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

GEOLOGICAL SURVEY

Mr. Silverhaole Mining Company
P. O. Box 799
Aspen, Colorado 81611

Re: OME-6466 (Gold)
Mt. Silverhaole Mining Company
Iron Mountain Claims
Park County, Colorado

Gentlemen:

Careful study of your application for financial assistance in exploring the subject property and of other information available to us indicates that the probability of disclosing significant ore reserves on the property is not sufficiently promising to justify Government participation in the proposed exploration. Accordingly, we regret to inform you that your application for exploration assistance is denied.

Sincerely yours,

(signed) FRANK E. JOHNSON

Frank E. Johnson
Chief, Office of
Minerals Exploration

GCSelfridge/mm (7/16/63)
cc: Director's Reading File
Division File
Economic Geology File
OME File
OME Reading File
Region III
Mr. Selfridge (2)
LRM

Bldg. 20, Denver Federal Center
Denver, Colo. 80225

July 13, 1965

Memorandum

To: George C. Selfridge, Chief
Office of Minerals Exploration
Geological Survey
Washington, D. C. 20240

From: Acting Field Officer, OME, Region III

Subject: OME-6468 (Gold)
Mt. Silverheels Mining Company
Iron Mountain Claims
Park County, Colorado

This responds to your memorandum of July 8, 1965 on the subject docket.

I fully concur that this application be denied without a field examination.

The story I get is that the McCulloch Oil Corporation of California dropped about a million dollars on this one. Ed Smart, a close friend of McCulloch, is trying to pull the irons out of the fire with this application. They came to us two years too late for us to save them some money.

Hugh M. Connors

H.M.Connors (7-13-65)

cc: 6468
Chron

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WASHINGTON 25, D. C.

GEOLOGICAL SURVEY

OME
DEPARTMENT OF THE INTERIOR
JUL 12 1965
REGION III
DENVER, COLORADO

JUL 8 1965

AIRMAIL

Memorandum

To: Acting Field Officer, Region III

From: Chief, Office of Minerals Exploration

Subject: OME-6468 (Gold)
Mt. Silverheels Mining Company
Iron Mountain Claims
Park County, Colorado

U.S.G.S. Bulletin 928-A discusses so many factors unfavorable to making a significant discovery by the proposed work on the subject property as to indicate that even an on-site examination is not warranted as suggested by the following excerpts therefrom.

Page 1 - Abstract

Surrounding the small stock is a zone of intense contact metamorphism, which grades outward into unmetamorphosed rocks. The metamorphosed zone coincides with the area of principal mineralization. The ore deposits consist of (1) veins and veinlets among fissures, (2) replacement bodies in metamorphosed limestone adjacent to fissures, and (3) countless veinlets in extensively fractured porphyry or other brittle rock. An early stage of mineralization caused widespread deposition of epidote and chlorite, accompanied locally by garnet, magnetite, specularite, and other minerals. Zoning away from the stock is indicated by the distribution of magnetite and specularite and by the relative coarseness of garnet crystals. A later stage caused deposition of pyrite and quartz throughout the mineralized area. At the end of effective deposition the temperature of the ore-forming solutions was still too high to permit deposition of sphalerite or other later sulfides except at two places.

The ore-forming solutions, in the absence of master channels, spread into innumerable small fissures, and the resulting deposits, though abundant, are small and scattered. Very small amounts of gold accompany pyrite and quartz. The most favored places for prospecting have been at the intersections of veins with limestone beds.

The area is not a favorable one for prospecting. Small ore shoots may perhaps be located by following some of the

stronger veins to their intersections with limestone beds, but the thickest and most persistent limestone, at the base of the middle division, is too far from the source of mineralization to be productive along its outcrop and too deep for prospecting in most of the mineralized area. Prospecting at depth for deposits in the Leadville limestone or Dyer dolomite member of the Chaffee formation (Blue limestone of the Leadville and Alma districts) is out of the question.

Page 29. Numerous prospect pits in the Beaver-Tarryall area prove extensive mineralization by ore-forming solutions. The known deposits, however, are small, discontinuous, and of low grade. Although no records exist, it is certain that the total production of the district, exclusive of placers, has been only a few hundred tons of ore.

. . . .

The number of veins and veinlets within the mineralized area is tremendous. Few of them are more than 6 inches wide or more than 100 feet long. . . . Pyrite and quartz . . . are the chief constituents. Characteristically, the pyrite and quartz occur as intermittent lenses within narrow shear zones. Nearly all contain a little gold, yet assays rarely exceed half an ounce to the ton. Apparently the best assays are obtained where the pyrite has been oxidized to limonite. . . .

