MME Form 52
Jan. 1959

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION

FOR GOVERNMENT USE ONLY
Operator
Docket No. OME –
Contract No. 14-23-090 –
Contract Date

LIEN AND SUBORDINATION AGREEMENTS 1/

To the United States of America:

That certain land in the County of Lake, State of Colorado, described as follows: 2/ the mineral rights in that portion of the Starr Placer patented mining claim, U. S. patent No. 255 which is included within survey points 23 through 34 thereof; all in Section 24, ~~Range 9W~~ Township 9N, Range 80W, California mining district, Leadville, Colorado,

hereinafter called the "land", is the subject of a proposed exploration contract, hereinafter called the "Contract", between the United States of America, hereinafter called the "Government" and

Minerals Extraction Company, a Colorado corporation 3/

hereinafter called the "Operator". In consideration for and as an inducement to the Government executing the Contract, the undersigned:

1. (a) Being the owner of an interest in the land, hereby grants to the Government a lien upon all of his right, title, and interest in the land and upon any production of minerals therefrom to secure the payment to the Government of the royalty on production provided for by the Contract, and agrees if the Operator's interest should be surrendered or terminated at any time prior to the expiration of the rights of the United States under said Contract to pay royalty to the Government according to the terms of said Contract; or

(b) Being the holder of a claim, lien, or encumbrance against the land, hereby subordinates his claim, lien, or encumbrance in or against the land and in any production therefrom to the rights of the Government under the Contract with respect to royalty on production and liens to secure same. 4/

2. Undertakes and agrees that property in which the Government may acquire an interest or equity under the Contract may be dismantled, severed from the land, and removed as may be provided in the Contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned.

3. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none". Do not leave blank.)

NONE

1/ Production from the land is not required, and in the absence of production there is no obligation to pay royalty to the Government.

2/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease /or contract, deed, or other document/ dated _____, and recorded in Book _____, Page ____, official records of said county". If (b) is used, the book and page of recordation must be inserted above. If the space provided is insufficient, use an Annex and refer to the Annex in the space.

3/ Insert name exactly as it appears in the Application MME Form 40.

4/ Subparagraph 1(a) does not apply to the holder of a claim, lien, or encumbrance.

4. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land or any production therefrom, furnishing the Government with two true copies of such notice; and

5. Consents to all amendments (including an agreement of termination) and assignments of the Contract without notice thereof, and undertakes and agrees that this agreement shall extend and apply thereto.

6. Added provisions _____ (State "None" or "See Annex No.____".)

Dated this _____ day of _____, 19__.

Nancy Wolcott Effner	(Seal)	Box 345 (Street) Agoura, Calif. (City & State)
Jean Wolcott Pugh	(Seal)	948 Hubbard St. (Street) Winnetka, Ill (City & State)
Katherine Wolcott Johnson	(Seal)	411 Glendale Ave. (Street) Winnetka, Illinois (City & State)
	(Seal)	(Street) (City & State)
	(Seal)	(Street) (City & State)
	(Seal)	(Street) (City & State)

I, _____ (Name), certify that I am the _____ (Title—Secretary, etc.) of the corporation named herein; that _____ (Name), who signed this agreement was then _____ (Title—Pres., Vice-Pres., etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____
(Corporate Seal)

MME Form 52
Jan. 1959

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION

FOR GOVERNMENT USE ONLY
Operator
Dock
OME
Contract
14-23-09
Contract Date

LIEN AND SUBORDINATION AGREEMENTS[1]

To the United States of America:

That certain land in the County of Lake, State of Colo

described as follows:[2] the mineral rights in that portion of the Starr patented mining claim, U. S. patent No. 255 which included within survey points 23 through 34 thereof; all in Section 24, ~~Range 2W~~ Township 9N, Range 80W, California mining district, Leadville, Colorado,

hereinafter called the "land", is the subject of a proposed exploration contract, hereinafter called the "Contract", between the United States of America, hereinafter called the "Government" and

Minerals Extraction Company, a Colorado corporation [3]

hereinafter called the "Operator". In consideration for and as an inducement to the Government executing the Contract, the undersigned:

1. (a) Being the owner of an interest in the land, hereby grants to the Government a lien upon all of his right, title, and interest in the land and upon any production of minerals therefrom to secure the payment to the Government of the royalty on production provided for by the Contract, and agrees if the Operator's interest should be surrendered or terminated at any time prior to the expiration of the rights of the United States under said Contract to pay royalty to the Government according to the terms of said Contract; or

(b) Being the holder of a claim, lien, or encumbrance against the land, hereby subordinates his claim, lien, or encumbrance in or against the land and in any production therefrom to the rights of the Government under the Contract with respect to royalty on production and liens to secure same.[4]

2. Undertakes and agrees that property in which the Government may acquire an interest or equity under the Contract may be dismantled, severed from the land, and removed as may be provided in the Contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned.

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3/ Insert name exactly as it appears in the Application MME Form 40.

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5. Consents to all amendments (including an agreement of termination) and assignments of the Contract without notice thereof, and undertakes and agrees that this agreement shall extend and apply thereto.

6. Added provisions NONE (State "None" or "See Annex No.____".)

Dated this 20th day of December, 19 67.

Nancy Wolcott Elsen (Seal)	Box 345 (Street) Ojai, Calif. (City & State)	
Joan Wolcott Pugh (Seal)	948 Hubbard St (Street) Winnetka, Ill. (City & State)	
Katrina Wolcott Johnson (Seal)	411 Glendale Ave. (Street) Winnetka, Illinois (City & State)	
(Seal)	(Street) (City & State)	
(Seal)	(Street) (City & State)	
(Seal)	(Street) (City & State)	

I, _____ (Name), certify that I am the _____ (Title—Secretary, etc.) of the corporation named herein; that _____ (Name), who signed this agreement was then _____ (Title—Pres., Vice-Pres., etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

_____ (Corporate Seal)

21103

MME Form 52
Jan. 1959

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION

FOR GOVERNMENT USE ONLY
Operator
Docket No. OME –
Contract No. 14-23-090 –
Contract Date

LIEN AND SUBORDINATION AGREEMENTS[1]

To the United States of America:

That certain land in the County of Lake, State of Colorado, described as follows:[2] the mineral rights in that portion of the Starr Placer ~~patented mining claim, U. S. patent No. 255 which is~~ included within survey points 23 through 34 thereof; ~~all in Section 24, Range 5W Township 9N, Range 80W, California~~ mining district, Leadville, Colorado,

hereinafter called the "land", is the subject of a proposed exploration contract, hereinafter called the "Contract", between the United States of America, hereinafter called the "Government" and

Minerals Extraction Company, a Colorado corporation[3]

hereinafter called the "Operator". In consideration for and as an inducement to the Government executing the Contract, the undersigned:

1. (a) Being the owner of an interest in the land, hereby grants to the Government a lien upon all of his right, title, and interest in the land and upon any production of minerals therefrom to secure the payment to the Government of the royalty on production provided for by the Contract, and agrees if the Operator's interest should be surrendered or terminated at any time prior to the expiration of the rights of the United States under said Contract to pay royalty to the Government according to the terms of said Contract; or

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2. Undertakes and agrees that property in which the Government may acquire an interest or equity under the Contract may be dismantled, severed from the land, and removed as may be provided in the Contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned.

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6. Added provisions NONE (State "None" or "See Annex No.____".)

Dated this 20th day of December, 19 67.

Nancy Wolcott Elsen (Seal)	Box 345 (Street) Cypress, Calif. (City & State)	
Jean Wolcott Pugh (Seal)	948 Hubbard St (Street) Winnetka, Ill. (City & State)	
Katherine Wolcott Johnson (Seal)	411 Glendale Ave. (Street) Winnetka, Illinois (City & State)	
(Seal)	(Street) (City & State)	
(Seal)	(Street) (City & State)	
(Seal)	(Street) (City & State)	

I, _____ (Name), certify that I am the _____ (Title—Secretary, etc.) of the corporation named herein; that _____ (Name), who signed this agreement was then _____ (Title—Pres., Vice-Pres., etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

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(Corporate Seal)

MME Form 52
Jan. 1959

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION

FOR GOVERNMENT USE ONLY
Operator
Docket No. OME –
Contract No. 14-23-090 –
Contract Date

LIEN AND SUBORDINATION AGREEMENTS[1]

To the United States of America:

That certain land in the County of Lake, State of Colorado,

described as follows:[2] The mineral rights in that portion of the Mary Placer [illegible] Mining Claim, U. S. Patent No. [illegible] and which is included within every points 75 through 84 thereof; [illegible] Section [illegible], Township [illegible], Range [illegible], Sixth Principal Meridian, Leadville, Colorado.

hereinafter called the "land", is the subject of a proposed exploration contract, hereinafter called the "Contract", between the United States of America, hereinafter called the "Government" and

Diamond Production Company, a Colorado corporation[3]

hereinafter called the "Operator". In consideration for and as an inducement to the Government executing the Contract, the undersigned:

1. (a) Being the owner of an interest in the land, hereby grants to the Government a lien upon all of his right, title, and interest in the land and upon any production of minerals therefrom to secure the payment to the Government of the royalty on production provided for by the Contract, and agrees if the Operator's interest should be surrendered or terminated at any time prior to the expiration of the rights of the United States under said Contract to pay royalty to the Government according to the terms of said Contract; or

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3. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none". Do not leave blank.)

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1/ Production from the land is not required, and in the absence of production there is no obligation to pay royalty to the Government.

2/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in Book_____, Page____, official records of said county". If (b) is used, the book and page of recordation must be inserted above. If the space provided is insufficient, use an Annex and refer to the Annex in the space.

3/ Insert name exactly as it appears in the Application MME Form 40.

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6. Added provisions NONE (State "None" or "See Annex No.____".)

Dated this 20th day of December, 19 67.

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Jean Wolcott Pugh	(Seal)	948 Hubbard St Winnetka, Ill.	(Street) (City & State)
Katherine Wolcott Johnson	(Seal)	411 Glendale Ave. Winnetka, Illinois	(Street) (City & State)
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(Corporate Seal)

MME Form 52
Jan. 1959

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION

FOR GOVERNMENT USE ONLY
Operator
Docket No. OME –
Contract No. 14-23-090 –
Contract Date

LIEN AND SUBORDINATION AGREEMENTS[1]

To the United States of America:

That certain land in the County of Lake, State of Colorado,

described as follows:[2] the mineral rights in that portion of the Stamp Placer patented mining claim, U. S. patent No. [illegible] which is included within survey points 29 through 32 thereof; all in Section 24, Range [illegible] Township [illegible], [illegible] M.D., California mining district, Leadville, Colorado.

hereinafter called the "land", is the subject of a proposed exploration contract, hereinafter called the "Contract", between the United States of America, hereinafter called the "Government" and

Minerals Extraction Company, a Colorado corporation[3]

hereinafter called the "Operator". In consideration for and as an inducement to the Government executing the Contract, the undersigned:

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6. Added provisions NONE (State "None" or "See Annex No. ____".)

Dated this 20th day of December, 1967.

Nancy Wolcott Elson	(Seal)	Box 345 Agoura, Calif.	(Street) (City & State)
Jean Wolcott Pugh	(Seal)	948 Hubbard St Winnetka, Ill.	(Street) (City & State)
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_____
(Corporate Seal)

MME Form 9
Rev. Nov. 65

UNITED STATES
DEPARTMENT OF THE INTERIOR
Geological Survey

OFFICIAL DOCKET FILE

Contract No. _____ Docket No. 6653

Application
- [x] Denied
- [ ] Withdrawn

Contract
- [ ] Terminated - Not Certified
- [ ] Terminated - Certified
- [ ] Cancelled
- [ ] Royalty Agreement

The records contained in this file are marked (x) and arranged in this order:

Folder No. 1:

Left Side

- [ ] Royalty Audits
- [ ] Certification of Discovery
- [ ] Closing Letter
- [ ] Cost Audits
- [ ] Termination Notice or Agreement
- [ ] Recision Notice
- [ ] Assignment of Contract
- [ ] Contract Amendments
- [ ] Contract with all exhibits and annexes
- [ ] Owner's Consent to Lien and Subordination Agreement
- [x] Application and Attachments

Revised

Right Side

- [ ] Project Summary (final)
- [ ] Work Completed Analysis (final)
- All other material filed in chronological order including the following reports if checked:
- [ ] Field Team Semiannual Report for Certified Project
- [ ] Final Field Team Report (Tab)
- [ ] Operator's Final Report (Tab)
- [ ] Interim Field Team Reports
- [ ] Operator's monthly reports and all attachments
- [x] On-site Exam. Report (Tab) 5/68
- [ ] Settlement Sheets
- [ ] Drill Logs

Additional Folders:

Left Side

Folders No. _____: Reports
- [ ] Analysis of Semiannual Inspection Reports
- [ ] Project Summary (Interim) by MME Engineers

Right Side

- [ ] Field Team Semiannual Report for Certified Project
- [ ] Field Team Interim Reports
- [ ] Operator's Monthly Reports with Transmittal, Narrative and Maps

Folders No. _____: Maps (Use pocket folder or envelope)

Folders No. _____: Settlement Sheets

Folders No. _____: Drill Logs

Folders No. _____: Royalty Material

72195-65

Minerals Extraction Company
401 Pine Street
Boulder, Colorado 80302

OFFICIAL
COPY
O. M. E.
RECEIVED
FEB 29 1968
INITIALS | CODE

Office of Minerals Exploration
Department of the Interior
Washington 25, D. C.

OME-

Re: ~~DMEA~~ 6653-Revised

Gentlemen:

An area in the Downtown district of Leadville, Colorado, has been, with a single minor exception, bypassed in exploration for silver. This area consists of a portion of the original Starr Placer, patent No. 255. The reason for its not having been explored is apparently because of conflicting ownership in earlier days of mining, so that adjacent mines were not enabled to cross boundary lines into this ground.

Geological inference of the presence of ore in this tract is highly reasonable. The sole attempt to prove this geological inference was successful, but was accomplished only in the last days of Leadville mining, and because of a limited time element, could not be pursued.

The purpose of the present application is to check upon the findings of the latter operation, and to prove the geological inference of the presence of ore in this tract. To support this application, we respectfully submit the accompanying statements and information.

Sincerely yours,

MINERALS EXTRACTION COMPANY

Harrison Cobb
President

1. FINANCIAL ELIGIBILITY:

(a) Minerals Extraction Company has requested an exploration loan from the National State Bank of Boulder, Colorado; from the Security Bank of Boulder; and from the Mercantile Bank and Trust Company, of Boulder.

Copies of these letters of request are submitted herewith as Exhibits A-1, A-2, and A-3. Refusals of these requests are also submitted herewith, as Exhibits A-4, A-5, and A-6.

(b) Minerals Extraction Company has no affiliated, parent, or controlling company.

(c) Minerals Extraction Company will provide its portion of the exploration cost from private funds of its owner-officers.

2. APPLICANT'S RIGHTS IN LAND:

(a) Applicant presently holds a lease on the mineral rights of the property under consideration. Enclosed as Exhibit B is a true copy of that lease. Applicant also owns Lots 1 through 16, which comprise the north half of Block 39, Strayhorse and North Leadville additions to Leadville, covering a part of the leased area, as space for conducting actual mining operations. (EXH. B-2)

There are no liens, mortgages or other encumbrances on this property.

(b) The legal description of the property is described in the lease agreement, and includes points 23 through 34 of the survey of the Starr Placer, Patent No. 255. It lies in Section 24, T9N, R80W, California Mining District, Lake County, Colorado.

Exhibits C-1, C-2, and C-3 are copies of plats which show the location of the property. The entire leased property is subject to the OME agreement.

(Subsequent to the original application date of DMEA 6653, Minerals Extraction Company has made offers to buy or lease ten or more additional acres along the northeast sideline of the original leased ground. If this land is acquired, it will be subordinated under MME-52, and included in the exploration area, if deemed advisable by the Office of Minerals Exploration.)

(c) Five copies of the Lien and Subordination Agreement, Form MME-52, are submitted, as Exhibit D.

3. PHYSICAL DESCRIPTION:

(a) The only exploration that has been made in the area under consideration was done by the 7th Street Mining Company, in 1925 and 1926. This consisted of one opening made by drifting from the Hibschle shaft. From this drift, headings were driven in four directions, and resulting ore was sent to the Arkansas Valley smelter.

This operation terminated within a few weeks, because the adjacent mines, primarily the Penrose, unexpectedly stopped pumping mine water, and these workings became flooded by rising water.

A copy of the working map of that operation is submitted as Exhibit E-1. This map was surveyed and made by J. Marvin Kleff, E. M., of Leadville. City streets and alleys were superimposed by the late Edward J. Dickerman, of Leadville and Denver. A reduced copy of this map is submitted as Exhibit E-2.

No other exploration has been done in this tract, as far as we are able to determine.

(b) The principals herein have had no interest in any of the operations described in (a) above.

(c) Such knowledge as is available in regard to production is incorporated in (e) and (f) below. Settlement sheets have been lost or destroyed. We have been informed by William Miles, Reed Welch, and J. Paul Harrison, all of American Smelting and Refining Company, that large numbers of old settlement sheets were destroyed after the closing of the Arkansas Valley smelter, and that the settlements for the 7th Street Mining Company were evidently among those destroyed.

All partners of the 7th Street Mining Company are deceased, and no one knows of the existence of any settlement sheets. The most recently remaining partner, Carl J. Youngstrom, stated that he retained his settlement sheets for some 25 years, after which he saw no advantage to keeping them, so destroyed them.

Assay values noted on the map are from memory by Carl Youngstrom. It is worthy of note that Youngstrom's verbal statements as to these figures have been consistent during the past twenty years.

(d) There are no known ore reserves.

(e) and (f) BASIS FOR DECISION TO EXPLORE A SECTION OF THE STARR-PLACER MINING CLAIM:

A large portion of the historical and geological data concerning the Leadville mining district is recorded in USGS Professional Paper 148, "Geology and Ore Deposits of the Leadville Mining District, Colorado", by S. F. Emmons, J. D. Irving, and G. F. Loughlin. In the present application the said Professional Paper 148 will hereinafter by referred to simply as "Emmons".

In Emmons, the productive ore horizons are reviewed, and it is shown that in the Downtown district, there are normally five horizons, or contacts, where ore has been mined. The uppermost, or First Contact, is where White Porphyry lies on Blue Limestone. The Second Contact is between a sheet of Gray Porphyry and Blue Limestone. Third and Fourth Contact ores lie above and below the Parting Quartzite, and Fifth Contact ore occurs in the lower part of the White Limestone, and between that formation and the Cambrian Quartzite.

Emmons, on page 274, states, "In the Downtown district . . . "the first contact orebodies were, on the whole, the richest in silver, the ores of the second and third contacts had a slightly lower tenor in this metal, and the fourth contact ores were prevailingly of low grade." "Over most of the area the orebodies of both contacts (first and second) ranged in general from 6 to 30 feet in thickness . . . "

On page 273, Emmons states, "the most work has been done at the first contact, beneath the White Porphyry, and the second, beneath the Gray Porphyry sheet in Blue Limestone . . . "The first contact follows uniformly the upper surface of the Blue Limestone, which is shown by scattered fragments of black chert to be present in its full thickness beneath the White Porphyry. . .

"Throughout the Downtown area the ores of the first and second contacts depart less than elsewhere from their characteristic position immediately below the porphyry sheets." "All the ores mined on the first three contacts in the Downtown district were oxidized."

Emmons further states, on Page 98, "The orebodies thus far discovered west of the Pendery fault are co-extensive with the Gray Porphyry sheet, a relation suggesting that fissures developed by the intrusion afforded opportunity for the ore-forming

solutions to permeate the limestone more thoroughly, whereas the Gray Porphyry itself, and the White Porphyry, acted as impervious barriers to the solutions." Emmons also points to the fact that very little ore has been found west of the Cloud City fault.

Exhibit G, a part of the application, shows the geology west of the Pendery fault. The various contacts are plainly indicated. A study of Exhibit G, Section on Line IV, strikingly suggests a continuity of first and second contact ores in this immediate area, and becomes the basis of applicant's intent to explore the ground described in this application.

In observing the suggested continuity, it will be noted that the first contact, between White Porphyry and Blue Limestone, yielded ore in the fault block east of the Niles and Carbonate faults from the east edge of the section diagram to the outcrop; in the block between the Niles and Pendery faults, it has been entirely removed by erosion. Continuation of this ore in the Pendery-Cloud City fault block is not shown, but may well be inferred.

However, subsequent to the preparation of Professional Paper 148 (Emmons) for publication, the partners in the 7th Street Mining Company concluded that the same ore should continue into this block, so pushed an exploration drift from the Hibschle shaft to the critical horizon, and proved their theory correct by finding excellent first contact ore, of which they were able to produce only a small amount, from further exploration, before the workings were flooded.

On Exhibit G, it will also be noted that the second contact, between Gray Porphyry and Blue Limestone, yielded ore in the Carbonate-Niles fault block, from the east edge of the section diagram to the outcrop; in the Niles-Pendery block, it yielded ore from the Niles fault to the outcrop. The second contact, as far as records are available, has not been prospected in the area of this application, that is, in the Pendery-Cloud City fault block. It has, however, been found and mined on both sides of this property.

Continuation of first and second contact ore in this fault block, in this property seems particularly logical, and the applicant deems it advisable to prospect this area by core-drilling.

From 1917 to 1924, the seven partners in the 7th Street Mining Company were leasing and working the Hibschle mine, the shaft of which is situated on the north side of 7th Street, and east of Ash Street. This group of men had drawn and shipped old stope filling material, which proved to be "good ore" (Quotations from Carl Youngstrom). Later these men had found a bed of new ore on an upper level, which they mined in a westerly direction until they were surprised by driving horizontally into "wash" (surface material). Mr. Youngstrom believed that they were following first contact ore, but in studying the diagram in Exhibit G, Line IV, we believe that they must have been on the second contact; Mr. Youngstrom stated that this ore "wasn't quite as good" as the ore which they later prospected for and found, west of the Pendery fault.

In 1924, realizing that they had encountered the Pendery fault, and that there should be a continuation of this ore on the west side of the fault, but at a much lower elevation, they moved down to the 414 foot level of the shaft, cut a new station, and proceeded to drive a new cross-cut drift toward where they guessed the ore should be.

Reaching this point, in 1926, after driving 500 feet, they encountered steeply dipping ore between White Porphyry and Blue Limestone, (first contact). This ore ran 17 oz. silver and 17.65% lead, and was "dragged in" ore between levels of minor

fault blocks. In following up-dip, the ore began to level out, and the grade improved, so that a blend of ore from all headings was running 30 oz. silver and 40% lead. Thickness of ore had increased from two feet to six feet, and was sandy lead-carbonate ore, "green with silver".

At this juncture the water level overtook the operation and put a permanent stop to it.

Exhibit H, appended, is a copy of a part of Plate 18, (Emmons), and is a plan of the area under consideration, showing zones of early stoping. It will be noted that, evidently because of adverse ownership, the section of the Starr Placer covered by this application has not been mined or prospected. First and second contact ores have been mined on both sides of the Starr claim.

It is also of interest to note that stopes on each side of the Starr ground were mined easterly to the Pendery fault line.

Your attention is directed to seeming trends of ore, illustrated by groups of stopes lying generally in a northeast-southwest direction. Another trend system appears to run almost east and west. Either trend system could pass through the area of this application.

It might be concluded that the Starr claim covered barren ground, and that adjacent stopes were followed to the end of ore-bearing deposits. However, exploration by the 7th Street Mining Company has proved that there is excellent ore in the heart of this unworked area. As there was not sufficient work done at that time to prove a quantity or an extent of this ore, we propose exploration drilling to establish a reserve of silver ore worthy of development and mining.

(g) A copy of each geological, areal, and mine map is included with each of the two copies of the application, and are submitted herewith.

4. ACCESSIBILITY OF PROPERTY:

(a) The property under consideration is located in the Downtown mining district, Leadville, Colorado. The property is east of Harrison Avenue, the main street of Leadville, and lies generally between 6th and 7th streets, both east and west of Ash Street. There is no problem in reaching the property.

Either George Vranesh, P. O. Box 580, phone 443-6151, Boulder; or Harrison Cobb, 401 Pine Street, phone 442-9248, Boulder, Colorado, 80302, will be available to meet with the OME representative to examine the property.

(b) Shipping and supply points for this operation would be Leadville, and Denver, Colorado. Distance from Denver to the property is about 125 miles; from the center of Leadville to the property, about one-half mile.

5. EXPLORATION WORK:

(a) Exploration work will consist of two phases of drilling vertical holes to crosscut ore zones. Surface wash and lake-bed deposits will be either rotary or cable-tool drilled, and cased. Solid rock will be core-drilled or plug-drilled and examined for possible ore. Ore zones will be cored, sampled and assayed.

The first phase of drilling will consist of 5 holes, as follows:

Drill holes 1, 2, 3, 4, and 5 are for the purpose of reestablishing the occurrence of ore found by the 7th Street Mining Company, and for the purpose of attempting to establish the trend of this ore.

Each of these drill holes is placed from 75 feet to 100 feet ahead of, and in back of where ore was supposedly encountered. The approximate positions of these holes are shown on the map, Exhibit E-1.

These holes are placed so as to divide distances between the original ore occurrence and property lines; between original ore occurrence and fault line; and, at the same time, to avoid drilling in city streets.

If ore is encountered in encouraging quantity during the first phase of drilling, all or part of second phase drilling would then be pursued. Second phase drilling may be stopped at any point by mutual consent of applicant and OME.

SECOND PHASE DRILLING:

DH 6. If DH 1, DH 2, and DH 3 show commercial ore, then DH 6 should be drilled in order to extend reserves.

DH 7 is placed at the westernmost edge of the exploration area, and as close to the Cloud City fault as possible, to determine whether or not mineralization extends to this fault wall on the west, as first phase drilling will have indicated its extension to the Pendery fault wall on the east.

DH 8. If sufficient mineralization is found in DH 7, then DH 8 will investigate the area between DH 5 and DH 7, and DH 9 would attempt to extend this mineralization to the north.

The relation of proposed drill holes to property lines, to earlier workings, and to geological structures (faults) is plainly shown on the plan map, Exhibit E-1, and E-2.

The relation of proposed drill holes to ore-bearing contacts is shown in the section map, Exhibit G, section on Line IV. This exhibit is the basis of estimate for the lengths of the drill holes, and for the relative thicknesses of the various beds.

Any hole shall be considered complete upon encountering granite.

(b) No access road is required, as city streets are available.

(c) After an OME contract is executed, work will commence as soon as weather conditions permit, and as soon as a drill crew is available to move onto the property. Boyles Brothers Drilling Company, which already operates in the Leadville-Climax area, states that this might be April or May of 1968.

Anticipated rate of performance is given as 20 feet per shift, or 120 feet per week. The approximately 4800 feet of drilling proposed herein would then require 40 weeks, or about 9 months. However, the drilling company states that if manpower is available, the drilling unit would be operated two shifts per day, 6 days per week, which could effect a time saving of as much as 50%, requiring perhaps only 4½ months. Further saving in time may be effected by utilizing a separate drill rig in the unconsolidated surface material. Cost figures are based upon the longer period.

Two additional weeks will cover plugging the holes, and completing the sampling, assaying, and reporting.

6. EXPERIENCE:

Harrison Cobb, president of Minerals Extraction Company, has been active in Colorado mining since 1931. He has successfully operated mines in Boulder County, Colorado, in Wyoming, and in Utah. He is a director of the Colorado Mining Association as well as past president of that organization. Mr. Cobb is a graduate of Rollins College, and is a member of A. I. M. E.

Robert H. Smellage, Jr. is a prominent business man in Boulder, Colorado. He has participated in mining ventures. His experience in drilling dates back to 1937, and he has been active in oil field operations for many years.

George Vranesh is an attorney and mining engineer. He graduated from the Colorado School of Mines in 1951. He has been employed as mine engineer by several mining companies. He owned his own mining partnership for seven years, operating uranium, tungsten, and base metal mines throughout the west.

Mr. Vranesh is a director of the Colorado Mining Association, president of the Boulder County Mining Association, and is a registered professional engineer as well as a member of the Colorado Bar.

The actual work under this application will be supervised by Harrison Cobb, and to a lesser degree, by George Vranesh.

7. ESTIMATE OF COSTS:

(a) Drilling, the main item of this exploration, as well as the main item of cost, will be done by an independent contractor. Herewith submitted are bids from five independent drilling contractors, designated as Exhibits J, K, L, M, and N.

A detailed cost breakdown chart is submitted herewith as Exhibit O, and is based primarily upon bids and information supplied by Boyles Brothers Drilling Company. This cost analysis shows a total cost for each hole, as well as a total cost for each item of the work. A separate total is given for first phase drilling, and also for second phase.

(b) Personal services are noted on the cost analysis under (b).

(c) Operating materials and supplies are noted (c). These items include city permit; water cost; core boxes; sample sacks.

(d) Operating equipment; noted as (d): Core splitting saw.

(e) Rehabilitation and repairs. NONE

(f) New buildings; fixtures. NONE

(g) Miscellaneous; (g) on cost analysis: Shipment of samples; assaying; accounting; payroll tax and insurance. Note: individual elements for assay to be determined on basis of visible mineralization.

7 Detail of cost breakdown:

Notes: All depths limited to drilling through second contact.
Any hole to be deemed complete upon encountering granite.
Distribution of drilling costs within each hole may be changed according to thicknesses of geological formations encountered.
Individual elements for assay to be determined on the basis of visible mineralization.
Basis of sampling/assaying estimate: 2 contacts, each 15' thick, 5' samples; 6 samples per hole.

(a) Site preparation cost: NONE

FIRST PHASE DRILLING

	Rate	DH-1 Ft/Hrs.	DH-1 Cost	DH-2 Ft/Hrs.	DH-2 Cost	DH-3 Ft/Hrs.	DH-3 Cost	DH-4 Ft/Hrs.	DH-4 Cost	DH-5 Ft/Hrs.	DH-5 Cost	Item Total	
Rotary drilling (qht &lb)$	6.50/ft	300	1950.	300	1950.	300	1950.	300	1950.	300	1950.	9750.	
Set casing	22.50/hr	4	90.	4	90.	4	90.	4	90.	4	90.	450.	
Coring loss (50%)	4.18/ft	150	627.	150	627.	150	627.	150	627.	150	627.	3135.	
NX core thru 1st contact	7.85/ft	100	785.	100	785.	125	981.						
NX core thru 2nd contact								250	1963.	275	2159.	6673.	
Cementing time allowance	10.00/hr	50	500.	50	500.	50	500.	50	500.	50	500.	2500.	
Standby time allowance	2%		79.		79.		79.		99.		107.	443.	
(c) Core boxes	.10/ft		10.		10.		10.		23.		27.	80.	
(c) Sample sacks 2x3	15.50/100	6	1.	6	1.	6	1.	6	1.	6	1.	5.	
(g) Sample shipment 2x3	1.00		6.		6.		6.		6.		6.	30.	
(g) Assaying 2x3	7.00/smpl	6	42.	6	42.	6	42.	6	42.	6	42.	210.	
TOTAL PER HOLE			4090.		4090.		4286.		5301.		5509.	23276.	$23,276.

