration program. However, because of the erratic distribution of the mercury mineralization, the cost of the proposed exploration work only would probably be greater than the value of any ore discovered.

The Applicant states in his letter dated September 22, "We believe and our opinion is backed by good mining engineers, C. N. Schuette and J. D. Swearingen, as well as other mercury mine operators that with the development work outlined we can block out sufficient ore to carry through any operating necessary to repay loan also add to mercury stock pile." In this connection we do not find evidence in the engineering reports submitted with these applications to substantiate this statement.

R.C.H.

Mr. Topliff's letter and the copy of my letter to him are returned herewith.

It is hoped the above will provide you with the necessary information for your reply to Mr. Topliff.

Sincerely yours,

C. O. Mittendorf

Administrator

Enclosures 2

FLKnouse/gla
10-6-54
cc to: Admr. Reading File
Docket
Messrs. H. M. Meyer, Rm. 2623
T. H. Kiilsgaard, Rm. 5227
DMEA Field Team, Region III (2) w/c incoming letter
Code 700
Mr. Knouse

DMEA Docket file

September 22, 1954
241 Jones Street,
San Francisco, California

Hon. Senator William P. Knowland,
Washington, D. C.,

Dear Sir:

Enclosed please find a copy of letter we received in answer to our request for a D. E. M. A. loan on mercury property we own in Sonoma County, near Healdsburg. We think that we are entitled to a reasonable explanation why the loan was turned down, not on a mysterious Washington, D. C., mumble jumbo. Why was an engineer sent over from Reno whom was an expert on copper which usually comes in large deposits instead of a man qualified on mercury and whom would recognize the possibilities of our property. We believe and our opinion is backed by good mining engineers, C. N. Schutte and J. D. Swearingen, as well as other mercury mine operators that with the development work outlined we can block out sufficient ore to carry through any operating necessary to repay loan also add to mercury stock pile.

If there is something wrong with our application or if the heads of the D. E. M. A. either think we did not ask for enough capitol or that we asked for too much we would be glad to amend same according to the specifications. If you will consult the mining mineral map of this section you will find that our property lies in a series of faults, this being the best place to find mercury. We now have a three hundred foot drift which has just started to cut the faults also good ore has been taken out in two places, besides a fine surface showing. Therefore we have every reason to believe on completion of contemplated work we would have a paying mine. So we feel that the decision of the D. E. M. A. is very unjust. We are willing and anxious to have a report from the mining engineers with mercury experience preferable Northern California men whom know the geology of the district. One chosen by us, one by D. E. M. A. and a third chosen by the other two, also we are willing to stand the expense of same.

We believe that you are a fairman and that you can get us a square deal from the D. E. M. A.

Thanking you foryour trouble and hoping for your continued sucess.

Respectfully,
Shamrock Mining Company,

/s/ George D. Topliff

George D. Topliff.

c
o
p
y

700

United States Senate

September 29, 1954

Defense Minerals Administration
RECEIVED
OCT - 1 1954

Respectfully referred to

Administrator
Defense Minerals Exploration Administration
Department of Interior

with thanks for such favorable consideration as the communication herewith submitted warrants, and for a report thereon, to accompany return of inclosure.

By direction of

William F. Knowland
U. S. S.

GPO 9—2479

Re: Loan for mercury property
Ltr: Mr. George D. Topliff

DMEA-3314

9/20/54

September 13, 1954

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

SEP 17 1954

Re: Docket No. DMEA-3314
Mericoma & Beeson claims
Sonoma County, California

Dear sirs:

I would appreciate your advising me on the collateral information which you state is available to you in Washington.

I do not want to spend money developing a property if there is evidence that it is of no value. You may be able to save me time and money.

Yours truly

George Topliff

George Topliff
Shamrock Mining Company
241 Jones Street
San Francisco, California

Surname 700

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

F L Knouse
Martin
Farraher
Hedges
K Johnson

Mr. George D. Topliff
Shamrock Mining Company
241 Jones Street
San Francisco, California

Re: Docket No. DMEA-3314 (Mercury)
Mericoma and Beeson claims
Sonoma County, California

Dear Mr. Topliff:

Your application for aid in an exploration project and other information available to us in Washington concerning the above-named property have been reviewed.

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

Careful study of all our information, although noting a small amount of mercury mineralization on this property, indicates to us that the probability of disclosing minable ore reserves by your proposed program is not sufficiently promising to justify Government participation. We regret to advise you, under these circumstances, that your application for exploration assistance is denied.

We wish to thank you for your interest in the Defense Minerals Exploration Administration Program and for bringing your property to our attention.

Sincerely yours,

R. O. Mittenderf

Administrator

FLKnouse/am
Aug. 19, '54

cc to: Admin. Reading File
Operating Committee
Docket File
Messrs. E. L. Newcomb, Rm. 5227
H. M. Meyer, Rm. 2623
DMEA Field Team, Reg. III(2)
Mr. Knouse
Code 700

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

August 19, 1954

SUMMARY OF PROPOSED PROJECT

Docket No. DMEA-3314

Applicant: Shamrock Mining Company
241 Jones Street
San Francisco, California

Subject: Denial of application

Commodity: Mercury

Location of property: Mericoma and Beeson claims Region III
Secs. 30 and 31, T. 10 N.,
R. 8 W., M/D.B.&M., Sonoma
County, California

Amount of application: $29,955.00

Date of application: April 15, 1954

Outline of project:

The proposed work is on the Mericoma unpatented claim. It consists of exploring a mineralized fault zone exposed in three adits by 400 feet of drifting, 300 feet of crosscutting, and 200 feet of raising and sinking to be done on the lowest, or Adit No. 1 level. The applicant would also have 500 feet of bulldozing work done near the No. 2 adit to explore a small cropping of mineralized rock.

Field Team Report: Dated: July 26, 1954
by: John D. Warne, Mining Engineer, USBM
E. H. Pampeyan, Geologist, USGS
Field Team transmittal letter: August 3, 1954

Recommendations:

The ore-bearing rock occurs in small pods erratically distributed. No ore reserves can be calculated, but it is inferred that unexplored parts of the fault zone may yield other pods of ore each containing a few tons of ore averaging 5 to 30 pounds of mercury per ton.

As the cost of the proposed exploration would probably be greater than the value of the ore discovered, it is recommended that the application be denied.

Recommendations: (Continued)

The Executive Officer, Region III, stated in his letter to the Operating Committee, dated August 3, 1954, that Mr. Roscoe Smith and he concur with the recommendations of the examining engineer and geologist.

Commodity Members' Comments:

Bureau of Mines: Miss Helena M. Meyer on Aug. 17, 1954, concurs in the denial.

Geological Survey: Mr. R. D. Trace on August 18, 1954, "If the scarcity of mercury demands that even this type of spotty and probably uneconomic type deposit be mined, I could go along on a limited amount of drifting, but, otherwise, I would recommend denial of the entire application."

Rare & Misc. Metals Division Engineer: F. L. Knouse

Comments: This property was submitted under the name of Docket No. DMEA-2821 - George David Topliff and was declined by letter dated June 17,1953, because of the small size and erratic distribution of the ore bodies. In this application the applicant added 44 acres of adjoining land for this project; however the merits of the project add no further justification for an exploration project. For the above reasons the project is denied.

F. L. Knouse

F. L. Knouse
For: Ernest Wm. Ellis, Chief,
Rare & Misc. Metals Division

8-18-54
C.U.

IN REPLY REFER TO:

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

August 18, 1954

Memorandum

REVIEW OF FIELD TEAM REPORT ON APPLICATION DMEA-3314 (mercury)

To: E. W. Ellis, Defense Minerals Exploration Administration
From: R. D. Trace, U. S. Geological Survey
Applicant: Shamrock Mining Company
Name of property: Mericoma and Beeson Claims
Location of property: Sonoma County, California
Date of Field Team Report: July 26, 1954
Authorship of Field Team Report: J. D. Warne, USBM, and E. H. Pampeyan, USGS
Field Team's recommendation: Deny application.
Comments:

Although the Field Team report confuses me once in a while, regarding details of the area and the proposed project, I doubt that any exploration assistance is warranted.

The proposed exploration seems to cover 3 general areas:

1. Adits 1, 2, and 3 area, where mined in the past. (Drifting, winzing, raising, and some trenching proposed.)

2. The Maacama fault zone area, 100-200 feet NE of area 1. (300-foot crosscut proposed.)

3. The serpentine-graywacke contact area, 1,500 feet east of area 1 (Beeson claim?). (500 feet of trenching proposed.)

From my interpretation of the information available, areas 2 and 3 have no merit whatsoever. No mineralized rock was seen in area 3. Although a serpentine-graywacke contact (fault?) is present, the favorable silica-carbonate rock is apparently scarce. Also, no mention of fault gouge ("alta") is made. According to figure 2 of the Field Team report, both walls of the Maacama fault in area 2 are sandstone or graywacke, with no greenstone or serpentine indicated. If this is so, the chance of finding any mercury deposit here, is very poor.

Regarding area 1, some ore has been produced, and the Field Team believes that some more may be present. Admittedly, information on quantity and grade of production is lacking but apparently 2 or 3 stopes have been made. IF the scarcity of mercury demands that even this type of spotty and probably uneconomic deposit be mined, I could go along on a limited amount of drifting, but otherwise, I would recommend denial of the entire application.

ACTION RECOMMENDED: Follow Field Team's recommendation.

R. D. Trace

R. D. Trace

IN REPLY REFER TO:

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

August 18, 1954

Memorandum

REVIEW OF FIELD TEAM REPORT ON APPLICATION DMEA-3314 (mercury)

To: E. W. Ellis, Defense Minerals Exploration Administration
From: R. D. Trace, U. S. Geological Survey
Applicant: Shamrock Mining Company
Name of property: Mericosa and Beeson Claims
Location of property: Sonoma County, California
Date of Field Team Report: July 26, 1954
Authorship of Field Team Report: J. D. Warne, USBM, and E. N. Pampeyan, USGS
Field Team's recommendation: Deny application.
Comments:

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ACTION RECOMMENDED: Follow Field Team's recommendation.

R. D. Trace

RDTrace:hlm
G-8/18/54

Copy to: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
H. M. Mayer, 2623

IN REPLY REFER TO:

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

August 18, 1954

Memorandum

REVIEW OF FIELD TEAM REPORT ON APPLICATION DMEA-3314 (mercury)

To: E. W. Ellis, Defense Minerals Exploration Administration
From: R. D. Trace, U. S. Geological Survey
Applicant: Shamrock Mining Company
Name of property: Mericoma and Beeson Claims
Location of property: Sonoma County, California
Date of Field Team Report: July 26, 1954
Authorship of Field Team Report: J. D. Warne, USBM, and E. H. Pampeyan, USGS
Field Team's recommendation: Deny application.
Comments:

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From my interpretation of the information available, areas 2 and 3 have no merit whatsoever. No mineralized rock was seen in area 3. Although a serpentine-graywacke contact (fault?) is present, the favorable silica-carbonate rock is apparently scarce. Also, no mention of fault gouge ("alta") is made. According to figure 2 of the Field Team report, both walls of the Mericoma fault in area 2 are sandstone or graywacke, with no greenstone or serpentine indicated. If this is so, the chance of finding any mercury deposit here, is very poor.

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ACTION RECOMMENDED: Follow Field Team's recommendation.

R. D. Trace

RDTrace:hlm
G-8/18/54

Copy to: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
H. M. Mayer, 2623

IN REPLY REFER TO:

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

August 18, 1954

Memorandum

REVIEW OF FIELD TEAM REPORT ON APPLICATION DMEA-3314 (mercury)

To: F. W. Ellis, Defense Minerals Exploration Administration
From: R. D. Trace, U. S. Geological Survey
Applicant: Shamrock Mining Company
Name of property: Mericoma and Beeson Claims
Location of property: Sonoma County, California
Date of Field Team Report: July 26, 1954
Authorship of Field Team Report: J. D. Warne, USBM, and E. M. Pampeyan, USGS
Field Team's recommendation: Deny application.
Comments:

Although the Field Team report confuses me once in a while, regarding details of the area and the proposed project, I doubt that any exploration assistance is warranted.

The proposed exploration seems to cover 3 general areas:

1. Adits 1, 2, and 3 area, where mined in the past. (Drifting, winzing, raising, and some trenching proposed.)

2. The Mancoma fault zone area, 100-200 feet NW of area 1. (300-foot crosscut proposed.)

3. The serpentine-graywacke contact area, 1,500 feet east of area 1 (Beeson claim?). (500 feet of trenching proposed.)

From my interpretation of the information available, areas 2 and 3 have no merit whatsoever. No mineralized rock was seen in area 3. Although a serpentine-graywacke contact (fault?) is present, the favorable silica-carbonate rock is apparently scarce. Also, no mention of fault gouge ("alta") is made. According to figure 2 of the Field Team report, both walls of the Mancoma fault in area 2 are sandstone or graywacke, with no greenstone or serpentine indicated. If this is so, the chance of finding any mercury deposit here, is very poor.

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ACTION RECOMMENDED: Follow Field Team's recommendation.

R. D. Trace

RDTrace:hlm
G-8/18/54

Copy to: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
H. M. Mayer, 2623

8-18-54
C.-C.

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

August 17, 1954

Memorandum

To: E. W. Ellis, DMEA

From: Helena M. Meyer, Bureau of Mines

Subject: DMEA - 3314 (mercury) Shamrock Mining Co., Mericoma and Beeson claims and adjacent patented land, Sonoma County, Calif., in Field Team Report.

I have read the Field Team report on the subject property and concur in their recommendation that the application be denied. The evidence is that because of the nature of the occurrence, at best only a small quantity of mercury is likely to be involved. The potential quantity does not appear to justify the expenditure of funds requested despite the current critical situation in mercury.

Bureau of Mines records do not show any production for this property and Ransome and Kellogg's report on Quicksilver Resources of California, California Journal of Mines and Geology, 1939, lists the "Mericoma" as one of a number of properties that had little or no production. The Beeson is not shown.

Helena M. Meyer

Helena M. Meyer

Copy to: Minerals Division
Base Metals Branch
H. M. Meyer
B. Gildersleeve, Room 5223
F i l e s

G. W.
8-10-54

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

420 Custom House
555 Battery Street
San Francisco 11, Calif.

August 3, 1954

Memorandum

To: George C. Selfridge, Chairman, Operating Committee, DMEA
Interior Building, Washington 25, D. C.

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket No. DMEA-3314 - Mercury
Shamrock Mining Company
Mericoma and Beeson claims
and adjacent patented land
Sonoma County, California

In accordance with your May 3, 1954, request for a field examination of the subject claims, the property was examined on June 2 and 23, 1954, by an engineer of the Bureau of Mines, and on July 1, 1954, by a geologist of the Geological Survey. The property previously - on March 10, 1953 - had been examined by a geologist from the Survey.

Attached are four copies of a report entitled "DMEA-3314, Mericoma and Beeson Claims, Shamrock Mining Company, Sonoma County, California, (Mercury)," by John D. Warne, Mining Engineer, U. S. Bureau of Mines, and E. H. Pampeyan, Geologist, U. S. Geological Survey, dated July 26, 1954.

A number of corrections in the Warne-Pampeyan report are suggested by members of the Geological Survey as follows:

Page 1 - At the end of the second line under Summary, Conclusions and Recommendations, add the phrase "and July 1, 1954."

Page 2 - The second and third sentences from the top of the page should read: "The applicant would also have 500 feet of bulldozing done along a serpentine-graywacke contact 1500 feet East of the mine. A small amount of bulldozing would be done near the No. 2 adit to explore a small cropping of mineralized rock."

Page 3 - At the end of first paragraph following the word "property" add "on July 1, 1954."

The first sentence of next paragraph should read: "Most of the proposed work is in connection with exploration at the Mericoma Mine; however, 500 feet of trenching is proposed for the adjoining Beeson claim held by Mr. G. D. Topliff (the applicant)."

Page 4 - In the first paragraph, line 9, the name is Swearingen.

Page 6 - In the fifth line, delete the phrase "No underground work" and substitute "A small amount of trenching."

Page 7 - Item 3(b), in third line add the word "fault" after the name Maacama.

Page 10 - In the seventh line of the first full paragraph delete the word "above" and substitute "East of." Delete "(fig. 2)."

According to the report by the examining engineer and geologist the property does not warrant assistance from the DMEA for further exploration of this property. Their report states that the spotty nature of this deposit leads one to believe that there may be more small irregular pods of mercury throughout the mineralized zone. However, the cost of exploration in all likelihood would be more than the ore produced from the property.

Mr. Roscoe Smith and I concur with the recommendations of the examining engineer and geologist.

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

Attachment

Copy to: Roscoe Smith, USGS
A. C. Johnson, Reno

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

DMEA-3314, Mericoma and Beeson Claims

Shamrock Mining Company

Sonoma County, California

(Mercury)

John D. Warne, Mining Engineer
U. S. Bureau of Mines

E. H. Pampeyan, Geologist
U. S. Geological Survey

July 26, 1954

REPORT OF EXAMINATION

Docket No.: DMEA-3314 (Mercury)

Name and address of applicant: George D. Topliff
241 Jones Street
San Francisco, California

Name and location of property: Shamrock Mining Company
Mericoma and Beeson Claims
Secs. 30 and 31, T. 10 N.,
R. 8 W., M/D.B.&M.,
Sonoma County, California

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Examinations of the Mericoma and Beeson (mercury) claims were made by geologists of the Geological Survey on March 10, 1953 and by an engineer of the Bureau of Mines during June 2 and 23, 1954. The applicant, Mr. George D. Topliff, was present during the examination.

The mining property is located within secs. 30 and 31, T. 10 N., R. 8 W., M.D.B. &M., Sonoma County, California. It is 8.4 miles by road from Healdsburg, Calif. (fig. 1).

The financial responsibility of the applicant is not known. His previous mining experience and application are not impressive, but he has obtained capable engineer's reports on the property.

The proposed work is on the Mericoma unpatented claim. It consists of exploring a mineralized fault zone exposed in three adits

by 400 feet of drifting, 300 feet of crosscutting, and 200 feet of raising and sinking to be done on the lowest, or Adit No. 1 level. The applicant would also have 500 feet of bulldozing work done near the No. 2 adit to explore a small cropping of mineralized rock. Total cost of the proposed program would be $29,955.00. The underground proposed exploration work is shown in figure 2.

The ore-bearing rock occurs in small pods erratically distributed. No ore reserves can be calculated, but it is inferred that unexplored parts of the fault zone may yield other pods of ore each containing a few tons of ore averaging 5 to 30 pounds of mercury per ton.

As the cost of the proposed exploration would probably be greater than the value of the ore discovered, it is recommended that the application be denied.

INTRODUCTION

The Shamrock Mining Company's mercury property was examined on March 10, 1953 by E. H. Pampeyan and D. B. Tatlock of the Geological Survey pursuant to a request for Government participation in a $32.500.00 exploration program (Docket No. DMEA-2821). A report by Pampeyan on March 31, 1953 entitled Mericoma Mine (Quicksilver) recommended denial of a loan because of the small size and erratic distribution of ore-bearing rocks in this type of deposit.

A later examination of the property was made on June 2 and 23, 1954 by John D. Warne of the Bureau of Mines in connection with

the final application, made on April 15, 1954, for a proposed project to cost $29,955 (Docket No. DMEA-3314). Prior to the final examination of the property, two upper adits of the Mericoma Mine were made accessible by the applicant for examination and sampling; and E. H. Pampeyan reexamined and completed mapping the Mericoma Mine property.

All of the proposed work is in connection with exploration at the Mericoma Mine, however, the application includes the adjoining Beeson claim and other property held by Mr. G. D. Topliff (the applicant). This report covers the examination of the Mericoma and Beeson claims made in connection with the final proposal (docket No. DMEA-3314).

NAME AND LOCATION OF PROPERTY

The Shamrock Mining Company property consists of the Mericoma and Beeson unpatented lode claims and 44 acres of adjoining agricultural patented land. This property is located within secs. 30 and 31, T. 10 N., R. 8 W., M.D.B.&M., Sonoma County, Calif.

ACCESSIBILITY

It is accessible by roads leading 2.7 miles north of Healdsburg, California along U. S. Highway No. 101, thence 3.7 miles eastward along California State Highway No. 128 to Jimtown, 1.4 miles of graveled road northeast of Jimtown, and finally 0.6 of a mile of private mountain access road to the portal of Adit No. 1 on the Mericoma claim. The mine would be accessible by low-geared automobile throughout most of the year. (Fig. 1).

COMPETENCY OF APPLICANT

The financial responsibility of the applicant is not known, however, he states that he is able to furnish his share of the cost of the proposed exploration project. Only a small amount of mining experience is indicated by his application and his conduct during the examination, however, he claims to have worked lead and zinc prospects in northern Idaho for a period of 10 to 15 years. Capable consulting engineers and professional advice has been used by him in planning the exploration work. Mr. C. N. Schuette, Sebastopal, California and Mr. John D. Swearinger, 61 Catalpa Ave., Mill Valley, Calif., have examined the property for the applicant.

APPLICANTS PROPERTY RIGHTS

The Mericoma Claim No. 63, and the Beeson claim No. 58, are unpatented lode claims recorded in Book 2, page 235 in the Santa Rosa, Sonoma County, California recorders office. The applicant, Mr. George D. Topliff, states that he acquired these claims during 1952. In addition approximately 44 acres of adjoining agricultural patented land including the mineral rights are stated to be held under lease by the applicant from Mr. Roy F. Ward, or Maud Ward, Box 109-A, Healdsburg, Calif. The owners consent to lien can be obtained according to Mr. Topliff. Partnership in the Shamrock Mining Company consits of: George D. Topliff - 85%; Roy F. or Maud Ward, 12.5%; and Morrie Bobrow and/or Cy Weita (365 Eddy St., San Francisco, Calif.) 2.5%.

