U.S. SILVER MINING COMPANY

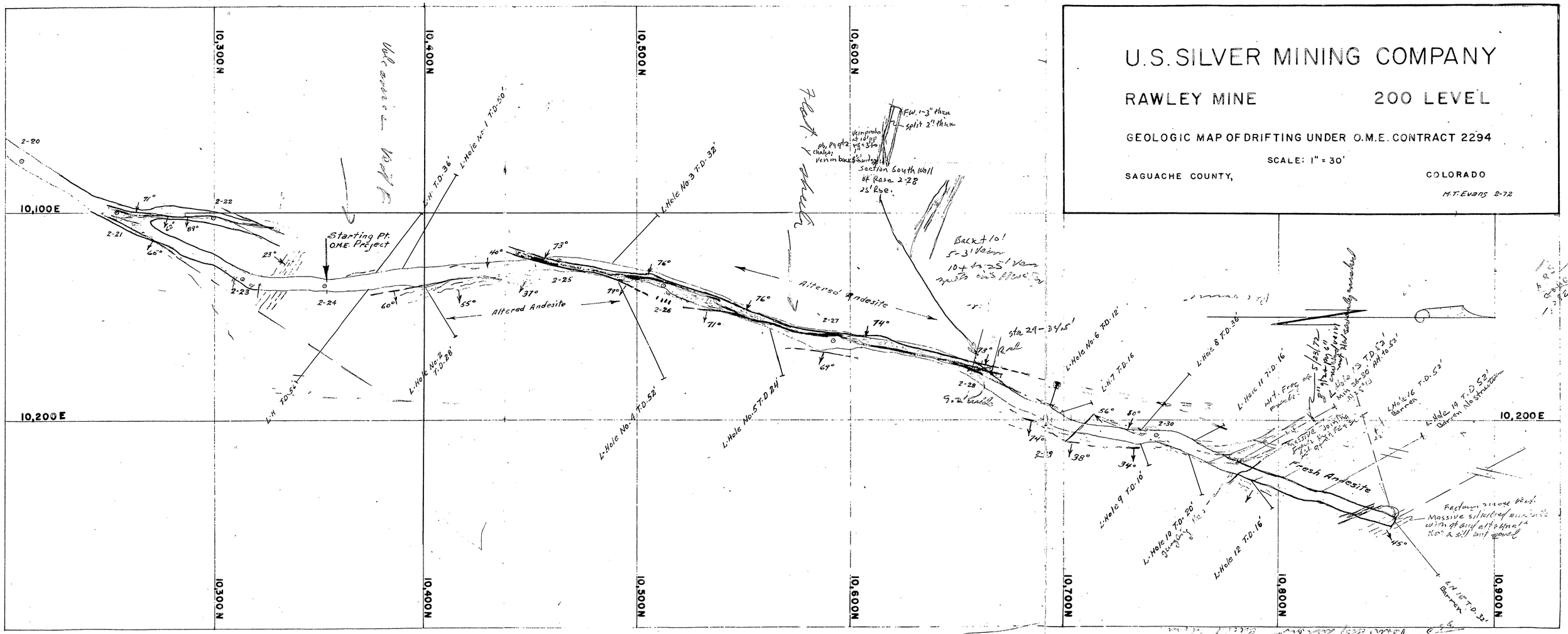
RAWLEY MINE — 200 LEVEL

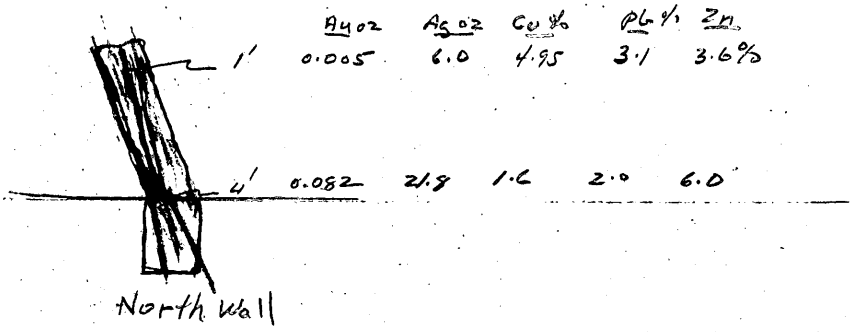
GEOLOGIC MAP OF DRIFTING UNDER O.M.E. CONTRACT 2294

SCALE: 1" = 30'

SAGUACHE COUNTY, COLORADO

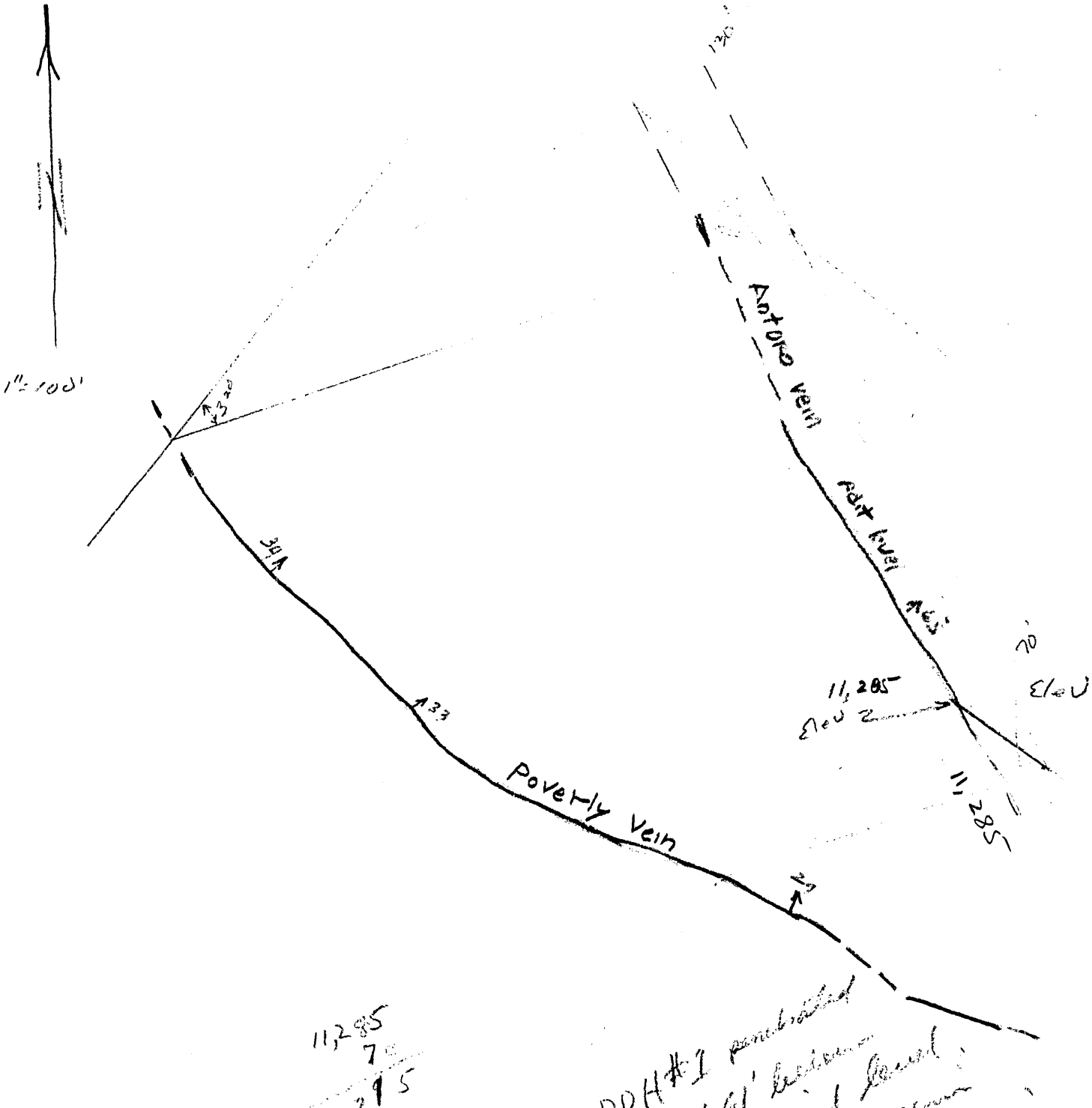
M.T. Evans 2-72





U.S. Silver Mining Co. 200 RAWLEY LEVEL 2-28 Raise

		Au oz	Ag oz	Cu %	Pb %	Zn %
OME 38	1-14' Rse Grab Samples	.017	4.0	0.78	0.76	1.25
OME 39	at 20' Rse 1' Vein (middle)	.005	6.0	4.95	3.1	3.6



DDH#1 penetrated
4' of ore at 91' below
Antoro sacked level.
However that Poverty vein
may not be the Antoro vein
70'± below the Antoro
adit level.

ANTORO MINE

SAGUACHE COUNTY, COLORADO

DMEA DOCKET 2604

Geologic Report

By E. N. Harshman
U. S. Geological Survey

ANTORO MINE
SAGUACHE COUNTY, COLORADO

INTRODUCTION

S. E. and W. E. Burleson, P. O. Box 209, Salida, Colorado, have applied for assistance in exploring for lead-zinc ore below the present workings in the Antoro mine. They have under lease, from the Weams Weaver Mining Company, New York City, N. Y., 80 patented claims in secs. 7, 8, 17, and 18, T. 47 N., R. 8 E., Kerber mining district, Saguache County, Colorado.

The property was examined on July 16 and 17, 1952, in company with M. H. Salsbury of the U. S. Bureau of Mines. W. E. Burleson, one of the applicants, accompanied the examining team; his assistance is acknowledged.

The Antoro mine is developed by about 4600 feet of drifts and cross cuts on the adit or main tunnel level, 430 feet of drift from the bottom of the Copper winze (-125 level), and about 700 feet of drifts on various levels above the adit level (fig. 2).

Early in 1952 the operators contracted 4 diamond drill holes in the Antoro mine. Hole No. 1 was directed to cut the Antoro vein below its intersection with the flat dipping Poverty vein (fig. 2). At a depth of about 90 feet vertically below the adit level, Drill hole No. 1 cut ore as follows:

Inclined Depth	oz. Au	oz. Ag	% Pb	% Zn	% Cu
91 to 96 feet	0.03	8.1	18.2	6.1	0.35
96 to 101 feet	0.02	5.6	15.5	5.8	0.20

Core recovery was poor and the above assays were made on sludge samples. The hole was drilled to an inclined depth of 172 feet; no other mineralized zone was encountered. The other 3 holes were drilled elsewhere in the mine and did not intersect ore.

The applicants propose to crosscut 75 feet farther into the hanging wall of the Antoro vein, excavate for 2 underground ore bins and a hoist-room, sink a five by ten foot inclined winze to an inclined depth of 140 feet (15 feet to be used as a sump), crosscut about 80 feet to reach the Antoro vein and drift about 200 feet on the vein (fig. 2). The applicants estimate the cost of the project to be $39,747.50.

GEOLOGY

W. S. Burbank (1932) has described the geology and ore deposits of the Bonanza mining district, and in this publication includes a description of the Antoro mine as well as other mines in the area. Free use has been made of the data contained in this publication.

The Bonanza mining district lies at the northeastern edge of the San Juan volcanic region of Colorado. The rocks of the area are principally lavas of Tertiary age, probably Oligocene, resting on pre-Cambrian metamorphic rocks and Paleozoic sedimentary rocks. Exposures of metamorphic and sedimentary rocks are not common. The pre-Cambrian rocks consist of gneisses, schists, granites, and pegmatite dikes. Shales, sandstones, conglomerates, limestones, and quartzites are exposed several miles southeast of the mineralized area. These rocks rest unconformably upon the pre-Cambrian complex.

The pre-Tertiary geologic history of the area is not well known, but includes long erosional and depositional periods, folding, and thrust faulting. Ore deposits are closely related to the Tertiary volcanic activity which includes the extrusion of large volumes of lava flows and tuffs, and intrusion of dikes. According to Burbank (1932) the volcanic activity resulted in the formation of a high plateau, which subsequently collapsed. Two periods of mineralization, along faults caused by the collapse, have been recognized. The early period consisted of silicification of the wall rock and the late period included deposition of sulfide and gangue minerals and sericitization of the wall rock.

Burbank concludes that the wall rocks have had no differential influence on the chemical processes affecting ore deposition. However, some mechanical influence was noted. Those rocks in which fractures remained open, such as the andesites, were the most favorable for ore deposition.

The Antoro mine workings are in the Rawley andesite, a 1000 to 2000 foot thick series of flows at the base of the Tertiary volcanics. The flows strike northwest and dip 15° to 20° SW. The andesite is broken by many pre-mineral faults of small to moderate displacement, most of which are mineralized. Four major veins, the Antoro, Poverty, Northeast, and Zinc veins, occupy the more prominent fault fissures. Lead-zinc ore has been mined on all but the Zinc vein.

The Antoro vein is exposed in the north end of the mine workings where it strikes N. 25° to 30° W. and dips 60° to 80° E. (fig. 2). The vein is 1 to 3 feet wide and contains galena, sphalerite, chalcopyrite, pyrite, quartz barite and calcite. On the adit level the Antoro fissure contains altered gangue, siliceous material, and sparse sulfides. The ore shoot

now being mined apexes near the surface and extends downward to a point about 75 feet above the adit level. The sulfide ore occurs in small lenticular bodies from 1 to 3 feet thick and 10 to 50 feet in length and height. This ore averages about 20% combined lead and zinc. The lead content is slightly greater than the zinc content.

Ore deposition in the Antoro vein was, to a major degree, controlled by the physical character of the openings. Portions of the fissure that contained considerable gouge, or areas where changes of dip or strike produced a "tight" condition, contain little or no ore. Also, pre-mineral cross faults may terminate or offset the ore.

The Poverty vein lies to the south of the Antoro vein and occupies a low-angle fault dipping northeastward (fig. 2). On the adit level, the 2 veins intersect to the east of the main crosscut, but the intersection has not been explored. Old workings on the 2 veins are not accessible, but it is reported that both veins, where exposed near the intersection, are only weakly mineralized.

The Poverty vein strikes N. 60°-65° W. and dips 29° to 35° N. The vein is characterized by thick gouge and breccia zones and small, lenticular, high grade sulfide ore bodies. The strongest mineralization on the Poverty vein is to the northwest of the main adit level and one small body of high grade galena ore was taken from the stope shown on fig. 2. A sample of the ore in the vein immediately below this stope assayed as follows:

Sample No.	Width	% Pb	% Zn	% Cu	oz. Ag
S-12	18"	24.3	1.0	0.2	6.7

The Zinc vein, which is by far the weakest and most narrow of the 4 principal veins in the mine, lies to the east of the adit level, strikes almost due north and dips 70° E. (fig. 2). It contains some gouge and

breccia and is poorly mineralized by pyrite, sphalerite, and galena. The Zinc vein is developed by about 160 feet of drifting on the adit level and by some raising. The results of this development work were not encouraging and additional work on the Zinc vein is not contemplated.

The Northeast vein is developed by the 125 foot Copper winze and by about 350 feet of drifting on the minus 125 foot level (fig. 2). The vein which occupies a strong fault zone in the Rawley andesite, strikes N. 20° E. and dips 80°-85° E. In contrast to the other veins in the mine, the ore on the Northeast vein occurs in a continuous shoot that has been mined, both horizontally and vertically, for a distance of over 180 feet. The vein width ranges from 1 to 8 feet and averages about 4 feet. Ore minerals are galena, sphalerite, chalcopyrite, and pyrite in a gangue of dense, white quartz.

There is little or no alteration of the wall rock and open stopes stand well with only occasional stull support. The ore now being mined contains about 20% combined zinc and lead, zinc accounting for slightly over half the metal content. The Northeast vein is by far the best yet developed in the Antero mine and most of the ore produced in the last few years has come from it.

PRODUCTION AND ORE RESERVES

Since 1947, when the present operators began mining, production has been as follows:

Dry tons	oz. Au	oz. Ag	% Pb	% Zn	% Cu	Gross Value
12,000	0.02	5.75	9.79	11.82	1.25	$408,220

Development work has not been carried on in advance of mining operations and ore reserves thus cannot be estimated with any degree of certainty.

Considerable ore probably remains to the north of the present workings on the Northeast vein, above the workings on the Antoro vein, and below the adit level on the Poverty and Antoro veins.

CONCLUSIONS AND RECOMMENDATIONS

The exploration program proposed by S. E. and W. E. Burleson, in DMEA Docket 2604, appears justified for the following reasons:

1. Considerable direct shipping, lead-zinc ore has been and is being mined on the Antoro vein above the adit level.

2. Some high grade lead ore has been mined from the Poverty vein above the adit level, and ore is exposed now along the floor of the drift on this vein.

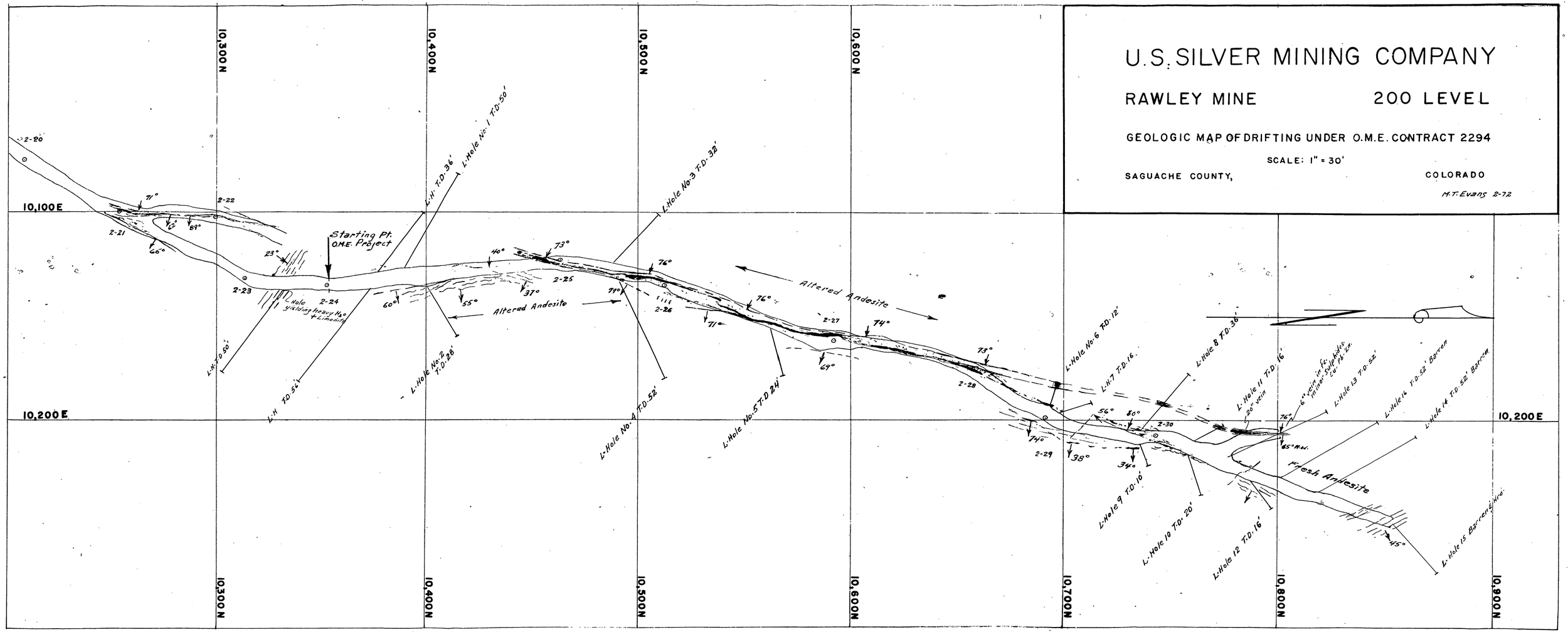
3. A projection of the dips of the Antoro and Poverty veins indicates an intersection or junction of the two veins in the area proposed for exploration in the program under consideration. A diamond drill hole proved the presence of 4 feet of lead-zinc ore in this area.

4. Burbank (1932) concludes that although little ore is exposed on the adit level, there is no reason to believe that the bottom of the horizon favorable to ore deposition has been reached by the present workings. The examining team agrees with this conclusion.

It is recommended that the exploration program, with the slight changes suggested in the engineering report, be approved and that a loan of $37,400 (Government participation 50%) be granted. It is further recommended, for the reasons given in the engineering report, that the contract be written to include royalties on ore produced from the Northeast vein as well as from the Antoro and Poverty veins.

REFERENCE

Burbank, W. S., Geology and ore deposits of the Bonanza Mining District, Colorado: U. S. Geological Survey Professional Paper 169, 1932.


U.S. SILVER MINING COMPANY
RAWLEY MINE
200 LEVEL
GEOLOGIC MAP OF DRIFTING UNDER O.M.E. CONTRACT 2294
SCALE: 1" = 30'
SAGUACHE COUNTY,
COLORADO
M.T. Evans 2-72
10,300 N
10,400 N
10,500 N
10,600 N
10,700 N
10,800 N
10,900 N
10,100 E
10,200 E
Starting Pt. O.M.E. Project
L-Hole No. 1 T.D. 50'
L.H. T.D. 36'
L-Hole No. 3 T.D. 32'
L-Hole No. 2 T.D. 28'
L.H. T.D. 50'
L.H. T.D. 54'
L-Hole No. 4 T.D. 52'
L-Hole No. 5 T.D. 24'
L-Hole No. 6 T.D. 12'
L.H. 7 T.D. 16'
L-Hole 8 T.D. 36'
L-Hole 9 T.D. 10'
L-Hole 10 T.D. 20'
L-Hole 11 T.D. 16'
L-Hole 12 T.D. 16'
L-Hole 13 T.D. 52'
L-Hole 14 T.D. 52' Barren
L-Hole 15 Barren
Altered Andesite
Fresh Andesite
L-Hole yielding heavy H2O + Limonite
20" vein
6" vein in fr. Hitted Sulphides Cu Pb Zn
2-20
2-21
2-22
2-23
2-24
2-25
2-26
2-27
2-28
2-29
2-30

ANTORO MINE

SAGUACHE COUNTY, COLORADO

DMEA DOCKET 2604

Geologic Report

By E. N. Harshman
U. S. Geological Survey

ANTORO MINE
SAGUACHE COUNTY, COLORADO

INTRODUCTION

S. E. and W. E. Burleson, P. O. Box 209, Salida, Colorado, have applied for assistance in exploring for lead-zinc ore below the present workings in the Antoro mine. They have under lease, from the Weams Weaver Mining Company, New York City, N. Y., 80 patented claims in secs. 7, 8, 17, and 18, T. 47 N., R. 8 E., Kerber mining district, Saguache County, Colorado.

The property was examined on July 16 and 17, 1952, in company with M. H. Salisbury of the U. S. Bureau of Mines. W. E. Burleson, one of the applicants, accompanied the examining tenm; his assistance is acknowledged.

The Antoro mine is developed by about 4600 feet of drifts and cross cuts on the adit or main tunnel level, 430 feet of drift from the bottom of the Copper winze (-125 level), and about 700 feet of drifts on various levels above the adit level (fig. 2).

Early in 1952 the operators contracted 4 diamond drill holes in the Antoro mine. Hole No. 1 was directed to cut the Antoro vein below its intersection with the flat dipping Poverty vein (fig. 2). At a depth of about 90 feet vertically below the adit level, Drill hole No. 1 cut ore as follows:

Inclined Depth	oz. An	oz. Ag	% Pb	% Zn	% Cu
91 to 96 feet	0.03	8.1	18.2	6.1	0.35
96 to 101 feet	0.02	5.6	15.5	5.8	0.20

Core recovery was poor and the above assays were made on sludge samples. The hole was drilled to an inclined depth of 172 feet; no other mineralized zone was encountered. The other 3 holes were drilled elsewhere in the mine and did not intersect ore.

The applicants propose to crosscut 75 feet farther into the hanging wall of the Antoro vein, excavate for 2 underground ore bins and a hoist-room, sink a five by ten foot inclined winze to an inclined depth of 140 feet (15 feet to be used as a sump), crosscut about 80 feet to reach the Antoro vein and drift about 200 feet on the vein (fig. 2). The applicants estimate the cost of the project to be $39,747.50.

GEOLOGY

W. S. Burbank (1932) has described the geology and ore deposits of the Bonanza mining district, and in this publication includes a description of the Antoro mine as well as other mines in the area. Free use has been made of the data contained in this publication.

The Bonanza mining district lies at the northeastern edge of the San Juan volcanic region of Colorado. The rocks of the area are principally lavas of Tertiary age, probably Oligocene, resting on pre-Cambrian metamorphic rocks and Paleozoic sedimentary rocks. Exposures of metamorphic and sedimentary rocks are not common. The pre-Cambrian rocks consist of gneisses, schists, granites, and pegmatite dikes. Shales, sandstones, conglomerates, limestones, and quartzites are exposed several miles southeast of the mineralized area. These rocks rest unconformably upon the pre-Cambrian complex.

The pre-Tertiary geologic history of the area is not well known, but includes long erosional and depositional periods, folding, and thrust faulting. Ore deposits are closely related to the Tertiary volcanic activity which includes the extrusion of large volumes of lava flows and tuffs, and intrusion of dikes. According to Burbank (1932) the volcanic activity resulted in the formation of a high plateau, which subsequently collapsed. Two periods of mineralization, along faults caused by the collapse, have been recognized. The early period consisted of silicification of the wall rock and the late period included deposition of sulfide and gangue minerals and sericitization of the wall rock.

Burbank concludes that the wall rocks have had no differential influence on the chemical processes affecting ore deposition. However, some mechanical influence was noted. Those rocks in which fractures remained open, such as the andesites, were the most favorable for ore deposition.

The Antoro mine workings are in the Rawley andesite, a 1000 to 2000 foot thick series of flows at the base of the Tertiary volcanics. The flows strike northwest and dip 15° to 20° SW. The andesite is broken by many pre-mineral faults of small to moderate displacement, most of which are mineralized. Four major veins, the Antoro, Poverty, Northeast, and Zinc veins, occupy the more prominent fault fissures. Lead-zinc ore has been mined on all but the Zinc vein.

The Antoro vein is exposed in the north end of the mine workings where it strikes N. 25° to 30° W. and dips 60° to 80° E. (fig. 2). The vein is 1 to 3 feet wide and contains galena, sphalerite, chalcopyrite, pyrite, quartz barite and calcite. On the adit level the Antoro fissure contains altered gangue, siliceous material, and sparse sulfides. The ore shoot

now being mined apexes near the surface and extends downward to a point about 75 feet above the adit level. The sulfide ore occurs in small lenticular bodies from 1 to 3 feet thick and 10 to 50 feet in length and height. This ore averages about 20% combined lead and zinc. The lead content is slightly greater than the zinc content.

Ore deposition in the Antoro vein was, to a major degree, controlled by the physical character of the openings. Portions of the fissure that contained considerable gouge, or areas where changes of dip or strike produced a "tight" condition, contain little or no ore. Also, pre-mineral cross faults may terminate or offset the ore.

The Poverty vein lies to the south of the Antoro vein and occupies a low-angle fault dipping northeastward (fig. 2). On the adit level, the 2 veins intersect to the east of the main crosscut, but the intersection has not been explored. Old workings on the 2 veins are not accessible, but it is reported that both veins, where exposed near the intersection, are only weakly mineralized.

The Poverty vein strikes N. 60°-65° W. and dips 29° to 35° N. The vein is characterized by thick gouge and breccia zones and small, lenticular, high grade sulfide ore bodies. The strongest mineralization on the Poverty vein is to the northwest of the main adit level and one small body of high grade galena ore was taken from the stope shown on fig. 2. A sample of the ore in the vein immediately below this stope assayed as follows:

Sample No.	Width	% Pb	% Zn	% Cu	oz. Ag
S-12	18"	24.3	1.0	0.2	6.7

The Zinc vein, which is by far the weakest and most narrow of the 4 principal veins in the mine, lies to the east of the adit level, strikes almost due north and dips 70° E. (fig. 2). It contains some gouge and

breccia and is poorly mineralized by pyrite, sphalerite, and galena. The Zinc vein is developed by about 160 feet of drifting on the adit level and by some raising. The results of this development work were not encouraging and additional work on the Zinc vein is not contemplated.

The Northeast vein is developed by the 125 foot Copper winze and by about 350 feet of drifting on the minus 125 foot level (fig. 2). The vein which occupies a strong fault zone in the Rawley andesite, strikes N. 20° E. and dips 80°-85° E. In contrast to the other veins in the mine, the ore on the Northeast vein occurs in a continuous shoot that has been mined, both horizontally and vertically, for a distance of over 180 feet. The vein width ranges from 1 to 8 feet and averages about 4 feet. Ore minerals are galena, sphalerite, chalcopyrite, and pyrite in a gangue of dense, white quartz.

There is little or no alteration of the wall rock and open stopes stand well with only occasional stull support. The ore now being mined contains about 20% combined zinc and lead, zinc accounting for slightly over half the metal content. The Northeast vein is by far the best yet developed in the Antoro mine and most of the ore produced in the last few years has come from it.

PRODUCTION AND ORE RESERVES

Since 1947, when the present operators began mining, production has been as follows:

Dry tons	oz. Au	oz. Ag	% Pb	% Zn	% Cu	Gross Value
12,000	0.02	5.75	9.79	11.82	1.25	$408,220

Development work has not been carried on in advance of mining operations and ore reserves thus cannot be estimated with any degree of certainty.

Considerable ore probably remains to the north of the present workings on the Northeast vein, above the workings on the Antoro vein, and below the adit level on the Poverty and Antoro veins.

CONCLUSIONS AND RECOMMENDATIONS

The exploration program proposed by S. E. and W. E. Burleson, in DMEA Docket 2604, appears justified for the following reasons:

1. Considerable direct shipping, lead-zinc ore has been and is being mined on the Antoro vein above the adit level.

2. Some high grade lead ore has been mined from the Poverty vein above the adit level, and ore is exposed now along the floor of the drift on this vein.

3. A projection of the dips of the Antoro and Poverty veins indicates an intersection or junction of the two veins in the area proposed for exploration in the program under consideration. A diamond drill hole proved the presence of 4 feet of lead-zinc ore in this area.

4. Burbank (1932) concludes that although little ore is exposed on the adit level, there is no reason to believe that the bottom of the horizon favorable to ore deposition has been reached by the present workings. The examining team agrees with this conclusion.

It is recommended that the exploration program, with the slight changes suggested in the engineering report, be approved and that a loan of $37,400 (Government participation 50%) be granted. It is further recommended, for the reasons given in the engineering report, that the contract be written to include royalties on ore produced from the Northeast vein as well as from the Antoro and Poverty veins.

REFERENCE

Burbank, W. S., Geology and ore deposits of the Bonanza Mining District, Colorado: U. S. Geological Survey Professional Paper 169, 1932.

12,000 Tons

	$
.02 oz Au	6.76
5.75 oz Ag	36.57
9.79 % Pb	53.50
11.82 % Zn	90.69
1.25 % Cu	18.50

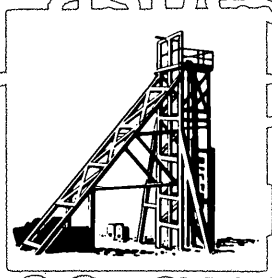
$206.00 / Ton
12

41200
20600

$2472,00

EXPLORATION ASSISTANCE

mica manganese quartz
uranium monazite silve
nickel sulphur asbesto
graphite thor talc
corundum go xit
mica manganese quartz
uranium monazite silve
nickel sulphur asbesto
graphite thorium talc
mica manganese quartz



U.S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
OFFICE OF MINERAL EXPLORATION

USGS: INF-69-6 (R. 7)

EXPLORATION ASSISTANCE

U.S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
OFFICE OF MINERALS EXPLORATION

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402 - Price 45 cents

FOREWORD

The U.S. Geological Survey, through the Office of Minerals Exploration (OME), encourages exploration for certain minerals within the United States, its territories, and possessions. The program provides financial assistance to private industry on a participating basis.

This assistance is available to those who would not ordinarily undertake the proposed exploration at their sole expense and who are unable to obtain the necessary finances on reasonable terms from commercial sources. Assistance is not available to "grubstake" or finance prospecting expeditions.

Exploration may be conducted from the surface or underground, using recognized and sound procedures (including standard geophysical and geochemical methods) to obtain geological and mineralogical information in favorable areas.

An applicant for assistance must own, lease, or have an otherwise valid claim to the property he wishes to explore. A reasonable probability must exist for significant discovery of ore on the property, and the property and workings must be accessible for examination. The applicant must show that he has adequate funds to start the proposed work and to continue it until Governmental funds begin to arrive, because the Government's share of the costs is paid monthly only after a voucher for costs incurred the preceding month has been submitted and approved. Repayment to the Government is at the rate of 5-percent royalty on production from the property. There is no requirement to produce, and if there is no production, no repayment is required.

This pamphlet answers the questions most frequently asked by applicants. For further information, write to the Office of Minerals Exploration, U.S. Geological Survey, 953 National Center, Reston, Virginia 22092, or contact the nearest OME field office. These offices are listed on the last page of this pamphlet.

CONTENTS

ELIGIBLE MINERALS OR MINERAL PRODUCTS ---------- 4

ELIGIBLE APPLICANTS ---------- 5

APPLICATIONS FOR ASSISTANCE ---------- 7

EXPLORATION CONTRACTS ---------- 9

ALLOWABLE COSTS ---------- 12

PERFORMING THE WORK ---------- 14

REPORTS, ACCOUNTS, AND PAYMENTS BY THE GOVERNMENT --- 15

REPAYING THE GOVERNMENT ---------- 16

OFFICE OF MINERALS EXPLORATION FIELD OFFICES ---------- 20

ELIGIBLE MINERALS OR MINERAL PRODUCTS

1. **Q. What minerals and mineral products are eligible for assistance under the OME program, and how much will the Government contribute?**

A. The following are eligible for Government financial assistance of 50 percent of the allowable costs of exploration:

Asbestos
Bauxite
Beryllium
Cadmium
Chromite
Cobalt
Columbium
Copper
Corundum
Diamond (industrial)
Fluorspar
Graphite (crucible flake)
Iron ore
Kyanite (strategic)
Manganese
Mica (strategic)
Molybdenum
Monazite
Nickel
Quartz crystal (piezoelectric)
Rare earth
Selenium
Sulphur
Talc (block steatite)
Tellurium
Thorium
Uranium

The following are eligible for Government financial assistance of 75 percent of the allowable costs of exploration:

Antimony
Bismuth
Gold
Mercury
Platinum group metals
Rutile
Silver
Tantalum
Tin

Combinations of the minerals or mineral products named above may be eligible for Government financial assistance of 62.5 percent of the allowable costs of exploration.

2. **Q. How is the percentage of Government participation determined?**

A. The Government's percentage of the total allowable costs of exploration is determined in accordance with the percentages specified in the mineral lists, and is indicated in each contract.

3. **Q. Are the eligible minerals and mineral products and the percentage of Government participation subject to change?**

A. Yes, as circumstances determine, but not without prior notice.

4. **Q. What percentage of cost will the Government contribute?**

A. The Government's contribution to the total allowable costs of exploration specified by the terms of all contracts executed after September 11, 1967, is a maximum of 75 percent for antimony, bismuth, gold, mercury, platinum group metals, rutile, silver, tantalum, and tin, and a maximum of 50 percent for all other eligible mineral commodities listed in the OME regulations.

Combinations of the mineral or metal commodities in the different percentage participation groups may be eligible for Government financial assistance of 62.5 percent of the allowable costs of exploration.

ELIGIBLE APPLICANTS

5. **Q. How can I become eligible for exploration assistance?**

A. To be eligible for exploration assistance, you must
(1) Have a sufficient interest in property which can qualify for exploration for one or more of the eligible minerals or mineral products;
(2) Furnish evidence that funds for the exploration are not available from banking institutions or other commercial sources of credit on reasonable terms; and
(3) Certify that you would not ordinarily undertake the proposed exploration under current conditions and circumstances at your sole expense.

6. **Q. What is meant by a "sufficient interest"?**

A. A "sufficient interest" gives you the right of possession of a property for the length of time required to complete the exploration, and to protect the Government's interest thereafter. Obviously, unencumbered ownership is sufficient. A leasehold, preferably with renewal rights, or a located claim may also be sufficient.

7. **Q. If I am leasing the property, what must I obtain from my landlord?**

A. You should obtain a lien agreement from your landlord using Lien and Subordination Agreements (MME Form 52) supplied by the OME. If the agreement cannot be obtained, you should provide OME with a copy of the letter of refusal. The OME may then accept, in lieu of the agreement, a performance bond (using Standard Form 25 supplied by OME) executed by an approved corporate surety or two responsible individual sureties.

8. **Q. If the property is subject to a mortgage, lien, or other encumbrance, what document should I provide to the Government?**

A. You must obtain a subordination agreement from the mortgagee (using MME Form 52) or provide a performance bond before an exploration contract can be executed.

9. **Q. Why must I deal with my landlord if I am leasing or with my mortgagee if my interest is subject to a mortgage?**

A. The lien agreement or subordination agreement, or performance bond in lieu thereof, is required to secure the payment of royalty to the Government on any production during the exploration work or after certification if a certificate of possible production is issued (see "Repaying the Government").

10. **Q. Would I be eligible under this program if I have no interest in a property and wish to purchase or lease the property only if I can get aid from the Government?**

A. No, but you could become eligible by entering into an agreement to purchase or lease the property subject to obtaining an exploration contract.

11. **Q. What evidence must I give that funds are not available on reasonable terms from commercial sources?**

A. You must furnish evidence of your efforts to obtain credit from two banking institutions or other commercial sources of credit. This evidence must include true copies of your letters to the banks showing the amount

and terms requested and proposed use of loan funds, and true copies of the replies showing why a loan was not granted.

12. **Q. Will any other evidence of financial eligibility be required?**

A. You must give assurance that your share of the exploration costs can be furnished. You may also be required to furnish additional information including a financial statement.

13. **Q. Must I be an experienced operator or miner?**

A. Not necessarily, but you will be responsible for securing experienced and competent people to supervise the exploration if an exploration contract is executed.

APPLICATIONS FOR ASSISTANCE

14. **Q. How may I obtain financial assistance for exploration?**

A. You file an application for assistance on MME Form 40 in duplicate (in triplicate for Alaska), answering all questions to the best of your ability. Application forms may be obtained by writing to the National Center or to the nearest OME field office. OME field offices are listed on the last page of this pamphlet.

15. **Q. What information is required in my application?**

A. Your application must include the following information:
(1) Evidence of your financial eligibility (see Answer 11);
(2) A legal description of the property to be explored;
(3) A statement of your interest in the property;
(4) A description of the pertinent geology of the property;
(5) An explanation of your reasons for expecting to find ore;
(6) An explicit statement of the proposed exploration work;
(7) A listing of cost estimates for the labor, materials, and equipment that will be required for the work;

(8) A detailed estimate of the cost of each type of work; and

(9) Maps showing land boundaries, existing workings, and proposed work.

16. Q. How can I obtain help to gather this information and prepare the application?

A. You may consult with the OME Field Officer in your region, or with the Reston, Virginia, office, on any question that may arise. If you are not experienced in exploration or mining, you may need a consulting mining engineer or geologist to help you with some of the information. The application form has full instructions. The General Instructions on the front of the form tell you what to do, and each item of information is described in detail on the back of the form.

17. Q. May the work include blocking out ore for production?

A. No. The regulations state: "The work shall not go beyond a reasonable delineation and sampling of a mineral deposit, and shall not be conducted primarily for mining or preparation for mining."

18. Q. What action does OME take upon my application?

A. The application is reviewed to determine if the information requested on the application form has been submitted. If not, the applicant may be asked to furnish the necessary information. When the application is complete, and if the facts warrant, a field examination of the property may be made by the Government, usually with the applicant, before a final decision regarding the application is reached. A field examination is not made by the Government at the request of the applicant.

19. Q. How does OME decide whether to approve or deny an application?

A. The following factors will be considered in passing upon applications:

(1) The geological probability of making a significant ore discovery;
(2) The estimated cost of the exploration work in relation to the probable size and grade of the potential deposit;
(3) The plan and method of conducting the exploration work;
(4) The accessibility of the project area;
(5) The background and operating experience of the applicant; and
(6) The applicant's title or right to possession of the property.

20. **Q. If an application is approved, what further action is taken?**
A. The OME offers the applicant an exploration contract.

EXPLORATION CONTRACTS

21. **Q. What is the nature of an exploration contract?**

A. The contract is an agreement between the Government and the operator. The details of the contract may vary to suit the individual project. However, the essential obligations in each contract are that the Government will contribute to the costs of exploration work and that the operator will perform the work and repay the Government's contribution with interest by royalty on any production from the property (see "Repaying the Government").

22. **Q. What are the principal elements of an exploration contract?**

A. The contract includes the following:
(1) A description of the land upon which the work will be performed;
(2) A detailed statement of the work to be performed;
(3) A time limit within which the work must be performed (generally not more than 2 years);

(4) An estimate of costs; and
(5) Provisions for the Government's contribution (not more than the percentage specified or $250,000) to costs and for repayment with interest to the Government in the event of production.

The contract also includes the standard provisions relating to nondiscrimination, settlement of disputes, 8-hour law, and rebate of wages.

23. **Q. Is more than one form of contract used?**

A. Yes. Two contract forms are presently used. Under the short form (MME Form 51), the Government's contribution is a percentage of unit costs of the work, agreed upon in advance and fixed by the contract. Under the long form (MME Form 50), the Government's contribution is a percentage of the allowable actual costs of the work as incurred or a combination of actual and fixed unit costs.

24. **Q. Explain the fixed unit form of contract. What is meant by "fixed unit costs"?**

A. The "fixed unit costs" of the work (per foot of drilling, per foot of drifting, per cubic yard of materials moved, etc.) are those agreed upon and stated in the contract. The Government's contribution is a percentage of these "fixed unit costs" of work performed, verified by the representatives of the OME as having been completed and found acceptable under the specifications of the OME contract.

25. **Q. If a fixed unit cost in the contract is lower than the actual cost of the work, on which amount will the Government's contribution be based?**

A. The Government's contribution will be based on the amount stated in the contract, whether the actual cost is greater or less. For example, if the fixed unit cost of drifting is $30 per foot and the actual cost is $40 per foot, the Government's contribution will be based on $30.

26. **Q. Am I required to complete all units of work specified by a fixed unit cost contract, regardless of the actual costs per unit?**

A. Yes, because that is what you agreed to do under that form of contract. However, under certain circumstances, the number of units may be reduced by mutual agreement.

27. **Q. What is meant by "allowable costs" in the actual cost contract?**

A. "Allowable costs" to which the Government will contribute are the direct costs of the work, such as labor, supervision, materials, supplies, and equipment, specified in the contract. These costs must be supported by documentary evidence available for audit. Indirect costs, such as general overhead and corporate management expense, are not "allowable costs" (see "Allowable Costs").

28. **Q. Is the cost of work performed before the date of the contract with the Government allowable?**

A. No.

29. **Q. If the work provided for in an actual cost contract cannot be completed within the estimated total cost, what are my obligations?**

A. Your obligations under the contract vary to suit the circumstances of your project. Usually, your share of the estimated total allowable cost stated in the contract will be the limit of your obligation; but the contract may require you to complete certain items of the work at your own expense above the maximums fixed for those items by the contract.

30. **Q. Who determines whether a fixed unit cost or actual cost contract is to be used, and what factors are considered?**

A. The Government decides which would be more appropriate in each particular case, depending on estimated costs, size, and type of operation, etc. A unit cost contract is a much simpler document than an actual cost contract. It is easier to administer and is generally preferable, both to the applicant and the Government, when the unit costs can be reasonably estimated in advance.

31. **Q. In what other way is a fixed unit cost contract simpler than an actual cost contract?**

A. Under the fixed unit cost contract, the operator is not required by the Government to maintain itemized cost records or to submit documentary invoices of the actual costs incurred.

ALLOWABLE COSTS

32. **Q. May rehabilitation of old workings be allowed as a part of the cost of exploration?**

A. Yes, in certain cases, limited rehabilitation may be provided by the contract when considered necessary to conduct the exploration work.

33. **Q. May permanent installations and improvements or their rehabilitation be allowed as a part of the cost of the exploration work?**

A. Only to the extent necessary to conduct the exploration work provided in the contract.

34. **Q. May the cost of operating equipment be included?**

A. Yes, in one of three ways:
(1) Depreciation is allowed on equipment owned by the operator to the extent of one-sixtieth of its fair market value or of its book value, whichever is less, for each month used on the project.
(2) Rental of equipment not owned by the operator is allowed at reasonable rates.
(3) Purchase of equipment is allowed, in which case the Government has an equity in the salvage value. See Questions 35 and 36.

35. **Q. What becomes of equipment purchased or installations made to which the Government has contributed?**

A. The Government owns them jointly with the operator in proportion to the amounts contributed, although title will be in the name of the operator. The Government's interest in any salable or salvageable property must be liquidated and accounted for when the Government's obligation to contribute to costs terminates or when the property is no longer needed for the work.

36. **Q. May I retain such equipment and installations for my own use?**

A. Yes, but at a price at least as high as could be obtained by sale to others.

37. **Q. Will I be given any allowance for the use or acquisition of the land and any existing building or installations thereon?**

A. No. The land and all fixtures are devoted to the project without allowance.

38. **Q. Will the cost of necessary rehabilitation or repair of existing buildings or installations be allowed?**

A. The contract may allow these costs for work performed after the contract is executed if such rehabilitation or repair is necessary for the conduct of the exploration work.

39. **Q. If the operator is an individual, a partnership, or a corporation, may the services of the individual, the partners, or a corporate officer be charged as allowable costs of the work?**

A. Yes, to the extent that the time and services of each is devoted exclusively and directly to the performance of the work, that they are qualified to perform the services, and that the services are provided for in the contract.

PERFORMING THE WORK

40. Q. Who is to perform the exploration work?

A. You or your employees may perform the work, or the exploration contract may provide for an independent contractor to perform all or any part of the work.

41. Q. Will the Government give me any technical aid in the conduct of the exploration?

A. Yes. Representatives of the Government inspect the work from time to time and will be available to advise on its performance. However, the Government assumes no responsibility for the performance of the work, and unless you are qualified to direct the work yourself, you will be required to employ competent technical help.

