6072

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
~~XXXXXXXXXXXXXXXXXXXXXXXX~~
555 Battery Street
San Francisco 11, California

Copy

April 5, 1960

Memorandum

To: Chairman, Operating Committee, OME, Washington D. C.

From: Executive Officer, OME Field Team, Region II

Subject: Docket No. OME-6072 (Copper-Cobalt)
Fresno County Land Development Co., Inc.
and H. R. Bissell
Jesse Belle Mine
Madera County, California

Enclosed are three copies of an application report by Glenn G. Gentry, U. S. Bureau of Mines, and H. K. Stager, U. S. Geological Survey, in which it is recommended that an OME contract to explore the contract be approved.

I concur in the recommendation subject to the applicants' submitting a Performance Bond equal to the Government's share of the costs or Consent to Lien from the owner.

/s/ Glenn G. Gentry
for W. F. Dietrich

Enclosures 3

Copy to: H. K. Stager, U.S.G.S.
OME file

Reviewed by
OME OPERATING COMMITTEE

(date)

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O. M. E
RECEIVED APR 7 1960

DATE	INITIALS	CODE

UNITED STATES
DEPARTMENT OF THE INTERIOR
FRED A. SEATON, SECRETARY

OFFICE OF MINERALS EXPLORATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION II

APPLICATION REPORT

OME-6072 (Copper-Cobalt)
Fresno County Land Development Co., Inc.
Gene Parrish and H. E. Bissell, Partners
Jesse Belle Mine
Madera County, California

By

Glenn G. Gentry
U. S. Bureau of Mines

H. K. Stager
U. S. Geological Survey

April 4, 1960

Reviewed by
OME OPERATING COMMITTEE

_____
(date)

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No. 1 Letter from Applicant of February 18, 1960 relative to option to Purchase

No. 2 Letter from Applicant on March 25, 1960, relative to Performance Bond

Introduction

The Fresno County Land Development Company, Inc., represented by Mr. Gene Parrish, President, 440 East Shields, Fresno, California and his partner, Mr. H. R. Bissell, 1735 West Hampton Way, Fresno, California, applied to the Office of Minerals Exploration, for Government assistance in a program to explore for copper-cobalt minerals on a 60 acre tract of land known as the Buchaneau Ranch, or the Jesse Belle mine, Madera County, California.

The applicant wishes to explore the area to determine the possible continuation of copper-cobalt ore shoots at approximately 250 feet below the surface; to determine the size and grade of the ore shoots; and to insure a supply of ore necessary for expanding present concentrating facilities.

A field examination was requested by the Operating Committee and was made by Glenn G. Gentry, U. S. Bureau of Mines, and H. K. Stager, U. S. Geological Survey, on March 2, 1960, accompanied by Messrs. Gene Parrish and H. K. Bissell, the applicants.

The applicant's maps, attached to the application, and a report by 1/ Cox and Wyant, U.S.G.S., were carefully studied and compared with geologic exposures on the surface and the underground workings in the Jesse Belle mine. Nine samples were taken by the examiners and assayed by the U. S. Bureau of Mines.

Summary

The deposit consists of narrow discontinuous quartz chalcopyrite veins containing an average of about 3 percent copper and as much as 0.5 percent cobalt. The mine area is underlain by quartz-mica schist, gneiss, and quartz diorite.

Reserves of about 3,500 tons of ore of the above grade are indicated on the 300 and 350-foot levels of the Jesse Belle Shaft and possibly 10,000 tons of ore may be inferred in lenses within the area proposed for exploration.

The applicant proposed to explore the area by 12,500 feet of diamond-drilling, 200 feet of shaft rehabilitation, and an additional 200 feet of shaft sinking after the rehabilitation.

The potential of the deposit can be adequately tested by a less extensive program and the examiners recommend a project comprising about one-half of the work proposed by the applicant.

1/ Cox, Manning W., and Wyant, Donald G., 1948, The Jesse Belle Copper Mine, Calif. Div. Mines Bull. 144, Copper in California, pp. 151-157.

Recommendations

We recommend that the Government enter into an CME contract with the Fresno Land Development Company, Inc. to provide 50 percent of the costs of the revised program consisting of:

2500 feet of diamond drilling
installation of shaft headframe and hoist
200 feet of shaft rehabilitation
500 feet of drifting and/or cross cutting
50 samples for analyses

Total cost is estimated to be $52,802.50, of which the Government's share at 50 percent would be $26,401.25. To facilitate administration of the contract, the work should be based on unit costs insofar as possible.