DESCRIPTION OF THE PROPERTY

No surface facilities, building, or equipment exist on the property.

Mining equipment consists of two usable mine cars, one timber car, and 300 feet of mine track in place in the lower Adit No. 1.

The main mine workings which are now accessible consist of the following: (1) Adit No. 1 (lower crosscut tunnel) - approximately 300 feet of crosscut, and 75 feet of drift southeastward along a mineralized zone. One small stope remains open above and near the face of the drift. (2) Adit No. 2 (located at about 90 feet higher elevation than Adit No. 1) - approximately 90 feet of crosscut, 60 feet of drift, and 42 feet of winze. (3) Adit No. 3 (located about 50 feet higher than Adit No. 2) - approximately 25 feet of crosscut. Most of these underground workings are barely accessible and would be unsuitable for use, with the exception of Adit No. 1 - the lower crosscut level. The workings are shown on fig. No. 2, however, a portion of the drift northwestward from the intersection of the Adit No. 1 crosscut-drift intersection has become inaccessible since the map was prepared. Several shallow prospects and old filled test pits also exist on the surface in the vicinity of the adits. All of the above work is located on the Mericoma unpatented claim.

PROPOSED EXPLORATION

The exploration program proposed by the applicant consists of

underground work and surface trenching with a bulldozer. Underground work is proposed for the No. 1 adit and would involve 300-400 feet of drifting to the southeast along the fault zone with four 50-foot raises or winzes to explore any leads found in the drift (fig. 2), and extending the No. 1 Adit crosscut 300 feet northeastward. No underground work would be done in the area above No. 2 adit to determine the extent of the silica-carbonate rock found in the small trench. More bulldozing would be done along the ridge top to uncover 500 feet of the graywacke-serpentine contact in hopes of finding quicksilver along this contact.

The applicant's proposal for underground work appears to be the best way of exploring the fault zone. Some bulldozing above the No. 2 adit would determine whether the silica-carbonate rock exposed there is in place. Bulldozing along the serpentine contact 1500 feet east of the mine would be of little value for no mineralized rock was seen along this contact. Silica-carbonate rock was found 50 feet or more east of the contact and constituted only a small part of the serpentine mass. Perhaps trenching would uncover more silica-carbonate rock in the serpentine mass, but its location is not apparent.

The spotty nature of this deposit leads one to believe that there may be more of these small, irregular pods of silica-carbonate rock scattered throughout this zone, or any other fault zone nearby. The cost of the proposed exploration program, however, would be greater than the value of quicksilver produced from these small and scattered pods.

The applicant's final proposal for an exploration project to cost $29,955.00 is summarized as follows:

	Cost
1. Repair mine access road 0.4 mile, and construct a combination office, tool, and compressor house	$1,500.00
2. Bulldoze approximately 500 feet along the surface in the vicinity of the Maacama fault to explore for ore-bearing structure, 10 day at an estimated cost of $100/day	1,000.00
3. (a) Extend the present southeast drift on Adit No. 1 level from approximately 70 feet to 470 feet - 400 feet of drifting	
(b) Extend the present Adit No. 1 crosscut an estimated 300 feet northeastward to intercept the Maacama, and to explore for other ore-bearing structures - 300 feet of crosscutting	
(c) Drive 100 feet of raise and 100 feet of shaft or winze to explore the vertical extent of the most favorable mineralized structure encountered by the above bulldozing, crosscutting or drifting work - 100 feet of raise, and 100 feet of shaft or winze	
Total estimated cost of crosscutting 300 feet, drifting 400 feet, raising 100 feet, and winzing 100 feet - total 900 feet @ $30.51/ft.	27,455.00
Total cost of proposed exploration project	$29,955.00

The application does not describe fully, or illustrate, the proposed work. After the examination, the applicant changed the quantity of underground work to be done from 500 feet to 900 feet in order to decrease the estimated cost per foot. In general, the cost estimates

were poorly prepared, and the proposed work was incompletely conceived in connection with this application, however, he did not increase the cost of the proposed project. Cost estimates as submitted by the operator to complete the proposed exploration project are summarized as follows:

a.	Independent contracts - bulldozing	$ 1,000.00
b.	Labor	9,200.00
	Supervision	5,000.00
c.	Operating materials and supplies	4,650.00
d.	Operating equipment (to be purchased)	8,605.00
e.	Equipment to be furnished	(None)
f.	New buildings (and road repair)	1,500.00
g.	Miscellaneous	(None)
Total		$29,955.00

PAST OPERATION

The applicant stated that the Mericoma and Beeson claims were originally located about 1902. The last mining work performed was during the period 1942 to 1944. They were relocated by Mr. George D. Topliff during 1952.

No records of the past production are now available. But the small stopes above the drift on the Adit No. 1 level indicates that some mercury ore was mined. The largest accessible stope indicates that about 320 tons of material has been mined. Portions of a "D" retort, a two-pipe Rossi-type retort, and condensing equipment remain on the property. This equipment is now worthless, but it serves as evidence that some mercury was produced in the past.

SAMPLING

Six samples (see fig. 2) were taken in connection with this examination and analyzed by the Bureau of Mines, Hydrometallurgical and Ore Dressing Branch, Reno, Nevada. Description and analysis of these samples are as follows:

Sample No.	Lb. Hg/T	Description
1	0.1*	1.2 feet horizontal channel from south face of drift on lower tunnel level.
2	1.7	Specimen sample of silica carbonate rock on dump of lower tunnel.
3	4.5	1-foot channel cut from mineralized silica carbonate in back of stope, south end, about 15 feet above lower tunnel level.
4	0.1*	1.2 feet horizontal channel from south face of drift on lower tunnel level - check on sample No. 1.
5	0.3	1-foot chip sample of hanging wall mineralized material from drift at its point of intersection with tunnel No. 2; about 75 feet vertically above lower tunnel level.
6	0.1*	Specimen sample of silica carbonate outcrop material exposed about 40 feet above tunnel No. 2.

*Less than.

GEOLOGY AND ORE DEPOSITS

The mine is on the southwest side of the Mayacmas Mountains about four miles southwest of the Mayacmas Quicksilver District. The rocks are predominately Franciscan chert, sandstone, graywacke, shale

and greenstones with irregular, intruded masses of serpentine; these rocks are cut by a series of northwest trending faults. Quicksilver deposits are associated with the faults.

The only ore mineral is cinnabar; it was deposited in a shear zone under an impermeable layer of fault gouge or "alta" and above a greenstone footwall, but appears to have deposited somewhat preferentially on altered serpentine or silica-carbonate rocks. Traces of cinnabar were seen in the gouge on No. 2 adit, in the silica-carbonate rock above No. 2 adit portal, and disseminated through silica-carbonate rock on the ridge top above the adits (fig. 2). At the time of this examination, no ore was seen.

The main portal of the Mericoma Mine is some 350 feet southwest of the Maacama Fault (fig. 2) described by Gealey[1/].

Surface exposures are poor. Red, thin-bedded chert is exposed along the road leading to the mine, and sandstone, or graywacke, appears on the northeast side of the steep Maacama Fault Scarp. Some serpentine float was observed but none was found in place on the surface close to the mine.

The No. 1, or lowest adit (fig. 2), penetrates Franciscan greenstone, which contains some irregular pods of serpentine. The drift at the

1/ Gealey, W. K., Geology of the Healdsburg Quadrangle, California State Division of Mines Bull. 161, 1951.

end of the adit is along a fault-contact of greenstone with graywacke. The fault-contact dips steeply to the northeast, and along it a 3 to 5-foot thickness of breccia has been altered and mineralized. This sheared and altered zone contains fragments of graywacke, greenstone, serpentine, silica-carbonate rock and chert and is similar to the "alta" of other Coast Range quicksilver deposits. The faulted greenstone-graywacke contact controlled the localization of ore. During an examination in March 1953, a small pod of fractured silica-carbonate rock was exposed in the stope at the southeast end of the No. 1 level drift. This pod, measuring 1-1/2 feet by 5 feet, had films of finely crystalline cinnabar as much as two millimeters thick coating the fracture surfaces. Stopes along the fault indicate that other small ore-bearing pods might have been mined.

The No. 2 adit, approximately 90 feet higher than the No. 1 adit, passes through greenstone, a two-foot thickness of black gouge, and then into graywacke and shale. The greenstone-graywacke contact is a fault, dipping 70-80 degrees northeast, and appears to be the same fault found in the lower workings. Traces of cinnabar were seen in the gouge at the north end of the No. 2 level. A winze probably connects the No. 1 and No. 2 levels. A small trench 30 feet higher than the No. 2 adit exposed some cinnabar-bearing silica-carbonate rock, but there is doubt that this rock is in place. No serpentine or silica-carbonate rock

was cut in the No. 2 adit which passed almost under the trench.

No. 3 adit was inaccessible at the time of the geologist's examination, but the structure was exposed where the surface had collapsed into an old stope. This adit appears to have been driven along the same greenstone-graywacke contact explored in the other workings. Where exposed on this level, the fault had the same northwest strike but the dip had increased to 90 degrees. No cinnabar was seen near the No. 3 adit.

On the ridge top about 1500 feet east of the Mericoma Mine, serpentine in fault-contact with graywacke crops out over a north-south distance of several hundred feet. Some of this serpentine has been altered to silica-carbonate rock and contains traces of cinnabar. An old prospect tunnel 15 feet long passes through the silica-carbonate rock but no mining has ever been done here. No silica-carbonate rock was seen along the graywacke-serpentine contact where the bulldozing is proposed.

ORE RESERVES

The largest accessible stope (fig. 2, Sample BM-3) is roughly triangular in shape, and yielded about 320 tons of rock. Judging from the high-grade pod seen in 1953, this stope might have produced 45 to 55 flasks of mercury. Assays from the most recent examination, however, show only 4.5 pounds of mercury per ton of rock from this area, which would equal 6 to 8 flasks of mercury from the stope. The irregular

appearance of the silica-carbonate pod would suggest that only a small production could be credited to this mine.

No reserves could be estimated from the scanty showings of cinnabar on this property. The possibility of a connection between No. 1 and No. 2 levels suggests that the fault zone has been explored upwards. The downward or lateral extension of the fault zone might contain other pods of ore; however, it is impossible to predict their presence, or absence, on such meager showings. One small outcrop of questionable silica-carbonate rock was observed on the surface along the Maacama Fault. It seems likely that only a small number of scattered pods might exist in the area under consideration for exploration.

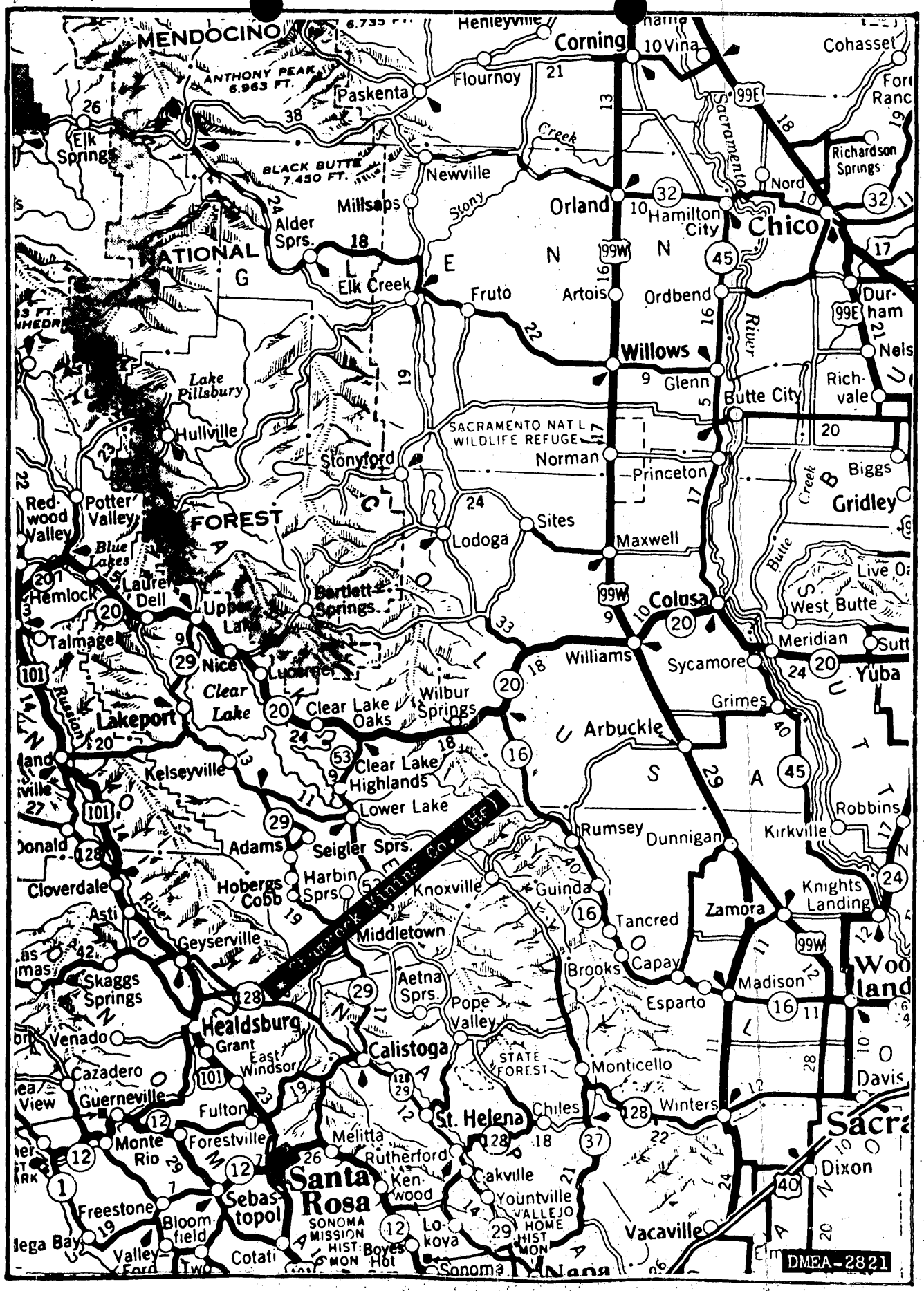
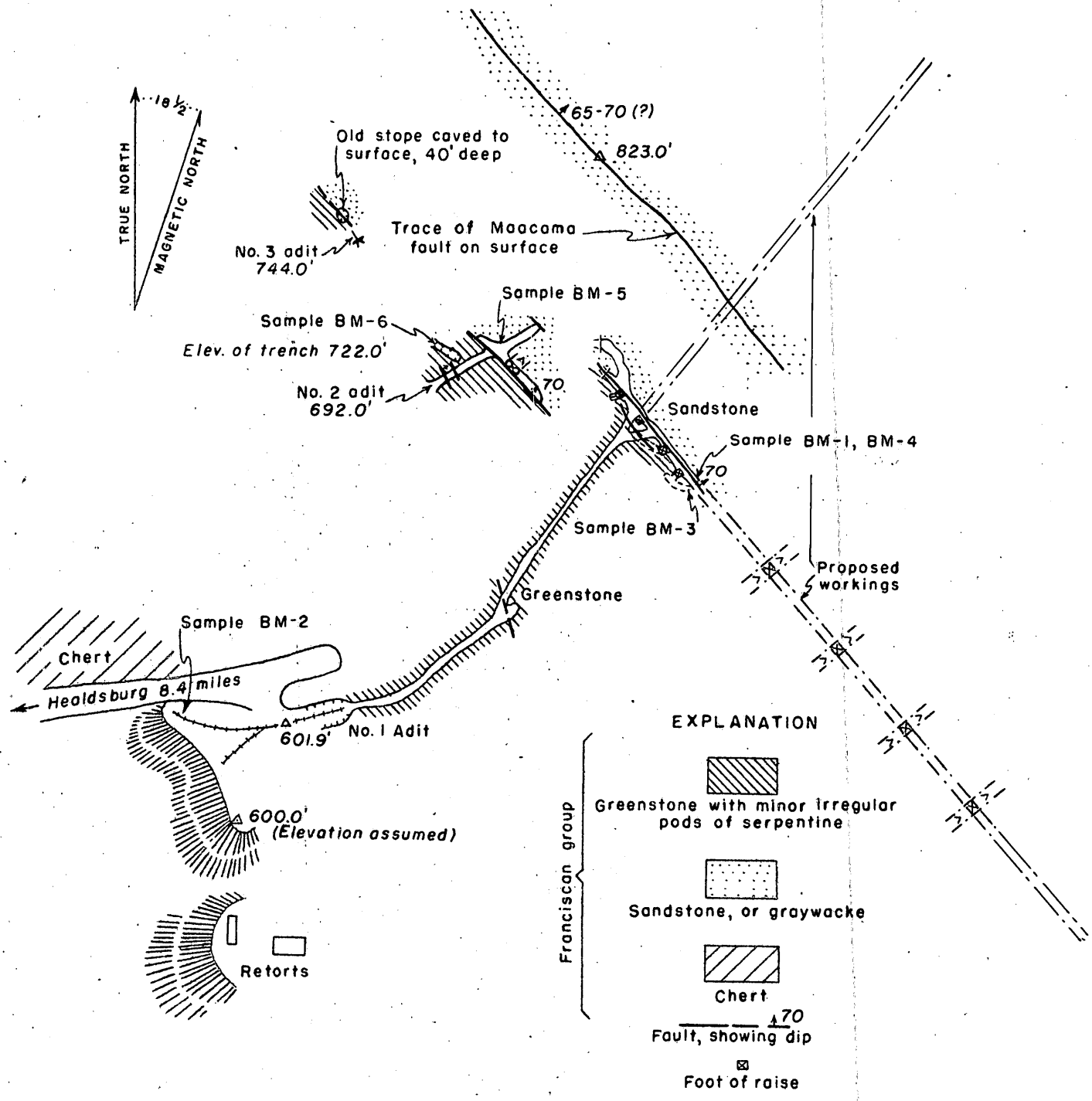


FIG. 1 LOCATION MAP

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DMEA 3314
(MERCURY)



Mapped by E. H. Pampeyan and D. B. Tatlock, March 1953
with additions July 1954

MERICOMA MINE, SONOMA COUNTY, CALIFORNIA

100 0 100 200 FEET

FIGURE 2

700

Docket
Surname
J. Lhouse

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

April 29, 1954

Memorandum

To: Administrator

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

Subject: Docket No. DMEA-3314 (Mercury)
Shamrock Mining Company
Maricoma and Beesen claims
and adjacent patented land
Sonoma County, California

In response to your request of April 26, at which time you forwarded letter of April 19 by George Topliff, 241 Jones Street, San Francisco, California, addressed to Miss Alene Phillips, we are supplying the following information relative to the captioned application which Miss Phillips may wish to incorporate in her reply:

The subject application was received by DMEA on April 19, 1954, and a letter of acknowledgment was sent to the Shamrock Mining Co., 241 Jones Street, San Francisco, California, on April 20, advising the applicant of the docket number and that the application had been referred to this Division.

Following receipt of comments upon the application from the USGS and USBM Commodity Members, a letter has been prepared today referring the application to the Executive Officer, DMEA Field Team, Region III, for further investigation and subsequent report to this office. A letter to Mr. Topliff concerning this referral has also been prepared and will be mailed simultaneously with the forwarding of the letter of transmittal to Region III.

Mr. Topliff's letter to Miss Phillips is returned herewith.

Ernest Wm. Ellis
Ernest Wm. Ellis

Attachment

R.C.H.

Code 700
Docket file

700

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

F. L. Knouse
Mr. Martin
Hedges
Farrabee
F. Johnson

MAY 3 - 1954

Mr. George D. Topliff
Shamrock Mining Company
241 Jones Street
San Francisco, California

Re: Docket No. DMEA-3314 (Mercury)
Mericoma and Beason Claims
and adjacent patented land.
Sonoma County, California

Dear Mr. Topliff:

The application for assistance in exploring your property, under the above captioned docket number, has been reviewed by the Rare and Miscellaneous Metals Division of the Defense Minerals Exploration Administration. It has been referred to the Executive Officer of Region III at the following address:

Mr. H. C. Miller
Executive Officer
DMEA Field Team, Region III
1012 Flood Building
870 Market Street
San Francisco 2, California

The Regional Office will contact you in the event they desire to obtain additional information.

Sincerely yours,

C. O. Mittendorf
(by ESF)
Administrator

FLKnouse/gla
4-28-54
cc to: Adm. Reading File
Docket
Code 700
FLKnouse
DMEA Field Team, Region III (2)

R.C.S.

700

Docket
Surname
FLKnouse
Ellis
Martin
YEJohnson

MAY 3 - 1954

Mr. H. C. Miller
Executive Officer
DMEA Field Team, Region III
1012 Flood Building
870 Market Street
San Francisco 2, California

Re: Docket No. DMEA-3114 (Mercury)
Shamrock Mining Company
Mariposa and Bonanza claims
and adjacent patented land
Sonoma County, California

Dear Mr. Miller:

The captioned application is referred to your office for either a field examination of the proposed project or an evaluation of the merits of the proposal from earlier work done on this project under Docket No. DMEA-3071, George David Tapliff.

Enclosed are copies of memorandum from C. H. Johnson, dated April 27, 1954, and E. L. Kennedy, dated April 26, 1954, which outline questions to be covered in the Field Team's report.

If your office recommends either the program as submitted by the Applicant or an alternate one approved by the Applicant, please furnish us the detailed information required to draft a contract. It is not clear in the application if the adjacent 44 acres of patented land referred to are controlled by the Company. This question should be resolved and the necessary number of executed "Owner's Consent to Lien" forms furnished if required.