Page 30. Hypogene minerals other than pyrite and quartz are rare. . . . Dark sphalerite with a purplish tone has been found in specimens from two of the principal properties but is absent or rare elsewhere. . . . Galena has not been seen on any of the dumps, although small quantities have been reported from a prospect in Scott Gulch.

. . . .

All these minerals--garnet, epidote, magnetite, and specularite--belong to an early contact-metamorphic stage of mineralization, for they clearly are older and extend for much greater distances from the fissures than pyrite and quartz. . . .

Page 31. . . . .

Original work on the Ute property was done from a shaft . . . . . Specimens on the dump contain magnetite, subordinate pyrite, ~~and minor quarter pyrite,~~ and minor quartz

intergrown with varying quantities of epidotized country rock.

Page 32. . . . .

> In order to get under the older workings, an adit was later driven westward from Deadwood Gulch. . . . In 1938, most of the adit was inaccessible because of bad air, but part was mapped as shown in figure 1. Two prominent sulphide veins are reported beyond the portion mapped. They consist, according to specimens on the dump, of dark sphalerite . . . and pyrite in nearly equal proportions, minor amounts of calcite and quartz, and diverse proportions of altered sedimentary country rock. Neither vein was sufficiently rich in gold to be exploited.

Although the application mentions that the Ute tunnel, reportedly 1,535 feet in length, did not cut the Mineral Ranch vein, lacking another 150 feet, it seems unlikely that it did not do so. The Applicant has not submitted information which would refute that of the U.S.G.S. Bulletin. Under the circumstances, we would be inclined to deny the application without a field examination. May we have your comments?

Frank E. Johnson

Frank E. Johnson

INTRODUCTION

This application is made by Mt. Silverheels Mining Company, Inc., a Colorado Corporation, to explore for silver and gold in the Beaver-Tarryall Mining District, located about four miles north of Como, Colorado. The lands submitted in this application consist of patented and unpatented mining claims, all held under long term lease. The work will be performed by a mining and drilling contractor, chosen from a list of formal bids. The applicant will contribute all work of an engineering, geological, and administrative nature. Because of the past history of this property, and the results of our preliminary work which indicate that the former operators may have overlooked certain areas of favorability, described in detail in this report, we believe the project outlined for the discovery of additional mineral reserves is of the type contemplated by the Office of Mineral Exploration.

1. FINANCIAL ELIGIBILITY

(a) The applicant applied to the Bank of Aspen, its local depository, for a loan of $82,712.00, the amount requested in this application. The loan was denied. The applicant also applied to The First National Bank of Glenwood Springs, Colorado, for the same amount, and this loan was denied. Both banks consider this type of loan inappropriate for their business to undertaken. Copies of correspondence are included in Exhibit No. 1.

(b) The sole interested party in this application is:

Mt. Silver Heels Mining Company
P.O. Box 799
Aspen, Colorado 81611

(c) Applicant's share of the cost of the exploration work will be furnished from internal sources.

(d) Applicant is financially prepared to pay the total cost of operation until reimbursement is made.

(e) Applicant would not undertaken full expenditure of the proposed exploration program without financial assistance.

2. APPLICANT'S RIGHTS IN LAND

The applicant, Mt. Silver Heels Mining Company, has leases to cover the subject premises (see Claim Map attached.) Leases were assigned to Mt. Silver Heels Mining Company by McCulloch Oil Corporation of California on May 26, 1965 (see Exhibit No. 4).

1. Mining Lease - between Martin Edwards, Lessor, and McCulloch Oil Corporation of California, Lessee, made July 25, 1963. Recorded in Book 179, Page 359 in the Official Records of Park County, Colorado, on April 15, 1964. Lease attached as Exhibit No. 2a. The assignment of this lease to the applicant is attached as Exhibit No. 4.

2. Mining Lease - between Martin Edwards, Lessor, and McCulloch Oil Corporation of California, Lessee, made November 1, 1964. Recorded in Book 184, Page 320 in the Official Records of Park County, Colorado, on December 10, 1964. Lease attached as Exhibit No. 2b. The assignment of this lease to the applicant is attached as Exhibit No. 4.

3. Mining Lease - between Charles Gresser, Lessor, and McCulloch Oil Corporation of California, Lessee, made January 31, 1963. Recorded in Book 176, Page 331 in the Official Records of Park County, Colorado, on May 13, 1963. Lease attached as Exhibit No. 3. The assignment of this lease to the applicant is attached as Exhibit No. 4.