Supervision and one-time costs:

(b) Consulting geologist	8 days @ $75.00/day	600.	
	8 days @ 16.00 per diem	128.	
	250 miles x 12¢ x 8 trips	240.	
(b) Company engineer	4½ months @ $600.	2700.	
(g) Accounting	4½ months @ 50.	225.	
(d) Core saw rental; oil, fuel	10./mo	45.	
(c) City drilling permit		10.	
(c) Water cost		50.	
(g) Extra sample sacks		20.	
(g) Other assaying (for bismuth; for between contact areas)		89.	
(g) Payroll tax & ins. on $2700. (13%)		351.	
		4458.	$ 4,458.

Exhibit O OME 6653, Revised

SECOND PHASE DRILLING

	Rate	DH-6 Ft/ Hrs.	DH-6 Cost	DH-7 Ft/ Hrs.	DH-7 Cost	DH-8 Ft/ Hrs.	DH-8 Cost	DH-9 Ft/ Hrs.	DH-9 Cost	Item Total	
Rotary drilling (qht & lb) $	6.50/ft	310	2015.	310	2015.	310	2015.	310	2015.	8060.	
Set casing	22.50/hr	4	90.	4	90.	4	90.	4	90.	360.	
Casing loss (50%)	4.18/ft		648.		648.		648.		648.	2592.	
NX core thru 1st contact	7.85/ft	100	785.							785.	
NX core thru 2nd contact				350	2748.	320	2512.	320	2512.	7772.	
Cementing time	10.00/hr	50	500.	50	500.	50	500.	50	500.	2000.	
Standby time			81.		120.		115.		115.	431.	
(c) Core boxes	.10/ft	100	10.	350	35.	320	32.	320	32.	109.	
(c) Sample sacks 2x3		6	1.	6	1.	6	1.	6	2.	5.	
(g) Sample shipment 2x3	1.00	6	6.	6	6.	6	6.	6	6.	24.	
(g) Assaying 2x3	7.00/smpl	6	42.	6	42.	6	42.	6	42.	168.	
TOTAL PER HOLE			4178.		6205.		5961.		5962.	22306	$22,306.

Supervision & one-time costs:

(b) Consulting geologist	8 days @ $75.00/day	600.	
	8 days @ 16.00/per diem	128.	
	250 miles x 12¢ x 8 trips	240.	
(b) Company engineer	4 months @ $600.	2400.	
(g) Accounting	4 months @ 50.	200.	
(d) Core saw rental	10./mo.	40.	
(c) Water cost		40.	
(g) Payroll tax & ins. on $2400.	(13%)	312.	
		3960.	3,960.
	GRAND TOTAL		$ 54,000.

Minerals Extraction Share	13,500.
OME Share	40,500.
	$ 54,000.

Exhibit O OME 6653, Revised

DIAMOND CORE DRILLING
DIAMOND DRILLING EQUIPMENT
GROUTING
FOUNDATION TESTING
MINING
QUARRYING
SHAFT SINKING
TUNNEL DRIVING
MINE PLANT DESIGN
AND FABRICATION

Boyles Bros.
DRILLING COMPANY
CONTRACTORS-ENGINEERS-GEOLOGISTS
15865 West 5th Avenue
GOLDEN, COLORADO 80401
Phone (303) 279-7913

General Offices and Plant
1624 Pioneer Road P. O. Box 58
SALT LAKE CITY, UTAH 84110
Phone 487-7595

BRANCH OFFICES
ARIZONA (PHOENIX)
CALIFORNIA (AUBURN)
COLORADO (GOLDEN)
NEVADA (SPARKS)
WASHINGTON (SPOKANE)
CHILE (SANTIAGO)
CABLE: BOYLESBROS
MEXICO, D.F.
PERU (LIMA)
CABLE: BOYLESCOP

June 14, 1967

Mr. George Vranesh
P.O. Box 580
Boulder,
Colorado

Dear Mr. Vranesh:

We propose the following schedules of charges for your drilling on the Starr Placer, Leadville, Colorado. You may choose the schedule most suitable to your company.

I. Rotary Drilling - Footage Rate

A. Drilling overburden, per linear foot		$ 6.50
B. Drilling bedrock	0 - 600 feet, per foot	$ 5.85
C. Lost circulation time, per hour		22.50
D. Casing time, per hour		22.50

E. Drill mud, casing and lost circulation material at cost, at job site.

II. Rotary Drilling - Day Rate

A. Drilling per hour $23.50

Plus cost of bits, lost casing, drill mud, additives and lost circulation material. All time will be charged, exclusive of break down time over one hour per day.

III. Core drilling - Footage Rate

A. Overburden per foot $14.00

	NX	BX	AX
B. Bedrock to 300 feet	$7.85	$7.30	$6.50
300 to 600 feet	8.90	7.85	7.30

C. Reaming, if required. All sizes, per linear foot		$ 4.00
D. Cementing, plus cost of cement and mud, per hour		14.00
E. Standby, as requested	per hour	12.75
F. Lost casing will be charged at our cost at job site.		
G. Installing casing	per hour	14.00

IV. Core Drilling - Day Rate

A. Drilling per hour $19.15

Plus cost of drill bits, lost casing, drill mud, additives and lost circulation material. All time will be charged, exclusive of break down time over one hour.

EXHIBIT J.
OME 6653 - Revised.

DIAMOND CORE DRILLING
DIAMOND DRILLING EQUIPMENT
GROUTING
FOUNDATION TESTING
MINING
QUARRYING
SHAFT SINKING
TUNNEL DRIVING
MINE PLANT DESIGN
AND FABRICATION

Boyles Bros.
DRILLING COMPANY
CONTRACTORS-ENGINEERS-GEOLOGISTS
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Phone (303) 279-7913

General Offices and Plant
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WASHINGTON (SPOKANE)
CHILE (SANTIAGO)
CABLE: BOYLESBROS
MEXICO, D.F.
PERU (LIMA)
CABLE: BOYLESCOP

These schedules are based on a 48 hour per week operation. The water truck is included with the source of water to be no cost to Boyles Bros.

Should any chert beds be encountered causing excessive bit wear, and the hole is to be continued through the chert bed, the bit cost would be charged to your account at our cost in addition to the rate set forth in any schedule.

The availability of men and equipment is uncertain. If any of these schedules are acceptable, please advise us as soon as possible to enable us to schedule crews and equipment as rapidly as possible.

Thank you for calling our company.

Very truly yours,

BOYLES BROS. DRILLING COMPANY

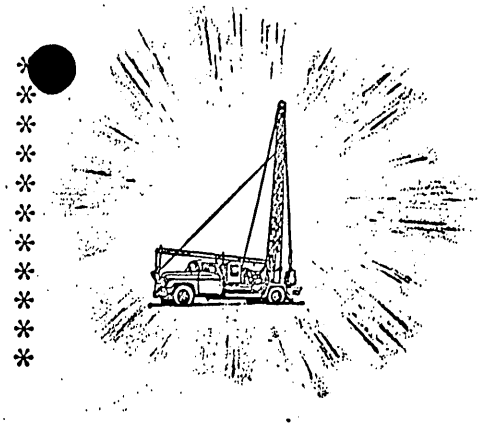
George E. Lensch

George E. Lensch, District Manager

Enclosure

NORRIS AND SONS DRILLING CO.

WATER WELL DRILLING
We Specialize in Mountain Drilling
1555 NORWOOD AVE. BOULDER, COLO. 80302
Licensed, Bonded & Insured Phone 442-4083



July 27, 1967

Minerals Extraction Co.
P. O. Box 580
Boulder, Colorado 80302

Attention: George Vranesh

Proposal for drilling test holes at Leadville, Colorado to a maximum depth of 550'.

		per foot
1.	Drill overburden with air or mud to bedrock	$7.00
2.	Set 6 5/8" O.D. steel casing to bedrock and pull on completion of drilling	1.00
3.	Plug drill consolidated formation below overburden	5.00
4.	Take sample every foot in consolidated formation	N/C
5.	If drill hole encounters old mine workings causing loss of circulation and further drilling is required, a 5" O.D. casing will be installed from surface to mine floor on a time and material basis - time $35.00 per hour.	
6.	Drilling below 5" casing plus tri cone bit cost	5.00
7.	Travel time moving equipment from Boulder to drill site and from drill site to Boulder $1.00 per mile.	
8.	Standby time $14.00 per hour based on 8 hour day.	
9.	A portable mud pit will be used when possible. If a pit is required a charge of $40.00 will be made for excavation.	
10.	One room for two men $50.00 per week.	

Equipment to be used:
1965 - 10 TG Winter-Weiss Portadrill truck mounted, new condition, service and water truck with welder and accessories.

NORRIS & SONS DRILLING CO.

Thaine A. Norris

Thaine A. Norris

EXHIBIT K.
OME 1653. Revised.

7050 East 57th Place
Commerce City, Colo. 80022
July 23, 1967

Mr. George Vranesh
P. O. Box 580
Boulder, Colorado

Dear Mr. Vranesh:

Thank you for the opportunity of bidding on the exploration drilling at Leadville. My revised bid is enclosed herewith.

Please note that I have added to this bid an offer to drill NX size holes, which would give a core diameter of 1.875". This would be done with a truck mounted drill rig which is now available for core drilling. In the event that any angle holes are desired, we would only be able to drill AX size.

We would be able to move on the site within 10 days of notice to proceed.

Very truly yours,

WILSON EXPLORATION CO.

Donald W. Wilson

Donald W. Wilson

DWW:h
Enclosure

EXHIBIT L
OME 6653 - Revised

BID PROPOSAL - July 23, 1967

TO: Mr. George Vranesh
P. O. Box 580
Boulder, Colo.

FROM: Wilson Exploration Co.
7050 East 57th Place
Commerce City, Colo.

BID PROPOSAL FOR APPROXIMATELY 2,000 LINEAR FEET OF EXPLORATION DRILLING NEAR LEADVILLE, COLO.

CONTRACTOR'S CHARGES

MOVE-IN COSTS . . . . . $0.75 per mile, one way only.

DRILL AND SET HEAVY WALL STEEL SURFACE CASING . . . $9.50 per lin. ft.
I estimate 400 ft. will be required.

BASE RATE FOR AX CORE DRILLING, as described:
0 feet to 600 feet hole depth . . . . $9.25 per lin. ft.

BASE RATE FOR NX CORE DRILLING, as described:
0 feet to 600 feet hole depth . . . .$10.75 per lin. ft.

SLUDGE SAMPLES IN ORE ZONES ARE INCLUDED IN FOREGOING PRICES.

CEMENTING, if required due to unconsolidated or caving hole conditions:
Rig time at $12.00 per hour, plus cement materials.
Drilling cement charges at 50% applicable rock drilling base rate.

REAMING FOR CASING, if required . . . . 60% applicable base rate.

INSTALL CASING, if required . . . . $12.00 per hour, plus materials.
We do not anticipate a need for reaming and installing casing other than the surface casing quoted above.
Set-up and water hauling costs are figured in the above quoted prices.

We will furnish an accurate Driller's Log for each hole drilled.

Respectfully submitted,

D. W. Wilson

D. W. Wilson
WILSON EXPLORATION CO.
7050 East 57th Place
Commerce City, Colo. 80022
Telephone 288-6923

Proposal

Page No. _____
of _____ Pages

GOLDEN DRILLING COMPANY
Diamond Drilling Contractor
GOLDEN, COLORADO 80402
Phone 279-1371

PROPOSAL SUBMITTED TO:	PHONE:	DATE: July 31, 1967
NAME: Mr. George Vranesh	JOB NAME: Downtown Basin	
STREET: P.O.Box 580	STREET:	
CITY: Boulder	CITY: Leadville	STATE: Colo.
STATE: Colorado	ARCHITECT:	DATE OF PLANS:

We hereby submit specifications and estimates for: Drilling:

Mob. and De-mob	Job	$ 300.00
BX Core:		
0 to Bedrock	Per. ft.	10.00
Bedrock to 300 ft.	Per. ft.	6.50
300 to 600 ft.	Per. ft.	8.00
Cementing, drilling cement and back filling core hole and repairing asphalt, if necessary	Per. hr.	15.00

We hereby propose to furnish labor and materials — complete in accordance with the above specifications, for the sum of:

_____ dollars ($ _____) with payment to be made as follows:

By the tenth of each month for work completed the previous month.

All material is guaranteed to be as specified. All work to be completed in a workmanlike manner according to standard practices. Any alteration or deviation from above specifications involving extra costs, will be executed only upon written orders, and will become an extra charge over and above the estimate. All agreements contingent upon strikes, accidents or delays beyond our control. Owner to carry fire, tornado and other necessary insurance. Our workers are fully covered by Workmen's Compensation Insurance.

Authorized Signature W E Matthews

NOTE: This proposal may be withdrawn by us if not accepted within _____ days.

Acceptance of Proposal

The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Accepted: Signature _____

Date _____ Signature _____

EXHIBIT M
OME 6653-Revised

Layne-Western Company
WATER WELL DRILLING
EXPLORATION BORINGS AND TEST SURVEYS
LAYNE TURBINE PUMPS

OFFICES
KANSAS CITY, MISSOURI
WICHITA, KANSAS
OMAHA, NEBRASKA
AMES, IOWA
AURORA, ILLINOIS
ST. LOUIS, MISSOURI
DENVER, COLORADO

8301 EAST ILIFF AVENUE
DENVER
COLORADO
80222

TELEPHONE AC 303-755-1281

December 22, 1967

Mr. Harrison Cobb
401 Pine Street
Boulder, Colorado

Dear Mr. Cobb:

This is to follow up our recent conversation regarding the exploration program near Leadville, Colorado.

Your first stage drilling program estimates the drilling of five (5) exploration holes with plug bit drilling of the overburden formation to approximately 300 feet with core drilling below that point an additional 200 to 300 feet.

We would conduct this exploration drilling for you as per the following schedule of charges.

1. Mobilization and demobilization of equipment, lump sum $500.00
2. Drilling overburden ..... $6.00 per foot
3. Coring NX size ..... $9.50 per foot
4. Coring BX size ..... $8.20 per foot
5. Casing:
   a. 6" threaded and coupled pipe ..... $4.00 per foot
   b. 4" threaded and coupled pipe ..... $2.40 per foot
   c. NX size casing ..... $3.50 per foot
   d. BX size casing ..... $2.50 per foot

We would furnish the water on the above schedule of charges, together with all labor, fuel, bits, core barrels, and other items necessary to conduct the exploratory drilling.

We carry Workmen's Compensation and Public Liability Insurance on our own men and equipment.

Our major concern on the drilling program is the degree of difficulty of the surface wash deposits to the approximate depth of 300 feet. We are figuring

EXHIBIT N
OME 6653 - Revised.

December 22, 1967

on using a heavier rig to drill these deposits and set casing to the bedrock and then placing a core rig over the hole. If we have extreme difficulty with this, we may have a cable tool rig install perhaps 100 feet of casing through the surface. The anticipated low static water level in the formation also concerns us due to the possibility of loss circulation zones. This would increase drilling mud costs and water hauling costs. There are a number of procedures that can be used to overcome loss circulation, and costs vary with the procedures. We would think that should loss circulation zones be encountered, either the drilling be conducted on the surface completely with cable tools, or the drilling be done with a rotary rig on an hourly basis with loss circulation materials at our cost plus 15%.

Our hourly rate on the rotary drilling rig, for either mud drilling or coring, would be $24.50 per hour.

We should point out that with the cable tool rig, it might be necessary to run more than two strings of casing through the surface wash deposits. However, should we be able to do the drilling without much difficulty with the rotary rig using a water and mud circulation system, one string of casing may be all that is required.

We would be pleased to work with you on this project, and if you have any questions regarding our proposal, please do not hesitate to contact us.

Very truly yours,

LAYNE-WESTERN COMPANY

Carl R. Larson

Carl R. Larson P.E.
District Manager

CRL:cw

401 Pine Street
Boulder, Colorado 80302
January 11, 1968

Mr. Clyde R. Reedy
National State Bank
Boulder, Colorado.

Dear Mr. Reedy:

Minerals Extraction Company, a Colorado corporation composed of George Vranesh, Robert H. Smellage, Jr., and Harrison Cobb, all of Boulder, intends to perform exploration work in Leadville, Colorado, for silver ore. This exploration will consist of core-drilling five to nine holes from the surface to a depth of from 450 to 600 feet.

It is estimated that the cost of this exploration will be approximately $54,000.00. As Minerals Extraction Company is able to provide $13,500.00 for this purpose, it becomes necessary to arrange a loan for the remainder, or $40,500.00.

Minerals Extraction Company will agree to repay this loan, with interest, by a guaranteed royalty from ores mined from the property, which it is confident will be found in the course of the exploration drilling.

An outline of this project, including geological conclusions for the expectation of ore; a tentative schedule of production and return; a detailed cost analysis of the project, is herewith presented for your examination.

Minerals Extraction Company requests the National State Bank to grant a loan of $40,500.00 for the purpose set forth herein.

Very truly yours,

MINERALS EXTRACTION COMPANY

Harrison Cobb.
President

EXHIBIT A-1
OME 6653 - Revised

NATIONAL STATE BANK OF BOULDER

BOULDER, COLORADO 80301 • P. O. BOX 227 • PHONE 442-0351 • AREA CODE 303

CLYDE R. REEDY
Vice President & Cashier

January 12, 1968

Minerals Extraction Company
401 Pine Street
Boulder, Colorado 80302

Attn: Mr. Harrison Cobb, President

Dear Mr. Cobb:

We appreciate your request for a loan in the amount of $40,500.00. However, the Discount Committee does not feel that we can grant this request at this time.

Yours very truly,

Clyde R. Reedy

Clyde R. Reedy
Vice President and Cashier

CRR:jc

EXHIBIT A-4
OME 6653 - Revised.

401 Pine Street
Boulder, Colorado 80302
January 4, 1968

Mr. William J. Carter
Mercantile Bank and Trust Company
Boulder, Colorado.

Dear Mr. Carter:

Minerals Extraction Company, a Colorado corporation composed of George Vranesh, Robert H. Smellage, Jr., and Harrison Cobb, all of Boulder, intends to perform exploration work in Leadville, Colorado, for silver ore. This exploration will consist of core-drilling five to nine holes from the surface to a depth of from 450 to 600 feet.

It is estimated that the cost of this exploration will be approximately $54,000.00. As Minerals Extraction Company is able to provide $13,500.00 for this purpose, it becomes necessary to arrange a loan for the remainder, or $40,500.00.

Minerals Extraction Company will agree to repay this loan, with interest, by a guaranteed royalty from ores mined from the property, which it is confident will be found in the course of the exploration drilling.

An outline of this project, including geological conclusions for the expectation of ore; a tentative schedule of production and return; a detailed cost analysis of the project, is herewith presented for your examination.

Minerals Extraction Company requests the Mercantile Bank and Trust Company to grant a loan of $40,500.00 for the purpose set forth herein.

Very truly yours,

MINERALS EXTRACTION COMPANY

Harrison Cobb,
President

EXHIBIT A-3
OME 6653 - Revised.

THE MERCANTILE BANK & TRUST CO.

BOULDER, COLORADO

W. D. CARTER
PRESIDENT

January 4, 1968

Mr. Harrison Cobb, President
Minerals Extraction Company
401 Pine Street
Boulder, Colorado 80302

Dear Mr. Cobb:

As you requested, we have considered carefully your application for $40,500 to be used in ore exploration in Leadville. Unfortunately, we are unable to grant the loan you requested in the absence of adequate and proper collateral.

We thank you for contacting us. If you have any questions, please call me.

Sincerely,

W. D. Carter

W. D. Carter

EXHIBIT A-6
OME 6653 - Revised.

TELEPHONE MAIN 3-1852
2114 CURTIS STREET
DENVER 5, COLORADO

Dec. 14, 1967.

Minerals Extraction Company,
Boulder,
Colorado.

Gentlemen:

I wish to quote on charges for assaying as follows:

Gold, Silver, Copper, lead, and zinc,	$1.50	each per sample.
Gold and silver on same sample	$2.50	per sample.

Very truly yours,

CHARLES O. PARKER & CO.,

By Charles O. Parker

CP-a

OME 6653 - REVISED

ASSAY COSTS

401 Pine Street
Boulder, Colorado 80302
January 8, 1968

Mr. Wallace C. Adams, Loan Officer
Security Bank of Boulder
Boulder, Colorado.

Dear Mr. Adams:

Minerals Extraction Company, a Colorado corporation composed of Robert H. Smellage, Jr., George Vranesh, and Harrison Cobb, all of Boulder, intends to perform exploration work in Leadville, Colorado, for silver ore. This exploration will consist of core-drilling five to nine holes from the surface to a depth of from 450 to 600 feet.

It is estimated that the cost of this exploration will be approximately $54,000.00. As Minerals Extraction Company is able to provide $13,500.00 for this purpose, it becomes necessary to arrange a loan for the remainder, or $40,500.00.

Minerals Extraction Company will agree to repay this loan, with interest, by a guaranteed royalty from ores mined from the property, which it is confident will be found in the course of the exploration drilling.

An outline of this project, including geological conclusions for the expectation of ore; a tentative schedule of production and return; a detailed cost analysis of the project, is herewith presented for your examination.

Minerals Extraction Company requests the Security Bank of Boulder to grant a loan of $40,500.00 for the purpose set forth herein.

Very truly yours,

MINERALS EXTRACTION COMPANY

Harrison Cobb
President

EXHIBIT A-2
OME 6653 - Revised

SECURITY BANK OF BOULDER 1135 BROADWAY, BOULDER, COLORADO
TELEPHONE: 443-1852

January 10, 1968

Mr. Harrison Cobb, President
Mineral Extraction Co.
401 Pine St.
Boulder, Colorado

Dear Mr. Cobb:

We wish to thank you for asking our bank to consider your loan request in the amount of $40,500.00 to be made to the Mineral Extraction Co.

I regret to inform you that after thorough consideration we are unable to make this loan at this time.

Should you have any questions please contact me.

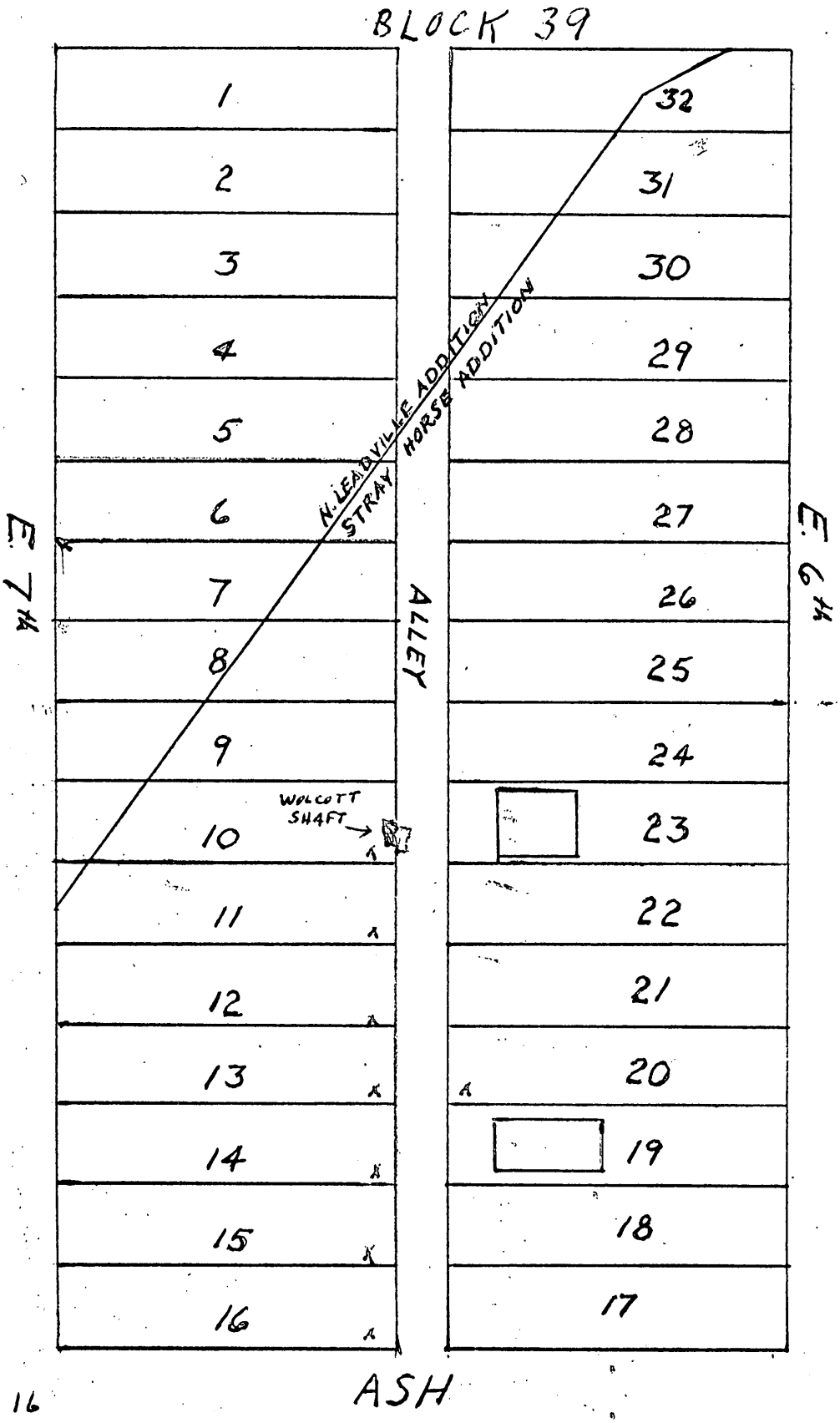
Very truly yours,

Wallace J. Adams, Jr.
Vice President

WJA/jr:kn

EXHIBIT A-5
OME 6653 - Revised.

BLOCK 39



LOTS 1 - 16
MINERALS EXT. CO.

EXHIBIT B-2
OME 6653 - Revised

EXHIBIT D
OME 6653 - REVISED

(5 COPIES)

MINING LEASE

This Mining Lease, entered into as of this 21st day of March, 1966, between NANCY WALCOTT EBSEN, Box 157, Balboa Island, California, Mrs. Jean Wolcott Pugh, 948 Hubbard Street, Winnetka, Illinois and Mrs, Katrina Wolcott Johnson, 411 Glendale Street, Winnetka, Illinois, hereinafter referred to as Lessors and MINERALS EXTRACTION COMPANY, hereinafter referred to as Lessee.

In consideration of the leasing of the within described premises by the said Lessors to the said Lessee said Lessee shall pay to the said Lessors the sum of Six Hundred Dollars ($600.00), and upon receipt of the said Six Hundred Dollars ($600.00) Lessors shall execute and deliver to said Lessee a receipt for same, and upon such delivery the lease shall become effective.

On the First day of April, 1967 and on the First day of April of every year thereafter during the term of this lease, the Lessee shall pay to the said Lessors the sum of Three Hundred Dollars ($300.00) as a minimum lease rental for the said premises. If when and as Royalties shall accrue to the credit of the Lessors by reason of production of ore or water under the terms of this lease as set out in Article 5, thereof and the amount of Royalties earned in any one year amount to more than $300.00 in said year, then the Lessors shall continue to pay the said $300.00 lease rental for that year, but the said $300.00 so paid shall be a credit to be deducted by Lessee from royalty settlements in that year.

W I T N E S S E T H:

ARTICLE 1. Description of the Property, Grant of Lease.

The Lessors in consideration of the Lease Rental and/or the royalties herein reserved and the covenants to be performed by the Lessee and the further consideration of One Dollar ($1.00) paid by Lessee to Lessors, receipt of which is hereby acknow-

EXHIBIT B
OME 6653 - REVISED

ledged, does hereby lease, let and demise unto the Lessee the following described patented lode mining claim in The California Mining District, Lake County, Colorado, to-wit:

Part of the Starr Placer mining claim, containing (19) acres more or less, and as defined by Mineral Survey 255, Mineral District No. 3 commencing at corner number 23 thereof and continuing consecutively to corner number 34 thereof, thence to corner number 23, which is the point of beginning.

ARTICLE 2. Term of Lease.

The term of this lease shall be ten (10) years from the date hereof and so long thereafter as production is continued therefrom and royalties earned shall not be less than $300.00 in any year unless sooner terminated in the manner hereinafter provided; except that in the event production is suspended as a result of the elements, accidents, strikes, riots, war or interference by state, local or federal government or any cause beyond the reasonable control of the lessee, such suspension shall not work a forfeiture or termination of this lease, as long as the said $300.00 per year Lease Rental is paid.

ARTICLE 3. Possession and Control of Property.

The lessee shall have, and it is hereby given and granted, the right to enter into and take over immediately the sole and exclusive possession and control of said property and the whole and every part thereof, and, during the term of this agreement, to remain in the sole and exclusive possession and control thereof, and to investigate, measure, sample, examine, test, develop, work, mine, operate, use, manage and control the same and the water and water rights appurtenant thereto, and to mine, extract and remove from said property the ores and minerals and waters therein and appurtenant and belonging thereto, and to treat, mill, ship, sell or otherwise dispose of the same and receive the full

proceeds therefrom; and to erect, construct, maintain, use and operate thereon and therein buildings, structures, machinery and equipment.

ARTICLE 4. Manner of Work.

The lessee agrees to cause all work, development and mining to be done in a careful and minerlike manner and to conform in all respects with the mining laws and regulations of the State of Colorado.

ARTICLE 5. Royalties.

Lessee shall pay to the Lessors royalties on all ores extracted and sold from the leased premises ten percent (10%) of net mill or smelter returns on all ores after customary deductions of haulage, freight, sampling, assaying and treatment charges, and five percent (5%) of gross sales of any and all water sold.

All ores shall be sold in the name of the lessee, with duplicate settlement sheets furnished to lessors, and royalty settlements shall be made by the lessee on or before the tenth day of each and every calendar month during the term of this lease. Each settlement shall be accompanied by a duplicate liquidation or settlement sheet for each lot of ore milled and by a duplicate of the smelter returns for each lot of ore sold to a smelter.

Water receipts shall be made available to lessors as soon as they become available to lessee. The commencement, continuation, cessation, resumption, method or extent of actual mining and/or pumping operations hereunder shall at all times be at the discretion and election of lessee.

ARTICLE 6. Use of Adjacent Properties.

The lessee shall have the right to remove ores, waste, water and other materials from the leased premises and to

carry on general mining operations by means of shafts and workings on other properties and to remove ores, waste, water and other materials from other properties and to carry on general mining operations pertaining to such other properties on the surface of or through shafts and workings on the leased premises.

ARTICLE 7. Vertical Boundary Planes.

The lessors and the lessee hereby agree as is commonly understood in the district that underground ownership is limited to vertical planes extending downward from surface boundaries and that there shall be no extra lateral rights.

ARTICLE 8. Records and Inspection by Lessors.

Lessee's maps and records of all mining operations upon the leased premises pertinent to the computation of royalties, shall be available for lessors' inspection upon request, but not more often than once each month; and the lessors may enter said property at all reasonable times for the purpose of inspecting the same, and the lessee shall facilitate such inspection in every reasonable way, but lessors shall enter upon the said property at lessors' own risk and so as not to unreasonably hinder the operations of lessee.

ARTICLE 9. Taxes.

The lessee shall pay when due and before delinquent all general property taxes assessed as a non-producing mine against the lessors' ownership in the leased premises during the term of this lease beginning with this date first stated above; but the lessors shall be charged with the lessors' proportion, based on the royalties hereinabove reserved, of taxes based on assessment as a producing

mine and of any production, severance or similar or other excise taxes, and lessee shall advance such proportion and be reimbursed therefor. The lessee shall also pay when due and before delinquent all taxes levied or assessed against any and all personal property, machinery and equipment placed upon said leased premises by the lessee during the term of this lease.