Location, Accessibility and Local Facilities

The Jesse Belle mine is in the Foothill copper-zinc belt on the western slope of the Sierra Nevadas at an altitude of about 600 feet. It is in Secs. 18 and 19, T. 9 S., R. 19 E. and Sec. 13, T. 9 S., R. 18 E., MDB&M, Madera County, California. (Fig. 1).

The property is 17.2 miles NE of the city of Madera and is accessible by way of all weather and good unimproved roads from Madera. To reach the property from U. S. Highway No. 99 in Madera, travel northeasterly 1.3 miles on Yosemite Avenue then turn left (west) at the Madera Air Force Station sign and travel 0.1 mile, then turn right (north) and travel 7.9 miles, then turn right (northeasterly) on the Daulton Road and travel 6.2 miles. Then turn left, leaving the all weather road, and follow a graded dirt road 1.7 miles to the mine. Driving time from Madera to the mine is about 45 minutes.

Climate: Moderate temperatures during the winter months and hot summers. Considerable rain fall from November to about March.

Timber: None

Water: From wells adjacent to the mine.

Work Season: All year.

Electric Power: Available by construction of about one mile of transmission line.

Assay office: Fresno, California; San Francisco, California; Los Angeles, California

Supplies: Principally from Fresno, California, 37 miles.

Railroad: Madera, California, 17.2 miles

Telephone-Telegraph-Mail: Madera, California.

The applicant has rehabilitated a flotation plant on the property, adjacent to the No. 1 shaft, and is presently operating it two shifts per day, 6 days per week and treating about 35 tons of crude ore per day. Ratio of concentration is reported at about 10:1. Production of concentrates is usually one truck load (20-25 tons) per week, which is hauled by truck to Miami, Arizona.

Average analyses reported:

Mill heads	-	2.5% - 3.0% Cu.
Cobalt	-	0.2%
Au.	-	0.25 ozs./Ton
Ag.	-	1.00 ozsx/Ton

The Property

History and Production

The Jesse Belle mine was discovered prior to 1870 and has been operated and explored intermittently since that date. The California Division of Mines Bulletin No. 144, on page 152, reports: Mr. J. E. Sisson leased the property and with the aid of an RFC loan, reopened and sampled the Jesse Belle shaft and adjacent workings between November 1942 and April 1943. In January 1944, with a second RFC loan, stopes were prepared on the 200-level. The mine was operated until approximately May 15, 1944 and about 40 tons of sorted ore was shipped. The total production prior to the present operation is estimated at less than 1,000 tons of ore. The production from the Rosati shaft and the No. 1 shaft, in the area proposed for the exploration, is not definitely known though the applicants report a total of $175,000 worth of copper concentrates were shipped by the last operator to the A.S. & R. Co., Tacoma, Washington.

At some period of the mine's history a small concentrating plant was installed adjacent to the collar of the No. 1 shaft and later removed. The size of the Rosati shaft dump indicates considerable mining has been done from that location.

Production by the present operators started in August 1959 and totals about 3,500 tons of ore that averaged about 3.0 percent copper. Present rate of production is about 35 tons per day.

Ownership

The property is a part of the Buchaneau cattle ranch. The land and the mineral rights are owned by M. R. Buchaneau of Madera, California. The applicant has a 5 year lease on approximately 60 acres, beginning May 1, 1959, controlling both the surface and mineral rights. All of the proposed exploration work will be conducted within this area.

Other data pertinent to an OME contract are:

1. The owner of the land has refused to sign a consent to lien agreement and the applicant will endeavor to obtain a Performance Bond equal to

the Government's share in the cost of any contract.

2. The applicants feel that royalties to Government should not be paid on ore produced from land under lease from the Daulton that adjoins the Buchaneau ground on the south (Fig. 2) because that area will not be included in the proposed work. However, present production north of the Jesse Belle shaft on the 350-foot level is from ground in the Buchaneau lease and will therefore be subject to royalty if all of the 60 acre tract is made a part of the contract.

Financial Eligibility:

The applicant has submitted evidence of efforts made to obtain a loan for exploration purposes from two sources. Copies of the applicant's letters and the replies thereto are attached to the application. The applicants will submit their financial statements and on March 25, 1960 were endeavoring to obtain a Performance Bond.