Under date of March 20, 1954, a copy of the application was transmitted to your office.

Sincerely yours,

W. S. Martin
ACTING Chairman, Operating Committee (JHB)

APPROVED:

J. H. Hedges (JHB)
Member, Bureau of Mines

D. M. Larrabee (JHB)
Member, Geological Survey

FLKnouse/fec 4-29-54
cc to: Admr. Reading File
Operating Comm.
Docket
Messrs. H. M. Meyer, Rm. 2623
Benjamin Hilderaleeve, B-242-A
Code 700
Mr. Knouse

R.C.L.

4/28/54 gla

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

April 27, 1954

Memorandum

To: E. W. Ellis, DMEA

From: C. H. Johnson, Bureau of Mines

Subject: DMEA-3314 (Mercury) Shamrock Mining Company, Mericoma Claim, Santa Rosa County, California

In Miss Meyer's absence, I have reviewed the above-named application. This property was the subject of an earlier application (DMEA-2821, Mericoma Mine) which was denied on the ground that the showings were insufficient to justify Government assistance in further exploration. The applicant, George D. Topliff, states in his letter of April 15 transmitting the new application, that he has acquired more property and done considerable exploration opening up two more old tunnels; he gives no further detail as to this new exploration or what was found in the course of it. No reason is given to indicate why a different decision should be reached at the present time from that with respect to the first application. However, if you think it would be advisable to obtain a field opinion on this matter, I shall be glad to concur with a referral to the Field Team.

With reference to the original application and the denial thereof, I should be glad to see some reconsideration given to it. The present workings penetrate only part way into the fault zone, and do not cut the main fault. Would it not be desirable to drill, trench, or crosscut the full width in one or more places before scratching off a prospect such as this? The first application, as well as the present one, includes a considerable footage that would not be driven unless good showings are found, therefore the project ought to be appraised on a basis of perhaps $15,000 to $20,000, instead of $30,000.

The application is returned herewith.

C. H. Johnson

C. H. Johnson

Attachment

Copy to - Mr. Newcomb, USGS
Minerals Division
Base Metals Branch

Miss Meyer
Files

4/26/54 gla

IN REPLY REFER TO:

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

April 26, 1954

Re: DMEA-3314
Shamrock Mining Co.
Mericoma and Beeson Claims
Sonoma County, Calif.
$29,955
Mercury

Memorandum

To: E. Wm. Ellis

From: E. L. Newcomb

Subject: Review of application

The applicant requests assistance to explore his claims by bulldozing along the strike of a mercury-bearing fault zone. This work would be followed by 500-700 feet of underground exploration.

A previous application, DMEA-2821, submitted by Mr. Topliff for this same property, was denied by DMEA on June 17, 1953. The field team examined the Mericoma and Beeson claims and recommended the application be denied. Their recommendation for denial was based upon geological evidence which indicated that quicksilver mineralization is very sparse and the ore-bearing rocks very erratically distributed.

The new application does not contain any information which appears to alter the conclusions presented in the field team report.

I recommend this application be denied.

E. L. Newcomb

E. L. Newcomb

April 20, 1954

SHAMROCK MINING CO.
241 Jones Street
San Francisco, Calif.

Subject: DMEA-3314
Re: Exploration Assistance
Mericoma & Beeson Claims, et al.

Gentlemen:

The receipt of your application dated April 15, 1954 for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-3314 and referred to the Rare and Miscellaneous Metals Division.

Kindly refer to DMEA-3314 in any future correspondence relating to your application.

Sincerely yours,

Robert E. Adams
Chief, Operation's Control
and Statistics Division

MF-500

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

REFERENCE SLIP

DATE 4-21-54

REFERRED TO:
1. Miss Lee, Rm. B-242A, GSA
2.
3.
4.

FOR:

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

REMARKS: Copy of Applicant'stransmittal letter in DMEA-3314; copy MF-104 with C.N.Schuette's report in previous application DMEA-2821, for use in connection with comments.

Check (X) before the items needing attention.

Wm. Ellis

gla *Initials of sender.*

GPO 16—63815-1

(Docket No. DMEA-3314)

San Francisco, California
April 15, 1954

C. O. Mittendorf
Administrator D.M.E.A.
Washington, D. C.

Dear Sir:

We are filing for a DMEA loan (Account of new program of March 23rd, 1954) under the name of Shamrock Mining Company, consisting of two mineral claims formerly known as Beeson and Mericoma, containing about 45 acres; also about 44 acres of adjacent patent land acquired under a co-partnership. You will find a partial report by C.N. Schuette, Docket No. DMEA 2821 (mercury).

Since filing the above request for assistance we have acquired more property and made considerable exploration, opening up two more old tunnels. We are sending a detailed report by John D. Swearingen, Mining Engineer and Geologist.

In regard to exploration work both reports agree, except in this report we contemplate some bulldozer work which we believe advisable on account of showing since the first report.

In regard to cost of operation, we are inclined to the Schuette Report, with some additions which are shown on a separate sheet. We prefer to buy a compressor and drills as it will be cheaper than renting because of the resale value. We also favor the nine months deal, using a superintendent, two miners and one outside man.

After a thorough study I am convinced that the exploration of the property has hardly been started. There are five tunnels on the property and, I believe, two more on Lots 1, 5 and 6. None have advanced far enough to explore the faults, so, due to indications, outcropping, etc., the project is well worth developing.

Respectfully,

/s/ George D. Topliff

George D. Topliff
241 Jones Street
San Francisco, California

c o p y

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC 22 1952

Form Approved
Budget Bureau No. 42-R1035.2.

APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

Not to be filled in by applicant

Docket No. 2 MEd-2821
Metal or Mineral
Date Received 12/22/52
Estimated Cost
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: George David Copliff
241 Jones St.,
San Francisco, California

(*b*) If other than an individual, add to your name above whether a corporation, partnership, etc., and the name of the State in which incorporated or otherwise organized.

(*c*) If a corporation, add to above statement, titles, names and addresses of officers.

(*d*) If a partnership, add to the above statement the names and addresses of all partners.

2. *General.*—Read DMEA Order 1, "Government Aid in Defense Exploration Projects," before completing this application. Submit this application and all accompanying papers in quadruplicate (four copies), with your name and address on each sheet of the application and on all accompanying papers. Where sufficient space is not provided on the form for all required information, state it on an accompanying paper, with a reference in each case to the instruction to which it refers by number. Comply with all applicable instructions; or, if not applicable, so state. File the application with Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest field executive officer thereof.

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract Moricoma Claim (# 63)
Range 10N 8W. Sec.30-31. Beeson Claim (#58), known as B&M Mining Co.
Unpatented claims recorded Book 2, page 235, Santa Rosa Recorder's
Office.

(*b*) State any mine name by which the property is known. B & Mining Co.

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise
Located

(*d*) If you are not the owner, submit with this application a copy of the lease, contract, or other document under which you control the property.

(*e*) If you own the land, describe any liens or encumbrances on it None

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. see above

4. *Physical description.*—(*a*) Describe in detail any mining or exploration operations which have been or now are being conducted upon the land, including existing mine workings and production facilities. State your interest, if any, in such operations. Also describe accessibility of mine workings for examination purposes. See pg 4,5 and 6

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades. See pg 6

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you. page 6

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points. pages 1 & 3

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power.

16—66551-1

small operation. No trouble with supplies or man power.

5. *The exploration project.*—(a) State the mineral or minerals for which you [illegible] to explore Mercury (quicksilver)

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc. page 6 & 7

(*c*) The work will start within 15 days and be completed within 10 months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations. see attached page

6. *Estimate of costs.*—Furnish a detailed estimate of the costs of the proposed work (you will have to use a separate sheet), under the following headings. Add the totals under all headings to give the estimated total cost of the project:

(*a*) *Independent contracts.*—(Note.—If the applicant does not intend to let any of the work to contractors, write "none" after this item. To the extent that the work is to be contracted, do not repeat the cost of the contract-work in subsequent items.) State the cost of any proposed independent contracts for the performance of all or any part of the work, expressed in terms of units of work (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved, etc.) none

(*b*) *Labor, supervision, consultants.*—Include an itemized schedule of numbers, classes and rates of wages, salaries or fees for necessary labor, supervision and engineering and geological consultants. page 7

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel. see page 7

(*d*) *Operating equipment.*—Furnish an itemized list of any operating equipment to be rented, purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or suggested use-allowance based on present value, as the case may be. see attached page

(*e*) *Rehabilitation and repairs.*—Furnish a detailed list showing the cost of any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and which will be devoted to the exploration project. None at present

(*f*) *New buildings, improvements, installations.*—Furnish a detailed list showing the cost of any necessary buildings, fixed improvements, or installations to be purchased, installed or constructed for the benefit of the exploration project. see att. pg

(*g*) *Miscellaneous.*—Furnish a detailed list showing the cost of repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance, and payroll taxes. see page 7

(*h*) *Contingencies.*—Give an estimate of any necessary allowances for contingencies not included in the costs stated above.

NOTE.—No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes), or any other indirect costs, or work performed or costs incurred before the date of the contract, should be included in the estimate of costs.

7. (*a*) Are you prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation (Sec. 7, DMEA No. 1)?

(*b*) How do you propose to furnish your share of the costs?

[X] Money [ ] Use of equipment owned by you [X] Other

Explain in detail on acompanying paper. see attached page

CERTIFICATION

The undersigned, whether as an individual, corporate officer, partner, or otherwise, both in his own behalf and acting for the applicant, certifies that the information set forth in this form and accompanying papers is correct and complete, to the best of his knowledge and belief.

Dated December 18 1952, 195__

(Applicant)

By

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—66551-1

Attached [illegible]

Sec. 5.

(D. I have worked on lead-zink prospects in Northern Idaho for about ten years. Consulting Engineer, C. N. Schutte, author of Bulletins, 106966 U. S. Bureau of Mines. Bull. 222 Bureau of mines, 1925, 173PP, Tech. Pubp 335, Am. Inst. Min. & Met. Engrs, N. Y. 1930 88 PP, Quicksilver Bull. 335, Bureau of Mines, 1931 168 PP and Tech. Paper 96, Bureau of Mines, 1919, 25 PP, Bull. 222, Bureau of Mines, 1925, 173 PP.

Sec. 6. List of assets I own and value of same at Mine:

D.	1/2 Ton. International Truck	*A	$ 545.00
	1940 DeSoto Sedan	*B	175.00
	1000 ft. 12# rail		350.00
	Fish plates, bolts & spikes for same		75.00
	625 ft. lin. of Ties 4 x 6		100.00
	2 Mine cars @ $250. ea.		500.00
	1 Timber car		200.00
	Small tools- picks,shovels,hammers,etc.		75.00
	Total ---		$2,020.00

*A May trade for later model truck.

*B Will trade for a jeep

F. Buying material and erection of shelters for truck and compressor, about $1200.00.

Additional to cost on pg. 7, making total of $28,475.00.

$27,675 ?

Copy

REPORT ON PROPOSED EXPLORATION WORK

at the

MERICOMA MINE IN SONOMA COUNTY, CALIFORNIA

by

C. N. SCHUETTE

C. N. Schutte
Consulting Mining Engineer
Telephone Sebastopol 6690
6390 Barnett Valley Road W
Sebastopol, California

December 13 1952

Mr. George Topliff,
241 Jones Street,
San Francisco, California.

Dear Sir:

Herewith I submit to you my report on an exploration program for the Mericoma Mine that can be completed in 9 months with a crew of three men. On a two shift basis the time required would be cut in half.

This report is based on observations made during a visit to the property on December 3rd 1952 and on information gathered from various sources and on data published by the California State Division of Mines. Cost estimates are based on recent quotations for machinery and supplies and on current wage rates. Two sketch maps illustrate the report.

In the work thus far done in the mine, the probable ore zone has barely been reached by the crosscut tunnel and very little work has been done along the strike to explore it.

I propose an exploration program to start with a 200 foot crosscut of the mineralized fault zone. This to be followed by drifting for 300 feet on the best ore disclosures and finally some 200 feet of sinking and raising to prove up the vertical extent of any orebodies found by drifting.

Such an amount of work should give a good picture of the cinnabar mineralization of the fault zone and might well disclose enough ore to warrant subsequent mining operations.

The cost of such an exploration program will be $26,500.

C. N. Schuette

Report on Proposed Exploration Work at the Mericoma Mine in Sonoma County, California

by C. M. Schuetto.

Introduction

This report outlines an exploration program for the Mericoma Mine near Healdsburg, Sonoma County, California. The Mericoma Mine produces quicksilver. Quicksilver is a strategic metal and the development of domestic sources of supply is encouraged by our Government under DMA by providing 75% of the costs of exploration projects for this strategic metal.

Location of the Mine

The Mericoma Lode Claim lies in Section 31, R. 8 W., T. 10 N., M.D.B.M. The location of the claim on the ground is shown on page 2 of this report. It is about 6 miles north east from the town of Healdsburg. Its location is shown on Plate 1 of Bulletin 161 of the California State Division of Mines. The claim is held by location by George Topliff who located it on October 6 1952 and filed his location on October 8 1952. Previous owners are said to have abandoned the claim in 1941.

Description of the Area

About four miles north east of Healdsburg, the Russian River flows south east thru Alexander Valley. This valley is bounded on the north east by steep hills rising abruptly from the valley floor. These hills are covered with brush and scrub timber.

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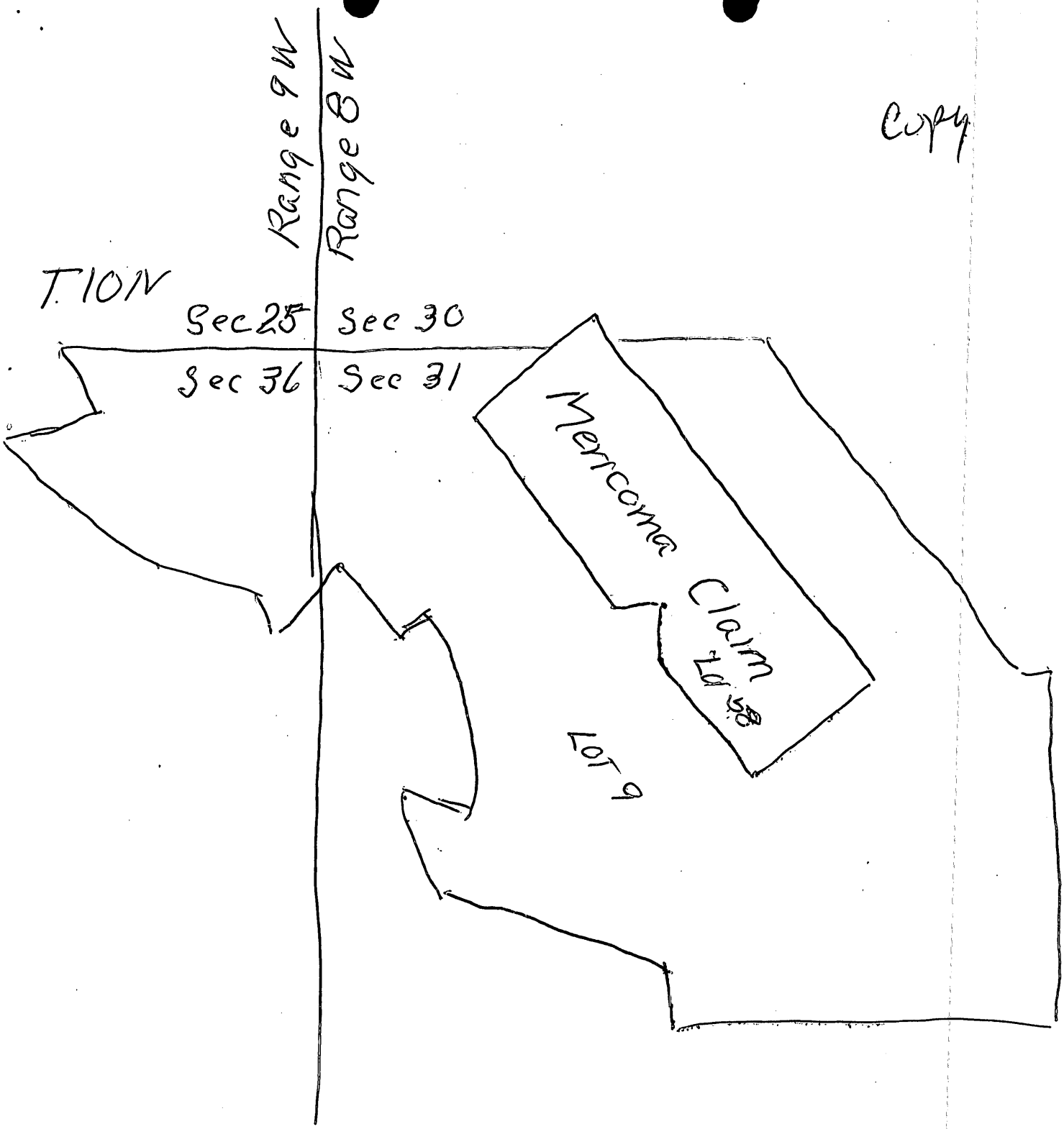

Mercoma Quicksilver Mine
Sonoma Co California
Scale 0 100 Feet

C N Schuette Dec 1952

The Mericoma Mine lies on the first steep hill rising from the valley floor, south east of Saysal Creek. The road to the mine goes from Healdsburg thru Jimtown. A little ways north east of Jimtown a crossroad runs south east. This is followed for 3/4 of a mile and then a road running north east is taken and followed to a ranch at the foot of the hills. From here a steep road leads up to the main tunnel of the mine.

Below the mouth of the main tunnel are the remains of a 2-pipe Rossi retort and a D retort. The setting of the retorts and the elaborate condenser arrangements lead me to believe that the operators were not too experienced in such operations, and this was borne out when panning of the burned rock showed that the treated rock still contained a few lbs per ton of quicksilver. At one side of the tunnel a few tons of ore that was probably too low grade to be treated, were piled up and panned about 5 lbs/ton.

Further up on the hill was another tunnel and at another location there seems to have been a third one the slides made this uncertain. The ridge above the mine is all Franciscan sandstone. About half way down from the ridge to the main tunnel a sharp escarpment marks a strong fault in the sandstone. The original discovery of cinnabar in place was probably made along this escarpment after following panningo on the hillside. Slides obscure the base of the escarpment and I could not find any silica-carbonate rock or cinnabar in place in the limited time I had to see this area.

The road leading to the mine cuts thru chert beds and the portal of the tunnel seems to be in chert also. Then the

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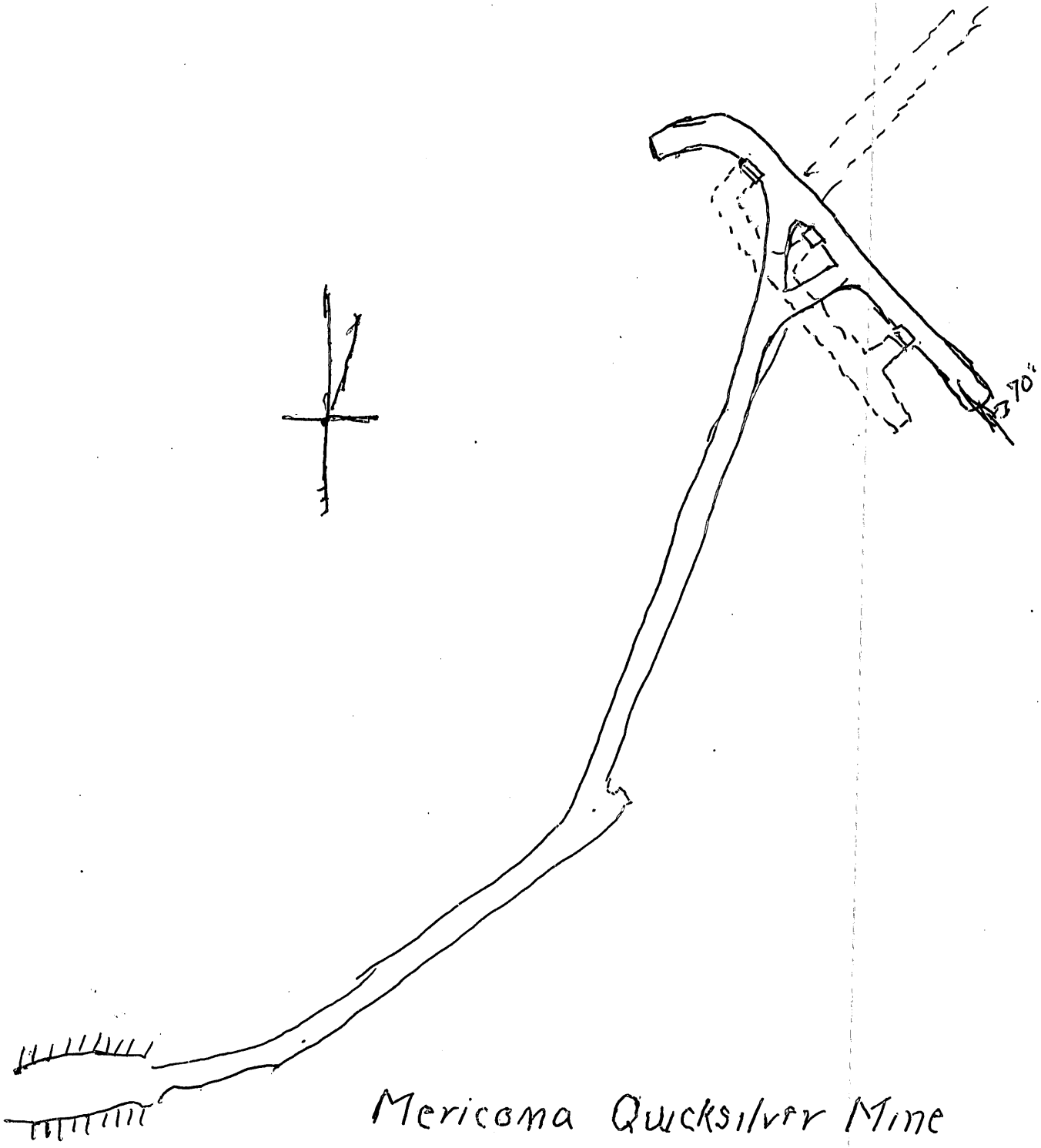

Mericoma Quicksilver Mine
Sonoma Co. California
Scale 0 50 Feet
C N Schuette Dec 1952

tunnel penetrates old greenstones and then the Franciscan sandstone. A rough sketch of the tunnel is shown on page 5. It was made by pacing the distances and taking bearings by compass. At the end of the crosscut part of the tunnel a drift has been run on a fault running north west and dipping north east at 70°. This drift is roughly 100 feet long and from it three raises were run up to aid in stoping out ore to a height of some 25 to 35 feet. The vein was about 4 feet wide, shows cinnabar in silica carbonate rock and has a fairly heavy fault gouge on the hanging wall side.