42. Q. If it is found after some of the work described in the contract has been done that the work should proceed in another direction or be replaced by another type of work, can these changes be authorized?

A. Yes. Both the Government and the operator benefit when the work is performed in the most effective manner, and the contract may be amended accordingly.

43. Q. If it is found while the work is in progress or upon its completion that additional work is needed to accomplish the original purpose of the contract, can the additional work be authorized?

A. In a suitable case, the contract may be amended to provide for added work and a related increase in the estimate of the total allowable cost. However, the Government's contribution cannot exceed $250,000.

44. Q. If, after some of the work has been done, I decide that there is no advantage in completing the work, can the contract be terminated short of completion?

A. Yes, if the Government agrees with you, it will terminate the work by agreement. If it does not agree, you may be required to complete the work. Should you discontinue the project or abandon it altogether without the Government's agreement, you would obviously be subject to a claim for damages or other remedy the law may provide for breach of contract, and a demand for refund of the Government's contribution.

45. Q. Who is responsible for damages to persons or property arising out of negligence in the course of the work?

A. You are. The work is entirely under your direction and control.

REPORTS, ACCOUNTS, AND PAYMENTS BY THE GOVERNMENT

46. Q. What reports will I have to make as the work progresses?

A. You are required to submit a two-part monthly report to the Government. The first part is a monthly voucher claiming costs for contribution by the Government. In the case of actual cost contracts, costs must be supported by certified true copies of invoices, transcripts of payrolls, etc. The second part is a concise narrative description of the work performed, results obtained, and any unusual situations encountered. It may be illustrated and supported by engineering-geological maps or sketches, drill hole logs, assay reports, etc. The voucher form (Form 9-1648) is furnished by the Government.

47. Q. Is any final report required?

A. Yes. Upon the completion or termination of the work, you must furnish the Government with an acceptable final report, giving a summary of the work

performed under the contract and costs thereof, together with pertinent geologic and engineering data and an estimate of any ore reserves resulting from the exploration work.

48. Q. What records will I have to keep?

A. For either a fixed unit cost contract or an actual cost contract, you should maintain records in accordance with the items to be reported on a voucher for reimbursement. For a fixed unit cost contract, itemized cost records are not required by the Government. For an actual cost contract, a simple distribution sheet is usually sufficient for small projects; large projects require more formal cost accounts. For either a small or large project under an actual cost contract, documentary support in the form of invoices, payrolls, tax returns, etc., must be available for audit.

49. Q. May the Government inspect and audit my records and accounts?

A. Yes, either by its own auditors or by a certified public accountant. In virtually all cases, an appointment is arranged at a time convenient to the operator.

50. Q. How do I obtain the Government's contribution?

A. At the end of each month you submit a voucher as explained in Answer 46. If the voucher is prepared properly, payment usually is made within 2 or 3 weeks after the voucher is submitted.

REPAYING THE GOVERNMENT

51. Q. Must I repay the Government the money which it contributed?

A. You are required to pay royalty to the Government on any production from the land covered by the contract

from the date of the contract until the Government notifies you, not later than 6 months after receipt of a sufficient final report (see Answer 47), of certification or of its intent not to certify. If the Government considers that the exploration indicates that production may be possible from the area covered by the contract, it shall so certify. Thereafter, you are required to pay royalty on any subsequent production for the period specified in the contract. The royalty is 5 percent of the "gross proceeds" or "value" of production in the form in which it is sold, held, or used.

52. **Q. If a certification of possible production is issued, how long do I pay royalty?**

A. You pay royalty on production for a period of not less than 10 years and not more than 25 years from the date of the contract or until the Government's contribution is repaid with interest, whichever occurs first.

53. **Q. Will I be required to pay royalty on production of minerals not eligible for exploration assistance?**

A. Yes. All minerals or metals mined or produced are subject to the repayment provisions of the contract.

54. **Q. What security, other than my legal obligation to pay, does the Government have for payment of this royalty?**

A. The contract gives the Government a lien on your interest in the land and on any production from it. The lien or subordination agreement (see Answers 7, 8, and 9) gives the Government additional security.

55. **Q. If the Government does not issue a certification of possible production, will the property be free from the Government's claim for royalty and the liens to secure its payment?**

A. Yes, except with respect to any production that may occur during the time in which the Government has a right to certify, but not after the Government has given notification of its intent not to certify.

56. **Q. If the Government certifies that production may be possible, am I required to start producing?**

A. No. The exploration contract does not require you to produce.

57. **Q. If I am a lessee of the property and my leasehold is surrendered to the owners, does this action destroy the Government's liens?**

A. No. If you are a lessee, the lien agreement you secured from the owner establishes a lien on the land and any production from it (see Answers 7 and 54). You also remain liable as surety for royalty on any production.

58. **Q. If my interest in the property is subject to a mortgage and the mortgage is foreclosed, does this foreclosure destroy the Government's liens?**

A. No. The liens are protected by the subordination agreement you secured from the mortgagee (see Answers 8 and 54). In this case, your liability as surety also remains in effect.

59. **Q. Who pays the royalties to the Government?**

A. If you sell your production, the purchaser should be notified of the Government's royalty interest and directed to make the payment to the Government, supporting the payment with copies of the settlement sheet. If the purchaser does not pay the royalty, you are liable for payment and must supply copies of settlement sheets or sales invoices.

60. **Q. How is the amount of the royalty verified?**

A. By audit of production records, sales amounts, and settlement sheets.

61. Q. Is interest charged on the Government's contribution?

A. Simple interest is calculated from the first day of the month following the dates of the Government's contribution. Interest continues until the period for royalty payment expires as specified in the contract, or until the amount of the Government's contribution is fully repaid, whichever occurs first.

62. Q. What is the interest rate?

A. The rate is stated in the contract. It is no less than the rate the Department of the Interior would be required to pay if it borrowed from the Treasury, plus a 2-percent interest charge in lieu of the actual cost to the Government of administering the contract.

63. Q. How is the interest paid?

A. Interest is paid from the royalty on production (see Answers 51, 52, and 53). You are not obligated to pay royalty unless you produce (see Answer 56), and the interest does not increase the royalty rate.

64. Q. If I surrender, transfer, or convey any of my rights in the land after certification, who becomes liable for the royalty?

A. You remain liable for the royalty on all production until the royalty period expires or the Government's contribution is fully repaid with interest (see Answer 51).

65. Q. What Federal laws and regulations must I comply with if a contract is granted?

A. You must comply with the following: Nondiscrimination in Employment, Section 202, Executive Order 11246, September 24, 1965; Work Hours Act of 1962—Overtime Compensation; and Copeland (Anti-Kickback) Act—Nonrebate of Wages.

OFFICE OF MINERALS EXPLORATION FIELD OFFICES

REGION I . . . . . U.S. Geological Survey
Building 53, Federal Center
Denver, Colorado 80225

Includes Idaho, Montana, Oregon, and Washington.

REGION II . . . . . Building 2
345 Middlefield Road
Menlo Park, California 94025

Includes Alaska, California, Nevada, and Hawaii.

REGION III . . . . . U.S. Geological Survey
Building 53, Federal Center
Denver, Colorado 80225

Includes Arizona, Colorado, Kansas, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Utah, and Wyoming.

REGION IV . . . . . U.S. Geological Survey
301 West Cumberland Avenue
Knoxville, Tennessee 37902

Includes all other States.

FOR FURTHER INFORMATION, WRITE TO THE OFFICE OF MINERALS EXPLORATION, U.S. GEOLOGICAL SURVEY, 953 NATIONAL CENTER , RESTON, VIRGINIA 22092.

☆U.S. GOVERNMENT PRINTING OFFICE: 1975-211-345/29

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.

operating materials, supplies, and equipment; initial rehabilitation or repair of existing buildings, installations, fixtures, and operating equipment; construction of buildings, fixed improvements, and installations; repairs and maintenance of operating equipment; analytical work, accounting, payroll and sales taxes, and employers' liability or employees' compensation insurance; payments by the operator to independent contractors, and such other necessary, reasonable, and direct actual costs as may be approved by the Government in the course of work; and

(2) The fixed unit costs agreed upon by the operator and the Government in terms of units of work to be performed (per foot of drifting, per foot of drilling, etc.) in lieu of actual costs.

(b) The Government will not contribute to costs incurred before the date of the contract, or to costs of or incident to:

(1) Acquiring, owning or possessing land with 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 employers' liability or employees' compensation insurance); and

(4) Damages to persons or property (other than authorized repair to or replacement of equipment or other property used in the work).

229.11 Repayment by the operator.

(a) If the Secretary considers that as a result of the exploration, mineral or metal production from the area covered by the contract may be possible, he shall so certify in writing to the operator within the time specified in the contract.

(b) When the Secretary determines not to certify, he shall promptly so notify the operator provided the operator has completed all obligations under the contract.

(c) The operator shall pay the Government a royalty on all minerals or metals produced from the land described in the contract and any other royalty as may be provided therein:

(1) Irrespective of any certification of possible production—from the date of the contract to the date of notice that certification will not be made, or until the total amount contributed by the Government with interest is fully repaid, whichever occurs first; or

(2) Irrespective of any certification of possible production—if the Secretary, deeming it necessary and in the public interest, enters into an agreement to provide for royalty payments.

(3) If a certification of possible production is issued—for a period of ten years (or other period fixed by the contract not exceeding 25 years) from the date of the contract, or until the total amount contributed by the Government, with interest, is fully repaid, whichever occurs first.

(d) The Government's royalty shall be 5 percent of the "gross proceeds" (including any bonuses, premiums, allowances, or other benefits) from the production sold, in the form sold (ore, concentrate, metal, or equivalent) at the point of delivery (the f.o.b. point) except, that charges of the buyer (not the operator or producer) arising in the regular course of his business, and shown on the buyer's settlement sheets as deductions (such as treatment processes performed by the buyer, sampling and assaying to determine the value of the production sold, and freight payable by the buyer to a carrier (not the operator or producer)) shall be allowed as deductions in arriving at the "gross proceeds" as that term is used in this section. No costs of the operator or producer are deductible in arriving at the "gross proceeds" as that term is used in this section. The term "treatment processes" as used in this paragraph means those processes (such as milling, concentrating, smelting, refining, or equivalent) applied to the crude ore or other production after it is extracted from the ground to put it into a commercially marketable form, excluding fabricating or manufacturing.

(e) If any production (ore, concentrate, metal, or equivalent) remains unsold or is not used by the operator or producer in integrated manufacturing or fabricating operations (for instance, if it is stockpiled) after the lapse of six months from the date it is extracted from the ground, the Government, at its option, may require the computation and payment of its royalty on the value of such production in the form (ore, concentrate, metal, or equivalent) it is in at the time the Government elects to exercise its option. If any production is used by the operator or producer in integrated manufacturing or fabricating operations, the Government's royalty on such production shall be computed on the "value" thereof in the form in which and at the time when it is used. "Value" as used in this section means what is or would be gross income from mining operations for percentage depletion purposes in Federal income tax determination, or the market value, whichever is greater.

(f) (1) To secure the payment of the Government's royalty, the contract shall provide for a lien upon the operator's interest in the land, upon any production from the land, and upon any interests in the land other than the operator's interest. However, the Secretary may accept the undertaking of a surety company or third person in lieu of a lien upon interests in the land other than the operator's interest. In circumstances where the Secretary deems it to be in the public interest, the requirement for a lien or other undertaking concerning interests in land, other than the lien upon the operator's interest, may be omitted from the Contract.

(2) If the operator is not the producer (for example, if the operator transfers or does not retain his interest in production or in the land), the operator shall remain liable for the payment of the Government's royalty.

(g) If, in any particular case, the Secretary finds that it would be more economical or practicable to compute the Government's royalty upon some basis other than "gross proceeds" or "value", as these terms are used in this section, or upon the production in some form other than that in which it is sold, held, or used in integrated operations, he may agree with the operator, either in the original exploration contract or by an amendment thereof, upon some other basis of computation.

(h) Nothing in this part shall be construed as imposing any obligation on the operator to engage in any mining or production operations.

(i) The Secretary may modify and adjust the terms and conditions of any contract to reduce the amount and terms of any royalty payment when he shall determine that such action is necessary and in the public interest.

229.12 Interest on amount of Government participation.

(a) Simple interest is calculated from the first day of the month following the dates Federal funds are made available until the period specified for royalty payments expires or until the amount of Federal funds contributed, including interest, is fully repaid, whichever occurs first.

(b) The rate of interest shall be fixed by the Secretary at not less than the rate the Department of the Interior would be required to pay if it borrowed from the Treasury, plus a two percent interest charge in lieu of the actual cost to the Government of administering the contract.

(c) Paragraphs (a) and (b) of this section shall not be construed to increase the rate of royalty or to extend the period for which the royalty is payable as set forth in 229.11.

229.13 Limitation on the amount of Government participation.

No single contract shall authorize Government participation in excess of $250,000.

229.14 Government not obligated to buy.

Nothing in this part or in any contract entered into pursuant to this part shall be construed as imposing any obligation on the Government to purchase any materials mined or produced from the land which is the subject of such contract.

229.15 Title to and disposition of property.

Facilities, buildings, fixtures, equipment, or other items or groups of items (such as pipe, rail, steel, etc.), costing more than $50.00 each, paid for or purchased with funds contributed jointly by the operator and the Government, although title may be taken in the name of the operator, shall belong to the operator and the Government jointly, in proportion to their respective contributions to the extent set forth in the contract. The exploration contract shall make suitable provisions also for their disposal for the joint account of the operator and the Government.

Title 30—MINERAL RESOURCES

Chapter II—Geological Survey, Department of the Interior

PART 229—REGULATIONS FOR OBTAINING FEDERAL ASSISTANCE IN FINANCING EXPLORATIONS FOR MINERAL RESERVES, EXCLUDING ORGANIC FUELS, IN THE UNITED STATES, ITS TERRITORIES AND POSSESSIONS

These regulations are reproduced from the following Federal Register documents:

[F.R. Doc. 65-2294; Filed, Mar. 4, 1965; 8:46 a.m.]

[F.R. Doc. 66-7220; Filed, June 30, 1966; 8:46 a.m.]

[F.R. Doc. 67-10624; Filed, Sept. 11, 1967; 8:48 a.m.]

GENERAL PROVISIONS

Sec.
229.1 Purpose.
229.2 Definitions.
229.3 Eligible minerals or mineral products.
229.4 Operator's property rights.

APPLICATIONS

229.5 Form and filing.
229.6 Information required.
229.7 Criteria.
229.8 Approval.

EXPLORATION CONTRACTS

229.9 Government participation.
229.10 Allowable costs.
229.11 Repayment by the operator.
229.12 Interest on amount of Government participation.
229.13 Limitation on the amount of Government participation.
229.14 Government not obligated to buy.
229.15 Title to and disposition of property.

AUTHORITY: The provisions of this Part 229 issued under sec. 2(a), 72 Stat. 700; 30 U.S.C. 642(a).

GENERAL PROVISIONS

229.1 Purpose.

The regulations in this part govern the obtaining of Federal financial assistance in conducting exploration for mineral reserves, excluding organic fuels, in the United States, its territories or possessions.

229.2 Definitions.

As used in this part:

(a) "Exploration" means the search, including related development work, for new or unexplored mineral deposits within a specified area or parcel of ground where geologic conditions favor their occurrence. Exploration using recognized and sound procedures, including standard geophysical and geochemical methods, may be conducted from the surface or underground to obtain pertinent geological and mineralogical information. The work shall not go beyond a reasonable delineation and sampling of a mineral deposit, and shall not be conducted primarily for mining or preparation for mining.

(b) "Operator" means an individual partnership, corporation, or other legal entity that is party to an exploration contract with the Government.

(c) "Secretary" means the Secretary of the Interior, or his authorized representative.

(d) "Government" and "Federal" means the United States of America.

(e) "Commercial sources" means banking institutions or other private sources of credit.

229.3 Eligible minerals or mineral products.

(a) The following are eligible for Government financial assistance of 50 percent of the allowable costs of exploration:

Asbestos.	Kyanite (strategic).
Bauxite.	Manganese.
Beryllium.	Mica (strategic).
Cadmium.	Molybdenum.
Chromite.	Monazite.
Cobalt.	Nickel.
Columbium.	Quartz Crystal (piezoelectric).
Copper.	Rare Earths.
Corundum.	Selenium.
Diamond (industrial).	Sulphur.
Fluorspar.	Talc (block steatite).
Graphite (crucible flake).	Tellurium.
	Thorium.
Iron Ore.	Uranium.

(b) The following are eligible for Government financial assistance of 75 percent of the allowable costs of exploration:

Antimony.	Rutile.
Bismuth.	Silver.
Gold.	Tantalum.
Mercury.	Tin.
Platinum Group Metals.	

(c) Combinations of the minerals or mineral products named in paragraphs (a) and (b) of this section may be eligible for Government financial assistance of 62.5 percent of the allowable costs of exploration.

229.4 Operator's property rights.

The operator must have and preserve the right to possession of the land (as owner, lessee, or otherwise) for a term at least sufficient to complete the exploration work. (See 229.11(f) regarding repayment.) The operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances necessary to the purposes of the exploration.

APPLICATIONS

229.5 Form and filing.

An application for Federal financial assistance must be submitted in duplicate on forms which may be obtained from and filed with either:

Office of Minerals Exploration
Geological Survey,
Department of the Interior,
Washington, D.C. 20242

or Field Officers, Office of Minerals Exploration, Geological Survey. The regions which they serve and their Post Office addresses are as follows:

Region I: Idaho, Montana, Oregon, and Washington—Room 656, West 920 Riverside Avenue, Spokane, Washington 99201.

Region II: Alaska, California, Hawaii, and Nevada—Building 2, 345 Middlefield Road, Menlo Park, California 94025.

Region III: Arizona, Colorado, Kansas, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Utah, and Wyoming—Building 25, Federal Center, Denver, Colorado 80225.

Region IV: Alabama, Arkansas, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Vermont, Virginia, West Virginia, and Wisconsin—Room 11, Post Office Building, Knoxville, Tennessee 37902.

229.6 Information required.

(a) Each application shall fully describe the proposed exploration, and shall include all detailed data called for by the application form. The Secretary may require the filing of additional information, including financial statements, reports, maps, or charts, and exhibits and such physical on-site examinations as he deems necessary.

(b) The application must include evidence that funds for the exploration work are unavailable on reasonable terms from commercial sources. The evidence shall include information as to the commercial sources to which applications were made, the amounts requested, and the reasons why loans were not obtained.

(c) The application must include a certification by the applicant that he would not normally undertake the exploration at his sole expense under current conditions or circumstances.

229.7 Criteria.

The following factors will be considered and weighted in passing upon applications:

(a) The geologic probability of a significant discovery being made.

(b) The estimated cost of the exploration in relation to the size and grade of the potential deposit.

(c) The plan and method of conducting the exploration.

(d) The accessibility of the project area.

(e) The background and operating experience of the applicant.

(f) The applicant's title or right to possession of the property.

229.8 Approval.

If the application is approved, the Government may enter into an exploration contract with the applicant upon terms and conditions which the Secretary deems necessary and appropriate as set forth in the contract form furnished by the Government.

EXPLORATION CONTRACTS

229.9 Government participation.

The Government will contribute not more than the percent of the total allowable costs of exploration which is specified in each exploration project contract. The percent specified in each contract will depend upon the minerals or mineral products sought and the Government contribution provided by 229.3 at the time the contract is made.

229.10 Allowable costs.

(a) The Government, to the extent provided in the exploration contract, will contribute to:

(1) The necessary, reasonable, and direct actual costs of performing the exploration, including the costs of: Labor, supervision, and outside consultants;

operating materials, supplies, and equipment; initial rehabilitation or repair of existing buildings; installations, fixtures, and operating equipment; construction of buildings, fixed improvements, and installations; repairs and maintenance of operating equipment; analytical work, accounting, payroll and sales taxes, and employers' liability or employees' compensation insurance; payments by the operator to independent contractors; and such other necessary, reasonable, and direct actual costs as may be approved by the Government in the course of work; and

(2) The fixed unit costs agreed upon by the operator and the Government in terms of units of work to be performed (per foot of drifting, per foot of drilling, etc.) in lieu of actual costs.

(b) The Government will not contribute to costs incurred before the date of the contract, or to costs of or incident to:

(1) Acquiring, owning or possessing land with 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 employers' liability or employees' compensation insurance); and

(4) Damages to persons or property (other than authorized repair to or replacement of equipment or other property used in the work).

229.11 Repayment by the operator.

(a) If the Secretary considers that as a result of the exploration, mineral or metal production from the area covered by the contract may be possible, he shall so certify in writing to the operator within the time specified in the contract.

(b) When the Secretary determines not to certify, he shall promptly so notify the operator provided the operator has completed all obligations under the contract.

(c) The operator shall pay the Government a royalty on all minerals or metals produced from the land described in the contract and any other royalty as may be provided therein:

(1) Irrespective of any certification of possible production—from the date of the contract to the date of notice that certification will not be made, or until the total amount contributed by the Government with interest is fully repaid, whichever occurs first; or

(2) Irrespective of any certification of possible production—if the Secretary, deeming it necessary and in the public interest, enters into an agreement to provide for royalty payments.

(3) If a certification of possible production is issued—for a period of ten years (or other period fixed by the contract not exceeding 25 years) from the date of the contract, or until the total amount contributed by the Government, with interest, is fully repaid, whichever occurs first.

(d) The Government's royalty shall be 5 percent of the "gross proceeds" (including any bonuses, premiums, allowances, or other benefits) from the production sold, in the form sold (ore, concentrate, metal, or equivalent) at the point of delivery (the f.o.b. point) except, that charges of the buyer (not the operator or producer) arising in the regular course of his business, and shown on the buyer's settlement sheets as deductions (such as treatment processes performed by the buyer, sampling and assaying to determine the value of the production sold, and freight payable by the buyer to a carrier (not the operator or producer)) shall be allowed as deductions in arriving at the "gross proceeds" as that term is used in this section. No costs of the operator or producer are deductible in arriving at the "gross proceeds" as that term is used in this section. The term "treatment processes" as used in this paragraph means those processes (such as milling, concentrating, smelting, refining, or equivalent) applied to the crude ore or other production after it is extracted from the ground to put it into a commercially marketable form, excluding fabricating or manufacturing.

(e) If any production (ore, concentrate, metal, or equivalent) remains unsold or is not used by the operator or producer in integrated manufacturing or fabricating operations (for instance, if it is stockpiled) after the lapse of six months from the date it is extracted from the ground, the Government, at its option, may require the computation and payment of its royalty on the value of such production in the form (ore, concentrate, metal, or equivalent) it is in at the time the Government elects to exercise its option. If any production is used by the operator or producer in integrated manufacturing or fabricating operations, the Government's royalty on such production shall be computed on the "value" thereof in the form in which and at the time when it is used. "Value" as used in this section means what is or would be gross income from mining operations for percentage depletion purposes in Federal income tax determination, or the market value, whichever is greater.

(f) (1) To secure the payment of the Government's royalty, the contract shall provide for a lien upon the operator's interest in the land, upon any production from the land, and upon any interests in the land other than the operator's interest. However, the Secretary may accept the undertaking of a surety company or third person in lieu of a lien upon interests in the land other than the operator's interest. In circumstances where the Secretary deems it to be in the public interest, the requirement for a lien or other undertaking concerning interests in land, other than the lien upon the operator's interest, may be omitted from the Contract.

(2) If the operator is not the producer (for example, if the operator transfers or does not retain his interest in production or in the land), the operator shall remain liable for the payment of the Government's royalty.

(g) If, in any particular case, the Secretary finds that it would be more economical or practicable to compute the Government's royalty upon some basis other than "gross proceeds" or "value", as these terms are used in this section, or upon the production in some form other than that in which it is sold, held, or used in integrated operations, he may agree with the operator, either in the original exploration contract or by an amendment thereof, upon some other basis of computation.

(h) Nothing in this part shall be construed as imposing any obligation on the operator to engage in any mining or production operations.

(i) The Secretary may modify and adjust the terms and conditions of any contract to reduce the amount and terms of any royalty payment when he shall determine that such action is necessary and in the public interest.

229.12 Interest on amount of Government participation.

(a) Simple interest is calculated from the first day of the month following the dates Federal funds are made available until the period specified for royalty payments expires or until the amount of Federal funds contributed, including interest, is fully repaid, whichever occurs first.

(b) The rate of interest shall be fixed by the Secretary at not less than the rate the Department of the Interior would be required to pay if it borrowed from the Treasury, plus a two percent interest charge in lieu of the actual cost to the Government of administering the contract.

(c) Paragraphs (a) and (b) of this section shall not be construed to increase the rate of royalty or to extend the period for which the royalty is payable as set forth in 229.11.

229.13 Limitation on the amount of Government participation.

No single contract shall authorize Government participation in excess of $250,000.

229.14 Government not obligated to buy.

Nothing in this part or in any contract entered into pursuant to this part shall be construed as imposing any obligation on the Government to purchase any materials mined or produced from the land which is the subject of such contract.

229.15 Title to and disposition of property.

Facilities, buildings, fixtures, equipment, or other items or groups of items (such as pipe, rail, steel, etc.), costing more than $50.00 each, paid for or purchased with funds contributed jointly by the operator and the Government, although title may be taken in the name of the operator, shall belong to the operator and the Government jointly, in proportion to their respective contributions to the extent set forth in the contract. The exploration contract shall make suitable provisions also for their disposal for the joint account of the operator and the Government.

Title 30—MINERAL RESOURCES

Chapter II—Geological Survey, Department of the Interior

PART 229—REGULATIONS FOR OBTAINING FEDERAL ASSISTANCE IN FINANCING EXPLORATIONS FOR MINERAL RESERVES, EXCLUDING ORGANIC FUELS, IN THE UNITED STATES, ITS TERRITORIES AND POSSESSIONS

These regulations are reproduced from the following Federal Register documents:

[F.R. Doc. 65-2294; Filed, Mar. 4, 1965; 8:46 a.m.]

[F.R. Doc. 66-7220; Filed, June 30, 1966; 8:46 a.m.]

[F.R. Doc. 67-10624; Filed, Sept. 11, 1967; 8:48 a.m.]

GENERAL PROVISIONS

Sec.
229.1 Purpose.
229.2 Definitions.
229.3 Eligible minerals or mineral products.
229.4 Operator's property rights.

APPLICATIONS

229.5 Form and filing.
229.6 Information required.
229.7 Criteria.
229.8 Approval.

EXPLORATION CONTRACTS

229.9 Government participation.
229.10 Allowable costs.
229.11 Repayment by the operator.
229.12 Interest on amount of Government participation.
229.13 Limitation on the amount of Government participation.
229.14 Government not obligated to buy.
229.15 Title to and disposition of property.

AUTHORITY: The provisions of this Part 229 issued under sec. 2(e), 72 Stat. 700; 30 U.S.C. 642(e).

GENERAL PROVISIONS

229.1 Purpose.

The regulations in this part govern the obtaining of Federal financial assistance in conducting exploration for mineral reserves, excluding organic fuels, in the United States, its territories or possessions.

229.2 Definitions.

As used in this part:

(a) "Exploration" means the search, including related development work, for new or unexplored mineral deposits within a specified area or parcel of ground where geologic conditions favor their occurrence. Exploration using recognized and sound procedures, including standard geophysical and geochemical methods, may be conducted from the surface or underground to obtain pertinent geological and mineralogical information. The work shall not go beyond a reasonable delineation and sampling of a mineral deposit, and shall not be conducted primarily for mining or preparation for mining.

(b) "Operator" means an individual partnership, corporation, or other legal entity that is party to an exploration contract with the Government.

(c) "Secretary" means the Secretary of the Interior, or his authorized representative.

(d) "Government" and "Federal" means the United States of America.

(e) "Commercial sources" means banking institutions or other private sources of credit.

229.3 Eligible minerals or mineral products.

(a) The following are eligible for Government financial assistance of 50 percent of the allowable costs of exploration:

Asbestos.	Kyanite (strategic).
Bauxite.	Manganese.
Beryllium.	Mica (strategic).
Cadmium.	Molybdenum.
Chromite.	Monazite.
Cobalt.	Nickel.
Columbium.	Quartz Crystal (piezoelectric).
Copper.	Rare Earths.
Corundum.	Selenium.
Diamond (industrial).	Sulphur.
Fluorspar.	Talc (block steatite).
Graphite (crucible flake).	Tellurium.
	Thorium.
Iron Ore.	Uranium.

(b) The following are eligible for Government financial assistance of 75 percent of the allowable costs of exploration:

Antimony.	Rutile.
Bismuth.	Silver.
Gold.	Tantalum.
Mercury.	Tin.
Platinum Group Metals.	

(c) Combinations of the minerals or mineral products named in paragraphs (a) and (b) of this section may be eligible for Government financial assistance of 62.5 percent of the allowable costs of exploration.

229.4 Operator's property rights.

The operator must have and preserve the right to possession of the land (as owner, lessee, or otherwise) for a term at least sufficient to complete the exploration work. (See 229.11(f) regarding repayment.) The operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances necessary to the purposes of the exploration.

APPLICATIONS

229.5 Form and filing.

An application for Federal financial assistance must be submitted in duplicate on forms which may be obtained from and filed with either:

Office of Minerals Exploration
Geological Survey,
Department of the Interior,
Washington, D.C. 20242

or Field Officers, Office of Minerals Exploration, Geological Survey. The regions which they serve and their Post Office addresses are as follows:

Region I: Idaho, Montana, Oregon, and Washington—Room 656, West 920 Riverside Avenue, Spokane, Washington 99201.

Region II: Alaska, California, Hawaii, and Nevada—Building 2, 345 Middlefield Road, Menlo Park, California 94025.

Region III: Arizona, Colorado, Kansas, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Utah, and Wyoming—Building 25, Federal Center, Denver, Colorado 80225.

Region IV: Alabama, Arkansas, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Vermont, Virginia, West Virginia, and Wisconsin—Room 11, Post Office Building, Knoxville, Tennessee 37902.

229.6 Information required.

(a) Each application shall fully describe the proposed exploration, and shall include all detailed data called for by the application form. The Secretary may require the filing of additional information, including financial statements, reports, maps, or charts, and exhibits and such physical on-site examinations as he deems necessary.

(b) The application must include evidence that funds for the exploration work are unavailable on reasonable terms from commercial sources. The evidence shall include information as to the commercial sources to which applications were made, the amounts requested, and the reasons why loans were not obtained.

(c) The application must include a certification by the applicant that he would not normally undertake the exploration at his sole expense under current conditions or circumstances.

229.7 Criteria.

The following factors will be considered and weighed in passing upon applications:

(a) The geologic probability of a significant discovery being made.

(b) The estimated cost of the exploration in relation to the size and grade of the potential deposit.

(c) The plan and method of conducting the exploration.

(d) The accessibility of the project area.

(e) The background and operating experience of the applicant.

(f) The applicant's title or right to possession of the property.

229.8 Approval.

If the application is approved, the Government may enter into an exploration contract with the applicant upon terms and conditions which the Secretary deems necessary and appropriate as set forth in the contract form furnished by the Government.

EXPLORATION CONTRACTS

229.9 Government participation.

The Government will contribute not more than the percent of the total allowable costs of exploration which is specified in each exploration project contract. The percent specified in each contract will depend upon the minerals or mineral products sought and the Government contribution provided by 229.3 at the time the contract is made.

229.10 Allowable costs.

(a) The Government, to the extent provided in the exploration contract, will contribute to:

(1) The necessary, reasonable, and direct actual costs of performing the exploration, including the costs of: Labor, supervision, and outside consultants,

operating materials, supplies, and equipment; initial rehabilitation or repair of existing buildings, installations, fixtures, and operating equipment; construction of buildings, fixed improvements, and installations; repairs and maintenance of operating equipment; analytical work, accounting, payroll and sales taxes, and employers' liability or employees' compensation insurance; payments by the operator to independent contractors; and such other necessary, reasonable, and direct actual costs as may be approved by the Government in the course of work; and

(2) The fixed unit costs agreed upon by the operator and the Government in terms of units of work to be performed (per foot of drifting, per foot of drilling, etc.) in lieu of actual costs.

(b) The Government will not contribute to costs incurred before the date of the contract, or to costs of or incident to:

(1) Acquiring, owning or possessing land with 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 employers' liability or employees' compensation insurance); and

(4) Damages to persons or property (other than authorized repair to or replacement of equipment or other property used in the work).

229.11 Repayment by the operator.

(a) If the Secretary considers that as a result of the exploration, mineral or metal production from the area covered by the contract may be possible, he shall so certify in writing to the operator within the time specified in the contract.

(b) When the Secretary determines not to certify, he shall promptly so notify the operator provided the operator has completed all obligations under the contract.

(c) The operator shall pay the Government a royalty on all minerals or metals produced from the land described in the contract and any other royalty as may be provided therein:

(1) Irrespective of any certification of possible production—from the date of the contract to the date of notice that certification will not be made, or until the total amount contributed by the Government with interest is fully repaid, whichever occurs first; or

(2) Irrespective of any certification of possible production—if the Secretary, deeming it necessary and in the public interest, enters into an agreement to provide for royalty payments.

(3) If a certification of possible production is issued—for a period of ten years (or other period fixed by the contract not exceeding 25 years) from the date of the contract, or until the total amount contributed by the Government, with interest, is fully repaid, whichever occurs first.

(d) The Government's royalty shall be 5 percent of the "gross proceeds" (including any bonuses, premiums, allowances, or other benefits) from the production sold, in the form sold (ore, concentrate, metal, or equivalent) at the point of delivery (the f.o.b. point) except, that charges of the buyer (not the operator or producer) arising in the regular course of his business, and shown on the buyer's settlement sheets as deductions (such as treatment processes performed by the buyer, sampling and assaying to determine the value of the production sold, and freight payable by the buyer to a carrier (not the operator or producer)) shall be allowed as deductions in arriving at the "gross proceeds" as that term is used in this section. No costs of the operator or producer are deductible in arriving at the "gross proceeds" as that term is used in this section. The term "treatment processes" as used in this paragraph means those processes (such as milling, concentrating, smelting, refining, or equivalent) applied to the crude ore or other production after it is extracted from the ground to put it into a commercially marketable form, excluding fabricating or manufacturing.

(e) If any production (ore, concentrate, metal, or equivalent) remains unsold or is not used by the operator or producer in integrated manufacturing or fabricating operations (for instance, if it is stockpiled) after the lapse of six months from the date it is extracted from the ground, the Government, at its option, may require the computation and payment of its royalty on the value of such production in the form (ore, concentrate, metal, or equivalent) it is in at the time the Government elects to exercise its option. If any production is used by the operator or producer in integrated manufacturing or fabricating operations, the Government's royalty on such production shall be computed on the "value" thereof in the form in which and at the time when it is used. "Value" as used in this section means what is or would be gross income from mining operations for percentage depletion purposes in Federal income tax determination, or the market value, whichever is greater.

(f) (1) To secure the payment of the Government's royalty, the contract shall provide for a lien upon the operator's interest in the land, upon any production from the land, and upon any interests in the land other than the operator's interest. However, the Secretary may accept the undertaking of a surety company or third person in lieu of a lien upon interests in the land other than the operator's interest. In circumstances where the Secretary deems it to be in the public interest, the requirement for a lien or other undertaking concerning interests in land, other than the lien upon the operator's interest, may be omitted from the Contract.

(2) If the operator is not the producer (for example, if the operator transfers or does not retain his interest in production or in the land), the operator shall remain liable for the payment of the Government's royalty.

(g) If, in any particular case, the Secretary finds that it would be more economical or practicable to compute the Government's royalty upon some basis other than "gross proceeds" or "value", as these terms are used in this section, or upon the production in some form other than that in which it is sold, held, or used in integrated operations, he may agree with the operator, either in the original exploration contract or by an amendment thereof, upon some other basis of computation.

(h) Nothing in this part shall be construed as imposing any obligation on the operator to engage in any mining or production operations.

(i) The Secretary may modify and adjust the terms and conditions of any contract to reduce the amount and terms of any royalty payment when he shall determine that such action is necessary and in the public interest.

229.12 Interest on amount of Government participation.

(a) Simple interest is calculated from the first day of the month following the dates Federal funds are made available until the period specified for royalty payments expires or until the amount of Federal funds contributed, including interest, is fully repaid, whichever occurs first.

(b) The rate of interest shall be fixed by the Secretary at not less than the rate the Department of the Interior would be required to pay if it borrowed from the Treasury, plus a two percent interest charge in lieu of the actual cost to the Government of administering the contract.

(c) Paragraphs (a) and (b) of this section shall not be construed to increase the rate of royalty or to extend the period for which the royalty is payable as set forth in 229.11.

229.13 Limitation on the amount of Government participation.

No single contract shall authorize Government participation in excess of $250,000.

229.14 Government not obligated to buy.

Nothing in this part or in any contract entered into pursuant to this part shall be construed as imposing any obligation on the Government to purchase any materials mined or produced from the land which is the subject of such contract.

229.15 Title to and disposition of property.

Facilities, buildings, fixtures, equipment, or other items or groups of items (such as pipe, rail, steel, etc.), costing more than $50.00 each, paid for or purchased with funds contributed jointly by the operator and the Government, although title may be taken in the name of the operator, shall belong to the operator and the Government jointly, in proportion to their respective contributions to the extent set forth in the contract. The exploration contract shall make suitable provisions also for their disposal for the joint account of the operator and the Government.

Title 30—MINERAL RESOURCES

Chapter II—Geological Survey, Department of the Interior

PART 229—REGULATIONS FOR OBTAINING FEDERAL ASSISTANCE IN FINANCING EXPLORATIONS FOR MINERAL RESERVES, EXCLUDING ORGANIC FUELS, IN THE UNITED STATES, ITS TERRITORIES AND POSSESSIONS

These regulations are reproduced from the following Federal Register documents:

[F.R. Doc. 65-2294; Filed, Mar. 4, 1965; 8:46 a.m.]

[F.R. Doc. 66-7220; Filed, June 30, 1966; 8:46 a.m.]

[F.R. Doc. 67-10624; Filed, Sept. 11, 1967; 8:48 a.m.]

GENERAL PROVISIONS

Sec.
229.1 Purpose.
229.2 Definitions.
229.3 Eligible minerals or mineral products.
229.4 Operator's property rights.

APPLICATIONS

229.5 Form and filing.
229.6 Information required.
229.7 Criteria.
229.8 Approval.

EXPLORATION CONTRACTS

229.9 Government participation.
229.10 Allowable costs.
229.11 Repayment by the operator.
229.12 Interest on amount of Government participation.
229.13 Limitation on the amount of Government participation.
229.14 Government not obligated to buy.
229.15 Title to and disposition of property.

AUTHORITY: The provisions of this Part 229 issued under sec. 2(e), 72 Stat. 700; 30 U.S.C. 642(e).

GENERAL PROVISIONS

229.1 Purpose.

The regulations in this part govern the obtaining of Federal financial assistance in conducting exploration for mineral reserves, excluding organic fuels, in the United States, its territories or possessions.

229.2 Definitions.

As used in this part:

(a) "Exploration" means the search, including related development work, for new or unexplored mineral deposits within a specified area or parcel of ground where geologic conditions favor their occurrence. Exploration using recognized and sound procedures, including standard geophysical and geochemical methods, may be conducted from the surface or underground to obtain pertinent geological and mineralogical information. The work shall not go beyond a reasonable delineation and sampling of a mineral deposit, and shall not be conducted primarily for mining or preparation for mining.

(b) "Operator" means an individual partnership, corporation, or other legal entity that is party to an exploration contract with the Government.

(c) "Secretary" means the Secretary of the Interior, or his authorized representative.

(d) "Government" and "Federal" means the United States of America.

(e) "Commercial sources" means banking institutions or other private sources of credit.

229.3 Eligible minerals or mineral products.

(a) The following are eligible for Government financial assistance of 50 percent of the allowable costs of exploration:

Asbestos.	Kyanite (strategic).
Bauxite.	Manganese.
Beryllium.	Mica (strategic).
Cadmium.	Molybdenum.
Chromite.	Monazite.
Cobalt.	Nickel.
Columbium.	Quartz Crystal (piezoelectric).
Copper.	Rare Earths.
Corundum.	Selenium.
Diamond (industrial).	Sulphur.
Fluorspar.	Talc (block steatite).
Graphite (crucible flake).	Tellurium.
Iron Ore.	Thorium.
	Uranium.

(b) The following are eligible for Government financial assistance of 75 percent of the allowable costs of exploration:

Antimony.	Rutile.
Bismuth.	Silver.
Gold.	Tantalum.
Mercury.	Tin.
Platinum Group Metals.	

(c) Combinations of the minerals or mineral products named in paragraphs (a) and (b) of this section may be eligible for Government financial assistance of 62.5 percent of the allowable costs of exploration.

229.4 Operator's property rights.

The operator must have and preserve the right to possession of the land (as owner, lessee, or otherwise) for a term at least sufficient to complete the exploration work. (See 229.11(f) regarding repayment.) The operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances necessary to the purposes of the exploration.

APPLICATIONS

229.5 Form and filing.

An application for Federal financial assistance must be submitted in duplicate on forms which may be obtained from and filed with either:

Office of Minerals Exploration
Geological Survey,
Department of the Interior,
Washington, D.C. 20242

or Field Officers, Office of Minerals Exploration, Geological Survey. The regions which they serve and their Post Office addresses are as follows:

Region I: Idaho, Montana, Oregon, and Washington—Room 656, West 920 Riverside Avenue, Spokane, Washington 99201.

Region II: Alaska, California, Hawaii, and Nevada—Building 2, 345 Middlefield Road, Menlo Park, California 94025.

Region III: Arizona, Colorado, Kansas, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Utah, and Wyoming—Building 25, Federal Center, Denver, Colorado 80225.

Region IV: Alabama, Arkansas, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Vermont, Virginia, West Virginia, and Wisconsin—Room 11, Post Office Building, Knoxville, Tennessee 37902.

229.6 Information required.

(a) Each application shall fully describe the proposed exploration, and shall include all detailed data called for by the application form. The Secretary may require the filing of additional information, including financial statements, reports, maps, or charts, and exhibits and such physical on-site examinations as he deems necessary.

(b) The application must include evidence that funds for the exploration work are unavailable on reasonable terms from commercial sources. The evidence shall include information as to the commercial sources to which applications were made, the amounts requested, and the reasons why loans were not obtained.

(c) The application must include a certification by the applicant that he would not normally undertake the exploration at his sole expense under current conditions or circumstances.

229.7 Criteria.

The following factors will be considered and weighed in passing upon applications:

(a) The geologic probability of a significant discovery being made.

(b) The estimated cost of the exploration in relation to the size and grade of the potential deposit.

(c) The plan and method of conducting the exploration.

(d) The accessibility of the project area.

(e) The background and operating experience of the applicant.

(f) The applicant's title or right to possession of the property.

229.8 Approval.

If the application is approved, the Government may enter into an exploration contract with the applicant upon terms and conditions which the Secretary deems necessary and appropriate as set forth in the contract form furnished by the Government.

EXPLORATION CONTRACTS

229.9 Government participation.

The Government will contribute not more than the percent of the total allowable costs of exploration which is specified in each exploration project contract. The percent specified in each contract will depend upon the minerals or mineral products sought and the Government contribution provided by 229.3 at the time the contract is made.

229.10 Allowable costs.

(a) The Government, to the extent provided in the exploration contract, will contribute to:

(1) The necessary, reasonable, and direct actual costs of performing the exploration, including the costs of: Labor, supervision, and outside consultants;

United States Department of the Interior

GEOLOGICAL SURVEY
BOX 25046 M.S. 933
DENVER FEDERAL CENTER
DENVER, COLORADO 80225

April 8, 1982

Re: OME 6797 (gold-silver-copper)
U.S. Silver Mining Company
June, Antero, and Poverty Claims
Saguache County, Colo.
Contract 2294

Mr. W. R. Moran
Vice President, Exploration
Molycorp, Inc.
Union Oil Center
4615 Boylston St.
Los Angeles, CA 90017

Dear Mr. Moran:

After the completion of the approved exploration work under the contract identified above, we asked to be informed about changes in the status of the property and production from it during the period of royalty obligation.

To assist you to furnish this information and to assure the accuracy of our records, please answer the questions on the back of this letter and return two copies to this office with copies of any pertinent documents.

Sincerely,

J. William Hasler

J. William Hasler, Chief
Office of Minerals Exploration

Form MME 63
(May 1970)

REQUEST FOR INFORMATION ON CERTIFIED PROJECT OR PROJECT UNDER ROYALTY AGREEMENT

1. Since March 24, 1981, has there been a change in ownership, lease, or sublease? *If yes, please state details of the transaction below and provide a true or signed copy of the pertinent documents, unless they have been provided before.* Yes ☐ No ☒

Is the option agreement between Molycorp. and Utah-Wyoming Consolidated Oil Company still in effect? YES

2. Since March 24, 1981, has there been any production from the land subject to the contract? Yes ☐ No ☒

A. If so and it was shipped, give quantity, value, and name and address of purchaser.

Purchaser (*name and address*)	Quantity	Value
N/A		

B. If stockpiled awaiting sale, state quantity, grade, and location.

Type	Quantity (*tons*)	Estimated Grade	Location
Ore	N/A		
Concentrates	N/A		
Other	N/A		

3. Since N/A workings (*see* , has any production been transported through *of contract*)? Yes ☐ No ☐

If so, state quantity, value, and disposition of material. N/A

Disposition of Material	Quantity	Value
N/A		

Submitted by:

Name Molycorp, Inc. Stanley E. Anthony	*Title* Regional Land Manager
Address P. O. Box 3976 Englewood, CO 80155	*Date* May 26, 1982

United States Department of the Interior

GEOLOGICAL SURVEY
BOX 25046 M.S. 933
DENVER FEDERAL CENTER
DENVER, COLORADO 80225

April 8, 1982

Re: OME 6797 (gold-silver-copper)
U.S. Silver Mining Company
June, Antero, and Poverty Claims
Saguache County, Colo.
Contract 2294

Mr. W. R. Moran
Vice President, Exploration
Molycorp, Inc.
Union Oil Center
4615 Boylston St.
Los Angeles, CA 90017

Dear Mr. Moran:

After the completion of the approved exploration work under the contract identified above, we asked to be informed about changes in the status of the property and production from it during the period of royalty obligation.