Development:

The Jesse Belle two compartment, vertical shaft is in ground covered by the Daulton lease. Is 300 feet deep, with levels at 100-200 and 300 feet. From the 300-foot level and 50 feet north of the shaft, a winze has been sunk 50 feet to the 350-foot level which extends 140-feet north of the winze and 80 feet south of the winze. Present production is obtained from an ore shoot about 5 feet wide and 125 feet long on this level.

The Buchaneau property has been developed by the North Shaft, 100 feet deep, and which now is an air shaft and a 2nd exit from the Jessie Belle workings; the No. 1 Shaft, now caved and reported to be 200 feet deep, the Rosati Shaft, now caved and reported to be about 200 feet deep, numerous shallow shafts and open cuts, mostly caved and all inaccessible.

Mining costs are estimated at $9.00 per ton. The rock is hard, stands well and very little timber support is required.

Geology

Geologic Setting:

The geology of the Jesse Belle mine area is described in detail by Cox and Wyant. The following brief description with minor additions and modifications is taken from their report.

The mine area is underlain by quartz-mica schist and gneiss, intruded by a stock of quartz diorite (Fig. 2). The metamorphic rocks strike northwest and dip steeply eastward. Shear zones in the metamorphic rocks strike N. 10°-25° W. and N. 45°-60° W. and contain chalcopyrite-quartz veins. Lenses of massive quartz that trend N. 45°-60° W. and dip steeply eastward occur along the east margin of the area. These quartz lenses are barren and the relationship to the ore veins has not been determined.

Schistosity in the metamorphic rocks strikes N 20°-25° W and dips 80°-85° east. There are two sets of flat joints in the area that trend N 45°-60° W and N 55°-70° E, and in general dip less than 15°. These joints are offset along the shear zones and in the mineralized areas they are filled with sulfide-quartz veinlets as much as three inches thick. A set of vertical or steeply dipping joints that strike about N 70° E cut the rocks throughout the area but are most abundant and closely spaced in the area of the Rosati Shaft, No. 1 Shaft, and Jesse Belle ore bodies.

The presence of small stocks of quartz diorite and the proximity of the Sierra Nevada intrusives suggest that granodiorite rocks may underlie the area at shallow depth, on the order of 1,000 feet. The shear zones and veins appear not to extend into the massive intrusive rocks south or north of the mine area. If an analogous relationship exists in the underlying intrusive rocks the downward extent of the veins is limited.

Ore Deposits:

The ore deposits consist of chalcopyrite-rich quartz veins in shear zones cutting schist. The veins contain chalcopyrite, pyrite, pyrrhotite, and cobaltite, in a gangue of quartz, biotite, muscovite, feldspar, graphite, and some epidote. Quartz comprises from 10 to 90 percent of the veins but the average is about 70 percent. Metallic minerals comprise from 1 to 80 percent of the veins and the average is about 5 percent. At least 75 percent of the metallic mineral content is chalcopyrite; pyrite makes up from 10 to 25 percent; pyrrhotite and cobaltite are rare. Chalcopyrite and pyrite occur together in fine-grained aggregates in which individual crystals are difficult to recognize. Cobaltite is intergrown with the sulfides in cubes and pyritohedrons, some of which are cut by chalcopyrite veinlets.

The ore bodies range from small pods a few feet in diameter and containing less than a ton of ore to large shoots 40 to 150 feet in length, as much as 10 feet thick, extending down dip for over 500 feet and containing over 10,000 tons of ore. The shoots generally rake about 75° north. The grade of the ore ranges from less than 1 percent to as much as 20 percent copper, from a trace to 0.5 percent cobalt, from a trace to about 0.4 ounce of gold, and a trace to 6 ounces of silver per ton. The average grade of the ore being mined is about 3 percent copper, 0.3 percent cobalt, 0.1 ounce of gold, and 0.5 ounce of silver per ton.

Of the several areas the applicants have proposed to explore, the most favorable is the area of the No. 1 Shaft (Fig. 2). In this area there is a well defined vein along a shear zone with a strike length of over 700 feet. This zone is cut by a zone of closely spaced joints that is over 300 feet wide, extending about 200 feet north and 100 feet south of the No. 1 Shaft. Old workings, caved at a depth of about 30 feet, indicate that an ore body about 3 feet wide and 100 feet long, was mined to an unknown depth. The No. 1 Shaft is reported to be about 200 feet deep. The downward and lateral extent of this ore body is the target of the proposed exploration.

Sixteen men are employed in the mining operations, working 2 shifts per day and 6 days per week. Miners receive $2.00 per hour and other mine labor $1.75 per hour.