Geology

The geology of the Healdsburg quadrangle has been mapped by W. H. Gealey. He shows that the range of hills north east of Alexander valley in which the mine lies, is cut by many northwest trending faults in rocks of the Franciscan group of Jurassic Age. This is the geologic formation in which most of the quicksilver mines of California are found. On the basis of the known geology of the area, it is a very favorable area in which to prospect for quicksilver occurrences as it shows numerous croppings of silica-carbonate rock. This rock is so generally associated with quicksilver orebodies in the Franciscan formation that it is colloquially known as "quicksilver rock". He shows the Mericoma Mine to lie in the Maacama Fault Zone.

General Observations

300 feet of crosscut tunnel was driven to reach the ore zone and then only 100 feet of drifting was done to explore it.

I doubt very much that the fault on which the ore was found is the main fault marked by the escarpment on the surface.

I think that the last operators in 1940-41 during the high price of the war years stoped out the ore that had been developed years before (I remember getting some ore specimens from this mine some 20 years ago) but did no development work of their own. The appear to have taken the mine for granted and to have spent their money on building retorts that didn't work very well.

There undoubtedly was some production from this mine as the size of the burned-rock dump below the retorts shows that a fair tonnage of ore was put thru them. The reject pile of 5 lb ore shows that a fair grade of ore must have been treated as many retort operators treated ore as low as 5 lb per ton when the price was high. I was not able to obtain production figures on this mine.

Conclusion

The general geology is favorable. Ore has been found by a very modest development effort in the past. On the basis of this showing I would say that further exploration is warranted.

I would suggest: Additional exploration ahead, by crosscutting to see if more fault fissures and possibly larger ones can be found. This to be followed by drifting on the most favorable leads and then raising or sinking on the best ore exposures found in the drifting.

To make the program definite so that it can be debated and so a cost estimate can be made, I suggest the following:

1. Crosscut NE from the present drift for 200 feet, with the expectation of cutting the main fault fissure.

2. Drift for 300 feet on the best exposures of ore shown in either the present or the extended crosscut.

3. Sink or Raise on the best ore exposures in the drifts. Two 50 fott winzes and two 50 foot raises would serve to show if the ore as found will persist in height and depth.

Cost Estimate

Equipment needed:		
A pickup truck	$1,800.	
A 210 cu.ft. gas driven compressor	1,800	
1000 ft. 2" black iron pipe	350	
2000 ft. 12# rail	720	
Fish plates, bolts & spikes for same	150	
1000 ft. 10" - 22 ga. g.i.vent. pipe	870	
5 HP gas engine & blower for ventilation	410	
2 mine cars	500	
1 timber car	200	
Ties (1250 lin. ft. 4 x 6)	200	
2 Jackhammers with mounts, columns & tank	1,300	
Air and water hose for same	125	
Steel and bits	400	
Blacksmith forge & tools	300	
Picks, shovels, saws, hammers, axes, etc	200	
		$ 9,325
Supplies:		
Powder, fuse and caps	1,000	
Carbide	50	
Gasoline for power	500	
Timber for drifts & crosscuts (10 M)	1,600	
Timber for winzes & raises (15 M)	1,500	4,650
		4,650
Labor:		8,000
Supervision & Miscellaneous (9 months)		4,500
Total:		$ 26,475
		26,500

Since some 700 feet of work are contemplated, this figures out to some $38 per foot on the average tho of course the sinking and raising will cost more per foot than tunneling.

Time required to complete the project on a 6 day week basis with 2 men per shift and a third man as working foreman would be some 9 months. Assumed wage scale $1.70/hour. Assumed advance is 3 feet per shift.

San Francisco, California
April 15, 1954.

C. O. Mittendorf
Administrator D.M.E.A.
Washington, D.C.

Dear Sir:

We are filing for a DMEA loan (Account of new program of March 23rd, 1954) under the name of Shamrock Mining Company, consisting of two mineral claims formerly known as Beeson and Mericoma, containing about 45 acres; also about 44 acres of adjacent patent land acquired under a co-partnership. You will find a partial report by C.N. Schuette, Docket No. DMEA 2821 (mercury).

Since filing the above request for assistance we have acquired more property and made considerable exploration, opening up two more old tunnels. We are sending a detailed report by John D. Swearingen, Mining Engineer and Geologist.

In regard to exploration work both reports agree, except in this report we contemplate some bulldozer work which we believe advisable on account of showing since the first report.

In regard to cost of operation, we are inclined to the Schuette Report, with some additions which are shown on a separate sheet. We prefer to buy a compressor and drills as it will be cheaper than renting because of the resale value. We also favor the nine months deal, using a superintendent, two miners and one outside man.

After a thorough study I am convinced that the exploration of the property has hardly been started. There are five tunnels on the property and, I believe, two more on Lots 1, 5 and 6. None have advanced far enough to explore the faults, so, due to indications, outcropping, etc., the project is well worth developing.

Respectfully,

George D. Topliff

George D. Topliff
241 Jones Street
San Francisco, California

GDT:B
Encls.

NOTE: When checking old records do not confuse this Mericoma claim with Maricoma claim which is in 10NR8W Section 36. Our claim is in Section 31.

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Form Approved.
Budget Bureau No. 42-R1035.2.

APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

Not to be filled in by applicant

Docket No. 3314
Metal or Mineral Mercury
Date Received
Estimated Cost $29,955
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address:
Shamrock Mining Company,
241 Jones Street,
San Francisco, California

(*b*) If other than an individual, add to your name above whether a corporation, partnership, etc., and the name of the State in which incorporated or otherwise organized.

(*c*) If a corporation, add to above statement, titles, names and addresses of officers.

(*d*) If a partnership, add to the above statement the names and addresses of all partners. See attached page

2. *General.*—Read DMEA Order 1, "Government Aid in Defense Exploration Projects," before completing this application. Submit this application and all accompanying papers in quadruplicate (four copies), with your name and address on each sheet of the application and on all accompanying papers. Where sufficient space is not provided on the form for all required information, state it on an accompanying paper, with a reference in each case to the instruction to which it refers by number. Comply with all applicable instructions; or, if not applicable, so state. File the application with Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest field executive officer thereof.

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract Mericoma Claim #63; Beeson Claim #58, R 10 N, 8 W, Section 30 and 31, unpatented claims recorded Book 2, Page 235, at Santa Rosa Recorder's Office, plus about 44 acres of patented ground.

(*b*) State any mine name by which the property is known. Shamrock Mining Company

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise
Located and purchased

(*d*) If you are not the owner, submit with this application a copy of the lease, contract, or other document under which you control the property.

(*e*) If you own the land, describe any liens or encumbrances on it None

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. See paragraph 3.

4. *Physical description.*—(*a*) Describe in detail any mining or exploration operations which have been or now are being conducted upon the land, including existing mine workings and production facilities. State your interest, if any, in such operations. Also describe accessibility of mine workings for examination purposes. R. #1, pages 4,5,6 R. #2, pages 1 & 2.

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades. R. 1, p.6 R2, P.2

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you. R1, P.6 R2, P.1 & 2.

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points. R1, p.1 & 3 R2, page 1

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power.
Small operation no trouble with supplies or man power.

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5. *The exploration project.*—(*a*) State the mineral or minerals for which you wish to explore Mercury

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc. R.1p.6 & 7, R.2, p.2, see accompanying map

(*c*) The work will start within 15 days and be completed within 10 months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations. See attached page

6. *Estimate of costs.*—Furnish a detailed estimate of the costs of the proposed work (you will have to use a separate sheet), under the following headings. Add the totals under all headings to give the estimated total cost of the project:

(*a*) *Independent contracts.*—(Note.—If the applicant does not intend to let any of the work to contractors, write "none" after this item. To the extent that the work is to be contracted, do not repeat the cost of the contract-work in subsequent items.) State the cost of any proposed independent contracts for the performance of all or any part of the work, expressed in terms of units of work (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved, etc.). Bulldozing 10 days about 1,000 dollars

(*b*) *Labor, supervision, consultants.*—Include an itemized schedule of numbers, classes and rates of wages, salaries or fees for necessary labor, supervision and engineering and geological consultants. R.1, p.7, R.2, p.4

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel. R.1, p.7, R.2, p.2

(*d*) *Operating equipment.*—Furnish an itemized list of any operating equipment to be rented, purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or suggested use-allowance based on present value, as the case may be. See attached page

(*e*) *Rehabilitation and repairs.*—Furnish a detailed list showing the cost of any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and which will be devoted to the exploration project. none at present

(*f*) *New buildings, improvements, installations.*—Furnish a detailed list showing the cost of any necessary buildings, fixed improvements, or installations to be purchased, installed or constructed for the benefit of the exploration project.

(*g*) *Miscellaneous.*—Furnish a detailed list showing the cost of repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance, and payroll taxes. see attached page

(*h*) *Contingencies.*—Give an estimate of any necessary allowances for contingencies not included in the costs stated above.

NOTE.—No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes), or any other indirect costs, or work performed or costs incurred before the date of the contract, should be included in the estimate of costs.

7. (*a*) Are you prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation (Sec. 7, DMEA No. 1)?

(*b*) How do you propose to furnish your share of the costs?

[X] Money [X] Use of equipment owned by you [ ] Other

Explain in detail on acompanying paper.

CERTIFICATION

The undersigned, whether as an individual, corporate officer, partner, or otherwise, both in his own behalf and acting for the applicant, certifies that the information set forth in this form and accompanying papers is correct and complete, to the best of his knowledge and belief.

Dated April 15th, 1954

Shamrock Mining Company
(Applicant)

By George D. Topliff
George D. Topliff
241 Jones Street
San Francisco, California

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—66551-1

NOTE: Schuette's Report in File DMEA 2881 (Mercury) will be known as R.#1 and Swearingen's Report will be R.#2.

Paragraph 1 (d): Names of partners:

George D. Topliff, 241 Jones St., San Francisco, Calif.	85%
Roy F. Ward and/or Maud Ward, Box 109-A, Healdsburg, Calif.	12½%
Merrie Dobrow and/or Cy Weita, 365 Eddy St., San Francisco, Calif.	2½%

Paragraph 5 (d)

I personally have worked lead and zinc prospects in Northern Idaho ten to 15 years.

Consulting Engineers:
C. E. Schuette, Sebastopol, California
John D. Swearingen, 61 Catalpa Ave. Mill Valley, Calif.

Paragraph 6 (d) List of assets on property at present time:

1,000 ft. 12 pound rail	$ 350.00
Fish plates, bolts and spikes for same	75.00
625 Lin. Ft. Ties 4 x 6	100.00
2 Mine cars at $250.00 each	500.00
1 Timber car	200.00

Paragraph 6 (g)

Repairing of road, erecting of shelter for truck, compressor, etc., tool sheds	1,500.00

ESTIMATED COST AND PROPOSED EXPENDITURES :

Labor plus Social Security and other taxes	$ 9,200.00
Supervision, office work and miscellaneous	5,000.00
Bulldozer (Contract)	1,000.00
Road repair, tool house, shelter for machinery	1,500.00
SUPPLIES :	
Powder, fuse, and caps	1,000.00
Carbide	50.00
Gasoline for power	500.00
Timber for drifts and cross-cuts (16 M ft.)	1,600.00
Timber for Winzes and raises (15 M ft.)	1,500.00
EQUIPMENT :	
Pick-up truck	1,800.00
210 cu.ft. Gas Driven Compressor	1,800.00
Water tank and fittings	500.00
1 M ft. 2" black iron pipe	350.00
1 M ft. 12 lb. rail	350.00
Fish plates, bolts and spikes for same	100.00
1 M ft. 10" 22 gage galvanized vent pipe	870.00
5 H.P. engine and blower for ventilation	410.00
2 Jack Hammers and mounts, columns and tank	1,300.00
Air and water hose for above	125.00
Steel and bits	400.00
Ties, 650 lin. ft. 2 x 6	100.00
Blacksmith forge and tools	300.00
Small tools	200.00
	$29,955.00

PRELIMINARY REPORT

on the

SHAMROCK QUICKSILVER MINE

SONOMA COUNTY, CAL.

---

by
John D. Swearingen

April 1954

1 - LOCATION AND OWNERSHIP:

The Shamrock quicksilver mine embracing two, full, non-contiguous, unpatented lode claims is located in portions of Sections 30 and 31, Township 10 North, Range 8 West, MDM, and is approximately one-half mile by dirt road southeast of the highway running between Alexander Valley Road cut-off and Pine Flat. It is approximately six miles in an airline northeast of Healdsburg, Sonoma County. There is an excellent paved road to within one-half mile of the property. The two claims have been known in the past as the Beeson and Mericoma respectively. The land between the two claims is held in fee simple under an agricultural patent.

The two claims are in the possession of Mr. George Topliff, et al, of San Francisco and are held by right of relocation under United States Mining Law.

2 - PAST PRODUCTION:

Nothing is known concerning past production, but it must have amounted to several hundred flasks judging from the amount of stoping done in the mine. It has also been established beyond a doubt that a considerable tonnage of selected ore was stolen from the property and treated at an unknown plant off the property. Some production, however, has been made at this mine by means of a "E" retort and a two tube Rossi-type retort.

3 - MINE PLANT AND UNDERGROUND WORKINGS:

With the exception of a very small surface cut the ore bearing structure has been explored and developed by means of three cross-cut tunnels with approximately 250 feet of known drifts, three raises, one of which is now inaccessible, and at least three stopes which are accessible and which have been mined to heights of over 20 feet. It is believed by this writer that a partly caved raise extends between two of the cross-cut tunnels. The total amount of accessible ground developed by cross-cutting,

Swansington's

drifting and raising amounts to about 650 feet.

The so-called lower tunnel is equipped with two ore cars and sufficient trackage to extend from the end of the waste dump to the three stopes and raises, aggregating perhaps 600 feet. The other tunnels are not provided with track. With the exception of the retorts, one of which is usable, there is no other equipment on the property.

4 - SUGGESTIONS FOR EXPLORATION AND DEVELOPMENT:

Perhaps the first order of business in rehabilitating the property would be to improve the road leading to the mine. While this road is now open to passenger cars, it will definitely have to be scraped and widened in places in order to accommodate trucks. Not over one-half mile of road will have to be improved.

Secondly, adequate maps should be prepared showing in detail the relative positions of the mine workings and both the surface and underground geology.

As a third condition, I am proposing that sufficient "bulldozing" be contracted for to more fully expose the ore-bearing structure for at least 500 feet along the surface where it is partly concealed by an overburden of decomposed country rock and landslide material.

Fourth. If underground exploration work is to be continued along the vein structure portions of the now accessible underground workings will definitely require re-timbering. All tunnel portals must be adequately timbered with three or four portal sets of eight inch by eight inch timber and suitably lagged with two inch by 12 inch planking, at least along the tops of the sets.

There are very definite showings of ore both on the surface and underground occurring along the footwall side of the westernmost part of the Mericoma fault zone. In the case of the high grade material showing in the so-called South Stope, I am

suggesting that a small sublevel drift be started and continued as long as ore remains in the face of this drift. This occurrence may represent the termination of the ore which was mined in the South Stope. On the other hand, it could just as well be the beginning of an entirely new ore shoot. Only continued drifting will prove this.

I would also suggest that all three of the cross-cut tunnels be cleaned out of all loose material and muck and that the drain ditch in the lower tunnel be cleared.

When we consider that the Mericoma fault is not a single, well defined, relatively narrow (5 to 10 feet) slip, but is actually a very wide zone of shearing composed of many, more or less parallel slips, the possibility of the existence of parallel ore shoots in this area is not unreasonable and the possibilities for developing more ore at this property are by no means exhausted.

5 - EQUIPMENT AND MATERIAL REQUIRED:

In order to perform even a minimum of exploratory work and necessary rehabilitation, the following items will be needed:

1. Air compressor (125 cfm).
2. Six hundred feet of second hand one and one-half inch WI air pipe.
3. Fifteen hundred feet of second hand one inch WI water pipe
4. Fifty feet of standard air hose.
5. Fifty feet of standard water hose.
6. One ten thousand gallon steel or wood water tank.
7. One 2 horsepower gasoline engine.
8. One centrifugal water pump W/belt drive.
9. Dynamite, fuse and caps.
10. Drill steel, two, four and six foot lengths.
11. Detachable or "throw away" bits.
12. At least eighteen thousand 'BF of eight inch by eight inch, four inch by six inch, two inch by eight inch, and two inch by twelve inch mine timber.
13. Wedges
14. One thousand feet of second hand twelve pound rail.

Cont. 14 - This is sufficient for 500 feet of track and weighs approximately two tons.

15. Fish plates and track spikes.

16. Fuel and lubricants for compressor and pump engine.

17. Air line lubricator and miscellaneous pipe fittings, valves, etc.

18. Carbide.

19. Picks, shovels, sledges, saws, hammers, bars, wrenches, etc.

20. Jackhammer with cradle, column, arm and clamp.

21. Gasoline storage drums.

22. Living quarters and office for superintendent.

23. Miscellaneous and extras.

6 - PERSONNEL REQUIREMENTS:

If any kind of progress is to be made, sufficient skilled and semi-skilled labor will be needed. A bare minimum would be as follows:

1. One foreman (superintendent.)

2. One top man to operate air compressor, tend water pump and frame mine timbers.

3. One miner (driller.)

4. One miner (timberman.)

5. One mucker

6. One timberman helper.

7. One driller helper.

7 - CAPITAL COSTS AND OPERATING EXPENSES:

Some of the equipment may be rented during the early stages of the work, but most of the items will have to be purchased either new or second hand. The following rate schedule (Santa Rosa) for equipment rental is as follows:

1. One hundred and twenty-five cfm air compressor - $164.00 per month.

2. Fifty-five pound jackhammer - $46.25 per month.

3. Fifty feet standard air hose - $5.70 per month.

4. One inch hollow hex. drill steel - -
   a - Two foot lengths - $2.05 per month
   b - Four foot lengths - $2.95 per month
   c - Six foot lengths - $3.80 per month

5. Two inch detachable bits 65¢ each. These are not returnable and must be purchased outright.

Prices for new and used pieces of equipment vary widely today and the following inventory represents average costs which I have prepared from maximum and minimum prices obtained from equipment dealers. It is by no means absolute for it may be possible to purchase used 12 pound rail, let us say, from one dealer (FOB) for $60 per ton and from another dealer for $40 per ton depending upon the quantity bought and the condition of the rail.

Following, I have shown in greater detail the material needed to perform the necessary underground work:

ITEM	MODEL	SIZE	QUANTITY	UNIT	UNIT PRICE	COST
Rail	Relaying	12 lb.	2	Ton	$50.00	$100.00
Pipe	Used Gal.	1-1/2"	800	Ft.	.19¢	152.00
Pipe	Used Gal.	1"	1500	Ft.	.13¢	195.00
Timber	#2 Pine	- - -	18,000	MBM	64.00	1,152.00
Dyna.	40% gel.	- - -	20	50# case	12.00	240.00
Caps	- - -	#8	10	Box 100	4.00	40.00
Fuse	Comet	- - -	10	Roll 500'	20.00	200.00
Bits	Detach.	2"	500	each	.65¢	325.00
Water Tank	Steel Welded	Used 10,000 gal.	1	each	500.00	500.00
Gas. Eng.	Rebuilt	2 HP	1	each	150.00	150.00
Water Pump	Rebuilt Cent.	1"	1	each	50.00	50.00
Valves and misc. pipe fittings . . . . . approximately . . .						50.00
Picks, shovels, bars, saws, etc. . . . . approximately . . .						75.00
Fuel and lubricants . . . . . approximately . . .						500.00
One rebuilt mounted jackhammer . . . . . approximately . . .						500.00
Miscellaneous items and spares . . . . . approximately . . .						500.00
Approximate total capital costs for equipment and materials purchased but not rented						$4,730.00

The above inventory represents sufficient material for 500 foot of exploratory cross-cutting and drifting. If progress

can be maintained at the rate of 4 feet per day including drilling, mucking and timbering, then $\frac{500}{4}$ will equal 125 working day. On the basis of a 40 hour week, this amounts to 25 weeks or approximately 6 months.