To assist you to furnish this information and to assure the accuracy of our records, please answer the questions on the back of this letter and return two copies to this office with copies of any pertinent documents.

Sincerely,

J. William Hasler

J. William Hasler, Chief
Office of Minerals Exploration

Form MME 63
(May 1970)

REQUEST FOR INFORMATION ON CERTIFIED PROJECT OR PROJECT UNDER ROYALTY AGREEMENT

1. Since March 24, 1981, has there been a change in ownership, lease, or sublease? *If yes, please state details of the transaction below and provide a true or signed copy of the pertinent documents, unless they have been provided before.* Yes ☐ No ☒

Is the option agreement between Molycorp. and Utah-Wyoming Consolidated Oil Company still in effect? YES

2. Since March 24, 1981, has there been any production from the land subject to the contract? Yes ☐ No ☒

A. If so and it was shipped, give quantity, value, and name and address of purchaser.

Purchaser (*name and address*)	Quantity	Value
N/A		

B. If stockpiled awaiting sale, state quantity, grade, and location.

Type	Quantity (*tons*)	Estimated Grade	Location
Ore	N/A		
Concentrates	N/A		
Other	N/A		

3. Since N/A workings (*see* , has any production been transported through *of contract*)? Yes ☐ No ☐

If so, state quantity, value, and disposition of material. N/A

Disposition of Material	Quantity	Value
N/A		

Submitted by:

Name Molycorp, Inc. Stanley E. Anthony	*Title* Regional Land Manager
Address P. O. Box 3976 Englewood, CO 80155	*Date* May 26, 1982

United States Department of the Interior

GEOLOGICAL SURVEY
BOX 25046 M.S. 933
DENVER FEDERAL CENTER
DENVER, COLORADO 80225

April 8, 1982

Re: OME 6797 (gold-silver-copper)
U.S. Silver Mining Company
June, Antero, and Poverty Claims
Saguache County, Colo.
Contract 2294

Mr. W. R. Moran
Vice President, Exploration
Molycorp, Inc.
Union Oil Center
4615 Boylston St.
Los Angeles, CA 90017

Dear Mr. Moran:

After the completion of the approved exploration work under the contract identified above, we asked to be informed about changes in the status of the property and production from it during the period of royalty obligation.

To assist you to furnish this information and to assure the accuracy of our records, please answer the questions on the back of this letter and return two copies to this office with copies of any pertinent documents.

Sincerely,

J. William Hasler

J. William Hasler, Chief
Office of Minerals Exploration

Form MME 63
(May 1970)

REQUEST FOR INFORMATION ON CERTIFIED PROJECT OR PROJECT UNDER ROYALTY AGREEMENT

1. Since March 24, 1981, has there been a change in ownership, lease, or sublease? *If yes, please state details of the transaction below and provide a true or signed copy of the pertinent documents, unless they have been provided before.* Yes ☐ No ☒

Is the option agreement between Molycorp. and Utah-Wyoming Consolidated Oil Company still in effect? YES

2. Since March 24, 1981, has there been any production from the land subject to the contract? Yes ☐ No ☒

A. If so and it was shipped, give quantity, value, and name and address of purchaser.

Purchaser (*name and address*)	Quantity	Value
N/A		

B. If stockpiled awaiting sale, state quantity, grade, and location.

Type	Quantity (*tons*)	Estimated Grade	Location
Ore	N/A		
Concentrates	N/A		
Other	N/A		

3. Since N/A workings (*see* , has any production been transported through *of contract*)? Yes ☐ No ☐

If so, state quantity, value, and disposition of material. N/A

Disposition of Material	Quantity	Value
N/A		

Submitted by:

Name Molycorp, Inc. Stanley E. Anthony	*Title* Regional Land Manager
Address P. O. Box 3976 Englewood, CO 80155	*Date* May 26, 1982

FILE COPY

UNITED STATES OF AMERICA
CERTIFICATION OF POSSIBLE PRODUCTION
UNDER AN EXPLORATION CONTRACT

Mr. George W. Bates
U.S. Silver Mining Company
21 University Road
Canton, Massachusetts 02021

Re: GHL-6797 (Gold-Silver-Copper)
U.S. Silver Mining Company
June, Antoro, and Poverty Claims
Saguache County, Colorado
Contract 2294

Dear Mr. Bates

Pursuant to Article 6 of the referenced contract, as amended, the Government hereby certifies that mineral or metal production may be possible as a result of the exploration work completed on the contract.

Therefore, royalties shall be paid to the Government as provided in the contract on all production from the land described in the contract from March 22, 1971, to March 22, 1983, or until the total amount contributed by the Government under the contract ($35,956.69, subject to audit) is fully repaid with interest at the rate of 6 percent per annum, whichever occurs first. The payment of royalties is secured by a lien upon the land and upon any production therefrom.

Royalty payments should be made in favor of the U.S. Geological Survey and mailed or delivered to the Field Officer, Office of Minerals Exploration, Region III, U.S. Geological Survey, Room 28, Building 53, Denver Federal Center, Denver, Colorado 80225. Each payment should be accompanied by two copies of settlement sheets or other suitable sales evidence showing the date of sale, name of purchaser, the quantity and grade of the production sold, the price per unit, and the gross proceeds and allowable deductions therefrom. The purchaser should be notified of the Government's royalty on production and directed to pay the royalty, computed as provided in the contract, directly to the Government.

The Field Officer should be promptly notified upon the commencement of any production and upon any extended cessation thereof. Production unsold or unused six months after extraction from the ground should be reported promptly to the Field Officer.

Attention is specifically invited to the provisions of Article 2(c) of the contract referring to the preservation of the Government's royalty rights. Two true copies of any instrument transferring, surrendering, or encumbering any of your rights in the land embraced in the contract shall be furnished to this office.

Dated this 13th day of November, 1973.

THE UNITED STATES OF AMERICA

Chief, Office of Minerals Exploration
U.S. Geological Survey

Copy to. Mr. Arad Riggs, Vice President
Weems-Weaver Mining Corporation

cc:
DMF
MR Rdg.
Br. of M Financial Mgmt.
Assoc. Sol. - Rm. 6554
OME Rdg.
OME Region III
Mr. Kirkemo
130 (2)

MKirkemo/gpw 11-13-73

FILE COPY

UNITED STATES OF AMERICA
CERTIFICATION OF POSSIBLE PRODUCTION
UNDER AN EXPLORATION CONTRACT

Mr. George F. Bates
U.S. Silver Mining Company
21 University Road
Canton, Massachusetts 02021

Re: GML-6797 (Gold-Silver-Copper)
U.S. Silver Mining Company
June, Antero, and Poverty Claims
Saguache County, Colorado
Contract 2294

Dear Mr. Bates

Pursuant to Article 6 of the referenced contract, as amended, the Government hereby certifies that mineral or metal production may be possible as a result of the exploration work completed on the contract.

Therefore, royalties shall be paid to the Government as provided in the contract on all production from the land described in the contract from March 22, 1971, to March 22, 1983, or until the total amount contributed by the Government under the contract ($35,936.69, subject to audit) is fully repaid with interest at the rate of 6 percent per annum, whichever occurs first. The payment of royalties is secured by a lien upon the land and upon any production therefrom.

Royalty payments should be made in favor of the U.S. Geological Survey and mailed or delivered to the Field Officer, Office of Minerals Exploration, Region III, U.S. Geological Survey, Room 28, Building 53, Denver Federal Center, Denver, Colorado 80225. Each payment should be accompanied by two copies of settlement sheets or other suitable sales evidence showing the date of sale, name of purchaser, the quantity and grade of the production sold, the price per unit, and the gross proceeds and allowable deductions therefrom. The purchaser should be notified of the Government's royalty on production and directed to pay the royalty, computed as provided in the contract, directly to the Government.

The Field Officer should be promptly notified upon the commencement of any production and upon any extended cessation thereof. Production unsold or unused six months after extraction from the ground should be reported promptly to the Field Officer.

Attention is specifically invited to the provisions of Article 2(c) of the contract referring to the preservation of the Government's royalty rights. Two true copies of any instrument transferring, surrendering, or encumbering any of your rights in the land embraced in the contract shall be furnished to this office.

Dated this 13th day of November, 1973.

THE UNITED STATES OF AMERICA

Chief, Office of Minerals Exploration
U.S. Geological Survey

Copy to. Mr. Arad Riggs, Vice President
Weems-Weaver Mining Corporation

cc:
DRF
MR Rdg.
Br. of M Financial Mgmt.
Assoc. Sol. - Rm. 6554
OME Rdg.
OME Region III
Mr. Kirkemo
130 (2)

MKirkemo/gpw 11-13-73

FILE COPY

UNITED STATES OF AMERICA
CERTIFICATION OF POSSIBLE PRODUCTION
UNDER AN EXPLORATION CONTRACT

Mr. George F. Bates
U.S. Silver Mining Company
21 University Road
Canton, Massachusetts 02021

Re: OME-6797 (Gold-Silver-Copper)
U.S. Silver Mining Company
June, Antero, and Poverty Claims
Saguache County, Colorado
Contract 2294

Dear Mr. Bates

Pursuant to Article 6 of the referenced contract, as amended, the Government hereby certifies that mineral or metal production may be possible as a result of the exploration work completed on the contract.

Therefore, royalties shall be paid to the Government as provided in the contract on all production from the land described in the contract from March 22, 1971, to March 22, 1983, or until the total amount contributed by the Government under the contract ($35,956.69, subject to audit) is fully repaid with interest at the rate of 8 percent per annum, whichever occurs first. The payment of royalties is secured by a lien upon the land and upon any production therefrom.

Royalty payments should be made in favor of the U.S. Geological Survey and mailed or delivered to the Field Officer, Office of Minerals Exploration, Region III, U.S. Geological Survey, Room 28, Building 53, Denver Federal Center, Denver, Colorado 80225. Each payment should be accompanied by two copies of settlement sheets or other suitable sales evidence showing the date of sale, name of purchaser, the quantity and grade of the production sold, the price per unit, and the gross proceeds and allowable deductions therefrom. The purchaser should be notified of the Government's royalty on production and directed to pay the royalty, computed as provided in the contract, directly to the Government.

The Field Officer should be promptly notified upon the commencement of any production and upon any extended cessation thereof. Production unsold or unused six months after extraction from the ground should be reported promptly to the Field Officer.

Attention is specifically invited to the provisions of Article 2(c) of the contract referring to the preservation of the Government's royalty rights. Two true copies of any instrument transferring, surrendering, or encumbering any of your rights in the land embraced in the contract shall be furnished to this office.

Dated this 13th day of November, 1973.

THE UNITED STATES OF AMERICA

Chief, Office of Minerals Exploration
U.S. Geological Survey

Copy to. Mr. Arad Riggs, Vice President
Weems-Weaver Mining Corporation

cc:
DRF
MR Rdg.
Br. of M Financial Mgmt.
Assoc. Sol. - Rm. 6554
OME Rdg.
OME Region III
Mr. Kirkemo
130 (2)

MKirkemo/gpw 11-13-73

Mr. Arad Riggs, Vice President
Weems-Weaver Mining Corporation
50 East 42nd Street
New York, New York 10017

Re: OME-6797 (Gold-Silver-Copper)
U.S. Silver Mining Company
June, Antoro, and Poverty Claims
Saguache County, Colorado
Contract 2294

Dear Mr. Riggs:

Enclosed is a copy of a certification of possible production issued to the Operator as a result of the exploration program under the subject contract. This relates to the Lien and Subordination Agreements signed by you on August 13, 1971.

The Government's prior lien on the land and upon any production therefrom will continue in existence for the length of time mentioned in the certification. You are obligated during that period to commit no act and to assert no claim in conflict with the Government's rights under the agreement signed by you, to give advance notice of the Government's rights to any transferee or lessee of any part of your interest in the land or the production therefrom, and to furnish this office with two true copies of such notice.

Sincerely yours,

Harold Kirkemo

Harold Kirkemo, Chief
Office of Minerals Exploration

Enclosure

cc: DRF
MR Rdg.
OME Rdg./OME Files
Mr. Kirkemo
Region III
130

HKirkemo/gpw 11-13-73

Mr. Arad Riggs, Vice President
Weems-Weaver Mining Corporation
50 East 42nd Street
New York, New York 10017

Re: OME-6797 (Gold-Silver-Copper)
U.S. Silver Mining Company
June, Antoro, and Poverty Claims
Saguache County, Colorado
Contract 2294

Dear Mr. Riggs:

Enclosed is a copy of a certification of possible production issued to the Operator as a result of the exploration program under the subject contract. This relates to the Lien and Subordination Agreements signed by you on August 13, 1971.

The Government's prior lien on the land and upon any production therefrom will continue in existence for the length of time mentioned in the certification. You are obligated during that period to commit no act and to assert no claim in conflict with the Government's rights under the agreement signed by you, to give advance notice of the Government's rights to any transferee or lessee of any part of your interest in the land or the production therefrom, and to furnish this office with two true copies of such notice.

Sincerely yours,

Harold Kirkemo

Harold Kirkemo, Chief
Office of Minerals Exploration

Enclosure

cc: DRF OME Rdg./OME Files
MR Rdg. Mr. Kirkemo
Region III
130

HKirkemo/gpw 11-13-73

Mr. Arad Riggs, Vice President
Weems-Weaver Mining Corporation
50 East 42nd Street
New York, New York 10017

Re: OME-6797 (Gold-Silver-Copper)
U.S. Silver Mining Company
June, Antoro, and Poverty Claims
Saguache County, Colorado
Contract 2294

Dear Mr. Riggs:

Enclosed is a copy of a certification of possible production issued to the Operator as a result of the exploration program under the subject contract. This relates to the Lien and Subordination Agreements signed by you on August 13, 1971.

The Government's prior lien on the land and upon any production therefrom will continue in existence for the length of time mentioned in the certification. You are obligated during that period to commit no act and to assert no claim in conflict with the Government's rights under the agreement signed by you, to give advance notice of the Government's rights to any transferee or lessee of any part of your interest in the land or the production therefrom, and to furnish this office with two true copies of such notice.

Sincerely yours,

Harold Kirkemo

Harold Kirkemo, Chief
Office of Minerals Exploration

Enclosure

cc: DRF
MR Rdg.
OME Rdg./OME Files
Mr. Kirkemo
Region III
130

HKirkemo/gpw 11-13-73

MME Form 40
(Revised Nov. 68)

Budget Bureau No. 42-R1368
Approval expires Dec. 1971

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

OME Region III
RECEIVED
MAY 22 1969
Denver, Colorado

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.*)

U. S. Silver Mining Company
P. O. Box #749
Salida, Colorado 81201

APPLICANT DO NOT USE THIS BLOCK

DOCKET NUMBER

DATE RECEIVED

REGION

DIVISION CODE

BUSINESS ORGANIZATION (*Check one*)

- INDIVIDUAL [ ]
- CORPORATION [ ]
- PARTNERSHIP [X]
- OTHER (*Specify*) [ ]

STATE IN WHICH FIRM IS ORGANIZED: Colorado

LIST CORPORATE OFFICERS OR PARTNERS HERE, IF APPLICABLE

NAME	ADDRESS	TITLE
George S. Abrams	73 Tremont Street, Boston, Ma.	Partner
George P. Bates	c/o Shield Chemical Co. 21 University Rd., Canton, Ma.	Partner
John O. Flender	112 Avon Hill Street Cambridge, Mass.	Partner
Dwight Rounds	c/o Rounds and Porter Wichita, Kansas	Partner

MINERAL(S) FOR WHICH YOU WISH TO EXPLORE: Gold, Silver, Copper

ESTIMATED COST OF PROJECT: $79,734.00

PROPERTY NAME	LOCATION COUNTY	STATE
June Claim	Saguache	Colorado
Antoro Claim	Saguache	Colorado
Poverty Claim	Saguache	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 5, and the proposed exploration work in item 6. 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 8(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 Department of the Interior, U.S. Geological Survey, Office of Minerals Exploration, Washington, D. C., 20242, 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.

5/16/69
DATED

George P. Bates
BY (*Signature*)

managing partner
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 (1) true copies of your letters to credit sources which show date of loan request, amount and terms requested, and proposed use of loan funds and (2) true copies of 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 signed by owner on MME Form 52. If the agreements cannot be obtained, state reasons and whether you can furnish a performance bond.

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.

(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) 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. State your reasons for expecting to find ore.

(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, address, and telephone number 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 time and materials *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 price 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.)]

U. S. Silver Mining Company

BONANZA, COLORADO 81155

OME Region
RECEIVED
MAY 2 2 1968
Denver

Subject: Application for Financial Assistance in Mineral Exploration

Required Information MME form #40

1. Financial Eligibility:

a) Please find attached true copies of letters of application for commercial credit to two banking institutions and their corresponding letters of refusal of same.

b) There are no affiliated, parent, or controlling companies having interest in the U.S. Silver Mining Company.

c) The company's share of the exploration costs will be furnished out of the personal savings of the partners of the company.

2. Applicant's Rights in Land:

a) The U.S. Silver Mining Company has the right to have and to hold all properties involved in this application for the purpose of mining thereon under the terms of an Agreement of Lease and Option to Purchase for the term of 20 years effective the first day of June, 1968 made between the U.S. Silver Mining Company and the Weems Weaver Mining Corporation. Agreement attached. To our knowledge there are no liens, mortgages, or other encumberances on the land other than those of the attached Agreement with the U.S. Silver Mining Company. As of the date of submission of this application the attached Agreement has not been recorded in the records of Saguache County.

b) The specific lands to be explored are listed below in their probable sequence of exploration. It is certain the proposed exploration will begin on the June Claim but the direction exploration will take from that point cannot be definitely determined. The probability, taking into consideration the general patern of vein direction, indicates that exploration proposed will fall onto the following claims.

June Claim - Survey #1364 - Sec. 18, T.N. 47, R.E. 8
Poverty Claim - Survey #938 - Sec. 18, T.N. 47, R.E. 8
Antoro Claim - Survey #937 - Sec. 18, T.N. 47, R.E. 8
Independence Claim - Survey #14183 (1) - Sec. 18, T.N. 47, R.E. 8

The four above listed claims are all patented claims. The U.S. Silver Mining Company has the above listed rights to the above properties and all adjacent lands to the above through the attached "Agreement".

U.S. Silver Mining Company
Bonanza, Colorado

2. Applicant's Rights in Land: Contd.

b) The adjacent properties are;

Ouray Claim - #14183 (5)
Peary Claim - #14183 (3)
North Pole Claim - #14183 (2)
Rawley Claim - #960
Orphan Bell Claim - #14183 (9)

All rights to the Rawley Claim are granted in a similar "Agreement" as the one attached. A copy of this agreement is available upon request.

c) The land to be explored is not owned by the U.S. Silver Mining Company at the present time. Lien and Subordination Agreements will not be entered into by the owners of the land. The U.S. Silver Mining Company will, in the event a contract is reached, present to the Government a Performance Bond (see G.S.A. Standard Form #25) in accordance with the Government's contribution.

3. Physical Description:

a) Although there are no mining operations in the specific area of the proposed exploration, various operations have taken place in the near vicinity. Please find attached Drawing (A) which shows the drift patterns of mining operations close-by. See also Drawing (B) which shows a profile of existing mine operations in the area. Since the beginning point of the exploration will be 1900' from the portal of the Rawley #200 Level (see Drawing (B)) the only mine operation close to the specific area at the present time is the Antoro Mine, approximately 400' above. The Antoro Mine was operated last in 1959. The bulk of ore taken from that mine came from the area surrounding the Antoro Shaft and the Copper Winze. See Drawing (B). The Copper Winze was operated between 1950 and 1952. See sec. c for smelter returns.

At the present time the U.S. Silver Mining Company is driving an exploratory drift on the Rawley #200 Level towards the area of proposed exploration. The breast of the drift is approximately 1650' from the portal of the level at present. The drift is in unexplored ground and should reach the 1900' mark, the beginning of the proposed exploration drift, by August of this year. See sec. c for assay figures. By August the U.S. Silver Mining Company will require additional funds to continue the drift and is therefore submitting this application in recognition of that requirement. The U.S. Silver Mining Company is also operating three stopes on the #200 Level, production from which warrants continued exploration in the area.

Other mine operations conducted in the area can be seen on Drawings (B) and (C). The work on the "Rawley Group" began in the early 1880's and sporadic operations have taken place since then with the bulk of ore taken from the area in the early 1900's. The Depression stopped major production in the District.

U.S. Silver Mining Company
Bonanza, Colorado

3. Physical Description: Contd.

b) The applicants interests in the above operations are that of Lessee with all mining rights and privileges for 20 years pertaining to the Antoro Mine and Claim and operator with identical rights concerning the Rawley #200 Level and Claim. The U.S. Silver Mining Company interests in above and adjacent properties can be seen specifically by examining the attached Agreements of Lease and Option to Buy.

c) Production from all areas of the Antoro Mine is difficult to determine as information is incomplete or lacking entirely. Production from the Copper Winze area of the Antoro (see Drawing (B)) was 6,796 tons shipped to mill and can be substanciated by settlement sheets which are available. There were additional tons of waste but there are no records to show same. Averageing the above mentioned settlement sheets for the Copper Winze area gives the following ounce and percentage figures;

Au - .0337/ton Pb - 10.29%/ton
Ag - 5.707/ton Cu - 1.615%/ton } $55.54 /ton (5/27/69

Although the averages shown above indicate the supported metals, Au, Ag, and Cu as 47.7% of the total value of a ton of ore information shows that the supported metals will increase in amounts per ton the deeper the veins run. See pg. 107, Burbank Report attached. Zinc values have not been considered since the U.S. Silver Mining Company is milling a bulk concetrate eliminating zinc. This is being done in order that a higher lead-silver concentrate can be produced. In addition market values of Au, Ag, and Cu should rise to some degree during the next few months making supported metal value per ton increase for the area in general. See Chemical Week 3/29/69, Business Week 4/5/69, and Business Week 3/8/69 attached. Production from the main level of the Antoro Mine when it was worked is lacking in assays of raw ore. The main level was operated last from 1957 to 1959 by the National Minerals Corporation. National Minerals operated a mill near-by and processed a concentrate which was shipped to A.S. & R. Copies of smelter returns are available on the production upon request. Approximately 3,000 tons of ore was taken from the main level of the Antoro Mine at that time. National Minerals was blending ore from various areas of the Bonanza District at the time so most returns on concentrate may not be relevant.

Production from the Rawley #200 Level has been approximately 16 to 20 thousand tons since the mine first openned in the 1890's. Ore values are shown in the Burbank Report, pg. 106 and 111 attached, and give some indication as to the ratio of metal values on the Rawley Vein although probably most of the ore taken was "high-grade". More recent information on the ore values on this area can be seen from the Rawley Metals Inc., crude ore smelter returns from the U.S. Smelting Refining and Mining Company, Salt Lake City, Utah. The Rawley Metals Inc., operated the Rawley #200 Level from August 1964 to May of 1966 and produced about 6 thousand tons of ore, some of which was shipped direct to smelter with the rest being processed in a near-by concentrating mill operated by Rawley Metals Inc., Information on assays on ore milled by Rawley Metals is not available. The averages of ore values of ore shipped by Rawley Metals direct to smelter taken from available returns are as follows;

Au - .017 oz./ton Cu - .786%/ton
Ag - 7.16 oz./ton Pb - 6.66%/ton } $39.48 /ton 5/27/69

U.S. Silver Mining Company
Bonanza, Colorado

3. Physical Description: Contd.

c) The ore related to the above averages was taken from stopes between 1,200' and 1,300' from the portal of Rawley #200 Level. Assay reports on the drift ore now being taken by the U.S. Silver Mining Company approximately 1,650' from the portal of the Rawley #200 show an average at this time of;

Ag - 8.24 oz./ton Cu - .86%/ton $37.46 9/25/70
Au - assays not being run Pb - 7.35%/ton

The above averages show supported metals as falling above the required 50%/ ton valuation and values for supported metals should increase additionally as more selective mining is conducted in any stoping areas. At the present time the U.S. Silver Mining Company is not too concerned in holding grade levels of ore taken from the drift as advancement is explorative in nature. Copies of assay reports are available upon request.

d) There are no known ore reserves in the area of planned exploration that have have been substanciated at the present time.

e) A description of the geological features of the proposed exploration property is perhaps best given in Burbank's Geological Survey Professional Paper #169, see pages #107 for the Rawley #200 Level and pages #129,130, and 131 for the Antoro Mine. Copies attached. A complete description of the Bonanza District can be found in Burbank Report covering the specified exploration area and all adjacent properties. See also the attached drawing. Deposits are of vein structure.

f) We expect to find ore primarily because there seems to be a substancially strong vein, the Rawley Vein, maintaining a two to three foot average width as the drift progresses on the #200 Level. See 3, c) para. 2. There has been substancial mineralization found at lower levels, see Drawing (C) & (D), although these operations are not directly under the area of proposed exploration. For example the #300 Level has drift assay maps averaging;

Au - .02 oz./ton Cu - 2.36%/ton 48.42 9/25/70
Ag - 11 oz./ton Pb - 13.30%/ton

In addition there has been considerable successful mining in the Antoro Mine located 400' above the proposed area of exploration with proven values of ore as shown above. There has also been drilling of two test holes approximately 1500' from the portal of the Antoro Mine to a depth of 125' below the main level of that mine. The test holes showed the presence of a vein about 4' in width. The exact assays of the drilling are not available. Because of the findings of the test holes it is believed there may be a general convergence of the Rawley, Antoro, and Poverty veins in that area. It must be pointed out that the test drillings took place about 800' N.E. of the area of proposed exploration, about 200' from the S.E. corner of the Antoro Claim on the East side. See Drawing (A). The test drillings indicate though that there is ore present in that area and from appearances it would be logical to assume the ore continues back from the test holes to the area of exploration.

There have been no samples taken in the specific area of proposed exploration. Samples taken on the #300 Level drift assays were of the channel method. Other samples were of the grab method and in the case of smelter returns probably of the crusher sample method.

U. S. Silver Mining Company
Bonanza, Colorado

3. Physical Description: Contd.

g) There are no engineering reports available on the proposed area of exploration. Assay maps are available on most of the "Rawley Levels" (see Drawing C) a recap of the #300 Level is given in sec. 3, c) above. The Drawings, maps, and technological information attached to this application need not be returned.

4. Accessibility of Property:

a) The individual who will assist the O.M.E. representative in his examination of the property to be considered will be -

Mr. L. Reid Johnston

Home address: 222 Scott Street
Salida, Colorado
P.O. Box 749
Salida, Colorado 81201
Tel. # 539-2767

Office address:
P.O. Box #749
Salida, Colorado
Tel. #655-2275

Directions to property:
Take Rt. #285 South from Salida, Colo., for 30 miles. Take the road to the right, a sign with the name Bonanza displayed on it is located at the beginning of this road, 1/16 of a mile before the town of Villa-Grove is reached. Follow this road for 15 miles until a group of metal corrugated sided buildings is reached. The main building will have a sign on it - U.S. Silver Mining Company. Mr. Johnston's office is located in the building.

b) All the properties necessary for insepction by the O.M.E. representative are easily accessible by road and open tunnel. The properties in question are well maintained at all times and can be inspected at any time.

The closest shipping and/or receiving point that is serviced by a commercial carrier is the town of Villa-Grove, 15 miles from the main office. Most freight coming to the U.S. Silver Mining Company is delivered to the Salida terminal of the Rio Grande Motor-Way and picked up by one of the company pick-ups on a daily basis. The closest rail-siding is also in the city of Salida, 45 miles from the main office.

The great majority of supply sources are located in Denver, Colo., approximately 200 miles from the main office.

5. Exploration Work:

a) Essentially the proposed work falls into two operations. The operation is that of an exploratory drift of 500 feet. The second is that of two 100 foot raises, one at the beginning of the proposed drift and one at the end of same to determine the dip of any veins found and their consistency.

The drift will be started 1900' from the portal of the Rawley #200 Level

U.S. Silver Mining Company
Bonanza, Colorado

5. Exploration Work; Contd.

a) (see Drawing B) and will progress 500', following any veins or mineralization to be found. A raise will be started at the 1900' mark and driven for 100'. A second raise of the same height will be driven at the 2400' mark. The drift itself will be approximately 387' below the main tunnel of the Antoro Mine - (see Drawings B and C).

The drift will be excavated to width of 7' and a height of 8' so there will be an unobstructed clearance of 5'x7' since a certain amount of supporting in the form of sets will be necessary. The sets will be of 8"x8"x8' timbers. Mine rail and air ducting as required will also be placed in the proposed drift. The two raises will measure 13' in length and 6' in width for an unobstructed clearance of 12'x5'. The raises will be completely lagged on all four sides, have ore shoots at both ends, and a man-way and a skip-way in the center. There will be a set every 5' in each raise.

See Drawing (B) for location of project in regard to other existing mine workings in the area. The actual location of the project cannot, at this time, be specifically shown as the beginning of the exploratory drift will start at the end of the present company drift operation now being conducted and which will not be complete until August of this year. It can be said the project will be located in the immediate vicinity of the S.E. corner of the June Claim - Survey #1364 approximately 100' from the claim's Southern end. Whether the project will lie to the Eastern side or Western side of the June Claim cannot be definitely determined at present.

b) No access roads will be required.

c) If an O.M.E. contract is executed, work would begin immediately and should be completed 29 weeks later. It is expected that, with a three man crew and one supervisor working one 8 hour shift/day, 6 days/week, the drift would require 21 weeks to complete. The rate of progress on the 500' drift is expected to be 6' per day given the above crew. It is expected that, with a three man crew and one supervisor working one 8 hour shift/day six days/week, the two raises would require 8 weeks to complete. The rate of progress, given the above crew, is expected to be 4'/day.

6. Experience:

a) Although the U.S. Silver Mining Company has been in existance only since April of 1968 the company is most fortunate in having two extremely well qualified men directly engaged in the directing and performing of company mine operations.

Mr. Reid Johnston, the man who will assist the O.M.E. representative, has his B.S. degree in Business from Western State College. He has been first a miner during his school days and subsequently a supervisor of mining operations in various locations, particularly in the the Bonanza District. He has had experience with all types of mining operations, explorations, and development work. He has, at one time, operated his own mining project, along with a mill and all the affiliated duties of a large scale mining venture. Mr. Johnston is our present mining supervisor and will continue in that capacity in the event that this application is accepted and a contract agreed upon.

U.S. Silver Mining Company
Bonanza, Colorado

6. Experience: Contd.

a) A Mr. Earl Wagner is the other qualified mining supervisor that we presently employ. He has had substancial experience in the type of mining that is carried on here in the Bonanza District. Mr. Wagner has been a miner, and more recently, a mine forman for 30 years. He has worked in most of the mining areas of the State of Colorado and subsequently has gained a great deal of know-how and basic knowledge of mining procedures. The bulk of his experience has been in "Hard Rock Mining", the type of mining found in the Bonanza District. Mr. Wagner has had a great deal of experience with drift work, explosives, structural supports in under-ground operations, and drifting methods. Mr. Wagner is our present mine operations forman and shall continue in that capacity.

In addition to the two qualified men described above we will be using the Survey and Engineering services of the Davis Engineering Service, Inc., of Del Norte, Colorado. Mr. Davis has had over 30 years experience in the mining field, doing private work and work for the State of Colorado in the Del Norte area. We will be using the services of Mr. Davis throughout the exploration work period. See #7,g) item #4.

U.S. Silver Mining Company
Bonanza, Colorado

#7 ESTIMATE OF COSTS - 500' Drift

A) Independent Contracts. None Applicant to perform all work.

B) Personal Services:

		Basis of Pay	Pay Period	Total
1.	Mine Supervisor	$285.00/wk.	21 Weeks	$5,985.00
2.	Mine Forman	208.00/wk.	"	4,368.00
3.	Mucker & Trammer	182.00/wk.	"	3,822.00
4.	Driller &	195.00/wk.	"	4,095.00
				18,270.00

C) Operating Material & Supplies:

		Quantity	Cost	$
1.	Mine Rail - 25#/yd., 15' length	8333#/1000'	$11.00/cwt	916.63
2.	Splice Bars	66 sets	81¢/set	54.36
3.	Rail Spikes	100#	$17.45/cwt	17.45
4.	Rail Bolts/Nuts	100#	$28.92/cwt	28.92
5.	Timber for Sets, lags, ties	3,139 Board'	$120.00/mB'	376.68
6.	Wedges	10 Bundles	$3.00/bdl.	30.00
7.	Nails - 60 D	4 boxes	$6.37/bx.	25.48
8.	Miners Picks	2	$3.56 ea.	7.12
9.	Double Jacks	2	$3.18 ea.	6.36
10.	Shovels - Round Point	2	$4.45 ea.	8.90
11.	Pipe Wrenches - 10" Rigid	2	$3.45 ea.	6.90
12.	Miners Axe	2	$5.00 ea.	10.00
13.	Steel Tape Rule - 10' Stanley	2	$1.64 ea.	3.28
14.	Hard Hats	2	$4.40 ea.	8.80
15.	Rubber Suits	4	$17.00 ea.	68.00
16.	Drill Steel 6' length	4	$14.60 ea.	58.40
	4' "	4	$11.70 ea.	46.80
	2' "	2	$9.00 ea.	18.00
17.	Drill Bits - Knock-on Type 7/8"	20	$4.80 ea.	96.00
18.	Blasting Powder - 1x8" stick	415#	$23.25/cwt	96.49
19.	Nitro-Carbonitrate - corvis	8,300#	$5.25/cwt	435.75
20.	Primer Fuse Cord/Caps/Igniters	1,660	13.4¢ ea.	222.44
21.	Compressed Air Pipe - 3"	500'	$69.42/c'	347.10
22.	Water Tubing - 1# Plastic	500'	$6.06/c'	30.30
23.	Water Hose - 1/2" 3 braid	30'	49¢/'	14.70
24.	Air Hose - 1" 3 braid	30'	69¢/'	20.70
25.	Valves - Nordstrom 2"	1	$19.31 ea.	19.31
	- Ball 1"	1	$6.18 ea.	6.18
	- " 1/2"	1	$4.50 ea.	4.50
26.	Fittings - Victaulic			
	- 3" Couplings	25	$2.61 ea.	65.25
	- 3" Els	5	$3.95 ea.	19.75
	- 3"x3"/Vic./Mach. Thr.	1	$2.05 ea.	2.05
27.	Fittings - Standard			
	- Bell Reducer 3"x2"	1	$1.79 ea.	1.79
	- " " 2"x1"	1	75¢ ea.	.75
	- 2"x4" Nipple	1	53¢ ea.	.53
28.	Fittings - Dixon			
	- 1" M/F Dbl. Spud	2	$3.15 ea.	6.30

Continued

#7 ESTIMATE OF COSTS: 500' Drift - Contd.

		Quantity	Cost	Total
29.	Rock Drill Oil E.P.W.	50 gal.	60¢/gal.	$ 30.00
30.	Electric Power	21 Weeks	$52.15/wk.	1,095.15
31.	Fuel - Gasoline	2,100 gal.	29.1¢/gal.	611.10
32.	Air Vent Tubing - Polyeth./WW	1,500'	#3.70/'	5,550.00
				$10,368.22
33.	Sales Tax on items 1-30 and 32 at 3%			292.71
				10,660.93

D) Operating Equipment:

1.	Remington Air Powered Chain Saw IP	1		
	To be purchased used.			$ 125.00
2.	Mancha Little Trammer Type B	1		
	To be purchased used.			4,000.00
3.	Card 1 Ton Ore Cars, Rocker Type	4		
	To be purchased used.			800.00
4.	Joy Axivane Mine Fan 20 H.P.	1		
	To be purchased used.			800.00
5.	Gardner Denver 600 Cu.' Air Compreesor	1		
	To be purchased new.			5,000.00
6.	Eimco Mucking Machine #12B	1		
	To be supplied by applicant		$2,500.00	
7.	Gardner Denver S58F Air Hammer	1		
	To be supplied by applicant		500.00	
8.	Thor #390 Air Hammer	1		
	To be supplied by applicant		500.00	
9.	Mancha Little Trammer Type B	1		
	To be supplied by applicant		3,000.00	
10.	Card One Ton Ore Cars, Rocker Type	8		
	To be supplied by applicant		1,600.00	
			$8,600.00	$10,725.00

Figures given for items supplied by applicant are present market value amounts.

All equipment supplied by applicant is in good working order.

E) Initial Rehabilitation:

None.

F) New Buildings, Fixtures, Installations:

1. One new building, a compressor house, will be required for the exploration work planned. The structure will be 3,000 sq.' of wood frame construction, a poured concrete floor, and metal corrugated siding and roof.
   The cost of the building, including labor, materials, and supervision - $3,000.00
2. Installation of air compressor (see sec. D #6) and wiring of same - 1,000.00
   $4,000.00

#7 ESTIMATE OF COSTS; 500' Drift - Contd.

G) Miscellaneous:

1.	Repair and maintenance costs; includes, oil, grease, paint, welding material, cleaning compounds, rags, tools for maintenance, and black-smith equipment. Replacement parts for new and used equipment.	$ 500.00
2.	Shop labor.	2,800.00
3.	Accounting and Office services.	1,207.00
4.	Survey and Engineering services.	1,152.00
5.	Analytical work. Assayor on premises	818.00
6.	Workmans Compensations expense. From #7, sec.B only	811.00
7.	Federal and State Unemployment expenses. " "	372.00
8.	F.I.C.A. Tax Expenses. " "	877.00
9.	Unanticipated General Expenses.	1,000.00 - ?
10.	Depreciation of applicant equipment. See sec. D, items 6-10 Method - 5 year straight line rate.	613.83
11.	Performance Bond expense, for one year @ $10.00/yr.	495.00
		$10,645.83

C.S Silver Mining Company
Bonanza, Colorado

#7 ESTIMATE OF COSTS: Two 100' Raises

A) Independent Contracts. None. Applicant to perform all work.

B) Personal Services:

		Basis of Pay	Pay Period	Total
1.	Mine Supervisor	$285.00/wk.	8 Weeks	$2,280.00
2.	Mine Forman	208.00/wk.	"	1,664.00
3.	Mucker & Trammer	182.00/wk.	"	1,456.00
4.	Driller & Timberman	195.00/wk.	"	1,560.00
				$6,960.00

C) Operating Material & Supplies:

		Quantity	Cost	
1.	Timber for sets, lags, lining	45,080 Bd'	$120.00/m Bd'	$5,409.00
2.	Mine Ladders 10', flush step	20	$8.25 ea.	165.00
3.	Nails 60D	6 Boxes	$5.65/bx.	33.90
4.	Miners Picks	2	$3.56 ea.	7.12
5.	Double Jacks	2	$3.18 ea.	6.36
6.	Miners Axes	1	$5.00 ea.	5.00
7.	Steel Tape Rules 10' Stanley	2	$1.64 ea.	3.28
8.	Rubber Suits	2	$14.47 ea.	28.94
9.	Wedges	10 Bdls.	$3.00 ea.	30.00
10.	Blasting Powder 1x8" stick	250 lbs.	$23.75/cwt	59.38
11.	Nitro-Carbonitrate Corvis	3,300 lbs.	$5.25/cwt	173.25
12.	Primer Fuse 6'/Cap/Igniter	660	13.4¢ ea.	88.44
13.	Drill Steel 7/8" x 6'	2	$14.60 ea.	29.20
14.	" " " x 4'	2	$11.70 ea.	23.40
15.	" " " x 2'	2	$9.00 ea.	18.00
16.	Drill Bits Knock-On Type	20	$4.60 ea.	92.00
17.	Compressed Air Pipe - 3" Coated	200'	$69.42/c'	138.84
18.	Water Line - 1" Plastic	200'	$6.06/c'	12.12
19.	Air Hose - 1" Rubber 3 braid	25'	49¢/'	12.25
20.	Water Hose - ½ Rubber 3 braid	25'	20¢/'	5.00
21.	Valve - Nordstrom 2"	2	$19.31 ea.	38.62
22.	Valve - Ball 1"	2	$6.18 ea.	12.36
	" ½"	2	$4.50 ea.	9.00
23.	Fittings - Victaulic			
	- 3" Couplings	10	$2.61 ea.	26.10
	- 3"x2" Vic./thread	2	$2.05 ea.	4.10
	- 3" T's	2	$8.87 ea.	17.74
24.	Fittings - Standard			
	- 2" Nipple	2	53¢ ea.	1.06
	- 2"x1" Bell Reducer	2	75¢ ea.	1.50
25.	Fittings - Dixon 1" M/F Dbl. Spud	2	$3.15 ea.	6.30
26.	Air Vent Tubing	200'	$3.47/'	694.00
27.	Rock Drill Oil E.P.W.	20 gal.	60¢/gal.	12.00
28.	Hand Mauls	2	$3.00 Ea.	6.00
29.	Pully Blocks 5/8"	2	$47.00 ea.	94.00
30.	5/8" Wire Rope 6 Strand	400'	$34.20/c'	136.80

Continued

#7 ESTIMATE OF COSTS: Two 100' Raises - Contd.

Operating Material and Supplies:	Quantity	Cost	Total
31. 5/8" Cable Clamps	8	31¢ ea.	$ 2.48
32. Power - Electrical	8 weeks	$52.15/wk.	417.20
33. Fuel - gasoline, diesel	800 gal.	29.1¢/gal.	232.80
34. Sales Tax on items 1-33	$8,052.54	3%	241.58
			$8,294.12

D) Operating Equipment:

1. Air Hoist - 5 H.P. To be purchased used	2	$500.00	$1,000.00
2. Hauling Skip To be built by applicant	2	$200.00	400.00
3. Alimax Raise Climber To be rented for 2 months	1	$3,000.00/mo.	6,000.00
4. Additional equipment to be supplied by applicant. See #7, sec. D, 500' Drift - attached			$7,400.00

E) Initial Rehabilitation and Repairs:

None.

F) New Buildings, Fixtures, Installations:

See sec. F, #7 for 500' Drift

G) Miscellaneous:

1. Depreciation of applicant equipment. 5 year straight line rate - 8 weeks. See #7, sec. D, 500' Drift	$ 233.84
2. Reapir and Maintenance costs. Incl. greasing, oil change, replacement of worn parts, painting, cleaning, welding, sharpening, and shop labor.	876.24
3. Survey Services and Mine Engineering included in #7, sec. G 500' Drift.	
4. Accounting and Office Services	460.00
5. Workmans Compensation expenses - based on amount from #7, Sec. B only	309.02
6. Federal and State Unemployment Taxes " " " "	215.77
7. F.I.C.A. Tax expense " " " "	334.08
8. Analytical Work - included in #7, sec. G, 500' Drift.	
9. Unanticipated general expenses not included above.	350.00
	$2,778.95

May 7, 1969

Mr. C. S. Haggo, Jr.
The First National Bank of Salida
Salida, Colorado

Dear Mr. Haggo,

The U. S. Silver Mining Company wishes to apply to the First National Bank of Salida for a commercial loan in the amount of $79,734.83. The loan is to be used for the financing of an exploration project we wish to undertake as soon as possible. Our project is that of driving one 500' drift and two 100' raises in order that we may explore and delineate any ore bodies that may be present on a number of mining claims we are presently leasing. The specific properties to be explored are the Antoro, June, Poverty, and Independence Claims located in the Bonanza District of Saguache County, Colorado.

You will find enclosed the U. S. Silver Mining Company Balance Sheet for the year ending Dec. 31st., 1968 and two estimates of exploration costs, related to the above project, which are submitted as preliminary reference material for your examination.

We would prefer payment arrangement extending over a 10 year period based on current market interest rates.

For additional information or materials please contact me at P. O. Box #749, Salida, or call me at 303-655-2275. Thank you for your consideration.

Sincerely yours,

R. C. Beasley

R. C. Beasley
Office Manager

The First National Bank of Salida

D. L. MITCHELL
VICE PRESIDENT & CASHIER

Salida, Colorado 81201
In the Heart of the Rockies

May 9, 1969

Mr. R. C. Beasley
Office Manager
U.S. Silver Mining Company
Bonanza, Colorado

Dear Mr. Beasley:

Thank you for your letter of May 7, 1969, wherein you requested a commercial loan in the amount of $79,734.83.

Our loan committee has met regarding this request, and due to the tight money situation, and the heavy demand of agriculture and local business concerns, we feel that we must decline your request for your mining operations.

We feel that until there is an easing of the credit situation that we will not be in a position to facilitate your borrowings.

Very truly yours,

D.L. Mitchell
Vice President & Cashier

DLM:nb

U. S. Silver Mining Company

BONANZA, COLORADO 81155

May 5, 1969

Mr. Raymond Fox
First National Bank of Center
Center, Colorado

Dear Mr. Fox,

We wish to apply to the First National Bank of Center for a Commerical Loan in the amount of $79,734.83. The loan is to be used for the financing of an exploration project we wish to undertake. We are planning to drive a 500' drift and two 100' raises in order that we may explore and locate any ore bodies that may be present on mining properties we are presently leasing. The properties are the Antoro, June, Poverty, and Independence Claims located in the Bonanza District of Saguache County, Colorado.

You will find enclosed the U. S. Silver Mining Company Balance Sheet for the year ending December 31st., 1968 and two estimates of costs which we are submitting as reference material for your examination.

We would prefer repayment arrangements extending over a ten year period based on present market interest rates.

If you are in need of additional information or materials please contact me at P.O. Box 749, Salida, Colo. or phone me at 655-2275. Thank you for your consideration.

Sincerely yours,

R. C. Beasley

R. C. Beasley
Office Manager

THE FIRST NATIONAL BANK
BOX 520
CENTER, COLORADO 81125

L. E. TROUSDALE - President
RAY A. FOX - Vice Pres. and Cashier

May 13, 1969

Mr. R. C. Beasley, Office Manager
U. S. Silver Mining Company
P. O. Box 749
Salida, Colorado 81201

Dear Sir:

We have your letter of May 5, 1969 regarding a loan in the amount of $79,734.83 payable over a ten year period for use in exploration of various properties located in the Bonanza District of Saguache County, Colorado.