Sampling:

Sample No.	Feet Width	Ozs/Ton Au.	Ag.	Percent Cu.	Co.	Description
1	1.8	Tr.	Tr.	0.03	0.03	300-level, fault zone 290' No. of shaft
2	2.0	Tr.	0.10	0.15	0.03	300-level, end of west X-cut, 90' So. of shaft
3	Grab	0.06	0.80	3.02	0.25	350-level, muck pile in drift, No. of winze (Mining in this section)
4	0.8	0.36	5.95	18.20	0.50	350-level, high-grade sulphide ore, 20' So. of manway to 300-level
5	Grab	0.02	0.30	0.72	0.10	From truck load of ore to mill. Produced from 350-level in areas same as samples 3 and 4
6	"	0.03	0.30	0.83	0.07	Head sample to ball mill
7	"	0.02	0.20	0.20	0.06	Mill Tails
8	"	0.04	0.40	1.13	0.03	Mill Table Heads
9	"	0.48	4.50	20.97	0.40	Flotation Concentrate

Ore Reserves:

The Jesse Belle mine area has yielded a total of about 5,000 tons of ore and has been mined to a maximum depth of 350 feet. The operators estimate about 2,000 tons of measured ore with an average grade of about 3 percent copper, 0.3 percent cobalt, 0.1 ounce of gold, and 0.5 ounce of silver per ton, is blocked out above the 350-level of the main Jesse Belle workings. Below the 350-level, to a depth of about 130 below the level, diamond-drilling has indicated about 7,500 tons of ore of the same grade. A study of the drill logs and mine exposures indicates that these estimates are reasonable. It is also reasonable to infer that the ore shoot extends 100 feet below the test holes and contains an additional 5,000 tons of ore.

The geologic setting in the area of the No. 1 Shaft is similar to that at the Jesse Belle ore body and it is inferred that an ore body of similar size and grade, containing about 20,000 tons of ore, exists in this area and will be found by the proposed exploration.

Exploration

Applicant's Proposal:

The applicant proposed to diamond-drill a total of 12,500 feet in about 50 holes to prospect the northward extension of the Jesse Belle veins, the area adjacent to the Rosati shaft and west of the Jesse Belle shaft. If the diamond drilling was successful, he proposed to clean out and retimber the No. 1 Shaft, estimated to be 200 feet deep, and sink the shaft an additional 225 feet. Total cost of this program was estimated at $128,250.

Examiners' Proposal; Costs:

The examiners consider that a smaller project would be sufficient to explore the most favorable area in the vicinity of the No. 1 Shaft. The work would consist of two stages; Stage 1 consisting of 10 drill holes totaling not more than 2,500 feet, to test the vein at a depth of about 200 feet, and Stage 2 consisting of 200 feet of shaft rehabilitation, 500 feet of drifting and/or cross cutting on the 200-level. The work under Stage 2 should be dependent upon the results of Stage 1.

Consideration was given to other methods of exploration such as trenching, churn drilling and drifting northward on the present 300-level of the Jesse Belle Shaft. The drifting is not practicable as the operators have been ordered by the California State mine inspector to completely repair the shaft, and the distance to the estimated geological target area is 800 feet. Churn drilling is not practical as the veins are nearly vertical and trenching has been done in the past without satisfactory results.

The examiners consider the following exploration is justified:

Stage 1:

10 diamond drill holes, not less than AX in size, inclined as required, each about 250' deep, at $7.00 per foot (includes any necessary preparation of drill sites, hauling water)	$17,500.00
250 core boxes at $1.25 each	312.50

Stage 2: (Dependent upon results obtained in Stage 1)

Installation of shaft headframe, hoist and collar sets at No. 1 Shaft	$ 1,500.00
Install adequate shaft timbering from collar of No. 1 shaft to present water level (32 ft.) at $45/ft.	1,440.00
Unwater, retimber and/or rehabilitate about 168 feet of No. 1 shaft at $100/ft.	16,800.00
From the bottom of the No. 1 Shaft, leaving a 5' sump, drift and/or cross cut 500 feet at $30/ft.	15,000.00
50 samples (4 determinations each) to be assayed for Au., Ag., Cu., Co. at $5.00 each	250.00
Total estimated cost	$52,802.50
Government's share at 50%	26,401.25

Time required: 12 months.