ARTICLE 10. State and Federal Laws.

Lessee shall comply with the Workman's Compnsation Laws of Colorado and with Social Security, Unemployment Insurance and all other state and federal laws relating to lessee's operations and shall save lessors harmless from any claim for damages or liability by reason thereof.

ARTICLE 11. Protection from Liens and Damages.

The lessee shall keep the leased premises and the whole and every part thereof free and clear of liens for labor done or work performed upon the premises or materials furnished to it for the development or operation thereof under this lease and while the same is in force and effect, and will save and keep harmless the lessors from all costs, loss or damage which may arise by reasonof injury to any persons employed by the lessee in or upon the leased premises or any part thereof.

ARTICLE 12. Cancellation

Notwithstanding any provision herein to the contrary, the lessee may at any time upon thirty (30) days written notice to the lessors, cancel and terminate this lease. Upon such cancellation and termination of this lease, the lessee shall be under no further obligation of whatsoever kind or nature to the lessors, except for the making of pay-

ments which have already accrued at the date of such cancellation and termination.

ARTICLE 13. Surrender of Property.

In the event of a valid forfeiture, cancellation or other termination of this lease, the lessee will surrender to the lessors peacable possession of the leased premises.

ARTICLE 14. Removal of Equipment.

The lessee shall have and is hereby given and granted three (3) months after a valid forfeiture, cancellation or other termination of this agreement to remove from said property, all warehouse stocks, merchandise, materials, tools, hoists, compressors, engines, motors, pumps, transformers, electrical accessories, metal or wooden tanks, pipes and connections, mine cars and any and all machinery, trade fixtures, and equipment erected or placed in or upon said property by it. If lessee is hampered by snowdrifts, washouts, inclement weather, or other climatic conditions, from completing the removal of said equipment within the time specified, then the lessors agree to extend the time by a reasonable period if requested by the lessee. Lessee further agrees to remove all dumps or deposits made upon the demised premises and to cover and seal in an acceptable and safe manner any shaft or holes or pits dug upon the said property.

ARTICLE 15. Notices

Any notices required or permitted to be given hereunder shall be considered as delivered thirty-six (36) hours after the same shall have been deposited in the United States mail, duly registered, with postage thereon prepaid, addressed to the respective addresses given below:

If to lessors,

Mrs. Jean Wolcott Pugh,
948 Hubbard Street,
Winnetka, Illinois

Nancy Wolcott Ebsen,
Box 157,
Balboa Island, Calif.

and

Mrs. Katrina Wolcott Johnson,
411 Glendale Street,
Winnetka, Illinois

and if to lessee,

Harrison Cobb
401 Pine Street,
Boulder, Colorado

ARTICLE 16. Inurement.

These presents shall inure to the benefit of and be binding upon the respective heirs, successors and assigns of the parties hereto.

ARTICLE 17. Construction.

Titles to the articles hereof shall not be deemed a part of this lease but shall be regarded as having been used for convenience only.

IN WITNESS WHEREOF this agreement is executed as of the day and year first above written.

Katrina Wolcott Johnson (Seal)
Jean Wolcott Pugh
Nancy Wolcott Ebsen
Harrison Cobb.
President, Mineral Extraction Co.

ATTESTED: Geo. Vranek
Secretary

STATE OF COLORADO)
COUNTY OF BOULDER) ss

The foregoing instrument was acknowledged before me this _____ day of _____, 19_____, by HARRISON COBB.

My commission expires: _____.

Witness my hand and notarial seal.

_____
Notary Public.

STATE OF CALIFORNIA
CITY AND COUNTY OF ~~LOS ANGELES~~ Orange } ss. Nancy Wolcott Elson, lessor

The foregoing instrument was acknowledged before me this 19th day of April, 1966, by _____, lessee.

My commission expires: _____

ADRIENNE E. VASTERLING, Notary Public in and for the State of California My Commission Expires Sept. 30, 1968

Witness my hand and notarial seal.

ADRIENNE E. VASTERLING
NOTARY PUBLIC-CALIFORNIA
PRINCIPAL OFFICE IN
ORANGE COUNTY

Adrienne E. Vasterling
Notary Public

STATE OF ILLINOIS)
COUNTY OF COOK) ss. Katrina Wolcott Johnson, lessor

The foregoing instrument was acknowledged before me this 13 day of April, 1966, by _____, lessee.

My commission expires: My Commission Expires October 24, 1967

Witness my hand and notarial seal.

Jane Applebert
Notary Public
My Commission Expires
October 24, 1967

STATE OF ILLINOIS)
COUNTY OF COOK) ss. Jane Wolcott Tagh, lessor

The foregoing instrument was acknowledged before me this 13th day of April, 1966, by _____, lessee.

My commission expires: My Commission Expires October 24, 1967

Witness my hand and notarial seal.

Jane Applebert
Notary Public

SURVEY NO. 253

Mineral District No. 3

PLAT

OF THE CLAIM OF

THOMAS STARR

UPON THE

STARR PLACER CLAIM

CALIFORNIA MINING DISTRICT, LAKE COUNTY, COL.

Surveyed by Charles E. Baldwin U. S. Deputy Surveyor.

Containing 18.461 Acres,

Scale of 600 Feet to an Inch,

Variation 15° E.

BOUNDARIES		
No. of Course	Course	
1	S 18° E	1437.0
2	N 63° 30' E	515.0
3	N 68° E	269.5
4	N 64° 25' E	179.0
5	S 69° E	215.0
6	S 62° 19' E	277.5
7	S 77° 42' E	169.5
8	S 63° 30' E	332.0
9	S 62° 50' E	197.0
10	N 35° 20' E	620.0
11	S 62° 30' E	17.0
12	S 42° 55' E	950.0
13	S 28° 30' E	150.0
14	N 49° 30' E	598.0
15	N 49° 5' W	1025.0
16	N 26° 24' E	456.0
17	N 64° W	200.0
18	N 26° E	415.0
X 19	N 75° 15' W	1027.0
20	N 26° 20' W	370.4
21	N 0° 3' E	607.0
22	N 14° 17' W	134.94
23	N 62° E	333.5
24	N 66° 30' E	500.0
25	N 75° 35' E	500.0
26	S 69° 51' E	500.0
27	S 70° E	500.0
28	N 39° 30' W	500.0

BOUNDARIES.		
No. of Course.	COURSE.	Distance in Feet.
29	N 70° W	500.0
30	N 69° 57' W	500.0
31	S 75° 35' W	500.0
32	S 68° 30' W	500.0
33	S 62° W	114.0
34	N 14° 17' W	89.33
35	N 31° 55' W	324.50
36	N 14° 14' W	240.8
37	N 2° E	424.0
38	N 2° 35' E	442.0
39	N 10° 50' E	560.7
40	N 10° 37' E	841.0
41	N 32° 7' E	452.2
42	N 49° 13' E	151.5
43	N 76° 42' E	142.0
44	N 55° E	141.0
45	N 57° 42' E	100.0
46	S 70° 5' E	249.5
47	N 50° E	166.5
48	S 50° 10' E	180.0
49	S 74° 15' E	97.0
50	S 40° 25' E	125.0
51	N 30° 56' E	50.0
52	N 43° 32' W	150.0
53	N 74° 15' W	97.0
54	N 50° 10' W	180.0
55	S 50° W	166.5
56	N 70° 5' W	249.5

BOUNDARIES		
No. of Course	Course	Distance in Feet
57	S 72° 54' W	21.5
58	S 57° W	136.0
59	S 44° W	69.0
60	S 65° 10' W	75.0
61	S 59° 52' W	17.0
62	S 62° 50' W	70.0
63	S 35° 24' W	34.5
64	S 56° 20' W	109.0
65	S 39° W	192.0
66	S 27° 36' W	292.5
67	S 20° 40' W	157.4
68	S 10° 22' W	245.0
69	S 7° 15' W	445.5
70	S 15° 50' W	254.5
71	S 5° 26' W	303.0
72	S 3° 6' W	375.0
73	S 7° 40' E	70.5
74	S 4° 10' W	297.0
75	S 1° 10' E	157.0
76	S 15° 20' E	222.5
77	S 30° 10' E	347.5
78	S 13° E	150.0
79	S 13° 10' E	360.0
80	S 1° 20' E	200.0
81	S 29° 40' E	330.5
82	S 73° 40' W	1411.5
83	S 16° 20' E	653.0
84	S 81° 5' W	1423.5

The original Field Notes of the Survey of the Claim of Thomas Starr upon the Starr Placer Claim from which this Plat has been made, have been examined and approved, and are on file in this office. And I hereby certify that they furnish such an accurate description of said Mining Claim as will, if incorporated into a patent, serve fully to identify the premises, and that such reference is made therein to natural objects and permanent monuments, as will perpetuate and fix the locus thereof. I further certify that the value of the labor and improvements upon the said Mining Claim, placed thereon by the applicant, as shown by the Deputy Surveyor is not less than Five Hundred Dollars, and that said improvements consist of a shed and three tunnels

And I further certify that this is a correct Plat of said Mining Claim or premises, made in conformity with said original Field Notes of survey thereof.

U. S. SURVEYOR GENERAL'S OFFICE,
Denver, Colorado,
February 8th 1872

Wm. H. Bacon
U. S. Surveyor General for Colorado.

EXHIBIT C-1 OME 6653 REVISED

? X N.1..
X N.7..

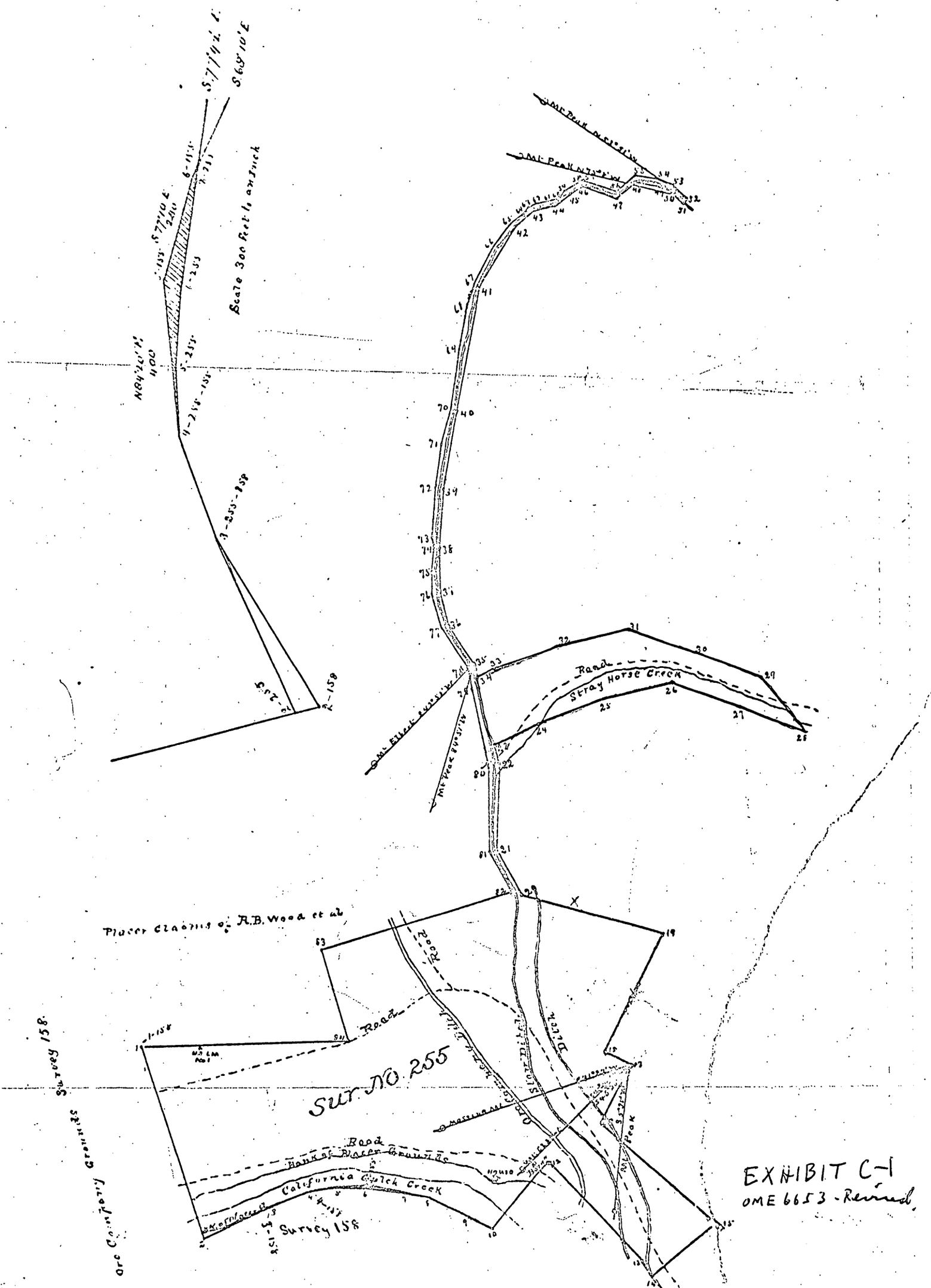


EXHIBIT C-1
OME 6653 - Revised

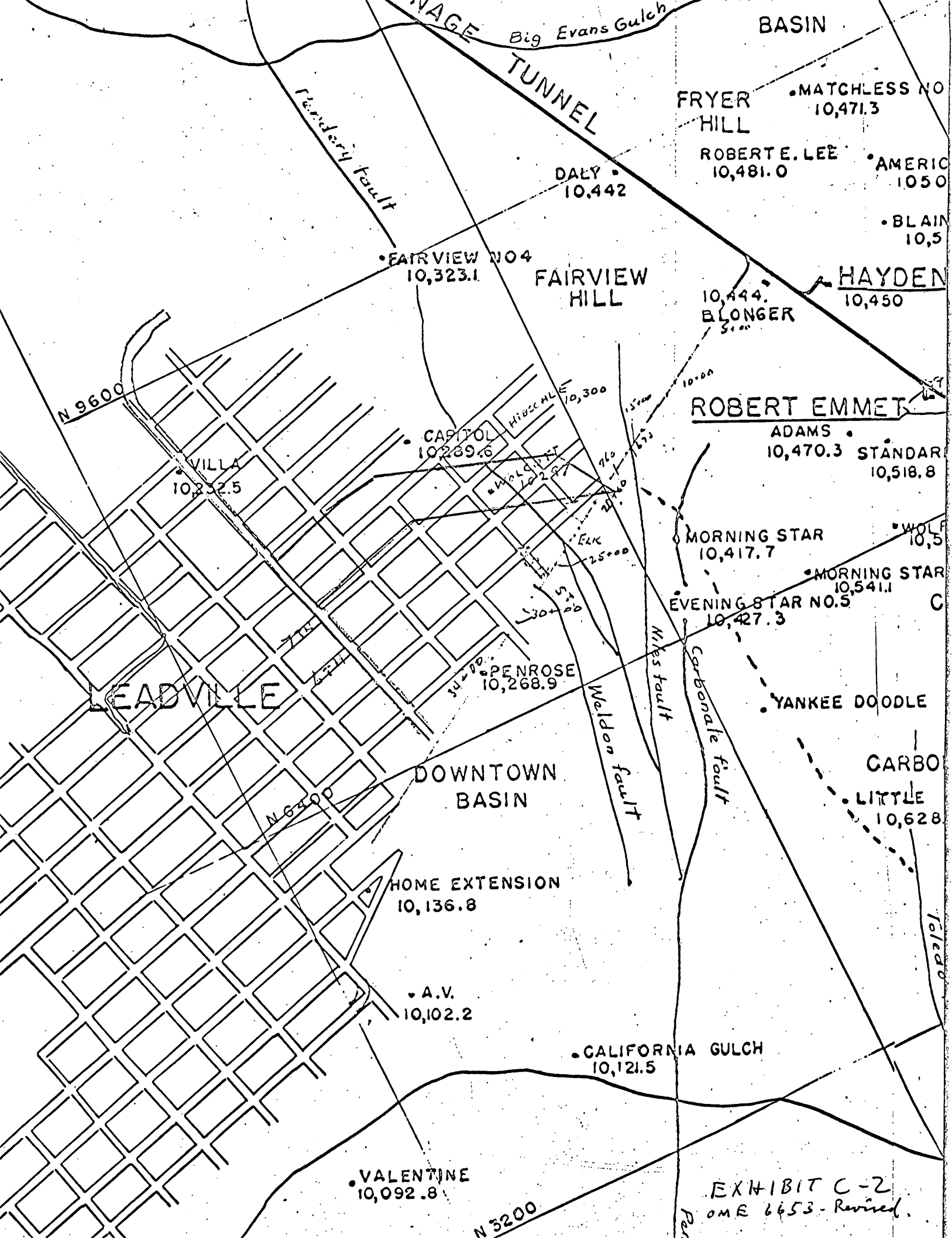


EXHIBIT C-2
OME 6653-Revised.

19 ACRES
STARR PLACER
No. 255
Poverty Flat
Little Fry
Little Stray
Stray
Carbonate Hill
Grand Park
Gulch
EXHIBIT C-3
OMB 6.6.83 - Revised

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
FEDERAL CENTER, DENVER, COLORADO 80225

Office of Minerals Exploration

OFFICIAL COPY
O. M. E.
RECEIVED
SEP 1 1967

INITIALS	CODE

August 30, 1967

Memorandum

To: Chief, OME

From: Field Officer, Region III

Subject: Minerals Extraction Company (Silver)
Starr Placer Property
Lake County, Colorado

Transmitted herewith is an application for financial assistance in minerals exploration on the above-stated property. A copy of the application has been retained for the OME Region III Field Office files.

J. William Hasler

J. William Hasler,
Field Officer, Region III
Office of Minerals Exploration

Enclosures

GEORGE VRANESH
ATTORNEY AT LAW
BOULDER, COLORADO 80302

P. O. Box 580

TELEPHONE 443-6151

August 28, 1967

OME Region III
RECEIVED
AUG 29 1967
Denver, Colorado

Mr. J. William Hasler
Field Officer, Region 3
U. S. Geological Service
Building 25, Room 2284
Denver Federal Center
Denver, Colorado 80225

Dear Mr. Hasler:

Enclosed are two copies of the application for an Office of Minerals Exploration loan.

We would very much like to obtain early consideration on this application because of the extremely difficult drilling conditions that may be encountered during the winter months.

We certainly appreciate all that you can do for us in this matter.

Very truly,

George Vranesh

George Vranesh

GV/d

Enclosures

cc: Mr. H. S. Cobb

MME Form 40
Jan. 65

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION

Budget Bureau No. 42-R1368
Approval expires Dec. 31, 1968

OFFICIAL COPY
O. M.
RECEIVED
SEP 1 1967
INITIALS CODE

APPLICATION FOR FINANCIAL ASSISTANCE IN MINERALS EXPLORATION

Pursuant to Public Law 85–701 (72 Stat. 700; 30 U.S.C. 641)

NAME OF APPLICANT *(Full legal name and mailing address as they should appear on contract if one is executed.)*

Minerals Extraction Company,
a Colorado corporation:
P. O. Box 580
Boulder, Colorado 80302

APPLICANT DO NOT USE THIS BLOCK

DOCKET NUMBER 6653

DATE RECEIVED 9-1-67

REGION III

DIVISION CODE

BUSINESS ORGANIZATION *(Check one)*

INDIVIDUAL	
CORPORATION	XX
PARTNERSHIP	
OTHER *(Specify)*	

STATE IN WHICH FIRM IS ORGANIZED Colorado

LIST CORPORATE OFFICERS OR PARTNERS HERE, IF APPLICABLE

NAME	ADDRESS	TITLE
Harrison S. Cobb	Boulder, Colorado	President
Robert H. Smellage, Jr.,	Boulder, Colorado	Vice-Pres. & Treasurer
George Vranesh	Boulder, Colorado	Secretary

MINERAL(S) FOR WHICH YOU WISH TO EXPLORE
Silver

ESTIMATED COST OF PROJECT
$ 23,128.75

PROPERTY NAME	LOCATION COUNTY	STATE
Starr Placer	Lake	Colorado

GENERAL INSTRUCTIONS

Before filling out this application, please read the *OME Regulations for Obtaining Federal Assistance in Financing Explorations for Mineral Reserves* (30 CFR Chap. III). To assure prompt action, your application must provide all applicable material and information specified on the back of this application form. Avoid unnecessary correspondence and delays by submitting complete and accurate information. *Please submit two copies of this application and all accompanying papers* except as otherwise noted. Place your name and address on each sheet. Each item of information, maps, and reports required as a part of this application is described on the back of this form. Identify each attached statement by the item number to which it applies. If an item does not apply to your application, show the item number on your statement and after it write "not applicable." Maps or sketches should be used to supplement narrative descriptions of the property location and boundaries in item 2, existing mine workings and geology in item 3, and the proposed exploration work in item 5. When this information is not too complex, all of it may be shown on one map or sketch. All documents and other attachments submitted as a part of this application, except those in item 3(g) which you mark to be returned, become the property of the Government and will not be returned to the applicant. Send true copies, *not originals*, of leases, contracts, and other documents which are an essential part of your business records. *File this application with the Office of Minerals Exploration, Department of the Interior, Washington 25, D. C., or with the nearest OME Field Office.*

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, and that he would not ordinarily undertake the proposed exploration under current conditions and circumstances at his sole expense.

DATED

Harrison S. Cobb
BY *(Signature)*

President
TITLE

A wilfully false statement or certification to any Department or Agency of the United States Government is a criminal offense. U. S. Code, Title 18, Sec. 1001.

INFORMATION REQUIRED WITH THIS APPLICATION

1. Financial Eligibility:

(a) Submit evidence of efforts made within 90 days preceding the filing of this application to obtain credit from your bank of account and at least one other banking institution or other private source of credit. Such evidence shall include true copies of correspondence which show: (1) date of loan request, (2) amount and terms requested, (3) proposed use of loan funds, and (4) the replies from credit sources. If the loan was offered under terms which you consider unreasonable, state why you consider them so.

(b) List names and addresses of affiliated, parent, or controlling companies or organizations and state extent and nature of their interest.

(c) State how you propose to furnish your share of the cost of the exploration work.

2. Applicant's Rights in Land:

(a) State your interest in the land and mineral rights, whether owner, lessee, purchaser under contract, or other. If you are not the owner, submit one true copy of the lease, contract, or other document (with address of owner) under which you control the property. Describe all liens, mortgages, or other encumbrances on the land and state book and page number and official place where recorded.

(b) State the legal description (section, township, and range; metes and bounds; patent number of claims) of the land upon which you wish to explore and all adjacent land which you own or control. Describe any part of the land or workings which should not be subject to Government royalty and liens. If the land consists of unpatented claims, state book and page number for each recorded location notice, including amended locations, and official place where recorded. State all the names by which you know the property.

(c) For all land or mineral rights encumbered or not owned, submit five copies of Lien and Subordination Agreements on MME Form 52. If the agreements cannot be obtained, state reasons and provide copies of letters of refusal.

3. Physical Description:

(a) Describe in detail and illustrate with maps or sketches all mining or exploration operations which you know have been or are being conducted upon the land. Include existing mine workings and all production facilities.

(b) State your interest, if any, in operations described in (a).

(c) State, if you know, the past and current production, supporting your statement with copies of settlement sheets, mine records, or published data if available.

(d) Describe known ore reserves, giving quantities and grades and sampling methods used. Support your statement with copies of assay certificates and assay maps if available.

(e) Describe by narrative and maps or sketches the geologic features of the property, including ore minerals, geologic formations if known, and type of deposit (vein, bedded, etc.).

(f) State your reasons for expecting to find ore, and if you have sampled the area you propose to explore, show where the samples were taken, describe sampling methods used, and provide copies of assay certificates.

(g) Send with your application at least *two* copies of all geologic or engineering reports, assay maps, or technologic information which you have, indicating whether you require their return.

4. Accessibility of Property:

(a) To aid the OME representative who may examine the property, state name and address of person who will meet him; give directions for reaching the property; and describe accessibility of property and of any mine workings.

(b) Name the shipping and supply points and state the distances to the property.

5. Exploration Work:

(a) Describe fully the proposed exploration work giving individual footages and sizes of openings *for each item of work.* Use narrative, maps, plans, and sections as necessary. Show location of the proposed work as related to geologic features such as veins, ore-bearing beds, contacts of rock formations, etc. Show also the relation of the proposed work to any existing mine workings and to *land boundaries* or to the closest identifiable corner.

(b) If an access road must be built, show the proposed location on the property map and state the length, type and construction methods proposed.

(c) If an OME contract is executed, state how soon thereafter work would be started and finished. State your anticipated average daily or monthly rate of progress for each type of work.

6. Experience:

State your operating experience and background to conduct this exploration work and also that of the person who will supervise the work.

7. Estimate of Costs:

Furnish detailed estimates of the necessary costs *for each item of the work proposed in 5(a)* under the headings listed below with a total for each heading and the estimated total cost of the work. Costs for any work to be performed by an independent contractor should be listed separately under category (a) below. Costs for any work that is not to be performed by an independent contractor should be listed under categories (b) through (g).

(a) Independent contracts. State the total cost of any proposed independent contract for all or any part of the work, and the number of units and the unit cost for each type of work, such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, or per cubic yard of material moved. Cost estimates should be supported by bids from three contractors if possible. (*Note*—If none of the work is to be contracted, write "none" after this item.)

(b) Personal services. The cost of supervision, engineering and geological services, outside consultants, and labor should be itemized by numbers and classes of employees; rates of wages, salaries or fees; and periods of employment. State whether these services are available.

(c) Operating materials and supplies. List items of material and supplies giving quantity and cost of each. Include under this heading power, water, and fuel, and units of equipment and tools costing less than $50 each.

(d) Operating equipment. List items of equipment and tools costing $50 or more per unit. Give specifications and indicate how each item is to be acquired—i.e., rented, purchased or provided by the applicant. If rented or purchased, state the estimated rental or purchase price. If furnished by the applicant, state condition and present fair market value.

(e) Initial rehabilitation and repairs. Describe the type and the cost of *initial* rehabilitation or repair of existing buildings, fixtures, installations (exclusive of mine workings), and movable operating equipment now owned by the applicant which will be used in the exploration work.

(f) New buildings, fixtures, installations. Describe each building, fixed improvement, and installation to be purchased, constructed, or installed for the exploration work, stating specifications and cost including labor, materials, and supervision.

(g) Miscellaneous. Describe the type and estimate the cost of repairs and maintenance of the operating equipment listed in 7(d). Do not repeat initial repairs listed in 7(e). Show also the costs of analytical work, accounting, workmen's compensation and employees' liability insurance, payroll taxes, and other required costs that do not fall within the previous categories. [*Note*—The Government will not contribute to costs incurred before the date of the contract, or to costs of or incident to: (1) acquiring, using, or possessing land and any existing improvements, facilities, buildings, installations, and appurtenances, or the depreciation and depletion thereof; (2) general overhead, corporate management, interest and taxes (other than payroll and sales taxes); (3) insurance (other than employees' liability insurance); and (4) damages to persons or property (other than authorized repair to or replacement of equipment or other property used in the work).]

I[illegible]OUP. SEC., WASH., D.C

INFORMATION REQUIRED WITH THIS APPLICATION

1. FINANCIAL ELIGIBILITY

(a) Letters to obtain credit have been transmitted to the Security Bank of Boulder and The National State Bank of Boulder on July 3, 1967. Reply was received on July 6, 1967. Both banks denied the loan for the reason that the risk was too great, and based on policy reaons for not loaning funds for purposes of mine exploration.

(b) Minerals Extraction Company is owned by Harrison S. Cobb, Sylvia Ruth Smellage and George Vranesh, all of Boulder, Colorado, 80302.

(c) Minerals Extraction Company will provide its portion of the exploration costs from private funds of the three owners.

2. APPLICANT'S RIGHT IN LAND

(a) Minerals Extraction Company presently holds a lease on the property under consideration. Enclosed is a true copy of that lease. There are no liens, mortgages or other encumbrances on this land.

Performance Bond will be used. see next page

(b) The legal description of the property is described in the lease agreement and includes points 23 through 34 of the survey of the Starr Placer No. 255. Enclosed is a copy of the plat which best describes the property. The entire portion of the lease property is subject to the OME agreement.

(c) A Lien and Subordination Agreement was not obtained covering this property because of the diverse ownership and location of the owners. Communication with the present owners is difficult. They wish not to be disturbed or troubled with any details concerning the lease. Therefore General Services Administration, Standard Form 25 will be executed.

3. PHYSICAL DESCRIPTION

(a) There has been recent exploratory work nearby. However, results of such exploration work are not available. The work was conducted by parties unknown to the principals herein. Mining activities have previously been conducted on the property under consideration. Mr. Carl Youngstrom, presently residing in Boulder, Colorado has furnished the very latest development maps of the area he mined just prior to cessation of mining operations in 1929.

(b) The principals herein have had no interest in any of the operations described in (a) above.

(c) There are no settlement sheets available from the immediate property. These were lost many years ago. However, the past history of Leadville District has been documented by C. W. Henderson in Professional Paper No. 148 and page 112 thereof is enclosed.

(d) The ore reserves cannot be stated with any degree of

authority. Mr. Carl Youngstrom, who last mined this particular property, has stated that there was very good ore in several faces. He had to quit mining when the mine became flooded when the Penrose Mine pulled its pumps. The stope maps provided by Mr. Youngstrom contain notations of ore in faces. However, no specific values or tonnages are indicated.

(e) The property under consideration lies on the east side of the Pendery fault. This is the up-throw side and is relatively near the surface. All five ore contacts appear to be present and relatively shallow drilling can intercept all of the ore zones. The Hibschle mine penetrated four of the five contact zones. The Wolcott mine penetrated the first three zones.

(f) Unquestionably ore will be found by drilling of the property under consideration. Mining has been conducted on this very property in the past. There was ore in a number of headings when the miners were driven out because of high water. There is no reason to believe that this ore will not continue beyond the existing faces.

(g) The primary source information for geologic and engineering information is from Professional Paper No. 148 published by the U. S. Geologic Society.

Enclosed are copies of cross-sections and maps from that publication which are of particular interest to this property, and a data sheet showing values recovered from 1859 through 1926 from the Leadville Mining District.

4. ACCESSIBILITY OF PROPERTY

(a) The property under consideration is located in the Downtown Mining District, Leadville, Colorado. The property is just east of Harrison Avenue, the main street, on 7th and Ash Streets. There is never any problem in getting to the property since there are homes in the immediate area.

Either George Vranesh, P. O. Box 580, phone 443-6151, Boulder or Harrison S. Cobb, 401 Pine Street, phone 442-9248, Boulder, Colorado 80302 would be available to meet with the OME representative to examine the property.

(b) The shipping and supply points for this operation would be Leadville, Colorado and Denver, Colorado, 100 miles away.

5. EXPLORATION WORK

(a) The extent of exploration work required is limited to drilling five drill holes on a trend of known ore as shown by mine maps and as revealed in discussions with the person who last mined this property.

The intention is to drill a hole about 100 feet beyond each face shown on the mine maps. The drill hole will be drilled to a depth to intersect five ore contact zones. The holes will vary somewhat in depth. The deepest hole should not exceed 550 feet. The total footage should be 2,000 feet.

Enclosed is a copy of a mine map and the relative location of the drill holes with respect to the working faces and to boundary lines.

(b) No roads will be required since the public streets of the City of Leadville are on the property.