We are unable to make a loan of this size since it is for an amount which exceeds our lending limitations. Also, our lending policy would not permit us to make a loan for the time requested to be used for exploration of mining properties.

Thank you for contacting us and we are sorry we are not able to be of help.

Yours very truly,

L. E. Trousdale

L. E. Trousdale
President

LET:gf

PRODUCTION

Complete data on the production of the Rawley mine prior to 1902 are not available. The reports of the Director of the Mint for 1890 and 1891[87] give $1,365 and $5,981, respectively, for these years. In reports for other years no data on the Rawley mine are given. The following table shows the production of the mine since 1902, compiled from mine records of the United States Geological Survey and the United States Bureau of Mines, supplemented by information furnished by the company. Some details of the metallurgical data from operation of the mill during 1926 and 1927 are shown in the second table, based upon data furnished by the Rawley Mines (Inc.).

Production of the Rawley mine, 1902–1930

Year	Ore (dry tons)	Concentrates produced (dry tons)	Gross content of concentrates and smelting ore				
			Gold (fine ounces)	Silver (fine ounces)	Lead (wet assay; pounds)	Copper (wet assay; pounds)	Zinc [a] (pounds)
1902	----------	600	----------	12,000	438,000	60,000	----------
1905	----------	384	----------	4,143	188,720	----------	----------
1916	[b] 2,731	----------	102.72	37,335	62,066	134,246	----------
1917	[b] 1,875	----------	61.46	21,663	51,523	94,521	Penalized.
1923	34,170	9,032	183.80	146,329	3,267,520	567,093	1,287,066
1926	43,971	5,369	236.27	267,142	3,110,418	1,276,493	----------
1927	112,393	22,742	965.28	842,579	6,683,138	4,846,733	2,488,250
1928	110,595	22,238	1,123.46	903,759	5,285,710	5,391,184	2,406,152
1929	118,647	18,967	1,003.50	720,172	6,442,738	3,329,047	2,465,710
1930 [c]	56,262	7,737	456.02	328,385	2,484,756	1,520,267	765,963
	480,644	87,069	4,132.51	3,283,507	28,014,589	17,219,584	----------

[a] Zinc not recovered. [b] Crude ore to smelter. [c] Mine closed late in June.

Range in character of concentrates from Rawley ore in 1927, by months

Month	Assay content of concentrates							Recoveries from mill heads (per cent)			Ratio of concentration
	Gold (ounce per ton)	Silver (ounces (per ton)	Lead (per cent)	Copper (per cent)	Iron (per cent)	Insoluble (per cent)	Zinc (per cent)	Silver	Lead	Copper	
January	0.050	44.0	17.1	10.8	25.9	2.4	5.43	85.7	92.5	86.1	5.36
February	.055	42.6	16.9	12.7	25.8	2.2	4.69	83.5	91.0	88.0	6.53
March	.045	45.1	16.6	11.9	26.4	2.4	4.38	90.6	93.2	91.0	6.37
April	.043	36.8	15.9	10.2	26.9	3.4	4.50	91.4	94.0	91.1	6.09
May	.039	32.8	16.6	9.70	26.6	3.7	4.70	92.5	94.1	92.6	5.39
June	.040	31.9	17.2	8.82	26.4	3.0	5.70	90.3	93.8	89.5	5.20
July	.040	32.5	14.8	9.60	25.1	4.9	7.0	88.7	92.5	88.3	4.45
August	.041	33.6	13.1	9.55	27.0	4.3	6.01	91.3	91.7	87.5	3.98
September	.040	31.6	9.91	9.06	29.5	4.8	4.92	92.1	91.0	88.1	3.75
October	.036	39.4	15.2	11.9	24.6	3.2	6.47	83.8	89.5	82.0	4.63
November	.040	38.9	13.6	12.8	25.5	3.2	5.33	82.7	90.8	82.8	4.64
December	.039	42.2	12.7	12.5	25.3	3.9	5.94	85.7	90.2	85.0	4.77

exploratory work has been done on the fourth adit level. In 1928 the 600-foot level was driven south through the Paragon fault zone and crosscut east about 50 feet, when a vein south of the fault was intersected. The Paragon fault was subsequently crossed, and development work was done on three other levels south of the fault. There is some development from the third level within the Paragon fault zone, which is weakly mineralized. The length of stoping on the Rawley vein proper north of the fault ranges from about 850 to 1,100 feet on levels between the 200 and 900. On the twelfth level the vein has been followed for more than 600 feet south of the shaft, but as it did not appear encouraging, the drift was not continued to intersect the Paragon fault. Between the second and ninth levels the vein has been stoped out practically to its intersection with the Paragon fault.

On the third level some development work has been done on the so-called Parallel vein, which lies north of the shaft and in the footwall of the Rawley vein. A crosscut was also driven from the fourth level to intersect the Parallel vein, but most of the work on the Parallel vein was done by lessees, and a complete survey of its development is not available. A little development work has been done on the Clark vein, one of those cut by the drainage tunnel.

An underground hoisting station, situated at the intersection of the Rawley vein and the drainage tunnel, allowed the skips to be operated in the main shaft to the fourth level. A small shaft south of the main shaft was used for raising and lowering men and materials between the sixth and third levels. The vein has been mined largely by the shrinkage-stope method. The ore was hauled from the loading bins on the twelfth level by electric locomotives to the mill, a distance of over 6,000 feet. The concentrates from the mill were delivered from the concentrate bins to an aerial tramway which ran due north of the mine plant to the Denver & Rio Grande Western Railroad at Shirley.

GEOLOGIC FEATURES

GENERAL SUMMARY

The rocks in the vicinity of the Rawley mine are the Rawley andesite and the Bonanza latite. These are much broken by north-south faults that drop the formations on the east and also by a series of northeasterly and northwesterly faults that drop the formations successively southward. The Paragon fault is the largest known of the east-west system. Practically all the faults are of premineral age, but the north-south faults are possibly older than the Paragon fault. The Rawley vein occupies a north-south fissure of comparatively small displacement and is largely the result of a filling of open spaces with minor replacement. The main gangue mineral is quartz, but barite, calcite, rhodochrosite, manganiferous calcite, and siderite are found in small quantities. The main ore minerals are pyrite, sphalerite, galena, chalcopyrite, bornite, enargite, tennantite, and stromeyerite. The vein shows a change in metal content from a lead-silver-copper ore in the upper levels to predominating copper-silver ore with a minor amount of lead in depth. A less pronounced change in the metal content is indicated from the south toward the north in the vein on several of the levels. These geologic features are discussed in more detail in the following paragraphs.

DRAINAGE AND HAULAGE TUNNEL

A geologic section from the portal of the drainage tunnel to the Rawley vein is shown in Plate 25. The geologic structure is very complex, and consequently it is not possible to make accurate correlations between the surface and underground data along the line of the tunnel. At the portal in Squirrel Gulch the tunnel starts in andesite, although the débris from the fault block of Bonanza latite that forms a high ledge above the tunnel portal completely obscures the outcrop of the underlying andesite near the portal. The Bonanza latite is encountered 70 feet from the portal and continues about 140 feet beyond this point. Two much smaller fault blocks of latite occur at about 400 and 900 feet from the portal. The remainder of the tunnel lies entirely in intricately faulted andesite. About three-quarters of its length is overlain at the surface by tilted and faulted latite. The large block of latite lying above the portal of the tunnel strikes about north and dips 45°–50° W. The latite is repeated many times at the surface along the line of the tunnel by faults which throw successive blocks downward toward the east. Although the structure appears incredibly complicated because of the steep westward dips of all the latite blocks, any doubts as to the faulting are dispelled by an examination of the tunnel. A great many fault fissures are encountered in the tunnel as may be seen from Plate 31 and the andesite is much fractured between the larger faults. Very little of the andesite is free from alteration, and the rock is either silicified, chloritized, or altered to sericite and impregnated with carbonates and pyrite. The pyritized jaspers, which are very common, are described in detail on pages 72–73. Some of these also contain traces of zinc. The distribution of the main zones of alteration is shown in the geologic section of the tunnel. Despite this extreme alteration of the rocks for nearly the whole length of tunnel, a comparatively small number of economically valuable veins are found. The Clark vein, which is described below, is the largest of these.

Variation in tenor of the ore of the Rawley vein in different parts of the ore shoot

	Number of assays [a]	Ore (tons) [b]	Silver (ounces to the ton)	Lead (per cent)	Copper (per cent)	Ratio of lead to copper
200-foot level		9,415	10.0	11.6	2.11	5.47
300-foot level		6,490	9.72	12.7	1.70	7.47
400-foot level:						
South of shaft		314	12.8	18.5	1.40	13.2
	11		6.75	12.5	1.57	8.0
North of shaft		2,749	9.86	11.0	2.45	4.48
500-foot level:						
South of shaft		3,784	12.2	7.78	3.25	2.39
North of shaft		12,563	10.3	5.78	3.02	1.9
	18		6.77	3.31	2.79	1.2
600-foot level:						
South of shaft		2,423	13.4	5.6	3.54	1.58
North of shaft		6,354	9.9	1.04	3.85	.27
	26		15.1	2.06	5.07	.41
680-foot level:						
South of shaft	28		10.7	1.52	3.18	.48
North of shaft	32		12.5	.84	5.22	.17
700-foot level:						
South of shaft		3,008	11.8	2.41	3.17	.76
North of shaft		92	6.84	.69	2.25	.31
	18		16.0	1.50	6.33	.24
800-foot level, north of shaft		2,817	8.48	6.67	2.36	2.8
1,200-foot level, south of shaft		193	25.2	3.2	3.6	.89
	27		4.48	.80	.59	1.4
		50,202	11.70	7.24	2.72	

[a] Assays reduced to average foot percentages, representing the weighted mean of the percentages according to the widths of individual samples.
[b] Ore mined by lessees.

50,202 tons @ 66.74/ton = 3,350,481

The horizontal change in the ratio of lead and copper toward the Paragon fault seems to be definitely shown by the data available, though it is not nearly as pronounced as the vertical change. The enrichment of the ore in lead noticeable at places near the Paragon fault is believed to be due to openings formed during the later stages of ore formation, caused presumably by contemporary movements on the Paragon fault.

The correspondence between the silver and copper content of the ore from the Rawley vein is very close in nearly all parts of the mine. The average silver content of the ore from the four upper levels mined prior to 1923 was about 5.6 ounces to the ton, or about 5 ounces of silver to 1 per cent of copper. The ratio of silver to copper in 11,820 tons of ore from the four upper levels mined by lessees in 1926 and 1927 is practically the same, 4.9 ounces of silver to 1 per cent of copper. This ratio is somewhat higher than that of the average mine-run ore of the lower levels, which ranges between 2.8 and 3.9 ounces of silver to 1 per cent of copper. There appears to be no definite relation between the silver and lead content. The minerals that probably carry most of the silver are tennantite and stromeyerite. In the Rawley ore stromeyerite is nearly always associated with bornite or tennantite and less commonly with other minerals. The bornite-bearing ore from the 700-foot level averaged about 10 ounces of silver to the ton, which is considerably higher than the average of mine-run ore from the upper levels.

The average value of ore from the Rawley vein is not fairly represented by the table on this page, as the ore was mined by lessees and the average value thus influenced by selection. The total ore mined and milled in the period from 1926 to 1930 had an average assay value of close to 8 ounces of silver to the ton, 3.2 per cent of lead, and 2 per cent of copper. Data as to the zinc content of the ore at various places in the mine are not as complete as those for lead and copper, but on the whole zinc is rather persistent. The highest content of zinc in the vein is said to have been encountered on the fourth level near the north end of the ore shoot, where it was about 4 to 5 per cent. The zinc content of the vein as a whole lies between 2 and 3 per cent. The average gold content is close to 0.01 ounce to the ton. The table on page 113 covering the mine production approximately by levels during 1927 shows the variation in value of the vein and also brings out strikingly the decrease in lead content of the ore with increasing depth of operations.

The close association of silver and copper is shown by Figure 24, based on the early production of the mine, prior to 1923, and on the monthly production of company mine ore during 1927. This chart shows that the percentage of lead in the company ore from the lower levels during November and December, 1927, was exceptionally low. The average for the lower levels is probably nearer 1 per cent, if several months' run is considered. The silver, however, shows no relation whatever to this fluctuation in the lead content but follows the copper curve very closely.

approximately 320 feet below the surface but has only about 30 to 40 feet of drifts.

GEOLOGIC FEATURES

All the workings of the Antoro mine are in the Rawley andesite, the upper levels and outcrop of the Antoro vein being in the upper latite member. The lava flows on the surface appear to have a strike somewhat west of north and a dip of 15°–20° W. The dips of the flows are much less steep here than 2,000 or 3,000 feet west of the mine. By allowing for the intervening lavas which have been eroded from above the vein outcrop but which overlay the andesite during the time of ore deposition, the present workings on the Antoro vein may be estimated as ranging within 200 to 600 feet below the base of the Bonanza latite.

On the main Antoro adit level the Rawley andesite is very much broken by faults, and it is in several of these fault fissures that the larger veins occur. Practically all the faults show some effects of mineralization, either by their altered gouge or by the presence of small amounts of sulphides, particularly pyrite or sphalerite. No postmineral faults of any consequence were found. The fault of greatest displacement is apparently the Poverty fault, in which the Poverty vein occurs. This fault has an average strike of N. 65° W., but the fault plane is somewhat curved and concave toward the north and dips 28°–35° N. The fault is accompanied by heavy gouge and some strong breccia zones, but, as is typical of all the low-angle faults in the district, the mineralization was very irregularly distributed.

The Antoro vein also occupies a fault fissure, as is shown by the different bodies of andesite that form the hanging wall and footwall at the south end of the "114 level." The Antoro fissure has an average strike of N. 25° W. and dips 65°–85° E. The average dip is probably 80°–85°, although the fault plane is warped irregularly, and both the strike and dip have a moderate range. At the surface near the Antoro shaft the vein crops out in the upper latite member of the Rawley andesite.

and carries about 5.5 ounces of silver to the ton, 8 per cent of lead, and 8 per cent of zinc, as indicated by mine assays. Copper is low, assays showing from a trace to 1.8 per cent. The gold content of the vein is also low, ranging from negligible amounts to 0.02 ounce to the ton. In the 114 north raise the vein for about 25 feet above the drift level averages 3½ feet in width and as indicated by samples carries about 6.5 ounces of silver to the ton, 18 per cent of lead, and 8.3 per cent of zinc.

The vein has been followed by drifts for only about 60 feet on the 200 level north. It has an average width here of about 1.6 feet and carries 4 ounces of silver to the ton, about 9 per cent of lead, 9 per cent of zinc, and 0.5 per cent of copper.

Along the main adit level the Antoro fissure is filled with a strongly sericitized gouge and is relatively tight and weakly mineralized. The vein could be examined for only about 100 feet north of the main raise, as the adit level was partly caved and filled with water. The Antoro vein is also exposed in a drift about 100 feet in length which branches north from the east-west drift on the Poverty fissure. The vein is also weakly mineralized in this drift and dips about 65° E. The relation between the Antoro fault and the Poverty fault could not be determined, as the Poverty fault passes into the south wall of the east-west drift where the two fissures meet.

About 100 feet south of the main raise, near the turn in the adit level, a small fracture in the hanging wall of the Antoro fissure has been explored. This fracture strikes N. 50° W. and dips 70° E. and presumably is a small transverse tension fracture formed in the hanging wall of the Antoro fissure. A narrow body of black sulphide ore has been stoped along this branch vein for about 20 feet upward. (See fig. 32.) The ore is partly enriched by secondary chalcocite.

On the "114 level" north of the main raise the Antoro fissure splits into two fissures, which appear to terminate against a premineral cross fault striking N. 40°–50° W. and dipping 75°–85° SW. Too little exploration has been done beyond this cross fault to determine whether this is the limit of the Antoro ore shoot. Conditions similar to those revealed on the main adit level north of the raise were probably found here but could not be examined because of a cave in the level. At the north end of the "114 level" the Antoro vein is better mineralized than on the main adit level but pinches down somewhat near the cross fault. Near the split the vein is about 18 inches in width and carries 8 ounces in silver to the ton, 15 per cent of lead, and about 7.5 per cent of zinc. About 150 feet north of the main Antoro raise there is a 30-foot raise on the vein which exposes about 30 inches of good-grade ore at the top. The vein in this raise is about 3 feet wide and has an altered gouge on its handling wall. The structure of the vein in the raise is vuggy, with quartz and galena crystals lining the vugs. The gangue consists mainly of quartz but partly of barite and carbonate. About 30 inches of the vein at the top of the 30-foot raise shows a content of 22.5 per cent of lead, 4.4 per cent of zinc, and 9.5 ounces of silver to the ton. Both walls of the vein are much altered; sericitization is evident in both, but the footwall is the more strongly silicified. At the foot of the raise in the drift the vein matter is more massive and less vuggy, but there is about 1 to 1½ feet of loose altered gouge on the hanging wall. This gouge extends all along the north drift and has a tendency to slump into the drift, necessitating timbering most of the way.

In the "114 drift" south of the main raise the vein lies between pyritized walls and is well mineralized for a distance of 70 feet, to a small raise. The vein in the upper end of this raise appears similar in character to that in the north raise and is about 2 feet thick. Beyond this raise to the south the vein becomes nearly vertical and pinches to a narrow barren fissure filled with altered gouge. The fissure continues barren to the end of the south drift. There are several parallel fractures in both walls, but they are not mineralized.

As far as present developments show the ore body is about 240 feet in length, extending possibly 50 feet below the "114 level" and an undetermined distance above. How much of this body has been mined above the "114 level" is not known, as the old workings are not accessible, but the early production was small. Although the fissure is tight on the main adit level, the mineralogic character of the ore just above the level does not indicate that the bottom of mineralization has been reached. Should the vein widen below the adit level within the next few hundred feet, there might be additional bodies of zinc-lead ore or of copper-silver ore. The intersection with the Poverty fissure should also be reached within a vertical depth of 200 feet in the vicinity of the shaft, providing the two fissures hold their dip as exposed on the adit level. Although the ore body developed by the present workings is small, the amount of work done is insufficient to show its full extent. It is presumably limited, however, on the north and south by the cross fissures mentioned.

POVERTY VEIN

The Poverty vein occupies a low-angle fault dipping northeastward toward the Antoro fissure. The two veins intersect east of the main adit level, but the intersection is not exposed in the drift. Near the intersection both veins are only weakly mineralized. The strongest mineralization in the Poverty fault occurred

near the end of the west drift. A small body of high-grade lead-silver ore has been mined from the stope shown on the map. Shipments direct to the smelter amounting to 730 tons showed an average content of 32.3 per cent of lead, 0.6 per cent of copper, and 8.9 ounces of silver and 0.012 ounce of gold to the ton. The zinc is said to have averaged 4 per cent or less in the ore that was shipped. The stope pinched at the east end but at the top showed 10 to 26 inches of ore which assayed from 3 to 7 ounces of silver to the ton, 8.5 to 25 per cent of lead, 0.2 to 5.0 per cent of copper, 2.4 to 6.0 per cent of zinc, and 7 to 11 per cent of iron. The data regarding the stope are based upon assay maps, as the stope could not be entered because of bad air. In the relatively high lead content and the low copper content this ore agrees with the ore of the Antoro vein as indicating that the bottom of the zone favorable to ore has not been reached. Ore bodies in flat veins such as the Poverty are likely to be very irregularly distributed, however.

ZINC VEIN

The Zinc vein is a north-south vein exposed by a crosscut east of the main adit level. It can be traced for about 160 feet in the drifts. It dips about 65° E., and the strike turns somewhat to the northeast in the north drift. It can not be definitely stated whether or not this is the continuation of the Antoro vein until more development work has been done. The vein runs much higher in iron and zinc than either the Antoro or the Poverty vein, and this mineralogic difference, in conjunction with its strike in the north drift, suggests that it is not a direct continuation of the Antoro vein. It may, however, be another part of the Antoro fissure which has been displaced by premineral movement on the Poverty fault. The vein is from 1 to 4 feet thick, averaging around 2 feet, and contains about 8 per cent of lead, 13 per cent of zinc, a trace of copper, and about 19 per cent of iron. The silver assays range from less than 1 ounce to 9 ounces and average a little over 2 ounces to the ton.

At the south end of the drift the vein pinches and terminates against a fault plane striking N. 85° E. and dipping about 70° S. In the north drift the vein is only a foot or a little more thick and pinches near the breast of the drift. The gangue of the vein is siliceous, and it appears too narrow and too high in iron and zinc to encourage stoping.

NORTHEAST VEIN

About 170 feet from the portal of the main adit level a winze has been sunk 125 feet on a steep vein. The winze was filled with water, but from what could be seen near the adit level the vein strikes about N. 30° E. The winze is said to be nearly vertical. The gangue consists of hard, dense quartz containing pyrite and chalcopyrite,[10] and the vein matter is said to be 18 inches wide at the bottom of the winze. This vein is in line with and about 300 feet northeast of the split in the Rawley vein on the 300-foot north level of the Rawley mine. Mr. John E. Ashley, superintendent of the Antoro property, very reasonably considers the fissure in the winze to be a continuation of the east split of the Rawley fissure. According to him, the northeast vein carries about 2 per cent of copper and has a good silver content. A vein of similar strike was apparently drifted on about 400 feet from the portal of the main adit, but these drifts were caved and could not be examined.

MICHIGAN AND PARAGON MINES

DEVELOPMENT AND PRODUCTION

The Michigan and Paragon properties (Nos. 54, 61, 62, and 63, pl. 1), which are owned by the Antoro Mines Co., have been developed on two veins on the north side of Rawley Gulch above the Rawley mine. The Paragon vein is in a fault that follows approximately the course of Rawley Gulch and is the large fault that is encountered in the Rawley mine. It has an average strike of N. 80°–85° E. and dips 55°–60° S. The Michigan vein has been found only north of the Paragon. It strikes N. 20°–25° E. and dips 45°–58° SE. The Michigan and Paragon veins intersect on the north side of Rawley Gulch, where the Michigan vein apparently terminates—at least it has never been recognized in the south or hanging wall of the Paragon fault.

The Michigan vein workings, which include a shaft on the vein at an altitude of 11,460 feet and two tunnels below the shaft, were operated during the early history of the district, and all are now inacessible. The known extent of the Michigan tunnels is shown on Plate 1. It is estimated that about 700 tons of ore was taken from this vein.[11] In 1888[12] the Michigan produced $5,337 in silver and $8,253 in lead, and in 1890 $1,337 in silver and $2,471 in lead, making a total for these two years of $17,398. The production between 1881 and 1900 given by Patton[13] is $24,500. The production of $17,398 represents about 5,170 ounces of silver and 246,000 pounds of lead and would indicate on 500 to 700 tons of ore that the ore averaged from 8 to 10 ounces of silver to the ton and 20 to 25 per cent of lead. The early shipping ore is said to have been oxidized and to have contained lead carbonate. There has been little or no production from

[10] Patton, H. B., op. cit., p. 89.
[11] Idem, p. 90.
[12] Munson, G. C., Report of the Director of the Mint upon the production of the precious metals in the United States, 1888, pp. 120, 121, 1889.
[13] Patton, H. B., op. cit., p. 68.

NONFERROUS METALS WILL MAKE IT BIG IN '69

The nonferrous metals picture is considerably brighter this year than in strike-plagued '68.

Shipments of copper-base mill and foundry products will rise 10% above '68 levels, to about 6.7 billion lbs. But they will not catch up with shipments in '66, when huge inventories were built up in anticipation of the industrywide strike. The strike shut down more than 90% of U.S. primary copper production for more than eight months.

Since the strike, refined copper production has increased steadily. Assuming no strikes in '69, it will top '68 output by 30%. At year-end '68, demand and supply were in near balance.

Brass Price Cut: Brass mill product shipments will reach 3 million lbs., a gain of 17% over '68. This is expected to be accomplished by a price reduction on the order of 5%. Brass and brass foundry product shipments are expected to increase 3-4% in '69, to a little over 1 billion lbs.

Copper wire mill production will go up about 5%, to 2.5 million lbs. The increase is relatively small, because fewer copper wire mills than brass mills were closed by strikes. A small price cut is also expected here because of abundant supplies.

Shipments of magnesium should climb about 6%, to nearly 290 million lbs. What happens to magnesium in the year ahead is closely tied to the aluminum industry's performance—it's alloyed with aluminum in structural products and in aluminum can stock. But gains are also expected in more direct uses—e.g., as cathodic protectors for underground gas and oil pipelines, water heaters and tanks and a range of chemical and metallurgical uses—so prices are expected to remain stable.

Net shipments of aluminum ingots and mill products soared from 696 million lbs. in Feb. '68 to more than 1 billion lbs. in May, when a new labor contract was signed without a strike.

There was also occasional substitution of aluminum for copper because of a copper shortage. And some substitutions tend to become permanent.

Shipments of aluminum ingots and mill products will rise about 7%, to a new high of 10.5 billion lbs. vs. a 9% gain last year when a strike threat boosted shipments.

Aluminum Strong: A high level of construction activity will also trigger a substantial increase in aluminum use in conventional buildings and mobile homes.

Also, more aluminum will go into trucks, trailers, passenger cars and shipping containers, and into aircraft construction.

Few products are immune to an economic slowdown such as is now sought by monetary authorities for latter-half '69. But the aluminum industry has a lot going for it—e.g., the dramatic burst of utility construction that's expected to continue through the year.

Lead production in '69 will be about 570,000 lbs., a 16% gain on top of last year's hefty 24% increase. World output of lead is expected to show a big increase. But consumption will remain strong and prices firm.

As with other nonferrous metals, strikes dominated the '68 zinc scene. Markets were firm but not tight. Because supplies are ample, some observers question whether a price increase posted last January will hold. Slab zinc output will climb 2% this year, to about 1.4 million short tons.

Chemical Week
March 29, 1969

Adequate silver supplies bring price pressure

Business Week
March 8, 1969

At $1.80 per oz., silver prices are now at their lowest levels since late 1967—and down from a peak of $2.57 last summer.

The downward toboggan of prices began with a realization that supplies of silver are adequate to meet current demands.

New silver is coming onto the market from domestic mining operations at around a 35-million-oz. annual rate. This is way short of requirements; industrial consumption currently amounts to about 150-million oz. a year.

But the government is selling 2-million oz. a week from its stocks. At yearend, it had 77-million oz. at the Mint; it estimates there were about another 157-million oz. at Federal Reserve banks in the form of silver coins.

Moreover, the Treasury expects to recover more than 600-million oz. by retiring silver coins that are still in circulation.

Last year 72-million oz. of silver were imported. But the U.S. was actually a net exporter of silver in 1968, shipping out 118-million oz.

There is one important factor that could underpin prices.

Since U. S. speculators cannot hold gold, many buy silver futures in times of international distress.

A new crisis could heat up demand, sending silver prices up at anytime, in the face of the large immediate supply available. Over the long term, silver analysts agree that the trend will be up.

Metal prices stay on the firm side

Business Week
April 5, 1969

Metal prices are benefiting from the ongoing advance in business, strong demand from Europe and Japan, and production problems in some metals.

Last year at this time, the major metals industries were expecting lower prices for copper, lead, and zinc. In aluminum, producers were hoping to eliminate discounting, but were not anticipating price increases.

There is solid demand in most metals; recent price rises may stick.

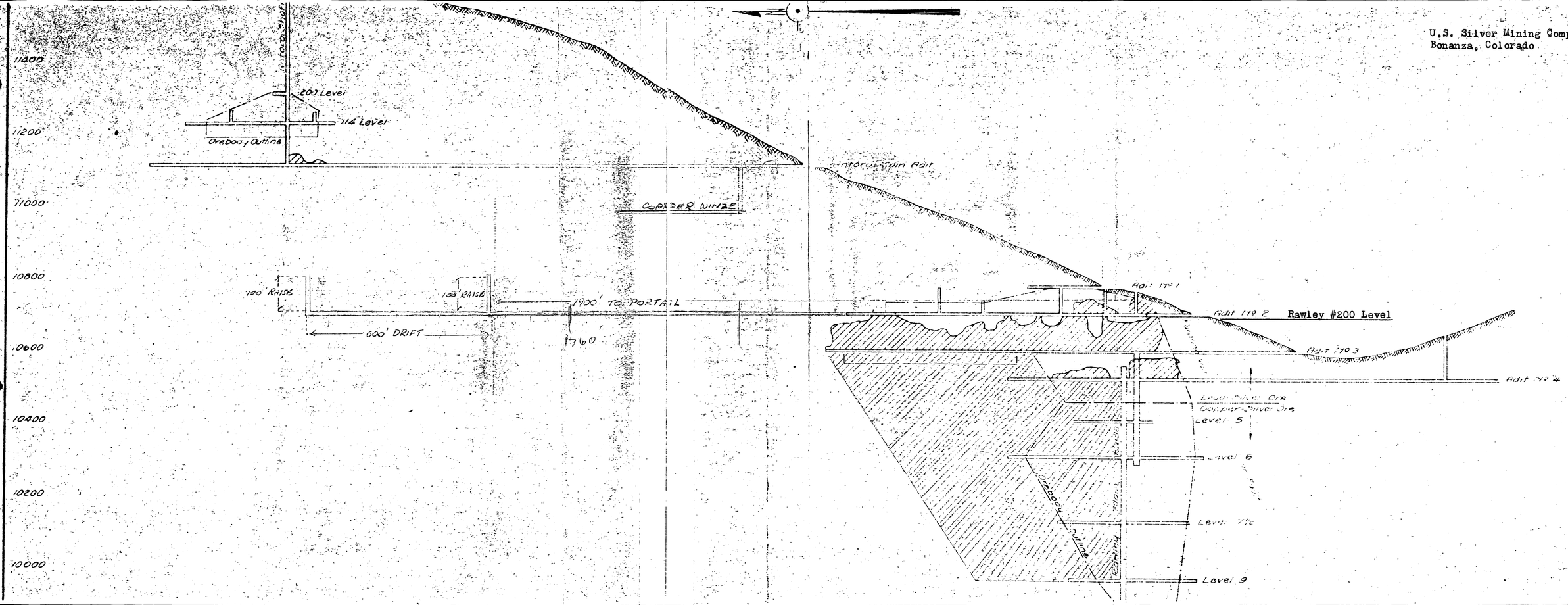
Domestic producers increased copper prices by 2¢ to 3¢ in January, to 44¢ to 45¢ per lb. Even though new production is slated to come on the market in a few months, it may do no more than bring down the free market price of 58¢ per lb. rather than undercut the recent price rise.

In aluminum, the mills have been posting small increases in mill products. And January's 1¢ increase to 27¢ in ingots is finally sticking. Price discounts had developed soon after the increase was posted.

Zinc was increased ½¢ per lb. to 14¢ in January. It could go up again, but producers may not want to hurt zinc's standing in its two big markets—steel (galvanizing) and autos (die casting).

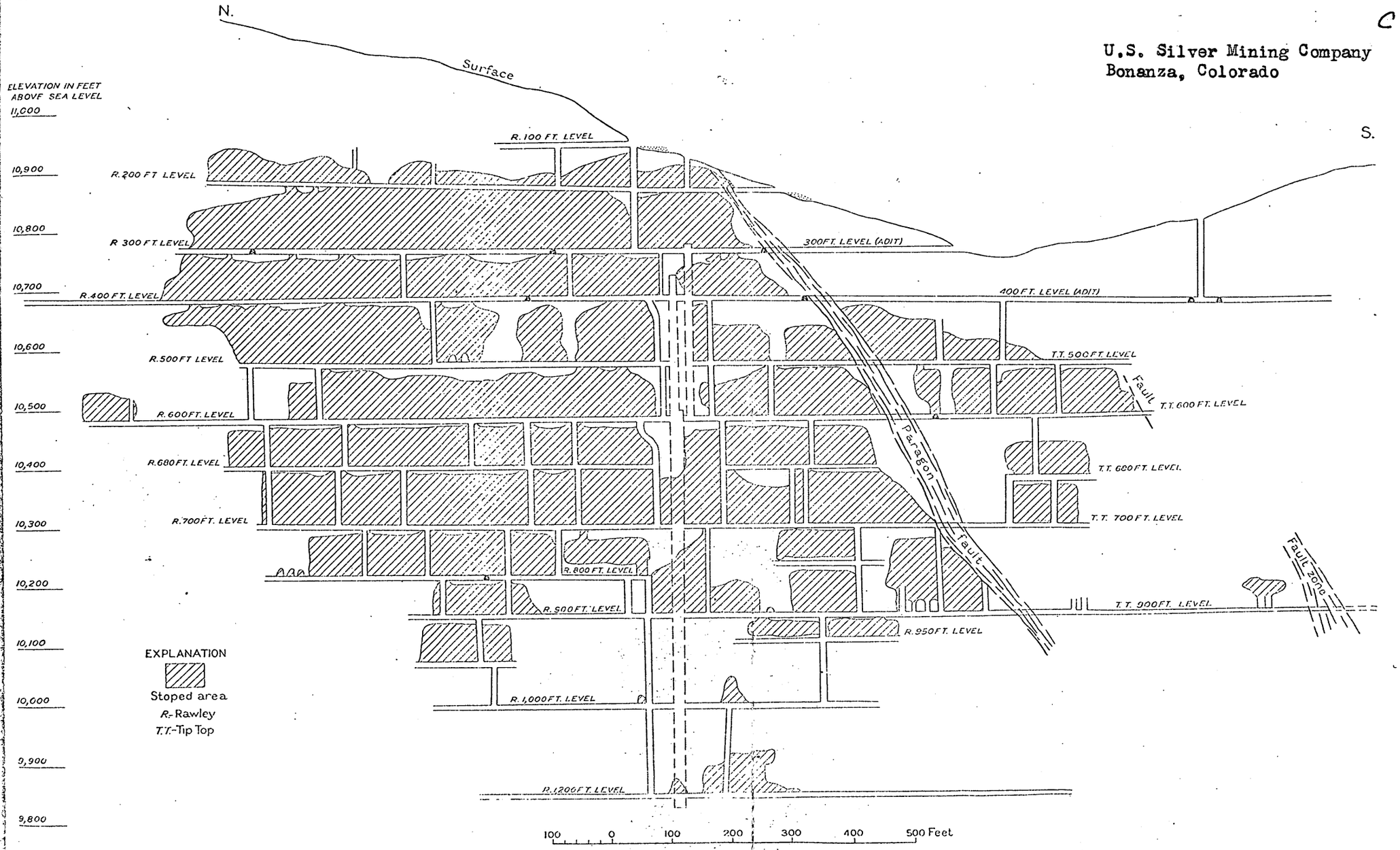
U.S. Silver Mining Company
Bonanza, Colorado

B



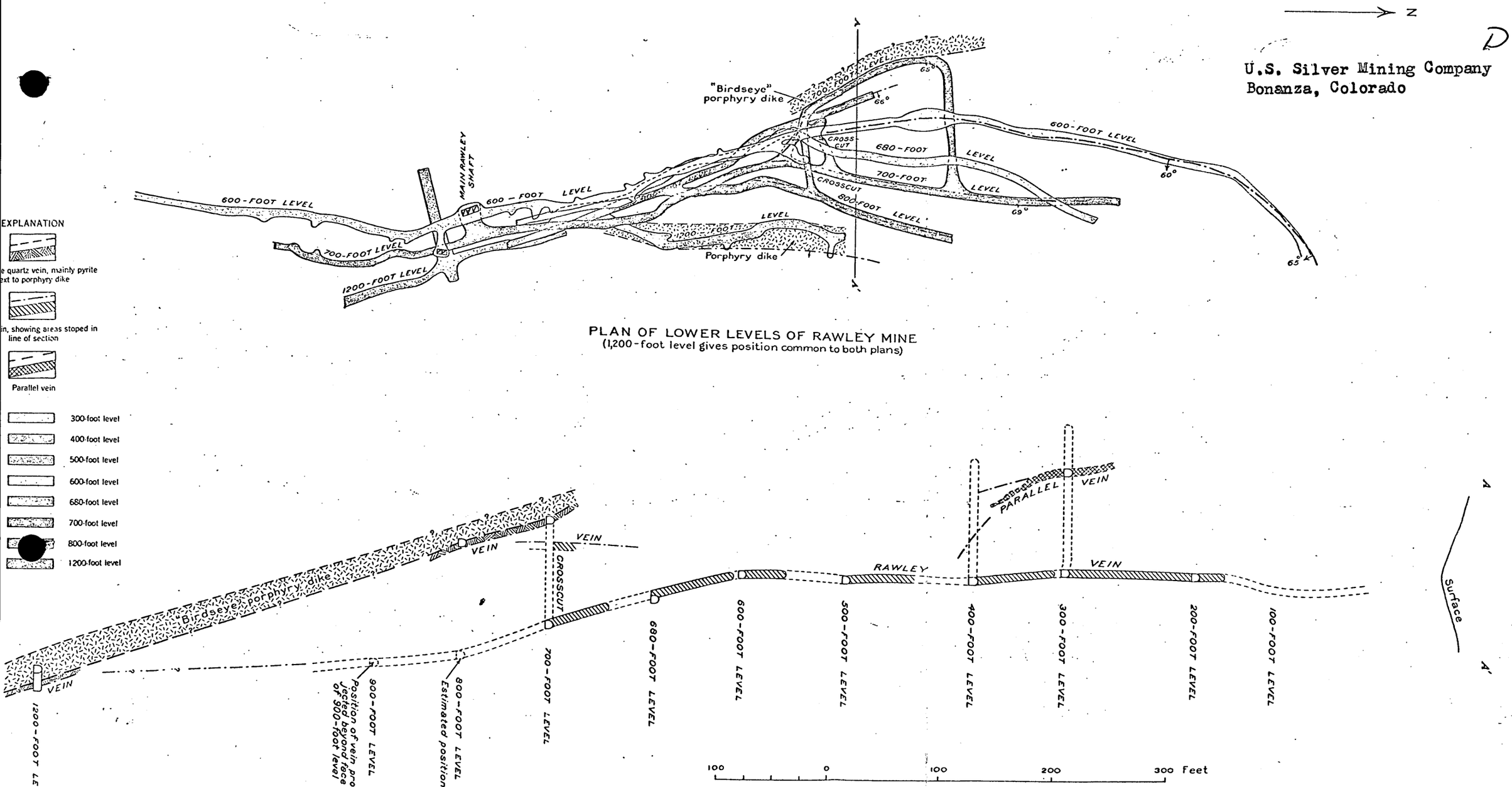
C

U.S. Silver Mining Company
Bonanza, Colorado



LONGITUDINAL SECTION OF RAWLEY MINE

U.S. Silver Mining Company
Bonanza, Colorado



PLAN OF LOWER LEVELS OF RAWLEY MINE
(1,200-foot level gives position common to both plans)

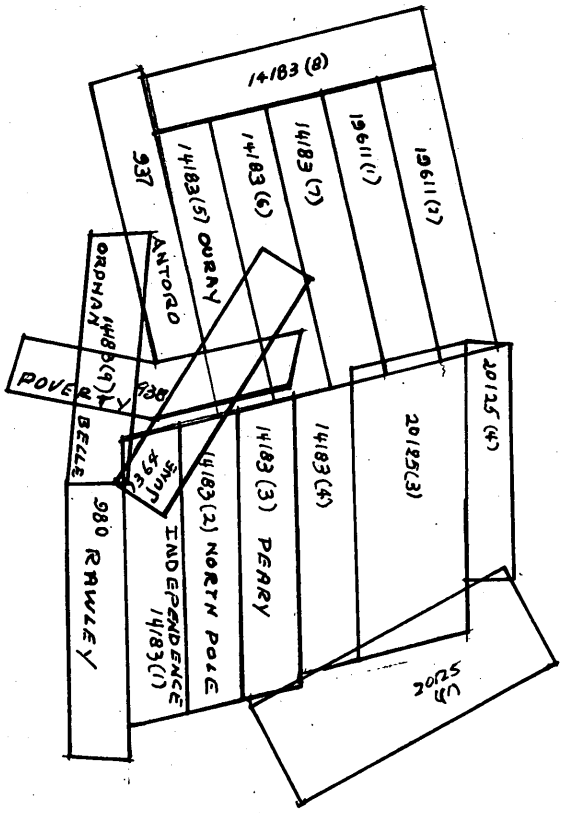
GEOLOGIC PLANS AND SECTION OF PART OF THE RAWLEY VEIN
1931

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

OFFICE OF MINERALS EXPLORA

DOCKET 6797

CLAIM	PAT. No.
June	1364
POVERTY	938
INDEPENDENCE	14183 (1)
OURAY	14183 (5)
PEARY	14183 (3)
NORTH POLE	14183 (2)
ORPHAN BELLE	14183 (9)
RAWLEY	980



Scale 1" = 12,000'
Traced from U.S.G.S. Prof. Paper 169 Pl. 1
10/12/70 by JWH

POVERTY, JUNE AND ANTORO CLAIMS
SAGUACHE COUNTY, COLORADO

Figure 1

AGREEMENT OF LEASE AND OPTION TO PURCHASE

THIS AGREEMENT OF LEASE AND OPTION TO PURCHASE, made and entered into as of the 1st day of June, 1968, by and between WEEMS WEAVER MINING CORPORATION, a Colorado corporation hereinafter known and referred to as the Lessor, and DWIGHT M. ROUNDS, GEORGE P. BATES, GEORGE S. ABRAMS and JOHN O. FLENDER d/b/a U.S. SILVER MINING COMPANY, a limited partnership, hereinafter known and referred to as the Lessee.

WITNESS THAT:

THE LESSOR, for and in consideration of the covenants and agreements hereinafter expressed, and the rents and royalties hereinafter stipulated to be paid by the LESSEE, hereby leases, demises and lets unto the said lessee the following described mining property and real estate, situate in Kerber Creek Mining District, in the County of Saguache and State of Colorado, to-wit:

Antoro	Survey No. 937
Poverty	Survey No. 938
June	Survey No. 1364
Artic	Survey No. 14183
Independence	Survey No. 14183
Ignacio	Survey No. 14183
Orphan Bell	Survey No. 14183
Ouray	Survey No. 14183
North Pole	Survey No. 14183
Peary	Survey No. 14183
Washakee	Survey No. 14183
Shavano	Survey No. 14183
Red Cloud	Survey No. 14183
Washington	Survey No. 19532
Lincoln	Survey No. 19532
Michigan	Survey No. 7837
Weems	Survey No. 20125
Weaver	Survey No. 20125
Ashley	Survey No. 20125
Sanders	Survey No. 20125
Paragon	Survey No. 733
Lillian	Survey No. 20443

22

and all of the ore and tailing dumps on the above described properties belonging to the Lessor.

pk:

3/24/81 arad Riggs, atty., 50 E 42nd ST, NY NY 10017 212 692-8767

ADDRESS OF OWNERS - WEEMS WEAVER CORP. (not listed)
C/O ARAD RIGGS
ALLIN, RIGGS + FIENCKE
50 EAST 42nd ST.
NEW YORK, N.Y. 10017

TO HAVE AND TO HOLD THE ABOVE DESCRIBED PREMISES, for the purpose of mining thereon under the terms of this Agreement of Lease and Option to Purchase for the term of 20 years from the date first hereinbefore written, and expiring at noon on the 1st day of June, 1988, unless sooner forfeited through violation of any covenant or promise hereinafter set forth.

(1) IN CONSIDERATION OF THE DEMISE AFORESAID, the Lessee hereby covenants and agrees with the Lessor as follows:

To enter into and upon said mining premises, and when and if working said mine, to work it in mine fashion, in a manner necessary to good and economical mining with due regard to the development and preservation of all of said property as a workable mine in the future. The Lessee may construct roads on the demised property at his expense, and may enter timber land and remove timber therefrom for mining purposes on the demised premises.

(2) To pay all mineral production taxes on the minerals mined from the premises when same are due, as is hereinafter provided.

(3) To well and sufficiently timber said mine at all points where proper in accordance with good mining and to repair old timbers wherever the same may be necessary by reason of the work done by the Lessee.

(4) To allow the Lessor and its agents, at reasonable times, to enter upon and into all parts of said mining property for the purpose of inspection, sampling, surveying, etc., and the Lessee will render unto the Lessor all reasonable assistance.

(5) To comply with all the rules and regulations of the Commissioner of Mines and the laws of the State of Colorado, as regards the operation of metalliferous mines now in force or which may hereafter be enacted.

(6) To occupy and hold all veins, spurs, feeders, crosslodes, parallel lodes or mineral deposits of every kind which may be discovered by the Lessee or any person or persons working under him in any manner, by working within or upon said premises, as the property of the Lessor and as part of the premises demised, and not to allow any person or persons, not in privity with the parties hereto, to take hold of or hold possession of the demised premises or any part thereof, under any pretense whatsoever. Lessee does not agree to protect the legal title to any of the demised premises in any litigation.

(7) All permanent buildings and other permanent improvements erected or constructed on the demised property shall, upon the termination of this Agreement for any cause whatever, be and become the property of the Lessor.

(8) No lien of any kind whatsoever will be created by the Lessee upon or against the premises herein demised.

(9) The Lessee will at all times keep and maintain, posted in conspicuous places near each and every entrance to the mine and on the principal building, a Notice in clear legible characters, in substance as follows:

N O T I C E

NOTICE IS HEREBY GIVEN to all parties performing labor or furnishing skill, materials, machinery or other fixtures or supplies of any kind, in, to or for the use of the Lessee, on any part or portion of this leased mining property, being a part on which this NOTICE is posted, that the undersigned, the owner of the property will not be responsible for any labor performed, or any skill, materials, machinery, fixtures, or supplies of any kind, furnished to or for the benefit of the Lessee, nor shall any interest of the owner, be subject to any lien for the same, and all persons are hereby notified that these premises and the contiguous claims have been and are now leased to Dwight M. Rounds, George P. Bates, George S. Abrams and John O. Flender d/b/a U. S. Silver Mining Company, a limited partnership, and their permitted assigns, to whom all persons must look for their compensation and pay.

DATED June 1, 1968

WEEMS-WEAVER MINING
CORPORATION

and any deliberate failure at any time so to keep and maintain posted such notices, or any of them, as herein required, shall at the option of the Lessor, constitute a forfeiture of this Agreement and Lease and the Lessee will thenceforth be a trespasser upon the demised property, and he may be proceeded against for unlawful detainer, or shall and will be considered without further rights in the demised property, all subject to the 45 day notice, Provision of Paragraph 20 hereafter set forth.