4. Proof of Ownership by Lessors (Edwards - Gresser)

   (a) Complete abstracting of Edwards-Gresser claims done by applicant, copies on County records and in applicant's files.

   (b) Tax list of patented claims from Treasurer's Office, Park County, in company files.

3. PHYSICAL DESCRIPTION

(a) None

(b) None

(c) Production - Very little production has resulted from the property other than that of placer gold from the placer operations in Deadwood and Little French gulches. Mr. Liebelt and family lived at the Liebelt cabin for 52 years and apparently were supported by returns from the placer operation. Some ore has been shipped from the Mineral Ranch shaft, which reportedly ran $32 to $285 per ton, but the tonnage is unknown. During the past 10 years, placering has been done in Deadwood gulch, just below the Ute tunnel.

(d) Ore Reserves - No ore reserves are presently known on the property.

(e) Geology - All geologic features are shown on the accompanying 100 scale map. District geology is well summarized in USGS Bulletin 928-A; Stratigraphy, Structure, and Mineralization in the Beaver-Tarryall Area, Park County, Colorado, by Quentin D. Singewald.

Rock Types - Principal rock type in the Iron Hill area is the Permo-Pennsylvania Maroon formation. The outcropping beds are part of the upper division consisting of red bedsshale, sandstone, and conglomerate. These are usually micaceous or feldspathic, and limestones are rare. Thickness of the upper division is about 4000 feet, and of the total Maroon formation, 9500 feet.

The second principal rock type is Tertiary monzonite porphyry, which is a light greenish-gray, quartz-poor monzonite. It comprises intrusive stocks, as well as sills, throughout the district, all of which are part of or related to the Montgomery Gulch stock. Feldspar and

hornblende phenocrysts are small but abundant, and the groundmass is dense. The sills are unusually continuous, having been mapped for lengths of 5 miles. They generally follow the N-S bedding but change considerably in thickness from inches to as much as 1000 feet.

A second minor igneous rock was seen above the Upper Fannie B dump - a light pink granite dike.

Structure - The structures of economic importance are the shear zones along which sulphides have been deposited to form the veins. Each vein is usually a number of separate mineralized fractures fairly close together rather than a single fault-fissure vein. These usually trend NW with only the Mineral Ranch structure about N-S to N10°W. Dip of the sedimentary beds is generally about 45°E, but varies from 20°-80°, and the strike also bends considerably around the monzonite intrusives. Tight folding of the Maroon beds is evident near a large fault, 250 feet in the Ute Tunnel.

Alteration and Metamorphism - The features of contact metamorphism are particularly pronounced in the district and should be given special attention. The Maroon red beds are changed to a green color or bleached by the numerous monzonite porphyry intrusives. Silicification is always a result, as well as varying but considerable amounts of epidote, garnet, chlorite, magnetite, and specularite. Every outcrop of Maroon formation on Iron Hill is strongly metamorphosed, with the exception of that in the road cut south of the Ute tunnel. Occurrence of the contact minerals is in layers, irregular masses, and disseminations. Alteration of the beds in the area back of the mill takes the form of bleaching and silicification. The aureole of contact metamorphism around the Montgomery Gulch stock covers an area 4 miles in diameter, and therefore is quite a major geologic feature.

Mineralization - The mineralized shear zones comprising the gold-silver veins vary from a few feet to as much as 80 feet, but only certain portions appear to be well-mineralized enough to have any economic interest. Sulphides are pyrite and chalcopyrite with usually a considerable amount of magnetite. Sphalerite and pyrrhotite are also present im minor amounts. Epidote and garnet are also common, but these contact minerals, including magnetite, are also present throughout the contact metamorphic aureole around the Montgomery Gulch stock. Undoubtedly, the placer gold of considerable past interest, has been derived both from erosion of the veins and of the disseminated mineralization associated with the contact minerals. From an examination of placer nuggets, the native gold is known to occur with the pyrite and pyrrhotite.

Four veins of possible interest were defined by a combination of geologic and magnetic work; the Mineral Ranch, Saddle Pass, Liebelt, and Reservoir veins. Three other veins, the Crusher Site, "L" Iron, and Big Iron Dike, are located about one mile northwest outside the property and were not studied. Strike of the Saddle Pass and Reservoir veins is N50°-65°W, of the Liebelt vein, N45°W, and of the Mineral Ranch, N5°-15°W. Dip of these veins is usually eastward and varies from 45°75°, except for the Reservoir vein which dips 70°-85°SW. Of these, the Saddle Pass vein is least well-defined and really consists of a 125-foot zone of disseminated sulphide and magnetite concentrations. From the map it can be seen that the Liebelt vein possibly junctions with the Reservoir vein near the mill site. The only vein possibly explored at depth is the Mineral Ranch, which was the target of the

Ute tunnel. The reported length of the Ute tunnel, 1535 feet, should have cut the vein, but the old Turner engineers report states that another 150 feet had to be driven. If this is so, the dip steepens a great deal from the 42° at surface.