(c) If an OME contract is executed, the work can commence within a reasonable time thereafter depending upon the time that it would take a drill crew to move on the property. The time for actual drilling should not exceed two weeks. Therefore, after the execution of the contract, all work should be completed within one month.

6. EXPERIENCE

Harrison S. Cobb, president of Minerals Extraction Company, has been active in Colorado mining since 1931. He has successfully operated mines in Boulder County and elsewhere since that time. He is a director of the Colorado Mining Association as well as past president of that organization. Mr. Cobb is a graduate of the Rollins College and belongs to a number of professional organizations.

Robert H. Smellage, Jr., is a prominent business man in Boulder. He has participated in mining ventures in the past. His experience in drilling dates back to 1937 and he has been active in oil field operations for many years.

George Vranesh is an attorney and a mining engineer. He graduated from the Colorado School of Mines in 1951. He has been a mine engineer employed by several different mining companies. He has also owned his own mining partnership for seven years, operating uranium, tungsten and base metal mines throughout the west.

Mr. Vranesh is a director of the Colorado Mining Association, president of the Boulder County Mining Association, and is a registered professional engineer as well as a member of the Colorado Bar.

The actual work will be supervised by Harrison S. Cobb and, to a lesser degree, by George Vranesh.

7. ESTIMATE OF COSTS

The cost of supervision of the actual work will be that of the services of Harrison S. Cobb, or qualified engineer employed by him, who will remain at the mine site during the drilling operations. This should be $600.00 maximum for the one month of supervision plus living expenses of $300.00. The miscellaneous expenses such as transportation, telephone, and other related items will be about $100.00 Therefore the total cost of supervision should not exceed $1,000.00.

(a) The only other direct cost involved would be the drilling expenses. Enclosed are three bids from independent drillers.

(b) Drilling Costs

(b.1) No road work or bulldozing required.

(b.2) Mobilization and demobilization $300.00

(b.3) BX Core

O to bedrock @ $10.00/ft.

It is estimated that there is 100 feet of

alluvial material above bedrock. Therefore, this cost should approximate $5,000.00.

Bedrock to 300 feet @ $6.50/ft.

It is estimated that this should approximate $7,800.00.

300 to 600 feet @ $8.00/ft.

It is estimated that this should approximate $8,000.00.

(c) Miscellaneous Costs

(c.1) Assaying costs

(c.1.1) Cardboard Core boxes, 160 @ $1.00/ea., $160.00.

(c.1.2) Assays for silver, gold, lead, and zinc; 125 assays @ $7.00/ea., $875.00.

(c.1.3) Transportation costs for sample, 125 samples @ $0.75/ea., $93.75.

(d) No special materials or supplies would be required.

(e) No operating equipment would be required except for the independent drilling equipment.

(f) No initial rehabilitation or repairs are required.

(g) No building, fixtures or installations are required.

(h) The only costs involved in this application are the direct drilling costs, costs attributed to supervision by Harrison S. Cobb and the assay costs. There are not other costs, direct or indirect.

RECAP - COSTS:

(a)	Supervision	$ 1,000.00
(b)	Drilling	21,100.00
(c)	Miscellaneous	1,028.75
	Total	$ 23,128.75

George Vranesh
July 15, 1967

Gentlemen:

Minerals Extraction Company, a Colorado corporation, desires to conduct exploration drilling in the downtown basin, Leadville Mining District in Leadville, Colorado.

We anticipate the cost of the entire project to be $20,000.00 for the first phase of the exploration program. This costs estimate includes direct drilling and does not reflect any overhead or indirect operation costs.

The Leadville area has always been considered one of the most promising mining areas in the State of Colorado. We believe the project presents a very realistic possibility of uncovering a large ore body of silver and lead.

This letter is to inquire into the possibility of obtaining a loan for all or a portion of the required funds necessary to carry on a successful exploration program.

We would appreciate an early consideration of this loan application. If you want further information, I will be glad to furnish reports or to meet with you at your earliest convenience.

MINERALS EXTRACTION COMPANY

By George Vranesh

George Vranesh
P.O. Box 580
Boulder, Colorado

SECURITY BANK OF BOULDER 1135 BROADWAY, BOULDER, COLORADO
TELEPHONE: 443-1852

July 6, 1967

Mr. George Vranesh
Mineral Extraction Co.
Box 580
Boulder, Colorado

Dear Mr. Vranesh:

We thank you for the inquiry of loan for the possibility of exploring properties in the Leadville area.

I am sorry to have to state that the loan of $20,000 must be denied. It is the policy of this bank not to make loans of this nature especially without security.

Again, thank you for your inquiry.

Sincerely,

R. H. Smellage

R. H. Smellage
President

RHS::kn

NATIONAL STATE BANK OF BOULDER

BOULDER, COLORADO 80302 • P. O. BOX 227 • PHONE 442-0351 • AREA CODE 303

July 6, 1967

No. of to letter of request.

Minerals Extraction Company
c/o George Vranesh
P. O. Box 580
Boulder, Colorado

Dear Mr. Vranesh:

Your request for a loan, in the amount of $20,000.00, for purposes of mining exploration, has been declined. Our bank does not feel that we can provide unsecured working capital for this type of venture.

Respectfully,

Bernard R. Miles

Bernard R. Miles
Vice President

BRM:jc

OFFICIAL COPY
O. M. E.
RECEIVED
SEP 1 1967
INITIALS | CODE

MINING LEASE

This Mining Lease, entered into as of this 21st day of March, 1966, between NANCY WALCOTT EBSEN, Box 157, Balboa Island, California, Mrs. Jean Wolcott Pugh, 948 Hubbard Street, Winnetka, Illinois and Mrs, Katrina Wolcott Johnson, 411 Glendale Street, Winnetka, Illinois, hereinafter referred to as Lessors and MINERALS EXTRACTION COMPANY, hereinafter referred to as Lessee.

In consideration of the leasing of the within described premises by the said Lessors to the said Lessee said Lessee shall pay to the said Lessors the sum of Six Hundred Dollars ($600.00), and upon receipt of the said Six Hundred Dollars ($600.00) Lessors shall execute and deliver to said Lessee a receipt for same, and upon such delivery the lease shall become effective.

On the First day of April, 1967 and on the First day of April of every year thereafter during the term of this lease, the Lessee shall pay to the said Lessors the sum of Three Hundred Dollars ($300.00) as a minimum lease rental for the said premises. If when and as Royalties shall accrue to the credit of the Lssors by reason of production of ore or water under the terms of this lease as set out in Article 5, thereof and the amount of Royalties earned in any one year amount to more than $300.00 in said year, then the Lessors shall continue to pay the said $300.00 lease rental for that year, but the said $300.00 so paid shall be a credit to be deducted by Lessee from royalty settlements in that year.

W I T N E S S E T H:

ARTICLE 1. Description of the Property, Grant of Lease.

The Lessors in consideration of the Lease Rental and/or the royalties herein reserved and the covenants to be performed by the Lessee and the further consideration of One Dollar ($1.00) paid by Lessee to Lessors, receipt of which is hereby acknow-

ledged, does hereby lease, let and demise unto the Lessee the following described patented lode mining claim in The California Mining District, Lake County, Colorado, to-wit:

Part of the Starr Placer mining claim, containing (19) acres more or less, and as defined by Mineral Survey 255, Mineral District No. 3 commencing at corner number 23 thereof and continuing consecutively to corner number 34 thereof, thence to corner number 23, which is the point of beginning.

ARTICLE 2. Term of Lease.

The term of this lease shall be ten (10) years from the date hereof and so long thereafter as production is continued therefrom and royalties earned shall not be less than $300.00 in any year unless sooner terminated in the manner hereinafter provided; except that in the event production is suspended as a result of the elements, accidents, strikes, riots, war or interference by state, local or federal government or any cause beyond the reasonable control of the lessee, such suspension shall not work a forfeiture or termination of this lease, as long as the said $300.00 per year Lease Rental is paid.

ARTICLE 3. Possession and Control of Property.

The lessee shall have, and it is hereby given and granted, the right to enter into and take over immediately the sole and exclusive possession and control of said property and the whole and every part thereof, and, during the term of this agreement, to remain in the sole and exclusive possession and control thereof, and to investigate, measure, sample, examine, test, develop, work, mine, operate, use, manage and control the same and the water and water rights appurtenant thereto, and to mine, extract and remove from said property the ores and minerals and waters therein and appurtenant and belonging thereto, and to treat, mill, ship, sell or otherwise dispose of the same and receive the full

proceeds therefrom; and to erect, construct, maintain, use and operate thereon and therein buildings, structures, machinery and equipment.

ARTICLE 4. Manner of Work.

The lessee agrees to cause all work, development and mining to be done in a careful and minerlike manner and to conform in all respects with the mining laws and regulations of the State of Colorado.

ARTICLE 5. Royalties.

Lessee shall pay to the Lessors royalties on all ores extracted and sold from the leased premises ten percent (10%) of net mill or smelter returns on all ores after customary deductions of haulage, freight, sampling, assaying and treatment charges, and five percent (5%) of gross sales of any and all water sold.

All ores shall be sold in the name of the lessee, with duplicate settlement sheets furnished to lessors, and royalty settlements shall be made by the lessee on or before the tenth day of each and every calendar month during the term of this lease. Each settlement shall be accompanied by a duplicate liquidation or settlement sheet for each lot of ore milled and by a duplicate of the smelter returns for each lot of ore sold to a smelter.

Water receipts shall be made available to lessors as soon as they become available to lessee. The commencement, continuation, cessation, resumption, method or extent of actual mining and/or pumping operations hereunder shall at all times be at the discretion and election of lessee.

ARTICLE 6. Use of Adjacent Properties.

The lessee shall have the right to remove ores, waste, water and other materials from the leased premises and to

carry on general mining operations by means of shafts and workings on other properties and to remove ores, waste, water and other materials from other properties and to carry on general mining operations pertaining to such other properties on the surface of or through shafts and workings on the leased premises.

ARTICLE 7. Vertical Boundary Planes.

The lessors and the lessee hereby agree as is commonly understood in the district that underground ownership is limited to vertical planes extending downward from surface boundaries and that there shall be no extra lateral rights.

ARTICLE 8. Records and Inspection by Lessors.

Lessee's maps and records of all mining operations upon the leased premises pertinent to the computation of royalties, shall be available for lessors' inspection upon request, but not more often than once each month; and the lessors may enter said property at all reasonable times for the purpose of inspecting the same, and the lessee shall facilitate such inspection in every reasonable way, but lessors shall enter upon the said property at lessors' own risk and so as not to unreasonably hinder the operations of lessee.

ARTICLE 9. Taxes.

The lessee shall pay when due and before delinquent all general property taxes assessed as a non-producing mine against the lessors' ownership in the leased premises during the term of this lease beginning with this date first stated above; but the lessors shall be charged with the lessors' proportion, based on the royalties hereinabove reserved, of taxes based on assessment as a producing

mine and of any production, severance or similar or other excise taxes, and lessee shall advance such proportion and be reimbursed therefor. The lessee shall also pay when due and before delinquent all taxes levied or assessed against any and all personal property, machinery and equipment placed upon said leased premises by the lessee during the term of this lease.

ARTICLE 10. State and Federal Laws.

Lessee shall comply with the Workman's Compnsation Laws of Colorado and with Social Security, Unemployment Insurance and all other state and federal laws relating to lessee's operations and shall save lessors harmless from any claim for damages or liability by reason thereof.

ARTICLE 11. Protection from Liens and Damages.

The lessee shall keep the leased premises and the whole and every part thereof free and clear of liens for labor done or work performed upon the premises or materials furnished to it for the development or operation thereof under this lease and while the same is in force and effect, and will save and keep harmless the lessors from all costs, loss or damage which may arise by reason of injury to any persons employed by the lessee in or upon the leased premises or any part thereof.

ARTICLE 12. Cancellation

Notwithstanding any provision herein to the contrary, the lessee may at any time upon thirty (30) days written notice to the lessors, cancel and terminate this lease. Upon such cancellation and termination of this lease, the lessee shall be under no further obligation of whatsoever kind or nature to the lessors, except for the making of pay-

ments which have already accrued at the date of such cancellation and termination.

ARTICLE 13. Surrender of Property.

In the event of a valid forfeiture, cancellation or other termination of this lease, the lessee will surrender to the lessors peacable possession of the leased premises.

ARTICLE 14. Removal of Equipment.

The lessee shall have and is hereby given and granted three (3) months after a valid forfeiture, cancellation or other termination of this agreement to remove from said property, all warehouse stocks, merchandise, materials, tools, hoists, compressors, engines, motors, pumps, transformers, electrical accessories, metal or wooden tanks, pipes and connections, mine cars and any and all machinery, trade fixtures, and equipment erected or placed in or upon said property by it. If lessee is hampered by snowdrifts, washouts, inclement weather, or other climatic conditions, from completing the removal of said equipment within the time specified, then the lessors agree to extend the time by a reasonable period if requested by the lessee. Lessee further agrees to remove all dumps or deposits made upon the demised premises and to cover and seal in an acceptable and safe manner any shaft or holes or pits dug upon the said property.

ARTICLE 15. Notices

Any notices required or permitted to be given hereunder shall be considered as delivered thirty-six (36) hours after the same shall have been deposited in the United States mail, duly registered, with postage thereon prepaid, addressed to the respective addresses given below:

If to lessors,

Mrs. Jean Wolcott Pugh,
948 Hubbard Street,
Winnetka, Illinois

Nancy Wolcott Ebsen,
Box 157,
Balboa Island, Calif.

and

Mrs. Katrina Wolcott Johnson,
411 Glendale Street,
Winnetka, Illinois

and if to lessee,

Harrison Cobb
401 Pine Street,
Boulder, Colorado

ARTICLE 16. Inurement.

These presents shall inure to the benefit of and be binding upon the respective heirs, successors and assigns of the parties hereto.

ARTICLE 17. Construction.

Titles to the articles hereof shall not be deemed a part of this lease but shall be regarded as having been used for convenience only.

IN WITNESS WHEREOF this agreement is executed as of the day and year first above written.

Katrina Wolcott Johnson (Seal)
Jean Wolcott Pugh
Nancy Wolcott Ebsen
Harrison Cobb.
President, Minerals Extraction Co.

ATTESTED: Geary Vranish
Secretary

STATE OF COLORADO)
) ss
COUNTY OF BOULDER)

The foregoing instrument was acknowledged before me this _____ day of _____, 19_____, by HARRISON COBB.

My commission expires: _____.

Witness my hand and notarial seal.

_____
Notary Public.

STATE OF CALIFORNIA
CITY AND COUNTY OF ~~LOS ANGELES~~ Orange } ss. Nancy Wolcott Elson, lessor

The foregoing instrument was acknowledged before me this 19th day of April, 1966, by _____, lessee.

My commission expires: _____

ADRIENNE E. VASTERLING, Notary Public
In and for the State of California
My Commission Expires Sept. 30, 1968

Witness my hand and notarial seal.

ADRIENNE E. VASTERLING
NOTARY PUBLIC-CALIFORNIA
PRINCIPAL OFFICE IN
ORANGE COUNTY

Adrienne E. Vasterling
Notary Public

STATE OF ILLINOIS)
COUNTY OF COOK) ss. Katherine Wolcott Johnson, lessor

The foregoing instrument was acknowledged before me this 13 day of April, 1966, by _____, lessee.

My commission expires: My Commission Expires October 24, 1967

Witness my hand and notarial seal.

Paul Offield
Notary Public
My Commission Expires
October 24, 1967

STATE OF ILLINOIS)
COUNTY OF COOK) ss. Jean Wolcott Pugh, lessor

The foregoing instrument was acknowledged before me this 13th day of April, 1966, by _____, lessee.

My commission expires: My Commission Expires October 24, 1967

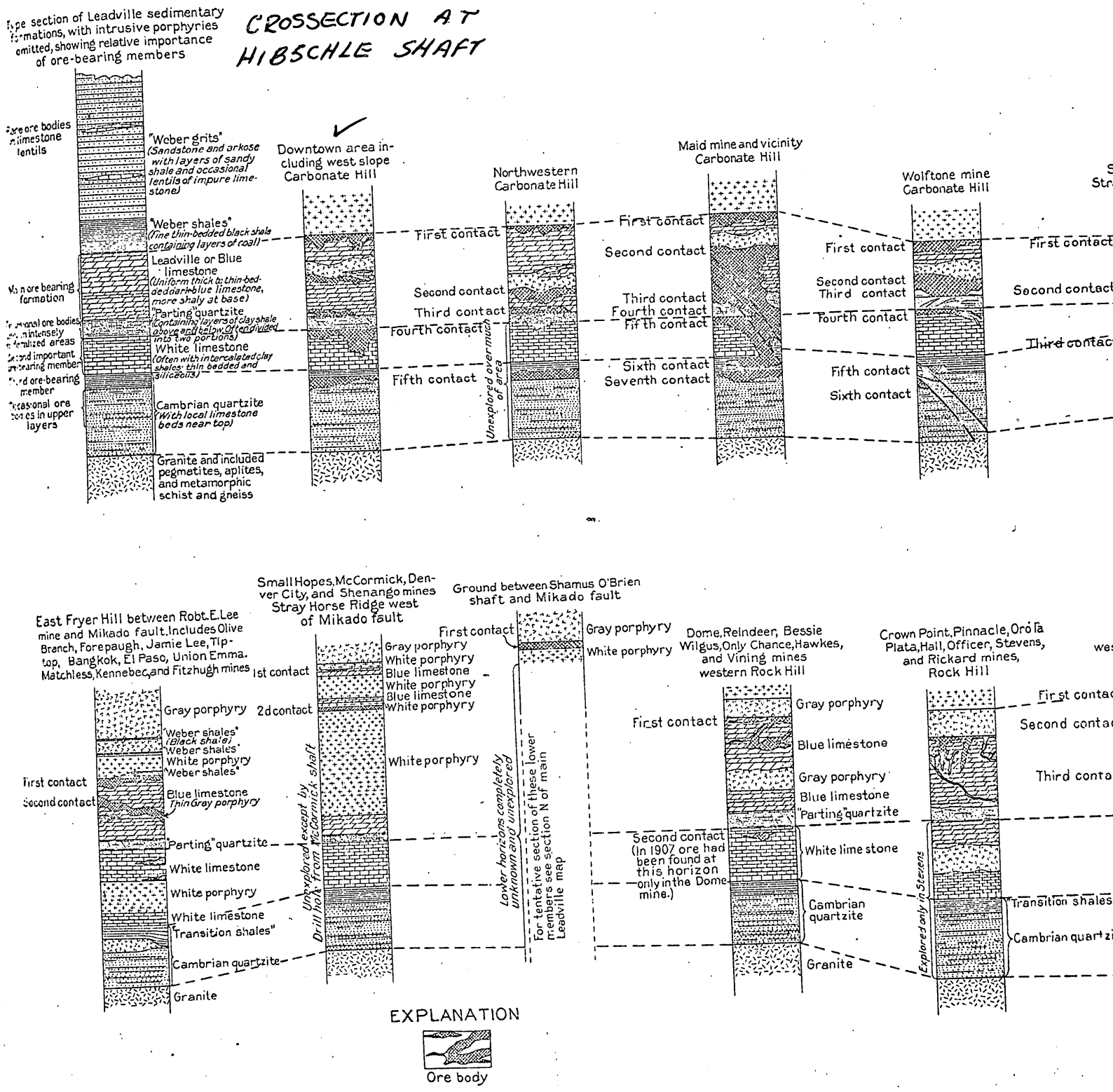
Witness my hand and notarial seal.

Paul Offield
Notary Public

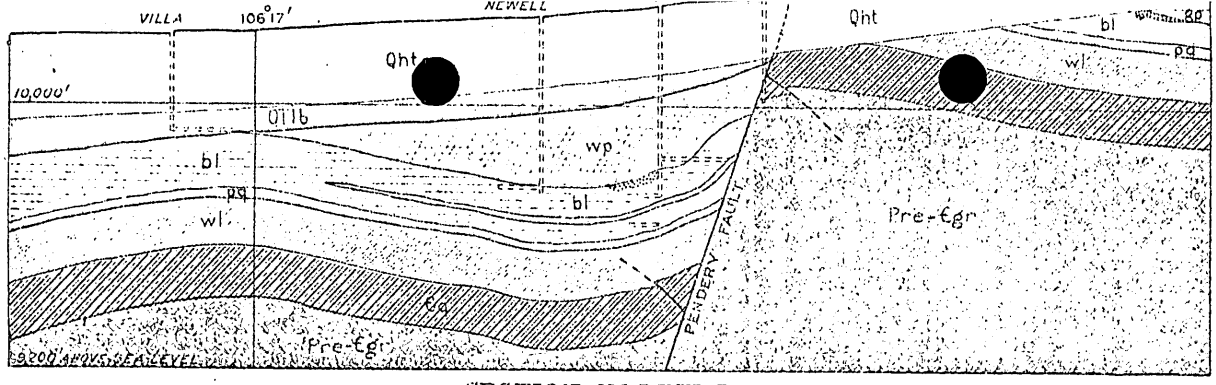
Gold, silver, copper, lead, and zinc recovered in Lake County, 1859–1926

Year	Ore (short tons, dry weight)	Gold (value)			Silver			Copper			Lead			Zinc			Total value
		Placer	Lode	Total	Fine ounces	Average price per ounce	Value	Pounds	Average price per pound	Value	Pounds	Average price per pound	Value	Pounds	Average price per pound	Value	
1859–1867		$5,272,000		$5,272,000	37,600	$1.341	$50,422										$5,322,422
1868		60,000		60,000	452	1.326	600										60,600
1869		80,000	$10,000	90,000	679	1.325	900										90,900
1870		65,000		65,000	465	1.328	618										65,618
1871		50,000	50,000	100,000	1,158	1.325	1,534										101,534
1872		66,500	66,500	133,000	1,540	1.322	2,036										135,036
1873		75,000	150,000	225,000	2,937	1.297	3,809										228,809
1874		70,000	143,503	213,503	2,797	1.278	3,575										217,078
1875		17,237	25,862	43,099	16,668	1.24	20,668										63,767
1876		30,000	30,000	60,000	23,203	1.16	26,915				15,000	$0.061	$915				87,830
1877		[a]30,000	25,000	55,000	458,000	1.20	549,600				1,200,000	.055	66,000				670,600
1878		[a]30,000	30,000	60,000	1,800,000	1.15	2,070,000				10,000,000	.036	360,000				2,490,000
1879		30,000	60,000	90,000	8,411,132	1.12	9,420,468				43,288,000	.041	1,774,808				11,285,276
1880	[b]140,623	70,000	34,014	104,014	9,977,344	1.15	11,473,946				66,658,000	.05	3,332,900				14,910,860
1881		69,000	231,000	300,000	7,966,406	1.13	9,002,039				58,464,000	.048	2,806,272				12,108,311
1882		63,500	256,500	320,000	8,894,531	1.14	10,139,765				97,890,000	.049	4,796,610				15,256,375
1883		25,000	375,000	400,000	9,049,219	1.11	10,044,633				111,575,000	.043	4,797,725				15,242,358
1884	[c]232,002	30,000	470,000	500,000	7,270,313	1.11	8,070,047	[a]100,000	$0.13	$13,000	93,628,000	.037	3,464,236				12,047,283
1885		[a]15,000	555,000	570,000	6,441,693	1.07	6,892,612	[a]100,000	.108	10,800	55,522,000	.039	2,165,358	50,000	$0.043	$2,150	9,640,920
1886		[a]5,000	428,691	433,691	6,486,047	.98	6,421,187	[a]100,000	.111	11,100	84,400,000	.046	3,882,400	50,000	.044	2,200	10,750,578
1887			243,694	243,694	5,994,324	.98	5,874,438	[a]200,000	.138	27,600	92,359,103	.045	4,156,160	50,000	.046	2,300	10,304,192
1888			310,891	310,891	5,486,064	.94	5,156,900	[a]200,000	.168	33,600	73,378,149	.044	3,228,639	150,000	.049	7,350	8,737,380
1889			189,397	189,397	6,150,839	.94	5,781,789	266,489	.135	35,976	83,785,918	.039	3,267,651	150,000	.05	7,500	9,282,313
1890	342,163		295,063	295,063	5,313,930	1.05	5,579,627	1,766,035	.156	275,501	43,623,477	.045	1,963,056	150,000	.055	8,250	8,121,497
1891	403,135	2,894	345,525	348,419	4,793,015	.99	4,745,085	4,544,202	.128	581,658	53,444,973	.043	2,298,134	150,000	.05	7,500	7,980,796
1892	323,187	9,000	242,296	251,296	5,898,020	.87	5,131,277	5,928,863	.116	687,748	44,009,114	.04	1,760,365	562,500	.046	25,875	7,856,561
1893	351,794		902,244	902,244	6,795,454	.78	5,300,455	5,000,000	.108	540,000	36,274,889	.037	1,342,171	[c]735,000	.04	29,400	8,114,270
1894	347,143		1,499,314	1,499,314	7,695,108	.63	4,847,918	4,000,000	.095	380,000	44,733,000	.033	1,476,189	[a]1,000,000	.035	35,000	8,238,421
1895	394,710		1,386,359	1,386,359	9,435,413	.65	6,133,018	2,803,550	.107	299,980	38,922,572	.032	1,245,522	1,265,000	.036	45,540	9,110,419
1896	349,333		1,453,458	1,453,458	6,623,764	.68	4,504,160	4,071,761	.108	439,750	31,993,777	.03	959,813	642,000	.039	25,038	7,382,219
1897	413,552		2,063,858	2,063,858	5,451,317	.60	3,270,790	3,146,802	.12	377,616	23,700,908	.036	853,233	2,201,500	.041	90,262	6,655,759
1898	517,992		2,073,036	2,073,036	7,068,727	.59	4,170,550	5,543,954	.124	687,450	35,945,006	.038	1,365,910	2,673,500	.046	122,981	8,419,927
1899	525,728		2,196,498	2,196,498	7,230,118	.60	4,338,071	3,202,828	.171	547,684	48,598,720	.045	2,186,942	10,575,240	.058	613,364	9,882,559
1900	618,071		2,529,512	2,529,512	6,967,279	.62	4,319,713	2,728,553	.166	452,940	62,599,654	.044	2,754,385	14,441,000	.044	635,404	10,691,954
1901	793,014		1,776,132	1,776,132	6,830,084	.60	4,098,050	1,930,556	.167	322,403	56,359,708	.043	2,423,467	23,167,140	.041	949,853	9,569,905
1902	748,946		1,203,924	1,203,924	5,641,857	.53	2,990,184	2,611,167	.122	318,562	39,450,178	.041	1,617,457	47,637,490	.048	2,286,600	8,416,727
1903	770,000		1,339,974	1,339,974	4,973,033	.54	2,685,438	2,556,583	.137	350,252	36,353,239	.042	1,526,836	76,566,000	.054	4,134,564	10,037,064
1904	663,487		1,186,851	1,186,851	5,085,151	.58	2,949,388	3,734,593	.128	478,028	47,180,865	.043	2,028,777	58,254,353	.051	2,970,972	9,614,016
1905	648,464		1,180,401	1,180,401	4,033,762	.61	2,460,595	4,486,115	.156	699,834	51,162,040	.047	2,404,616	70,238,634	.059	4,144,079	10,889,525
1906	672,055	264	1,508,146	1,508,410	3,890,338	.68	2,645,430	2,092,735	.193	403,898	47,456,964	.057	2,705,047	70,198,462	.061	4,282,106	11,544,891
1907	631,273	510	1,064,180	1,064,690	4,154,913	.66	2,742,243	2,679,510	.20	535,902	32,519,796	.053	1,723,549	67,247,381	.059	3,967,595	10,033,979
1908	408,711		1,228,449	1,228,449	2,893,496	.53	1,533,553	4,674,502	.132	617,034	19,646,007	.042	825,132	23,188,080	.047	1,089,840	5,294,008
1909	417,297		1,435,431	1,435,431	3,423,642	.52	1,780,294	5,182,608	.13	673,739	21,073,992	.043	906,182	38,637,315	.054	2,086,415	6,882,061
1910	462,033		1,213,134	1,213,134	3,322,015	.54	1,793,888	3,645,157	.127	462,935	19,249,503	.044	846,978	56,367,445	.054	3,043,842	7,360,777
1911	438,419		1,133,442	1,133,442	3,007,296	.53	1,593,867	4,017,504	.125	502,188	18,499,089	.045	832,459	71,610,456	.057	4,081,798	8,143,752
1912	507,591		1,103,230	1,103,230	3,000,397	.615	1,845,244	2,065,800	.165	340,857	26,234,244	.045	1,180,541	105,945,783	.069	7,310,259	11,780,131
1913	528,311		1,023,631	1,023,631	3,400,318	.604	2,053,792	1,923,987	.155	298,218	29,286,183	.044	1,288,592	93,842,857	.057	5,255,200	9,919,433
1914	547,463		1,571,451	1,571,451	3,810,830	.553	2,107,389	2,382,910	.133	316,927	26,784,615	.039	1,044,600	78,763,334	.051	4,016,930	9,057,297
1915	481,620	69,009	2,177,143	2,246,152	2,571,002	.507	1,303,498	1,803,423	.175	315,599	20,957,404	.047	984,998	72,493,178	.124	8,989,154	13,839,401
1916	477,240	119,169	1,601,271	1,720,440	2,931,281	.658	1,928,783	2,621,675	.246	644,932	21,719,392	.069	1,498,638	76,785,567	.134	10,289,266	16,082,059
1917	422,428	110,325	1,064,894	1,175,219	2,184,000	.824	1,799,616	2,182,623	.273	595,856	18,301,802	.086	1,573,955	60,254,333	.102	6,145,942	11,290,588
1918	355,840	92,066	751,173	843,239	2,290,121	1.00	2,290,121	1,626,534	.247	401,754	22,469,915	.071	1,595,364	46,715,736	.091	4,251,132	9,381,610
1919	217,667	81,688	544,268	625,956	1,542,324	1.12	1,727,403	888,628	.186	165,285	11,299,076	.053	598,851	23,165,219	.073	1,691,061	4,808,556
1920	172,988	138,864	629,501	768,365	1,099,688	1.09	1,198,660	799,744	.184	147,153	8,590,188	.08	687,215	18,754,531	.081	1,519,117	4,320,510
1921	80,501	6,184	302,960	309,144	1,043,497	1.00	1,043,497	1,107,295	.129	142,841	3,537,889	.045	159,205	1,821,000	.05	91,050	1,745,737
1922	112,547	315	412,743	413,058	952,048	1.00	952,048	871,370	.135	117,635	5,521,818	.055	303,700	9,003,000	.057	513,171	2,299,612
1923	115,975	15,224	256,280	271,504	655,838	.82	537,787	511,776	.147	75,231	5,624,958	.07	393,747	9,415,000	.068	640,220	1,918,489
1924	165,593	23,453	956,701	980,154	519,460	.67	348,038	122,878	.131	16,097	9,687,587	.08	775,007	9,191,000	.065	597,415	2,716,711
1925[d]	217,765	36,260	407,725	443,985	892,135	.694	619,142	171,000	.142	24,282	13,888,000	.087	1,208,256	7,460,000	.076	566,960	2,862,625
Total 1859–1925		6,858,462	45,745,250	52,603,712	231,894,082		190,377,113	100,393,710		14,369,845	1,948,863,712		87,438,563	1,251,569,034		86,574,653	431,363,886
1926[d]				375,539	635,300	.624	396,427	112,000	.138	15,456	17,882,000	.083	1,484,206	22,100,000	.073	1,613,300	3,884,928
				52,979,251	232,529,382		190,773,540	100,505,710		14,385,301	1,966,745,712		88,922,769	1,273,669,034		88,187,953	435,248,814

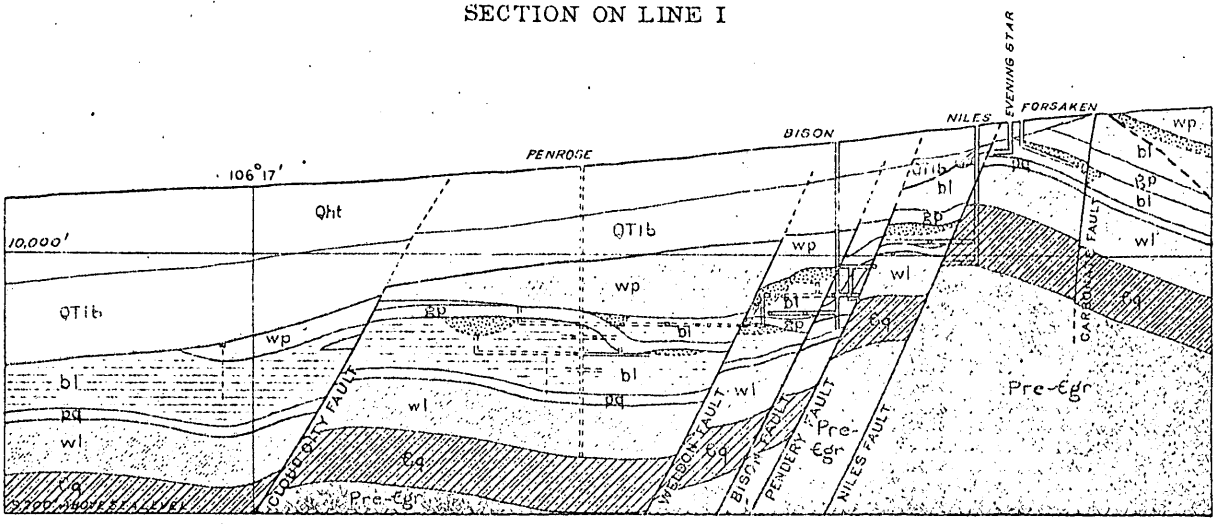
[a] Estimated by C. W. Henderson. [b] Census of 1880. [c] Emmons, S. F., op. cit., p. 18. [d] Estimates subject to revision.