(10) The Lessee will not be considered the Agent of the Lessor in any manner connected with the use and operation of the demised property, except where such agency is expressly stated herein.

(11) To assume all responsibility for and to save the Lessor harmless for any accidents to the Lessee or any of his employees, agents, associations or visitors upon the property of the Lessor, or being conveyed to or from the demised premises by the Lessee, his Agents, servants, or employees, or any person or persons, other than the Lessor, its visitors, agents or persons acting for the Lessor. And if necessary for the protection of the Lessor, to forthwith post and at all times keep posted at the main workings upon the demised premises a conspicuous notice stating that the premises are leased to the Lessee and that the Lessor will not, under any circumstances, be liable for damages on account of accident, and the Lessor will not, under any circumstances, be liable to the Lessee, his Agents, licensees, employees, associates, visitors, or any person acting under the Lessee on account of any accident and, for the further protection of the Lessor, the Lessee agrees that he will comply in all respects with the Workmen's Compensation Laws of the State of Colorado now in force or which may hereafter be enacted for the protection of the employees working on the demised premises.

(12) The Lessee further agrees that he will not use, or permit to be used, any part of the demised premises for any purpose in violation of the laws of the United States of America, or the laws of the State of Colorado, and he will not do, or permit to be done by any person or persons under his direction or control, any act or thing that will endanger the buildings and cabins on the demised premises, nor such as would invalidate any insurance that may be or has been placed thereon. The Lessee agrees to this as one of the conditions precedent to the use of the demised premises.

(13) The Lessee, at his option may use either of the following two milling methods; he may keep all ores broken and mined separate and distinct from all ore and other products by him broken and mined in other property, and shall keep the same under distinct markings and in separate storage equipment, and shall ship the same in lots separate and distinct from all other ores, and the Lessee will at reasonable times permit the Lessor and its authorized Agents to examine and check the methods in use in so handling such ore at all places where the same may be; or he may mix ores from various sources and apply the following formula: The said Lessee will pay to the Lessor, upon all ore, concentrates and other products, mined, shipped or sold, from the demised premises, a royalty of 10% on Lessor's proportion of weight of crude ore is to the total net smelter returns.

e-g
Net Smelter Return $10,000
Total Crude Ore 200 Tons

Mine #1=	50 Tons of Crude or 1/4	$ 2,500.00	Royalty	$	250.00
Mine #2=	50 Tons of Crude or 1/4	2,500.00	Royalty		250.00
Mine #3=	100 Tons of Crude or 1/2	5,000.00	Royalty		500.00
Totals	200 Tons	$10,000.00			$1,000.00

An accurate monthly itemized statement of weight on crude ore, mined shall be sent to Arad Riggs, Esq., or any other person in Colorado or New York designated by the Lessor by notice in writing given to the Lessee, not later than the 10th of the month following the monthly report. Statement should show tonnage involved in any concentrate ore shipment.

~~All of the above royalties are to be paid on the net value per ton less the actual cost of truck or wagon haulage from the mine to the required shipping point.~~

(14) The Lessee will make the necessary arrangements for the ore or concentrate purchasing agency to send to Arad Riggs, Esq., whose address is 50 East 42nd Street, New York, N. Y. 10017, or any other person in Colorado or New York designated by the Lessor by notice in writing given to the Lessee, complete copies of all the settlement sheets, which settlement sheets will show the tonnage shipped, the grade and content of the ore or concentrates shipped, together with a draft in payment of all royalties due the Lessor on each shipment.

(15) The said Lessee will make a payment in cash on the execution of this Agreement as set forth in the "Option to Purchase" clause (25) hereof, and thereafter the Lessee, will pay a royalty of 10% on Lessor's proportionate weight of crude ore, or direct calculation of Lessor's ore milled, as set forth in alternative provisions above.

(16) The Lessor hereby consents to two assignments of this lease by the said Lessee, Dwight M. Rounds, George P. Bates, George S. Abrams and John O. Flender d/b/a U. S. Silver Mining Company, a limited partnership, upon the express condition, that the said Lessee, Dwight M. Rounds, George P. Bates, George S. Abrams and John O. Flender, d/b/a U. S. Silver Mining Company, a limited partnership, will at all times be and remain responsible and liable to

the Lessor for such assignee's complete and faithful compliance with all of the agreements, covenants, terms and conditions, of this Agreement of Lease and Option to Purchase, provided however, the said Lessee will notify Arad Riggs, Esq., in writing in advance of any intention to make such an assignment. No other or further assignments of this lease will be made without the written consent of the Lessor. The said Lessee will not mortgage or otherwise encumber this lease, and said Lessee will not mortgage or otherwise encumber the demised premises.

(17) All of the above royalties are to be paid on the net value per ton, less the actual cost of railroad freight, truck or wagon haulage, from the mine, if any, milling costs and the smelter or other ore-purchasing agency treatment charges, and after a two percent deduction is made to apply upon, and to create a reserve for the payment of, the production taxes assessed against the output of the demised properties.

(18) The Lessee will furnish the Lessor with paid receipts from the State Compensation Insurance Fund showing that Lessee's Workmen's Compensation Insurance is paid and in effect. The Lessee will protect the Lessor and save it harmless as to any litigation or damage, including attorney's fees and costs, of and controversy or suit relative to the disposal of any class of tailings or waste water resulting from the operation, by the Lessee, in either the mines or from the mill upon said premises, said Lessee agrees to keep all dams and tailing ponds in reasonable repair at all times during the term of this lease.

(19) Any machinery or equipment of a temporary nature installed upon the premises by the Lessee may be removed at any time before the termination of this lease.

Any other machinery or equipment installed by the Lessee upon the demised premises can, within ninety days after the termination of this lease, cancellation or forfeiture, be removed from the premises by the Lessee, provided, however, that the Lessee is not indebted to the Lessor under the terms of this lease. No permanent improvement, track, air pipe or buildings, will be removed at any time, by the Lessee or by any person or persons acting for or under the Lessee.

(20) The Lessee will deliver to the Lessor the premises and property with the appurtenances and all of the improvements in good order and condition. At any termination, or forfeiture of this lease, and subject to the 45 day provision set forth below, the Lessor, and the Lessor's Agents may thereupon enter into and upon said premises and dispossess all persons occupying the same, with or without process of law, or at the option of the Lessor, the said Lessee and all persons found in occupancy or found thereon, may be proceeded against as guilty of unlawful detainer, PROVIDED, HOWEVER, if this lease is forfeited by or upon election of the Lessor by reason of the failure of the Lessee to perform any of the covenants or conditions of this lease, the Lessor shall give the Lessee 45 days notice by registered mail, return receipt requested, and addressed to the Lessee at such address of such failure to perform, and upon the failure of the Lessee within 45 days, to remedy such failure, all of the Lessee's rights herein and to said property will thereupon cease and terminate and the Lessor's rights to take possession of all of said property shall immediately vest and may be immediately asserted and exercised.

(21) The said Lessee agrees that he will pay, promptly and when due, the general and real estate taxes assessed against, or levied upon, all of the properties herein demised. The Lessor agrees that all general and real estate taxes are current except for the 1968 real estate tax which is not payable until 1969. Lessor agrees to pay his proportionate share of the 1968 tax when the same is due.

(22) ~~Operations under~~ This lease may be terminated by the Lessee at any time during its term without any penalty or obligation, except damages caused by Lessee previous to such termination, by violation of any of the terms hereof.

(23) Each and every agreement, covenant, clause, term and condition of this lease will be binding upon the heirs, administrators, executors, successors and permitted assignees of the parties hereto.

(24) In the event any law shall be enacted in the State of Colorado making mining property subject to a lien or liability incurred by the Lessee, then and thereupon the Lessee will immediately make arrangements, satisfactory to the Lessor, to protect and indemnify the Lessor against any such lien or liability, and in the event of the failure of the Lessee to furnish such protection and indemnity, this lease can be cancelled by the Lessor upon notice as in case of forfeiture, at any time after such law becomes effective.

(25) OPTION TO PURCHASE: The said Lessee will pay to the Lessor $2,000. upon the execution of this agreement and $2,000. on June 1, 1969 and a like sum on the first day of June in each and every year thereafter during the term of this agreement.

The Lessee may deduct any royalties paid to Lessor during the 12 months, immediately preceding June 1 in any year, from said $2,000 annual minimum payment and pay only the balance of said $2,000, if any. If the 10% royalty payments in any given year exceeds $2,000 the amount in excess shall be credited to the payment due in the next subsequent year or years as the case may be. In consideration of the full and faithful performance of and compliance with each and all of the agreements, covenants, terms and conditions, of this demise by the said Lessee, the said Lessee shall have and is hereby given the exclusive right to purchase the property herein demised for the total purchase price of $40,000 provided said sum is paid to the Lessor, without interest, on or before noon of the 1st day of June, 1978.

It is agreed that all royalties paid pursuant to the terms of this lease and any minimum annual cash payments in excess of royalties paid pursuant to the terms of this option shall apply upon the purchase price if the Option to Purchase is exercised by the Lessee or its assigns. Upon payment in full of said purchase price of $40,000, the said Lessor will make, execute and deliver a good and sufficient Mining Deed conveying to the said Lessee, or its permitted assigns, all of the property herein demised. At the time of the delivery of said Mining Deed, the Lessor will deliver all maps, abstracts and other materials in its possession that will be of assistance to the said Lessee, or his permitted assigns, in the operations of the premises herein demised.

If the Option to Purchase is not exercised by June 1, 1978 by the payment of the purchase price of $40,000, then all annual payments of $2,000 or less which

shall be payments for continuing the Option to Purchase shall be forfeited to Lessor and the Lessee hereby renounces any right to reimbursement therefor and the Lessee will thereafter on June 1, 1978 pay the minimum sum of $2,000 to the Lessor on June 1, 1978 and continue to pay a like minimum sum on the first day of June in each and every year thereafter to and including June 1, 1987 with the continuing credits for Royalty payments hereunder against said annual minimum payments, without any obligation on the Lessor to permit the Lessee or its permitted assigns to purchase the leased premises.

IN WITNESS WHEREOF, the said Lessor has caused these presents to be signed by its proper officers and attested under its corporate seal, and Dwight M. Rounds, George P. Bates, George S. Abrams and John O. Flender, d/b/a U. S. Silver Mining Company, a limited partnership, have hereunto set their hands and seals, all in duplicate, the day and year first hereinabove written.

WEEMS-WEAVER MINING CORPORATION,
Lessor

(Seal)

By _____
President

Attest:

_____
Secretary

Dwight M. Rounds, George P. Bates, George S. Abrams and John O. Flender, d/b/a U. S. Silver Mining Company, a limited partnership.

By Dwight M. Rounds

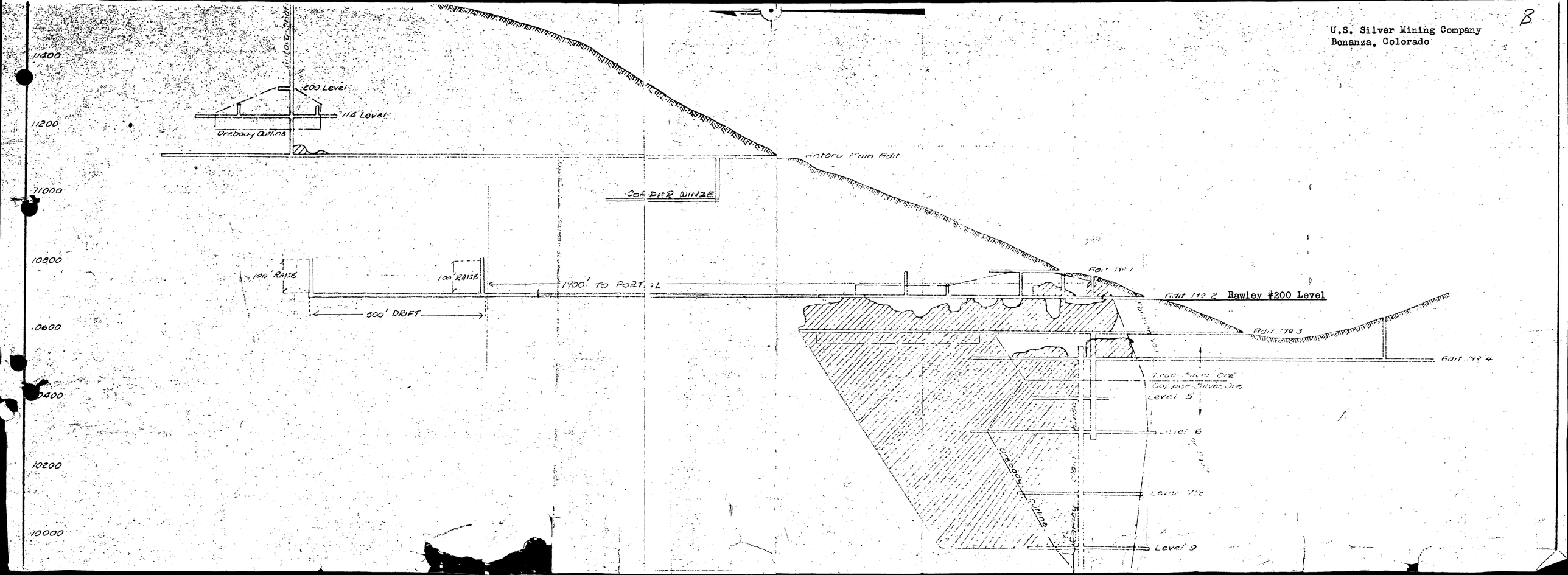
By _____

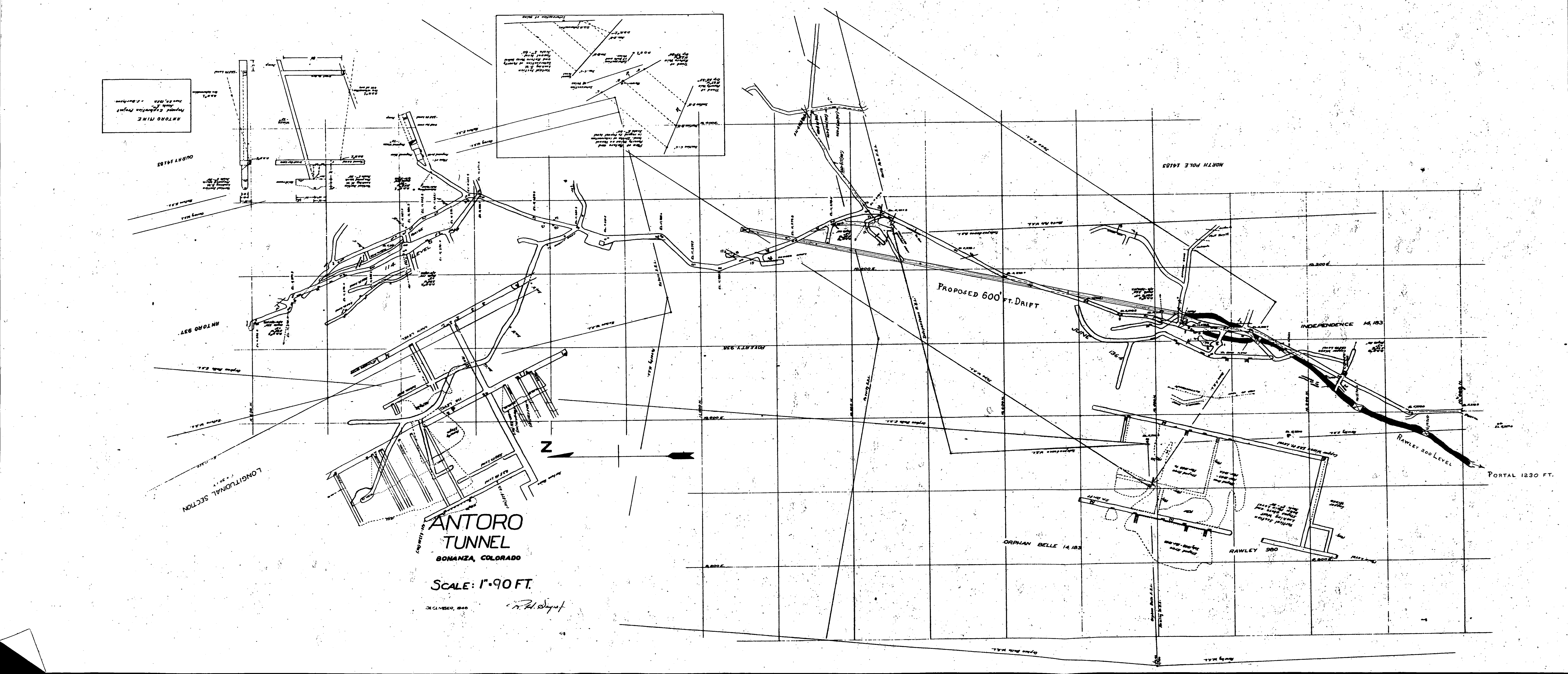
By George S. Abrams

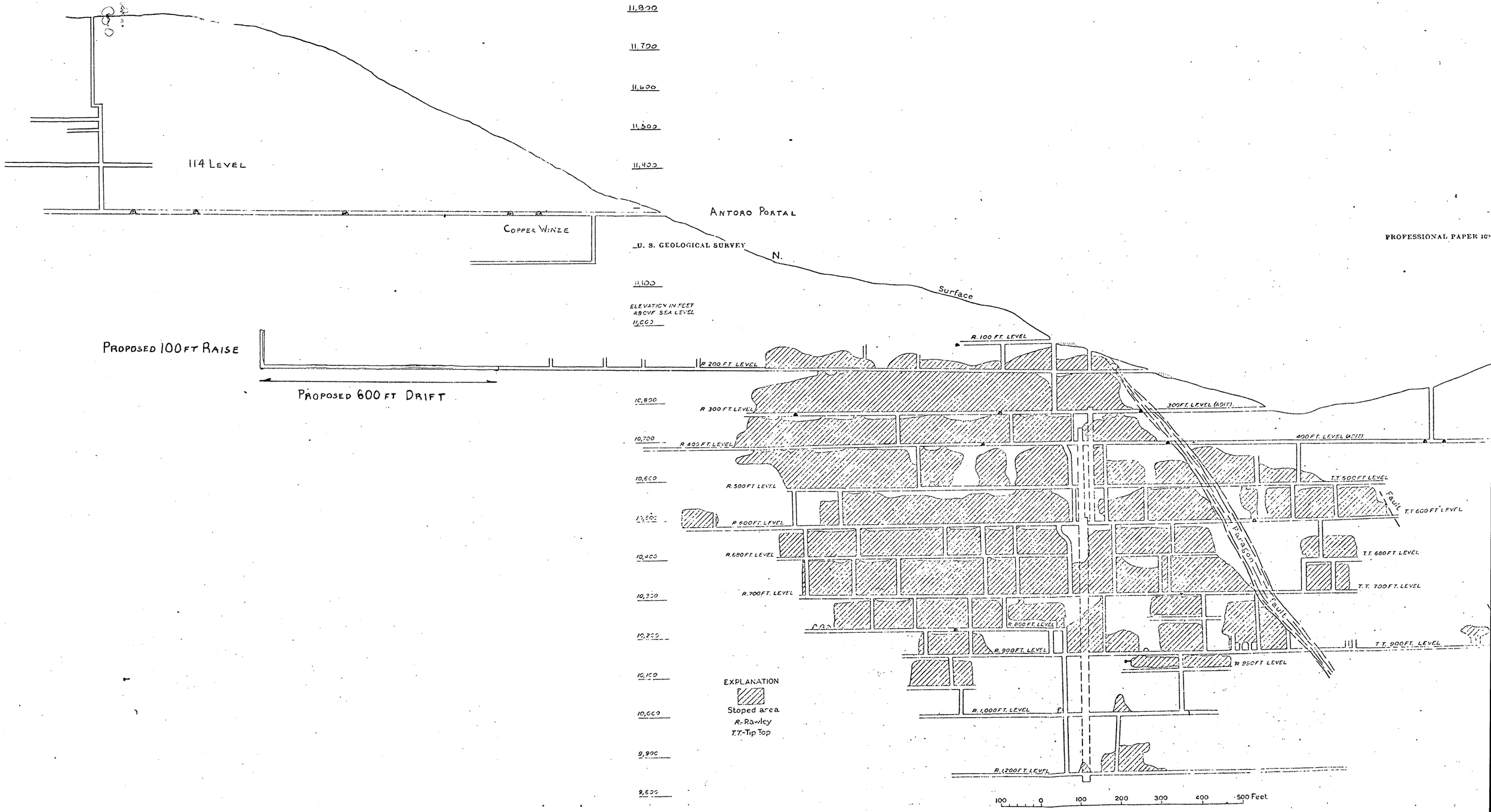
By _____

U.S. Silver Mining Company
Bonanza, Colorado

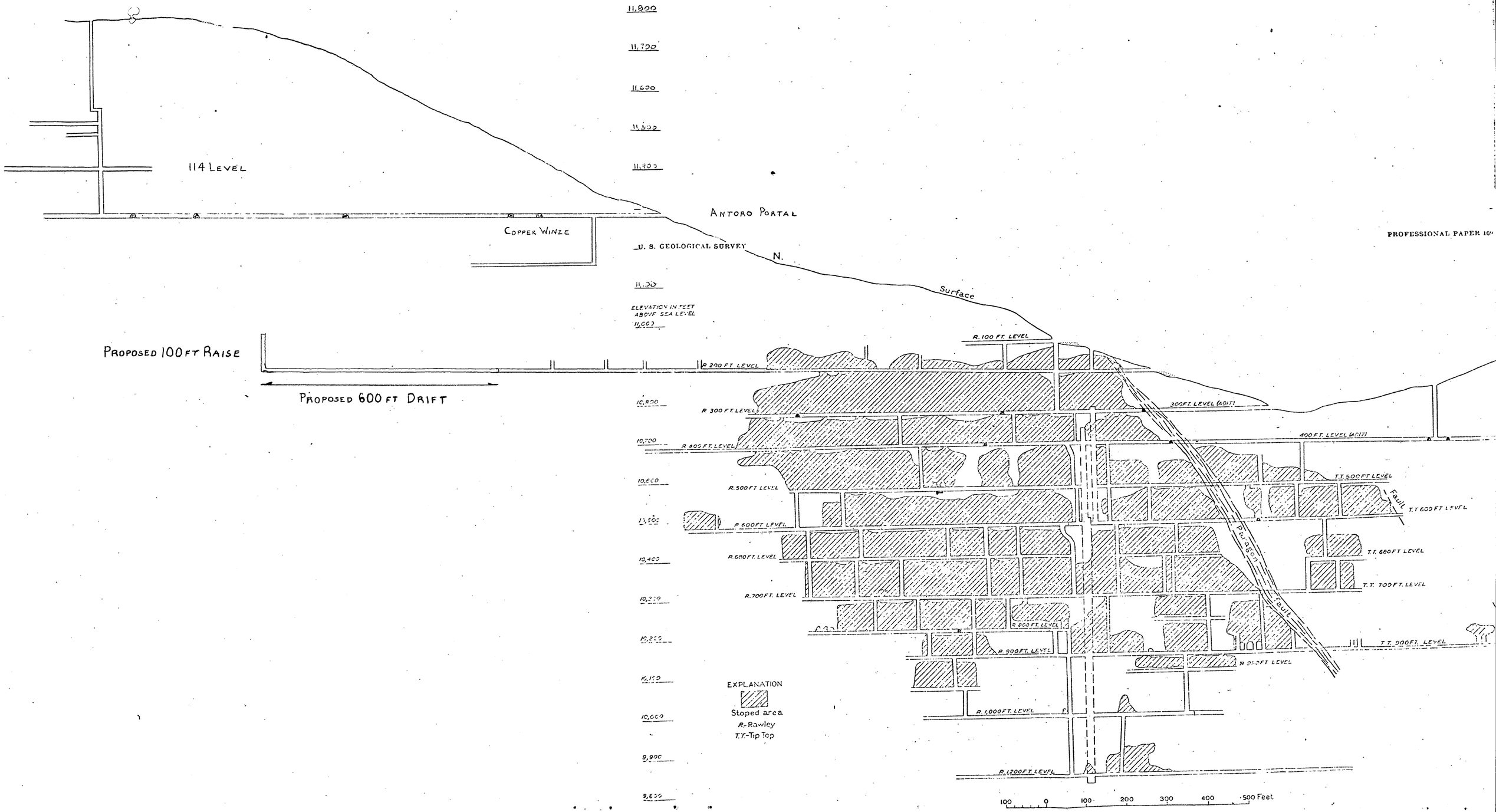
B



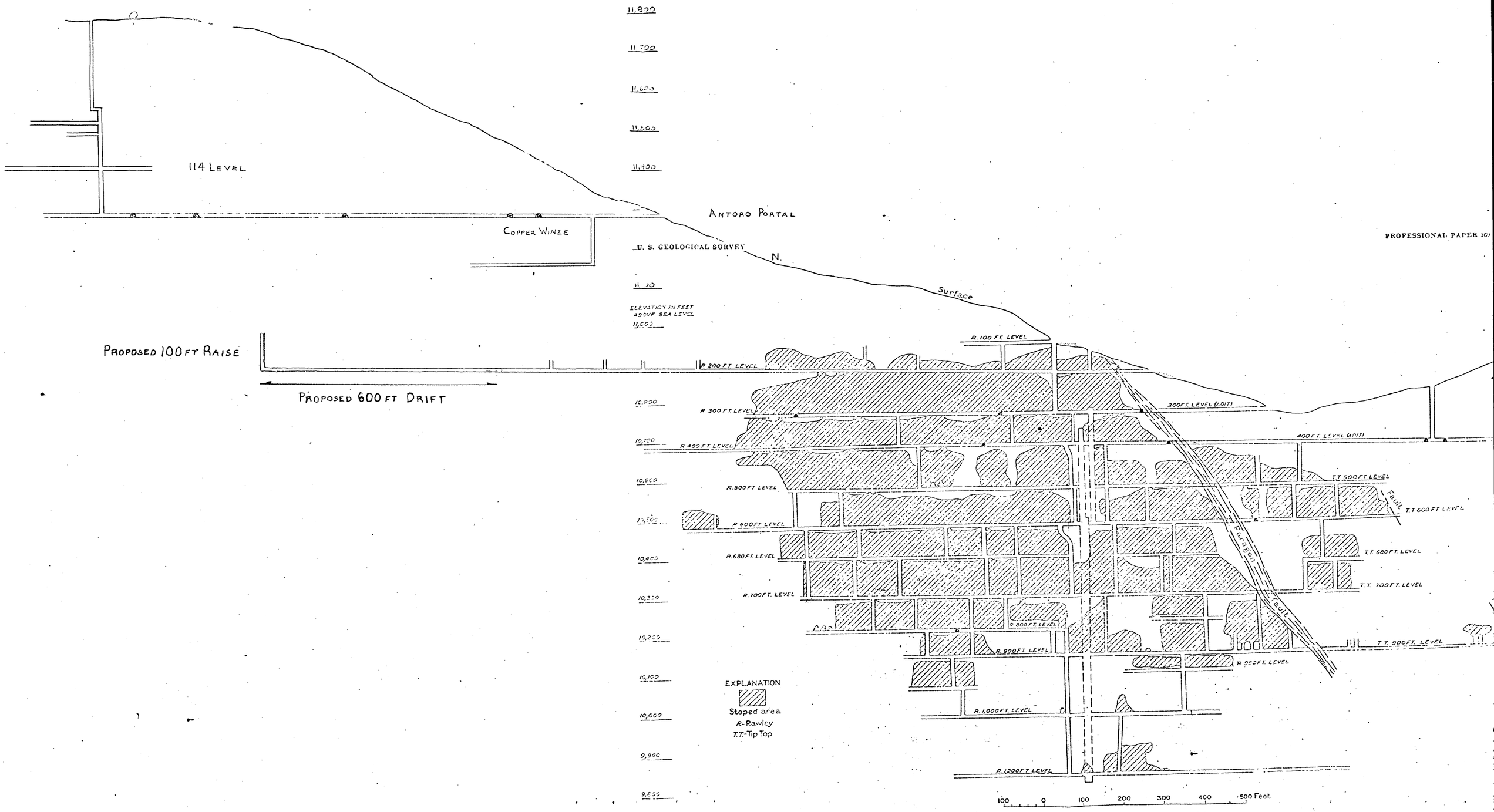

ANTORO TUNNEL
BONANZA, COLORADO
SCALE: 1"=90 FT.
DECEMBER, 1948
PROPOSED 600' FT. DRIFT
INDEPENDENCE 14,183
ORPHAN BELLE 14,183
RAWLEY 980
RAWLEY 200 LEVEL
PORTAL 1230 FT.
JUNE
114 LEVEL
MAIN LEVEL
LONGITUDINAL SECTION
ANTORO 937
QUARRY 14183
NORTH POLE 14183
POVERTY 938
ANTORO MINE
Proposed Exploration Project



LONGITUDINAL SECTION OF RAWLEY MINE



LONGITUDINAL SECTION OF RAWLEY MINE



LONGITUDINAL SECTION OF RAWLEY MINE

INSTRUCTIONS FOR USE

1. Void Previously Used Block
2. Identify Agency of Addressee
3. Write Clearly
4. Send Surplus Envelopes to Supply Room for Reissue

OME-6767
US Silver Mining Co
Maps

NAME (OR TITLE) OF ADDRESSEE, AGENCY, ORGANIZATIONAL UNIT, ADDRESS, AND ROOM		NAME (OR TITLE) OF ADDRESSEE, AGENCY, ORGANIZATIONAL UNIT, ADDRESS, AND ROOM	
	STOP		STOP
	STOP		STOP
	STOP		STOP
	STOP		STOP
	STOP		STOP
	STOP		STOP
	STOP		STOP
	STOP		STOP
	STOP		STOP

Use other side first

☆ U. S. GOVERNMENT PRINTING OFFICE: 1970-436-850-6

Standard Form No. 65
November 1961
General Services Administration
FPMR (41 CFR) 101-11.6

U.S. Government Messenger Envelope

NAME (OR TITLE) OF ADDRESSEE, AGENCY, ORGANIZATIONAL UNIT, ADDRESS, AND ROOM		NAME (OR TITLE) OF ADDRESSEE, AGENCY, ORGANIZATIONAL UNIT, ADDRESS, AND ROOM	
R.T.S.-F. McLEAN, VIRGINIA	STOP		STOP
~~Office of Minerals Exploration~~ ~~Room 4460~~ Interior	STOP		STOP
	STOP		STOP
	STOP		STOP
	STOP		STOP
	STOP		STOP
	STOP		STOP
	STOP		STOP
	STOP		STOP
	STOP		STOP
	STOP		STOP

Use other side

Use STOP only when messenger service between Government buildings in Washington, D.C., is required or wherever a STOP system is used. Your mail room has STOP information.

65-107

Office of Minerals Exploration
Building 53 Room 200

October 20, 1970

Memorandum

To: Chief, Office of Minerals Exploration

From: Field Officer, Region III

Subject: OME-6797 (Gold, Silver, Copper)
U. S. Silver Mining Company
June, Antoro, and Poverty Claims
Saguache County, Colorado

Enclosed is a report of examination on the subject property recommending that a contract be prepared and executed to complete exploration work, as recommended, along the Hawley Vein. Revised estimated total cost is $67,962.00. The Government's participation at 75 percent will be $50,971.50. Enclosed are extra copies of a claim map, Figure 1, and Figure 3 for inclusion in a possible contract.

Enclosed also is a copy of the Applicant's revised costs, one copy of a map of the Rawley 200 level and extra copies of Figure 4 for your use.

The applicant is in the process of obtaining two bids from assaying offices. They will be sent to you as soon as they arrive at this office.

Please send Mr. George P. Bates the necessary copies of Performance Bond No. 25, Revised, for his use, if you concur in my recommendations.

J. William Hasler

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

Enclosures
cc: OME-6797
OME chron
Mr. Hasler

UNITED STATES

DEPARTMENT OF THE INTERIOR

WALTER J. HICKEL, SECRETARY

GEOLOGICAL SURVEY

OFFICE OF MINERALS EXPLORATION

REPORT OF EXAMINATION

REGION III

OME-6797 (Gold, Silver, Copper)

U. S. SILVER MINING COMPANY

JUNE, ANTORO, AND POVERTY CLAIMS

SAGUACHE COUNTY, COLORADO

BY

J. WILLIAM HASLER

GEOLOGIST

OCTOBER 1970

Contents

Introduction and summary---------- 1

Location---------- 2

Property---------- 2

Geologic features---------- 3

General summary---------- 3

Drainage and haulage tunnel---------- 4

Rawley vein and Paragon fault---------- 6

Character of the vein---------- 10

Distribution of metals in and value of the vein----- 11

History and production---------- 13

Applicant's Proposed Exploration---------- 17

Evaluation and proposed exploration---------- 17

Recommended costs---------- 21

Drifting---------- 21

Raising---------- 22

Illustrations

Figure 1. Claim map showing Poverty, June and Antoro claims, Saguache County, Colorado.

Figure 2. Plan of the Parallel and Rawley Veins, 200 Level, Rawley Mine, Bonanza, Colorado by Andrew J. Lang, and J. H. Garrett.

Figure 3. Antoro Tunnel map showing Rawley Tunnel and proposed 600-foot drift off 200 level (5 copies).

Figure 4. Longitudinal section of Rawley Mine showing proposed drifting and 100-foot raise (5 copies).

OME-6797 (Gold, Silver and Copper)

U. S. Silver Mining Company

June, Antoro, and Poverty Claims

Saguache County, Colorado

Introduction and Summary

Mr. George P. Bates, Managing Partner of 21 University Road, Canton, Massachusetts, 02021, applied to the Office of Minerals Exploration on May 16, 1969 for financial assistance to explore for gold, silver, and copper on the June, Antoro, and Poverty Claims, Bonanza Mining District, Saguache County, Colorado.

The application was referred to the field on February 18, 1970 and a field examination was made on July 28 and 29, 1970 by the Field Officer, Region III in company with Mr. George P. Bates and Mr. Reid Johnson. The estimated cost of the project is $79,734.00 of which the Government would furnish 62-1/2% or $53,160.00.

A prior application was made on the Antoro Claim, DMEA Docket No. 2604 (Lead and Zinc), and the applicant's names at the time were S. E. and W. E. Burleson. The examination was made by M. H. Salsbury, Mining Engineer, Bureau of Mines, and E. N. Harshman, Geologist, U. S. Geological Survey who recommended that the exploration program, with slight changes suggested in the engineering report, be approved and that a loan of $27,400.00 (Government participation 50%) be granted. It was further recommended that the contract be written to include royalties on ore produced from the Northeast vein as well

as from the Antoro and Poverty veins, however, the contract Idm-E-492 was never executed, consequently no exploration work on the Antoro vein was completed.

Location

The June, Poverty, Antoro and Independence claims leased by the applicant are located in Section 18, T. 47 N., R. 8 E., N. M. P. M., in the Bonanza Mining District, Saguache County, Colorado. The nearest railroad heading is at Salida, Colorado some 45 miles distant from the mine. The property may be reached from Denver, Colorado by travelling southwest on U. S. Highway 285, to Poncha Springs, via Fairplay and Buena Vista, Colorado, a distance of some 137 miles, thence south over Poncha Pass to Villa Grove a distance of 22 miles, then turn right or westerly at Villa Grove to Bonanza, a distance of of some 15 miles from the U. S. Highway 285 turnoff.

Property

The applicant, U. S. Silver Mining Company, reserves the right to work the following patented mining claims under the terms of an Agreement to Lease and Option to Purchase from the Wiems Weaver Mining Corporation. (Agreement with application). There are no liens, mortgages or other encumbrances on the land. Figure 1.

June Claims -- Survey #1364 -- Sec. 18, T. N. 47, R. E. 8

Poverty Claim - Survey #938 - Sec. 18, T. N. 47, R. E. 8

Antoro Claim - Survey #937 - Sec. 18, T. N. 47, R. E. 8

Independence Claim - Survey #14183 (1) - Sec. 18, T. N. 47, R. E. 8

The U. S. Silver Mining Company has the above listed rights to the

above properties and all adjacent lands to the above properties and all adjacent lands to the above through the attached "Agreement". (See application). The adjacent properties are:

Ouray Claim #14183 (5)

Peary Claim - #14183 (3)

North Pole Claim #14183 (2)

Rawley Claim #980

Orphan Bell Claim #14183 (9)

All rights to the Rawley Claim are granted in a similar "Agreement" as the one attached. A copy of this agreement is available upon request.

Lien and Subordination Agreements will not be executed however, the U. S. Silver Mining Company will, in the event a contract is executed, obtain a Performance Bond in lieu of Lien and Subordination Agreements. The applicant has been assured by his insurance agent in Salida, Colorado that the "Employer's Group" will issue a performance bond. In the event of a contract the applicant will furnish his share of the exploration costs from personal savings of the partners of the company.

Geologic Features[1/]

General Summary

"The rocks in the vicinity of the Rawley mine are the Rawley andesite and the Bonanza latite. These are much broken by north-south faults that drop the formations on the east and also by a series of northeasterly and northwesterly faults that drop the formations

successively southward. The Paragon fault is the largest known of the east-west system. Practically all the faults are of premineral age, but the north-south faults are possibly older than the Paragon fault. The Rawley vein occupies a north-south fissure of comparatively small displacement and is largely the resulte of a filling of open spaces with minor replacement. The main gangue mineral is quartz, but barite, calcite, rhodochrosite, manganiferous calcite, and siderite are found in small quantities. The main ore minerals are pyrite, sphalerite, galena, chalcopyrite, bornite, enargite, tennantite, and stromeyerite. The vein shows a change in metal content from a lead-silver-copper ore in the upper levels to predominating copper-silver ore with a minor amount of lead in depth. A less pronounced change in the metal content is indicated from the south toward the north in the vein on several of the levels. These geologic features are discussed in more detail in the following paragraphs."

Drainage and Haulage Tunnel

"A geologic section from the portal of the drainage tunnel to the Rawley vein is shown in Plate 25. The geologic structure is very complex, and consequently it is not possible to make accurate correlations between the surface and underground data along the line of the tunnel. At the portal in Squirrel Gulch the tunnel starts in andesite, although the debris from the fault block of Bonanza latite that forms a high ledge above the tunnel portal completely obscures the outcrop of the underlying andesite near the portal. The Bonanza latite is encountered 70 feet from the portal and continues about 140 feet beyond this point.

Two much smaller fault blocks of latite occur at about 400 and 900 feet from the portal. The remainder of the tunnel lies entirely in intricately faulted andesite. About three-quarters of its length is overlain at the surface by tilted and faulted latite. The large block of latite lying above the portal of the tunnel strikes about north and dips 45° - 50° W. The latite is repeated many times at the surface along the line of the tunnel by faults which throw successive blocks downward toward the east. A great many fault fissures are encountered in the tunnel and the andesite is much fractured between the larger faults. Very little of the andesite is free from alteration, and the rock is either silicified, chloritized, or altered to sericite and impregnated with carbonates and pyrite. Despite this extreme alteration of the rocks for nearly the whole length of tunnel, a comparatively small number of economically valuable veins are found. The Clark vein, which is described below, is the largest of these. This vein occupies a fault zone of complex structure, most of the ore so far developed lying at the intersection of north=south and east-west faults."

"About halfway from the portal of the tunnel to the Clark vein there is another small mineralized fissure of northward trend and easterly dip, but it has not been exposed."

"About two-thirds of the way from the portal to the Rawley vein a strong fault zone is intersected by the tunnel. At the time of driving the tunnel a large volume of water issued from this fault, considerably delaying the work. From the position of the Paragon fault at the surface and its approximate dip, it appears reasonable to assume that this fault is the continuation of the Paragon fault."

Evidence of strong silicification and fissuring of the andesite is noticeable in the tunnel beyond the fault, and there are a few small veins, but the immediate vicinity of the fault is largely concealed by timber."

"Lack of open fissures seems to have been the main reason for the character of the mineralization revealed in the tunnel. As mentioned elsewhere in this report the kind of faulting which occurred in areas of steeply tilted formations seems to have been unfavorable to the production of open fissures."

Rawley Vein and Paragon Fault

"General features.--The Rawley vein lies about 6,100 feet from the portal of the tunnel and occupies a fault fissure, probably of slight displacement. The country rock of the vein, except for a porphyry dike on the lower levels, consists of the lava flows of the Rawley andesite. These are too much altered near the vein to permit the recognition of individual flows and the measurement of the exact displacement along the fissure. On the third level at the north end of the drift both hanging wall and footwall consist of a conspicuously porphyritic andesite. This particular rock appears to correspond with one of the flows in the upper part of the Rawley andesite and is believed to have a thickness of about 100 feet, providing the flow has not been steeply tilted. Some small displacement has also occurred along the Parallel vein fissure on the third level, as the hanging wall there is a porphyritic andesite and the footwall a volcanic breccia. In all probability the displacement on the Rawley fissure does not exceed a few tens of feet in magnitude."

"The main ore shoot of the Rawley vein is bounded south of the main shaft by the east-west Paragon fault, which cuts the Rawley vein nearly at right angles. (See pl. 24). If the southerly dip of 55° to 60° continues below the 900-foot level its intersection with the Rawley vein would lie about 750 to 800 feet south of the shaft on the haulage-tunnel level."

"The relative age of the Rawley fissure and the Paragon fault and the relations between them are problems over which opinions have differed. Simonds and Burns say regarding the Paragon fault:

"Across the country from east to west, cutting the Rawley vein nearly at right angles, is a zone of faulting some 50 feet wide, dipping at an angle of about 55° S."

"This faulting was subsequent to the vein formation, and the zone incloses, at various places, bunches of ore detached from the veins which it intersected. The lateral throw of the fault was slight, if any, but there is reason to believe that the vertical throw must have been considerable. However, no definite data existed at the time, and only meager data have since been developed to indicate the amount of this vertical displacement. There being but little lateral throw, the alinement of vertical or nearly vertical veins was only slightly disturbed by this faulted zone."

"Patton concurred in this opinion."

"From the character of the Paragon fault in the Rawley mine and at several other places along Rawley Gulch where it has been disclosed by mining operations the writer is of the opinion that

the major part of the displacement on this fault is of premineral age, although some relatively late postmineral movement has undoubtedly occurred. The main reasons for this belief are as follows:

"The Paragon fault is itself mineralized, not only within the Rawley mine but also in several openings on it along Rawley Gulch east of the outcrop of the Rawley vein. Except locally the mineralization has not been greatly or at all disturbed by post-mineral movement. The gouge along the Paragon fault is also strongly sericitized and pyritized, showing that it was penetrated by mineralizing solutions. The results of mineralization within the fault and of alteration adjoining it along the Rawley Gulch east of the Rawley vein occurred prior to the formation of the Paragon fault this would indicate two periods of similar mineralization in the veins of Rawley Gulch. There is good reason, however, to believe that this did not happen, as nearly all the veins show a mineral paragenesis that is very similar, although the proportions of different minerals may differ from vein to vein."

2. "Where the relation between the Rawley vein and the Paragon fault can be seen only a slight disturbance of the Rawley vein material is evident. The displacement of the Rawley fissure in small steps as the Paragon fault is approached is quite evident, yet as the Rawley fissure narrows the mineralization follows the turns and offsets in the fissure until close to the main fault zone. Where the drift has penetrated farther into the fault the fault itself is mineralized. The writer is informed by Mr. A. E. Ring that on

the 500 and 600 foot levels, where ore in the Paragon fault was stoped, this ore was as regularly in place on the dip of the fault as in any vein. Slight postmineral movement on fault fissures is almost invariably shown in mineralized regions, and the small amount of crushed ore found at other places within the Paragon fault can not in itself be considered evidence that it was dragged in from intersecting veins. The greatest disturbance of vein material seen by the writer indicated, under a most liberal interpretation of dragging, a possible movement of about 2 feet on one of the parallel fissures shown in Figure 23. Slight postmineral movement has undoubtedly occurred, and inasmuch as ore deposited within the Paragon fault is crushed at places, some cursing of the Rawley ore close against the fault might have occurred at the same time."

3. "The distribution of minerals in the Rawley vein appears to be in part related in position to the Paragon fault."

"Just what proportion of the movement on the Paragon fault occurred before the formation of the Rawley ore and what proportion after can not be definitely proved. But it has been pointed out in the section on the relation of mineralization and faulting (pp. 93-98) that in general the greater part of the faulting movement throughout the district is of premineral age. So far as direct evidence is available there is no indication that the Paragon fault is an exception to this general relation."

"Character of the vein.-- The Rawley vein is fairly well defined between its walls and ranges in width from a narrow barren fissure where pinched to a maximum of about 12 feet. Its average width in the lower part of the mine is 3-1/2 to 4-1/2 feet. It can not be profitably stoped at most places unless the width exceeds 3 feet. Along some portions of the vein a sericitized gouge a foot or less in thickness lies against the hanging wall, and less commonly against the footwall. Although the vein material is on the whole of fairly uniform character, with no delicate banding, the vein at some places is composed of several bands of somewhat different composition. Bodies of galena may run along either or both walls and here and there may be seen to cut diagonally across the more siliceous part of the vein."

"Although replacement of portions of the wall rock has been very pronounced, it was mainly of a siliceous or pyritic nature. The greater part of the commercial ore evidently resulted from filling between the fissure walls. Some replacement of breccia material probably occurred within the fissure. The ore is not notably porous but rather massive, although very small vugs lined with quartz and sulphides are fairly common. In the vein on the 600-foot level south of the Paragon fault rhodochrosite crystals are found lining vugs, with a late coating of pyrite."

"The gangue minerals are quartz, barite, calcite, rhodochrosite, manganiferous calcite, or rarely a little siderite. Quartz is by far the predominating gangue. The sulphides are pyrite, sphalerite, galena, chalcopyrite, bornite, enargite, tennantite, chalcocite, covellite, and stromeyerite. Chalcocite, covellite and enargite occur

only in small amounts are usually recognized only under the microscope on polished faces. It has been considered that the silver is largely or entirely in tennantite, but microscopic examination shows stromeyerite to be widely distributed in the vein in small amounts. It is associated with bornite, tennantite, and galena. Its presence probably accounts for the high silver content of some of the bornite-bearing ore. At the south end of the ore shoot stromeyerite continues to the twelfth level. It is undoubtedly a primary mineral."