Magnetite, pyrite, and quartz appear to be the main vein constituents, as shown by the Mineral Ranch vein outcrop of one foot of massive magnetite and pyrite. The others have both bunches and disseminations of magnetite and pyrite over widths of 50-60 feet. The Liebelt vein consists of a number of narrow veins over a width of 30 feet; in the cut SW of the saddle, two definite oxidized veins are 2.5 and 3 feet wide. Distribution of mineralization between the monzonite porphyry and sedimentary host rocks is yet unknown, but this must be considered in exploration. At a number of prospects in the district, values have been concentrated at intersections with limestone beds. However, because of rather extensive soil and glacial cover, the extent of these limestones is very difficult to ascertain.

An interesting occurrence is the myriad of pyrite-quartz-calcite veinlets comprising the Reservoir vein near the mill site. Two samples of this material showed only small amounts of gold-silver, but previous more extensive sampling done in testing the placer ground seemed to indicate an abnormal concentration of gold-silver in the bedrock.

(f) Reasons for Expecting to Find Ore - The Mineral Ranch vein is considered the best possibility for higher-grade ores, in view of its massive magnetite and pyrite and since higher-grade ore was shipped from one ore-body. As is typical of veins of this type, only where structural and lithologic conditions are favorable will an ore shoot

be localized. Two samples were taken at the shafthouse:

	Oz Au/ton	Oz Ag/ton
Outcrop - 2.5' vein	.10	1.05
Grab of vein material-dump	.11	1.10

Since neither of these is ore grade, they indicate only the presence of appreciable gold-silver values, and an ample potential, both horizontally and vertically, exists for the discovery of one or more orebodies. The Reservoir vein also warrants exploration near the mill site, where it is highly sheared and altered by hydrothermal solutions and where numerous veinlets are present over a zone at least 50 feet wide. This presents a possibility for a large tonnage of low-grade open-pit ore, and the location right in back of the mill is very favorable for a low-cost operation.

4. ACCESSIBILITY OF THE PROPERTY

A. OME Representation - The OME representative who may wish to examine the property should contact Edwin J. Smart, at Aspen, Colorado, or Charles Melbye at Golden, Colorado. The property lies approximately five miles north of Como, Colorado. Numerous surface cuts and approximately 900 feet of the Ute tunnel are open for inspection. A good, well-maintained dirt road runs from Como to the property and a number of jeep roads give good access to all of the property.

B. Shipping and Supply Points - The principal supply point for the operation would be Denver where all mining supplies are available for any size mining operation. Water is available at the property but power would be supplied by generators which are available on the property. There is no local mine labor supply; however, mine labor is believed to be available from the surrounding Colorado mining camps.

5. EXPLORATION WORK

(a) Description of Proposed Work - In all proposed drilling, angle holes must be drilled since the veins dip steeply. Holes will be collared NX and continued as far as ground conditions permit and then completed BX or AX size. Depending on which the contractor has equipment for, core size should be specified either standard NX, BX, and AX or wireline NX, BX, or AX sizes. The entire holes should be cored. In regard to casing, reaming, and cementing, a total of 80 hours is allotted, or 16 hours per hole. All holes will be by surface drilling.

Underground cross-cutting and drifting will be completed 5' x 7' size where untimbered and 6' x 8' where timber is required, thereby keeping 5' x 7" in the clear. It is estimated that 50% will require timber.

With regard to supervision, a resident superintendent and a part-time consulting geologist are proposed as being adequate supervision for this project.

Mineral Ranch Vein

Stage I	Drilling	1000 feet
Stage II	Cross-cutting	500 feet
	Drifting	1000 feet

Two holes are proposed at -45° angles to explore the vein midway between the Mineral Ranch shaft and the Ute tunnel. This total distance is 580 feet vertically or 900 feet along the dip. (See cross-section) Although 400-foot holes should be adequate, 500 feet per hole is allowed in case the dip steepens, necessitating more drilling.