The operators will furnish all supervision, engineering, labor, materials, supplies, insurance and equipment necessary to complete the project at the above costs and at no additional cost to the Government. The operators estimated costs are reasonable and acceptance is recommended.

The Field Team believe it is important to complete Stage 1 drilling and evaluate the results prior to authorizing Stage 2, because if Stage 1 is not successful it is doubtful that the size of the geological target will justify work of Stage 2.

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

OME-6072
(Copper-Cobalt)

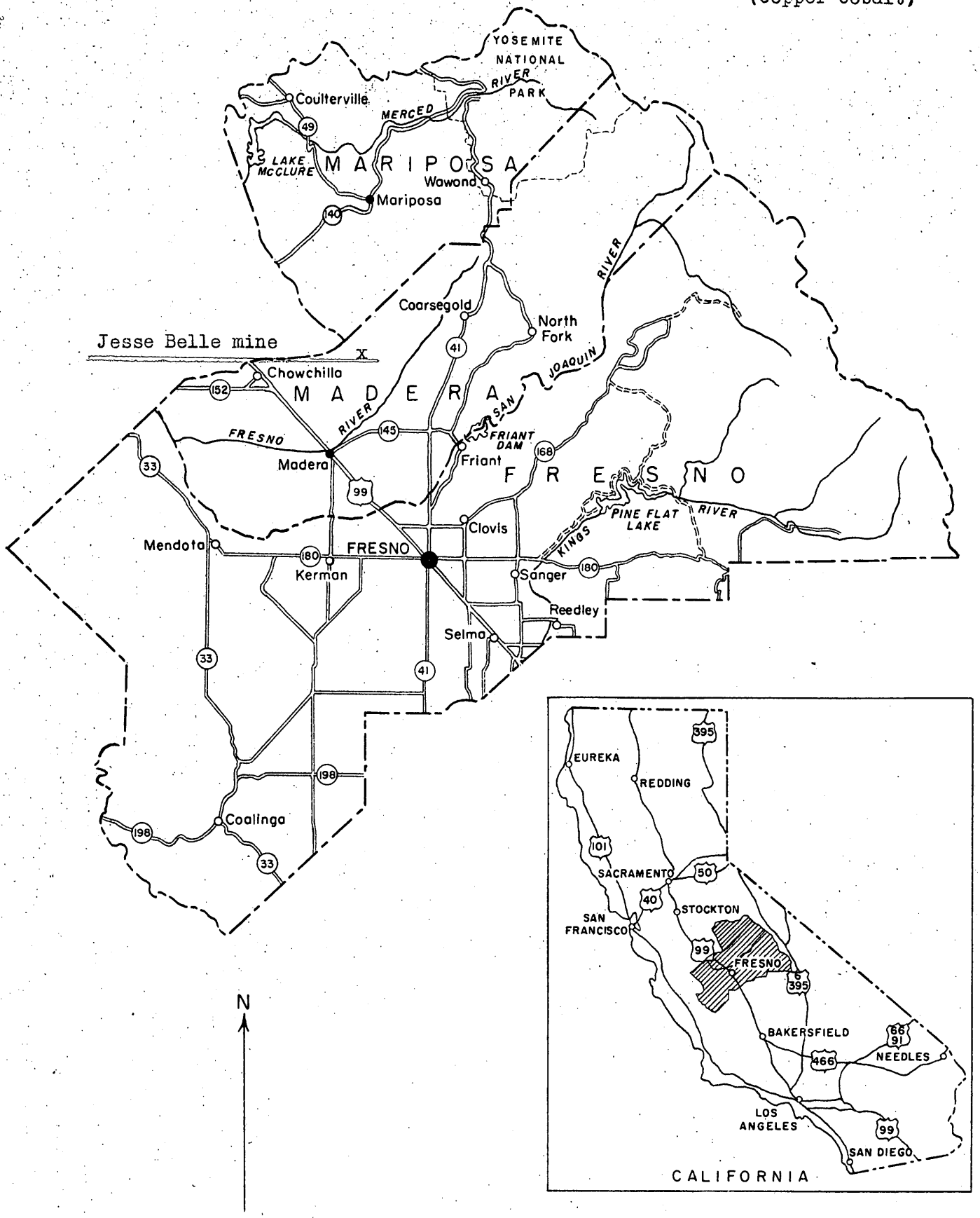

Figure 1. INDEX MAP OF FRESNO, MADERA, AND MARIPOSA COUNTIES, CALIFORNIA

0 20 40 60 Miles

EXTRA COPY.
O. M. E.
RECEIVED APR 7 1960

DATE	INITIALS	CODE

United States Department of the Interior
Geological Survey

OME-6072
(Copper-Cobalt)