COLUMNAR SECTIONS SHOWING POSITION AND RELATIVE SI



SECTION ON LINE I



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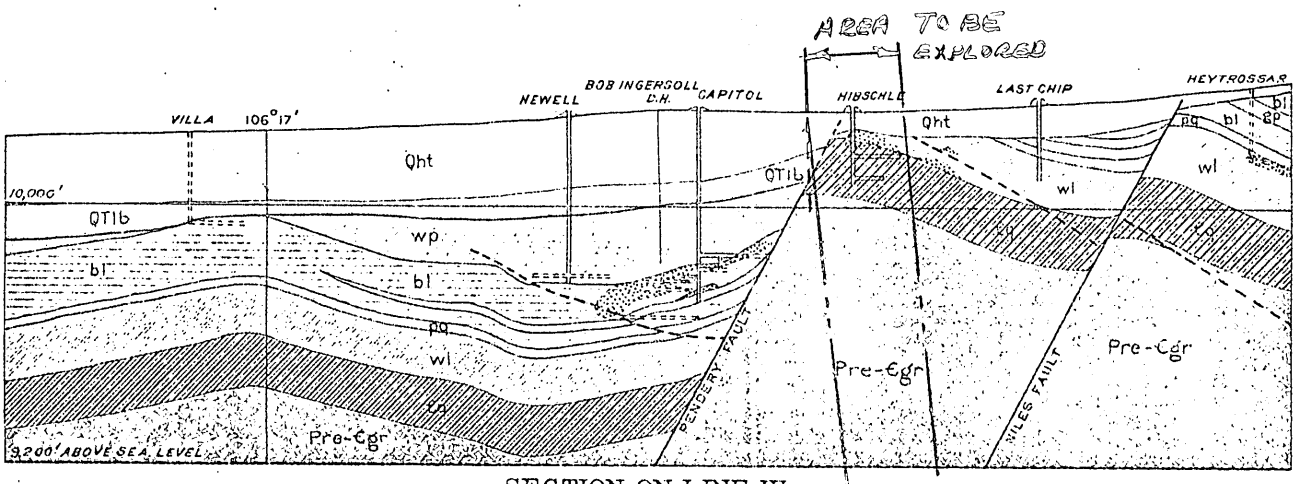

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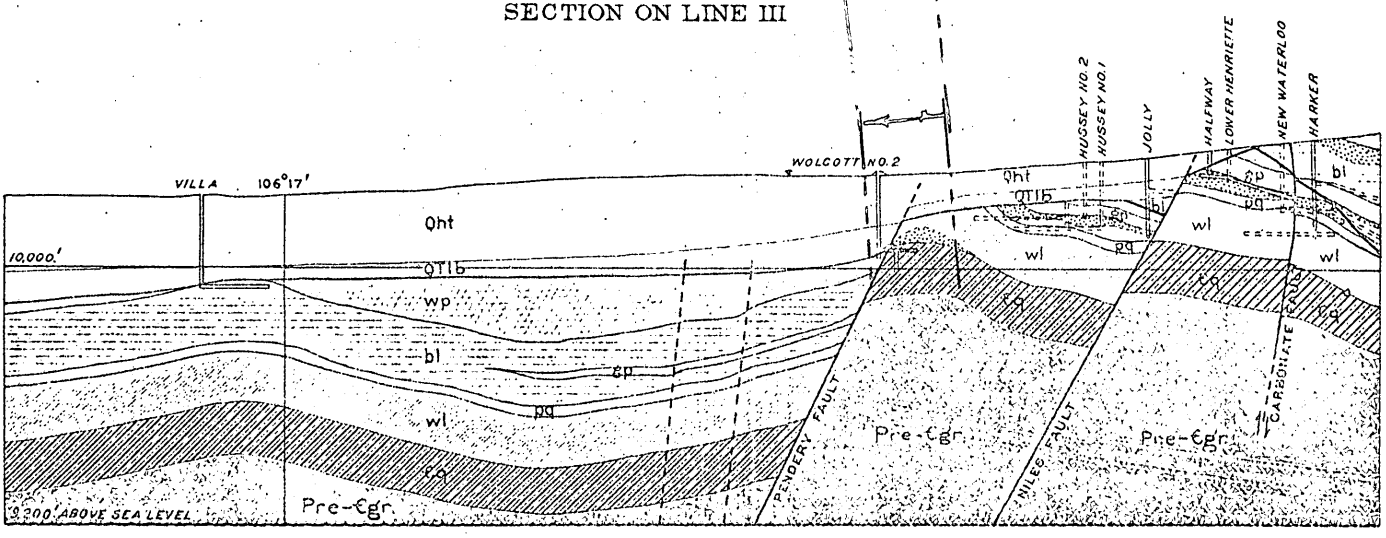
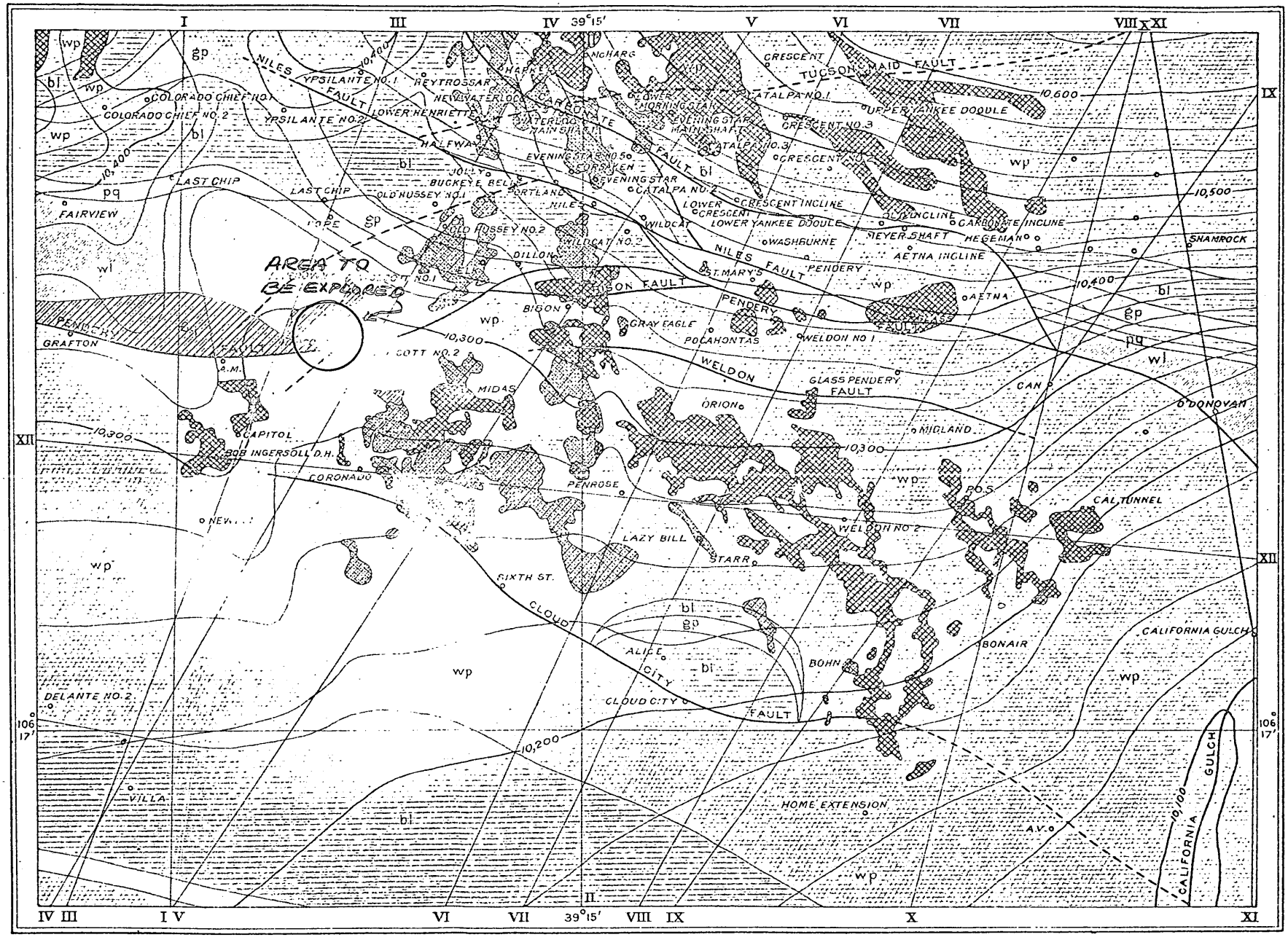


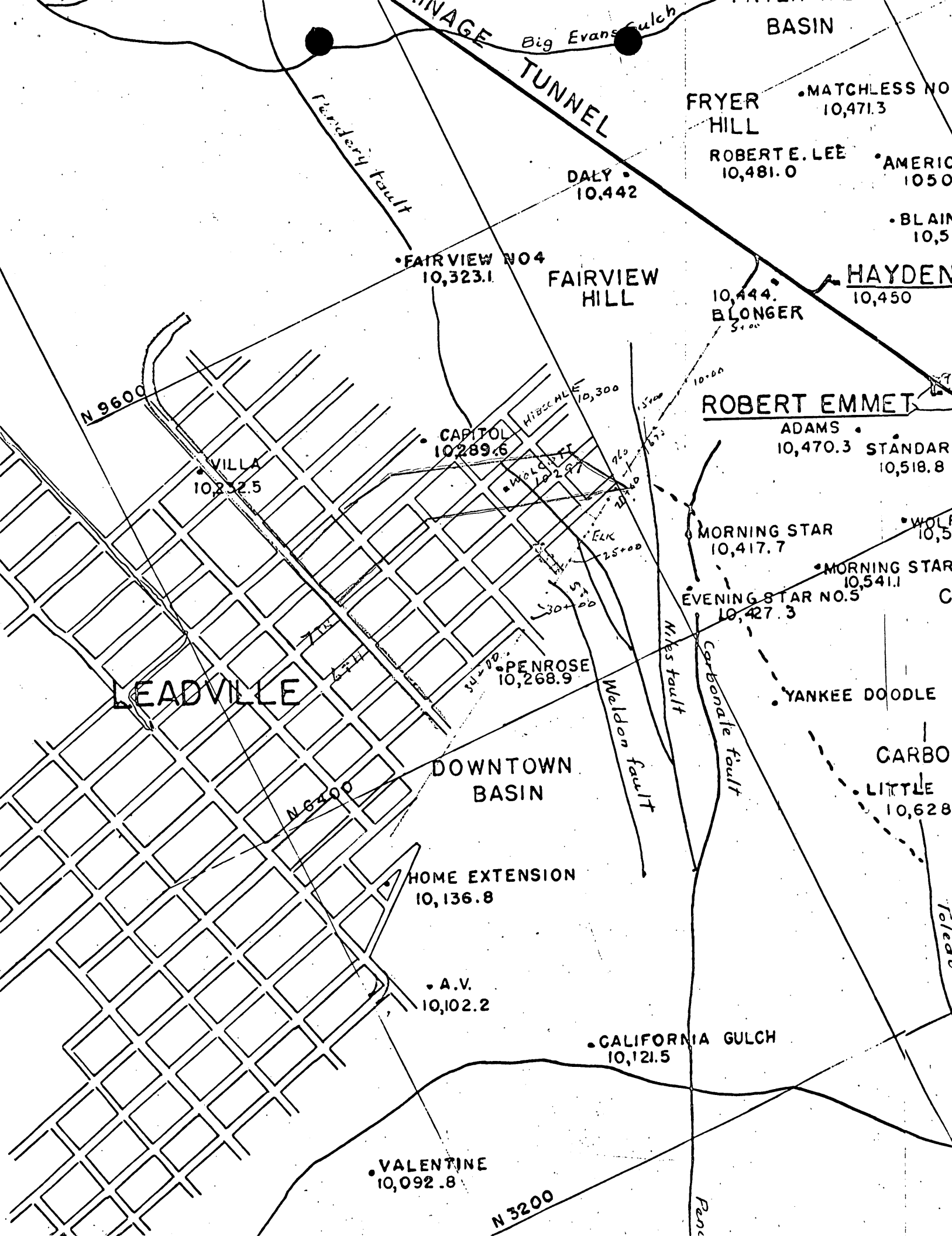
SECTION ON LINE IV



GEOLOGIC MAP OF DOWNTOWN DISTRICT OF LEADVILLE, COLORADO
(After S.F. Emmons and J.D. Irving, with some modifications.)

0 500 1,000 1,500 FEET

Contour interval 25 feet


Big Evans Gulch
TUNNEL
BASIN
FRYER HILL
MATCHLESS NO
10,471.3
ROBERT E. LEE
10,481.0
AMERIC
1050
BLAIN
10,5
Pardery fault
DALY
10,442
FAIRVIEW NO4
10,323.1
FAIRVIEW HILL
10,444.
BLONGER
HAYDEN
10,450
N 9600
HIBERNIA
10,300
CAPITOL
10,289.6
ROBERT EMMET
ADAMS
10,470.3
STANDAR
10,518.8
VILLA
10,252.5
WOLCOTT
10,297
ELK
MORNING STAR
10,417.7
MORNING STAR
10,541.1
EVENING STAR NO.5
10,427.3
PENROSE
10,268.9
LEADVILLE
Weldon fault
Niles fault
Carbonate fault
YANKEE DOODLE
CARBO
LITTLE
10,628
DOWNTOWN BASIN
N 6400
HOME EXTENSION
10,136.8
A.V.
10,102.2
CALIFORNIA GULCH
10,121.5
VALENTINE
10,092.8
N 3200

OLATHE PLACER
SOUTHERN
MILLSITE
ELLA
VESUVIUS
Poverty
9864
Flat
WHALE
NEPTUNE
9865
JASON
384 Am
9676
DELANTE NO 2
GRAFTON
ZULU
gp
Fairview
Hill
CHRYSOLITE NO 1
ROBERTS
Fryer
Hill
Gulch
LITTLE PITTSBURG
VIRGINIUS
HARVARD
MAGGIE FRACTION
CORABEL
FOREPAUGH
BANGKOK
COMPROMISE
NEW ORLEANS
WRIGHT
(DENVER CITY)
DENVER CITY
Little
Stray
NEW DISCOVERY
NEW GAMBETTA
HAYDEN
FOREST CITY
STRAY HORSE
RIDGE
RESULT
McCORMICK
ROBERT EMMET
BULLION
VANDERBILT
Stray
Gulch
19 ACRES
STARR
PLACER
SIXTH STREET
CORONA
WOLCOTT NO 2
AUGUSTA
PENROSE
LITTLE CRAM
NILES
VALENTINE
STAR
ORION
WELDON NO 2
Weldon
fault
Carbonate
fault
WELDON
PENDERY
JUDGE
MILLAND
TREASURE
HEGEMAN
SHAMROCK
BON AIR
STARR
fault
DENVER
THOMPSON PLACER
GAW PLACER
ARNOLD PLACER
JOHN LEAHY
HIAWATHA
HUMBOLDT
wp
Gulch
McHARG
WATERLOO
WOLFTONE
CLONTARF
BROOKLAND
MONTE CRISTO
CYCLOPS
GREENBACK
PYRENEES
(RIALTO)
PHARMACIST No. 2
RIO GRANDE
CASTLE VIEW
AGASSIZ
CATALPA
CATALPA No. 2
WILLIAM WALLACE
MAB
EXCELSIOR
WILLIAM WALLACE
EVELYN
Graham
Park
PHARMACIST
EXPERIMENT
BLIND TOM
IRON QUEEN
WALNUT
CHESTNUT
TRIO
ORO
DENVER
AND
GREAT WESTERN
TIP TOP
MOGUL
CARBONATE
HILL
LITTLE GIANT
NELL
CUCUMBER
GOLD LEAF
PROSPECT
MODEST GIRL
THISTLE
UTAH
THESPIAN
DEAD BROKE
WASHINGTON
SUMMER
MODEST GIRL
SATELLITE NO
BLIND TOM
STAR OF THE WEST
EIGHT

7050 East 57th Place
Commerce City, Colo. 80022
July 23, 1967

Mr. George Vranesh
P. O. Box 580
Boulder, Colorado

Dear Mr. Vranesh:

Thank you for the opportunity of bidding on the exploration drilling at Leadville. My revised bid is enclosed herewith.

Please note that I have added to this bid an offer to drill NX size holes, which would give a core diameter of 1.875". This would be done with a truck mounted drill rig which is now available for core drilling. In the event that any angle holes are desired, we would only be able to drill AX size.

We would be able to move on the site within 10 days of notice to proceed.

Very truly yours,

WILSON EXPLORATION CO.

Donald W. Wilson

Donald W. Wilson

DWW:h
Enclosure

BID PROPOSAL - July 23, 1967

TO: Mr. George Vranesh
P. O. Box 580
Boulder, Colo.

FROM: Wilson Exploration Co.
7050 East 57th Place
Commerce City, Colo.

BID PROPOSAL FOR APPROXIMATELY 2,000 LINEAR FEET OF EXPLORATION DRILLING NEAR LEADVILLE, COLO.

CONTRACTOR'S CHARGES

MOVE-IN COSTS . . . . . $0.75 per mile, one way only.

DRILL AND SET HEAVY WALL STEEL SURFACE CASING . . . $9.50 per lin. ft.
I estimate 400 ft. will be required.

BASE RATE FOR AX CORE DRILLING, as described:
0 feet to 600 feet hole depth . . . . $9.25 per lin. ft.

BASE RATE FOR NX CORE DRILLING, as described:
0 feet to 600 feet hole depth . . . .$10.75 per lin. ft.

SLUDGE SAMPLES IN ORE ZONES ARE INCLUDED IN FOREGOING PRICES.

CEMENTING, if required due to unconsolidated or caving hole conditions:
Rig time at $12.00 per hour, plus cement materials.
Drilling cement charges at 50% applicable rock drilling base rate.

REAMING FOR CASING, if required . . . . 60% applicable base rate.

INSTALL CASING, if required . . . . $12.00 per hour, plus materials.
We do not anticipate a need for reaming and installing casing other than the surface casing quoted above.
Set-up and water hauling costs are figured in the above quoted prices.

We will furnish an accurate Driller's Log for each hole drilled.

Respectfully submitted,

D. W. Wilson

D. W. Wilson
WILSON EXPLORATION CO.
7050 East 57th Place
Commerce City, Colo. 80022
Telephone 288-6923

Proposal

Page No. _____
of _____ Pages

GOLDEN DRILLING COMPANY

Diamond Drilling Contractor
GOLDEN, COLORADO 80402
Phone 279-1371

PROPOSAL SUBMITTED TO:	PHONE:	DATE: July 31, 1967
NAME: Mr. George Vranesh	JOB NAME: Downtown Basin	
STREET: P.O.Box 580	STREET:	
CITY: Boulder	CITY: Leadville	STATE: Colo.
STATE: Colorado	ARCHITECT:	DATE OF PLANS:

We hereby submit specifications and estimates for: Drilling:

Mob. and De-mob	Job	$ 300.00
BX Core:		
0 to Bedrock	Per. ft.	10.00
Bedrock to 300 ft.	Per. ft.	6.50
300 to 600 ft.	Per. ft.	8.00
Cementing, drilling cement and back filling core hole and repairing asphalt, if necessary	Per. hr.	15.00

We hereby propose to furnish labor and materials — complete in accordance with the above specifications, for the sum of:

_____ dollars ($ _____) with payment to be made as follows:

By the tenth of each month for work completed the previous month.

All material is guaranteed to be as specified. All work to be completed in a workmanlike manner according to standard practices. Any alteration or deviation from above specifications involving extra costs, will be executed only upon written orders, and will become an extra charge over and above the estimate. All agreements contingent upon strikes, accidents or delays beyond our control. Owner to carry fire, tornado and other necessary insurance. Our workers are fully covered by Workmen's Compensation Insurance.

Authorized Signature W E Matthews

NOTE: This proposal may be withdrawn by us if not accepted within _____ days.

Acceptance of Proposal

The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Accepted: Signature _____

Date _____ Signature _____

Form 118 — Copyright 1960 New England Business Service, Inc., Townsend, Mass.

DIAMOND CORE DRILLING
DIAMOND DRILLING EQUIPMENT
GROUTING
FOUNDATION TESTING
MINING
QUARRYING
SHAFT SINKING
TUNNEL DRIVING
MINE PLANT DESIGN
AND FABRICATION

Boyles Bros. DRILLING COMPANY

CONTRACTORS-ENGINEERS-GEOLOGISTS

15865 West 5th Avenue
GOLDEN, COLORADO 80401
Phone (303) 279-7913

General Offices and Plant
1624 Pioneer Road P. O. Box 58
SALT LAKE CITY, UTAH 84110
Phone 487-7595

BRANCH OFFICES
ARIZONA (PHOENIX)
CALIFORNIA (AUBURN)
COLORADO (GOLDEN)
NEVADA (SPARKS)
WASHINGTON (SPOKANE)
CHILE (SANTIAGO)
CABLE: BOYLESBROS
MEXICO, D.F.
PERU (LIMA)
CABLE: BOYLESCOP

June 14, 1967

Mr. George Vranesh
P.O. Box 580
Boulder,
Colorado

Dear Mr. Vranesh:

We propose the following schedules of charges for your drilling on the Starr Placer, Leadville, Colorado. You may choose the schedule most suitable to your company.

I. Rotary Drilling - Footage Rate
- A. Drilling overburden, per linear foot $ 6.50
- B. Drilling bedrock 0 - 600 feet, per foot $ 5.85
- C. Lost circulation time, per hour 22.50
- D. Casing time, per hour 22.50
- E. Drill mud, casing and lost circulation material at cost, at job site.

II. Rotary Drilling - Day Rate
- A. Drilling per hour $23.50

Plus cost of bits, lost casing, drill mud, additives and lost circulation material. All time will be charged, exclusive of break down time over one hour per day.

III. Core drilling - Footage Rate
- A. Overburden per foot $14.00

	NX	BX	AX
B. Bedrock to 300 feet	$7.85	$7.30	$6.50
300 to 600 feet	8.90	7.85	7.30

- C. Reaming, if required. All sizes, per linear foot $ 4.00
- D. Cementing, plus cost of cement and mud, per hour 14.00
- E. Standby, as requested per hour 12.75
- F. Lost casing will be charged at our cost at job site.
- G. Installing casing per hour 14.00

IV. Core Drilling - Day Rate
- A. Drilling per hour $19.15

Plus cost of drill bits, lost casing, drill mud, additives and lost circulation material. All time will be charged, exclusive of break down time over one hour.

DIAMOND CORE DRILLING
DIAMOND DRILLING EQUIPMENT
GROUTING
FOUNDATION TESTING
MINING
QUARRYING
SHAFT SINKING
TUNNEL DRIVING
MINE PLANT DESIGN
AND FABRICATION

Boyles Bros.
DRILLING COMPANY
CONTRACTORS-ENGINEERS-GEOLOGISTS
15865 West 5th Avenue
GOLDEN, COLORADO 80401
Phone (303) 279-7913

General Offices and Plant
1624 Pioneer Road P. O. Box 58
SALT LAKE CITY, UTAH 84110
Phone 487-7595
BRANCH OFFICES
ARIZONA (PHOENIX)
CALIFORNIA (AUBURN)
COLORADO (GOLDEN)
NEVADA (SPARKS)
WASHINGTON (SPOKANE)
CHILE (SANTIAGO)
CABLE: BOYLESBROS
MEXICO, D.F.
PERU (LIMA)
CABLE: BOYLESCOP

These schedules are based on a 48 hour per week operation. The water truck is included with the source of water to be no cost to Boyles Bros.

Should any chert beds be encountered causing excessive bit wear, and the hole is to be continued through the chert bed, the bit cost would be charged to your account at our cost in addition to the rate set forth in any schedule.

The availability of men and equipment is uncertain. If any of these schedules are acceptable, please advise us as soon as possible to enable us to schedule crews and equipment as rapidly as possible.

Thank you for calling our company.

Very truly yours,

BOYLES BROS. DRILLING COMPANY

George E. Lensch

George E. Lensch, District Manager

Enclosure

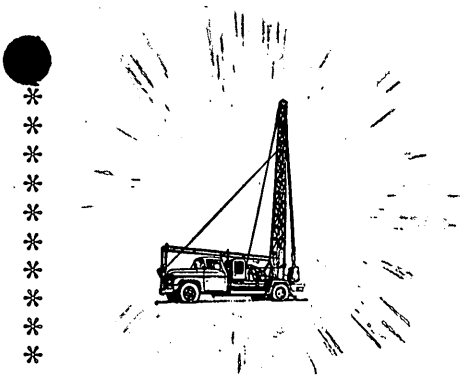
NORRIS AND SONS DRILLING CO.

WATER WELL DRILLING

We Specialize in Mountain Drilling

1555 NORWOOD AVE. BOULDER, COLO. 80302

Licensed, Bonded & Insured Phone 442-4083



July 27, 1967

Minerals Extraction Co.
P. O. Box 580
Boulder, Colorado 80302

Attention: George Vranesh

Proposal for drilling test holes at Leadville, Colorado to a maximum depth of 550'.

		per foot
1.	Drill overburden with air or mud to bedrock	$7.00
2.	Set 6 5/8" O.D. steel casing to bedrock and pull on completion of drilling	1.00
3.	Plug drill consolidated formation below overburden	5.00
4.	Take sample every foot in consolidated formation	N/C
5.	If drill hole encounters old mine workings causing loss of circulation and further drilling is required, a 5" O.D. casing will be installed from surface to mine floor on a time and material basis - time $35.00 per hour.	
6.	Drilling below 5" casing plus tri cone bit cost	5.00
7.	Travel time moving equipment from Boulder to drill site and from drill site to Boulder $1.00 per mile.	
8.	Standby time $14.00 per hour based on 8 hour day.	
9.	A portable mud pit will be used when possible. If a pit is required a charge of $40.00 will be made for excavation.	
10.	One room for two men $50.00 per week.	

Equipment to be used:
1965 - 10 TG Winter-Weiss Portadrill truck mounted, new condition, service and water truck with welder and accessories.

NORRIS & SONS DRILLING CO.

Thaine A. Norris

Thaine A. Norris

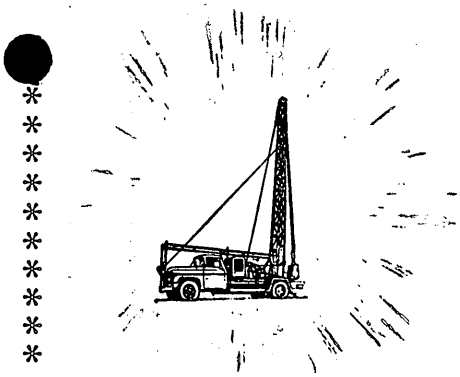
NORRIS AND SONS DRILLING CO.

WATER WELL DRILLING

We Specialize in Mountain Drilling

1555 NORWOOD AVE. BOULDER, COLO. 80302

Licensed, Bonded & Insured Phone 442-4083



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4.	Take sample every foot in consolidated formation	N/C
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Equipment to be used:
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NORRIS & SONS DRILLING CO.

Thaine A. Norris

Thaine A. Norris

A REPORT OF THE

STARR PLACER CLAIM

LEADVILLE MINING DISTRICT

DOWNTOWN

LEADVILLE, COLORADO

By

GEORGE VRANESH E.M., P.E.

July, 1967

A REPORT OF THE
STARR PLACER CLAIM
LEADVILLE MINING DISTRICT
LEADVILLE, COLORADO

by George Vranesh July, 1967

SUMMARY, CONCLUSIONS and RECOMMENDATIONS

SUMMARY: The Starr Placer is situated in the California Mining District, Lake County, Colorado in the Downtown Basin. From 1859 to date the Downtown Basin has produced over $500,000,000 in gold, silver and lead. The tenor is principally silver with values in lead and zinc.

This area has been active for many years but during the last twenty years very little mining was conducted.

The area still presents a realistic potential for the production of high grade silver ores, associated with lead. There is an area of land situated in the Downtown Mining District between known mined-out ore bodies. This area shows favorable geologic significance and should be explored to determine the extent and value of the silver ores.

It is recommended that at least five drill holes be drilled through the fifth contact immediately ahead of faces of ore that are believed to exist in the old Hibschle workings.

A REPORT OF THE

STARR PLACER CLAIM

LEADVILLE MINING DISTRICT

LEADVILLE, COLORADO

January, 1967

LOCATION: The Starr Placer is situated in the California Mining District, Lake County, Colorado in what is known as the "Downtown Basin" at an elevation of 10,300 feet in Section 24, T. 9 N., R. 80 W., approximately 100 miles west of Denver. The area was one of intensive mining activity from 1860 to 1923. All weather highways serve Leadville from all directions providing easy, all-year access. The area is presently served by the Rio Grande Railroad. The Starr Placer was located in 1877 by Thomas Starr and consisted of approximately 164 acres. In subsequent years portions of this claim were conveyed to diverse owners. This report is specifically concerned with the area encompassed by the points 23 through 34 of the original survey. This area approximates 19 acres in the most desirable geologic area in the vicinity of 7th and Ash Streets in the City of Leadville. Exhibit 1, hereto attached, is a Plat of Mineral Survey 255 and outlines the area under consideration.