If the drilling under Stage I is favorable, 500 feet of cross-cutting

or rehabilitation is requested to cut the vein ahead of the caved point in the Ute Tunnel. Part of this distance can be rehabilitated and part must be new cross-cut, but the percentage of each is difficult to estimate. The Ute Tunnel is presently open and in good condition for 930 feet. Once the vein is intersected, exploration can best be done by drifting, since each surface hole would be about 600 feet. The direction will depend, of course, on previous results, but at present, 500 feet north and south is proposed.

Reservoir Vein

Stage I	Drilling	1000 feet
Stage II	Drifting	500 feet

Three surface holes are shown on the map, which can be fanned out from one location to adequately explore the large low-grade zone near the mill. A total footage of 1000 feet is proposed. Angle will be -40°, which will test the zone about 100 feet below surface.

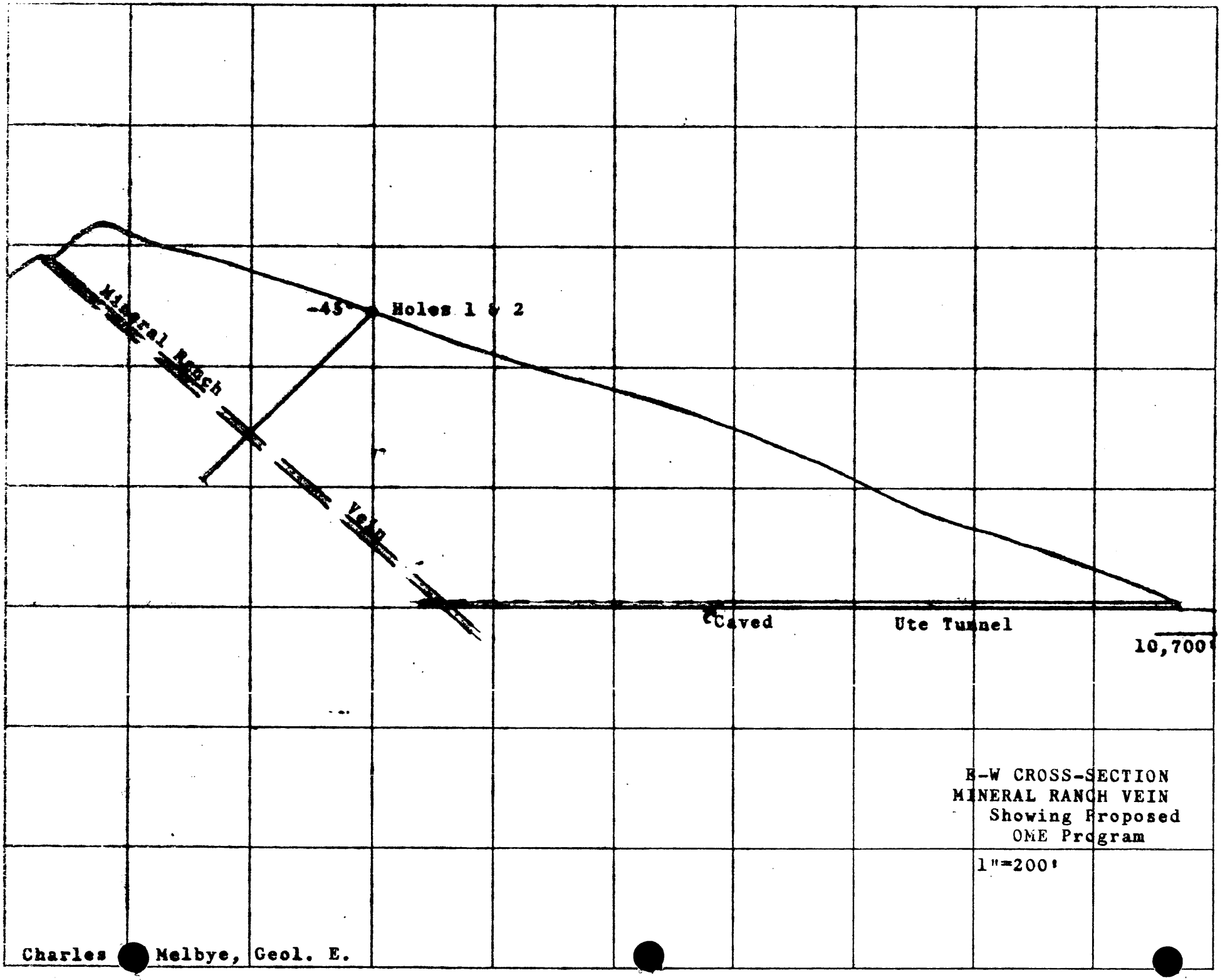
If drilling gives encouraging results, a 500-foot drift is proposed to explore northward along the vein. The portal would be located in the large cut directly above the holes, but the exact location would depend on where drilling results would dictate.