Let us now consider equipment rental costs:

1.	One 125 CFM air compressor @ $164 per month, 6 months	$ 984.00
2.	Fifty feet of standard air hose @ $5.70 per mo. 6 months	34.20
3.	Fifty feet standard water hose, same rental 6 months	34.20
4.	Two, four and six foot drill steel, allowing for breakage and "sticking":	
	5 two foot lengths @ $10.25 per month (ea. pc. $2.05) 6 months	61.50
	5 four foot lengths @ $14.75 per month (ea. pc. $2.95) 6 months	88.50
	5 six foot lengths @ $19.00 per month (ea. pc. $3.80) 6 months	114.00

Total cost for equipment rental for 6 months $1,316.40

Grant total cost for needed items of materials

will then approximate $4,730.00

plus 1,316.40

or $6,046.40

We will now consider personnel needs and costs:

1.	One foreman or superintendent @ $450. per mo. 6 months	$2,700.00
2.	One top man to operate compressor, water pump and frame mine timbers @ $16 per day, 5 days per week, 6 months	2,000.00
3.	One miner (driller) @ $16 per day, 5 days per week, 6 months	2,000.00
4.	One miner (timberman) @ $16 per day, 5 days per week, 6 months	2,000.00
5.	One driller helper @ $13.60 per day, 5 days per week, 6 months	1,700.00
6.	One timberman helper @ $13.60 per day, 5 days per week, 6 months	1,700.00
7.	One mucker @ $12 per day, 5 days per week, 6 months	1,500.00

Total Labor Cost	$13,600.00
To the labor cost must be added Social Security @ 2%, or	272.00
Unemployment, Workmen's Compensation Insurance, Sales, Transportation Tax, etc.	1,000.00

Total capital and operating costs for a six months period will be approximately as follows:

Equipment and materials purchased	$ 4,730.00
Equipment rented	1,316.40
Labor	13,600.00
Social Security, Unemployment, etc.	1,272.00
	$ 20,918.40

At first glance these costs appear excessive, yet a critical analysis of each item will reveal that the writer has been quite conservative in his estimates. Some individual cost items may be slightly reduced as the work progresses, but it is doubtful if they will exceed 10%.

8 - REGIONAL AND LOCAL GEOLOGY:

Broadly speaking the property lies wholly within an area of Franciscan rocks composed essentially of sandstones, cherts and serpentine with subordinate amounts of shale and "silica-carbonate rock". Several periods of intense faulting covering a width of about 3 miles have created 8 separate and parallel shear zones along which are found intensive attrition gouges composed of crushed wall rock material. These shear zones all have northwest trends varying from 30 to 60 degrees. In places cinnabar deposition has occurred in and under the gouge and in the shattered sandstone footwall. This altered sandstone I have tentatively classified as a graywacke. It is usually dark brown to light gray in color and frequently contains very small shale partings, stringers of calcite and quartz and varying amounts of oxides and iron. This material is often the host rock for small pods and lenses of cinnabar.

In other places both on the surface and underground, I have observed cinnabar occurring suspended in a silica gel in the well known "silica-carbonate rock" which is so characteristic of

many quicksilver deposits. While this material is not considered to be a definite rock with more or less fixed amounts of specific minerals, but is a rather loosely used term to describe a metamorphic rock peculiar to certain quicksilver deposits, it must not be inferred that this material always indicates commercial quicksilver deposits.

About one-half mile southeast of the mine is an extensive exposure of serpentine lying between 2 definite shear zones. To my knowledge, the contact between the serpentine and the shear zone has never been fully explored. Here are 2 areas which might well contain ore bodies which do not outcrop or which have such insignificant outcrops as to be considered as non-commercial. They certainly warrant further study.

For several hundred feet northwest of the #2 tunnel are found outcrops of "silica-carbonate rock" which show definite cinnabar mineralization and which have never been exposed at depth. This region demands further study.

9 - WHAT CONSTITUTES ORE:

Whether or not a deposit of cinnabar is ore depends upon several important factors, namely; the price received for a standard 76 pound flask of quicksilver and the grade of ore in pounds per ton, as well as mining and furnacing costs. It is thus apparent that when the price per flask is high (over $100) some deposits are ore, and when the price per flask is low (under $100) some deposits are not ore. This assumes of course that the grade of ore remains constant. The attached graph shows the production cost per flask and the grade of ore in pounds per ton for a given operating cost of $10 per ton with a 95% recovery. The market price for quicksilver today (March 1954) is around $195 per flask or about $2.56 per pound. Theoretically then an ore running better than $\frac{\$10}{2.56}$ or just under 4 pounds per ton would pay. Actually this is not the case because the grade of ore may not

Secretary Tom

average 4 pounds per ton, the percentage of extraction is not always uniform and the market price for the metal sometimes fluctuates rapidly. By studying the graph it is apparent that the ore should average at least 6 pounds per ton or better if a fair profit is to be made on Mericona ore treating say, 25 tons per day and the market price remains at its present level. It must be remembered that price and market demand are not always closely related and at times, the demand may be limited in spite of a high price. A study of the quicksilver market as reflected in general business conditions in the United States today leads me to believe that the price will remain well over $100 per flask, at least for the next 18 months.

In view of the fact that the "D" retort is probably usable and may be put into operating condition at small expense, a portion of the operating expenses may be absorbed by retorting small batches of selected ore extracted during the exploration and development work.

If one ton of sorted ore with a value of 25 pounds per ton can be retorted every other day, this would amount to nearly a flask a week with an approximate gross of $195. If two laborers can sort and retort this material the approximate cost per flask for labor @ $28 per day would be 6 times 28 or $168. Fuel oil for the burner and gasoline for a small engine to operate a blower would take an additional $2 per day or about $12 per week making a total production cost of $180 per flask (per week). On the other hand, if it is possible to upgrade the value of the ore to 50 pounds per ton by hand sorting, and one ton of this material is retorted every other day, net returns should be somewhat as follows: 3 tons per week @ 50 pounds per ton equals 150 pounds or approximately 1.9 flasks per week. 1.9 flasks @ $195 equals $370. Then $370 less 180 equals $190 net. These figures of course will not be fully realized because a 100% extraction is impossible; they are offered for purposes of comparison.

Swearington

10 - RECAPITULATION:

1 - In view of the rather limited amount of exploration work that has been performed compared with the total length of vein structure(s) remaining to be explored, my considered opinion is that the possibilities for finding more ore are by no means exhausted, not only along the most westerly shear zone, but along parallel shear zones known to exist further east in the general direction of Pine Flat.

2 - To properly equip the property and to adequately finance 500 feet of exploration work by underground means will require at least $21,000.

3 - To "Bulldoze" or strip the overburden which now conceals portions of the outcrop will require at least 10 days which @ $100 per day will equal $1,000.

4 - Although there are good surface exposures of "silica-carbonate rock" lying to the northwest of the present mine workings, I believe that the area which offers the most promise from a geological point of view is that lying in a southeasterly direction from the present lower tunnel along the Mericoma fault to a large serpentine dike (intrusive?) about one-half mile from the lower tunnel. This serpentine mass is very clearly shown on Plate 1 of Bulletin 161 published by the California State Division of Mines.

5 - The property has produced quicksilver, the exact amount of which is unknown. It is my opinion that whatever ore has been stolen from the property has been reduced at another mine and the product recorded as all or part of the production obtained at the other mine. This, of course, would be a very effective way to conceal "high grading" activities at the Mericoma mine.

6 - An exploratory drift should be started in the South Stope where there is a good exposure of ore in the south face.

7 - Complete maps of the underground workings should be prepared and the surface and underground geology plotted thereon.

John D. Swearingen
Mining Engineer and Geologist
Registered Professional Engineer No.818
State of Nevada

APPLICATION FOR

D. M. & A. LOAN

SHAMROCK MINING Co.

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Form Approved.
Budget Bureau No. 42-R1035.2.

APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

Not to be filled in by applicant

Docket No. 3314
Metal or Mineral Mercury
Date Received
Estimated Cost $29,955
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: Shamrock Mining Company,
241 Jones Street,
San Francisco, California

(*b*) If other than an individual, add to your name above whether a corporation, partnership, etc., and the name of the State in which incorporated or otherwise organized.

(*c*) If a corporation, add to above statement, titles, names and addresses of officers.

(*d*) If a partnership, add to the above statement the names and addresses of all partners. See attached page

2. *General.*—Read DMEA Order 1, "Government Aid in Defense Exploration Projects," before completing this application. Submit this application and all accompanying papers in quadruplicate (four copies), with your name and address on each sheet of the application and on all accompanying papers. Where sufficient space is not provided on the form for all required information, state it on an accompanying paper, with a reference in each case to the instruction to which it refers by number. Comply with all applicable instructions; or, if not applicable, so state. File the application with Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest field executive officer thereof.

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract Mericoma Claim #63; Beeson Claim #58, R 10 N 8 W, Section 30 and 31, unpatented claims recorded Book 2, Page 235, at Santa Rosa Recorder's Office, plus about 44 acres of patented ground.

(*b*) State any mine name by which the property is known. Shamrock Mining Company

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise Located and purchased

(*d*) If you are not the owner, submit with this application a copy of the lease, contract, or other document under which you control the property.

(*e*) If you own the land, describe any liens or encumbrances on it None

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. See paragraph 3.

4. *Physical description.*—(*a*) Describe in detail any mining or exploration operations which have been or now are being conducted upon the land, including existing mine workings and production facilities. State your interest, if any, in such operations. Also describe accessibility of mine workings for examination purposes. R. #1, pages 4,5,6 R. #2, pages 1 & 2

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades. R. 1, p.6 R2, P.2

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you. R1, P.6 R2, P.1 & 2.

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points. R1, p.1 & 3 R2, page 1

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power.
Small operation no trouble with supplies or man power.

16—66551-1

5. *The exploration project.*—(*a*) State the mineral or minerals for which you wish to explore Mercury

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc. R.1p.6 & 7, R.2, p.2, see accompanying map

(*c*) The work will start within 15 days and be completed within 10 months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations. See attached page

6. *Estimate of costs.*—Furnish a detailed estimate of the costs of the proposed work (you will have to use a separate sheet), under the following headings. Add the totals under all headings to give the estimated total cost of the project:

(*a*) *Independent contracts.*—(Note.—If the applicant does not intend to let any of the work to contractors, write "none" after this item. To the extent that the work is to be contracted, do not repeat the cost of the contract-work in subsequent items.) State the cost of any proposed independent contracts for the performance of all or any part of the work, expressed in terms of units of work (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved, etc.). Bulldozing 10 days about 1,000 dollars

(*b*) *Labor, supervision, consultants.*—Include an itemized schedule of numbers, classes and rates of wages, salaries or fees for necessary labor, supervision and engineering and geological consultants. R.1, p.7, R.2, p.4

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel. R.1, p.7, R.2, p.2

(*d*) *Operating equipment.*—Furnish an itemized list of any operating equipment to be rented, purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or suggested use-allowance based on present value, as the case may be. See attached page

(*e*) *Rehabilitation and repairs.*—Furnish a detailed list showing the cost of any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and which will be devoted to the exploration project. none at present

(*f*) *New buildings, improvements, installations.*—Furnish a detailed list showing the cost of any necessary buildings, fixed improvements, or installations to be purchased, installed or constructed for the benefit of the exploration project.

(*g*) *Miscellaneous.*—Furnish a detailed list showing the cost of repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance, and payroll taxes. see attached page

(*h*) *Contingencies.*—Give an estimate of any necessary allowances for contingencies not included in the costs stated above.

NOTE.—No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes), or any other indirect costs, or work performed or costs incurred before the date of the contract, should be included in the estimate of costs.

7. (*a*) Are you prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation (Sec. 7, DMEA No. 1)?

(*b*) How do you propose to furnish your share of the costs?

[X] Money [X] Use of equipment owned by you [ ] Other

Explain in detail on acompanying paper.

CERTIFICATION

The undersigned, whether as an individual, corporate officer, partner, or otherwise, both in his own behalf and acting for the applicant, certifies that the information set forth in this form and accompanying papers is correct and complete, to the best of his knowledge and belief.

Dated April 15th, 1954

Shamrock Mining Company
(Applicant)

By George D. Topliff

George D. Topliff
241 Jones Street
San Francisco, California

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—66551-1

NOTE: Schuette's Report in File DMEA 2821 (Mercury) will be known as R.#1 and Swearingen's Report will be R.#2.

Paragraph 1 (d): Names of partners:

George D. Topliff, 241 Jones St., San Francisco, Calif.	85%
Roy F. Ward and/or Maud Ward, Box 109-A, Healdsburg, Calif.	12½%
Morrie Bobrow and/or Cy Weita, 365 Eddy St., San Francisco, Calif.	2½%

Paragraph 5 (d)

I personally have worked lead and zinc prospects in Northern Idaho ten to 15 years.

Consulting Engineers:
C. N. Schuette, Sebastopol, California
John D. Swearingon, 61 Catalpa Ave. Mill Valley, Calif.

Paragraph 6 (d) List of assets on property at present time:

1,000 ft. 12 pound rail	$ 350.00
Fish plates, bolts and spikes for same	75.00
625 Lin. Ft. Ties 4 x 6	100.00
2 Mine cars at $250.00 each	500.00
1 Timber car	200.00

Paragraph 6 (g)

Repairing of road, erecting of shelter for truck, compressor, etc., tool sheds	1,500.00

ESTIMATED COST AND PROPOSED EXPENDITURES :

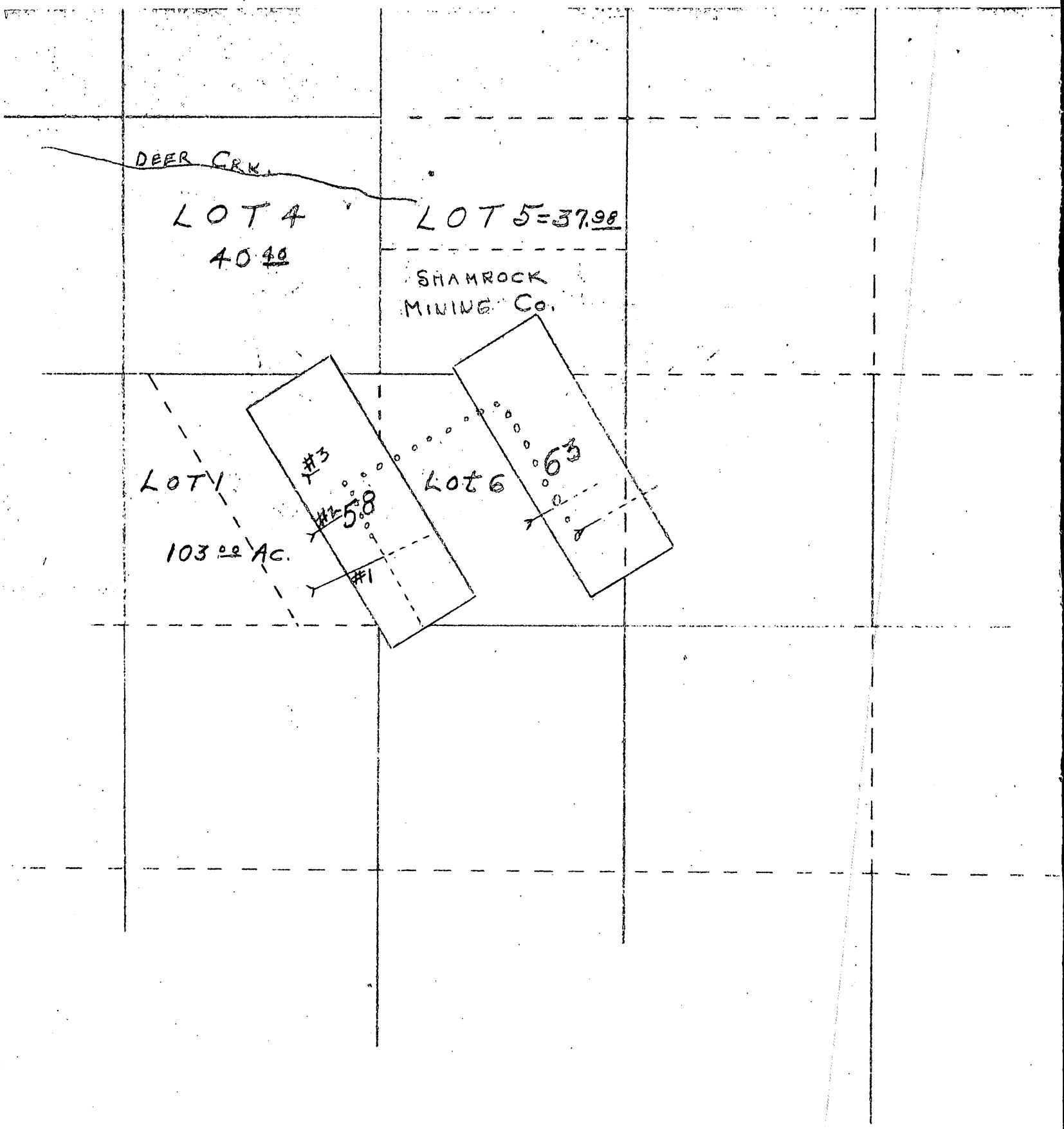
Labor plus Social Security and other taxes	$ 9,200.00
Supervision, office work and miscellaneous	5,000.00
Bulldozer (Contract)	1,000.00
Road repair, tool house, shelter for machinery	1,500.00

SUPPLIES :

Powder, fuse, and caps	1,000.00
Carbide	50.00
Gasoline for power	500.00
Timber for drifts and cross-cuts (16 M ft.)	1,600.00
Timber for Winzes and raises (15 M ft.)	1,500.00

EQUIPMENT :

Pick-up truck	1,800.00
210 cu.ft. Gas Driven Compressor	1,800.00
Water tank and fittings	500.00
1 M ft. 2" black iron pipe	350.00
1 M ft. 12 lb. rail	350.00
Fish plates, bolts and spikes for same	100.00
1 M ft. 10" 22 gage galvanized vent pipe	870.00
5 H.P. engine and blower for ventilation	410.00
2 Jack Hammers and mounts, columns and tank	1,300.00
Air and water hose for above	125.00
Steel and bits	400.00
Ties, 650 lin. ft. 2 x 6	100.00
Blacksmith forge and tools	300.00
Small tools	200.00
	$29,955.00



John D. Swearingen
4-15-54

PROPOSED TUNNELING ------

BULLDOZING o o o o

SCALE: 40 CHAINS = 1"

PRELIMINARY REPORT

on the

SHAMROCK QUICKSILVER MINE

SONOMA COUNTY, CAL.

---

by
John D. Swearingen

April 1954

1 - LOCATION AND OWNERSHIP:

The Shamrock quicksilver mine embracing two, full, non-contiguous, unpatented lode claims is located in portions of Sections 30 and 31, Township 10 North, Range 8 West, MDM, and is approximately one-half mile by dirt road southeast of the highway running between Alexander Valley Road cut-off and Pine Flat. It is approximately six miles in an airline northeast of Healdsburg, Sonoma County. There is an excellent paved road to within one-half mile of the property. The two claims have been known in the past as the Beeson and Mericoma respectively. The land between the two claims is held in fee simple under an agricultural patent.

The two claims are in the possession of Mr. George Topliff, et al, of San Francisco and are held by right of relocation under United States Mining Law.

2 - PAST PRODUCTION:

Nothing is known concerning past production, but it must have amounted to several hundred flasks judging from the amount of stoping done in the mine. It has also been established beyond a doubt that a considerable tonnage of selected ore was stolen from the property and treated at an unknown plant off the property. Some production, however, has been made at this mine by means of a "D" retort and a two tube Rossi-type retort.

3 - MINE PLANT AND UNDERGROUND WORKINGS:

With the exception of a very small surface cut the ore bearing structure has been explored and developed by means of three cross-cut tunnels with approximately 250 feet of known drifts, three raises, one of which is now inaccessible, and at least three stopes which are accessible and which have been mined to heights of over 20 feet. It is believed by this writer that a partly caved raise extends between two of the cross-cut tunnels. The total amount of accessible ground developed by cross-cutting,

drifting and raising amounts to about 650 feet.

The so-called lower tunnel is equipped with two ore cars and sufficient trackage to extend from the end of the waste dump to the three stopes and raises, aggregating perhaps 600 feet. The other tunnels are not provided with track. With the exception of the retorts, one of which is usable, there is no other equipment on the property.

4 - SUGGESTIONS FOR EXPLORATION AND DEVELOPMENT:

Perhaps the first order of business in rehabilitating the property would be to improve the road leading to the mine. While this road is now open to passenger cars, it will definitely have to be scraped and widened in places in order to accommodate trucks. Not over one-half mile of road will have to be improved.

Secondly, adequate maps should be prepared showing in detail the relative positions of the mine workings and both the surface and underground geology.

As a third condition, I am proposing that sufficient "bulldozing" be contracted for to more fully expose the ore-bearing structure for at least 500 feet along the surface where it is partly concealed by an overburden of decomposed country rock and landslide material.

Fourth. If underground exploration work is to be continued along the vein structure portions of the now accessible underground workings will definitely require re-timbering. All tunnel portals must be adequately timbered with three or four portal sets of eight inch by eight inch timber and suitably lagged with two inch by 12 inch planking, at least along the tops of the sets.

There are very definite showings of ore both on the surface and underground occurring along the footwall side of the westernmost part of the Mericoma fault zone. In the case of the high grade material showing in the so-called South Stope, I am

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I would also suggest that all three of the cross-cut tunnels be cleaned out of all loose material and muck and that the drain ditch in the lower tunnel be cleared.

When we consider that the Mericoma fault is not a single, well defined, relatively narrow (5 to 10 feet) slip, but is actually a very wide zone of shearing composed of many, more or less parallel slips, the possibility of the existence of parallel ore shoots in this area is not unreasonable and the possibilities for developing more ore at this property are by no means exhausted.