HISTORY: The Leadville District was one of the first to be located during the early 1860's when the mining industry of Colorado was just developing. It has always been one of the very important locations in Colorado.

One of the major problems since the inception of the district has been that of handling the mine water. The success of mining operations was entirely dependent upon the cooperative pumping of the area. During the second world war the Leadville Drainage Tunnel was driven into the Downtown Basin, draining a considerable area for mining. Soon after, however, metal prices declined and all mining ceased in the area.

Today these same problems exist but to a lesser degree because metal prices have risen. The water, with modern pumping equipment and the drainage tunnel, presents no real problem. Although the smelter is no longer available, the shipping charges to distant smelters are not prohibitive for high grade ores.

The Leadville District ranked sixth among the mining districts of the United States in total value of nonferrous metals produced. From 1860 when the first placer gold was shipped, to the end of 1923, this value amounted to $425,784,550 of which 12% represented gold, 45% represented silver, 20% lead, 20% zinc and 3% copper.

It was not until 1875, however, that the first shipment of lead carbonate was made and five years later, the annual production

amounted to nearly 10,000,000 ounces of silver and 66,600,000 pounds of lead.

The production of silver and lead continued steadily but owing to decreasing richness of the ores and generally declining prices of silver, the quantity and value of each metal decreased on the whole, although there was an increase in the tonnage mined. In 1876 the ratio of silver to lead was one ounce to three pounds, in 1878 and 1879 it was one ounce to five pounds and thereafter it declined annually until in 1884 it was one ounce to thirteen pounds.

In 1889 work was begun in the Downtown district and by 1891 ten shafts had been sunk.

The Downtown area had been mined on five contacts with most work done on the first contact, beneath the white porphyry. Considerable work had been done on the second contact, beneath the Gray porphyry sheet in the blue limestone. The other contacts are just above and below the Parting quartzite and in the "transition shales" above the Cambrian quartzite.

In 1902 the two upper contacts had been extensively explored, and most of the production came from this area. After the unwatering of the Penrose shaft in 1916, a large quantity of oxidized zinc, lead, and manganese-iron was mined by the Downtown Mines Company.

Third contact ore was also mined by the Downtown Mines Co.

The presence of a fourth contact ore was found in several mines and this ore extended completely through the white limestone, down to the Cambrian quartzite.

A large body of ore was found in the Hibschle and Wolcott mines on a fifth contact; it lay mainly in the "transition shales" at the top of the Cambrian quartzite but extended for a short distance into the quartzite itself.

The Hibschle mine is situated just adjacent to the Starr Placer. The Wolcott shaft is located on the property. Certain portions of the property were mined during the 1920's. Mining was curtailed when the Penrose quit pumping.

There is much open ground on this property. According to Emmons, in Professional Paper 148 at page 99:

> . . . Ore in white limestone was also stoped southward from the Hibschle shaft, and, as already suggested, may be associated with auxiliary fissures along the Tuscan-Maid reverse fault. If this relation can be established, the white limestone northwest and especially southeast of the Hibschle shaft is worthy of exploration.

It is the area essentially south of the Hibschle shaft that we propose to explore by the drilling of several holes.

There are five contact ore zones in the Downtown basin. These all can be intersected by drilling holes no deeper than 500-550 feet. Ore has been mined on all the contacts but the major production in the immediate area has been from the fourth contact and mined through the Hibschle shaft.

Old mine records and maps indicate stopes with ore in place. Discussions with old timers who worked the area just prior to shut-down recall extremely good values in place.

The last person to mine in this immediate area was Mr. Carl Youngstrom, now residing in Boulder, Colorado. During a personal interview with Mr. Youngstrom he stated that the Hibschle was last mined in 1929. The entire area was being pumped by the Penrose mine. When the pumping quit at the Penrose, the water immediately rose in his mine and he was unable to continue. At that time there was very good ore in a number of faces and this same ore is still in place. Mr. Youngstrom is very alert and has a vivid recollection of the property. He had maps of the area and states that the maps represent conditions as they existed when he last mined this property.

It is intended that five holes be drilled as the initial exploration phase and if these holes show encouraging results, then a second phase of close spaced drilling will be considered. Since these holes will be approximately 350-550 feet deep, it is anticipated that 2,000 feet of drilling will be required in the initial phase.

COSTS: The cost of such drilling will hopefully be shared between the Office of Mineral Exploration and the principals of Minerals Extraction Company, a Colorado corporation.

Drilling can be conducted either by rotary drilling or by core drilling. The price, taking into consideration all costs, approximates ten dollars per foot. Therefore the entire project should not cost over $20,000.00.

MILLING FACILITIES: There are no custom mills in the Leadville area. The ore would, at first, be shipped directly to the smelter. The cost of processing the ore at the El Paso smelter would be approximately $20.00 per ton. Ten dollars for freight and ten dollars for smelting charges. These costs would not be restrictive if a good grade of silver lead ore was being mined.

mining costs?

MINING: The Hibschle shaft was previously used in order to mine the property under consideration. The Wolcott shaft is situated on the property. Either of these shafts could be reopened for purposes of mining. It is believed that the shafts are in good condition below the water level. However, if, after proper investigation, it is determined that these shafts could not be used, a new shaft would have to be sunk to a depth of 425 feet.

PROPERTY OWNERSHIP: This property is presently owned by Nancy Wolcott Ebsen, Jean Wolcott Pugh and Katrina Wolcott Johnson, beneficiaries of the Wolcott Estate. A lease has been negotiated between the owners above named and Minerals Extraction Company, a Colorado corporation. The term of the lease is for ten years and so long thereafter as production is continued. Complete control of the entire operation is vested in Minerals Extraction Company.

RISK: There undoubtedly is a risk in exploring the designated area. However, such risks are inherent to mining. The lending institutions today do not choose to participate in such ventures and therefore funds from other sources must be sought.

The principals of Minerals Extraction Company have been unable to secure sufficient funds to properly explore the property under consideration. The commercial lending agencies have denied any consideration for loan of exploration funds. Therefore this group has requested assistance from the Office of Mineral Exploration to provide 75% of the exploration costs--in this case, $15,000.00, and the principals will supply the remaining $5,000.00 required to properly explore the property.

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
7/17/68	Peterson	120
7/17/68	Kirkham	120
		110
		220

AIRMAIL

JUL 17 1968

Mr. Harrison Cobb, President
Minerals Extraction Company
P. O. Box 580
Boulder, Colorado 80302

Re: OME-6653 (Silver)
Minerals Extraction Company
Starr Placer Property
Lake County, Colorado

Dear Mr. Cobb:

Thank you for your letter of July 15 concerning the subject application for financial assistance.

Please refer to Plates 13 and 45 of Professional Paper 148, which we believe, show the location of ore bodies and old workings far better than Plate 18. Plate 18 is a reduction, with minor changes, of the map in Bulletin 320, published in 1907. Plates 13 and 45 are much more up-to-date, although No. 45 does not show the great third contact ore bodies in the "White Limestone" of the Coronado. More importantly, these plates are on a base that allows direct comparison with your Exhibits E-1 and E-2 by means of the street and claim-line plates.

Hopefully, this information will be of assistance to you in evaluating the potential of the property, and in preparing future programs.

Sincerely yours,

FRANK E. JOHNSON

Frank E. Johnson
Chief, Office of
Minerals Exploration

cc: Director's Reading File
Economic Geology File
OME Docket
OME Reading File
Region II w/copy of incoming ltr.
Mr. Peterson

ECPeterson/bsl 7/17/68

HARRISON S. COBB
401 PINE STREET
BOULDER, COLORADO
80302

OFFICIAL
COPY
O. M. E.
RECEIVED
JUL 16 1968

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EP	120

July 15, 1968

Mr. Frank E. Johnson
Chief, Office of
Minerals Exploration
Washington, D. C. 20242

Re: OME-6653

Dear Mr. Johnson:

Your letter of May 23, refusing application OME-6653 has finally progressed through our company channels into my hands.

I am in complete agreement with you in the denying of this loan application. When it was recommended that the scope of our original application be expanded substantially by adding several more drill holes, I felt that this was ill advised and uneconomical. This type of exploration should be included in about one-tenth of one percent of expected gross; when such exploration is expanded to three or four percent, it becomes too top-heavy for efficient operation.

I do wish to question your statement that the stopes and ore-bodies were misplotted. Stopes on our maps were plotted from two sources: Marvin Kleff; and U.S.G.S. publications.

We have found no other opinion but that Marvin Kleff was the master of exactitude and accuracy.

We have discussed this prospect with Mel Salsbury, Robert U. King, and through the years with Ogden Tweto. We have been told that there is no later or more detailed information than the U.S.G.S. material which we have used.

If there is other, more accurate information and mapping, please divulge to us its whereabouts, so that we do not unnecessarily proceed in a wrong direction.

We invite and request your assistance in this matter.

Sincerely yours,

MINERALS EXTRACTION COMPANY

Harrison Cobb.
President

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
6/27/68	Peterson	120
6/27/68	Kirkemo	120
"	Johnson	110
		220
6/27	Kilgaard	
6/28	Jewete	
		120M

JUN 28 1968

Hon. Peter H. Dominick
United States Senate
Washington, D. C. 20510

Dear Senator Dominick:

This will acknowledge your letter of June 20 to Mr. Harold Kirkemo, Assistant Chief, Office of Minerals Exploration, requesting information on the status of the application (OME-4653) for exploration assistance submitted by Mr. Harrison Cobb, President, Minerals Extraction Company, Boulder, Colorado.

A careful review of the application and other information available to us indicated that most of the area proposed for exploration had already been explored. Therefore, Government participation in the proposed work could not be justified. Accordingly, the Applicant was informed on May 23 that his application for exploration assistance was denied. A copy of our letter is enclosed for your information.

We regret that we were unable to be of assistance to your constituent in this instance.

Sincerely,

Arthur A. Baker

Acting Director

Enclosures

cc: Director's Reading File
Division File
Director's Chron.
Economic Geology File
OME File
OME Reading File
Mr. Peterson
R-II

ECPeterson/hel 6/27/68

RICHARD B. RUSSELL, GA., CHAIRMAN
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JAMES B. PEARSON, KANS.
PETER H. DOMINICK, COLO.

WILLIAM H. DARDEN, CHIEF OF STAFF
CHARLES B. KIRBOW, CHIEF CLERK

United States Senate

COMMITTEE ON ARMED SERVICES
WASHINGTON, D.C. 20510

June 20, 1968

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O. M. E.
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JUN 26 1968
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Mr. Harold Kirkemo
Assistant Chief
Office of Minerals Exploration
U. S. Geological Survey
Washington, D. C. 20242

Dear Mr. Kirkemo:

I have been advised by one of my constituents, Mr. Harrison Cobb of Boulder, Colorado, that he has applied for financial assistance from the Bureau of Mines. His application is No. 6653 and covers work in the Downtown Basin area of Leadville, Colorado.

I am further advised that the property was examined on April 16 by OME and the examination forwarded to Washington on May 6.

I would greatly appreciate your advising me the status of this application and any other information you are able to provide concerning its possibilities.

Thank you very much for your assistance in this matter.

Sincerely yours,

Peter H. Dominick

Peter H. Dominick
United States Senator

PHD/er

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MME Form 7
(2/63)

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Date	Surname	Code
6/12/68	Peterson	120
		120
6/12	Johnson	110
6/14	Kilsgaard	
6/14	Meyer	
		220

JUN 17 1968

Hon. Gordon Allott
United States Senate
Washington, D. C. 20510

Dear Senator Allott:

This is in reply to your letter of June 7 concerning the application (OME-6653) for exploration assistance submitted by Mr. Harrison Cobb, President, Minerals Extraction Company, Boulder, Colorado.

Under date of May 23, 1968, we notified the Applicant of our denial of the application. For your information, we are enclosing a copy of the letter.

We sincerely regret that we were unable to be of assistance to Mr. Cobb in this instance.

Sincerely yours,

Acting Director

Enclosures

cc: General Files Copy
Division Copy
Director's Chron.
Economic Geology File
OME Docket
OME Reading File
Mr. Peterson

ECPeterson/bsl 6/12/68

Control No. 179904

CARL HAYDEN, ARIZ., CHA[illegible]
RICHARD B. RUSSELL, GA.
ALLEN J. ELLENDER, LA.
LISTER HILL, ALA.
JOHN L. MCCLELLAN, ARK.
WARREN G. MAGNUSON, WASH.
SPESSARD L. HOLLAND, FLA.
JOHN STENNIS, MISS.
JOHN O. PASTORE, R.I.
A. S. MIKE MONRONEY, OKLA.
ALAN BIBLE, NEV.
ROBERT C. BYRD, W. VA.
GALE W. MCGEE, WYO.
MIKE MANSFIELD, MONT.
E. L. BARTLETT, ALASKA
WILLIAM PROXMIRE, WIS.
RALPH YARBOROUGH, TEX.

MILTON [illegible]UNG, N. DAK.
KARL E. MUNDT, S. DAK.
MARGARET CHASE SMITH, MAINE
THOMAS H. KUCHEL, CALIF.
ROMAN L. HRUSKA, NEBR.
GORDON ALLOTT, COLO.
NORRIS COTTON, N.H.
CLIFFORD P. CASE, N.J.
JACOB K. JAVITS, N.Y.

THOMAS J. SCOTT, CHIEF CLERK
WM. W. WOODRUFF, ASST. CHIEF CLERK

United States Senate

COMMITTEE ON APPROPRIATIONS

WASHINGTON, D.C. 20510

June 7, 1968

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[illegible] | 120 P

Mr. W. T. Pecora, Director
Geological Survey
Department of the Interior
Washington, D. C.

Re: Harrison Cobb
Application No. 6653

Dear Mr. Pecora:

I am informed that the above application has been filed by Mr. Cobb for an exploration project in the Leadville area, Lake County, Colorado, and would very much appreciate your advising me the current status of the matter and the final decision when it is taken on Mr. Cobb's request.

With best regards.

Sincerely yours,

Gordon Allott

Gordon Allott
United States Senator

GA:psd

OFFICIAL FILE COPY

Date	Surname	Code
5/17/68	Peterson	120
"	Johnson	110
5/22/68	~~"Tweto"~~	
"	"Klepper"	
5/23/68	Peterson	120
		120
		110
		220

Minerals Extraction Company
P. O. Box 580
Boulder, Colorado 80302

Re: OME-6653 (Silver)
Minerals Extraction Company
Starr Placer Property
Lake County, Colorado

Gentlemen:

A careful review has been made of all the information available to us relating to your application for financial assistance to explore the cited property. This review indicates that ore bodies (stopes) have been misplotted on your maps E-1 and E-2, and that except for scattered small fractional areas, most of the area proposed for exploration has already been explored. We must conclude that the probability of disclosing significant ore reserves on the property is not sufficiently promising to justify Government participation in the proposed work. Accordingly, we regret to inform you that your application for assistance is denied.

We wish to thank you for your interest in the minerals exploration program and for bringing your property to our attention.

Sincerely yours,

FRANK E. JOHNSON

Frank E. Johnson
Chief, Office of
Minerals Exploration

cc: Director's Reading File
Economic Geology File
OME Docket
OME Reading File
OME Region III
Mr. Peterson
130

ECPaterson/gla 5-17-68
Rewritten: OLTweto/gla 5-23-68

MME Form 7
(2/63)

OFFICIAL FILE CO

Date	Surname	Co
5/17/68		12
"	On leave	120
5/17	John	110
		220

May 17, 1968

Memorandum

To: The File

From: Edward C. Peterson, Office of Minerals Exploration

Subject: OME-6653 (Silver)
Minerals Extraction Company
Starr Placer Property
Lake County, Colorado

Justification for Denial of Application

The OME field examiner recommends that the subject application for exploration assistance be denied for the following reasons:

1. The apparent discrepancy in the Applicant's reconstruction of the geologic structure of the target area as discussed in the field geologist's examination report on pages 26, 27, and 28.

2. The claim area is too restrictive to insure an adequate exploration program. The claims are located in a populated section of Leadville, Colorado, and numerous waste dumps and private dwellings bar full access to the surface areas to be tested. In certain areas the claims are only about 240 feet in width.

3. The proposed work is based chiefly on the findings of Emmons, Irvin and Loughlin (U.S.G.S. Professional Paper 148), and upon unconfirmed past production reports and oral conversations with "oldtimers." The Applicant has performed no preliminary work on the property in an effort to gather new factual data or to substantiate the findings of others.

I agree with the field examiner and recommend that the application for assistance be denied.

Edward C Peterson
Edward C. Peterson

cc: Director's Reading File
Economic Geology File
OME docket
OME Reading File
Mr. Peterson

ECPeterson/gla 5-17-68

Frank Johnson

Surrnamed by Hyppa + Zweto ~~to~~ avoid recirculation after change suggested on attached memo by Zweto have been made in letter

MHH

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON

DATE 5/22

REFERRED BY ASSISTANT CHIEF GEOLOGIST:

TO OME

See my memo in the docket. Suggest 2d sentence be changed to "This review indicates that ore bodies (stopes) have been misplotted on your maps E-1 and E-2, and that except for scattered small fractional areas, most of the area proposed for exploration has already been explored. We must conclude that the probability ... etc. If you change, you can put quotes in parts.

Ordo

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON, D.C. 20242

May 22, 1968

Memorandum

To: OME Record

From: Ogden Tweto

Subject: Comment on Report of Examination, OME 6653, Starr Placer, Leadville, Colorado, May 1968

I concur in Gualtieri's general conclusion that Harrison Cobb et al have misplotted the ore bodies (stopes) on figures E-1 and E-2 of the application, and that this segment of the Starr Placer has been too extensively explored and mined to warrant further exploration at shallow depths beneath the bedrock surface, which is at depths of more than 300 feet below the surface.

However, for the sake of an accurate record, I would point out that Gualtieri's analysis is weakened by reliance on poor data when better data are available, and by using the location of the Cloud City fault as a basis for reference, when in fact the location of this fault on the bedrock surface is very poorly known.

Plates 13 and 45 of Professional Paper 148 show the situation far better than Plate 18, on which the applicant and Gualtieri have based their discussion. Plate 18 is a reduction, with very minor changes, of the map in Bulletin 320, published in 1907. Plates 13 and 45 are much more up-to-date, although No. 45 does not show the great 3d contact ore bodies in the "White Limestone" of the Coronado. More importantly, Plates 13 and 45 are on a base that is far superior to that of Plate 18, and this base allows direct comparison with figures E-1 and E-2 of the application by means of the street and claim-line plats. Such a comparison shows that the Coronado shaft and workings are smack in the middle of the area proposed for exploration, as are large ore bodies (equals stopes). According to some records I have, the stopes are much more extensive than shown on Plate 45, and a conspicuous feature of the present topography is a pronounced sag over these stopes in the area between the Coronado and the Walcott. The Hibschle, Walcott, and Coronado are all connected by drifts, crosscuts, and ramifying stopes, and the Coronado is connected northward with the Capitol and southward with the Sixth Street, Penrose, and Midas in the same way. Thus almost the entire area of the application has been explored at least down to the Parting Quartzite, and most of it has been explored down to the Sawatch or the granite by workings and by very extensive

drilling done from the lower levels of the Coronado. Consequently, there is scarcely anything left to explore except in scattered small areas. These areas would be less than 100 feet in maximum dimension and almost impossible to locate or outline with the incomplete information available.

On top of all this, a court decision back about 1910 gave the City of Leadville title to ore beneath the streets on the Starr Placer, since the owners had not reserved the subsurface mineral values in deeding the streets to the City. Possibly, this may have been reversed, but I have never heard so.

Ogden Tweto

Ogden Tweto

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION

the memory of J. T. Neff
cc

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AIRMAIL

Memorandum

To: Chief, Office of Minerals Exploration

From: Field Officer Region III

Subject: OME 6653 (Silver)
Minerals Extraction Company
Star Placer Property
Lake County, Colorado.

Transmitted is a report of examination on the subject property by J. J. Gustini. My formal letter of transmittal was mailed inadvertently last week. Mr. Peterson informed me of it. Please attach that memorandum to this report of examination.

J. William Fanlen

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
FEDERAL CENTER, DENVER, COLORADO 80225
Office of Minerals Exploration
Building 53 Room 203

OFFICIAL COPY

May 6, 1968

Memorandum

To: Chief, Office of Minerals Exploration

From: Field Officer, Region III

Subject: OME-6653 (Silver)
Minerals Extraction Company
Star Placer Property
Lake County, Colorado

Transmitted herewith is a report of examination by Mr. James L. Gualtieri on the subject property.

Although the property leased by Minerals Extraction Company, Inc. is located on geologically favorable ground, the area proposed for exploration is so small, and effected by other physical restrictions, that drilling here would be virtually on a development scale. For this reason and other complications cited on pages 26, 27 and 28 of the subject report of examination it is recommended that the application be denied.

I agree with the conclusions and recommendations of the examining geologist, and recommend that in denying the application, the applicant be explicitly notified of the confusion in the reconstruction of the geologic structure as described in Mr. Gualtieri's report on pages 26, 27, and 28.

J. William Hasler

J. William Hasler,
Field Officer, Region III
Office of Minerals Exploration

UNITED STATES

DEPARTMENT OF THE INTERIOR

STEWART L. UDALL, SECRETARY

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U. S. GEOLOGICAL SURVEY

OFFICE OF MINERALS EXPLORATION

REPORT OF EXAMINATION

REGION III

OME-6653 (Silver)

MINERALS EXTRACTION COMPANY

STARR PLACER PROPERTY

~~BOULDER~~ LAKE COUNTY, COLORADO

By

James L. Gualtieri

Geologist

May 1968

TABLE OF CONTENTS

	Page
Introduction	1
The property	1
Property rights	2
The district	2
Geology	3
Structure	6
Ore deposits	10
The oxidized ores	15
Downtown area	16
Production from Leadville district	20
Applicant's proposal	21
Conclusions	25
Recommendations	29
References cited	30

Introduction

MINERALS EXTRACTION COMPANY, INC. applied to the Office of Minerals Exploration August 8, 1967 for financial assistance to explore for silver on part of the Starr placer claim in the town of Leadville, Lake County, Colorado. The application was subsequently revised and the revision submitted to the Office of Minerals Exploration, Region III on February 28, 1968. The examination was made on April 16, 1968 by J. L. Gualtieri in the company of Mr. Harrison Cobb.

The Property

The Starr claim is a patented placer claim, survey number 255, and is described in the survey as being located in the California mining district. The part to be explored, however, is not contiguous with the main part of the claim but lies about 400 feet away at its nearest point, in a northerly direction. This block of ground is westward-sloping, irregularly elongate, and trends northeast-southwest over a distance of about 400 feet in the western half of the claim and northwest-southeast over a distance of about 400 feet in the eastern half. The block is about 440 feet wide in the western half and about 240 feet wide in the eastern half. The plat is shown on Plat 1.

The applicant proposes exploring an area about 700 feet long in the east-central part of the claim lying between two north-trending faults. There are restrictions barring full access to the surface areas of ground to be explored; two homes are located on the north side of East Sixth Street near Ash Street, three holes are located on the north side of east Seventh Street west of Ash Street, and

in addition, the presently used street, East Seventh Street as far east as Ash Street, Ash Street, and East Sixth Street cannot be utilized as drill sites. Waste dumps are located between East Seventh Street and East Eighth Street, and north of East Eighth Street, along the abandoned railroad right-of-way. These dumps are 60 feet to 100 feet wide and 40 feet high and it would be unduly expensive to attempt to prepare drill sites upon them, and to drill through them.

The property is located in the town of Leadville two blocks off Harrison Avenue, the main thoroughfare, and may be reached by driving east on East Seventh Street.

Property Rights

The applicant, Minerals Extraction Company, Inc. is leasing the Starr claim from Mrs. Nancy Wolcott Ebsen, Mrs. Jean Wolcott Pugh and Katrina Wolcott Johnson. Lien and subordination agreements are not obtainable from the owners; in lieu of such agreements a performance bond ? will be signed by the applicant.

The District

The Leadville mining district is located on the west slope of the Mosquito Range and on the east flank of the broad valley of the Arkansas River. Topographically the district is varied, the eastern part of the district is characterized by "U" shaped, glaciated valleys or gulches, the middle part is characterized by narrow valleys partly flanked by moraines, and the western part is characterized by a gently sloping outwash terrace. It is on this latter type topography that the Starr claim is located.

The center of the city of Leadville is located at an elevation of 10,150 feet above sea level; mines in the district are located at elevations ranging from 10,100 feet to 12,000 feet.

Geology

The Leadville district was first studied by Emmons who published in 1886, and later by Emmons, Irvin and Loughlin who published in 1927. Subsequently Behre restudied the outlying parts of the Leadville district with the aim of understanding the controls effecting ore deposits in the Leadville Limestone. He published in 1953. The following description of the Precambrian rocks is quoted from his work.

"The most conspicuous Precambrian rocks in the area are several varieties of schist, mainly micaceous; light-gray trachytic Silver Plume (?) Granite; and darker, pinkish Pikes Peak (?) Granite. The granites are believed to have been intruded during the Algoman revolution; the deposits now represented by schists are believed to have been laid down mainly during Early and Middle Huronian time. The major Precambrian folds trend northwestward and have steep dips, predominantly northeastward."

Paleozoic sedimentary rocks are the principal hosts for ore bodies in the Leadville district. The following description of the formation is also quoted from Behre.

"The Upper Cambrian Sawatch Quartzite, which is about 60 feet in thickness, unconformably overlies the Precambrian rocks. It is overlain by 45 feet of shaly beds of the Peerless Formation which is also of Late Cambrian age. Unconformably overlying the Peerless Formation is the Ordovician Manitou (Limestone) Dolomite (averaging

about 110 feet in thickness); above this is the Devonian Chaffee Formation. The Chaffee consists of two members -- the Parting Quartzite Member below and the Dyer Dolomite Member above. The Parting is a 27-ffot unit of shale and quartzite; the Dyer Dolomite (is) about 80 feet of buff to gray dolomitic limestone equivalent to the lower part of the Blue Limestone of earlier reports. The Chaffee is unconformably overlain by the Mississippian Leadville (Limestone) Dolomite, with the base generally indicated by sandy beds and a limestone conglomerate. The Leadville, equivalent to the upper part of the Blue Limestone of earlier reports, averages about 140 feet in thickness. The Weber(?) Formation of * * * (Pennsylvanian) age is the youngest Paleozoic sedimentary formation preserved in the Leadville district. The Weber (?) consists of shales and grits with a few beds of quartzite and limestone. The thickness of the formation averages 1,750 feet but has a considerable range as it rests unconformably on the Leadville (Limestone) Dolomite and has undergone various amounts of erosion after deposition."

Igneous rocks of possible Mesozoic and Cenozoic age intrude the sedimentary rocks preserved in the Leadville district. Behre describes them as follows:

"Late Cretaceous(?), Tertiary, and Pleistocene (?) igneous rocks invaded the Precambrian and Paleozoic rocks forming sills, dikes and plugs. One of the most widespread, the early 'White' porphyry, is a granodiorite of stony to finely granular texture. It forms several thick, conspicuous sills. In the field it is almost indistinguishable from the younger, later white porphyry. The later 'White'porphyry is a rhyolite porphyry of stony groundmass

porphyry of stony groundmass enclosing scattered phenocrysts of white oligoclase, transparent quartz, and biotite; in general it closely resembles the early 'White' porphyry megascopically but is much younger and, with a single exception, occurs only in dikes."

"Five kinds (of 'Gray' porphyry) are distinguished as a result of the present studies. Chief megascopic differences are the granularity of the groundmass, the nature of the phenocrysts, and the general color of the rock. All five kinds are essentially quartz monzonites, but it is possible with slight reservations to determine the order of their intrusion. The youngest of the group is the Johnson Gulch porphyry, which, in contrast to the other porphyries of the group occurs in dikes and probably forms the Breece Hill plug and a smaller plug in Iowa Gulch. The other porphyries of the group have been observed only in sills. The occurrence of the Johnson Gulch porphyry in dikes along faults that offset the sills of the 'Gray' porphyry group, its presence in fissures striking like those that contain ore, and its lateness in sequence of the 'Gray' porphyry group seem to point to the Johnson Gulch porphyry as igneous rock most closely associated in time with ore deposition.

Still younger than the 'Gray' porphyry group are the later 'White' porphyry previously described, the Little Union quartz latite making up two plugs near the head of Little Union Gulch, and rhyolite and rhyolite agglomerate that form plugs in the central Leadville district, and dikes elsewhere. The later 'White' porphyry is probably of early Tertiary, the quartz latite and rhyolitic rocks of late Tertiary or even early Pleistocene age."

Structure

The following description of the structure of the Leadville district is quoted from part of the summary of Emmons, Irvin and Loughlin (1927, p. XIII - XIV).

"Folding is not so pronounced within the Leadville district as in the surrounding region, where the principal folds trend N. 30° W. and are associated with reverse faults. These folds and reverse faults were developed subsequent to the intrusion of the porphyry sills, but prior to the intrusion of stocks batholithic masses of monzonitic rock in central Colorado. Folding and reverse faulting were followed by normal block faulting on a comparatively small scale. The block faults are particularly conspicuous in the eastern part of the Leadville district, where they are mineralized. Subsequent to mineralization block faulting on a larger scale took place."

"The reverse faults are of considerable interest because of their influence was not appreciated until a comparatively small reverse fault, * * * the Tuscon-Maid fault, was discovered in the Tucson mine in 1908 and developed during the next few years. It is offset by the Iron fault, and its westward continuation has been found in the Mahala, Wolfstone, and Maid mines, and a further offset continuation may extend through the eastern and northern parts of the downtown area. The fault itself contains ore at a few places, but for the most part it is sealed by gouge, whereas auxiliary faults and fissures along it are mineralized and have served as feeders to replacement ore bodies in limestone. In the Cord mine, where

the reverse fault is crossed by the Cord vein, the shattered ground contains both replacement deposits in limestone and stockworks in 'Gray' porphyry and quartzite."

"The Colorado Prince reverse fault contains ore where it is crossed by the Colorado Prince vein, which fills a younger fissure. Throughout much of its course this reverse fault is filled with agglomerate, which may have obliterated small showings of ore. The upturned limestones on the southwest side of the fault have yielded some rich ore * * *."

"Ore in the London mine, on the east slope of the Mosquito Range, has evidently been introduced along auxiliary faults and fissures on the footwall side of the London fault. In the Clear Grit mine, on the south slope of Iowa Gulch, ore has been found both within the Weston reverse fault and in auxiliary fissures on its footwall side. The general conclusion regarding the influence of the reverse faults on ore deposition is that although they are not the trunk channels through which ore was introduced, where they or the broken ground along them are intersected or joined by the younger fissures that did serve as channels, the conditions have been favorable for ore deposition."

"The Mosquito, Weston, and Mike faults, as mapped by Emmons, are composites of earlier reverse faults and later normal faults."

"Faults and fissures formed subsequent to reverse faulting and prior to ore deposition are most prominent in the eastern part of the district, but a few have been found in Iron and Carbonate hills. The faults and fissures that can be definitely assigned to this

class are mineralized. Some, like the Ibex, Winnie-Luema, Garbutt, and Sunday veins, have been mined extensively; others, like the Cord vein in Iron Hill, minor veins in the Ibex group, and those in the Resurrection mine, have been stoped at a few places but are chiefly important as feeders of blanket ore bodies in limestone."