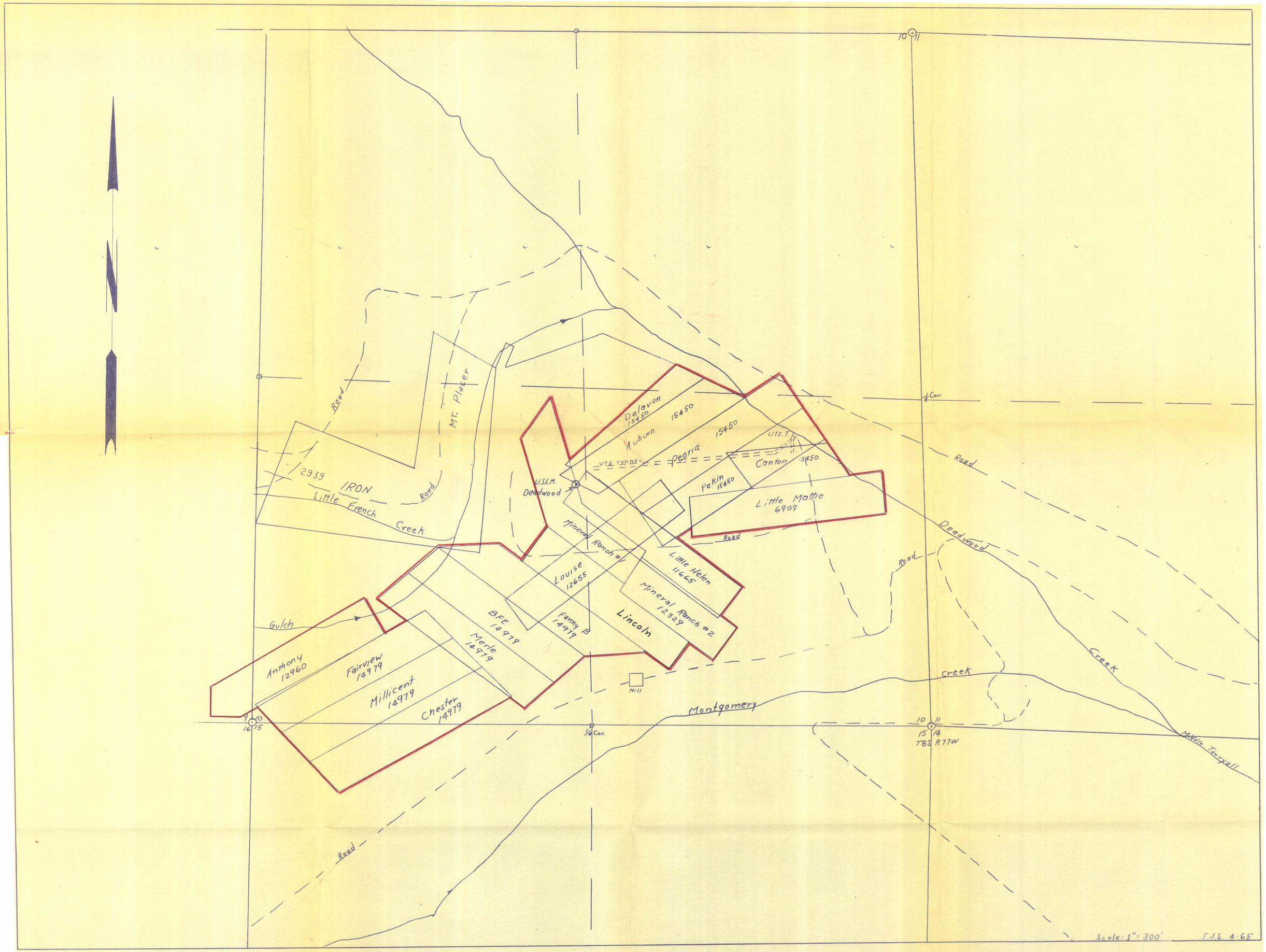
(b) Access Roads - No access road is required other than a short ¼-½ mile of drill road on the mountainside above the Ute Tunnel. Only a few hundred feet of drill road will be required at the Reservoir vein site. Bulldozer cuts will be adequate for both.