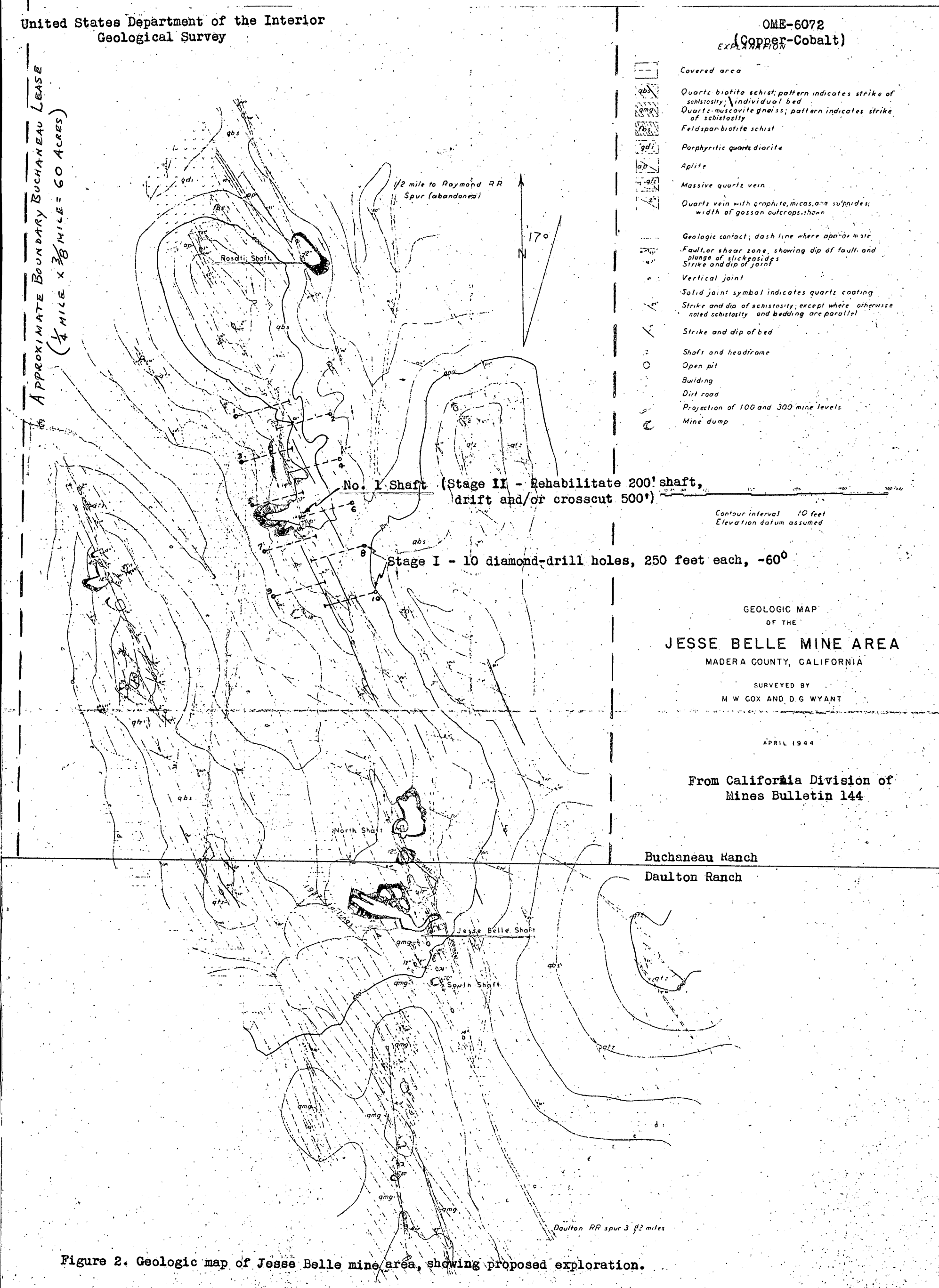

Figure 2. Geologic map of Jesse Belle mine area, showing proposed exploration.

BUREAU OF MINES
MINERAL
REGION

Gene Parrish Realtor

44 E. SHIELDS AVENUE
FRESNO 4, CALIFORNIA
BAldwin 7-2973 — BAldwin 7-3037

INVESTMENTS and DEVELOPMENT

Fresno County Land Development Company, Inc.