"No pronounced oxidation or enrichment of the vein is evident except within 50 feet or less of the surface. Above the first and second levels near the surface some native copper occurs in small seams in the ore or in the adjacent wall rock."

"Distribution of metals in and value of the vein . . . The most noteworthy features if the gradual but pronounced increase in copper content and decrease in lead content with increase in depth."

"The horizontal change in the ratio of lead and copper toward the Paragon fault seems to be definitely shown by the data available, though it is not nearly as pronounced as the vertical change. The enrichment of the ore in lead noticeable at places near the Paragon fault is believed to be due to openings formed during the later states of ore formation, caused presumably by contemporary movements on the Paragon fault."

"The correspondence between the silver and copper content of the ore from the Rawley vein is very close in nearly all parts

of the mine. The average silver content of the ore from the four upper levels mined prior to 1923 was about 5.6 ounces to the ton, or about 5 ounces of silver to 1 percent of copper. The ratio of silver to copper in 11,820 tons of ore from the four upper levels mined by lessees in 1926 and 1927 is practically the same, 4.9 ounces of silver to 1 per cent of copper. There appears to be no definite relation between the silver and lead content. The minerals that probably carry most of the silver are tennantite and stromeyerite. In the Rawley ore stromeyerite is nearly always associated with bornite or tennantite and less commonly with other minerals. The bornite-bearing ore from the 700-foot level averaged about 10 ounces of silver to the ton, which is considerably higher than the average of mine-run ore from the upper levels."

"The total ore mined and milled in the period from 1926 to 1930 had an average assay value of close to 8 ounces of silver to the ton, 3.2 per cent of lead, and 2 per cent of copper. Data as to the zinc content of the ore at various places in the mine are not as complete as those for lead and copper, but on the whole zinc is rather persistent. The highest content of zinc in the vein is said to have been encountered on the fourth level near the north end of the ore shoot, where it was about 4 to 5 per cent. The zinc content of the vein as a whole lies between 2 and 3 per cent. The average gold content is close to 0.01 ounce to the ton. The table on page 113 covering the mine production approximately by levels during 1927 shows the variation in value of the vein and also brings

out strikingly the decrease in lead content of the ore with increasing depth of operations."

"The close association of silver and copper is shown by Figure 24, based on the early production of the mine, prior to 1923, and on the monthly production of company mine ore during 1927. This chart shows that the percentage of lead in the company ore from the lower levels during November and December, 1927, was exceptionally low. The average for the lower levels is probably nearer 1 per cent, if several months' run in considered. The silver, however, shows no relation whatever to this fluctuation in the lead content but follows the copper curve very closely."

1/ Burbank, W. S., 1932, Geology and Ore Deposits of the Bonanza District of Colorado, U. S. Geol. Survey Prof. Paper 169 pp. 107, 108, 109, 110 and 111.

History and Production

2/"The lead and silver deposits of the district attracted attention early in the history of the San Juan country, and the town of Bonanza attained considerable importance by 1880. Most of the mining operations were relatively small, however, until the driving of the 6,200-foot Rawley drainage tunnel from Squirrel Gulch in 1911 and 1912 to tap the silver-lead-copper-zinc ore shoot of the Rawley vein at depth. The greater part of the ore in the Rawley shoot above the tunnel level was mined and milled between 1923 and 1930, and the mill was then dismantled. Some lateral exploration was undertaken on the veins across the Paragon fault that bounded the ore shoot on the south, but bodies of ore large enough to be of commercial interest at that time were not found. Besides some known

and inferred ore remaining within reach of the Rawley tunnel developments, many other veins in the district contain small reserves but none large enough to warrant the construction of a large-scale plant for economical treatment of low-grade ores."

"The total production of the district to 1946 has been about $9,000,000, most of which represents the output of the Rawley mine. About 3,000 tons of zinc metal were actually recovered from ores mined in the district; but the equivalent of approximately 5,000 tons of zinc mined with the ore from the Rawley vein was not recovered, and many smaller operations failed to mine or recover zinc. Most of the zinc mined and recovered in the district came from the Cocomongo and Bonanza properties in the Bonanza latite on the west edge of the mineralized area. This ore also contains lead, silver and copper. Contributions to the gold and silver output of the district were made by the Empress Josephine and St. Louis mines, partly telluride-bearing ores. The Eagle mine in the southern part of the district yielded ore valuable chiefly for the silver content. Manganese ore was also mined from the Pershing mine in the extreme southern part of the district. Lately the output of all metals from the district has ranged between $150,000 and $200,000 annually."

2/ W. S. Burbank, Mineral Resources of Colorado, p. 445, 1947.

3/"The Antoro mine was worked as early as 1882 but the first reported production was in 1891 and consisted of lead-silver ore from shallow workings. The reported production from 1881 to 1900 was 1,000 tons of lead-silver-zinc ore. The property was operated intermittently from 1908 to 1927 with a production of about 1,400 tons of lead-zinc ore. The last operator of this period was the American Smelting and Refining Company which did considerable exploration on the Antoro vein. After 1927 or 1928, the mine was idle until 1947, when the present operations started."

"Since 1927, the mine has produced approximately 12,000 tons of lead-zinc ore with an average assay of 0.02 ounces gold and 5.75 ounces silver per ton, 9.79 percent lead, 11.82 percent zinc, and about 1.25 percent copper. The copper is not paid for at the mill. These figures include production through May 1952 and are verified by settlement sheets. The gross value of the total production for the period 1927 - 1952 is $408,219.85. The total metal content was 2,349,600 pounds of lead and 2,836,800 pounds of zinc.

The gross value of this ore per ton was $34.12 and the net value to the shipper, after treatment, freight, royalty and production and tax deductions were made, was $21.28 per ton.

All of this production came from the Northeast and Antoro veins, the largest part coming from the Northeast vein. In the period 1947 - 50, 1,700 tons were mined from the Antoro vein. Since January 1951, ores from the two veins have not been segregated and the

applicant has no records to indicate what proportion came from either vein."

The applicant reports that some 6,796 tons of ore was mined from the Copper Winze in the Antoro Mine. The settlement sheets from the shipments show them to have an average value of 0.0337 oz. Au, 5.707 oz. Ag, 10.29% Pb, and 1.1615% Cu per ton. At current metal prices (10/8/70), the value of this ore would gross approximately $55.00 per ton. Production from the main level of the Antoro Mine between 1957 to 1959 as reported by the applicant totalled some 3,000 tons. This ore was mined by the National Minerals Corporation but was a blend consisting of ores from other mines in the Bonanza district.

Other claims by the applicant state that production from the Rawley 200 level totalled some 16- 20,000 tons, since the mine first operated. More recent production by the Rawley Metals, Inc. from the Rawley 200-level between August 1964 and May 1966 totalled some 6,000 tons of ore, some of which was direct shipping ore, and some was concentrated on the property. The ore shipped direct to the U. S. Smelting and Refining Company Smelter at Salt Lake City, Utah averaged 0.017 oz. Au, 7.16 oz. Ag, 6.66% Pb and 0.786% Cu per ton. At current metal prices (10/8/70) the ore would gross approximately $41.76 per ton.

3/ Salsbury, M. H., and Harshman, E. N., DMEA-2604, Report of Examination on S. E. and W. E. Burleson, Antoro Mine, Saguache County, Colorado, August 8, 1952.

The applicant, U. S. Silver Mining Company, mined some 1,116 tons of ore from three stopes off the Rawley 200 level, during 1969 that averaged 6.5 oz. Ag, 8.3% Pb, 4.2% Zn and 0.6% Cu. At current metal prices (9/25/70) would gross $49.34 per ton.

There are no ore reserves in the area of proposed exploration at the present time.

Applicant's Proposed Exploration

The applicant, in his original application proposes an exploratory drift for 500 feet along the Rawley Vein on the 200 level, from a point 1900 feet from the portal, as well as two 100-foot raises to explore up-dip on the Rawley vein at a point 1900 feet from the portal, and one at the end of the proposed exploratory drift. Recent drilling, some 1500 feet from the Antoro mine portal, tested an area 125 feet below the main level and showed the vein to be as wide as 4 feet. As a result of drilling the applicant indicates that there may be a possible convergence of the Rawley, Antoro and Poverty veins, some 800 feet northeast of the currently proposed exploration project or about 200 feet from the southeast corner of the Antoro claim.

Evaluation and Proposed Exploration

The Rawley vein had contributed substantially to the total production of the Bonanza district, since a good portion of the total amount of $9,000,000 dollars produced from the district came from the Rawley mine. Throughout its length the Rawley vein ranges in width

from a narrow barren fissure where pinched to a maximum of about 12 feet. Its average width in the lower part of the mine is 3-1/2 to 4-1/2 feet. The character of the ore appears to change but little both along the Rawley vein as well as down the vein from the surface to the 1200 foot level, except that there is a gradual but pronounced increase in copper content and descrease in lead content with increase in depth. Figure 4.

The correspondence between the silver and copper content of the ore from the Rawley vein is very close in nearly all parts of the mine. The average silver content of the ore from the four upper levels mined prior to 1923 was about 5.6 ounces to the ton, or about 5 ounces of silver to 1 percent of copper. The ratio of silver to copper in 11,820 tons of ore from the four upper levels mined by lessees in 1926 and 1927 is practically the same, 4.9 ounces of silver to 1 percent of copper. This ratio is somewhat higher than that of the average mine-run ore of the lower levels, which range between 2.8 and 3.9 ounces of silver to 1 percent of copper. There appears to be no definite relation between the silver and lead content. The minerals that probably carry most of the silver are tennantite and stromeyerite. In the Rawley ore stromeyerite is nearly always associated with bornite or tennantite and less commonly with other minerals. The bornite-bearing ore from the 700-foot level averaged about 10 ounces of silver to the ton, which is considerably higher than the average of mine-run ore from the upper levels.

The total ore mined and milled from the Rawley Vein in the period from 1926 - 1930 had an average assay value of 8.0 ounces of silver to the ton, 3.2 per cent of lead, and 2 per cent of copper. The zinc content as a whole lies between 2 and 3 per cent. The average gold content is close to 0.1 ounces to the ton. At current metal prices (10/9/70) this ore would gross some $55.50 per ton, with eligible minerals totalling $38.39 per ton or 69 percent of the total value of the ore. Burbank states that the north end of the Rawley ore shoot appears to be limited by the pinching of the fissure walls and by splitting of the main Rawley fissure into flatter breaks. See plate 26, USGS Prof. Paper 169. The several operators, have since drifted along the Rawley vein and its several splits and have produced additional tonnages of ore from stopes off the 200 level, and good mineralized material has been mined and indicated from the Antoro mine some 400 feet above the Rawley 200 level, as well as the extensive stoping below the 200 level, down to the Rawley 1200-foot level. The applicant has mined in excess of 160 feet along the Rawley vein, as shown on the accompanying geologic map by A. J. Lang, Jr. and Garrett, Figure 2, and is shown to range in thickness from nearly nil to as wide as 7 feet, and the latter portion mined averaged 3.5 feet thick containing vein material that averaged 7.7 ounces Ag per ton, 5.6% Pb, 0.9% Cu, and 2.52% zinc. It is therefore concluded that further exploration along the Rawley vein is warranted and that significant new and undiscovered reserves of silver, copper and gold may be found by further exploring along

the Rawley vein system on the 200-foot level.

The applicant's revised proposal includes 600 feet of drifting along the Rawley vein system and one 100-foot raise to explore the up-dip extension of the vein. It is recommended that a contract be prepared to explore the Rawley vein system as herein outlined. Figure 3.

The applicant, Mr. George P. Bates, Managing Partner, U. S. Silver Mining Company assures us that if a contract is offered to him he can and will obtain a Performance Bond in lieu of Lien and Subordination Agreements.

If the weather holds out the exploration work can commence immediately and continue throughout the winter without too much difficulty. Proposed costs are as follows:

Recommended Costs

Drifting

600 feet of drifting 7' x 8' to allow for unobstructed clearance for a 5' x 7' timbered drift, as there may be as much as 300 feet of timbered drift required. The timber will be 8" x 8" x 8'. Rate of advance 4 feet per shift, 30 weeks or 174 working days, is estimated by the applicant.

1.	Independent Contract		none
2.	Labor and Supervision		Cost per foot
	2 men underground - labor		$23.75
	Outside maintenance man		
	30 weeks at $200.00/week		$10.00
	Supervisor - 30 weeks at $300.00/week		$15.00
	Mining Engineering - Geologist,		
	Consulting:		
	20 days at $75.00/day	$1,500.00	
	20 days at $16.00/day	320.00	
	20 days travel, 150 miles/day at $0.12 per mile	360.00	
		$2,180.00	$3.63
	FICA, Workman's compensation and other insurance less performance bond: 15% of $48.75		$7.31

Operating Materials and Supplies

Materials and supplies including timber, rail, air pipe, water pipe, 1600' vent tube, powder, drill steel etc. $20.00

	Cost per foot
Depreciation on equipment to be supplied by U. S. Mining Co. including: air powered chain saw, trammer, ore cars, mine fan, air compressor, mucking machine, air hammers, compressor building and charger.	
Total cost $23,425.00 for 7 months at 1/60 per month	$4.55
Miscellaneous:	
Assays:	
1500 assay determinations at $3.00	$7.50
Long hole drilling two days each 100 feet of drifting to test FW and HW of Hawley vein zone	$1.33
Total cost per foot for drifting	$ 93.07

600' drifting at $93.07 per foot + $55,842.00 (Including 300' timbered drift).

Recommended Raise Costs

One 100-foot raise, not less than 5' x 7' in cross section, and shall be timbered as necessary. Raise sets shall be of not less than 8" x 8" timber, or equivalent round timber. The raise shall be timbered to provide a chute and manway, with 3-inch lagging on the chute side and ladders on the manway side.

1. Independent Contracts	None
2. Labor and Supervision	
2 men underground Labor	
Raising including timber (rounded)	$35.20
Outside maintenance, 7 weeks at $200.00/week = $1,000.00	$14.00
Supervisor, 7 weeks at $300.00 per week = $1,500.00	$21.00

Recommended Costs

Raising (Cont.)

	Cost per foot
Consulting Engineer - Geologist: 20 days provided for drifting should suffice for raising as well	None
FICA and other insurance (15% of labor and supervision)	$10.53
Operating Materials and Supplies	
Materials and supplies including timber, ladders, air and water hoses, air vent tubing, powder, drill steel etc. (1/3 off applicant's proposed 13' x 6' raise)	$27.65
Depreciation on equipment to be supplied by U. S. Silver Mining Co. including air powered chain saw, trammer, ore cars, mine fan, air compressor, air hammers, compressor building charger, air hoist, hauling skip etc. Total cost $21,625.00 - 1-1/2 months at 1/60 per month	$5.40
Miscellaneous	
Analytical work	
170 assay determinations at $3.00 per determination	$5.10
Office expense, etc.	$0.75
$50.00 per month 1-1/2 months	
Maintenance, repair, etc. 1.5 month	$1.57
	$121.20

100 ft. raise at $121.20/foot = $12,120.00

600 ft. drifting at $93.07/foot = $55,842.00

Total cost drifting and raising = $67,962.00

Government participation (gold, silver, copper) at 75% = $50,971.50

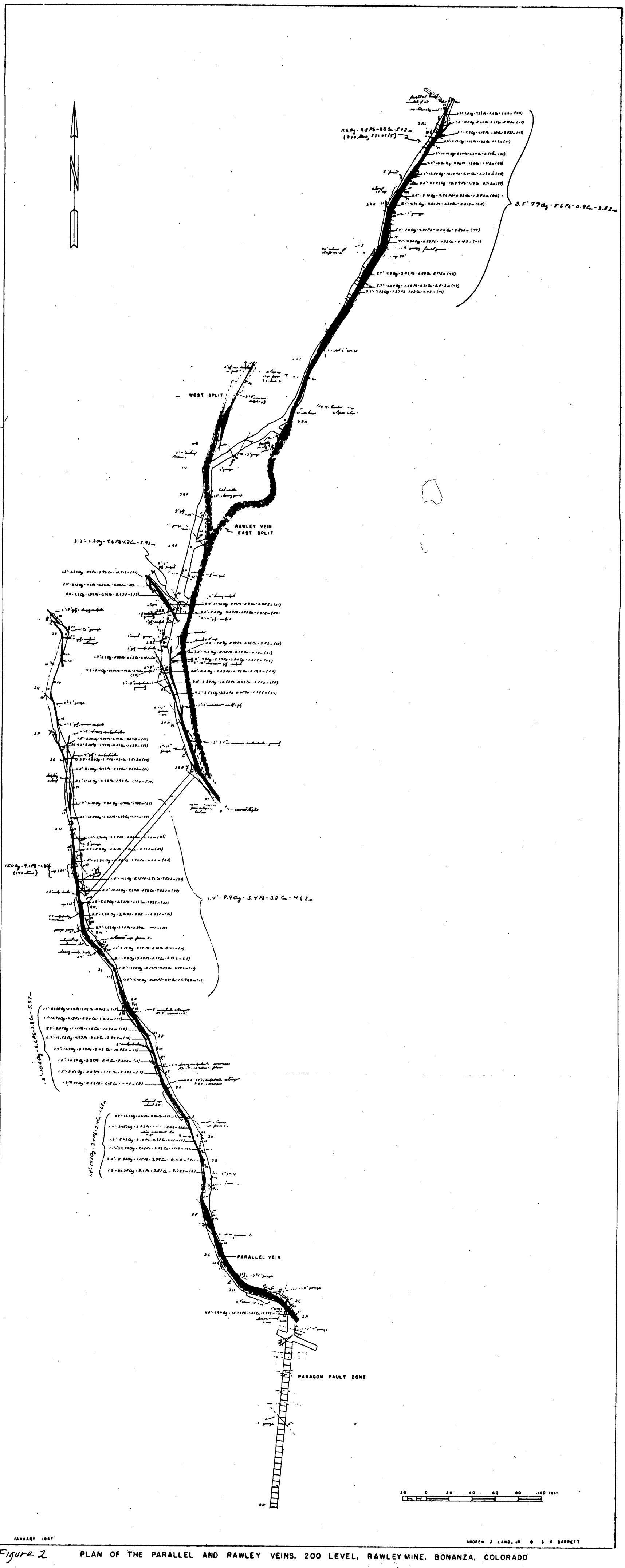


Figure 2 PLAN OF THE PARALLEL AND RAWLEY VEINS, 200 LEVEL, RAWLEY MINE, BONANZA, COLORADO

6

617-828-6660

SHIELD CHEMICAL CO., INC.

AEROSOL & PRESSURE PACKAGING

21 University Road
Canton
Massachusetts 02021

OME Region III
RECEIVED
JUN 28 1973
Denver, Colorado

June 25, 1973

Mr. J. William Hasler
Office of Minerals Exploration
U. S. Geological Survey
Denver Federal Center
Building 53, Room 28
Denver, Colorado 80225

Re: OME-6797
Contract No. 2294
U. S. Silver Mining Company

Dear Mr. Hasler:

Enclosed you will find four (4) copies of our Final Report in compliance with our Termination Agreement. I trust this will be sufficient for you to make a final settlement. I expect to be away on vacation until August 6th. If you have any questions in the meantime, you could contact Reid Johnston in Salida - telephone: 539-2767.

Thank you very much for your help and I will see to it that you are kept informed about the status of our property.

Sincerely yours,

George P. Bates

George P. Bates
U. S. Silver Mining Company

GPB/rmf

Encs. - 4

U.S. SILVER MINING COMPANY

Final Exploration Report

O.M.E. Contract No. 2294

Docket No. OME - 6797

June 19, 1973

OME Region III
RECEIVED
JUN 28 1973
Denver, Colorado

O.M.E. Contract No. 2294 was entered into by O.M.E. and U.S. Silver Mining Company on March 22, 1971. U.S. Silver Mining Company is a limited partnership composed of George P. Bates, John O. Flender and Dwight M. Rounds. The partnership owns or controls the following mining claims:

Claim	Pat. No.
June	1366
Poverty	938
Independence	14183 (1)
Ouray	14183 (5)
Peary	14183 (3)
North Pole	14183 (2)
Orphan Belle	14183 (9)
Rawley	980
Antoro	937

All are located in the Kerber Creek Mining District, Saguache County, Colo. These claims were pledged to the government for a royalty lien to provide for repayment to the government of the amount expended for exploration work on the claims.

The purpose of the exploration project was to explore by drifting, raising and long hole drilling on the 200 ft. level of the Rawley Mine for gold - silver - copper bearing ore bodies in a steeply dipping fissure vein in andesite. The original contract called for 600 ft. of drifting, loo ft. of raising and 1800 ft. of long hole drilling with provision for overhead costs for supervision, consulting expense, office expense, payroll taxes and insurance, and assaying expense for a total amount of $63,200 with government participation of 62½% or $39,500. The original term of the contract was for nine months.

The term of the contract was later extended to Decamber 22, 1973 by various amendments. Also, since during the course of the work it became apparent that greater benefit could be obtained by a re-allocation of funds within the total amount originally provided for, the contract was amended to revise the drifting footage from 600 ft. to 710 ft., the raising from 100 ft. to 25 ft. and the long holing from 1800 ft. to 700 ft.

The work was suspended for a winter recess as of November 30, 1972. As of that date the amount of funds expended on the exploration contract is detailed below:

Description	Units	Unit Cost	Total Cost
Drifting, including timbering	643 ft.	64.00	41,152.00
Long Hole Drilling	617 ft.	1.33	820.61
Supervisor	12 mos.	800.00	9,600.00
Office Expense	9 mos.	50.00	450.00
Payroll Taxes, Insurance	12 mos.	120.00	1,440.00
Assaying	36	Var.	240.00
Outside Consultant	18.5 days	75.00	1,387.50
Travel, outside consultant	680 mi.	0.12	81.60
Per diem, outside consultant	4.36	25.00	109.00
Raising, including timbering	25 ft.	90.00	2,250.00
Total Cost			$57,530.71

Relationship of Actual to Estimated Costs

The total cost of the project incurred by the operator were somewhat greater than those allowed for in the contract. A detailed cost accounting system was not maintained to provide an accurate comparison. However, the greater portion of the excess costs were caused principally by delays and difficulties with substantial water flow in the drifting. Fairly extensive rehabilitation of the 200 ft. level was required before the exploration work could begin. Other delays were occasioned by: the ventilation problem which required introduction of outside air by blowers and vent line to the face, the pinching and splitting of the ore body which caused time lost in

getting amendments and approval for changing direction, bad weather, labor problems, new safety regulations, etc.

Under ordinary circumstances the operator feels that the estimated costs provided for in the contract would come fairly close to actual costs for this type of project and prevailing mine conditions, taking into account length of haulage, size of haulage, type of equipment etc.

Narrative Review of Work

Although the effective date of Contract No. 2294 was 3-22-71, actual work under the contract was not commenced until 5-28-71. The period from 3-22-71 to 5-28-71 was spent in rehabilitation and other work pending execution of a bond for the contract. The starting point of the work was the old face of the "East Drift" of the Rawley 200 level located 41 ft. from station 23 on Davis Engineering Co. map of the workings.

The first 97 ft. of the drift was through altered andesite featuring some weakly mineralized cross faults and scattered veinlets through the rock. As the drift advanced the flow of water increased enough to make good progress very difficult. Two long holes were drilled in this section. One to the west for a total depth of 50 ft. at point OME +38', and one to the east at OME +47' to a depth of 28 ft. Neither of these holes cut any recognizable mineralized material.

At OME +97' a strong vein of ore was encountered, striking N 15°E with a dip of 70° E. The material is a quartz based ore, very pyritic, containing chalcopyrite with some other copper minerals, galena and aphalerite. The drift was turned from a heading of N 2° E to an average N 15° E to follow the structure.

The vein was followed from OME -97' to 338' or a distance of 241 ft. Throughout this length the structure has a marked tendency to pinch and swell, sometimes very abruptly. It also shows a tendency for the ore to

split into streaks separated by weakly mineralized waste. It seems to be a fairly wide fissure zone with the ore deposition somewhat irregular through the fissure. Generally speaking the footwall of the structure is rather well defined, although in several places it is quite gougy and features a "false" footwall of from several inches to a foot or more in width that sloughs readily to slips behind it. In almost all cases the hanging wall tends to be blocky and broken. Some of the long holes drilled in the walls of the drift verified that the altered, mineralized zone is several feet wide with some narrow ore streaks encountered before the rock becomes harder.

Because of the ravelly nature of the ore and the strong flow of water from the vein, the drift was driven in the hanging wall with the ore kept on the west rib of the drift from OME +312' to OME +338'. This system backfired at the 338' point with the main strand apparently continuing on a westward course and the drift went too far out in the hanging wall. When this became obvious the drift was turned back in an attempt to get on structure. Meanwhile, the vein had evidently split and drifting continued on two of the eastern splits of the vein from OME +394 to 450ft. (Refer to M. Evans Geological Map submitted with November, 1972 Report of Progress.)

At OME +448 to 456 ft. a non-mineralized fissure was encountered that cut off all mineralization in the direction the drift was heading (N 24° E). The drift was not turned at that time, however, because the possible down dip extension of the "850" structure exposed in the Antoro level some 400 ft. vertically above the Rawley 200 level presented a possible target. Drifting continued on the northeast heading to OME +523'. The section from 456' to 523' was entirely in fresh andesite with the exception of a

small weakly mineralized fault crossed at the 500 ft. mark striking N 40° W dipping 24° to the northeast.

An examination of the property in February, 1972 by Max Evans, consulting geologist,and J.W. Hasler of O.M.E. resulted in a decision to drive a short crosscut to the west at OME +428 to again pick up the vein left at 338'. This was done in March, 1972. The vein was cut at 28' in the crosscut. Where first intersected the ore was 2 ft. wide, but pinched rather rapidly to 6 in. in the face at 42 ft. See Evans Geologic Map of Drifting.

After another examination in April, 1972 of both the Rawley 200 ft. level and Antoro level it was agreed that the balance of the drifting footage allowed in the contract would best be utilized in a crosscut to the east to explore for the down dip extension of an ore shoot exposed in the Antoro level known as the "Copper Winze" ore. An amendment was applied for to provide for this crosscut.

While waiting for the amendment a short raise of 25 ft. was driven up dip on the vein at station 2 - 28. Splitting of the ore into streaks was very pronounced in the raise. Although such a short raise cannot be considered conclusive, it does point to problems that could be encountered in mining of the ore body. The ground was most incompetent. The rock is soft, highly altered and sloughs in slabs. Should the splitting of the ore into streaks be prevalent throughout the vein it is possible that some type of volume mining method would have to be devised so that cheaper mining costs would offset a decrease in grade through dilution.

Following approval from O.M.E. a x-cut to the east was started at 28 ft. from station 2 - 21. Purpose being to find the extension of the copper winze vein referred to above. This work was started the latter part of September, 1972. The x-cut was driven 78 ft. when it intersected

a fault zone correlating to the fault at station 2 - 23 in the main drift. This zone is featured by very bad ground consisting of gouge and altered andesitic porphyry. It caved about 15 ft. above the back of the x-cut during installation of square sets to catch the ground.

Before proceeding with the x-cut an examination was made by Mr.Hasler of O.M.E. and Mr. Evans in November, 1972 to determine the best approach for the balance of the work. It was decided that two long holes should be drilled to attempt to locate the copper winze structure and to test rock conditions in case a run around would be required.

Long Hole #17 was drilled on a Brunton bearing of S 55° E for a total depth of 57 ft. It was a blank. Long Hole # 18 was drilled on a bearing of N 73° E to a total depth of 60 ft. The rock softened at 46' in the hole and passed into heavy gouge material between 50 and 51 ft. Panning of the gouge revealed mineralization. Particles of Galena, Sphalerite and Chalcopyrite were identified in the drillings. Alteration was evident in the hole from 51 to 55 ft.

From the results of this hole it appeared logical to assume a structure does exist, roughly conforming to the copper winze vein. Accordingly, a decision was made to timber the fault zone at whatever cost to avoid losing any footage remaining on the contract, and continue the x-cut.

However, severe weather in late November and early December caused a request for recess of the work until the spring of 1973.

Circumstances developing after the date of recess caused the Partnership to put the mill and mining equipment up for sale and place the property on a standby basis. It is, therefore, requested that the contract be closed, and this be the final report covering the work.

Estimation of Ore Reserves

Attached hereto as separate exhibits are assay details covering bulk and channel samples taken of the ore found.

Referring again to Evans Geologic Map, it would be safe to say that the strike length of the ore shoot is at least 360 ft. From previous stoping experience on the 200 ft. level a conservative estimate of stoping backs would be 100 ft. above the level and 100 ft. below. Rounding off the average width of the channel samples of vein material to 3 ft. wide would yield 60 tons per dip foot, using a factor of 10 cu. ft. per ton for simplicity in estimation (3 x 200 ÷ 10). Or a total of 21,600 of indicated ore.

Gross ore values using current metal prices (6 - 19 - 73) are as follows:

.04 oz. Au @ 120.00/oz.	4.80
11.77 oz. Ag @ 2.50/oz.	29.43
2.19% Cu - 43.8 lbs @ .60/lb.	26.28
3.2 % Pb - 64 lbs @ .165/lb	10.56
5.15% Zn - 103 lbs @ .20/lb.	20.60
Total	$91.67

Total gross value of indicated ore - - - $1,980,000.

If the bulk sample assays were used as criteria, the reserve tonnage would become 50,400 tons. The bulk samples represent drift width - 7 ft. This would change the tonnage to 140 tons per dip foot (200 x 7 ÷ 10 multiplied by 360 ft. strike length). Again using current metal prices gross ore values would be:

.04 oz. Au @ 120.00/oz.	4.80
4.88 oz. Ag @ 2.50/oz.	12.20
.93 % Cu - 18.6 lbs @ .60/lb.	11.16
1.17 % Pb - 23.4 lbs @ .165/lb	3.86
1.68 % Zn - 33.6 lbs @ .20/lb	6.72
Total	$38.74

Total gross value of indicated ore on this basis - - - $1,950,000.

Possible ore reserves could be much greater based on geological experience in the district. For instance, ore is exposed in the Antoro level 400 ft. vertically above the 200 ft. level. Should this shoot hold up for that distance there would be approximately 400 ft. of stoping back above the level. About 1,000 ft. south of this work the vein went down to the Rawley 1200 ft. level. This could mean an additional 900 dip feet of ore below the level.

Conversely, the district is also known for an abrupt termination of ore bodies. Should this be the case either up or down dip the reserve estimates would be overstated. Additional development work is necessary to prove the figures.

The operator would like to take this opportunity to express appreciation to the staff of O.M.E. for the consideration and cooperation shown on the project. Particular thanks go to Mr. Hasler of the Denver Office and Mr. Kirkemo of the Washington Office. This can also be considered to be an endorsement from an operational standpoint of the O.M.E. program.

PLEASE NOTE:

M.T. Evans' "Geologic Map of Drifting Under O.M.E. Contract 2294" dated November, 1972 covers all work to date, and should become the final map for attachment to this report. The map was submitted with the Monthly Progress Report for November, 1972.

OME-6797 U. S. SILVER MINING CO. RAWLEY MINE 200' LEVEL

SAMPLES OF VEIN MATERIAL RAWLEY 200' LEVEL

Sample No.	Location	Width	Au Oz.	Ag oz.	Cu%	Pb%	Zn%
5	OME- 101'	1.0'	0.14	34.0	11.0	2.6	9.50
OME (E)	110'	3.0'	0.06	20.94	1.6	2.5	2.05
6	150'	0.5'	0.06	3.21	2.4	4.6	11.60
7	150'	0.8'	0.02	12.25	1.2	16.0	20.0
9	162'	1.2'	0.01	6.13	5.0	2.2	6.4
23	170'	3.7'	0.05	4.0	0.80	3.0	3.70
24	190'	4.6'	0.017	18.2	1.40	7.0	3.90
18	197'	2.5'	0.012	3.50	1.8	3.1	5.5
25	210'	3.0'	0.018	5.0	1.40	2.0	1.20
19	215'	2.5'	0.02	8.10	2.2	1.2	2.6
OME (E)	215'	2.5'	0.04	31.10	3.70	4.0	3.25
26	230'	3.0'	0.035	11.7	0.95	2.7	5.80
20	235'	2.5'	0.043	11.0	2.6	2.0	2.9
27	250'	3.0'	0.18	4.7	0.55	1.7	2.2
21	255'	3.0'	0.01	3.4	2.1	0.76	2.6
OME (E)	267'	3.0'	0.01	3.83	0.50	1.00	3.95
28	270'	4.0'	0.022	4.7	0.44	2.0	1.6
22	275'	2.0'	0.017	8.00	0.95	2.4	6.2
29	290'	4.0'	0.082	21.8	1.60	2.0	6.0
30	318'	5.2'	0.070	20.0	1.70	2.7	2.1
	Width	Au oz.	Ag oz.	Cu%	Pb%	Zn%	
Average	2.7'	0.04	11.77	2.19	3.2	5.15	

OME-6797 U. S. Silver Mining Company

Bulk and grab samples

Sample No.	Location	No. Cars	Au oz.	Ag oz.	Cu%	Pb%	Zn%
2	96 - 100	17 cars	.006	1.0	0.225	0.36	.52
3	Same as #2	17 cars	.065	7.05	0.90	0.71	1.25
4	102 - 107	9	.04	10.82	1.54	1.15	0.30
14	Car grab	142 - 146	0.02	1.40	1.10	2.65	0.45
8	grab	muck pile	0.03	4.08	0.44	1.2	1.7
10	169 - 174	muck pile	0.01	3.06	1.04	1.08	2.15
11	177 - 182	muck pile	0.005	4.67	0.75	1.50	3.40
12	186 - 190	muck pile	0.01	2.95	0.52	1.65	2.05
13	214 - 219	muck pile	0.01	3.75	0.64	1.15	1.35
14	231 - 254	muck pile	0.25	4.47	0.89	0.98	1.10
15	270	grab	.015	4.2	1.45	0.48	3.0
16	290	grab	.019	8.2	1.2	1.5	2.9
17	318	grab	.045	7.8	1.5	.88	1.7
	(13)		.525	63.45	12.19	15.29	21.87
Average			.040	4.88	.93	1.17	1.68

794 cars @ 1 ton each = 794 tons of ore grade material in stockpile:

.04 oz. Au @ $35.00/oz.	$1.40
4.88 oz. Ag @ $1.48 oz.	$7.22
.93% Cu - 18.6 lbs @ 50¢/lb.	$9.30
1.17% Pb - 23.4 lbs @ .1450¢/lb.	$3.39
1.68% Zn - 33.6 lbs @ 17¢/lb.	$5.71
	$27.02

OMM-6797 U. S. Silver Mining Company

Bulk and grab samples

Sample No.	Location	No. Cars	Au oz.	Ag oz.	Cu%	Pb%	Zn%
2	96 - 100	17 cars	.006	1.0	0.225	0.36	.52
3	Same as #2	17 cars	.065	7.05	0.90	0.71	1.25
4	102 - 107	9	.04	10.82	1.54	1.15	0.30
14	Car grab	142 - 146	0.02	1.40	1.10	2.65	0.45
8	grab	muck pile	0.03	4.08	0.44	1.2	1.7
10	169 - 174	muck pile	0.01	3.06	1.04	1.08	2.15
11	177 - 182	muck pile	0.005	4.67	0.75	1.50	3.40
12	186 - 190	muck pile	0.01	2.95	0.52	1.65	2.05
13	214 - 219	muck pile	0.01	3.75	0.64	1.15	1.35
14	231 - 254	muck pile	0.25	4.47	0.89	0.98	1.10
15	270	grab	.013	4.2	1.45	0.48	3.0
16	290	grab	.019	8.2	1.2	1.5	2.9
17	318	grab	.045	7.8	1.5	.88	1.7
(13)			.525	63.45	12.19	15.29	21.87
Average			.040	4.88	.93	1.17	1.68

794 cars @ 1 ton each = 794 tons of ore grade material in stockpile:

.04 oz. Au @ $35.00/oz.	$1.40
4.88 oz. Ag @ $1.48 oz.	$7.22
.93% Cu - 18.6 lbs @ 5¢/lb.	$9.30
1.17% Pb - 23.4 lbs @ .145¢/lb.	$3.39
1.68% Zn - 33.6 lbs @ 17¢/lb.	$5.71
	$27.02

U.S. SILVER MINING COMPANY

Final Exploration Report

O.M.E. Contract No. 2294

Docket No. OME - 6797

June 19, 1973

OME Region III
RECEIVED
JUN 28 1973
Denver, Colorado

O.M.E. Contract No. 2294 was entered into by O.M.E. and U.S. Silver Mining Company on March 22, 1971. U.S. Silver Mining Company is a limited partnership composed of George P. Bates, John O. Flender and Dwight M. Rounds. The partnership owns or controls the following mining claims:

Claim	Pat. No.
June	1366
Poverty	938
Independence	14183 (1)
Ouray	14183 (5)
Peary	14183 (3)
North Pole	14183 (2)
Orphan Belle	14183 (9)
Rawley	980
Antoro	937

All are located in the Kerber Creek Mining District, Saguache County, Colo. These claims were pledged to the government for a royalty lien to provide for repayment to the government of the amount expended for exploration work on the claims.

The purpose of the exploration project was to explore by drifting, raising and long hole drilling on the 200 ft. level of the Rawley Mine for gold - silver - copper bearing ore bodies in a steeply dipping fissure vein in andesite. The original contract called for 600 ft. of drifting, loo ft. of raising and 1800 ft. of long hole drilling with provision for overhead costs for supervision, consulting expense, office expense, payroll taxes and insurance, and assaying expense for a total amount of $63,200 with government participation of 62½% or $39,500. The original term of the contract was for nine months.

The term of the contract was later extended to December 22, 1973 by various amendments. Also, since during the course of the work it became apparent that greater benefit could be obtained by a re-allocation of funds within the total amount originally provided for, the contract was amended to revise the drifting footage from 600 ft. to 710 ft., the raising from 100 ft. to 25 ft. and the long holing from 1800 ft. to 700 ft.

The work was suspended for a winter recess as of November 30, 1972. As of that date the amount of funds expended on the exploration contract is detailed below:

Description	Units	Unit Cost	Total Cost
Drifting, including timbering	643 ft.	64.00	41,152.00
Long Hole Drilling	617 ft.	1.33	820.61
Supervisor	12 mos.	800.00	9,600.00
Office Expense	9 mos.	50.00	450.00
Payroll Taxes, Insurance	12 mos.	120.00	1,440.00
Assaying	36	Var.	240.00
Outside Consultant	18.5 days	75.00	1,387.50
Travel, outside consultant	680 mi.	0.12	81.60
Per diem, outside consultant	4.36	25.00	109.00
Raising, including timbering	25 ft.	90.00	2,250.00
Total Cost			$57,530.71

Relationship of Actual to Estimated Costs

The total cost of the project incurred by the operator were somewhat greater than those allowed for in the contract. A detailed cost accounting system was not maintained to provide an accurate comparison. However, the greater portion of the excess costs were caused principally by delays and difficulties with substantial water flow in the drifting. Fairly extensive rehabilitation of the 200 ft. level was required before the exploration work could begin. Other delays were occasioned by: the ventilation problem which required introduction of outside air by blowers and vent line to the face, the pinching and splitting of the ore body which caused time lost in

getting amendments and approval for changing direction, bad weather, labor problems, new safety regulations, etc.

Under ordinary circumstances the operator feels that the estimated costs provided for in the contract would come fairly close to actual costs for this type of project and prevailing mine conditions, taking into account length of haulage, size of haulage, type of equipment etc.

Narrative Review of Work

Although the effective date of Contract No. 2294 was 3-22-71, actual work under the contract was not commenced until 5-28-71. The period from 3-22-71 to 5-28-71 was spent in rehabilitation and other work pending execution of a bond for the contract. The starting point of the work was the old face of the "East Drift" of the Rawley 200 level located 41 ft. from station 23 on Davis Engineering Co. map of the workings.

The first 97 ft. of the drift was through altered andesite featuring some weakly mineralized cross faults and scattered veinlets through the rock. As the drift advanced the flow of water increased enough to make good progress very difficult. Two long holes were drilled in this section. One to the west for a total depth of 50 ft. at point OME +38', and one to the east at OME +47' to a depth of 28 ft. Neither of these holes cut any recognizable mineralized material.

At OME +97' a strong vein of ore was encountered, striking N 15°E with a dip of 70° E. The material is a quartz based ore, very pyritic, containing chalcopyrite with some other copper minerals, galena and sphalerite. The drift was turned from a heading of N 2° E to an average N 15° E to follow the structure.

The vein was followed from OME +97' to 338' or a distance of 241 ft. Throughout this length the structure has a marked tendency to pinch and swell, sometimes very abruptly. It also shows a tendency for the ore to

split into streaks separated by weakly mineralized waste. It seems to be a fairly wide fissure zone with the ore deposition somewhat irregular through the fissure. Generally speaking the footwall of the structure is rather well defined, although in several places it is quite gougy and features a "false" footwall of from several inches to a foot or more in width that sloughs readily to slips behind it. In almost all cases the hanging wall tends to be blocky and broken. Some of the long holes drilled in the walls of the drift verified that the altered, mineralized zone is several feet wide with some narrow ore streaks encountered before the rock becomes harder.

Because of the ravelly nature of the ore and the strong flow of water from the vein, the drift was driven in the hanging wall with the ore kept on the west rib of the drift from OME +312' to OME +338'. This system backfired at the 338' point with the main strend apparently continuing on a westward course and the drift went too far out in the hanging wall. When this became obvious the drift was turned back in an attempt to get on structure. Meanwhile, the vein had evidently split and drifting continued on two of the eastern splits of the vein from OME +394 to 450ft. (Refer to M. Evans Geological Map submitted with November, 1972 Report of Progress.)

At OME +448 to 456 ft. a non-mineralized fissure was encountered that cut off all mineralization in the direction the drift was heading (N 24° E). The drift was not turned at that time, however, because the possible down dip extension of the "850" stmucture exposed in the Antoro level some 400 ft. vertically above the Rawley 200 level presented a possible target. Drifting continued on the northeast heading to OME +523'. The section from 456' to 523' was entirely in fresh andesite with the exception of a

small weakly mineralized fault crossed at the 500 ft. mark striking N 40° W dipping 24° to the northeast.

An examination of the property in February, 1972 by Max Evans, consulting geologist, and J.W. Hasler of O.M.E. resulted in a decision to drive a short crosscut to the west at OMN +428 to again pick up the vein left at 338'. This was done in March, 1972. The vein was cut at 28' in the crosscut. Where first intersected the ore was 2 ft. wide, but pinched rather rapidly to 6 in. in the face at 42 ft. See Evans Geologic Map of Drifting.

After another examination in April, 1972 of both the Rawley 200 ft. level and Antoro level it was agreed that the balance of the drifting footage allowed in the contract would best be utilized in a crosscut to the east to explore for the down dip extension of an ore shoot exposed in the Antoro level known as the "Copper Winze" ore. An amendment was applied for to provide for this crosscut.

While waiting for the amendment a short raise of 25 ft. was driven up dip on the vein at station 2 - 28. Splitting of the ore into streaks was very pronounced in the raise. Although such a short raise cannot be considered conclusive, it does point to problems that could be encountered in mining of the ore body. The ground was most incompetent. The rock is soft, highly altered and sloughs in slabs. Should the splitting of the ore into streaks be prevalent throughout the vein it is possible that some type of volume mining method would have to be devised so that cheaper mining costs would offset a decrease in grade through dilution.

Following approval from O.M.E. a x-cut to the east was started at 28 ft. from station 2 - 21. Purpose being to find the extension of the copper winze vein referred to above. This work was started the latter part of September, 1972. The x-cut was driven 78 ft. when it intersected

a fault zone correlating to the fault at station 2 - 23 in the main drift. This zone is featured by very bad ground consisting of gouge and altered andesitic porphyry. It caved about 15 ft. above the back of the x-cut during installation of square sets to catch the ground.

Before proceeding with the x-cut an examination was made by Mr. Hasler of O.M.E. and Mr. Evans in November, 1972 to determine the best approach for the balance of the work. It was decided that two long holes should be drilled to attempt to locate the copper winze structure and to test rock conditions in case a run around would be required.

Long Hole #17 was drilled on a Brunton bearing of S 55° E for a total depth of 57 ft. It was a blank. Long Hole # 18 was drilled on a bearing of N 73° E to a total depth of 60 ft. The rock softened at 46' in the hole and passed into heavy gouge material between 50 and 51 ft. Panning of the gouge revealed mineralization. Particles of Galena, Sphalerite and Chalcopyrite were identified in the drillings. Alteration was evident in the hole from 51 to 55 ft.

From the results of this hole it appeared logical to assume a structure does exist, roughly conforming to the copper winze vein. Accordingly, a decision was made to timber the fault zone at whatever cost to avoid losing any footage remaining on the contract, and continue the x-cut.

However, severe weather in late November and early December caused a request for recess of the work until the spring of 1973.

Circumstances developing after the date of recess caused the Partnership to put the mill and mining equipment up for sale and place the property on a standby basis. It is, therefore, requested that the contract be closed, and this be the final report covering the work.

Estimation of Ore Reserves

Attached hereto as separate exhibits are assay details covering bulk and channel samples taken of the ore found.

Referring again to Evans Geologic Map, it would be safe to say that the strike length of the ore shoot is at least 360 ft. From previous stoping experience on the 200 ft. level a conservative estimate of stoping backs would be 100 ft. above the level and 100 ft. below. Rounding off the average width of the channel samples of vein material to 3 ft. wide would yield 60 tons per dip foot, using a factor of 10 cu. ft. per ton for simplicity in estimation (3 x 200 ÷ 10). Or a total of 21,600 of indicated ore.

Gross ore values using current metal prices (6 - 19 - 73) are as follows:

.04 oz. Au @ 120.00/oz.	4.80
11.77 oz. Ag @ 2.50/oz.	29.43
2.19% Cu - 43.8 lbs @ .60/lb.	26.28
3.2 % Pb - 64 lbs @ .165/lb	10.56
5.15% Zn - 103 lbs @ .20/lb.	20.60
Total	$91.67

Total gross value of indicated ore - - - $1,980,000.