5 - EQUIPMENT AND MATERIAL REQUIRED:

In order to perform even a minimum of exploratory work and necessary rehabilitation, the following items will be needed:

1. Air compressor (125 cfm).
2. Six hundred feet of second hand one and one-half inch WI air pipe.
3. Fifteen hundred feet of second hand one inch WI water pipe
4. Fifty feet of standard air hose.
5. Fifty feet of standard water hose.
6. One ten thousand gallon steel or wood water tank.
7. One 2 horsepower gasoline engine.
8. One centrifugal water pump W/belt drive.
9. Dynamite, fuse and caps.
10. Drill steel, two, four and six foot lengths.
11. Detachable or "throw away" bits.
12. At least eighteen thousand 'BF of eight inch by eight inch, four inch by six inch, two inch by eight inch, and two inch by twelve inch mine timber.
13. Wedges
14. One thousand feet of second hand twelve pound rail.

Cont. 14 - This is sufficient for 500 feet of track and weighs approximately two tons.

15. Fish plates and track spikes.

16. Fuel and lubricants for compressor and pump engine.

17. Air line lubricator and miscellaneous pipe fittings, valves, etc.

18. Carbide.

19. Picks, shovels, sledges, saws, hammers, bars, wrenches, etc.

20. Jackhammer with cradle, column, arm and clamp.

21. Gasoline storage drums.

22. Living quarters and office for superintendent.

23. Miscellaneous and extras.

6 - PERSONNEL REQUIREMENTS:

If any kind of progress is to be made, sufficient skilled and semi-skilled labor will be needed. A bare minimum would be as follows:

1. One foreman (superintendent.)

2. One top man to operate air compressor, tend water pump and frame mine timbers.

3. One miner (driller.)

4. One miner (timberman.)

5. One mucker

6. One timberman helper.

7. One driller helper.

7 - CAPITAL COSTS AND OPERATING EXPENSES:

Some of the equipment may be rented during the early stages of the work, but most of the items will have to be purchased either new or second hand. The following rate schedule (Santa Rosa) for equipment rental is as follows:

1. One hundred and twenty-five cfm air compressor - $164.00 per month.

2. Fifty-five pound jackhammer - $46.25 per month.

3. Fifty feet standard air hose - $5.70 per month.

4. One inch hollow hex. drill steel - -
   a - Two foot lengths - $2.05 per month
   b - Four foot lengths - $2.95 per month
   c - Six foot lengths - $3.80 per month

5. Two inch detachable bits 65¢ each. These are not returnable and must be purchased outright.

Prices for new and used pieces of equipment vary widely today and the following inventory represents average costs which I have prepared from maximum and minimum prices obtained from equipment dealers. It is by no means absolute for it may be possible to purchase used 12 pound rail, let us say, from one dealer (FOB) for $60 per ton and from another dealer for $40 per ton depending upon the quantity bought and the condition of the rail.

Following, I have shown in greater detail the material needed to perform the necessary underground work:

ITEM	MODEL	SIZE	QUANTITY	UNIT	UNIT PRICE	COST
Rail	Relaying	12 lb.	2	Ton	$50.00	$100.00
Pipe	Used Gal.	1-1/2"	800	Ft.	.19¢	152.00
Pipe	Used Gal.	1"	1500	Ft.	.13¢	195.00
Timber	#2 Pine	- - -	18,000	MBM	64.00	1,152.00
Dyna.	40% gel.	- - -	20	50# case	12.00	240.00
Caps	- - -	#8	10	Box 100	4.00	40.00
Fuse	Comet	- - -	10	Roll 500'	20.00	200.00
Bits	Detach.	2"	500	each	.65¢	325.00
Water Tank	Steel Welded	Used 10,000 gal.	1	each	500.00	500.00
Gas. Eng.	Rebuilt	2 HP	1	each	150.00	150.00
Water Pump	Rebuilt Cent.	1"	1	each	50.00	50.00
Valves and misc. pipe fittings . . . . . approximately . . .						50.00
Picks, shovels, bars, saws, etc. . . . . approximately . . .						75.00
Fuel and lubricants . . . . . approximately . . .						500.00
One rebuilt mounted jackhammer . . . . . approximately . . .						500.00
Miscellaneous items and spares . . . . . approximately . . .						500.00
Approximate total capital costs for equipment and materials purchased but not rented						$4,730.00

The above inventory represents sufficient material for 500 feet of exploratory cross-cutting and drifting. If progress

can be maintained at the rate of 4 feet per day including drilling, mucking and timbering, then $\frac{500}{4}$ will equal 125 working day. On the basis of a 40 hour week, this amounts to 25 weeks or approximately 6 months.

Let us now consider equipment rental costs:

1. One 125 CFM air compressor @ $164 per month, 6 months . . . . . $ 984.00

2. Fifty feet of standard air hose @ $5.70 per mo. 6 months 34.20

3. Fifty feet standard water hose, same rental 6 months 34.20

4. Two, four and six foot drill steel, allowing for breakage and "sticking":

   5 two foot lengths @ $10.25 per month (ea. pc. $2.05) 6 months 61.50

   5 four foot lengths @ $14.75 per month (ea. pc. $2.95) 6 months 88.50

   5 six foot lengths @ $19.00 per month (ea. pc. $3.80) 6 months 114.00

Total cost for equipment rental for 6 months $1,316.40

Grant total cost for needed items of materials

will then approximate $4,730.00

plus 1,316.40

or $6,046.40

We will now consider personnel needs and costs:

1. One foreman or superintendent @ $450. per mo. 6 months $2,700.00

2. One top man to operate compressor, water pump and frame mine timbers @ $16 per day, 5 days per week, 6 months 2,000.00

3. One miner (driller) @ $16 per day, 5 days per week, 6 months 2,000.00

4. One miner (timberman) @ $16 per day, 5 days per week, 6 months 2,000.00

5. One driller helper @ $13.60 per day, 5 days per week, 6 months 1,700.00

6. One timberman helper @ $13.60 per day, 5 days per week, 6 months 1,700.00

7. One mucker @ $12 per day, 5 days per week, 6 months 1,500.00

Total Labor Cost	$13,600.00
To the labor cost must be added Social Security @ 2%, or	272.00
Unemployment, Workman's Compensation Insurance, Sales, Transportation Tax, etc.	1,000.00

Total capital and operating costs for a six months period will be approximately as follows:

Equipment and materials purchased	$ 4,730.00
Equipment rented	1,316.40
Labor	13,600.00
Social Security, Unemployment, etc.	1,272.00
	$ 20,918.40

At first glance these costs appear excessive, yet a critical analysis of each item will reveal that the writer has been quite conservative in his estimates. Some individual cost items may be slightly reduced as the work progresses, but it is doubtful if they will exceed 10%.

8 - REGIONAL AND LOCAL GEOLOGY:

Broadly speaking the property lies wholly within an area of Franciscan rocks composed essentially of sandstones, cherts and serpentine with subordinate amounts of shale and "silica-carbonate rock". Several periods of intense faulting covering a width of about 3 miles have created 8 separate and parallel shear zones along which are found intensive attrition gouges composed of crushed wall rock material. These shear zones all have northwest trends varying from 30 to 60 degrees. In places cinnabar deposition has occurred in and under the gouge and in the shattered sandstone footwall. This altered sandstone I have tentatively classified as a graywacke. It is usually dark brown to light gray in color and frequently contains very small shale partings, stringers of calcite and quartz and varying amounts of oxides and iron. This material is often the host rock for small pods and lenses of cinnabar.

In other places both on the surface and underground, I have observed cinnabar occurring suspended in a silica gel in the well known "silica-carbonate rock" which is so characteristic of

many quicksilver deposits. While this material is not considered to be a definite rock with more or less fixed amounts of specific minerals, but is a rather loosely used term to describe a metamorphic rock peculiar to certain quicksilver deposits, it must not be inferred that this material always indicates commercial quicksilver deposits.

About one-half mile southeast of the mine is an extensive exposure of serpentine lying between 2 definite shear zones. To my knowledge, the contact between the serpentine and the shear zone has never been fully explored. Here are 2 areas which might well contain ore bodies which do not outcrop or which have such insignificant outcrops as to be considered as non-commercial. They certainly warrant further study.

For several hundred feet northwest of the #2 tunnel are found outcrops of "silica-carbonate rock" which show definite cinnabar mineralization and which have never been exposed at depth. This region demands further study.

9 - WHAT CONSTITUTES ORE:

Whether or not a deposit of cinnabar is ore depends upon several important factors, namely; the price received for a standard 76 pound flask of quicksilver and the grade of ore in pounds per ton, as well as mining and furnacing costs. It is thus apparent that when the price per flask is high (over $100) some deposits are ore, and when the price per flask is low (under $100) some deposits are not ore. This assumes of course that the grade of ore remains constant. The attached graph shows the production cost per flask and the grade of ore in pounds per ton for a given operating cost of $10 per ton with a 95% recovery. The market price for quicksilver today (March 1954) is around $195 per flask or about $2.56 per pound. Theoretically then an ore running better than $\frac{\$10}{2.56}$ or just under 4 pounds per ton would pay. Actually this is not the case because the grade of ore may not

average 4 pounds per ton, the percentage of extraction is not always uniform and the market price for the metal sometimes fluctuates rapidly. By studying the graph it is apparent that the ore should average at least 6 pounds per ton or better if a fair profit is to be made on Mericoma ore treating say, 25 tons per day and the market price remains at its present level. It must be remembered that price and market demand are not always closely related and at times, the demand may be limited in spite of a high price. A study of the quicksilver market as reflected in general business conditions in the United States today leads me to believe that the price will remain well over $100 per flask, at least for the next 18 months.

In view of the fact that the "D" retort is probably usable and may be put into operating condition at small expense, a portion of the operating expenses may be absorbed by retorting small batches of selected ore extracted during the exploration and development work.

If one ton of sorted ore with a value of 25 pounds per ton can be retorted every other day, this would amount to nearly a flask a week with an approximate gross of $195. If two laborers can sort and retort this material the approximate cost per flask for labor @ $28 per day would be 6 times 28 or $168. Fuel oil for the burner and gasoline for a small engine to operate a blower would take an additional $2 per day or about $12 per week making a total production cost of $180 per flask (per week). On the other hand, if it is possible to upgrade the value of the ore to 50 pounds per ton by hand sorting, and one ton of this material is retorted every other day, net returns should be somewhat as follows: 3 tons per week @ 50 pounds per ton equals 150 pounds or approximately 1.9 flasks per week. 1.9 flasks @ $195 equals $370. Then $370 less $180 equals $190 net. These figures of course will not be fully realized because a 100% extraction is impossible; they are offered for purposes of comparison.

10 - RECAPITULATION:

1 - In view of the rather limited amount of exploration work that has been performed compared with the total length of vein structure(s) remaining to be explored, my considered opinion is that the possibilities for finding more ore are by no means exhausted, not only along the most westerly shear zone, but along parallel shear zones known to exist further east in the general direction of Pine Flat.

2 - To properly equip the property and to adequately finance 500 feet of exploration work by underground means will require at least $21,000.

3 - To "Bulldoze" or strip the overburden which now conceals portions of the outcrop will require at least 10 days which @ $100 per day will equal $1,000.

4 - Although there are good surface exposures of "silica-carbonate rock" lying to the northwest of the present mine workings, I believe that the area which offers the most promise from a geological point of view is that lying in a southeasterly direction from the present lower tunnel along the Mericoma fault to a large serpentine dike (intrusive?) about one-half mile from the lower tunnel. This serpentine mass is very clearly shown on Plate 1 of Bulletin 161 published by the California State Division of Mines.

5 - The property has produced quicksilver, the exact amount of which is unknown. It is my opinion that whatever ore has been stolen from the property has been reduced at another mine and the product recorded as all or part of the production obtained at the other mine. This, of course, would be a very effective way to conceal "high grading" activities at the Mericoma mine.

6 - An exploratory drift should be started in the South Stope where there is a good exposure of ore in the south face.

7 - Complete maps of the underground workings should be prepared and the surface and underground geology plotted thereon.

John D. Swearingen
Mining Engineer and Geologist
Registered Professional Engineer No.818
State of Nevada

MF-500

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

REFERENCE SLIP

DATE 4-21-54

REFERRED TO:
1. Miss H. M. Meyer, Rm. 3649
2.
3.
4.

FOR:

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

REMARKS: Copy of Applicant's transmittal letter in DMEA-3314; copy MF-104 with C.N.Schuette's report in previous application DMEA-2821, for use in connection with comments.

Check (X) before the items needing attention.

Ernest Wm. Ellis

gla *Initials of sender.*

GPO 16—63815-1

(Docket No. DMEA-3314)

San Francisco, California
April 15, 1954

C. O. Mittendorf
Administrator D.M.E.A.
Washington, D. C.

Dear Sir:

We are filing for a DMEA loan (Account of new program of March 23rd, 1954) under the name of Shamrock Mining Company, consisting of two mineral claims formerly known as Beeson and Mericoma, containing about 45 acres; also about 44 acres of adjacent patent land acquired under a co-partnership. You will find a partial report by C.N. Schuette, Docket No. DMEA 2821 (mercury).

Since filing the above request for assistance we have acquired more property and made considerable exploration, opening up two more old tunnels. We are sending a detailed report by John D. Swearingen, Mining Engineer and Geologist.

In regard to exploration work both reports agree, except in this report we contemplate some bulldozer work which we believe advisable on account of showing since the first report.

In regard to cost of operation, we are inclined to the Schuette Report, with some additions which are shown on a separate sheet. We prefer to buy a compressor and drills as it will be cheaper than renting because of the resale value. We also favor the nine months deal, using a superintendent, two miners and oneoutside man.

After a thorough study I am convinced that the exploration of the property has hardly been started. There are five tunnels on the property and, I believe, two more on Lots 1, 5 and 6. None have advanced far enough to explore the faults, so, due to indications, outcropping, etc., the project is well worth developing.

Respectfully,

/s/ George D. Topliff

George D. Topliff
241 Jones Street
San Francisco, California

c o p y

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Budget Bureau No. 42-R035.2.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
DEC 22 1952

APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

Not to be filled in by applicant

Docket No. DMEA-2821
Metal or Mineral
Date Received 12/22/52
Estimated Cost
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: George David Topliff
241 Jones St.,
San Francisco, California

(*b*) If other than an individual, add to your name above whether a corporation, partnership, etc., and the name of the State in which incorporated or otherwise organized.

(*c*) If a corporation, add to above statement, titles, names and addresses of officers.

(*d*) If a partnership, add to the above statement the names and addresses of all partners.

2. *General.*—Read DMEA Order 1, "Government Aid in Defense Exploration Projects," before completing this application. Submit this application and all accompanying papers in quadruplicate (four copies), with your name and address on each sheet of the application and on all accompanying papers. Where sufficient space is not provided on the form for all required information, state it on an accompanying paper, with a reference in each case to the instruction to which it refers by number. Comply with all applicable instructions; or, if not applicable, so state. File the application with Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest field executive officer thereof.

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract Mericoma Claim (# 63)
Range 10N 8W. Sec.30-31. Beeson Claim (#58), known as B&M Mining Co.
Unpatented claims recorded Book 2, page 235, Santa Rosa Recorder's
Office.

(*b*) State any mine name by which the property is known. B & Mining Co.

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise
Located

(*d*) If you are not the owner, submit with this application a copy of the lease, contract, or other document under which you control the property.

(*e*) If you own the land, describe any liens or encumbrances on it None

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. see above

4. *Physical description.*—(*a*) Describe in detail any mining or exploration operations which have been or now are being conducted upon the land, including existing mine workings and production facilities. State your interest, if any, in such operations. Also describe accessibility of mine workings for examination purposes. See pg 4,5 and 6

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades. See pg 6

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you. page 6

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points. pages 1 & 3

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power.

16—66551-1

Small operation. No trouble with supplies or man power.

5. *The exploration project.*—(State the mineral or minerals for which you to explore Mercury (Quicksilver)

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc. page 6 & 7

(*c*) The work will start within 15 days and be completed within 10 months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations. See attached page

6. *Estimate of costs.*—Furnish a detailed estimate of the costs of the proposed work (you will have to use a separate sheet), under the following headings. Add the totals under all headings to give the estimated total cost of the project:

(*a*) *Independent contracts.*—(Note.—If the applicant does not intend to let any of the work to contractors, write "none" after this item. To the extent that the work is to be contracted, do not repeat the cost of the contract-work in subsequent items.) State the cost of any proposed independent contracts for the performance of all or any part of the work, expressed in terms of units of work (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved, etc.) None

(*b*) *Labor, supervision, consultants.*—Include an itemized schedule of numbers, classes and rates of wages, salaries or fees for necessary labor, supervision and engineering and geological consultants. page 7

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel. See page 7

(*d*) *Operating equipment.*—Furnish an itemized list of any operating equipment to be rented, purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or suggested use-allowance based on present value, as the case may be. See attached page

(*e*) *Rehabilitation and repairs.*—Furnish a detailed list showing the cost of any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and which will be devoted to the exploration project. None at present

(*f*) *New buildings, improvements, installations.*—Furnish a detailed list showing the cost of any necessary buildings, fixed improvements, or installations to be purchased, installed or constructed for the benefit of the exploration project. See Att. Pg

(*g*) *Miscellaneous.*—Furnish a detailed list showing the cost of repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance, and payroll taxes. See page 7

(*h*) *Contingencies.*—Give an estimate of any necessary allowances for contingencies not included in the costs stated above.

NOTE.—No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes), or any other indirect costs, or work performed or costs incurred before the date of the contract, should be included in the estimate of costs.

7. (*a*) Are you prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation (Sec. 7, DMEA No. 1)?

(*b*) How do you propose to furnish your share of the costs?

[X] Money [ ] Use of equipment owned by you [X] Other

Explain in detail on acompanying paper. See attached page

CERTIFICATION

The undersigned, whether as an individual, corporate officer, partner, or otherwise, both in his own behalf and acting for the applicant, certifies that the information set forth in this form and accompanying papers is correct and complete, to the best of his knowledge and belief.

Dated December 18 1952, 195

(Applicant)

By

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—66551-1

Attached sheet

Sec. 5.

D. I have worked on lead-zink prospects in Northern Idaho for about ten years. Consulting Engineer, C. N. Schutte, author of Bulletins, 1C6966 U. S. Bureau of Mines. Bull. 222 Bureau of mines, 1925, 173PP, Tech. Pub. 335, Am. Inst. Min. & Met. Engrs, N. Y. 1930 88 PP, Quicksilver Bull. 335, Bureau of Mines, 1931 168 PP and Tech. Papor 96, Bureau of Mines, 1919, 25 PP, Bull. 222, Bureau of Mines, 1925, 173 PP.

Sec. 6. List of assets I own and value of same at Mine:

D.	1/2 Ton. International Truck *A	$ 545.00
	1940 DeSoto Sedan *B	175.00
	1000 ft. 12# rail	350.00
	Fish plates, bolts & spikes for same	75.00
	625 ft. lin. of Ties 4 x 6	100.00
	2 Mine cars @ $250. ea.	500.00
	1 Timber car	200.00
	Small tools- picks, shovels, hammers, etc.	75.00
	Total ---	$2,020.00

*A May trade for later model truck.

*B Will trade for a jeep

F. Buying material and erection of shelters for truck and compressor, about $1200.00.

Additional to cost on pg. 7, making total of $28,475.00.

Copy

REPORT ON PROPOSED EXPLORATION WORK

at the

MERICOMA MINE IN SONOMA COUNTY, CALIFORNIA

by

C. N. SCHUETTE

C. N. Schutte
Consulting Mining Engineer
Telephone Sebastopol 6690
6390 Barnett Valley Road W
Sebastopol, California

December 13 1952

Mr. George Topliff,
241 Jones Street,
San Francisco, California.

Dear Sir:

Herewith I submit to you my report on an exploration program for the Mericoma Mine that can be completed in 9 months with a crew of three men. On a two shift basis the time required would be cut in half.

This report is based on observations made during a visit to the property on December 3rd 1952 and on information gathered from various sources and on data published by the California State Division of Mines. Cost estimates are based on recent quotations for machinery and supplies and on current wage rates. Two sketch maps illustrate the report.

In the work thus far done in the mine, the probable ore zone has barely been reached by the crosscut tunnel and very little work has been done along the strike to explore it.

I propose an exploration program to start with a 200 foot crosscut of the mineralized fault zone. This to be followed by drifting for 300 feet on the best ore disclosures and finally some 200 feet of sinking and raising to prove up the vertical extent of any orebodies found by drifting.

Such an amount of work should give a good picture of the cinnabar mineralization of the fault zone and might well disclose enough ore to warrant subsequent mining operations.

The cost of such an exploration program will be $26,500.

C. N. Schuette

Report on Proposed Exploration Work at the
Mericoma Mine in Sonoma County, California
by C. N. Schuette.

Introduction

This report outlines an exploration program for the Mericoma Mine near Healdsburg, Sonoma County, California. The Mericoma Mine produces quicksilver. Quicksilver is a strategic metal and the development of domestic sources of supply is encouraged by our Government under DMA by providing 75% of the costs of exploration projects for this strategic metal.