"These faults and fissures trend in several directions and may comprise two subclasses--one trending north or northeast. So far as observed, those at right angles to associated reverse faults are marked by comparatively little or no displacement. The others include some faults of considerable size, though small compared to the major postmineral faults. The larger of these faults, notably the Winnie-Luema have transverse branches or auxiliary faults which are also mineralized."

"The Ibex group of premineral faults is complex and numbers more than 70. Its largest members, the Ibex No. 4, Garbutt, and Modoc faults form the irregular northern boundary of a large down-faulted block between the Weston and Ball Mountain faults, which is one of the least known parts of the district. Many of the minor members of the group are only a few inches thick but serve as leads to connected replacement ore bodies in limestone."

"The origin of the reverse and later mineralized faults must be deduced from evidence from the surrounding region rather than the Leadville district itself. The folds and accompanying reverse faults were developed by a thrust acting in a west-southwest to west direction."

"The fissures and minor faults at right angles to the reverse faults are attributed in part to a minor recoil movement following the period of folding and reverse faulting and in part to disturbances accompanying or closely following the late stock-like intrusions at Breece Hill."

"With the exception of the Mike, Weston, and London faults and the northern part of the Mosquito fault, the largest and most conspicuous faults of the regions are of postmineral age. Some of the older faults, notably the Mike, underwent renewed movement at this time. Postmineral faults have been more thoroughly explored in the western part of the district than elsewhere. They occur singly and in groups."

"The two conspicuous groups of postmineral faults are the Pendery, in the Downtown area, and the Dome-Iron-Mikado, along the west slope of Iron Hill. The faults vary considerably in strike and dip, but their prevailing trend is N. 12° E. and their dip westward. Movement along them has been almost entirely in the direction of dip, as proved by the positions of faulted ore bodies. Auxiliary faults that branch from the major faults mostly strike northwestward, but the Adelaide fault, which is auxiliary to the Iron fault, is usual in having a southeastward to southward trend."

"Movement along the postmineral faults has taken place continuously or at repeated intervals until the present time, but the principal movement occurred during the main uplift of the Mosquito Range, in middle Tertiary time. Minor subsequent movements

are indicated by the faulting of 'lake beds,' ' wash,' and mine workings."

"The force that produced the postmineral faults acted vertically. The blocks between faults were tilted to the east but underwent very little horizontal movement along the strike of the faults and no compression transverse to the faults. The greatest amount of uplift was along the Mosquito fault, northeast of the Leadville district, and the next greatest along the Dome-Iron-Mikado and Pendery fault groups."

Ore Deposits

The ore deposits of the Leadville are thoroughly discussed by emmons, Irvin, and Loughlin (1927). The following discussion is quoted from parts of their summary.

"The ore bodies may be classified according to form into veins, stockworks, closely related to veins, replacement deposits or 'blankets' and placers. The first two classes are found principally in siliceous rocks and the third in carbonate rocks. Classification may also be based upon the genetic relations of their ores and constituent minerals, and a subclassification on the metals and gangue present."

"The important hypogene minerals are comparatively few and of simple chemical composition, but supergene minerals, derived wholly or in part from them, include more than 50 species, some of which are of complex chemical composition. The hypogene minerals are divided, according to the temperature at which they were formed, into two groups -- high temperature minerals, in replacement bodies near the Breece Hill stock, and moderate-temperature minerals, in

veins and replacement bodies away from the main center of intrusion. The mineral composition of a few deposits indicates a gradation between the two groups."

"The minerals diagnostic of high temperature are wallastonite (uncommon), pyroxene and olivine (new altered to serpentine), magnetite, and specularite. The last two minerals are also present in small quantity in deposits that belong more to the moderate-temperature group. Manganosiderite is in minor degree closely associated with massive magnetite, but for the most part if forms casings around the mixed sulfide ore bodies. Quartz also is associated to a minor extent with the high-temperature minerals but is mostly present in moderate-temperature deposits. In siliceous rocks it is accompaied by large quantities of sericite and minor quantities of chlorite, epidote, and calcite. It is also present together with chalcedony and opal in the supergene ores."

"The principal sulphide minerals, in order of abundance, are pyrite, zinc blende (Marmatite), and galena. The pyrite, like the manganosiderite, is intimately associated with magnetite to a small extent and is also present in veins that distinctly cut the massive magnetite. It is the principal ore mineral in the veins and stockworks and also in many of the replacement bodies in limestone. Zinc blende and galena are more limited to deposits of moderate temperature. They are mostly present in the blanket bodies, either in mixed sulphide ore or in nearly pure zinc or lead ores, but are also locally preset in the veins. Zinc blende is much more abundant than galena."

"Among the minor hypogene sulphide minerals chalcopyrite is most prominent. It is locally interstitial among pyrite and zinc blende in the veins and is present as microscopic inclusion in the

The ores commercially classified as copper ores (copper 2-1/2 percent or more) have been enriched by supergene chalcocite, which coats chalcopyrite and pyrite and to a minor extent zinc blende. The chalcocite is commonly accompanied by considerable silver and also gold."

"Argentite is present, usually as microscopic grains accompanying the other sulphides, and is occasionally found intergrown with bismuthinite. This intergrowth is the principal constituent of the rich silver sulphide ore found here and there."

"Gold is present in commercial quantity in this rich silver ore, also in certain shoots in the lodes and stockworks, and in rather closely associated blanket bodies. Visible gold is practically confined to oxidized parts of these ore bodies, where it is locally present in flakes and wire, and to certain enriched parts of the associated sulphide zones. Gold presents one striking mode of occurrence in the sulphides as veinlets, coatings, and interstitial filling, particularly in the zinc blende. It is also closely but not constantly associated with chalcocite."

Further discussion here will be restricted to the replacement or "blanket" type ore deposit as this is the type of deposit likely to be present on the applicant's property. The following is quoted from the summary of Emmons, Irvin, and Loughlin (1927):

"Although mineralization extends from veins along certain beds in quartzite and shale, workable ore is almost wholly confined to the replaced shattered rock within the fissure zones between siliceous wall rocks. The exceptions are small blanket replacement

deposits that branch from veins in the 'Weber grits' (Weber(?) Formation). Where the veins cut limestone, however, most of them spread into blanket deposits, whose longest dimensions are generally parallel to the strike of the veins, though some trend away from the main vein along branch fissures. The ores that have been mined from these connected replacement deposits are mostly similar to those within the veins and different from the ores of the large replacement bodies in the western part of the district, but gradations between the two kinds of replacement deposits have been established at a few places. Where gradations have been exposed the siliceous pyritic gold or gold-copper ore extends a short distance from the vein fissure and grades rather abruptly into massive zinc blende-galena ore."

"The large blanket ore bodies occur mostly in groups that have a roughly radial arrangement with respect to the intrusive stock of 'Gray' porphyry at Breece Hill, but their location and arrangement are more closely controlled by other structural features, notably the reverse faults and the transverse normal faults and fissures."

"These 'blankets' have been found in all the sedimentary formations but mostly in the two limestones. In shaly formations more limy beds have been replaced by ore in areas of intense mineralization, but the principal function of the shales, and particularly of the porphyry sills, has been to serve as an impervious cover beneath which ore-forming solutions spread and replaced limestone."

"The Blue (Dyer-Dolomite Member of the Chaffee Formation and Leadville Limestone of current usage) Limestone has contained the greatest number and the largest of the ore bodies mined. The 'White' (Manitou Limestone of current usage) limestone has been

the more productive for several years in certain places, particularly in the Iron Hill and Carbonate Hill areas, but its ore bodies have not been so large as those mined in the Blue Limestone in the earlier years. The 'White" limestone is well worth prospecting in certain undeveloped places, particularly in the Iron Hill area, but its ore on the whole are less widely distributed and of lower grade than those in Blue limestone."

"The replacement bodies commonly occur at certain horizons, locally called 'contacts,' where structural conditions have controlled the concentration of ore. The number of porphyry sills and shale beds that serve as impervious covers to ore bodies. In some places ore has been mined at as many as ten or eleven 'contacts.' The uppermost, usually the contact of 'White porphyry' or 'Weber shales' with Blue Limestone, is called the 'first contact,' and others are numbered in consecutive descending order, regardless of their stratigraphic positions. The original ores of the blankets are classified below according to the ratio of sulphides and gangue minerals, and the classes may be subdivided according to the relative abundance of the different metallic sulphides. The different varieties grade into one another."

"1. Massive sulphide ores (sulphides with inconspicuous gangue):

a. Pyritic or iron ores.

b. Galena or lead ores.

c. Sphalerite or zinc ores.

d. Chalcopyrite-bearing mixed sulphides or copper ores.

e. Mixed sulphide ores.

f. Argentite-bismuthinite or silver-bismuth ores."

"2. Carbonate-sulphide ores (mixtures of sulphides and large quantities of manganosiderite)."

"3. Siliceous sulphide ores (mixtures of sulphides and large quantities of quartz or jasperoid):

a. Pyritic gold ores.

b. Chalcopyritic gold ores."

"Concentric banding characterizes much of the mixed sulphide ore."

The Oxidized Ores

A discussion of the oxidized ores, quoted from the summary of Emmons, Irvin and Loughlin (1927), is included here because oxidized-type deposits are present at the upper contacts in the general area of the Starr placer claim.

"Oxidized ores, formerly dominant, but now subordinate to sulphide ores, include iron-manganese and manganese oxide ores derived from manganosiderite, iron oxide ore derived from pyrite ore low in silica, oxidized siliceous gold and silver ore derived from siliceous pyrite ore, lead carbonate ore derived from massive galena and mixed sulphides, lead-iron sulphate (plumbojarosite) ore derived from mixed sulphides, oxidized siliceous lead ore derived from siliceous mixed sulphides, zinc carbonate and silicate ore derived from massive zinc blende and mixed sulphides, oxidized siliceous copper ore and copper sulphate ore derived from siliceous pyrite-chalcopyrite ore, and oxidized bismuth ore derived from bismuth sulphide ore."

"The bottom of the oxidized zone is in general sharply defined in the blanket bodies, where circulation was mainly parallel to the dip of the country rock; it is less distinct in the steeply dipping veins, and some effects of oxidation are found considerably below the zone of thorough oxidation. The zone of sulphide enrichment, principally indicated by chalcocite, is very poorly defined and in several places absent. It is far more common in the veins than in the blanket bodies but can rarely be separated from the oxidized zone above and the zone of primary ore below."

"The depth of the oxidized zone below and the bedrock surface ranges from 75 to 940 feet, but in most parts of the district it is between 400 and 600 feet. The depths of complete oxidation approach uniformity within any area bounded by major faults but are very different in adjacent areas separated by the faults."

Downtown Area

The description of the downtown area includes the description of mines and properties adjacent to the part of the Starr placer claim under consideration in the submitted proposal. Emmons, Irvin and Loughlin (1927, p. 273-274) described the areas as follows:

"Ore bodies in the downtown area have been mined at five contacts * * *. The most work has been done at the first, beneath the White porphyry, and the second, beneath the Gray porphyry sheet in Blue (Dyer, Dolomite Member?) Limestone. The others are just above and below the Parting Quartzite and in the 'transition shales' (Peerless Formation) above the Cambrian (Sawatch) Quartzite. When seen by Emmons and

Irvin in 1902 the two upper contacts had been extensively explored, and most of the ore had been mined from them. After the unwatering of the Penrose shaft in 1916 a large quantity of oxidized zinc, lead, and manganese-iron ore was mined by the Downtown Mines Co. south of the Coronado shaft and west of the Midas shaft in the lower part of the Blue Limestone and in the 'White' limestone, and a small quantity in the underlying 'transition shales,' but in 1924 these operations were suspended. Elsewhere there has been no production from the downtown area since 1907, except for a small tonnage of manganese-oxide ore from the first contact in 1918."

"The first contact follows uniformly the upper surface of the Blue Limestone, which is shown by scattered fragments of black chert to be present in its full thickness beneath the White porphyry. The contact surface is marked by many irregularities and undulations, some of which are due to irregularities in the original intrusive contact and some to the distortion to which both ore bodies and porphyries have been subjected by faulting. In a small portion of the area between the Penrose and Coronado shafts, the Gray porphyry rises to the under surface of the 'White' porphyry, and there is locally no 'first contact.' In other places the single 'Gray' porphyry sheet that forms the 'second contact' divides into several branches, increasing the number of ore contacts. Throughout the downtown area the ores of the first and second contacts depart less than elsewhere from their characteristic position immediately below the porphyry sheets, although exceedingly irregular protrusions extend downward into the limestone from their lower surfaces."

The first-contact ore have been found in greater amount in the southern portion of the area, and the second-contact ores in the northern and eastern portions."

"The only noteworthy vein seen in the downtown area is one connected with an oxidized replacement body that has been mined 12 feet above the third level of the Penrose mine, southwest of the shaft. This replacement body directly underlies a sheet of 'Gray' porphyry and extends for 280 feet in a northeasterly direction with an average width of 20 feet and average thickness of 5 feet. The vein, which connects with the northwest side of the replacement body has an average thickness of 1 foot and extends to and below the fourth level but has not been followed deeper. The ore mined from the replacement body consisted chiefly of iron and manganese oxides and silica with considerable lead and 100 to 200 ounces of silver to the ton. The vein also was found to be highly siliceous and to contain considerable horn silver, but it could not be profitably worked. A few other small veins have been reported beneath replacement bodies in the downtown area, but they are on the whole scarce and inconspicuous."

"Third contact ore, lying directly on the Parting Quartzite, has been found on the bench between the Pendery and Niles faults in the Wildcat, Bison, and Catalpa mines, where the 'Gray' porphyry approaches within 60 feet of the Parting Quartzite and the second-contact and third-contact ores come together. Third-contact ore has also been mined by the Downtown Mines Co., as already stated."

"The presence of a fourth contact, beneath the Parting Quartzite, had been demonstrated by 1902 in the Lazy Hill, Midas, Sixth Street, and Coronado mines. In drill holes Nos. 7 and 1 of the Coronado mine and No. 2 of the Sixth Street mine this fourth contact ore was found to extend completely through the 'White' limestone down to the Cambrian (Sawatch) quartzite. During 1918 to 1923 the fourth contact ore of the Coronado was mined by the Downtown Mines Co. In the Hibschle and Walcott mines a large body of ore was found on a fifth contact; it lay mainly in the "transition shales" (Peerless Formation), at the top of the Cambrian (Sawatch) quartzite but extended for a short distance into the quartzite itself. This ore body was in line with the northeastward projection of the Tuscon-Maid reverse fault. Upthrow along the Pendery fault brought it sufficiently near the surface to permit complete oxidation."

"All the ores mined on the first three contacts in the downtown district were oxidized, and the fourth-contact ores found in drill holes and in recent workings of the Coronado mine below the Parting Quartzite were partly oxidized sulphides. The first-contact ore bodies were, on the whole, the richest in silver, the ores of the second and third contacts had a slightly lower tenor in the metal, and the fourth-contact ores were prevailing of low grade. How much of this difference was due to oxidation and how much to differences in the original silver content could not be determined from the available data."

"The ore bodies on the first contact were in general relatively thinner than those on the second. The maximum thickness for the second-contact ore, 150 feet, was attained by Coronado-Sixth Street body immediately above the Sixth Street drill hole No. 2. Over most of the area the ore bodies of both contacts ranged in general from 6 to 30 feet in thickness, with a thickening here and there to 60 feet and in a few places to nearly 100 feet. The disseminated ore bodies in 'White' limestone in the Sixth Street and Coronado mines were apparently much thicker and may have occupied the entire thickness of the 'White' limestone; but recent developments in the Coronado showed that only parts of them could be profitably worked. In the Midas and Penrose they were thinner, being, respectively, 80 and 30 feet thick. The ore bodies on all contacts were much more variable in thickness than is indicated on the generalized sections of the downtown (area) map."

Production from Leadville District

From the beginning of operations until the end of 1944 the Leadville district produced $462,597,906 (Loughlin and Behre, 1947, p. 351-352) worth of mineral products. This value includes 2,466,834 ounces of mined gold, 344,258 ounces of placered gold, 236,609,972 ounces of silver, 51,437 tons of copper, 714,038 tons of zinc and 1,033,454 tons of lead. The ore mined, including reworked dumps, amounted to 21,245,883 tons. There is no breakdown of district production by areas, consequently no figure is obtainable for the downtown area.

The size of ore bodies mined in the area of the Starr placer are previously described to some extent in this narrative in connection with the downtown area (Emmons, Irvin and Loughlin, 1927, p. 273). As shown on Plate 18 of the same paper the mined ore bodies range from over 160 feet long to over 1,000 feet long, and from a few tens of feet wide to several hundred feet wide.

Reserves of ore, for the Leadville district, the downtown area, or the Starr placer claim are not known.

Applicant's Proposal

The applicant, MINERALS EXTRACTION COMPANY, INC., largely on the basis of the professional paper by Emmons, Irvin, and Loughlin (1927), contends that substantial oxidized ore bodies high in silver are likely to be found in the ground of the Starr placer claim at the first contact -- the contact between the "White" porphyry and the top or upper part of the Leadville Limestone, and the second contact -- the contract between the base of the "Gray" porphyry and the top or upper part of the Dyer Dolomite Member of the Chaffee Formation. The applicant refers to the operations of the Seventh Street Mining Company, which leased the Hibschle mine and worked it east of the Pendery fault, and later west of the Pendery fault. According to the applicant, whose information is apparently supplied by a Mr. Carl Youngstrom, the Seventh Street Mining Company, crosscut the fault from the Hibschle shaft at a sufficiently low level to intersect the contact between the "White" porphyry and

the Blue (Leadville) Limestone and subsequently found an ore body several feet thick with high values in silver. This was in 1926. The operation ceased, according to the applicant, because the mine flooded when the nearby Penrose mine shut down and ceased pumping operations. Mr. Cobb orally informed the examiner that the workings were mapped by a competent mining engineer. In this connection, the map (MINERALS EXTRACTION CO., INC. proposal, Exhibit E-1 and E-2) appears to show workings at two levels, inasmuch as two separate workings are shown overlapping. The applicant designated the ore-body reached from the 414-foot level as a first-contact ore-body which is described to some extent in the narrative. There is no clear indication from the map at what level the other working is reached or what contact may have been mined in that working. Mr. Cobb was queried about this during the examination and did not seem to know, but it seems likely the second contact was mined in this working.

Emmons, Irvin and Loughlin (1927, Plate 18) show the location of the Hibschle mine shaft and the deposits east of the Pendery fault worked through the shaft but they show no deposits west of the fault as indicated on the applicant's exhibit. This, however, does not invalidate Mr. Youngstroms' story for the last field work was carried out in 1922 by Loughlin prior to the publication of Professional Paper 148 (Emmons, Irvin and Loughlin, 1927, p. 3), whereas the mining west of the fault is purported to have been carried out as late as 1926 - 1927.

The examiner did verify the existence of remanent timbering at the site indicated on the map (MINERALS EXTRACTION CO., INC. proposal, Exhibits E-1 and E-2) to be the Hibschle shaft but he could not find any surface indication of the Wolcott shaft. Mr. Cobb indicated he thought that the Wolcott shaft might be located at a point near the edge of a waste dump but the distance chained from the east edge of Ash Street to the indicated point did not measure the same as that shown on the map (MINERALS EXTRACTION CO., INC. proposal, Exhibits E-1 and E2).

MINERALS EXTRACTION CO., INC. proposes exploring the ground on the Starr placer claim between the Pendery fault and the Cloud City fault within nine diamond drill holes. As will be explained further on in this report, the applicant erred in transposing the data from Plate 18 (Emmons, Irvin, and Loughlin, 1927) and was further misled by the erroneous location of the trace of Cloud City fault on Plate 18.

As proposed, the holes will penetrate only the first and second contacts. The applicant proposes to put down the holes in two stages. Five holes (Holes Nos. 1 - 5) would be drilled in the first stage around the Hibschle workings as indicated on the maps (MINERALS EXTRACTION CO., INC. proposal, Exhibits E-1 and E-2). None of these holes would be closer than 50 feet from the old workings. Holes No. 1 and No. 2 are planned to penetrate only the first contact. If drilled deeper the applicant believes they might penetrate the main structural zone of the westward-dipping Pendery fault without reaching the second contact. The applicant apparently also plans to drill hole No. 3 no deeper than the first contact (MINERALS EXTRACTION CO., INC. proposal, Exhibit O). This

is puzzling inasmuch as the proposed hole is located sufficiently west to avoid the Pendery fault.

As part of the second stage the applicant proposes a hole (Hole No. 6) be drilled near the southeast corner of the ground to be explored only if the three (Holes Nos. 1 - 3) on the east and south side of the workings show commercial ore at the first contact. Here the applicant is not explicit on whether or not one, two or all three holes must show commerical ore to warrant the drilling of this hole. This hole, like holes Nos. 1 and 2, is planned to penetrate only the first contact because its proposed location is near the Pendery fault. The applicant proposes locating it about 10 feet from the claim boundary.

Also in the second stage, a hole (not numbered in exhibits but described as hole No. 7) is proposed to be drilled near the surface trace of the Cloud City fault near the western edge of the applicant's property. The applicant implies but is not explicit that two other holes would be drilled, one (not numbered in exhibits but described as hole No. 8) about 190 feet northeast toward the old workings and another (Hole No. 9) near the northwest corner of the ground to be explored, only if the first hole (Hole No. 7) shows sufficient mineralization. The proposed site of Hole No. 9 is only 15 feet from the claim boundary and the examiner believes the applicant would be forced to locate it even closer to the boundary if not off the claim because of a waste dump located at this site.

Conclusions

The discussion by Emmons, Irvin and Loughlin (1927, p. 273-274) clearly indicates that the downtown area -- the area adjacent the Starr placer claim has been a copious producer of ore, and has produced from as many as five contacts, but only the upper three, which are incidentally oxidized, are high in silver. Sections IV and XII of Plate 18 (Emmons, Irvin and Loughlin, 1927) are drawn through the Starr claim. The geology shown in the sections are based on data projected from adjacent mine workings no more than a few hundred feet distant. The attitudes and thicknesses of the various units shown in the sections are probably generally accurate. In this connection however, discrepancies are noted between the sections and subcrop map, especially the location of the Cloud City fault.

No well defined overall trend of the ore bodies is noted, rather they appear to fall into a rough square. The individual ore bodies, however, appear crudely elongated in a northeast-southwest direction. The plumbing system which fed ore solution to points of deposition is not well enough understood to predict on the basis of known geology, the areal location of yet unfound ore bodies. The western limit of ore deposition, or at least of found ore bodies, is more or less marked by the postmineral Cloud City fault, which the applicant has chosen as the western limit of its exploration. In summation, the Starr placer claim appears to be located on favorable ground; the chances of finding additional ore bodies here are as

good as in other parts of the downtown area. If one adopts the concept used in the exploration for area targets such as the uranium-vanadium deposits of the Colorado Plateau, it is surmised from the ratio of area of ground underlain by known first and second contact ore bodies to the area of ground underlain by third or lower contact ore bodies, and barren rock that there is about a one-in-four chance of any one hole being drilled in ore or mineralized rock. This is solely based on data presented by Emmons, Irvin and Loughlin (1927, Plate 18); the reported extension of the Hibschle mine or the information given by Mr. Carl Youngstrom do not influence this conclusion.

As stated previously there appears to be some confusion as to the location of the Cloud City fault by the authors of Professional Paper 148 (Emmons, Irvin, and Loughlin, 1927). The trace shown on the subcrop map does not conform to the location shown in the sections (Plate 18, section IV and XII). It appears, inasmuch as the information shown in Plate 18 is based on subsurface data, and inasmuch as there are mine workings, including a crosscut extending from the Coronado shaft to the Capitol shaft, in this area, that the location of the Cloud City fault in the sections is probably accurate, whereas its position on the subcrop map is mislocated through some error.

The applicant transposed the position of the ore bodies shown on the subcrop map of Plate 18 to its maps (MINERALS EXTRACTION CO., INC. proposal, Exhibits E-1 and E-2) and accordingly revised the scales, but did not denote the location of the Coronado shaft, Capital shaft or the Bob Ingersoll drill hole (shaft). Their locations can be approximated by relating them to the location of the ore bodies,

hence the Coronado shaft would be located about 60 feet southwest of survey point 255/26 on the south side of the Starr placer claim. The location of the Coronado shaft relative to the location of the Cloud City fault on the applicant's map (E-1 and E-2) places them about 290 feet apart whereas the distance between the shaft and the mislocated fault trace on the subcrop map of Plate 18 is about 85 feet. This difference is only understood when Behre's map (1953, Plate 1) is studied. It clearly shows the location of the Coronado shaft near the northeast corner of the junction of East Seventh Street with the abandoned railroad right-of-way, an area now covered with a waste dump. On the same map the Capitol shaft is shown located in the northeast central part of the next block to the north, and the Bob Ingersoll drill hole (shaft) is located in East Ninth Street about midway between Ash Street and the abandoned railroad right-of-way. It appears that the applicant was aware of the location of the Coronado shaft shown on Behre's map because the location of the Cloud City fault on the applicant's maps is almost exactly 85 feet from where the shaft should be shown. The applicant, apparently believing it had correctly located the fault, failed to move the ore bodies commensurately. If property relocated the mined ore body shown on the applicant's map just north of survey point 255/26 would lie about 210 feet northeast, in the middle of the west central part of the area the applicant wishes to explore. The locations of the Coronado shaft and Bob Ingersoll drill hole (shaft) shown on Behre's map has made it possible to establish the trace of the section XII. Using the correct location of the Cloud City fault in the section

it is possible to correctly locate its trace on the applicant's map (E-1). Doing this it is found that the fault lies 30 feet to 100 feet farther eastward than the applicant shows it. The revision of the location of the ore bodies and the fault accompanies this report (Plate 4).

In addition to the confusing situation outlined above, the proposed project will be handicapped by the narrow width of the ground to be explored; it measures no more than about 240 feet to 450 feet wide. If no drill hole may be located closer than 100 feet from the claim boundary, the area available for exploration is about halved. Even on this limited ground the presence of homes, yards and waste dumps further restricts the number of drill sites available.

Lastly, there is a chance that unknown or unmapped workings underly the Starr placer claim. The last field examination of the Leadville district prior to the publication of Professional Paper 148 was made in 1922. Between then and complete cessation of mining activity in the downtown area, unreported mining operations may have been on the claim. For example, the Coronado shaft which is located on the property, may have been used to reach other possible deposits located northward or eastward.

Recommendations

Although the property leased by MINERALS EXTRACTION CO., INC. is located on geologically favorable ground, the area proposed for exploration is so small, and effected by other physical restrictions, that drilling here would be virtually on a development scale. For this reason the proposal is not recommended for contract.

References Cited

Behre, Charles H., Jr., 1953, Geology and ore deposits of the west slope of the Mosquito Range: U. S. Geol. Survey Prof. Paper 235, p. 1-2.

Emmons, S. F., Irving, J. D., and Loughlin, G. F., 1927, Geology and ore deposits of Leadville mining district, Colorado: U. S. Geol. Survey Prof. Paper 148, P. XIII-XVI, p. 273-274.

Loughlin, G. F. and Behre, Jr. C. H., 1947, Leadville mining district, Lake County (Colo.), in Mineral Resources of Colorado, 1947: p. 351-352.

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
FEDERAL CENTER, DENVER, COLORADO 80225
Office of Minerals Exploration
Building 53 Room 203

See left side of folder

February 28, 1968

OFFICIAL COPY
O. M. E.
RECEIVED
FEB 29 1968

INITIALS	CODE

Memorandum

To: Chief, Office of Minerals Exploration

From: Field Officer, Region III

Subject: OME-6653 (Silver)
Minerals Extraction Company
Starr Placer Property
Lake County, Colorado

Transmitted herewith is the revised application on the above-stated subject which was brought in by Mr. Harrison Cobb February 26, 1968.

J. William Hasler

J. William Hasler,
Field Officer, Region III
Office of Minerals Exploration

Enclosure

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
9/18	Peterson	120
		120
	On leave	110
9/18	Cal	220
9/18	Bill	120M

AIRMAIL

SEP 18 1967

Minerals Extraction Company
P.O. Box 580
Boulder, Colorado 80302

Re: OME-6653 (Silver)
Minerals Extraction Company
Starr Placer Property
Lake County, Colorado

Gentlemen:

Your application for exploration assistance has been reviewed in our Washington Office and referred to Mr. J. William Hasler, Field Officer, Region III, Office of Minerals Exploration, U. S. Geological Survey, Building 25, Federal Center, Denver, Colorado 80225.

Mr. Hasler will notify you if additional information concerning the application is needed, and possibly to make arrangements for a field examination.

Sincerely yours,

Harold Kirkemo (gla)

For: Frank E. Johnson
Chief, Office of
Minerals Exploration

cc: Director's Reading File
Division File
Economic Geology File
OME File
OME Reading File
OME Region III
Mr. Peterson

ECPeterson/bsl 9/18/67

23263

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
9/18	Peters	120
9/18	Nikemo	120
"	Orleans	110
		220
9/18	Bell	120M

AIRMAIL

SEP 18 1967

Memorandum

To: Field Officer, Region III

From: Chief, Office of Minerals Exploration

Subject: OME-6653 (Silver)
Minerals Extraction Company
Starr Placer Property
Lake County, Colorado

This application is referred to you for consideration and a field examination if warranted.

The application is complete, but the proposal is stated in such general terms that we do not have sufficient information to properly evaluate it. However, it appears that further correspondence between this office and the Applicant would add little information to what has already been submitted.

No real supporting evidence has been supplied. The proposal appears to be based on hearsay and referenced material dealing with the Leadville mining district. Nothing specifically relating to the Applicant's property is mentioned. Perhaps additional supporting material may be obtained during a field examination, although it is doubtful.

If a contract is recommended, the Applicant should be requested to submit new bank correspondence. His request for a loan is not directed to a specific bank and both bank replies fail to mention receiving such a request.