February 18, 1960

Mr. W. J. Dietrich, Executive Officer
MC Field Team, Region 2
United States Department of the Interior
Office of Minerals Exploration
555 Battery Street
San Francisco 11, California

Re: Docket No. MC-602 (Copper-Cobalt)
Fresno County Land Development Co., Inc.
and H. R. Bissell
Jesse Belle Mine
(Sec. 13, T. 9 S., R. 18 E., MDB & M)
Madera County, California

Dear Mr. Dietrich:

Re your letter of February 17, 1960.

We do not intend to exercise the option to purchase provided for in our mining lease of the Jesse Belle Mine.

Very truly yours,

Fresno County Land Development Company, Inc.

Gene Parrish, President.

GP:va

Exhibit No. 1

Gene Parrish ... Realtor

GENERAL OFFICES
440 E. SHIELDS AVENUE
FRESNO 4, CALIFORNIA
BAldwin 7-2973 — BAldwin 7-3037

MAR 1960
DIVISION OF
INDIAN RESOURCES

INVESTMENT DEVELOPMENT

Fresno County Land Development Company, Inc.

S.G.P. Company, Inc.
Fresno, California

Windsor Forest Subdivision
Fresno, California

Windsor Forest No. 2
Fresno, California

Northdale Subdivision
Fresno, California

New Fig Garden No. 1
Fresno, California

New Fig Garden No. 2
Fresno, California

Fremor Motel
Fresno, California

Highland Towers Apartments
Hollywood, California

Jesse Belle Mine
Madera, California

Sequoia Hospital
Fresno, California

Clovis Hospital
Clovis, California

Monterey Estates
Fresno, California

March 25, 1960

Route to:	Init.
DEERICH	

Mr. W. J. Dietrich, Executive Officer
OME Field Team, Region 2
U. S. Department of the Interior
Office of Minerals Exploration
555 Battery Street
San Francisco 11, California

Re: Docket OME-0072 (Copper-Cobalt)
Fresno County Land Development Co., Inc. and H. R. Bissell
Jesse Belle Mine
Madera County, California

Dear Mr. Dietrich:

Thank you for your reply of March 22, 1960.

It would appear that if we can furnish the bonding company, who requires a disinterested report, with a copy of Mr. Gentry's and Mr. Staiger's inspection report on the Jesse Belle Mine--they will write the bond required.

We would appreciate your furnishing this information as quickly as possible.

Thank you for your cooperation in this matter.

Very truly yours,

Fresno County Land Development Company, Inc.

Gene Parrish, President

EXHIBIT No. 2

GP:va

April 14, 1960
Re: OGX 0072 (Copper-cobalt)
Fresno County Land Development Co., Inc.
Exchequer Lease
Jesse Belle Mine
Madera County, California

Memorandum

To: W. E. Griswold, Office of Minerals Exploration

From: Harold Kirkham, U. S. Geological Survey

Subject: Review of Field Team Report

The field examiners recommend a two-stage program estimated to cost about $52,000 but caution against authorizing Stage II if Stage I is not successful.

The probability of discovering large reserves of ore is not favorable. The probability of repayment to the Government for support of the field examiners' proposed two-stage program is not good. I suggest using the same drill hole footage (2,500 feet) in a revised pattern of drill holes as Stage I and allowing another 2,500 feet of drilling under Stage II instead of rehabilitating No. 1 shaft, drifting, and crosscutting.

It is estimated that 20,000 tons of ore averaging 3 percent copper, 0.3 percent cobalt, 0.1 ounce gold, and 0.5 ounce gold per ton may be found by the proposed exploration recommended by the field examiners. Possible royalty to the Government on this ore, if mined, might total between $13,000 to $18,000. This would repay the Government for its share in the cost of drilling but would repay only 70 percent of the Government's share in the cost of the proposed drilling, rehabilitation of No. 1 shaft, drifting, and crosscutting. The problem of recovering cobalt from the ore is evident from the Applicant's correspondence with The Gallicher Company. No income from the cobalt content of the ore is expected in the foreseeable future.