Location of the Mine

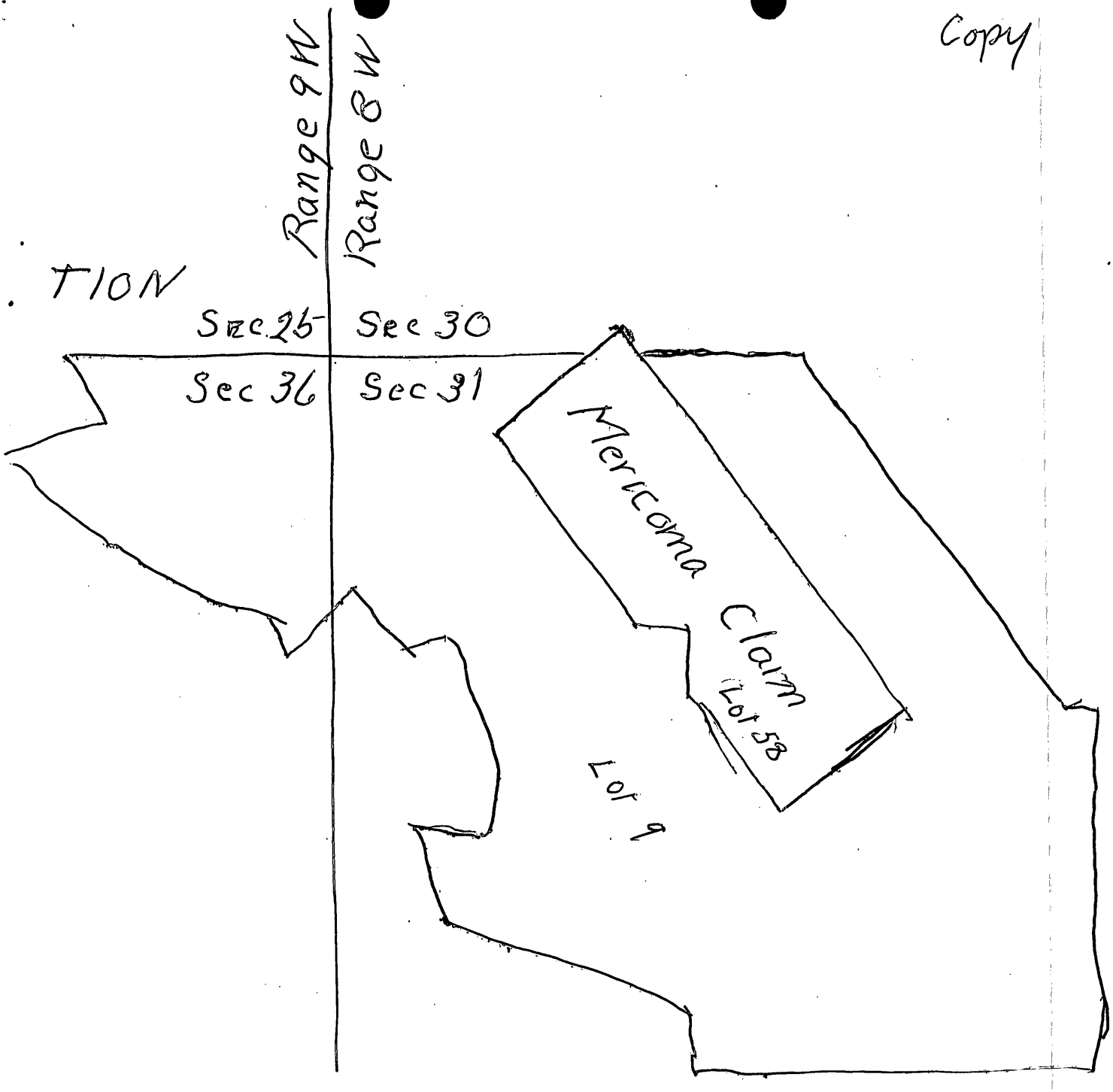
The Mericoma Lode Claim lies in Section 31, R. 8 W., T. 10 N., M.D.B.M. The location of the claim on the ground is shown on page 2 of this report. It is about 6 miles north east from the town of Healdsburg. Its location is shown on plate 1 of Bulletin 161 of the California State Division of Mines. The claim is held by location by George Topliff who located it on October 6 1952 and filed his location on October 8 1952. Previous owners are said to have abandoned the claim in 1941.

Description of the Area

About four miles north east of Healdsburg, the Russian River flows south east thru Alexander Valley. This valley is bounded on the north east by steep hills rising abruptly from the valley floor. These hills are covered with brush and scrub timber.

MED-2821

Copy



Mericoma Quicksilver Mine
Sonoma Co. California
Scale 0 600 Feet
C N Schuette Dec 1952

The Mericoma Mine lies on the first steep hill rising from the valley floor, south east of Saysal Creek. The road to the mine goes from Healdsburg thru Jimtown. A little ways north east of Jimtown a crossroad runs south east. This is followed for 3/4 of a mile and then a road running north east is taken and followed to a ranch at the foot of the hills. From here a steep road leads up to the main tunnel of the mine.

Below the mouth of the main tunnel are the remains of a 2-pipe Rossi retort and a D retort. The setting of the retorts and the elaborate condenser arrangements lead me to believe that the operators were not too experienced in such operations, and this was borne out when panning of the burned rock showed that the treated rock still contained a few lbs per ton of quicksilver. At one side of the tunnel a few tons of ore that was probably too low grade to be treated, were piled up and panned about 5 lbs/ton.

Further up on the hill was another tunnel and at another location there seems to have been a third one tho slides made this uncertain. The ridge above the mine is all Franciscan sandstone. About half way down from the ridge to the main tunnel a sharp escarpment marks a strong fault in the sandstone. The original discovery of cinnabar in place was probably made along this escarpment after following pannings on the hillside. Slides obscure the base of the escarpment and I could not find any silica-carbonate rock or cinnabar in place in the limited time I had to see this area.

The road leading to the mine cuts thru chert beds and the portal of the tunnel seems to be in chert also. Then the

tunnel penetrates old greenstones and then the Franciscan sandstone. A rough sketch of the tunnel is shown on page 5. It was made by pacing the distances and taking bearings by compass. At the end of the crosscut part of the tunnel a drift has been run on a fault running north west and dipping north east at 70°. This drift is roughly 100 feet long and from it three raises were run up to aid in stoping out ore to a height of some 25 to 35 feet. The vein was about 4 feet wide, shows cinnabar in silica carbonate rock and has a fairly heavy fault gouge on the hanging wall side.

Geology

The geology of the Healdsburg Quadrangle has been mapped by W. K. Gealey. He shows that the range of hills north east of Alexander Valley in which the mine lies, is cut by many northwest trending faults in rocks of the Franciscan group of Jurassic Age. This is the geologic formation in which most of the quicksilver mines of California are found. On the basis of the known geology of the area, it is a very favorable area in which to prospect for quicksilver occurrences as it shows numerous croppings of silica-carbonate rock. This rock is so generally associated with quicksilver orebodies in the Franciscan formation that it is colloquially known as "quicksilver rock". He shows the Mericoma Mine to lie in the Maacama Fault Zone.

General Observations

300 feet of crosscut tunnel was driven to reach the ore zone and then only 100 feet of drifting was done to explore it.

DMEG-2821

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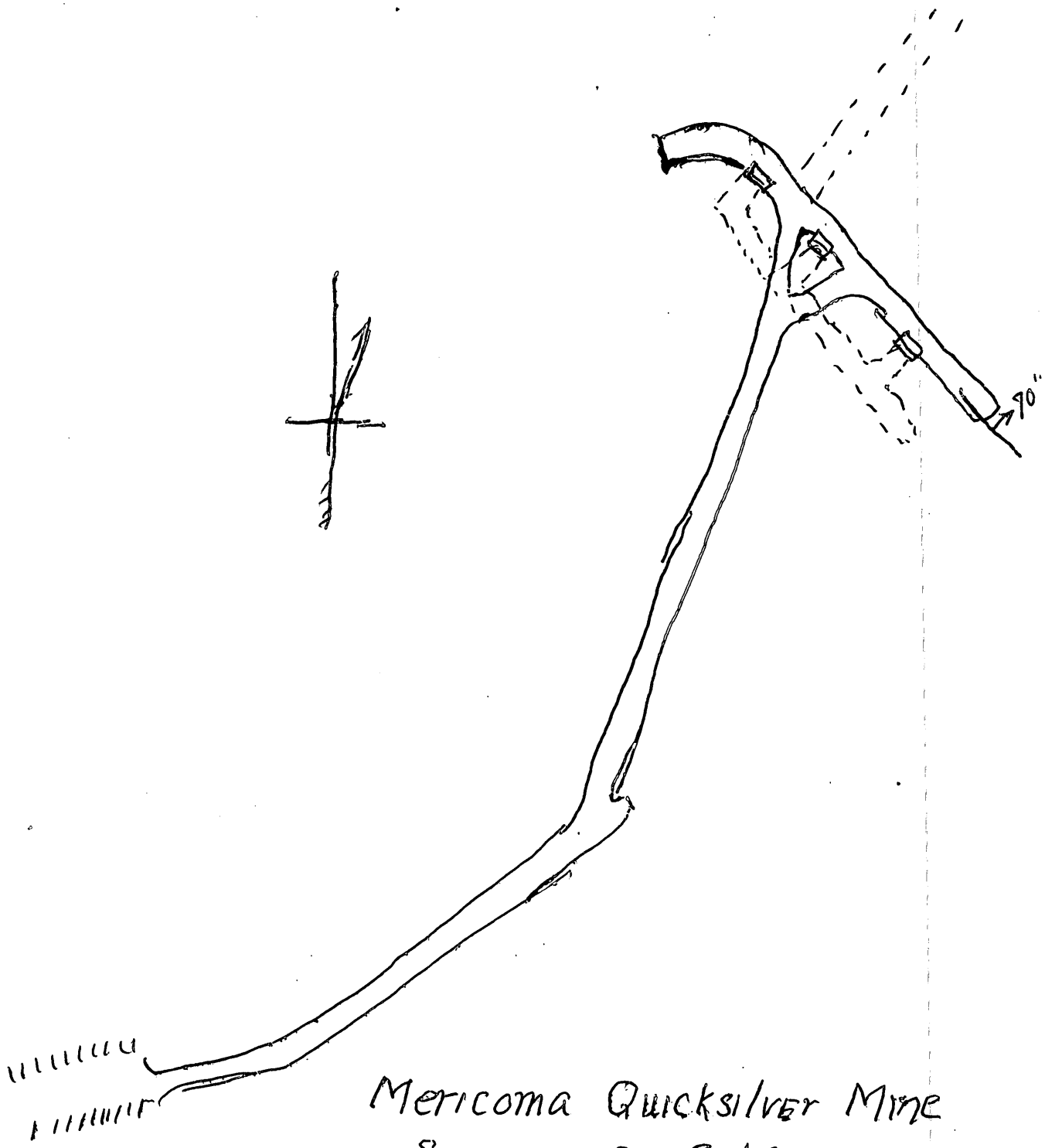


Mericoma Quicksilver Mine
Sonoma Co. California
Scale 0 30 Feet

C N Schuette Dec. 1952

I doubt very much that the fault on which the ore was found is the main fault marked by the escarpment on the surface.

I think that the last operators in 1940-41 during the high price of the war years stoped out the ore that had been developed years before (I remember getting some ore specimens from this mine some 20 years ago) but did no development work of their own. The appear to have taken the mine for granted and to have spent their money on building retorts that didn't work very well.

There undoubtedly was some production from this mine as the size of the burned-rock dump below the retorts shows that a fair tonnage of ore was put thru them. The reject pile of 5 lb ore shows that a fair grade of ore must have been treated as many retort operators treated ore as low as 5 lb per ton when the price was high. I was not able to obtain production figures on this mine.

Conclusion

The general geology is favorable. Ore has been found by a very modest development effort in the past. On the basis of this showing I would say that further exploration is warranted.

I would suggest: Additional exploration ahead, by crosscutting to see if more fault fissures and possibly larger ones can be found. This to be followed by drifting on the most favorable leads and then raising or sinking on the best ore exposures found in the drifting.

To make the program definite so that it can be debated and so a cost estimate can be made, I suggest the following:

1. Crosscut NE from the present drift for 200 feet, with the expectation of cutting the main fault fissure.

2. Drift for 300 feet on the best exposures of ore shown in either the present or the extended crosscut.

3. Sink or Raise on the best ore exposures in the drifts. Two 50 foot winzes and two 50 foot raises would serve to show if the ore as found will persist in height and depth.

Cost Estimate

Equipment needed:		
A pickup truck	$1,800.	
A 210 cu.ft. gas driven compressor	1,800	
1000 ft. 2" black iron pipe	350	
2000 ft. 12# rail	720	
Fish plates, bolts & spikes for same	150	
1000 ft. 10" - 22 ga. g.i.vent. pipe	870	
5 HP gas engine & blower for ventilation	410	
2 mine cars	500	
1 timber car	200	
Ties (1250 lin. ft. 4 x 6)	200	
2 Jackhammers with mounts, columns & tank	1,300	
Air and water hose for same	125	
Steel and bits	400	
Blacksmith forge & tools	300	
Picks, shovels, saws, hammers, axes, etc	200	
		$ 9,325
Suuplies:		
Powder, fuse and caps	1,000	
Carbide	50	
Gasoline for power	500	
Timber for drifts & crosscuts (16 M)	1,600	
Timber for winzes & raises (15 M)	1,500	4,650
		4,650
Labor:		8,000
Supervision & Miscellaneous (9 months)		4,500
Total:		$ 26,475

Since some 700 feet of work are contemplated, this figures out to some $38 per foot on the average tho of course the sinking and raising will cost more per foot than tunneling.

Time required to complete the project on a 6 day week basis with 2 men per shift and a third man as working foreman would be some 9 months. Assumed wage scale $1.70/hour. Assumed advance is 3 feet per shift.

APPLICATION FOR

D.M.E.A. LOAN

SHAMROCK MINING CO.

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Form Approved.
Budget Bureau No. 42-R1035.2.

APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

Not to be filled in by applicant

Docket No. 3314
Metal or Mineral Mercury
Date Received
Estimated Cost $29,955
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: Shamrock Mining Company,
241 Jones Street,
San Francisco, California

(*b*) If other than an individual, add to your name above whether a corporation, partnership, etc., and the name of the State in which incorporated or otherwise organized.

(*c*) If a corporation, add to above statement, titles, names and addresses of officers.

(*d*) If a partnership, add to the above statement the names and addresses of all partners. See attached page

2. *General.*—Read DMEA Order 1, "Government Aid in Defense Exploration Projects," before completing this application. Submit this application and all accompanying papers in quadruplicate (four copies), with your name and address on each sheet of the application and on all accompanying papers. Where sufficient space is not provided on the form for all required information, state it on an accompanying paper, with a reference in each case to the instruction to which it refers by number. Comply with all applicable instructions; or, if not applicable, so state. File the application with Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest field executive officer thereof.

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract Mericora Claim #63; Beeson Claim #58, R 10 W 8 W, Section 30 and 31, unpatented claims recorded Book 2, Page 235, at Santa Rosa Recorder's Office, plus about 44 acres of patented ground.

(*b*) State any mine name by which the property is known. Shamrock Mining Company

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise Located and purchased

(*d*) If you are not the owner, submit with this application a copy of the lease, contract, or other document under which you control the property.

(*e*) If you own the land, describe any liens or encumbrances on it None

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. See paragraph 3.

4. *Physical description.*—(*a*) Describe in detail any mining or exploration operations which have been or now are being conducted upon the land, including existing mine workings and production facilities. State your interest, if any, in such operations. Also describe accessibility of mine workings for examination purposes. R. #1, pages 4,5,6 R. #2, pages 1,2

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades. R. 1, p.6 R2, P.2

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you. R1, P.6 R2, P.1 & 2.

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points. R1, p.1 & 3 R2, page 1

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power.
Small operation no trouble with supplies or man power.

16—66551-1

5. *The exploration project.*—(*a*) State the mineral or minerals for which you wish to explore Mercury

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc. R.1 p.6 & 7, R.2, p.2, see accompanying map

(*c*) The work will start within 15 days and be completed within 10 months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations. See attached page

6. *Estimate of costs.*—Furnish a detailed estimate of the costs of the proposed work (you will have to use a separate sheet), under the following headings. Add the totals under all headings to give the estimated total cost of the project:

(*a*) *Independent contracts.*—(Note.—If the applicant does not intend to let any of the work to contractors, write "none" after this item. To the extent that the work is to be contracted, do not repeat the cost of the contract-work in subsequent items.) State the cost of any proposed independent contracts for the performance of all or any part of the work, expressed in terms of units of work (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved, etc.). Bulldozing 10 days about 1,000 dollars

(*b*) *Labor, supervision, consultants.*—Include an itemized schedule of numbers, classes and rates of wages, salaries or fees for necessary labor, supervision and engineering and geological consultants. R.1, p.7, R.2, p.4

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel. R.1, p.7, R.2, p.2

(*d*) *Operating equipment.*—Furnish an itemized list of any operating equipment to be rented, purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or suggested use-allowance based on present value, as the case may be. See attached page

(*e*) *Rehabilitation and repairs.*—Furnish a detailed list showing the cost of any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and which will be devoted to the exploration project. None at present

(*f*) *New buildings, improvements, installations.*—Furnish a detailed list showing the cost of any necessary buildings, fixed improvements, or installations to be purchased, installed or constructed for the benefit of the exploration project.

(*g*) *Miscellaneous.*—Furnish a detailed list showing the cost of repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance, and payroll taxes. See attached page

(*h*) *Contingencies.*—Give an estimate of any necessary allowances for contingencies not included in the costs stated above.

NOTE.—No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes), or any other indirect costs, or work performed or costs incurred before the date of the contract, should be included in the estimate of costs.

7. (*a*) Are you prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation (Sec. 7, DMEA No. 1)?

(*b*) How do you propose to furnish your share of the costs?

[X] Money [X] Use of equipment owned by you [ ] Other

Explain in detail on acompanying paper.

CERTIFICATION

The undersigned, whether as an individual, corporate officer, partner, or otherwise, both in his own behalf and acting for the applicant, certifies that the information set forth in this form and accompanying papers is correct and complete, to the best of his knowledge and belief.

Dated April 15th, 1954

Shamrock Mining Company
(Applicant)

By George P. Topliff

George P. Topliff
241 Jones Street
San Francisco, California

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—66551-1

NOTE: Schuette's Report in File DMEA 2821 (Mercury) will be known as R.#1 and Swearingen's Report will be R.#2.

Paragraph 1 (d): Names of partners:

George D. Topliff, 241 Jones St., San Francisco, Calif. 85%
Roy F. Ward and/or
Maud Ward, Box 109-A, Healdsburg, Calif. 12½%
Morrie Bobrow and/or
Cy Weita, 365 Eddy St., San Francisco, Calif. 2½%

Paragraph 5 (d)

I personally have worked lead and zinc prospects in Northern Idaho ten to 15 years.

Consulting Engineers:
C. N. Schuette, Sebastopol, California
John D. Swearingen, 61 Catalpa Ave. Mill Valley, Calif.

Paragraph 6 (d) List of assets on property at present time:

1,000 ft. 12 pound rail	$ 350.00
Fish plates, bolts and spikes for same	75.00
625 Lin. Ft. Ties 4 x 6	100.00
2 Mine cars at $250.00 each	500.00
1 Timber car	200.00

Paragraph 6 (g)

Repairing of road, erecting of shelter for truck, compressor, etc., tool sheds 1,500.00

ESTIMATED COST AND PROPOSED EXPENDITURES :

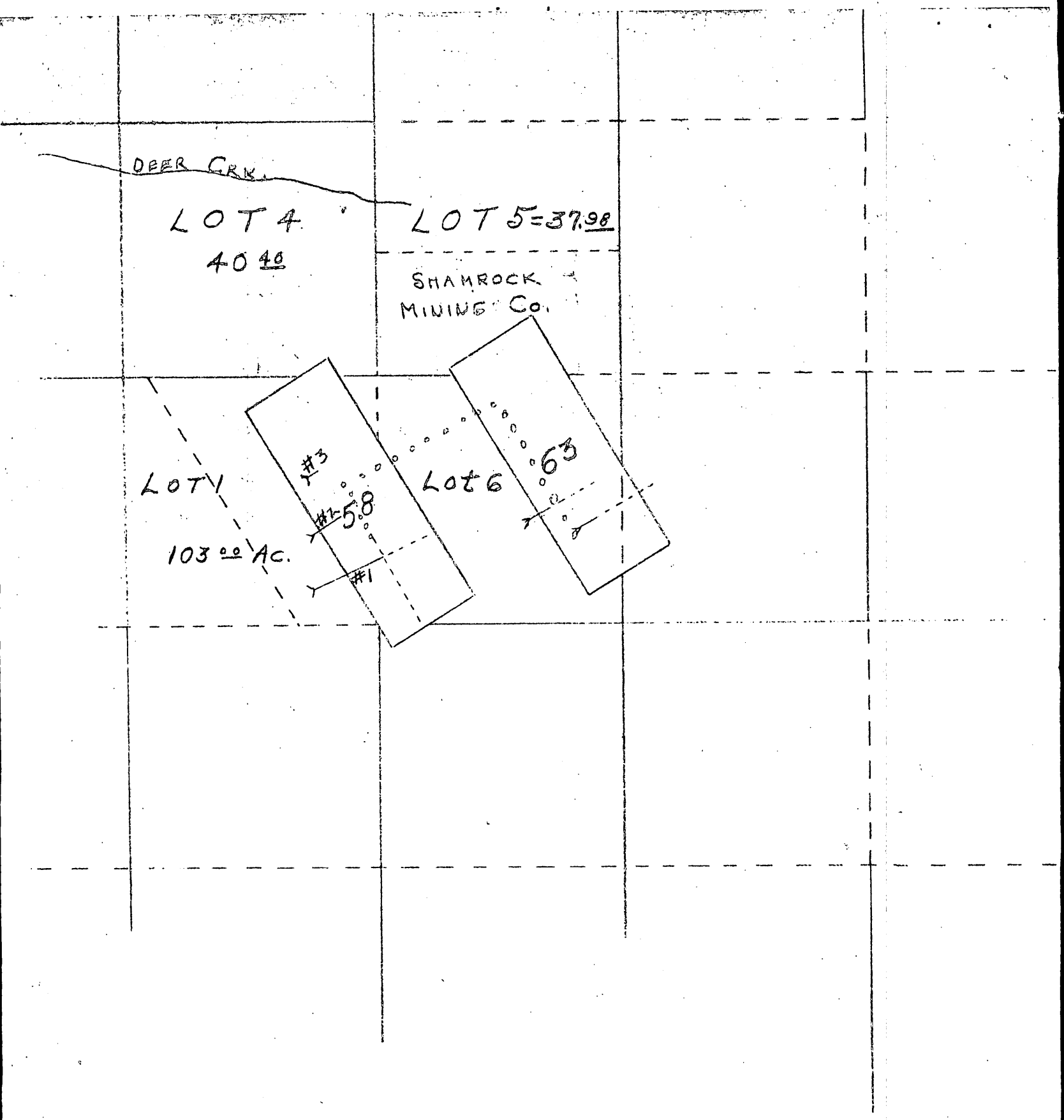
Labor plus Social Security and other taxes	$ 9,200.00
Supervision, office work and miscellaneous	5,000.00
Bulldozer (Contract)	1,000.00
Road repair, tool house, shelter for machinery	1,500.00

SUPPLIES :

Powder, fuse, and caps	1,000.00
Carbide	50.00
Gasoline for power	500.00
Timber for drifts and cross-cuts (16 M ft.)	1,600.00
Timber for Winzes and raises (15 M ft.)	1,500.00

EQUIPMENT :

Pick-up truck	1,800.00
210 cu.ft. Gas Driven Compressor	1,800.00
Water tank and fittings	500.00
1 M ft. 2" black iron pipe	350.00
1 M ft. 12 lb. rail	350.00
Fish plates, bolts and spikes for same	100.00
1 M ft. 10" 22 gage galvanized vent pipe	870.00
5 H.P. engine and blower for ventilation	410.00
2 Jack Hammers and mounts, columns and tank	1,300.00
Air and water hose for above	125.00
Steel and bits	400.00
Ties, 650 lin. ft. 2 x 6	100.00
Blacksmith forge and tools	300.00
Small tools	200.00
	$29,955.00



John D. Lessinger
4-15-54

PROPOSED TUNNELING - - - - - -

BULLDOZING

SCALE: 40 CHAINS = 1"

PRELIMINARY REPORT

on the

SHAMROCK QUICKSILVER MINE

SONOMA COUNTY, CAL.