Harold Nikemo (gla)

For: Frank E. Johnson

Enclosure

cc: Director's Reading File
Division File
Economic Geology File
OME FIle
OME Reading File
Mr. Peterson
130

ECPeterson/bsl 9/18/67

23263

September 1, 1967

Mineral Extraction Company
P. O. Box 580
Boulder, Colorado 80302

Subject: OME-6653

Gentlemen:

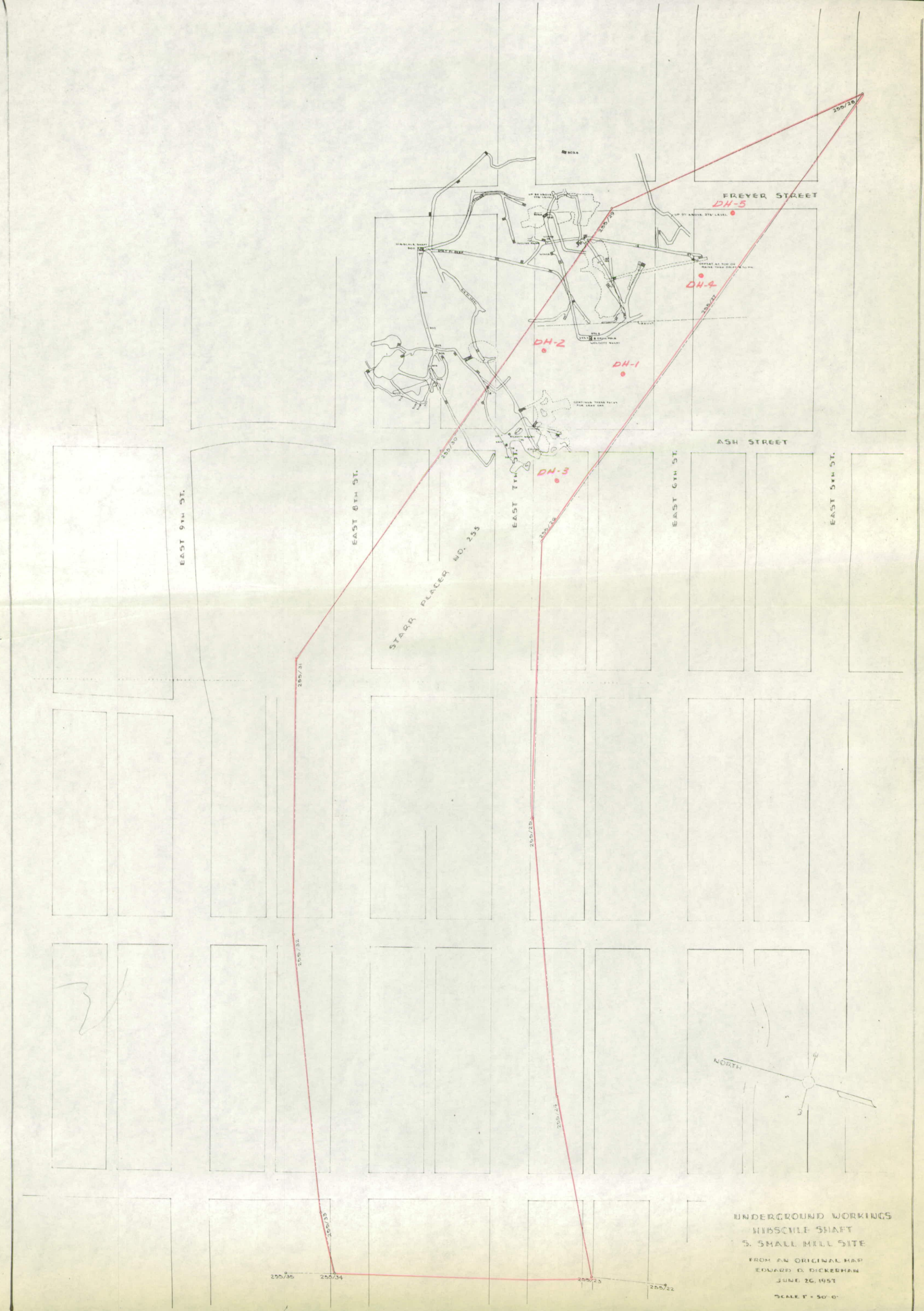
Your application for exploration assistance, undated, submitted to our office at Denver, Colorado, has been assigned Docket No. OME-6653.

Please identify all future correspondence relating to your application by this docket number.

Sincerely yours,

Frank E. Johnson
Chief, Office of
Minerals Exploration

Copy to Region III


FREYER STREET
ASH STREET
EAST 9TH ST.
EAST 8TH ST.
EAST 7TH ST.
EAST 6TH ST.
EAST 5TH ST.
STARR PLACER NO. 233
DH-1
DH-2
DH-3
DH-4
DH-5
255/18
255/19
255/20
255/21
255/22
255/23
255/24
255/25
255/26
255/27
255/28
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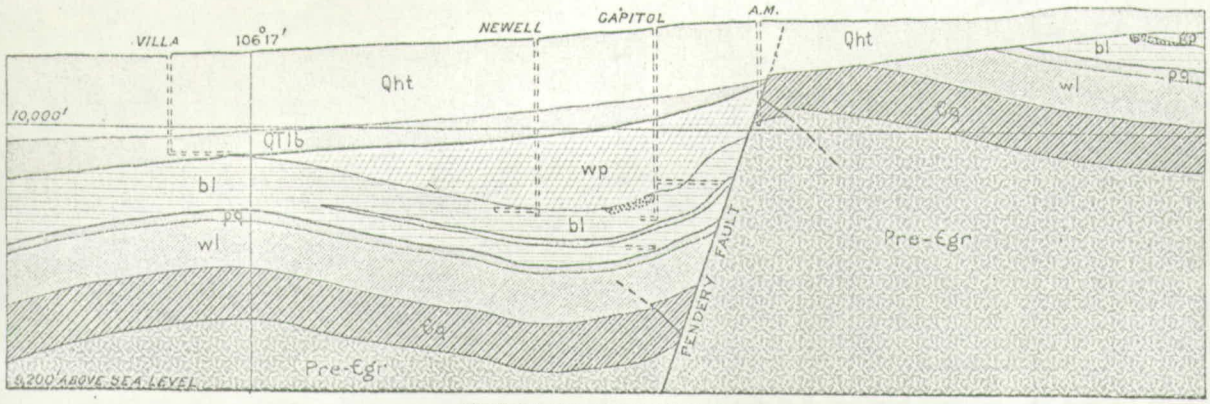
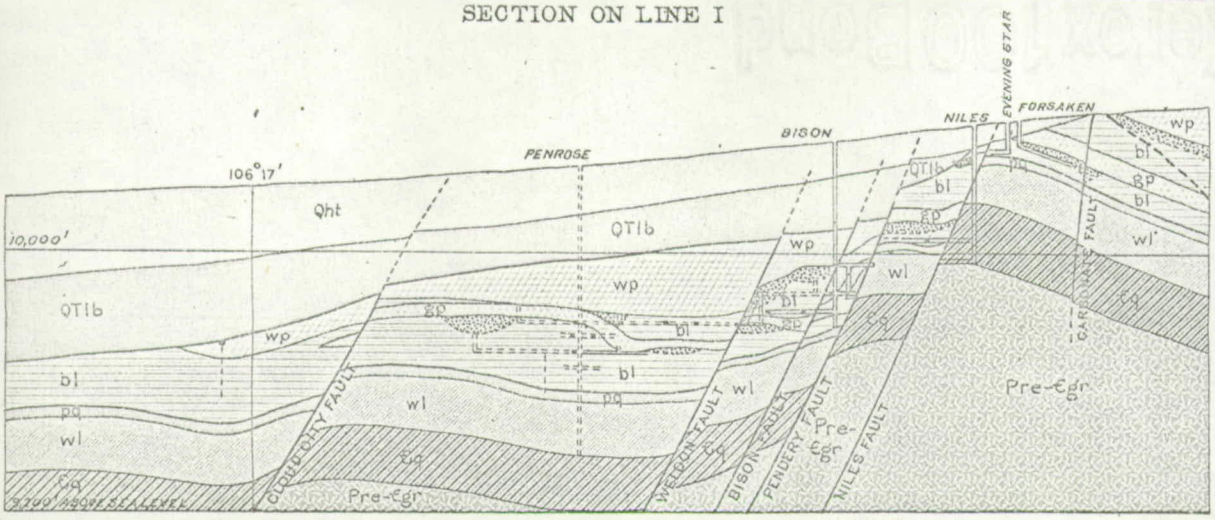
255/30
255/31
255/32
255/33
255/34
255/35
NORTH
UNDERGROUND WORKINGS
HIBSCHLE SHAFT
S. SMALL MILL SITE
FROM AN ORIGINAL MAP
EDWARD D. DICKERMAN
JUNE 26, 1957
SCALE 1" = 50'-0"



SECTION ON LINE I

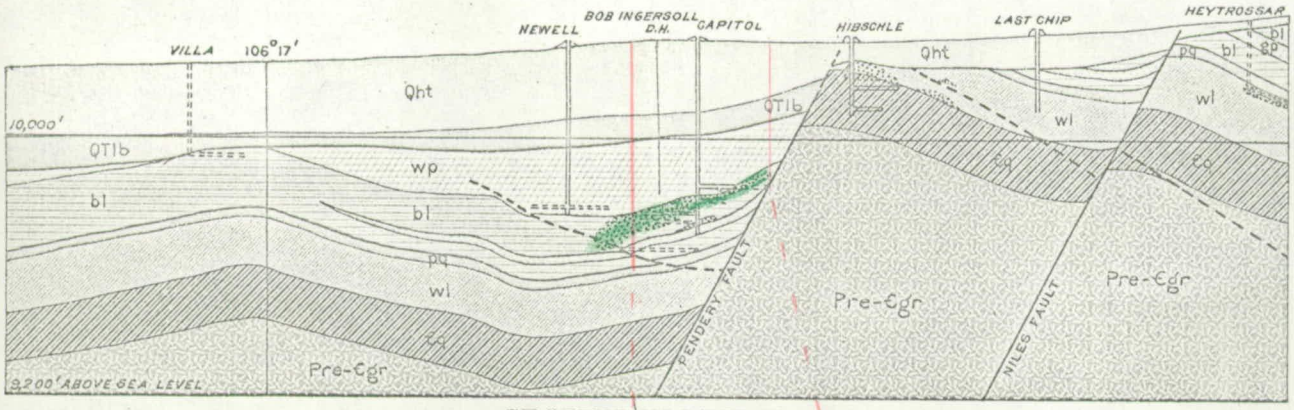


SECTION ON LINE II

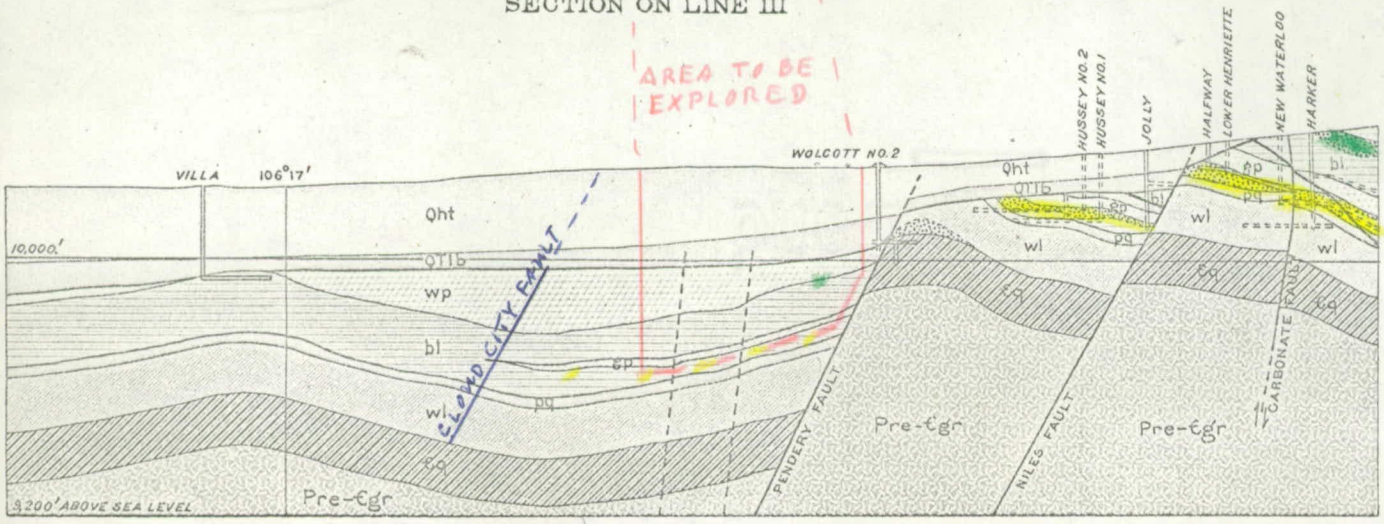
EXHIBIT G
OME 6653 - Revised

P. P. 148
PLATE 18

0 100 200 300 400 500
SCALE IN FEET



SECTION ON LINE III



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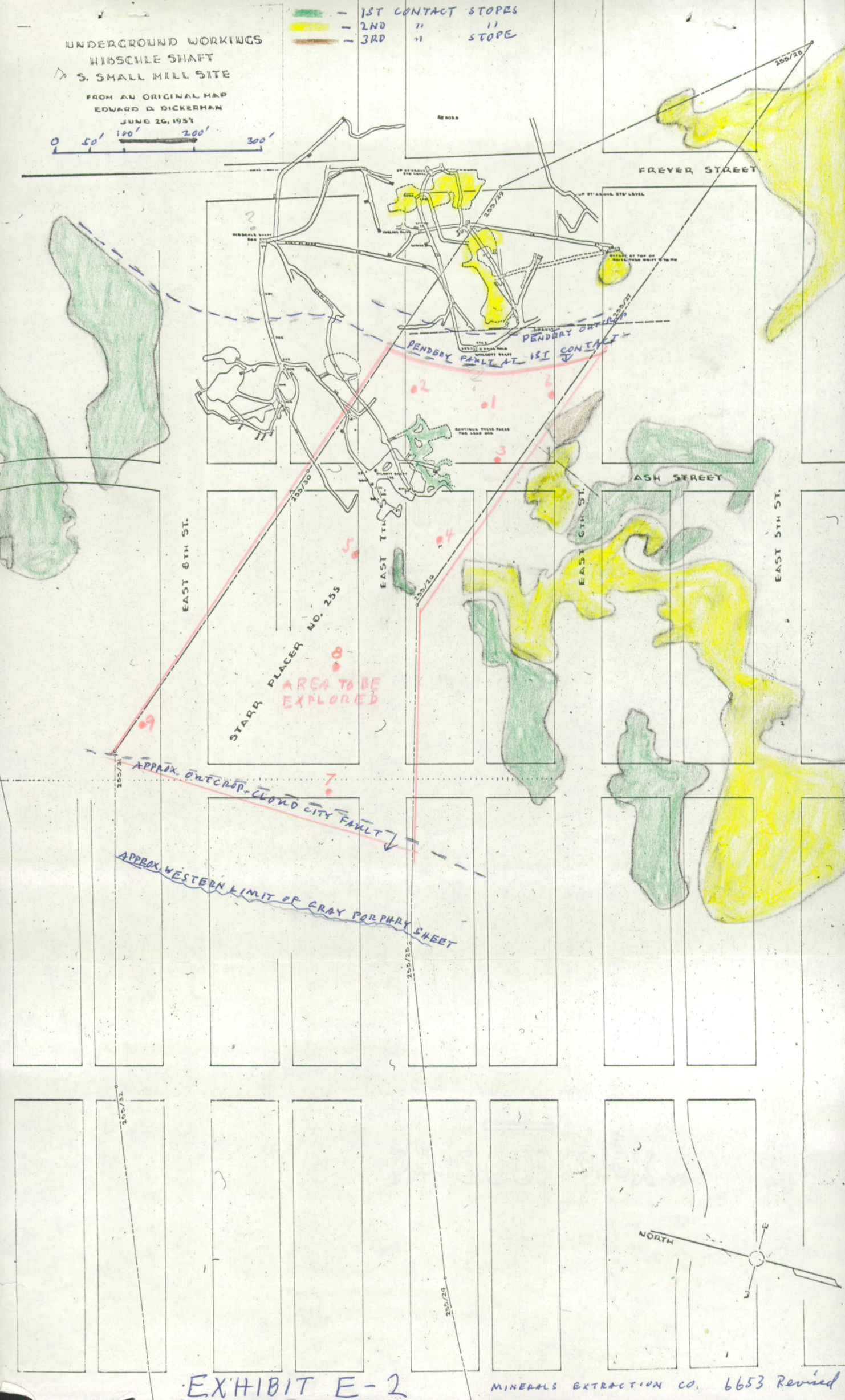
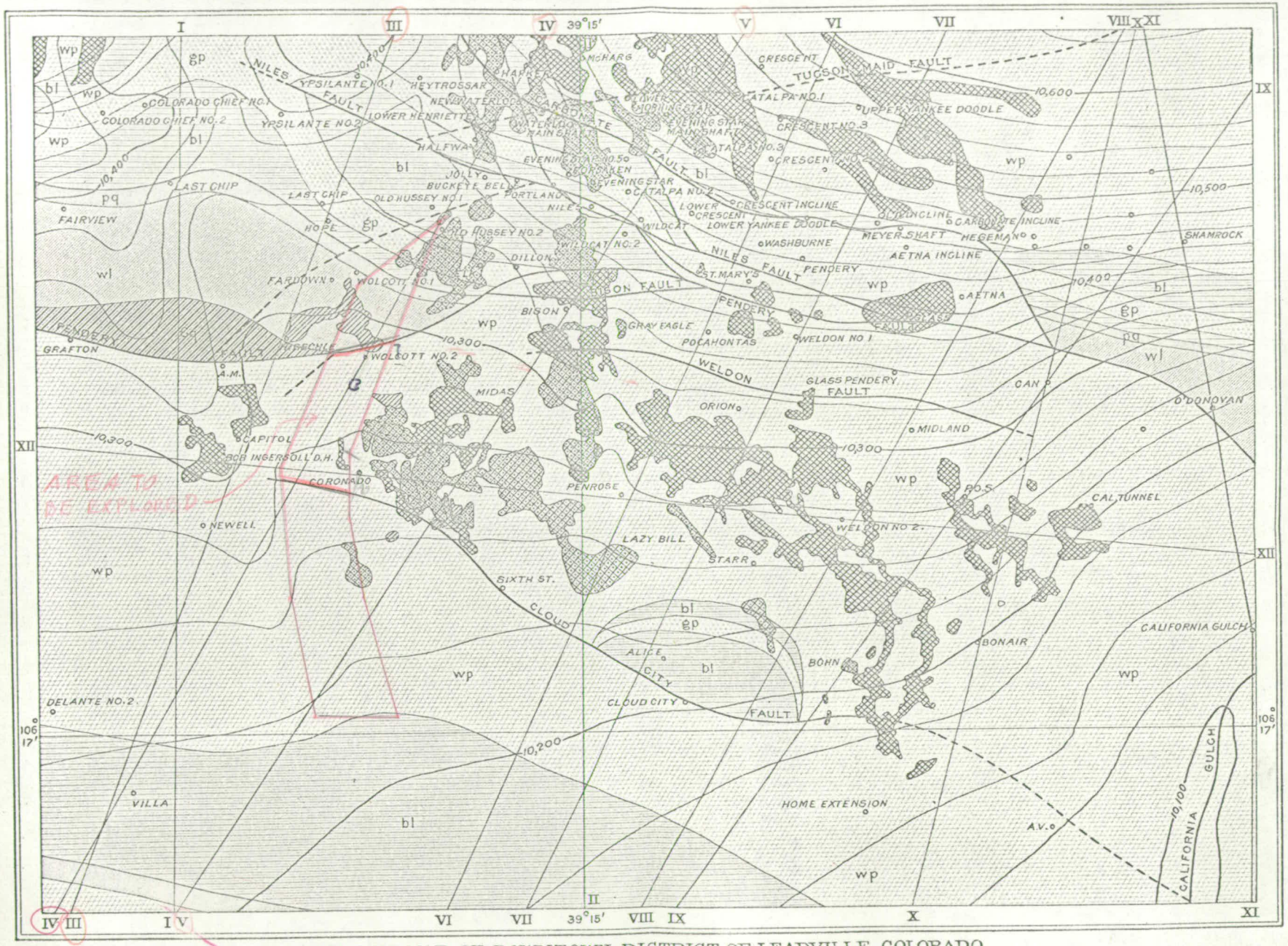


EXHIBIT E-2

MINERALS EXTRACTION CO. 6653 Revised



GEOLOGIC MAP OF DOWNTOWN DISTRICT OF LEADVILLE, COLORADO
(After S.F. Emmons and J.D. Irving, with some modifications.)

0 500 1000 1500 FEET

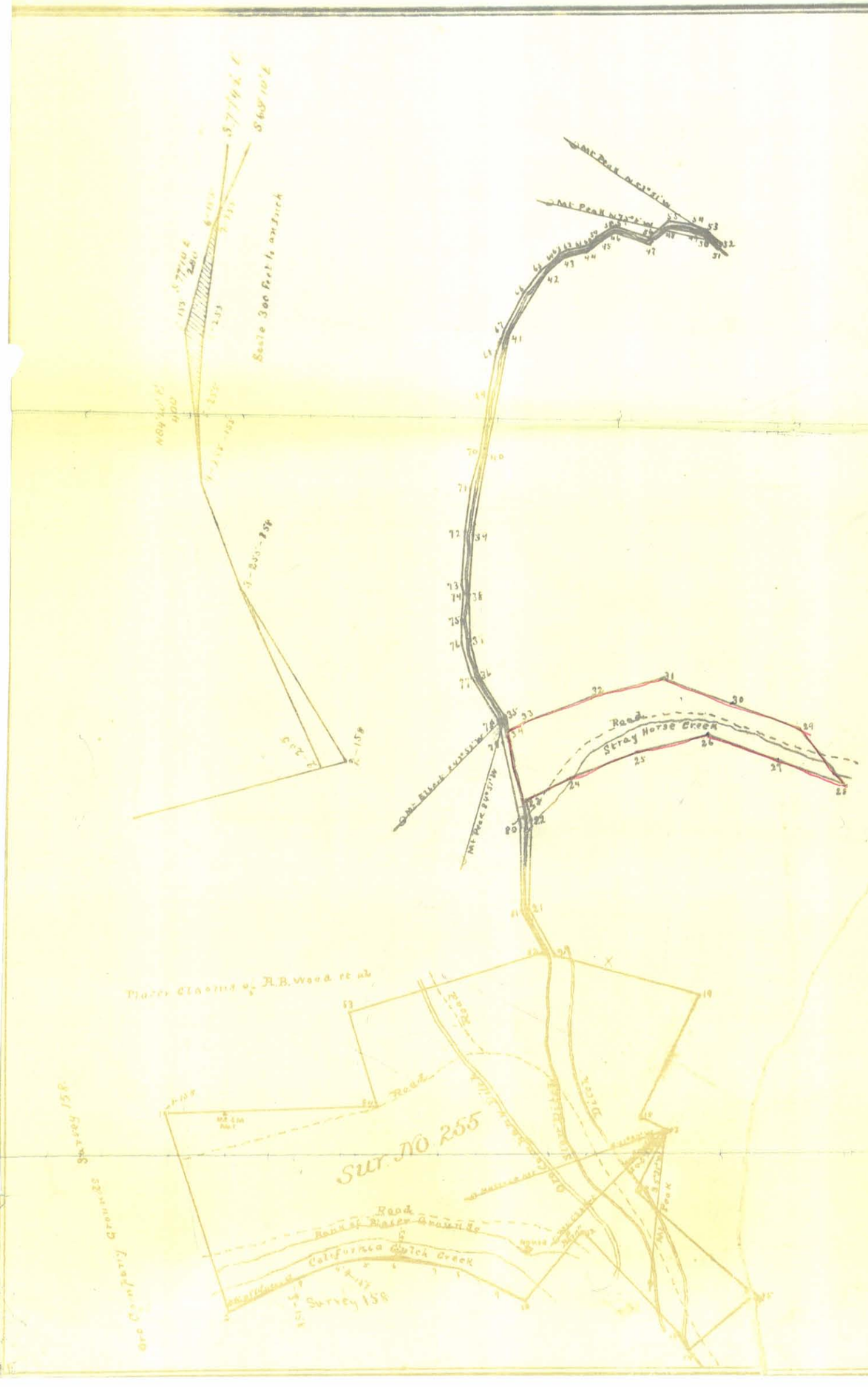
Contour interval 25 feet

EXHIBIT H
OME 6653 - Revised

PLATE 18
P.P. 148

EXHIBIT H

? x N. 13°42' W. 10 x 3111. Sec. line 2022 x 1.N. 1.11
* N. 74°12' W. " " 2.5276 " Nov. 30, 78.



SURVEY NO. 255

Mineral District No. 3

PLAT

OF THE CLAIM OF

THOMAS STARR

UPON THE

STARR PLACER CLAIM

CALIFORNIA MINING DISTRICT, LAKE COUNTY, COL.

Surveyed by Charles W. Baldwin U. S. Deputy Surveyor.

Containing 18.461 Acres,

Scale of 500 Feet to an Inch,

Variation 16° E.

BOUNDARIES		
No. of Course	Course	
1	S 19° E	1037.0
2	N 63° 30' E	515.0
3	N 68° E	289.5
4	N 50° 25' E	179.0
5	S 89° E	215.0
6	S 82° 19' E	277.5
7	S 77° 43' E	164.5
8	S 61° 30' E	332.0
9	E 62° 30' E	197.0
10	N 38° 20' E	620.0
11	S 62° 30' E	120
12	S 42° 55' E	980.0
13	S 25° 30' E	150.0
14	N 49° 30' E	598.0
15	N 49° 5' W	1022.0
16	N 26° 24' E	486.0
17	N 64° W	200.0
18	N 36° E	415.0
X 19	N 78° 18' W	1027.0
20	N 24° 20' W	376.4
21	N 0° 3' E	607.0
22	N 14° 17' W	134.9
23	N 62° E	333.5
24	N 64° 30' E	500.0
25	N 75° 35' E	500.0
26	S 49° 51' E	500.0
27	S 70° E	500.0
28	N 39° 30' W	500.0

BOUNDARIES.		
No. of Course.	COURSE.	Distance in Feet.
29	N 70° W	500.0
30	N 68° 57' W	500.0
31	S 85° 35' W	500.0
32	S 65° 30' W	500.0
33	S 62° W	1114.0
34	N 14° 17' W	89.33
35	N 34° 55' W	323.50
36	N 14° 14' W	340.8
37	N 2° E	424.0
38	N 2° 33' E	442.0
39	N 10° 50' E	560.7
40	N 10° 37' E	541.0
41	N 32° 7' E	452.2
42	N 49° 13' E	155.5
43	N 76° 42' E	142.0
44	N 58° E	141.0
45	N 59° 42' E	100.0
46	S 76° 5' E	249.5
47	N 38° E	166.5
48	S 50° 10' E	150.0
49	S 74° 15' E	97.0
50	S 40° 25' E	125.0
51	N 30° 55' E	50.0
52	N 43° 32' W	150.0
53	N 74° 15' W	97.0
54	N 80° 10' W	150.0
55	S 5° 6' W	146.5
56	N 70° 5' W	249.5

BOUNDARIES		
No. of Course	Course	Distance in Feet
57	S 72° 54' W	31.5
58	S 57° W	136.0
59	S 44° W	59.0
60	S 65° 10' W	75.0
61	S 89° 52' W	51.0
62	S 62° 50 W	70.0
63	S 35° 24' W	54.5
64	S 46° 20' W	104.0
65	S 39° W	192.0
66	S 37° 36' W	293.5
67	S 20° 40' W	157.4
68	S 10° 22' W	245.0
69	S 7° 15' W	442.5
70	S 15° 40' W	256.5
71	S 5° 24' W	303.0
72	S 3° 6' W	376.0
73	S 7° 40' E	70.5
74	S 40° 10' W	297.0
75	S 1° 10' E	157.0
76	S 15° 20' E	232.5
77	S 30° 10' E	347.5
78	S 13° E	150.0
79	S 13° 10' E	450.0
80	S 1° 20' E	400.0
81	S 24° 40' E	530.5
82	S 73° 40' W	1911.0
83	S 16° 30' E	653.0
84	S 51° 5' W	1425.5

The original Field Notes of the Survey of the Claim of Thomas Starr upon the Starr Placer Claim ~~Lode~~ from which this Plat has been made, have been examined and approved, and are on file in this office. And I hereby certify that they furnish such an accurate description of said Mining Claim as will, if incorporated into a patent, serve fully to identify the premises, and that such reference is made therein to natural objects and permanent monuments, as will perpetuate and fix the locus thereof. I further certify that the value of the labor and improvements upon the said Mining Claim, placed thereon by the applicant (the dev. on it by the Lessee Jur. for the dev.) is not less than Five Hundred Dollars, and that said improvements consist of a shed and blacksmith shop

And I further certify that this is a correct Plat of said Mining Claim or premises, made in conformity with said original Field Notes of survey thereof.

U. S. SURVEYOR GENERAL'S OFFICE,
Denver, Colorado,
February 9th 1878

Wm. L. Casebeer
U. S. Surveyor General for Colorado.

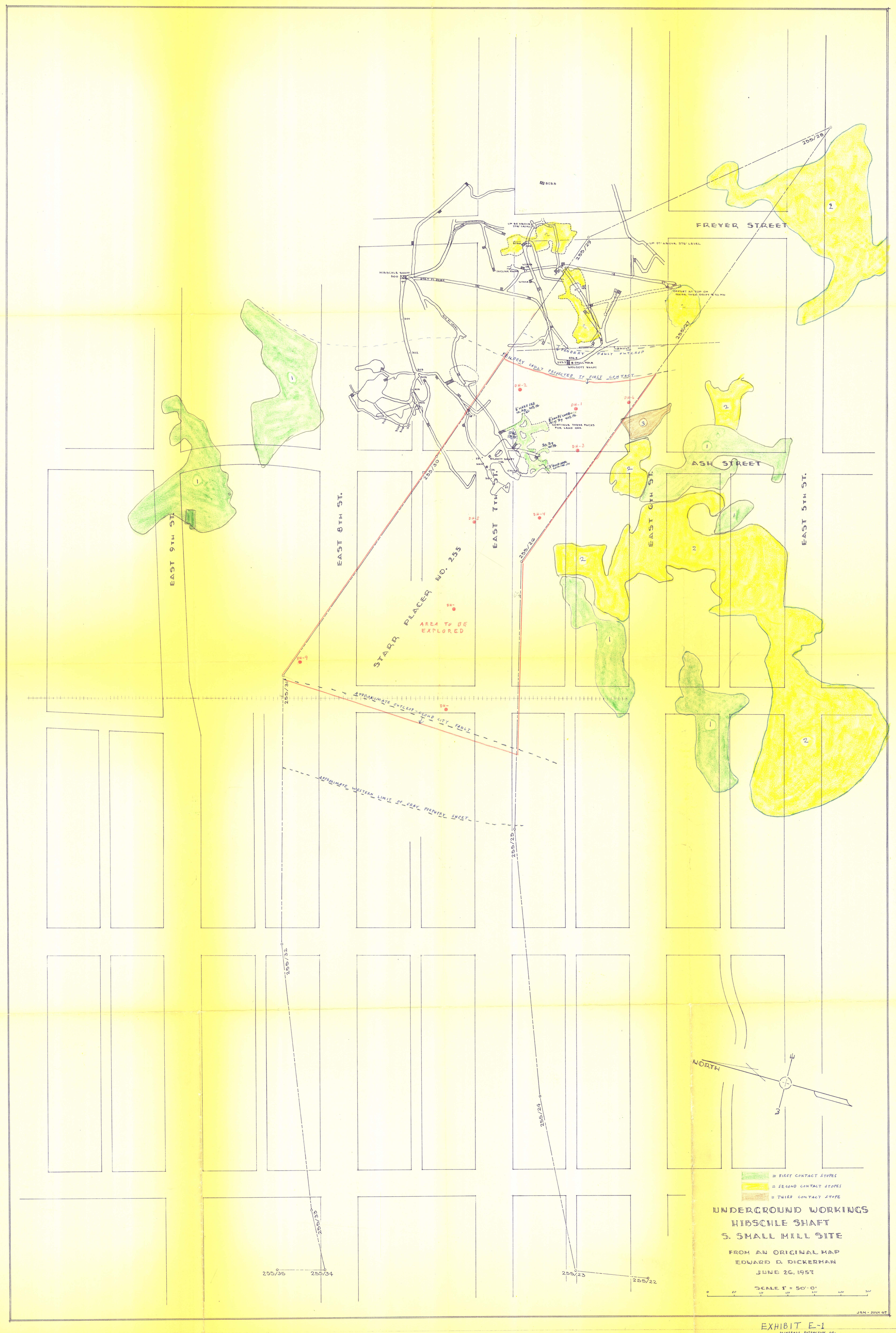


EXHIBIT E-1
MINERALS EXTRACTION CO.
OMB 6653 - Revised