Drill holes proposed by the Field Examiners as Stage I would test to a depth of about [illegible] feet from the surface. In the vicinity of No. 1 shaft the bottom of proposed holes 5, 6, and 7 would be about 80 feet below the reported bottom of No. 1 shaft and any old workings extending along the vein from the bottom of the shaft. These holes would be too close to previous workings so I suggest that a deeper test of the vein structure ([illegible]-foot drill hole at -60°) be considered in the vicinity of No. 1 shaft or that the drill footage proposed for holes 5, 6, and 7 be used to test the vein structure north of proposed hole 1 and south of proposed hole 10.

I suggest wider spacing of holes in order to test the vein structure between the Hosali shaft and the south boundary of the Buchanan lease. The strike length of individual ore shoots in this mine is reported to range from 40 feet to 150 feet. Drill holes spaced 100 to 150 feet apart (as compared to about 40 feet shown on Figure 2 of the Field Examiners' report) would test for the larger ore shoots that might exist in the unexplored vein segments. This would permit exploring nearly triple the length of the original target (1,100 ft. vs. 400 feet). Ore shoots discovered under Stage I drilling could be further tested by drilling under Stage II. A new application could be submitted if the results of drilling warranted underground exploration. The size and position of newly discovered shoots might justify sinking a new shaft instead of rehabilitating No. 1 shaft.

Harold Kirkham

cc: OME (3)
Director's reading
Branch reading
A. D. McMahon, 3623
Chron. file
Docket file

HKirkham/mm
0-MO-4-14-60

April 15, 1960

Memorandum

To: W. R. Griswold, Office of Minerals Exploration

From: Commodity Specialist, Branch of Base Metals

Subject: Review of Application Report, Docket No. OME-60/2 (Copper-Cobalt), Fresno County Land Development Co., Inc., Jesse Belle Mine, Madera County, California, $52,802.50.

A field examination of the above-cited property revealed that the potential of the deposit could be adequately tested with approximately half the work proposed by the applicant. Accordingly, the examiners recommended that the Government enter into a contract for a two stage exploration program consisting of; 2,500 feet of diamond drilling, installation of shaft headframe and hoist, 200 feet of shaft rehabilitation, 500 feet of drifting and/or crosscutting, and analyses of 50 samples. This work is considered sufficient to explore the most favorable area. Stage I consists of 10 surface diamond drill holes for a total of 2,500 feet. The underground work proposed for Stage II will be dependent upon the results of Stage I drilling.

Mr. Harold Kirkemo, U. S. Geological Survey, has proposed using the 2,500 feet of diamond drilling in Stage I to test the full length of the vein structure between the Rosati shaft and the south boundary of the Buchanan lease by wider spacing of the holes. He also suggests that Stage II should provide for additional concentrated drilling to delineate favorable ground penetrated by Stage I testing.

An investigation of the larger area with a two stage drilling project offers a means of obtaining the most exploration information for the funds expended. Therefore, it is recommended that the Field Team and the Examiners be asked to consider and report on Mr. Kirkemo's proposal before any action is initiated on the contract recommended by the Examiners.

A. D. McMahon

A. D. McMahon

A.McMahon/nf

Copy to: Division of Minerals (2)
Branch of Base Metals (2)
Harold Kirkemo, U.S.G.S.
Files

February 8, 1960
Re: OME 6072 (Copper, cobalt)
Fresno County Land Development Co., Inc.
Buchanan Lease
Jesse Belle Mine
Madera County, California

Memorandum

To: W. R. Griswold, Office of Minerals Exploration

From: Harold Kirkemo, Geological Survey

Subject: Review of application for exploration assistance

A project costing $128,250 and consisting of 12,400 feet of diamond drilling, shaft rehabilitation, and 900 feet of drifting is proposed. The proposal is to diamond drill from the surface to depths of 250 feet or more to test the ore possibilities of groups of veins occurring along nearly one half mile of shear zones. If ore is found by drilling, underground work would follow.

The applicant has had experience exploring, developing, and mining ore bodies in the Jesse Belle mine. His summary of operations in 1959 indicates that he recognizes the uncertainties involved in looking for similar deposits. The individual ore bodies discovered thus far are rather small lenses which occur erratically along shears. The grade of ore, however, warrants serious consideration of the proposal.

Copy of the chapter in California Bulletin 144 pertaining to the Jesse Belle mine which was attached to the application is not complete. The information on page 157 in the bulletin applies particularly to the area proposed for exploration.

I recommend that the application be referred to the Field Team.

Harold Kirkemo

Application for JMB 2/12/60

cc: OME (3)
A. D. McMahon, 3623
Director's reading
Branch reading
Chron. file
Docket file

HKirkemo/adb
G-MD-2-8-60