If the bulk sample assays were used as criteria, the reserve tonnage would become 50,400 tons. The bulk samples represent drift width - 7 ft. This would change the tonnage to 140 tons per dip foot (200 x 7 ÷ 10 multiplied by 360 ft. strike length). Again using current metal prices gross ore values would be:

.04 oz. Au @ 120.00/oz.	4.80
4.88 oz. Ag @ 2.50/oz.	12.20
.93 % Cu - 18.6 lbs @ .60/lb.	11.16
1.17 % Pb - 23.4 lbs @ .165/lb	3.86
1.68 % Zn - 33.6 lbs @ .20/lb	6.72
Total	$38.74

Total gross value of indicated ore on this basis - - - $1,950,000.

Possible ore reserves could be much greater based on geological experience in the district. For instance, ore is exposed in the Antoro level 400 ft. vertically above the 200 ft. level. Should this shoot hold up for that distance there would be approximately 400 ft. of stoping back above the level. About 1,000 ft. south of this work the vein went down to the Hawley 1200 ft. level. This could mean an additional 900 dip feet of ore below the level.

Conversely, the district is also known for an abrupt termination of ore bodies. Should this be the case either up or down dip the reserve estimates would be overstated. Additional development work is necessary to prove the figures.

The operator would like to take this opportunity to express appreciation to the staff of O.M.E. for the consideration and cooperation shown on the project. Particular thanks go to Mr. Kasler of the Denver Office and Mr. Kirkemo of the Washington Office. This can also be considered to be an endorsement from an operational standpoint of the O.M.E. program.

PLEASE NOTE:

M.T. Evans' "Geologic Map of Drifting Under O.M.E. Contract 2294" dated November, 1972 covers all work to date, and should become the final map for attachment to this report. The map was submitted with the Monthly Progress Report for November, 1972.

OME-6797 U. S. SILVER MINING CO. RAWLEY MINE 200' LEVEL

SAMPLES OF VEIN MATERIAL RAWLEY 200' LEVEL

Sample No.	Location	Width	Au oz.	Ag oz.	Cu%	Pb%	Zn%
5	OME+ 101'	1.0'	0.14	34.0	11.0	2.8	9.50
OME (H)	110'	3.0'	0.06	20.94	1.6	2.5	2.05
6	150'	0.5'	0.06	3.21	2.4	4.6	11.60
7	150'	0.8'	0.02	12.25	1.2	16.0	20.0
9	162'	1.2'	0.01	6.13	5.0	2.2	6.4
23	170'	3.7'	0.05	4.0	0.80	3.0	3.70
24	190'	4.6'	0.017	18.2	1.40	7.0	3.90
18	197'	2.5'	0.012	3.50	1.8	3.1	5.5
25	210'	3.0'	0.010	5.0	1.40	2.0	1.20
19	215'	2.5'	0.02	8.10	2.2	1.2	2.6
OME (H)	215'	2.5'	0.04	31.10	3.70	4.0	3.25
26	230'	3.0'	0.035	11.7	0.95	2.7	5.80
20	235'	2.5'	0.043	11.0	2.6	2.0	2.8
27	250'	3.0'	0.18	4.7	0.55	1.7	2.2
21	255	3.0'	0.01	3.4	2.1	0.76	2.6
OME (H)	267'	3.0'	0.01	3.83	0.50	1.00	3.95
28	270'	4.0'	0.022	4.7	0.44	2.0	1.6
22	275'	2.0'	0.017	8.00	0.95	2.4	6.2
29	290'	4.0'	0.682	21.8	1.60	2.0	6.0
30	318'	5.2'	0.070	20.0	1.70	2.7	2.1
Average		2.7'	0.04	11.77	2.19	3.2	5.15

OME-6797 U. S. Silver Mining Company

Bulk and grab samples

Sample No.	Location	No. Cars	Au oz.	Ag oz	Cu%	Pb%	Zn%
2	96 - 100	17 cars	.006	1.0	0.225	0.36	.5%
3	Same as #2	17 cars	.065	7.05	0.90	0.71	1.25
4	102 - 107	9	.04	10.82	1.54	1.15	0.30
14	Car grab	142 - 146	0.03	1.40	1.10	2.65	0.45
8	grab	muck pile	0.03	4.08	0.44	1.2	1.7
10	169 - 174	muck pile	0.01	3.06	1.04	1.08	2.15
11	177 - 182	muck pile	0.005	4.67	0.75	1.50	3.40
12	186 - 190	muck pile	0.01	2.95	0.52	1.65	2.05
13	214 - 219	muck pile	0.01	3.75	0.64	1.15	1.35
14	231 - 254	muck pile	0.25	4.47	0.89	0.98	1.10
15	270	grab	.015	4.2	1.45	0.48	3.0
16	290	grab	.019	8.2	1.2	1.5	2.9
17	318	grab	.045	7.8	1.5	.88	1.7
	(13)		.525	63.45	12.19	15.29	21.87
	Average		.040	4.88	.93	1.17	1.68

794 cars @ 1 ton each = 794 tons of ore grade material in stockpile:

.04 oz. Au @ $35.00/oz.	=	$1.40
4.88 oz. Ag @ $1.48 oz.	=	$7.22
.93% Cu = 18.6 lbs. @ 50¢/lb.	=	$9.30
1.17% Pb = 23.4 lbs. @ .1450¢/lb.	=	$3.39
1.68% Zn = 33.6 lbs. @ 17¢/lb.	=	$5.71
		$27.02

U.S. SILVER MINING COMPANY

Final Exploration Report

O.M.E. Contract No. 2294

Docket No. OME - 6797

June 19, 1973

Office of Region III
RECEIVED
JUN 28 1973
Denver, Colorado

O.M.E. Contract No. 2294 was entered into by O.M.E. and U.S. Silver Mining Company on March 22, 1971. U.S. Silver Mining Company is a limited partnership composed of George P. Bates, John O. Flender and Dwight M. Rounds. The partnership owns or controls the following mining claims:

Claim	Pat. No.
June	1366
Poverty	938
Independence	14183 (1)
Ouray	14183 (5)
Peary	14183 (3)
North Pole	14183 (2)
Orphan Belle	14183 (9)
Rawley	980
Antoro	937

All are located in the Kerber Creek Mining District, Saguache County, Colo. These claims were pledged to the government for a royalty lien to provide for repayment to the government of the amount expended for exploration work on the claims.

The purpose of the exploration project was to explore by drifting, raising and long hole drilling on the 200 ft. level of the Rawley Mine for gold - silver - copper bearing ore bodies in a steeply dipping fissure vein in andesite. The original contract called for 600 ft. of drifting, 100 ft. of raising and 1800 ft. of long hole drilling with provision for overhead costs for supervision, consulting expense, office expense, payroll taxes and insurance, and assaying expense for a total amount of $63,200 with government participation of 62½% or $39,500. The original term of the contract was for nine months.

The term of the contract was later extended to December 22, 1973 by various amendments. Also, since during the course of the work it became apparent that greater benefit could be obtained by a re-allocation of funds within the total amount originally provided for, the contract was amended to revise the drifting footage from 600 ft. to 710 ft., the raising from 100 ft. to 25 ft. and the long holing from 1800 ft. to 700 ft.

The work was suspended for a winter recess as of November 30, 1972. As of that date the amount of funds expended on the exploration contract is detailed below:

Description	Units	Unit Cost	Total Cost
Drifting, including timbering	643 ft.	64.00	41,152.00
Long Hole Drilling	617 ft.	1.33	820.61
Supervisor	12 mos.	800.00	9,600.00
Office Expense	9 mos.	50.00	450.00
Payroll Taxes, Insurance	12 mos.	120.00	1,440.00
Assaying	36	Var.	240.00
Outside Consultant	18.5 days	75.00	1,387.50
Travel, outside consultant	680 mi.	0.12	81.60
Per diem, outside consultant	4.36	25.00	109.00
Raising, including timbering	25 ft.	90.00	2,250.00
Total Cost			$57,530.71

Relationship of Actual to Estimated Costs

The total cost of the project incurred by the operator were somewhat greater than those allowed for in the contract. A detailed cost accounting system was not maintained to provide an accurate comparison. However, the greater portion of the excess costs were caused principally by delays and difficulties with substantial water flow in the drifting. Fairly extensive rehabilitation of the 200 ft. level was required before the exploration work could begin. Other delays were occasioned by: the ventilation problem which required introduction of outside air by blowers and vent line to the face, the pinching and splitting of the ore body which caused time lost in

getting amendments and approval for changing direction, bad weather, labor problems, new safety regulations, etc.

Under ordinary circumstances the operator feels that the estimated costs provided for in the contract would come fairly close to actual costs for this type of project and prevailing mine conditions, taking into account length of haulage, size of haulage, type of equipment etc.

Narrative Review of Work

Although the effective date of Contract No. 2294 was 3-22-71, actual work under the contract was not commenced until 5-28-71. The period from 3-22-71 to 5-28-71 was spent in rehabilitation and other work pending execution of a bond for the contract. The starting point of the work was the old face of the "East Drift" of the Rawley 200 level located 41 ft. from station 23 on Davis Engineering Co. map of the workings.

The first 97 ft. of the drift was through altered andesite featuring some weakly mineralized cross faults and scattered veinlets through the rock. As the drift advanced the flow of water increased enough to make good progress very difficult. Two long holes were drilled in this section. One to the west for a total depth of 50 ft. at point OME +38', and one to the east at OME +47' to a depth of 28 ft. Neither of these holes cut any recognizable mineralized material.

At OME +97' a strong vein of ore was encountered, striking N 15°E with a dip of 70° E. The material is a quartz based ore, very pyritic, containing chalcopyrite with some other copper minerals, galena and sphalerite. The drift was turned from a heading of N 2° E to an average N 15° E to follow the structure.

The vein was followed from OME +97' to 338' or a distance of 241 ft. Throughout this length the structure has a marked tendency to pinch and swell, sometimes very abruptly. It also shows a tendency for the ore to

split into streaks separated by weakly mineralized waste. It seems to be a fairly wide fissure zone with the ore deposition somewhat irregular through the fissure. Generally speaking the footwall of the structure is rather well defined, although in several places it is quite gougy and features a "false" footwall of from several inches to a foot or more in width that sloughs readily to slips behind it. In almost all cases the hanging wall tends to be blocky and broken. Some of the long holes drilled in the walls of the drift verified that the altered, mineralized zone is several feet wide with some narrow ore streaks encountered before the rock becomes harder.

Because of the ravelly nature of the ore and the strong flow of water from the vein, the drift was driven in the hanging wall with the ore kept on the west rib of the drift from OME +312' to OME +338'. This system backfired at the 338' point with the main strand apparently continuing on a westward course and the drift went too far out in the hanging wall. When this became obvious the drift was turned back in an attempt to get on structure. Meanwhile, the vein had evidently split and drifting continued on two of the eastern splits of the vein from OME +394 to 450ft. (Refer to M. Evans Geological Map submitted with November, 1972 Report of Progress.)

At OME +448 to 456 ft. a non-mineralized fissure was encountered that cut off all mineralization in the direction the drift was heading (N 24° E). The drift was not turned at that time, however, because the possible down dip extension of the "850" structure exposed in the Antoro level some 400 ft. vertically above the Rawley 200 level presented a possible target. Drifting continued on the northeast heading to OME +523'. The section from 456' to 523' was entirely in fresh andesite with the exception of a

small weakly mineralized fault crossed at the 500 ft. mark striking N 40° W dipping 24° to the northeast.

An examination of the property in February, 1972 by Max Evans, consulting geologist, and J.W. Masler of O.M.E. resulted in a decision to drive a short crosscut to the west at OMX +428 to again pick up the vein left at 338'. This was done in March, 1972. The vein was cut at 28' in the crosscut. Where first intersected the ore was 2 ft. wide, but pinched rather rapidly to 6 in. in the face at 42 ft. See Evans Geologic Map of Drifting.

After another examination in April, 1972 of both the Rawley 200 ft. level and Antoro level it was agreed that the balance of the drifting footage allowed in the contract would best be utilized in a crosscut to the east to explore for the down dip extension of an ore shoot exposed in the Antoro level known as the "Copper Winze" ore. An amendment was applied for to provide for this crosscut.

While waiting for the amendment a short raise of 25 ft. was driven up dip on the vein at station 2 - 28. Splitting of the ore into streaks was very pronounced in the raise. Although such a short raise cannot be considered conclusive, it does point to problems that could be encountered in mining of the ore body. The ground was most incompetent. The rock is soft, highly altered and sloughs in slabs. Should the splitting of the ore into streaks be prevalent throughout the vein it is possible that some type of volume mining method would have to be devised so that cheaper mining costs would offset a decrease in grade through dilution.

Following approval from O.M.E. a x-cut to the east was started at 28 ft. from station 2 - 21. Purpose being to find the extension of the copper winze vein referred to above. This work was started the latter part of September, 1972. The x-cut was driven 78 ft. when it intersected

a fault zone correlating to the fault at station 2 - 23 in the main drift. This zone is featured by very bad ground consisting of gouge and altered andesitic porphyry. It caved about 15 ft. above the back of the x-cut during installation of square sets to catch the ground.

Before proceeding with the x-cut an examination was made by Mr. Hasler of O.M.X. and Mr. Evans in November, 1972 to determine the best approach for the balance of the work. It was decided that two long holes should be drilled to attempt to locate the copper winze structure and to test rock conditions in case a run around would be required.

Long Hole #17 was drilled on a Brunton bearing of S 55° W for a total depth of 57 ft. It was a blank. Long Hole # 18 was drilled on a bearing of N 73° W to a total depth of 60 ft. The rock softened at 46' in the hole and passed into heavy gouge material between 50 and 51 ft. Panning of the gouge revealed mineralization. Particles of Galena, Sphalerite and Chalcopyrite were identified in the drillings. Alteration was evident in the hole from 51 to 55 ft.

From the results of this hole it appeared logical to assume a structure does exist, roughly conforming to the copper winze vein. Accordingly, a decision was made to timber the fault zone at whatever cost to avoid losing any footage remaining on the contract, and continue the x-cut.

However, severe weather in late November and early December caused a request for recess of the work until the spring of 1973.

Circumstances developing after the date of recess caused the Partnership to put the mill and mining equipment up for sale and place the property on a standby basis. It is, therefore, requested that the contract be closed, and this be the final report covering the work.

Estimation of Ore Reserves

Attached hereto as separate exhibits are assay details covering bulk and channel samples taken of the ore found.

Referring again to Evans Geologic Map, it would be safe to say that the strike length of the ore shoot is at least 360 ft. From previous stoping experience on the 200 ft. level a conservative estimate of stoping backs would be 100 ft. above the level and 100 ft. below. Rounding off the average width of the channel samples of vein material to 3 ft. wide would yield 60 tons per dip foot, using a factor of 10 cu. ft. per ton for simplicity in estimation (3 x 200 ÷ 10). Or a total of 21,600 of indicated ore.

Gross ore values using current metal prices (6 - 19 - 73) are as follows:

.04 oz. Au @ 120.00/oz.	4.80
11.77 oz. Ag @ 2.50/oz.	29.43
2.19% Cu - 43.8 lbs @ .60/lb.	26.28
3.2 % Pb - 64 lbs @ .165/lb	10.56
5.15% Zn - 103 lbs @ .20/lb.	20.60
Total	$91.67

Total gross value of indicated ore - - - $1,980,000.

If the bulk sample assays were used as criteria, the reserve tonnage would become 50,400 tons. The bulk samples represent drift width - 7 ft. This would change the tonnage to 140 tons per dip foot (200 x 7 ÷ 10 multiplied by 360 ft. strike length). Again using current metal prices gross ore values would be:

.04 oz. Au @ 120.00/oz.	4.80
4.88 oz. Ag @ 2.50/oz.	12.20
.93 % Cu - 18.6 lbs @ .60/lb.	11.16
1.17 % Pb - 23.4 lbs @ .165/lb	3.86
1.68 % Zn - 33.6 lbs @ .20/lb	6.72
Total	$38.74

Total gross value of indicated ore on this basis - - - $1,950,000.

Possible ore reserves could be much greater based on geological experience in the district. For instance, ore is exposed in the Antoro level 400 ft. vertically above the 200 ft. level. Should this shoot hold up for that distance there would be approximately 400 ft. of stoping back above the level. About 1,000 ft. south of this work the vein went down to the Rawley 1200 ft. level. This could mean an additional 900 dip feet of ore below the level.

Conversely, the district is also known for an abrupt termination of ore bodies. Should this be the case either up or down dip the reserve estimates would be overstated. Additional development work is necessary to prove the figures.

The operator would like to take this opportunity to express appreciation to the staff of O.M.E. for the consideration and cooperation shown on the project. Particular thanks go to Mr. Nasler of the Denver Office and Mr. Kirkemo of the Washington Office. This can also be considered to be an endorsement from an operational standpoint of the O.M.E. program.

PLEASE NOTE:

M.T. Evans' "Geologic Map of Drifting Under O.M.E. Contract 2294" dated November, 1972 covers all work to date, and should become the final map for attachment to this report. The map was submitted with the Monthly Progress Report for November, 1972.

OME-6797 U. S. SIL[illegible] MINING CO. RAWLEY MINE 200' LEVEL

SAMPLES OF VEIN MATERIAL RAWLEY 200' LEVEL

Sample No.	Location	Width	Au oz.	Ag oz.	Cu%	Pb%	Zn%
5	OME+ 101'	1.0'	0.14	34.0	11.0	2.6	0.50
OME (H)	110'	3.0'	0.06	20.94	1.6	2.5	2.85
6	150'	0.5'	0.06	3.21	2.4	4.6	11.60
7	150'	0.8'	0.02	12.25	1.2	16.0	20.0
9	162'	1.2'	0.01	6.13	5.0	2.2	6.4
23	170'	3.7'	0.05	4.0	0.80	3.0	3.70
24	190'	4.6'	0.017	18.2	1.40	7.0	3.90
18	197'	2.5'	0.012	3.50	1.8	3.1	5.5
25	210'	3.0'	0.010	5.0	1.40	2.0	1.20
19	215'	2.5'	0.02	8.10	2.2	1.2	2.6
OME (G)	215'	2.5'	0.04	31.10	3.70	4.0	3.95
26	230'	3.0'	0.035	11.7	0.95	2.7	5.00
20	235'	2.5'	0.043	11.0	2.6	2.0	2.9
27	250'	3.0'	0.18	4.7	0.55	1.7	2.2
21	255	3.0'	0.01	3.4	2.1	0.76	2.6
OME (E)	267'	3.0'	0.01	3.83	0.50	1.00	3.95
28	270'	4.0'	0.022	4.7	0.44	2.0	1.6
22	275'	2.0'	0.017	8.00	0.95	2.4	6.2
29	290'	4.0'	0.082	21.0	1.60	2.0	6.0
30	318'	5.2'	0.070	20.0	1.70	2.7	2.1
Average		2.7'	0.04	11.77	2.19	3.2	5.15

OME-6797 U. S. Silver Mining Company

Bulk and grab samples

Sample No.	Location	No. Cars	Au oz.	Ag oz	Cu%	Pb%	Zn%
1	96 - 100	17 cars	.006	1.0	0.225	0.26	.52
3	Same as #2	17 cars	.065	7.05	0.90	0.71	1.25
4	102 - 107	9	.04	10.82	1.54	1.15	0.30
14	Car grab	142 - 146	0.02	1.40	1.10	2.65	0.45
8	grab	muck pile	0.03	4.08	0.44	1.2	1.7
10	169 - 174	muck pile	0.01	3.06	1.04	1.08	2.15
11	177 - 182	muck pile	0.005	4.67	0.75	1.50	3.40
12	186 - 190	muck pile	0.01	2.95	0.52	1.65	3.05
13	214 - 219	muck pile	0.01	3.75	0.64	1.15	1.35
14	231 - 254	muck pile	0.25	4.47	0.89	0.98	1.10
15	270	grab	.015	4.2	1.45	0.48	3.0
16	290	grab	.019	8.2	1.2	1.5	2.0
17	318	grab	.045	7.8	1.5	.82	1.7
(13)			.525	63.45	12.19	15.29	21.87
Average			.040	4.88	.93	1.17	1.68

794 cars @ 1 ton each = 794 tons of ore grade material in stockpile:

.04 oz. Au @ $35.00/oz.	=	$1.40
4.88 oz. Ag @ $1.48 oz.	=	$7.22
.93% Cu = 18.6 lbs. @ 50¢/lb.	=	$9.30
1.17% Pb = 23.4 lbs. @ .1450¢/lb.	=	$3.39
1.68% Zn = 33.6 lbs. @ 17¢/lb.	=	$5.71
		$27.02

JMH
11/16/73

UNITED STATES OF AMERICA
CERTIFICATION OF POSSIBLE PRODUCTION
UNDER AN EXPLORATION CONTRACT

Mr. George P. Bates
U.S. Silver Mining Company
21 University Road
Canton, Massachusetts 02021

Re: CML-6797 (Gold-Silver-Copper)
U.S. Silver Mining Company
June, Antoro, and Poverty Claims
Saguache County, Colorado
Contract 2294

Dear Mr. Bates

Pursuant to Article 6 of the referenced contract, as amended, the Government hereby certifies that mineral or metal production may be possible as a result of the exploration work completed on the contract.

Therefore, royalties shall be paid to the Government as provided in the contract on all production from the land described in the contract from March 22, 1971, to March 22, 1985, or until the total amount contributed by the Government under the contract ($35,956.69, subject to audit) is fully repaid with interest at the rate of 8 percent per annum, whichever occurs first. The payment of royalties is secured by a lien upon the land and upon any production therefrom.

Royalty payments should be made in favor of the U.S. Geological Survey and mailed or delivered to the Field Officer, Office of Minerals Exploration, Region III, U.S. Geological Survey, Room 28, Building 53, Denver Federal Center, Denver, Colorado 80225. Each payment should be accompanied by two copies of settlement sheets or other suitable sales evidence showing the date of sale, name of purchaser, the quantity and grade of the production sold, the price per unit, and the gross proceeds and allowable deductions therefrom. The purchaser should be notified of the Government's royalty on production and directed to pay the royalty, computed as provided in the contract, directly to the Government.

The Field Officer should be promptly notified upon the commencement of any production and upon any extended cessation thereof. Production unsold or unused six months after extraction from the ground should be reported promptly to the Field Officer.

Attention is specifically invited to the provisions of Article 2(c) of the contract referring to the preservation of the Government's royalty rights. Two true copies of any instrument transferring, surrendering, or encumbering any of your rights in the land embraced in the contract shall be furnished to this office.

Dated this 13th day of November, 1973.

THE UNITED STATES OF AMERICA

Harold Kirkemo

Chief, Office of Minerals Exploration
U.S. Geological Survey

Copy to Mr. Arad Riggs, Vice President
Geems-Weaver Mining Corporation

cc:
DEF
MR Rdg.
Br. of M Financial Mgmt.
Assoc. Sol. - Rm. 6554
OME Rdg.
OME Region III
Mr. Kirkemo
130 (2)

HKirkemo/gpw 11-13-73

Field Office's copy

RECEIVED
JUN 4 - 1973
Denver, Colorado

EXPLORATION CONTRACT
U. S. SILVER MINING COMPANY
OME-6797

Termination Agreement

It is agreed this 24th day of May, 1973, between the United States of America, acting through the Department of the Interior, U. S. Geological Survey, Office of Minerals Exploration, hereinafter called the "Government," and George P. Bates, John O. Flender and Dwight M. Rounds, d/b/a U. S. Silver Mining Company, a partnership, hereinafter called the "Operator," parties to that certain exploration Contract No. 2294 (OME-6797), dated March 22, 1971, as amended, hereinafter called the "Contract," that:

1. Effective June 15, 1973, the Contract and all obligations of the parties thereunder, except as otherwise herein expressly provided, shall be and are hereby terminated.

2. The Government shall contribute only to the allowable costs incurred prior to December 15, 1972.

3. The Operator shall promptly complete all winding-up and settlement actions provided for in the Contract, including furnishing to the Government three copies of a final report (in addition to the final monthly report) which shall include a geological and engineering evaluation of the results of the work performed under the Contract with an estimate of the ore reserves resulting from such work, complete assay data, adequate geological and engineering maps or sketches, and a summary of the work performed and the related costs thereof.

4. All rights of the Government provided for in the Contract with respect to a certification of possible production, royalty on production, and liens to secure payment thereof, reports (including preservation of Operator's records), accounts, audits, and the right to recover any overpayments are hereby preserved.

5. The Operator hereby releases and agrees to save the Government harmless from all claims or demands under or arising out of the Contract except as otherwise provided in this termination agreement.

IN WITNESS WHEREOF, these parties have executed this agreement as of the day and year first above written.

THE UNITED STATES OF AMERICA

By Harold Kirkemo
Chief, Office of Minerals Exploration
U. S. Geological Survey

U. S. SILVER MINING COMPANY

By George P. Bates

Title partner

Field Office's copy

EXPLORATION CONTRACT
U.S. SILVER MINING COMPANY
OME-6797

AMENDMENT NO. 5

It is agreed this 21st day of December, 1972, between the United States of America, acting through the Department of the Interior, U. S. Geological Survey, hereinafter called the "Government," and George P. Bates, John O. Flender, and Dwight M. Rounds, d/b/a U.S. Silver Mining Company, a partnership, hereinafter called the "Operator," that Exploration Contract 2294, (OME-6797), dated March 22, 1971, as amended, is further amended effective December 15, 1972, as follows:

1. (a) Work under the Contract may be suspended during the period beginning December 15, 1972, and ending no later than June 15, 1973.

(b) The Government shall not contribute to any costs incurred during the period of suspension.

(c) The Government shall not contribute to or be liable for any costs of rehabilitation or repair or any other costs which would not have occurred if there had been no suspension of work, or which may arise out of this suspension.

(d) The Operator, at its own cost and expense, without contribution by the Government, during the period of suspension shall preserve and protect the project work.

2. The date fixed by Article 1(a) of the Contract for completion of the work, as amended by Amendment No. 4, is further extended from twenty-one (21) months to thirty-three (33) months from the date of the Contract, or until December 22, 1973.

3. The maximum period for royalty payments as provided in Article 6(b) of the Contract as amended by Amendment No. 2 and for the lien to secure payment thereof, as amended by Amendment Nos. 1 and 2, is extended from eleven (11) years to twelve (12) years from the date of the Contract.

4. In Exhibit A of the Contract under the heading Estimated Costs of the Work, Fixed Unit Costs, as revised by Amendment No. 3, the section is further revised to read as follows:

"Fixed Unit Costs 1/ 2/

Drifting, including timbering, 710 feet at $64.00/foot	$45,440.00
Raising, including timbering, 25 feet at $90.00/foot	2,250.00

Long-hole drilling 740 feet at $1.33/foot (rounded)	$ 985.00
1 Supervisor 12 months at $800.00/month	9,600.00
1 Outside Consultant, 20 days at $75.00/day	1,500.00
Travel, Outside Consultant 3,000 miles at $0.12/mile	360.00
Per diem, Outside Consultant, 20 days at $25.00/day	500.00
Office Expense, 9 months at $50.00/month	450.00
Payroll taxes, insurance $9,600 at 15%	1,440.00
Assaying, 100 samples Gold and silver at $2.50/sample Copper, lead, zinc, at $1.50/each (rounded)	675.00
Total Estimated Cost of the Work	$63,200.00
Government Participation at 62-1/2%	$39,500.00

1/ Includes all costs whatsoever such as mobilization and demobilization, labor, equipment, material and supplies, and services.

2/ The Government retains no equity in any of the equipment or materials used."

This amendment shall not be construed to increase the estimated total cost of the Contract, the aggregate amount which the Government may be required to contribute, the amount of any item designated as maximum, nor the fixed unit cost of any item of work.

Except as herein amended, Exploration Contract 2294 (OME-6797), dated March 22, 1971, shall remain in full force and effect.

Executed in quadruplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By Harold Kirkemo
Chief, Office of Minerals Exploration
U. S. Geological Survey

U.S. SILVER MINING COMPANY

By George P. Bates

Title partner

Field Office's copy

AUG 24 1972

EXPLORATION CONTRACT
U. S. SILVER MINING COMPANY
OME-6797
AMENDMENT NO. 4

It is agreed this 15th day of August, 1972, between the United States of America, acting through the Department of the Interior, U. S. Geological Survey, hereinafter called the "Government", and George P. Bates, John O. Flender, and Dwight N. Rounds, d/b/a U. S. Silver Mining Company, a partnership, hereinafter called the "Operator", that Exploration Contract 2294, (OME-6797), dated March 22, 1971, as amended, is further amended effective as of August 22, 1972, as follows:

The date fixed by Article I(a) of the Contract for completion of the work, as amended by Amendment No. 2, is further extended from seventeen (17) months to twenty-one (21) months from the date of the Contract, or until December 22, 1972.

This amendment shall not be construed to increase the estimated total cost of the contract, the aggregate amount which the Government may be required to contribute, the amount of any item designated as maximum, nor the fixed unit cost of any item of work.

Except as amended herein Exploration Contract 2294 (OME-6797) dated March 22, 1971, shall remain in full force and effect.

Executed in quadruplicate the day and year first written above.

THE UNITED STATES OF AMERICA

By Harold Kirkemo
Chief, Office of Minerals Exploration

U. S. SILVER MINING COMPANY

By George P. Bates

Title Managing Partner

Field Office's copy

O.M.E. Region, U.S.
RECEIVED
MAR 20 1972
Denver, Colorado

EXPLORATION CONTRACT
U. S. SILVER MINING COMPANY
OME-6797

Amendment No. 3

It is agreed this 9th day of March, 1972, between the United States of America, acting through the Department of the Interior, U. S. Geological Survey, hereinafter called the "Government," and George P. Bates, John O. Flender, and Dwight Rounds, d/b/a U. S. Silver Mining Company, a partnership, hereinafter called the "Operator," that Exploration Contract 2294, (OME-6797), dated March 22, 1971, as amended, is further amended effective March 1, 1972 as follows:

In Exhibit A under the heading Estimated Costs of the Work, Fixed Unit Costs, the section is revised to read as follows:

	1/ 2/
"Fixed Unit Costs	
Drifting, including timbering, 710 feet at $64.00/foot	$45,440.00
Raising, including timbering, 25 feet at $90.00/foot	2,250.00
Long-hole drilling 560 feet at $1.33/foot (rounded)	745.00
1 Supervisor 12 months at $800.00/month	9,600.00
1 Outside Consultant, 20 days at $75.00/day	1,500.00
Travel, Outside Consultant 3,000 miles at $0.12/mile	360.00
Per diem, Outside Consultant, 20 days at $25.00/day	500.00
Office Expense, 9 months at $50.00/month	450.00
Payroll taxes, insurance $9,600 at 15%	1,440.00 May 11/10/72
Assaying, 131 samples Gold and silver at $2.50/sample Copper, lead, zinc at $1.50/each (rounded)	915.00
Total Estimated Cost of the Work	$63,200.00
Government Participation at 62-1/2%	$39,500.00

1/ Includes all costs whatsoever such as mobilization and demobilization, labor, equipment, materials and supplies, and services.

2/ The Government retains no equity in any of the equipment or materials used."

This amendment shall not be construed to increase the estimated total cost of the Contract, the aggregate amount which the Government may be required to contribute, the amount of any item designated as maximum, nor the fixed unit cost of any item of work.

Except as herein amended, Exploration Contract 2294 (OME-6797), dated March 22, 1971, shall remain in full force and effect.

Executed in quadruplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By Harold Kirkemo
Chief, Office of Minerals Exploration

U. S. SILVER MINING COMPANY

By George P. Bates

Title partner

Field Office's copy

EXPLORATION CONTRACT
U. S. SILVER MINING COMPANY
OME-6797

AMENDMENT NO. 2

It is agreed this 30th day of December, 1971, between the United States of America, acting through the Department of the Interior, U. S. Geological Survey, hereinafter called the "Government," and George P. Bates, John O. Flender, and Dwight M. Rounds, d/b/a U.S. Silver Mining Company, a partnership, hereinafter called the "Operator," that Exploration Contract 2294, (OME-6797), dated March 22, 1971, as amended by Amendment No. 1, dated August 26, 1971, is further amended effective as of December 22, 1971, as follows:

1. (a) Work under the Contract may be suspended during the period beginning January 1, 1972, and ending no later than May 1, 1972.

(b) The Government shall not contribute to any costs incurred during the period of suspension.

(c) The Government shall not contribute to or be liable for any costs of rehabilitation or repair or any other costs which would not have occurred if there had been no suspension of work, or which may arise out of this suspension.

(d) The Operator, at its own cost and expense, without contribution by the Government, during the period of suspension shall preserve and protect the project work.

2. The date fixed by Article I(a) of the Contract for completion of the work is extended from nine (9) to seventeen (17) months from the date of the Contract, or until August 22, 1972.

3. The maximum period for royalty payments as provided in Article 6(b) of the Contract and for the lien to secure payment thereof as amended by Amendment No. 1 is extended from ten (10) to eleven (11) years from the date of the contract.

This amendment shall not be construed to increase the estimated total cost of the contract, the aggregate amount which the Government may be required to contribute, the amount of any item designated as maximum, nor the fixed unit cost of any item of work.

Except as amended herein Exploration Contract 2294 (OME-6797), dated March 22, 1971, shall remain in full force and effect.

Executed in quadruplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By Harold Kirkemo
Chief, Office of Minerals Exploration

U. S. SILVER MINING COMPANY

By George P. Bates

Title partner

R-III

Field Office's Copy

EXPLORATION CONTRACT
U. S. SILVER MINING COMPANY
OME-6797

AMENDMENT NO. 1

It is agreed this 26th of August, 1971, between the United States of America, acting through the Department of the Interior, U. S. Geological Survey, hereinafter called the "Government," and George P. Bates, John O. Flender and Dwight M. Rounds, d/b/a U. S. Silver Mining Company, a partnership, hereinafter called the "Operator," that Exploration Contract 2294 (OME-6797), dated March 22, 1971, is amended effective July 19, 1971, as follows:

1. Article 6(e) of the contract, reading as follows, is reinstated:

"Lien for payment.--To secure the payment of royalty (see Article 6(b)), the Operator hereby grants to the Government a lien upon his interest in the land and upon any production of minerals and metals therefrom until the royalty claim is extinguished by lapse of time or is fully paid."

2. Article 14 of the contract entitled Changes and added provisions is deleted.

3. In Annex I of the contract, the fourth and final paragraph is deleted and the following paragraph is substituted in lieu thereof:

"A Lien and Subordination Agreements, dated August 13, 1971, executed by Weems-Weaver Mining Corporation, is attached and made part hereof."

Except as herein amended, Exploration Contract 2294 (OME-6797), dated March 22, 1971, shall remain in full force and effect.

Executed in quadruplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By Harold Kirkham
Chief, Office of Minerals Exploration
U. S. Geological Survey

U. S. SILVER MINING COMPANY
(Operator)

By George P. Bates
Partner

OME Region III
RECEIVED
SEP 16 1971
Denver

OME Region III
RECEIVED
SEP 16 1971

MME Form 42
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 Saguache, State of Colorado, described as follows: 2/ eight (8) patented lode mining claims in Section 18, T.47N., R.8E., Kerber Creek Mining District; as follows: June (1364), Poverty (938), Independence (14183-1), Ouray (14183-5), Peary (14183-3), North Pole (14183-2), Orphan Belle (14183-9) Antoro (937); as described in an agreement of Lease and Option to Purchase executed June 1, 1968 from the owner, Weems Weaver Mining Corporation to U.S. Silver Mining Company.

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 George P. Bates, John O. Flender and Dwight M. Rounds, d/b/a U. S. Silver Mining Company, a partnership. 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 "None." (State "None" or "See Annex No. ____".)

Dated this 13th day of August, 1971.

WEEMS-WEAVER MINING CORPORATION — ~~50 East 42nd Street~~ (Street)
By: X Arad Riggs (Seal) — New York, New York 10017 (City & State)
Vice President

(Street)
(City & State)
(Seal)

(Street)
(City & State)
(Seal)

(Street)
(City & State)
(Seal)

(Street)
(City & State)
(Seal)

(Street)
(City & State)
(Seal)

I, Edna M. Phillips (Name), certify that I am the Treasurer (Title—Secretary, etc.) of the corporation named herein; that Arad Riggs (Name), who signed this agreement was then Vice-President (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.

WEEMS-WEAVER MINING CORPORATION
By: X Edna M. Phillips
(Corporate Seal)

CONTRACT 2294 U.S. Silver Mining Co. STAGE ONE 6797 June, Antony Claims SHORT FORM -1-

MONTH	Drifting incl. Timber 600 ft @ 64.00/ft. $38,400.00		Raising incl. Timber 100 ft. @ 90.00/ft $9,000.00		Long Hole Drilling 1800 ft @ 1.33/ft. $2,394.00		2 Supervisor 9 mo. @ $800.00/mo. $67,200.00		Consultant 20 days @ 75.00/day $1,500.00		Consultant's Travel 3000 mi @ 0.12/mi $360.00		Consultants P.D. 20 days @ 25.00/day $500.00		Office Expense 9 mo @ 50.00/mo	
	MONTHLY	ACCUM.	MONTHLY	ACCUM.	MONTHLY	ACCUM.	MONTHLY	ACCUM.	MONTHLY	ACCUM	MONTHLY	ACCUM.	MONTHLY	ACCUM	MONTHLY	ACCUM.
MAY-June	110	110			78	78	1	1	–	–	–	–	–	–	1	1
1971	7,040.00	7,040.00			103.74	103.74	800.00	800.00	–	–	–	–	–	–	50.00	50.00
JULY	26	136			–	–	1	2	–	–	–	–	–	–	1	2
1971	1,664.00	8,704.00			–	103.74	800.00	1,600.00	–	–	–	–	–	–	50.00	100.00
AUG	51	187			84	162	1	3	–	–	–	–	–	–	1	3
1971	3,264.00	11,968.00			111.72	215.46	800.00	2400.00	–	–	–	–	–	–	50.00	150.00
SEPT	105	292			24	186	1	4	–	–	–	–	–	–	1	4
1971	6,720.00	18,688.00			31.92	247.38	800.00	3,200.00	–	–	–	–	–	–	50.00	200.00
OCT	74	366			–	–	1	5	–	–	–	–	–	–	1	5
1971	4,736.00	23,424.00			–	247.38	800.00	4,000.00	–	–	–	–	–	–	50.00	250.00
Nov.	52	418			28	214	1	6	–	–	–	–	–	–	1	6
1971	3,328.00	26,752.00			37.24	284.62	800.00	4,800.00	–	–	–	–	–	–	50.00	300.00
DEC	56	474			66	280	1	7	–	–	–	–	–	–	1	7
1971	3,584.00	30,336.00			87.78	372.40	800.00	5,600.00	–	–	–	–	–		50.00	350.00
JAN. FEB	49	523			220	500	2	9	8.5	8.5	680	680	.36	.36	2	9
1972	3,136.00	33,472.00			292.60	665.00	1,600.00	7,200.00	637.50	637.50	81.60	81.60	9.00	9.00	100.00	450.00
MARCH	42	565			–	500	1	10	–	8.5	–	680	–	.36	–	9
1972	2,688.00	36,160.00			–	665.00	800.00	8000.00	–	637.50	–	81.60	–	9.00	–	450.00
April –	–	–	25	25	–	–	1	11	8	16.5	–	–	3	3.36	–	–
MAY 1972	–	36,160.00	2,250.00	2,250.00	–	665.00	800.00	8,800.00	600.00	1,237.50	–	81.60	75.00	84.00	–	450.00
Oct.	78	643	–	–	–	–	1	12	–	–	–	–	–	–	–	–
1972	4,992.00	41,152.00	–	2,250.00	–	665.00	800.00	9,600.00	–	1,237.50	–	81.60	–	84.00	–	450.00
Nov.	–	–	–	–	117	617	–	–	2	18.5	–	–	1	4.36	–	–
1972	–	41,152.00	–	2,250.00	155.61	820.61	–	9,600.00	150.00	1,387.50	–	81.60	25.00	109.00	–	450.00

CONTRACT 2294 U.S. Silver Mng Co. OME 6797 STAGE ____ SHORT FORM -2-

$1,080.00 $2,316.00

MONTH	Payroll Taxes, Ins. 72000 15%		Assaying - Ru-Ag. @ 2.50/sample Cu, Pb, Zn @ 1.50/ea.												Total Recommended Payment	
	MONTHLY	ACCUM.	MONTHLY	ACCUM.	MONTHLY	ACCUM.	MONTHLY	ACCUM.	MONTHLY	ACCUM	MONTHLY	ACCUM.	MONTHLY	ACCUM	MONTHLY	ACCUM.
MAY-JUNE	1	1														
1971	120.00	120.00													8,113.74	8,113.74
July	1	2	4	4												
1971	120.00	240.00	160.0	16.00											2,650.00	10,763.74
AUG	1	3	–	–												
1971	120.00	360.00	–	16.00											4,345.72	15,109.46
SEPT	1	4	10	14												
1971	120.00	480.00	70.00	86.00											7,791.92	22,901.38
OCT.	1	5	3	17												
1971	120.00	600.00	21.00	107.00											5,727.00	28,628.38
NOV	1	6	5	22												
1971	120.00	720.00	35.00	142.00											4,370.24	32,998.62
DEC	1	7	8	30												
1971	120.00	840.00	56.00	198.00											4,697.78	37,696.40
JAN-FEB	2	9	–	–												
1972	240.00	1,080.00	–	198.00											6,096.70	43,793.10
MARCH	1	10	–	30												
1972	120.00	1,200.00	–	198.00											3,608.00	47,401.10
APRIL-	1	11	6	36												
MAY/1972	120.00	1,320.00	42.00	240.00											3,887.00	51,288.10
Oct	1	12	–	–												
1972	120.00	1,440.00	–	240.00											5,912.00	57,200.10
NOV	–	–	–	–												
1972	–	1,440.00	–	240.00										Withheld $200.00	330.61	57,530.71

25°
135
385

5/29/73

OME 6797 US Ag Mng Co.

474 feet along Rowley vein on 200 ft level
Total drifting under OME 523 feet along vein

"250" Vein are 2.7 feet wide and has an average grade of

.04 oz Au
11.77 oz Ag
2.19 % Cu
3.20 % Pb
5.15 % Zn

$67.51 / Ton as of 2/29/72

7'x8' – 5 oz Ag
3% Zn
3% Pb
2.0

Stockpiled ore 794 tons – grade on bulk samples are:

.04 oz Au
4.88 oz Ag
0.93 % Cu
1.17 % Pb
1.68 % Zn

$27.02 / ton as of 2/29/72

OVER

Northeast (Copper Vein)
180' ave 4 feet

12,000 Tons .02 oz Au
5.75 oz Ag
9.79 % Pb
11.82 % Zn
1.25 % Cu
} = $95.86 / ton 6/30/72

"Blob"

7' x 8' mine,

5.0 oz Ag
1.5 % Cu
3.0 % Zn
3.0 % Pb

$58+ - 7' Ave face
85% .50¢/unit over
$63.00/Ton
Zn - only Zn

Pb 90%
Cu 100%
-30 lbs
(Zn) $25.00

Very wet "
"3.7 ~~Zinc~~ wet

Smelting
18.00/Ton Pb

.12 oz Ag
.2 % Cu
.6 % Zn
.4 % Pb

85% mill
$43.20/Ton

Cost
75,000 mill
20,000 Equip
5000 supplies
+
5% Royalty

$500,000 one
$400,000 cost $10.00
100,000 profit

$$\frac{7' \times 200 \times 100}{11} = 12,700 \text{ Tons.}$$

$$\frac{7' \times 200' \times 250'}{11} = 31,800 \text{ Tons}$$

43.00/Ton

= $1,367,400.00

Merrill Mekem's

Keeler. Feb 8, 1979

Bob

Robert K. Murray
607 10th St Golden 80401
Colo

OME 6797
Pawley Mine
US Silver Mng Co.
Geo Bates

.04 g Au	5.0 g Ag	= 32.55
11.77 g Ag	1.5 % Cu = 30# @ .75¢	= 22.50
2.19 % Cu	3.0 % Pb = 60# @ .38¢	= 22.80
3.20 % Pb	3.0 % Zn = 60# @ .34¢	= 20.40
5.15 % Zn		$98.25

$172.66 ($162.50 w/o Au)

$67.51 / Ton 2/29/72
172.66 / Ton 2/9/78

2/8/79

W E Burleson

2370200

Bud Franz

2.19
2
438

1.5
2
30

3.20
2
640

5.15
2
1030

.04 oz Au $250.00/oz = $10.00

11.77 oz Ag @ $6.51/oz = $71.32

2.19 % Cu = 43.8 lbs @ .75¢/lb = 32.85

3.20 % Pb = 64.0 lbs @ .38¢/lb = 24.32

5.15 % Zn = 103.0 lbs @ .34¢/lb = 35.02

$ 172.66

5.0 oz Ag @ $6.51/oz

1.5 % Cu = 30 lbs @ .75¢/lb

3.0 % Pb = 60 lbs @

3.0 % Zn = 60 lbs @

Field Office's Copy

Maps transferred to Extra Copy for field use

MME Form 51
July 1965

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
U. S. Geological Survey

EXPLORATION CONTRACT
(Short Form) (AM)

Docket	Commodity	Contract No.	County	State
OME -6797	Gold-Silver-Copper	2294	Saguache	Colorado

It is agreed MAR 22 1971 (Date), between the United States of America, acting through the Department of the Interior, U. S. Geological Survey, hereinafter called the "Government," and

George P. Bates, John O. Flender and Dwight M. Roundo, d/b/a
U. S. Silver Mining Company, a partnership

,

whose mailing address is P. O. Box 326, Salida, Colorado 81201, hereinafter called the "Operator," as follows:

ARTICLE I. Authority and scope.--(a) This contract, entered into under the authority of Public Law 701, 85th Cong., 2d sess. (72 Stat. 700; 30 U.S.C. § 641 - 646), consists of this form, the attached Annex I (land description), Exhibit A (work and costs), and the maps and documents listed. The work is a search for new or unexplored deposits of the commodity designated above. The Operator shall begin the work on or before June 30, 1971 (Date), and, subject to the provisions of Article 7 and Exhibit A, shall complete the work within 9 months from the date of the contract. (Dec. 22nd 1971)

(b) The description of the work and the fixed cost for each unit of work to be performed (per foot of drilling, per foot of drifting, per hour of operations, etc.) are hereby agreed upon as specified in Exhibit A. The estimated total cost of the work is $ 63,200.00. The Government will contribute 62-1/2 percent of the total fixed unit costs of the work performed, not in excess of $ 39,500.00 in accordance with the provisions of Articles 4 and 5.