6. EXPERIENCE OF APPLICANT

Mt. Silver Heels Mining Company, a newly formed Colorado corporation, has no experience in the mining business. It therefore proposes to retain the firm of Charles E. Melbye and Associates, of 2020 Foothills

Road, Golden, Colorado, to manage all stages of the investigation. Work will be under the personal charge of Charles E. Melbye. Mr. Melbye has had substantial exploration experience and directly connected with supervision of a number of major projects. Personnel directly in charge of the work will be selected by Mr. Melbye as required. Experience records of officers of the company are included in Exhibit No. 8.


Mineral Ranch
Vein
-45°
Holes 1 & 2
Caved
Ute Tunnel
10,700'
E-W CROSS-SECTION
MINERAL RANCH VEIN
Showing Proposed
OME Program
1"=200'
Charles Melbye, Geol. E.

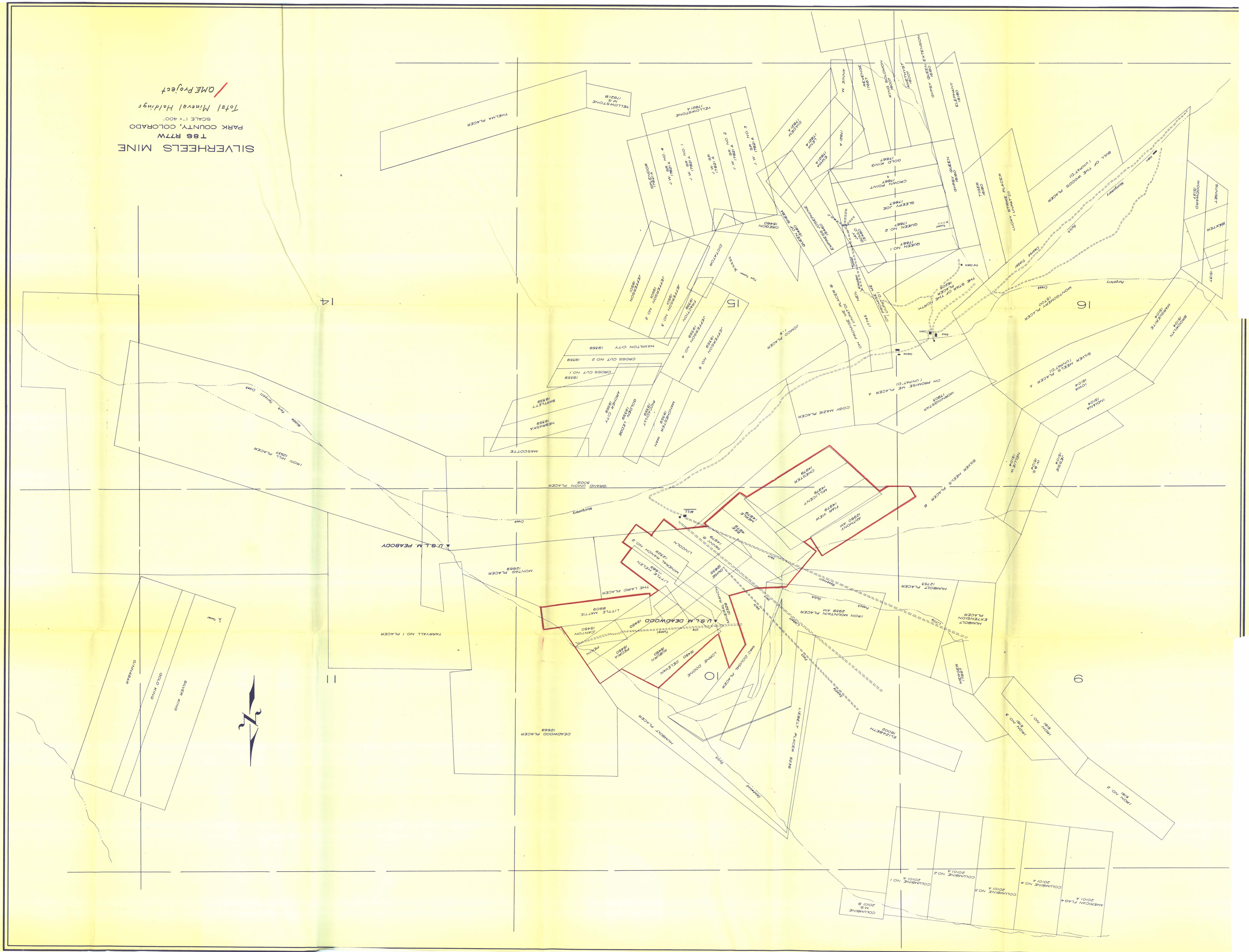


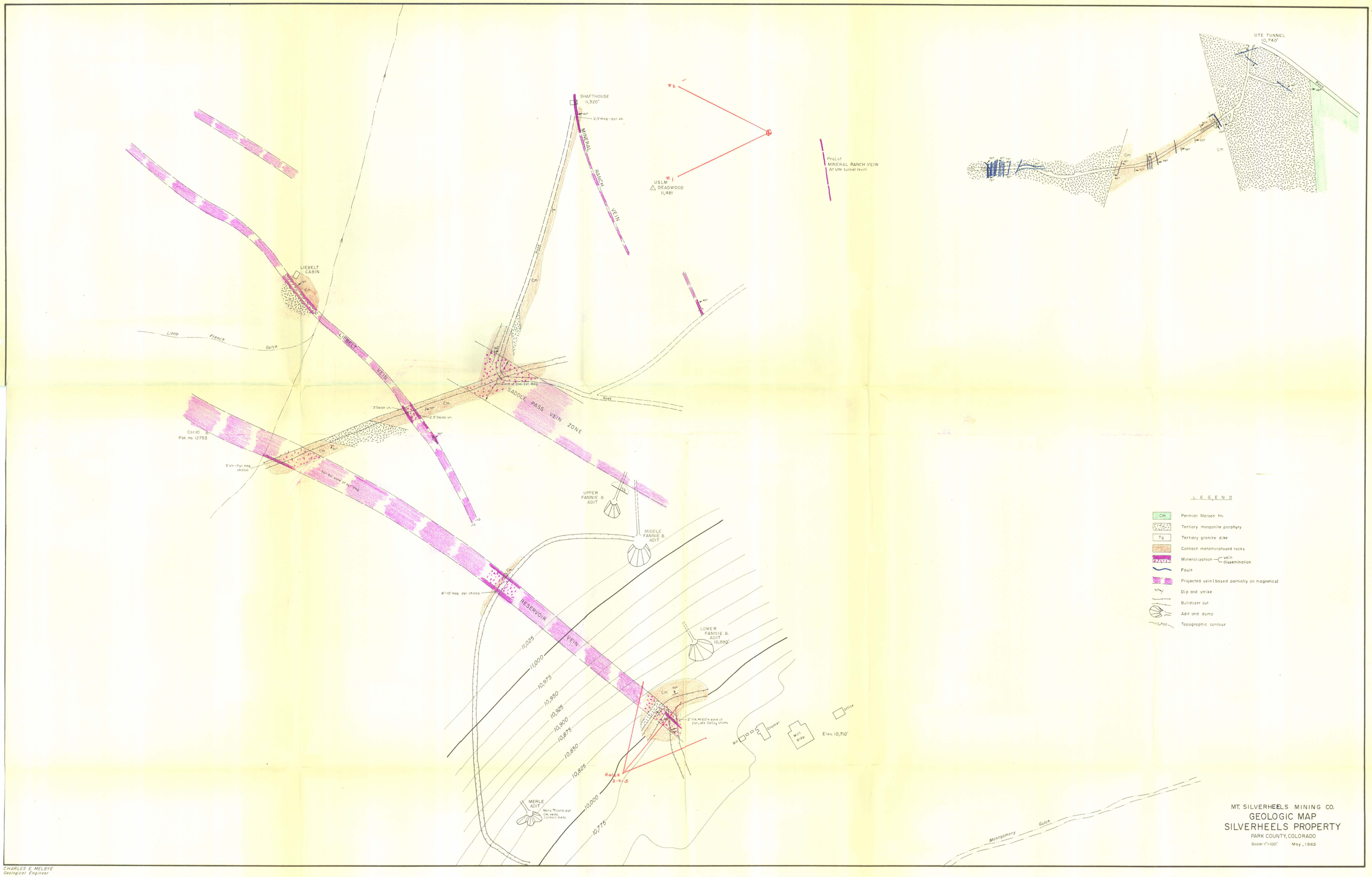
CLAIM MAP

MT. SILVERHEELS MINING CO. PROPERTIES

Showing Ute Tunnel

/ O.M.E. Project


SILVERHEELS MINE
T8S R77W
PARK COUNTY, COLORADO
SCALE 1" = 400'
Total Mineral Holdings
OME Project
U.S.L.M. PEABODY
U.S.L.M. DEADWOOD
10
11
14
15
16
9
N



CHARLES E. MELBYE
Geological Engineer