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by
John D. Swearingen

April 1954

1 - LOCATION AND OWNERSHIP:

The Shamrock quicksilver mine embracing two, full, non-contiguous, unpatented lode claims is located in portions of Sections 30 and 31, Township 10 North, Range 8 West, MDM, and is approximately one-half mile by dirt road southeast of the highway running between Alexander Valley Road cut-off and Pine Flat. It is approximately six miles in an airline northeast of Healdsburg, Sonoma County. There is an excellent paved road to within one-half mile of the property. The two claims have been known in the past as the Beeson and Mericoma respectively. The land between the two claims is held in fee simple under an agricultural patent.

The two claims are in the possession of Mr. George Topliff, et al, of San Francisco and are held by right of relocation under United States Mining Law.

2 - PAST PRODUCTION:

Nothing is known concerning past production, but it must have amounted to several hundred flasks judging from the amount of stoping done in the mine. It has also been established beyond a doubt that a considerable tonnage of selected ore was stolen from the property and treated at an unknown plant off the property. Some production, however, has been made at this mine by means of a "D" retort and a two tube Rossi-type retort.

3 - MINE PLANT AND UNDERGROUND WORKINGS:

With the exception of a very small surface cut the ore bearing structure has been explored and developed by means of three cross-cut tunnels with approximately 250 feet of known drifts, three raises, one of which is now inaccessible, and at least three stopes which are accessible and which have been mined to heights of over 20 feet. It is believed by this writer that a partly caved raise extends between two of the cross-cut tunnels. The total amount of accessible ground developed by cross-cutting,

drifting and raising amounts to about 650 feet.

The so-called lower tunnel is equipped with two ore cars and sufficient trackage to extend from the end of the waste dump to the three stopes and raises, aggregating perhaps 600 feet. The other tunnels are not provided with track. With the exception of the retorts, one of which is usable, there is no other equipment on the property.

4 - SUGGESTIONS FOR EXPLORATION AND DEVELOPMENT:

Perhaps the first order of business in rehabilitating the property would be to improve the road leading to the mine. While this road is now open to passenger cars, it will definitely have to be scraped and widened in places in order to accommodate trucks. Not over one-half mile of road will have to be improved.

Secondly, adequate maps should be prepared showing in detail the relative positions of the mine workings and both the surface and underground geology.

As a third condition, I am proposing that sufficient "bulldozing" be contracted for to more fully expose the ore-bearing structure for at least 500 feet along the surface where it is partly concealed by an overburden of decomposed country rock and landslide material.

Fourth. If underground exploration work is to be continued along the vein structure portions of the now accessible underground workings will definitely require re-timbering. All tunnel portals must be adequately timbered with three or four portal sets of eight inch by eight inch timber and suitably lagged with two inch by 12 inch planking, at least along the tops of the sets.

There are very definite showings of ore both on the surface and underground occurring along the footwall side of the westernmost part of the Mericoma fault zone. In the case of the high grade material showing in the so-called South Stope, I am

suggesting that a small sublevel drift be started and continued as long as ore remains in the face of this drift. This occurrence may represent the termination of the ore which was mined in the South Stope. On the other hand, it could just as well be the beginning of an entirely new ore shoot. Only continued drifting will prove this.

I would also suggest that all three of the cross-cut tunnels be cleaned out of all loose material and muck and that the drain ditch in the lower tunnel be cleared.

When we consider that the Mericoma fault is not a single, well defined, relatively narrow (5 to 10 feet) slip, but is actually a very wide zone of shearing composed of many, more or less parallel slips, the possibility of the existence of parallel ore shoots in this area is not unreasonable and the possibilities for developing more ore at this property are by no means exhausted.

5 - EQUIPMENT AND MATERIAL REQUIRED:

In order to perform even a minimum of exploratory work and necessary rehabilitation, the following items will be needed:

1. Air compressor (125 cfm).
2. Six hundred feet of second hand one and one-half inch WI air pipe.
3. Fifteen hundred feet of second hand one inch WI water pipe
4. Fifty feet of standard air hose.
5. Fifty feet of standard water hose.
6. One ten thousand gallon steel or wood water tank.
7. One 2 horsepower gasoline engine.
8. One centrifugal water pump W/belt drive.
9. Dynamite, fuse and caps.
10. Drill steel, two, four and six foot lengths.
11. Detachable or "throw away" bits.
12. At least eighteen thousand 'BF of eight inch by eight inch, four inch by six inch, two inch by eight inch, and two inch by twelve inch mine timber.
13. Wedges
14. One thousand feet of second hand twelve pound rail.

Cont. 14 - This is sufficient for 500 feet of track and weighs approximately two tons.

15. Fish plates and track spikes.

16. Fuel and lubricants for compressor and pump engine.

17. Air line lubricator and miscellaneous pipe fittings, valves, etc.

18. Carbide.

19. Picks, shovels, sledges, saws, hammers, bars, wrenches, etc.

20. Jackhammer with cradle, column, arm and clamp.

21. Gasoline storage drums.

22. Living quarters and office for superintendent.

23. Miscellaneous and extras.

6 - PERSONNEL REQUIREMENTS:

If any kind of progress is to be made, sufficient skilled and semi-skilled labor will be needed. A bare minimum would be as follows:

1. One foreman (superintendent.)

2. One top man to operate air compressor, tend water pump and frame mine timbers.

3. One miner (driller.)

4. One miner (timberman.)

5. One mucker

6. One timberman helper.

7. One driller helper.

7 - CAPITAL COSTS AND OPERATING EXPENSES:

Some of the equipment may be rented during the early stages of the work, but most of the items will have to be purchased either new or second hand. The following rate schedule (Santa Rosa) for equipment rental is as follows:

1. One hundred and twenty-five cfm air compressor - $164.00 per month.

2. Fifty-five pound jackhammer - $46.25 per month.

3. Fifty feet standard air hose - $5.70 per month.

4. One inch hollow hex. drill steel - -
   a - Two foot lengths - $2.05 per month
   b - Four foot lengths - $2.95 per month
   c - Six foot lengths - $3.80 per month

5. Two inch detachable bits 65¢ each. These are not returnable and must be purchased outright.

Prices for new and used pieces of equipment vary widely today and the following inventory represents average costs which I have prepared from maximum and minimum prices obtained from equipment dealers. It is by no means absolute for it may be possible to purchase used 12 pound rail, let us say, from one dealer (FOB) for $60 per ton and from another dealer for $40 per ton depending upon the quantity bought and the condition of the rail.

Following, I have shown in greater detail the material needed to perform the necessary underground work:

ITEM	MODEL	SIZE	QUANTITY	UNIT	UNIT PRICE	COST
Rail	Relaying	12 lb.	2	Ton	$50.00	$100.00
Pipe	Used Gal.	1-1/2"	800	Ft.	.19¢	152.00
Pipe	Used Gal.	1"	1500	Ft.	.13¢	195.00
Timber	#2 Pine	- - -	18,000	MBM	64.00	1,152.00
Dyna.	40% gel.	- - -	20	50# case	12.00	240.00
Caps	- - -	#8	10	Box 100	4.00	40.00
Fuse	Comet	- - -	10	Roll 500'	20.00	200.00
Bits	Detach.	2"	500	each	.65¢	325.00
Water Tank	Steel Welded	Used 10,000 gal.	1	each	500.00	500.00
Gas. Eng.	Rebuilt	2 HP	1	each	150.00	150.00
Water Pump	Rebuilt Cent.	1"	1	each	50.00	50.00
Valves and misc. pipe fittings . . . . . approximately . . .						50.00
Picks, shovels, bars, saws, etc. . . . . approximately . . .						75.00
Fuel and lubricants . . . . . approximately . . .						500.00
One rebuilt mounted jackhammer . . . . . approximately . . .						500.00
Miscellaneous items and spares . . . . . approximately . . .						500.00
Approximate total capital costs for equipment and materials purchased but not rented						$4,730.00

The above inventory represents sufficient material for 500 feet of exploratory cross-cutting and drifting. If progress

can be maintained at the rate of 4 feet per day including drilling, mucking and timbering, then $\frac{500}{4}$ will equal 125 working day. On the basis of a 40 hour week, this amounts to 25 weeks or approximately 6 months.

Let us now consider equipment rental costs:

1. One 125 CFM air compressor @ $164 per month, 6 months . . . . . $ 984.00

2. Fifty feet of standard air hose @ $5.70 per mo. 6 months 34.20

3. Fifty feet standard water hose, same rental 6 months 34.20

4. Two, four and six foot drill steel, allowing for breakage and "sticking":

   5 two foot lengths @ $10.25 per month (ea. pc. $2.05) 6 months 61.50

   5 four foot lengths @ $14.75 per month (ea. pc. $2.95) 6 months 88.50

   5 six foot lengths @ $19.00 per month (ea. pc. $3.80) 6 months 114.00

Total cost for equipment rental for 6 months $1,316.40

Grant total cost for needed items of materials

will then approximate $4,730.00

plus 1,316.40

or $6,046.40

We will now consider personnel needs and costs:

1. One foreman or superintendent @ $450. per mo. 6 months $2,700.00

2. One top man to operate compressor, water pump and frame mine timbers @ $16 per day, 5 days per week, 6 months 2,000.00

3. One miner (driller) @ $16 per day, 5 days per week, 6 months 2,000.00

4. One miner (timberman) @ $16 per day, 5 days per week, 6 months 2,000.00

5. One driller helper @ $13.60 per day, 5 days per week, 6 months 1,700.00

6. One timberman helper @ $13.60 per day, 5 days per week, 6 months 1,700.00

7. One mucker @ $12 per day, 5 days per week, 6 months 1,500.00

Total Labor Cost	$13,600.00
To the labor cost must be added Social Security @ 2%, or	272.00
Unemployment, Workman's Compensation Insurance, Sales, Transportation Tax, etc.	1,000.00

Total capital and operating costs for a six months period will be approximately as follows:

Equipment and materials purchased	$ 4,730.00
Equipment rented	1,316.40
Labor	13,600.00
Social Security, Unemployment, etc.	1,272.00
	$ 20,918.40

At first glance these costs appear excessive, yet a critical analysis of each item will reveal that the writer has been quite conservative in his estimates. Some individual cost items may be slightly reduced as the work progresses, but it is doubtful if they will exceed 10%.

8 - REGIONAL AND LOCAL GEOLOGY:

Broadly speaking the property lies wholly within an area of Franciscan rocks composed essentially of sandstones, cherts and serpentine with subordinate amounts of shale and "silica-carbonate rock". Several periods of intense faulting covering a width of about 3 miles have created 8 separate and parallel shear zones along which are found intensive attrition gouges composed of crushed wall rock material. These shear zones all have northwest trends varying from 30 to 60 degrees. In places cinnabar deposition has occurred in and under the gouge and in the shattered sandstone footwall. This altered sandstone I have tentatively classified as a graywacke. It is usually dark brown to light gray in color and frequently contains very small shale partings, stringers of calcite and quartz and varying amounts of oxides and iron. This material is often the host rock for small pods and lenses of cinnabar.

In other places both on the surface and underground, I have observed cinnabar occurring suspended in a silica gel in the well known "silica-carbonate rock" which is so characteristic of

many quicksilver deposits. While this material is not considered to be a definite rock with more or less fixed amounts of specific minerals, but is a rather loosely used term to describe a metamorphic rock peculiar to certain quicksilver deposits, it must not be inferred that this material always indicates commercial quicksilver deposits.

About one-half mile southeast of the mine is an extensive exposure of serpentine lying between 2 definite shear zones. To my knowledge, the contact between the serpentine and the shear zone has never been fully explored. Here are 2 areas which might well contain ore bodies which do not outcrop or which have such insignificant outcrops as to be considered as non-commercial. They certainly warrant further study.

For several hundred feet northwest of the #2 tunnel are found outcrops of "silica-carbonate rock" which show definite cinnabar mineralization and which have never been exposed at depth. This region demands further study.

9 - WHAT CONSTITUTES ORE:

Whether or not a deposit of cinnabar is ore depends upon several important factors, namely; the price received for a standard 76 pound flask of quicksilver and the grade of ore in pounds per ton, as well as mining and furnacing costs. It is thus apparent that when the price per flask is high (over $100) some deposits are ore, and when the price per flask is low (under $100) some deposits are not ore. This assumes of course that the grade of ore remains constant. The attached graph shows the production cost per flask and the grade of ore in pounds per ton for a given operating cost of $10 per ton with a 95% recovery. The market price for quicksilver today (March 1954) is around $195 per flask or about $2.56 per pound. Theoretically then an ore running better than $\frac{\$10}{2.56}$ or just under 4 pounds per ton would pay. Actually this is not the case because the grade of ore may not

average 4 pounds per ton, the percentage of extraction is not always uniform and the market price for the metal sometimes fluctuates rapidly. By studying the graph it is apparent that the ore should average at least 6 pounds per ton or better if a fair profit is to be made on Mericoma ore treating say, 25 tons per day and the market price remains at its present level. It must be remembered that price and market demand are not always closely related and at times, the demand may be limited in spite of a high price. A study of the quicksilver market as reflected in general business conditions in the United States today leads me to believe that the price will remain well over $100 per flask, at least for the next 18 months.

In view of the fact that the "D" retort is probably usable and may be put into operating condition at small expense, a portion of the operating expenses may be absorbed by retorting small batches of selected ore extracted during the exploration and development work.

If one ton of sorted ore with a value of 25 pounds per ton can be retorted every other day, this would amount to nearly a flask a week with an approximate gross of $195. If two laborers can sort and retort this material the approximate cost per flask for labor @ $28 per day would be 6 times 28 or $168. Fuel oil for the burner and gasoline for a small engine to operate a blower would take an additional $2 per day or about $12 per week making a total production cost of $180 per flask (per week). On the other hand, if it is possible to upgrade the value of the ore to 50 pounds per ton by hand sorting, and one ton of this material is retorted every other day, net returns should be somewhat as follows: 3 tons per week @ 50 pounds per ton equals 150 pounds or approximately 1.9 flasks per week. 1.9 flasks @ $195 equals $370. Then $370 less $180 equals $190 net. These figures of course will not be fully realized because a 100% extraction is impossible; they are offered for purposes of comparison.

10 - RECAPITULATION:

1 - In view of the rather limited amount of exploration work that has been performed compared with the total length of vein structure(s) remaining to be explored, my considered opinion is that the possibilities for finding more ore are by no means exhausted, not only along the most westerly shear zone, but along parallel shear zones known to exist further east in the general direction of Pine Flat.

2 - To properly equip the property and to adequately finance 500 feet of exploration work by underground means will require at least $21,000.

3 - To "Bulldoze" or strip the overburden which now conceals portions of the outcrop will require at least 10 days which @ $100 per day will equal $1,000.

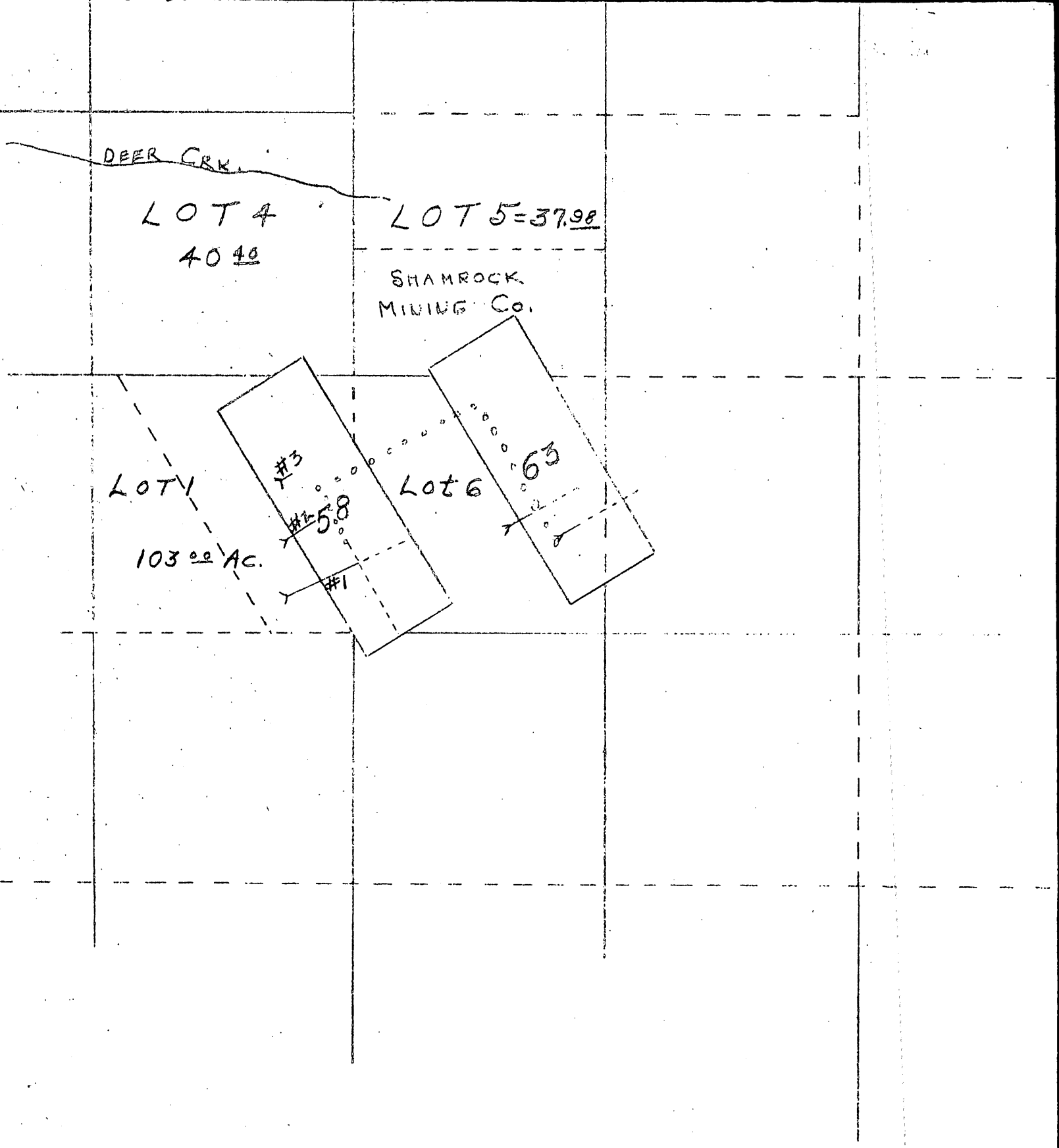
4 - Although there are good surface exposures of "silica-carbonate rock" lying to the northwest of the present mine workings, I believe that the area which offers the most promise from a geological point of view is that lying in a southeasterly direction from the present lower tunnel along the Mericoma fault to a large serpentine dike (intrusive?) about one-half mile from the lower tunnel. This serpentine mass is very clearly shown on Plate 1 of Bulletin 161 published by the California State Division of Mines.

5 - The property has produced quicksilver, the exact amount of which is unknown. It is my opinion that whatever ore has been stolen from the property has been reduced at another mine and the product recorded as all or part of the production obtained at the other mine. This, of course, would be a very effective way to conceal "high grading" activities at the Mericoma mine.

6 - An exploratory drift should be started in the South Stope where there is a good exposure of ore in the south face.

7 - Complete maps of the underground workings should be prepared and the surface and underground geology plotted thereon.

John D. Swearingen
Mining Engineer and Geologist
Registered Professional Engineer No.818
State of Nevada



John D. Lessinger
4-15-54

PROPOSED TUNNELING ------

BULLDOZING oooo

SCALE: 40 CHAINS = 1"

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