(c) Interest computation.--Simple interest at the rate of 8 percent shall accrue from the dates Federal funds are made available until the period specified for payment of royalty expires, or until the amount of Federal funds contributed is fully repaid with interest.

(d) The Operator shall not transfer or assign this contract or any right or obligation thereunder without the written consent of the Government.

ARTICLE 2. Operator's rights in land.--(a) The Operator represents and undertakes that Annex I correctly describes the land which is the subject of this contract and the nature of the Operator's right of property and possession therein (whether as owner, lessee, or otherwise), and that such right, title, or interest is subject only to the following claims, liens, or encumbrances:

SEE ANNEX I

(b) The Subordination Agreement of the holder of any claim, lien, or encumbrance listed above and (if the Operator does not hold the legal title) the Lien Agreement of any holder of the legal title of the land (lessor, seller, optionor, etc.) are attached as follows:

SEE ANNEX I

(c) The Operator shall preserve and maintain his right, title, or interest in the land and his right to the possession thereof for the purposes of this contract, and shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of this contract. The Operator shall neither transfer, convey, nor surrender the land nor any right, title, or interest therein, nor permit nor suffer any claim, lien, or encumbrance thereon, without expressly referring to and providing in the instrument of conveyance, lien, or encumbrance for the preservation of the Government's right to a royalty on production and liens for the payment thereof. Two true copies of such instrument shall be furnished to the Government. If the Government's rights to royalty as provided in Article 6 have been terminated, the provisions of this paragraph (c) shall become inapplicable.

ARTICLE 3. Performance of the work.--(a) Operator's responsibility.--The work shall be performed diligently, efficiently, in a workmanlike manner in accordance with good mining standards, and in compliance with State laws governing health, safety, and liability insurance covering employment. The Operator shall provide suitable and adequate equipment, facilities, materials, supplies, and labor to complete the work as specified in Article 1(a).

(b) Government may inspect.--The Operator shall consult with and inform the Government on all phases of the work as it progresses. The Government may enter at all reasonable times to inspect the work under the contract and production operations during the period that royalty is payable to the Government. The Operator shall provide the Government with all reasonable means of access for such inspections.

ARTICLE 4. Contribution by the Government.--The Government will make its contribution on the basis of the monthly vouchers referred to in Article 5(b), but all payments by the Government are provisional only, subject to audit. Until the account between the Operator and the Government is finally audited and settled and the Operator's final report has been received, the Government may withhold such sums as are necessary to protect its interests. To the extent that amounts in excess of fixed unit costs or in excess of the estimated total cost may be necessary for the performance of the work, the Operator shall incur and pay such amounts for his own account without contribution by the Government. The Government will not contribute to the cost of any work performed prior to the date of this contract. The Government may make payments for the account of the Operator directly to independent contractors and suppliers rather than to the Operator.

ARTICLE 5. Reports, accounts, audits.--(a) Operator's records.--The Operator shall keep suitable records and accounts of the units of work performed and of any production in which the Government may have an interest; and shall preserve those with respect to work performed for at least three years after final payment by the Government, and those with respect to production for at least three years after any obligation to pay royalties to the Government has terminated. The Government may inspect and audit said records and accounts at any time, either by itself or by a certified public accountant. The Comptroller General of the United States or his representative, until the expiration of said three-year periods, shall have access to and the right to examine all pertinent books, documents, papers, and records of the Operator.

(b) Monthly reports.--The Operator shall provide the Government with four copies of monthly reports in three sections as follows:

(1) Operator's Monthly Voucher claiming costs for work performed;

(2) Operator's Progress Report showing the number of units of the various types of work performed; and

(3) a narrative report of the work performed during the reporting period, including adequate engineering-geological maps or sketches, drill hole logs and locations, and assay reports on samples taken concurrently with advance in mineralized ground.

(Forms for reporting under (1) and (2) above will be provided by the Government.)

(c) Final report.--Upon completion of the work or termination of the Government's obligation to contribute to costs, the Operator shall furnish the Government with three copies of a final report (in addition to the final monthly report). This final report shall include a geological and engineering evaluation of the results of the work performed under the contract with an estimate of the ore reserves resulting from such work, complete assay data, adequate geological and engineering maps or sketches, and a summary of the work performed and the unit costs thereof.

(d) Report of sales.--The Operator shall provide the Government with suitable accounting and documentary evidence covering all production to which the Government's royalty relates, such as two copies of smelter or concentrator settlement sheets and certified accounts of production and sale or other disposition of production.

(e) Compliance with requirements.--If the Government determines that any of the Operator's reports, records, or accounts are insufficient or incomplete, or if the Operator fails to make them, the Government may procure the preparation or completion of same with suitable attachments as an expense of the work to which the Operator shall contribute. The Government may withhold approval and payment of any vouchers relating to insufficient or incomplete reports, records, or accounts.

ARTICLE 6. Repayment by Operator.--(a) Certification.--If the Government considers that mineral or metal production from the land covered by the contract may be possible as a result of the exploration work, it shall so certify in writing to the Operator at any time not later than six months after a sufficient final report and final accounting (see Article 5) have been furnished.

(b) Royalty on production.--The Operator, whether or not the producer (for example, if the Operator either transfers or does not retain his interest in the land), shall pay to the Government a royalty on all minerals and metals mined or produced from the land as follows:

(1) irrespective of any certification of possible production--from the date of the contract until the lapse of the time within which the Government may issue such certification or until the total net amount contributed by the Government is fully repaid with interest, whichever occurs first; or

(2) if the Government issues a certification of possible production--for a period of ten years from the date of the contract or until the total net amount contributed by the Government is fully repaid with interest, whichever occurs first.

(c) Payment of royalty.--(1) The Government's royalty shall be five percent of the gross proceeds (including any bonuses, premiums, allowances, or other benefits) from the production sold, in the form sold (ore, concentrate, metal, or equivalent), at the point of delivery (the f.o.b. point); except, that charges of the buyer arising in the regular course of business and shown as deductions on the buyer's settlement sheets (such as treatment processes performed by the buyer, sampling and assaying to determine the value of the production sold, and freight payable by the buyer to a carrier (not the Operator or producer)), shall be allowed as deductions in arriving at the "gross proceeds" as that term is used herein. No costs of the Operator or producer are deductible in arriving at the "gross proceeds" as that term is here used.

The term "treatment processes" means those processes (such as milling, concentrating, smelting, refining, or equivalent, but excluding fabricating or manufacturing) applied to the crude ore or other production after it is extracted from the ground to put it into a commercially marketable form.

(2) The Government's royalty shall be computed and paid currently upon each lot sold, held, or used in integrated operations, as the case may be.

(d) Unsold production.--If any production (ore, concentrate, metal, or equivalent), after the lapse of six months from the date the ore was extracted from the ground, remains neither sold nor used in integrated manufacturing or fabricating operations (for instance if it is stockpiled), the Government, at its option, as long as it so remains, may require the computation and payment of its royalty on the value of such production in the form (ore, concentrate, metal, or equivalent) it is in when the Government elects to require computation and payment. If any production is used in integrated manufacturing or fabricating operations before the Government makes its election, the Government's royalty on such production shall be computed on the value thereof in the form in which and at the time it is so used. "Value" as here used means what is or would be gross income from mining operations for percentage depletion purposes in Federal income tax determination, or the market value, whichever is greater.

~~(e) Lien for payment. To secure the payment of royalty (see Article 6(b)), the Operator hereby grants to the Government a lien upon his interest in the land and upon any production of minerals and metals therefrom until the royalty claim is extinguished by lapse of time or is fully paid.~~

(f) Notice to purchasers.--The Operator or producer shall give notice of the Government's claim for royalty to any purchaser of the production, and shall authorize and direct such purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets. If the records of any production and sales or other disposition of production, whether the production is by the Operator or by others, are not made available to the Government, the amount of the royalty may be estimated by the Government, and this estimate shall be final and binding upon the Operator or producer.

(g) No obligation to produce.--Nothing in this contract shall be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any production operations.

(h) Government not obligated to buy.--Nothing in this contract shall be construed as imposing any obligation on the Government to purchase any minerals and metals mined or produced from the land.

ARTICLE 7. Termination of the Government's Obligations.--(a) If the Government determines that operations at any time have failed to achieve anticipated results and further work is not justified, the Government may give the Operator written notice thereof, and thereupon:

(1) the Government shall be free of all obligation to pay on account of units of work not then performed; and

(2) the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to final accounting and reporting.

(b) If the Government determines that the Operator is in default under the terms of the contract, the Government may give the Operator written notice of such default with a specification of reasonable time within which the default must be cured; and if the Operator fails to cure such default as required, thereupon:

(1) the Government shall be relieved of all obligation to pay on account of units of work not performed when the notice was given, and

(2) the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to final accounting and reporting.

The Government may also avail itself of any other remedy the law may provide for breach of contract, including the right to rescind the contract and to demand repayment of all moneys contributed by the Government under the contract.

(c) The giving of any notice by the Government under the provisions of this Article 7 shall not affect the Government's rights as provided for in the contract with respect to royalty and liens to secure the payment thereof, and such rights shall be fully preserved.

(d) The determinations of the Government are subject to appeal under Article 11.

ARTICLE 8. Notices to be given by the Government may be delivered to the Operator or may be sent by certified mail addressed to the Operator at his mailing address stated in this contract. If mailed, notices are deemed to have been delivered five days after the date of mailing.

ARTICLE 9. Officials not to benefit.--No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

ARTICLE 10. Nondiscrimination in Employment.--The provisions respecting nondiscrimination in employment which are required by section 301 of Executive Order 10925, dated March 6, 1961, as amended and supplemented, are attached hereto as Exhibit B and are hereby incorporated in and made a part of this contract.

ARTICLE 11. Disputes.--Any dispute arising under this contract which is not disposed of by agreement shall be decided by the Director, U. S. Geological Survey, who shall reduce his decision to writing and mail or otherwise furnish a copy thereof to the Operator. The decision of the Director, U S. Geological Survey, shall be final and conclusive unless, within 30 days from the date of receipt of such copy, the Operator mails or otherwise furnishes to the Director, U. S. Geological Survey, a written appeal addressed to the Secretary of the Interior. The decision of the Secretary or his duly authorized representative for the determination of such appeals shall be final and conclusive unless determined by a court of competent jurisdiction to have been fraudulent, or capricious or arbitrary, or so grossly erroneous as necessarily to imply bad faith, or not supported by substantial evidence.

The term "Director, U. S. Geological Survey," as used herein includes his duly authorized representative.

ARTICLE 12. Work Hours Act of 1962 - Overtime Compensation.--This contract, to the extent that it is of a character specified in the Work Hours Act of 1962 (Public Law 87-581, 76 Stat. 357-360) and is not covered by the Walsh-Healey Public Contracts Act (41 U.S.C. 35-45), is subject to the following provisions and to all other provisions and exceptions of said Work Hours Act of 1962.

(a) Overtime requirements.--No Operator or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any laborer or mechanic to be employed on such work in excess of eight hours in any calendar day or in excess of forty hours in any workweek unless such laborer or mechanic receives compensation at a rate of not less than one and one-half times his basic rate of pay for all hours worked in excess of eight hours in any such calendar day or in excess of forty hours in any such workweek, as the case may be.

(b) Violations; liability for unpaid wages; liquidated damages.--In the event of any violation of the clause set forth in subparagraph (a) of this paragraph, the Operator and any subcontractor responsible therefor shall be liable to any affected employee for his unpaid wages. In addition, such Operator and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed, with respect to each individual laborer or mechanic employed in violation of the clause set forth in subparagraph (a) of this paragraph, in the sum of $10 for each calendar day on which such employee was required or permitted to work in excess of eight hours or in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in subparagraph (a) of this paragraph.

(c) Withholding for unpaid wages and liquidated damages.--The U. S. Geological Survey may withhold or cause to be withheld, from any moneys payable on account of work performed by the Operator or subcontractor, such sums as may administratively be determined to be necessary to satisfy any liabilities of such Operator or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (b) of this paragraph.

ARTICLE 13. Copeland (Anti-Kickback) Act--Nonrebate of wages.--The regulations of the Secretary of Labor applicable to contractors and subcontractors (29 CFR, Part 3), made pursuant to the Copeland Act, as amended (40 U. S. C. 276c) and to aid in the enforcement of the Anti-Kickback Act (18 U. S. C. 874) are made a part of this contract by reference. The Operator will comply with these regulations and any amendments or modifications thereof and will be responsible for the submission of affidavits required of independent contractors thereunder. The foregoing shall apply except as the Secretary of Labor may specifically provide for reasonable limitations, variations, tolerances, and exemptions.

EXPLORATION CONTRACT
U. S. SILVER MINING COMPANY
OME-6797

ANNEX I

The land, including all rights pertaining thereto, referred to in Article 2 of the contract consists of nine (9) patented lode mining claims in Section 18, T. 47 N., R. 8 E., Kerber Creek Mining District, Saguache County, Colorado. These claims are shown on Figure 1, entitled "Poverty, June, and Antoro Claims, Saguache County, Colorado," which is attached and made part hereof.

The patented lode mining claims are identified as:

Name	U. S. Survey No.
June	1,364
Poverty	938
Antoro	937
Independence	14,183 (1)
Ouray	14,183 (5)
Peary	14,183 (3)
North Pole	14,183 (2)
Orphan Bell	14,183 (9)
Rawley	980

The Operator is in possession of all of these claims except the Rawley under terms of an Agreement of Lease and Option to Purchase executed June 1, 1968 from the owner, Weems Weaver Mining Corporation.

The Operator is in possession of the Rawley patented claim under terms of a Quit Claim Deed executed September 3, 1969 from the owner, American Industrial Leasing Company.

A Performance Bond in lieu of Lien and Subordination Agreements in the amount of $39,500.00 will be furnished by the Operator, and attached and made part hereof.

EXPLORATION CONTRACT
U. S. SILVER MINING COMPANY
OME-6797

EXHIBIT A

The purpose of the project is to explore by drifting, raising and long hole drilling on the 200-foot level of the Hawley mine for gold-silver-copper-bearing ore bodies in a steeply dipping fissure vein in andesite.

General Provisions

Drifts shall be not less than 7 by 8 feet in cross section and raises not less than 5 by 7 feet in cross section and both shall be timbered as necessary. Drift and raise sets shall be not less than 8- by 8-inch timber, or equivalent round timber. Raises shall be timbered to provide a chute and manway with 3-inch thick lagging on the chute side and ladders on the manway side.

Mine rails shall be not less than 12-pound size, air lines not less than 2-inch diameter, water lines not less than 1-inch diameter, and vent lines not less than 12-inch diameter.

All significantly mineralized areas traversed by the drifts and raises shall be sampled normal to the trends of the deposits at intervals not exceeding 5 feet, or by a representative bulk sample of each round broken. Significantly mineralized cuttings from the long holes shall be sampled with no sample representing more than 5 linear feet of hole.

All samples, from whatever source, shall be split as necessary and one split assayed. The Operator shall store one split of each sample in a suitable container properly labeled. Stored samples shall be made available for Government inspection and possible use, and may be disposed of only with prior Government approval.

All splits of samples assayed shall be analyzed for gold, silver, and copper.

True copies of assay certificates and maps or sketches showing the work completed, the location, width, and assay value of all samples assayed, and the geological formations and structures traversed by the long-holes and workings shall be furnished monthly to the Government.

The Operator shall provide such equipment, materials, supervision, labor, and technical services as may be required to perform the work in a satisfactory manner.

The location, direction, and extent of each work item shall be subject to Government approval.

Description of the Work

The work shall consist of extending the drift on the 200-foot level of the Hawley mine an additional 600 feet along the vein, driving a 100-foot raise up dip on the vein from the end of the completed drift, and drilling about 1,800 feet of long-holes at sites to be selected by the Operator to test the width and grade of mineralized areas in the hanging and footwall sides of the vein.

The approximate locations of the proposed drift extension and raise are shown on Figure 2 entitled "Antoro Tunnel, Bonanza, Colorado," attached and made part hereof.

Estimated Costs of the Work

1/ 2/

Fixed Unit Costs

Drifting, including timbering, 600 feet at $64.00/foot	$ 38,400.00
Raising, including timbering, 100 feet at $90.00/foot	9,000.00
Long-hole drilling, 1,800 feet at $1.33/foot	2,394.00
1 Supervisor, 9 months at $800.00/month	7,200.00
1 Outside Consultant, 20 days at $75.00/day	1,500.00
Travel, Outside Consultant, 3,000 miles at $0.12/mile	360.00
Per diem, Outside Consultant, 20 days at $25.00/day	500.00
Office Expense, 9 months at $50.00/month	450.00

Payroll taxes, insurance, $7,200.00 at 15%	$ 1,080.00
Assaying, 331 samples, Gold and silver at $2.50/sample Copper, lead, zinc at $1.50/ea., (rounded)	2,316.00
Total Estimated Cost of the Work	$63,200.00
Government Participation at 62-1/2%	$39,500.00

1/ Includes all costs whatsoever such as mobilization and demobilization, labor, equipment, materials and supplies, and services.

2/ The Government retains no equity in any of the equipment or materials used.

ARTICLE 14. Changes and added provisions. - -

The Government shall not make or be obligated to make any contribution to the costs of work performed under this contract until the Operator has submitted an adequate performance bond in the penal sum of $39,500.00 and the bond has been approved by the Government.

Executed in quadruplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By William T. McCormack

Assistant Director, U. S. Geological Survey
for Administration

N. D. SILVER MINING COMPANY
(Operator)

By George P. Bates
George P. Bates
Title: Partner

By John O. Hender
John O. Hender
Title: Partner

By Dwight M. Rounds
Dwight M. Rounds
Title: Partner

EXHIBIT B

NONDISCRIMINATION IN EMPLOYMENT

(Section 202, Executive Order 11246, September 24, 1965)

"During the performance of this contract, the contractor agrees as follows:

'(1) The contractor will not discriminate against any employee or applicant for employment because of race, creed, color, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.
'(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, or national origin.
'(3) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the contractor's commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
'(4) The contractor will comply with all provisions of Executive Order No. 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
'(5) The contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
'(6) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be cancelled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
'(7) The contractor will include the provisions of Paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, That in the event the contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.'"

Carl Standy

Mt. Holly X

MECO

Minerals Eng Co.

Moly-Co

Monarch ~~Mines~~ Corp

Mt. Etna

Colo Div Min.

866-3401

Colo Wy Assoc. -

Shirley 534 7181

866-3567

mine land Reclamation

534-1181

Colorado Molybdenum
Corp - Napoleon
Minn Oil

2 mos

Moly. Corp

Cumberland

MS 101 4630
Bun.
Joe Smith
M. Caulky

Smith D

Page 33

3 of 33

Indian — Mexico

8- 928-6650 Al Frier

Pete Toulemon

G (1971)

Mt Pleasant

Mt Gilmer (Cob Egg Napoleon Pierce)

Gerald

Am oY - Porter School Musi

Wesley Winfield

Cumberland Pass

between Pittsburg & Turing

162 PP26-

USG & Bel 289

Gospel P

Lum & Cobb

(Sam Adams)

Napoleon Mines
Colo Springs

Colo. Moly Corp
George P. Agostolos
Colo Springs

333 No. Tejon
Colo. Spr. 80901
473-8100

2,709 shares

Paul Jordan

886 E 300 North
Orem Utah
84057

D. Sepin

Joe. Deseo

Di' sepin -
(Hit last Tuesday
Colorado Molybdenum
Corp. -

Union Oil -

Cumberland Pass

Friday

Bill Siker

798- 8355
Moly Corp

9-1- 798-8355
Ken Zinn

Colorado Molybdenum
Geo.
Baker

US Silver
Ken Pagsani & Mayhew

Gordon Humbert -
P- 261-3900
Tucson

602- 624- 1572
Moly Corp
Joan Orme

Mayhew E J
985-1078
986-8930-

Gordon Humble
Tucson moly co

8-261 3900

602-624 1572 Tucson
Lou Anne —
message to Humble
Aug 17th or 18th

1922-60

1978

McCallum Smith

Jam Tyson

Oak Springs

Friday

~~19,000 lbs.~~

19
2
38
Tons

~~19~~ 2000
19 one
18000
2000
38,000 lbs

1.3%

500 conc

9.09 g Au

37.00 g Ag

999 lbs Pb

1.3%

3

38,000 | 500

5

Xtra

FINAL FIELD REPORT - OME EXPLORATION PROJECT

By J. William Hasler

November 6, 1973

1. OME-6797 (Gold-Silver-Copper)
U. S. Silver Mining Company
June, Antoro and Poverty Claims
Saguache County, Colorado
Contract 2292

Operator: George P. Bates, John O. Flender and Dwight N. Rounds, d/b/a, U. S. Silver Mining Company, a partnership, 21 University Road, Canton, Massachusetts 02021

Property: "The land, including all rights pertaining thereto, referred to in Article 2 of the contract consists of nine (9) patented lode mining claims in Section 18, T. 47 N., R. 8 E., Kerber Creek Mining District, Saguache County, Colorado. These claims are shown on Figure 1, entitled "Poverty, June, and Antoro Claims, Saguache County, Colorado," which is attached and made part hereof."

"The patented lode mining claims are identified as:

Name	U. S. Survey No.
June	1,364
Poverty	938
Antoro	937
Independence	14,183
Ouray	14,183
Peary	14,183
North Pole	14,183
Orphan Bell	14,183
Rawley	980

Ownership: "The Operator is in possession of all of these claims except the Rawley under terms of an Agreement of Lease and Option to Purchase executed June 1, 1968 from the owner, Weems Weaver Mining Corporation.

The Operator is in possession of the Rawley patented claim under terms of a Quit Claim Deed executed September 3, 1969 from the owner, American Industrial Leasing Company.

A Performance Bond in lieu of Lien and Subordination Agreements in the amount of $39,500.00 was furnished by the Operator, and attached and made part hereof.

2. Purpose of Project: The purpose of the project was to explore by drifting, raising and long hole drilling on the 200-foot level of the Rawley mine for gold-silver-copper-bearing ore bodies in a steeply dipping fissure vein in andesite.

3. Contract: Date - March 22, 1971, for a period of 9 months.
Original contract amount - $63,200.00.
Government participation 62-1/2 percent, $39,500.00.

Amendments - No. 1 - August 26, 1971. 1. Article 6(e) of the contract, reading as follows, is reinstated: Lien for payment -- To secure the payment of royalty (see Article 6(b)), the Operator hereby grants to the Government a lien upon his interest in the land and upon any production of minerals and metals therefrom until the royalty claim is extinguished by lapse of time or if fully paid." 2. "Article 14 of the contract entitled Changes and added provisions is deleted." 3. In Annex I of the contract, the fourth and final paragraph is deleted and the following paragraph is substituted in lieu thereof: "A Lien and Subordination Agreement, dated August 13, 1971, executed by Weems-Weaver Mining Corporation is attached and made a part hereof."

No. 2 - December 30, 1971, provided that (a) work under the Contract may be suspended during the period beginning January 1, 1972, and ending no later than May 1, 1972, and 2. The date fixed by Article I(a) of the Contract for completion of the work ie extended from nine (9) to seventeen (17) months from the date of the Contract, or until August 22, 1972. 3. The maximum period for royalty payment as provided in Article 6(b) of the Contract and for the lien to secure payment thereof as amended by Amendment No. 1 is extended from ten (10) to eleven (11) years from the date of the contract.

No. 3 - March 9, 1972, provided for the conversion of portions of raising, long-hole drilling, and assaying funds to additional drift footage and supervision.

No. 4 - August 15, 1972, amended the contract to extend the date fixed for completion of the work from seventeen (17) months to twenty-one (21) months from the date of the Contract, or until December 22, 1972.

3. Contract:

Amendments (Continued) - No. 5 - December 21, 1972 amended the Contract to allow for a work suspension period beginning December 15, 1972, and ending no later than June 15, 1973. The amendment also allowed for an extension of time to allow for the completion of the work from twenty-one (21) months to thirty-three (33) months from the date of the contract, or until December 22, 1973. The maximum period for royalty payments was also extended from eleven (11) years to twelve (12) years from the date of the Contract. There was a revision in the Fixed Unit Costs that increased the amount of long hole drilling from 560 feet to 740 feet, and to decrease the amount of assaying from 131 samples to 100 samples.

4. Project Work: Started May 25, 1971. Terminated May 24, 1973.

Cost Items Fixed Unit Costs 1/, 2/	Authorized 3/ Units	Rate	Amount	Completed Units	Amount
Drilling, including timbering	600 ft.	$64.00/ft.	$38,400.00	643 ft.	$41,152.00
Raising, including timbering	100 ft.	$90.00/ft.	$9,000.00	25 ft.	$2,250.00
Long-hole drilling	1,800 ft.	$1.33 ft.	$2,394.00	617 ft.	$820.61
Supervision	9 mo.	$800.00/mo.	$7,200.00	12 mo.	$9,600.00
Geologic Consultant	20 da.	$75.00/da.	$1,500.00	18.5 da.	$1,387.50
Consultant's Travel	3,000 mi.	$0.12 mi.	$360.00	680 mi.	$81.60
Office Expense	9 mo.	$50.00/mo.	$450.00	9 mo.	$450.00
Payroll, taxes, insurance	$7,200.00	15%	$1,080.00	12 mo.	$1,440.00
Assaying	331	Au-Ag @ $2.50 per sample Cu, Pb, Zn $1.50 per each	$2,316.00	36	$240.00
Total Fixed Unit Costs			$63,200.00		$57,530.71
Gov't participation @ 62-1/2%			$39,500.00		$35,756.70
Refund for submitting final report					$200.00
Total Gov't participation @ 62-1/2%					$35,956.70

1/ Included all costs whatsoever, such as mobilization, demobilization, labor, equipment, materials and supplies, and services.

2/ The Government retains no equity in any of the equipment or materials.

3/ As amended, in Amendment Nos. 3 and 5.

Effectiveness of the Work - The work completed under the contract adequately explored the target area, however, I would have like to see the Operator complete the long-hole drilling, crosscutting and drifting to more adequately explore the hangingwall split off the main Rawley vein, and in this way explore the "copper winze vein" at depth as well as along strike. However, the vein on the Rawley 200 Level was

adequately explored for a distance of some 523 feet and was found to contain ore grade material for a distance of 200 feet.

Efficiency of Operation - The project was efficiently supervised and operated.

5. Reports:

Operator's Final Report - An acceptable Final Geologic and Engineering Report, was received in this office June 28, 1973.

Cost Review - Since the contract was on a Fixed Unit Cost basis, no report of review was requested, nor has been made.

Royalty Review - There has been no production of metals from the mine since the Termination Agreement was executed consequently there will be no request for a Royalty Review by the Field Officer, Region III, OME.

6. Project Results Discovery: - The project work resulted in the discovery of minable gold-silver-copper ore. Maps and assay data were attached to the monthly vouchers. Ore reserves estimated by the Operator as of June 19, 1973, were included in his final engineering and geologic report.

The Operator estimates a tonnage of 21,600 tons of ore based on a 3-foot vein width, 200 feet in length and a projection of 100 feet above, and 100 feet below the Rawley 200-Level. The gross value of this ore based on metal prices as of 6/19/73 ($91.67 per ton) would be $1,980,000.00.

If the bulk sample assays were used as criteria there would be a tonnage estimated at 50,400 tons, using a drift width of 7 feet, a length of 360 feet, and a projection of 100 feet each above and below the Rawley 200 Level. The gross value of this ore based on metal prices as of 6/19/73 ($38.74 per ton) would be $1,950,000.00.

Certification

- Certificiation was recommended, on August 22, 1973, in a memorandum from the Field Officer, Region III to the Chief, Office of Minerals Exploration. Certification was recommended on the basis of the ore discovered by the OME work, however, a Certification of Possible Production has not yet been issued by Washington as of the date of this report, November 7, 1973. Only a termination agreement has been effected thus far.

Production

- There is a stockpile of some 794 tons of ore grade material lying outside the portal of the Rawley 200 Level. None of this stockpile has been shipped, to date. The stockpile material assayed as follows:

.04 oz. Au @ $35.00/oz.	=	$1.40
4.88 oz. Ag @ $1.48/oz.	=	$7.22
0.93% Cu, 18.6 lbs. $0.50/lb.	=	$9.30
1.17% Pb = 23.4 lbs. @ .1450¢/lb	=	$3.39
1.68% Zn = 33.6 lbs @ 17¢/lb.	=	$5.71
		$27.02

(Prices prevailing as of 6/19/73)

Gross value of the 794 tons at the quoted price of $27.02/ton will be $21,453.88.

Royalties

- There has been no production reported as having been sold as of the date of this report, and no royalties have been paid to the Government.

7. Geologic Summary

- The purpose of the contract was to explore by drifting, crosscutting, raising, and long-hole drifting on the 200 level of the Rawley Mine for gold-silver-copper bearing ore bodies in a steeply dipping fissure vein in andesite.

OME exploration work started at Station 23 + 41 feet. The first 97 feet was driven in altered andesite with some weakly mineralized faults and scattered veinlets. The vein was intercepted at OME + 97 feet, and had a thickness of nearly 4 feet, and was striking N. 15° E., and dipping 70° to the east. The vein contained considerable quartz, was quite pyritic, and contained chalcopyrite, galena, sphalerite and some other copper minerals. The vein was explored for a distance of some 250 feet.

Throughout this distance the vein pinched, swelled occasionally but generally maintained a thickness of at least 3.5 feet. Near station 2 - 28 the drift was driven into the hanging wall partly because of the nature of the ground. The andesite became somewhat less altered, several long holes were drilled into the footwall and the vein appeared to be some 10 to 15 feet west of the drift. A crosscut was driven westerly off the main drift, beyond station 2-30 (see mine map 2-72 by M. T. Evans with vouchers). The vein was penetrated by a crosscut at about 15 feet, and was followed northward for 18 feet, where vein was found to have a thickness of only 6-inches and contained only minor Cu, Pb and Zn sulphides. The hanging wall drift was continued for some 80 feet however a seemingly weak, steeply dipping structure crossed the drift 15 feet north of the short stub drift. Beyond this structure the andesite was fresh, and dense, and contained no vein material, bearing out previous studies that show that the veins are strong and productive in certain areas of alteret andesite, and are completely non-productive in the fresh dense unaltered andesite.

An attempt was made to intersect a strong hangingwall split off the Rawley vein, that appears to extend into or is the so-called "Copper vein", however the ground was highly altered, and heavy making drifting or crosscutting hazardous. The work was terminated at this time, partly due to heavy ground, but due mostly to a change in the financial structure of the Operator, precluding his doing further exploration work under the subject contract.

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
OFFICE OF MINERALS EXPLORATION

OME Region III
RECEIVED
JAN 9 X 1973
Denver, Colorado

Xtra for file

OPERATOR'S MONTHLY VOUCHER

For Month of November 1972

Docket No. OME- 6797
Contract 14-08-0001 2294
Contract Amount $63,200.00
Gov't. Participation 62½ % $ 39,500.00

Operator's Name U. S. Silver Mining Company
Address 21 University Rd., Canton, Mass. 02

FOR OPERATOR'S USE					FOR GOVERNMENT USE ONLY			
COST ITEMS (FROM EXHIBIT A)	THIS MONTH		TO DATE		THIS MONTH		TO DATE	
	UNITS	COSTS	UNITS	COSTS	UNITS	COSTS	UNITS	COSTS
		$		$		$		$
Drifting including timbering			643	41,152.00			643	41,152.00
Long hole drilling	117	155.61	617	820.61	117	155.61	617	820.61
Supervisor			12	9,600.00	—	—	12	9,600.00
Office expense			9	450.00	—	—	9	450.00
payroll taxes, insurance			12	1,440.00	—	—	12	1,440.00
Assaying			36	240.00	—	—	36	240.00
Outside Consultant	2	150.00	18.5	1,387.50	2	150.00	18.5	1,387.50
Travel, outside consultant			680	81.60	—	—	680	81.60
Per diem, outside consultant	1	25.00	4.36	109.00	1	25.00	4.36	109.00
Raising, including timbering			25	2,250.00	—	—	25	2,250.00
TOTALS		$ 330.61		$ 57,530.71		$ 330.61		$ 57,530.71

I certify that the above bill is correct and just and that payment therefor has not been received.

Date 1/2/73 *Payee George P. Bates U.S. Silver Mining Company

Per George P. Bates Title Partner

*When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary," or "Treasurer," as the case may be.

A willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction is a criminal offense. (U. S. Code, Title 18, Sec. 1001.)

(INSTRUCTIONS ON REVERSE)

Approved as noted, subject to field examination and audit.

Signature J. William Hasler OME Field Officer 1/10/73 Date

Approved for: $ (SUBJECT TO AUDIT)

Signature

Date Vou. No.

(SEE OTHER SIDE)

FOR OPERATOR'S USE	FOR GOVERNMENT USE
REMARKS	REMARKS Withheld $200.00 pending resumption of work, June 1973

OPERATOR'S MONTHLY REPORT

The Operator, under an Office of Minerals Exploration contract, is required to report monthly to the Government. The report consists of two parts.

FIRST, the Operator's Monthly Voucher on Form 9-1648 listing the project costs incurred and claimed by the Operator is the voucher basis for payment of the Government's share of the cost.

SECOND, the Operator's Narrative Report is a concise description of the work performed, results accomplished, and any unusual situations encountered, illustrated and supported by engineering-geological maps or sketches, drill hole logs, assay reports, etc., as pertinent.

The Operator submits the original and three copies of each of the two sections of this report to the OME regional Field Officer at the end of each month during the life of the contract.

PREPARATION OF OPERATOR'S MONTHLY VOUCHER, FORM 9-1648

In the left hand column list the items for which costs were incurred during the month, and also the items for which costs were previously reported. For items previously reported, show only UNITS TO DATE and COSTS TO DATE. Items listed should conform to Exhibit A of the contract (Estimated Costs of the Work). The total of COSTS THIS MONTH followed by the Operator's signature constitutes a claim for payment of the Government's share of the costs. The Operator or his agent must sign the certification in the lower left corner.

Except for amounts claimed under "fixed unit costs" provisions of the contract, all costs claimed in this voucher must be supported by documentary evidence consisting of: (a) certified copies or transcripts of payrolls which list each employee, wage rate, period of employment, gross earnings, and net earnings; (b) original or certified copies of invoices, statements of accounts, or purchase orders which indicate items of materials or services, quantities, unit prices, total charges, and payment terms; and (c) certified memoranda of the Operator for such items as unemployment taxes, employee's liability insurance, and depreciation of Operator-owned equipment. The certification may be stated thus, "Certified True Copy", followed by the signature of the Operator or his agent. One copy of each document should accompany the original of this voucher.

The requirement for submitting documentary evidence of claimed costs may be waived by the OME regional Field Officer if he determines that it is impracticable for an Operator to submit this material. In any case of waiver of this requirement an "on-site" audit by an OME auditor is mandatory prior to payment of the final Operator's Monthly Voucher.

U.S. SILVER MINING COMPANY

Report of Progress

Month of November 1972

O.M.N. Contract No. 2294

Timbering was commenced to catch the bad ground resulting from the fault zone encountered at 68 to 78 ft. in the east x cut referred to in the progress report for October, 1972. During the first part of the month the rock was still caving and sloughing as water coursed down the slick footwall slip of the fault. The first two square sets were put up without difficulty, but while blocking to the back on the third a large slab caved off and wiped the set out.

At this point it seemed that while the area could be eventually controlled, the expenditure of time and material involved would off set a new course of the x cut to get around the area. Also the effect of the fault and its influence on ore deposition was an unknown quantity. Accordingly, an examination of the x cut by Mr. William Kasler of the O.M.N. Denver office and Max Evans, consulting geologist, was arranged for November 15, 1972.

During the examination the east x cut was surveyed and mapped and a decision was made to drill two long holes from a drill location with bearings as shown on Evans' map. Purposes of the holes being to try to locate the copper winze structure and to test the rock conditions in case a run around would be required.

Long Hole #17 was drilled on a Brunton bearing of S 55°E. The first 30 ft. of the hole was in medium hard rock, probably due to the influence

	15561
	15000
	2500
Nov Exp.	33061 *
	*
	*
	4115200
	82061
	960000
	45000
	144000
	24000
	138750
	8160
	10900
	225000
Total	57530.71 *
	*
	*

of the fault, but from 30 ft. to its total depth of 57 ft. the rock became quite hard. The hole was abandoned at 57 ft. because the drilling machine would not rotate the string of steel. Some deflection of the string was undoubtedly caused by slips angling across the hole.

Long Hole #18 was drilled on a bearing of N 73° E. The fault zone shown on the geologic map was encountered from 16 ft. to 20 ft. in the hole. Thereafter the rock became hard and continued hard to 46 ft. At 46 ft. the rock softened considerably and between 50 and 51 ft. heavy gouge material was struck. This gouge caused much trouble by plugging the steel and, after several unsuccessful attempts to drill through it, a 1" pipe was inserted into the hole to clean the gouge. This was done three times and then the hole was flushed with water. During these operations some of the gouge was panned and the mineral glass reveals fairly heavy mineralization in the gouge. Galena, Sphalerite and Chalcopyrite particles were identified in the drillings. A sample has been saved of the gouge cleaned out with the pipe, as well as samples of each red. The red samples may not be very conclusive, however, due to contamination in the hole clearly revealed during the flushing of the hole.

After flushing, the hole was reentered and drilled to 60 ft. total depth. Alteration was evident in the drillings from 51 ft. to 55 ft. after which the hole passed back into country rock. While no "solid" ore was cut in the hole, it seems conclusive that there is a structure out there roughly conforming to the down dip extension of the Copper Winze of the Antero.

A decision was made to timber the fault zone at whatever cost and extend the x cut to avoid losing any footage remaining on the contract. However, a major snowstorm on December 4th and 5th coming on top of several previous storms in November blocked the road from the 1200 level to the 200 level, and it seemed best to apply for a recess of the work until spring.

Copies of Mr. Evans' report and map covering the latest examination of the project are attached hereto.

Summary of work for month of November, 1972:

	Nov.	Total to Date
Mill ore dumped on stockpile	-0-	924 cars
Drifting and x cutting	-0-	643 ft.
Raising	-0-	25 ft.
Long Holes	117	617 ft.

GEOLOGICAL REPORT
RAWLEY MINE 200 LEVEL
OME PROJECT - CONTRACT NO. 2294
November, 1972

A one day geological examination was made on the 200 level O.M.E. project at the Rawley Mine during November, 1972. The examination was made with Mr. William Hasler, field officer for the United States Government Office Of Minerals Exploration.

Purpose of the examination was to map the underground geology of the crosscut drifting recently completed on the 200 Level of the Rawley Mine. The crosscutting had been completed to explore for the down dip extension of the Copper Winze Ore shoot on the 200 level.

Extremely bad ground composed of altered andesitic porphyry was encountered in the crosscut drift at a point forty five (45) feet in from the right rib of the main existing drift. Caving conditions required timbering of the drift from the forty five foot point to the existing face. A N 70 degree West fault zone with flat parallel fractures on the south hanging wall block caused the drift back to cave some fifteen (15) feet above the track elevation. At the time of examination the drift timbers were broken and the drift segment near the face was full of cave material.

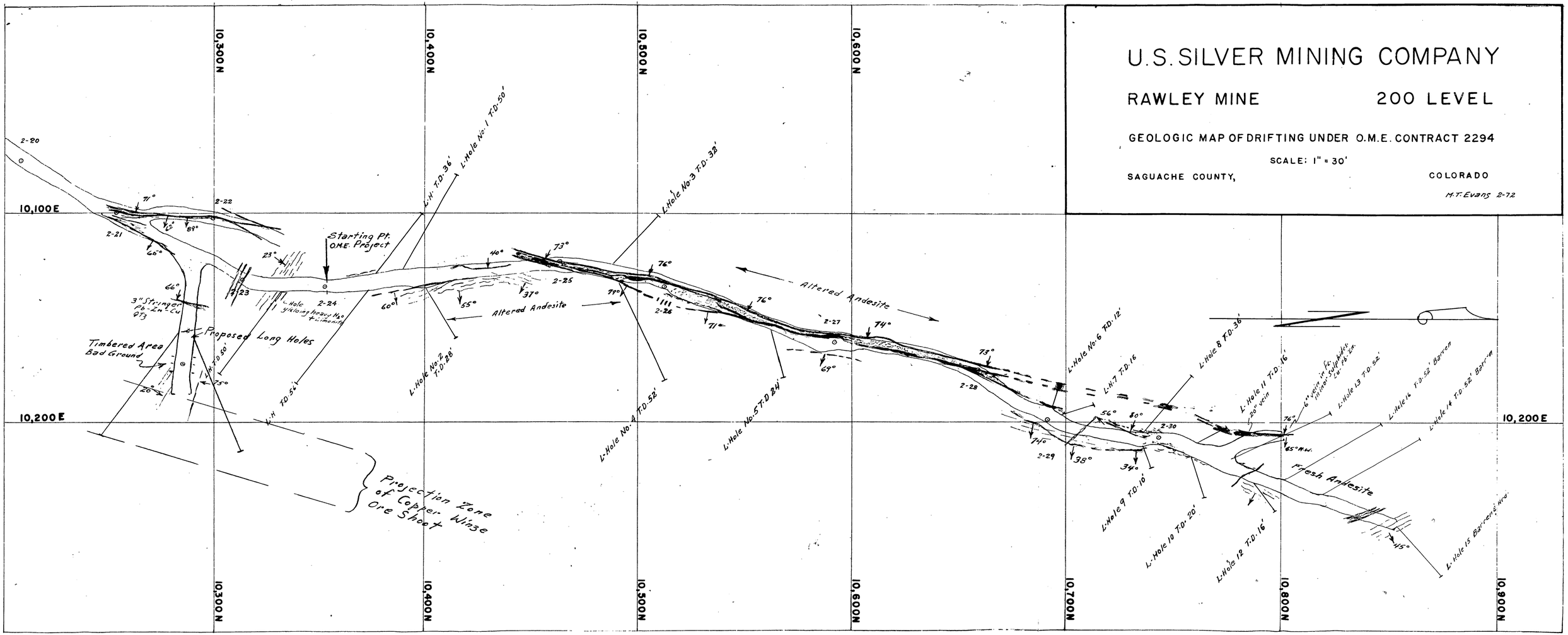
Due to the bad ground conditions encountered and the fact the existing face was in near proximity to the projected position of the vein, a decision was made to drill two long holes for possible location of the vein and also to test for better ground conditions in the event a run around would be required.

It is strongly recommended that the proposed long holes be drilled no less than 60 feet in depth to test the possibility of a flattening in dip on the projected vein structure. (See Attached Map)

Respectfully submitted,

Max T. Evans - Consulting Ming. Geol.
P. O. Box 407
Crested Butte, Colorado 81224

Att: Geological Map


U.S. SILVER MINING COMPANY
RAWLEY MINE
200 LEVEL
GEOLOGIC MAP OF DRIFTING UNDER O.M.E. CONTRACT 2294
SCALE: 1" = 30'
SAGUACHE COUNTY,
COLORADO
M.T. Evans 2-72
10,300 N
10,400 N
10,500 N
10,600 N
10,700 N
10,800 N
10,100 E
10,200 E
Starting Pt. O.M.E. Project
L-H T.D. 36'
L-Hole No. 1 T.D. 50'
L-Hole No. 3 T.D. 32'
L-Hole No. 2 T.D. 28'
L-Hole No. 4 T.D. 52'
L-Hole No. 5 T.D. 24'
L-Hole No. 6 T.D. 12'
L-H. 7 T.D. 16
L-Hole 8 T.D. 36'
L-Hole 9 T.D. 10'
L-Hole 10 T.D. 20'
L-Hole 11 T.D. 16'
L-Hole 12 T.D. 16'
L-Hole 13 T.D. 52'
L-Hole 14 T.D. 52' Barren
L-Hole 15 Barren
L-H T.D. 50'
L-H T.D. 54'
Altered Andesite
Fresh Andesite
Proposed Long Holes
Timbered Area Bad Ground
3" Stringer Pb-Zn-Cu Qtz
L-Hole 4' Kaolinized heavy Mn + Limonite
6" vein Fe Sulphides Mn Sulphides Cu Pb Zn
20" vein
85° N.W.
Projection Zone of Copper Winze Ore Shoot
2-20
2-21
2-22
2-23
2-24
2-25
2-26
2-27
2-28
2-29
2-30

Crested Butte, Colorado
December 18, 1972

To: Mr. Reid Johnston - Operator Rawley Mine

From: Max T. Evans

Subject: Statement For Geological Consulting Services On Rawley Mine OME Project.

Underground geological Work On November 15, 1972.....	$75.00
Expenses Per Day	125.00
One day map preparation & report	75.00
Map Prints	2.47
Total Amount Due.....	$177.47

Respectfully submitted,

Max T. Evans

Max T. Evans - Consulting Ming. Geol.
P. O. Box 407
Crested Butte, Colorado 81224

Office of Minerals Exploration
Building 53 Room 28

November 29, 1972

Memorandum

To: Chief, Office of Minerals Exploration

From: Field Officer, Region III

Subject: OME-6797 (Gold-Silver-Copper)
U. S. Silver Mining Company
June, Antoro, and Poverty Claims
Saguache County, Colorado
Contract 2292

An interim inspection on the subject property was made November 15th and 16th. The examining geologist was accompanied by the Operator's Mine Superintendent, Mr. Reid Johnston, and the Operator's Consulting Geologist, Mr. Max Evans.

The recommended crosscut off the Rawley 200 level to explore the projected hanging wall split of the main Rawley vein to the east was begun 28 feet beyond Survey Station 2-21 in order not to interfere with the frog at the junction of the two drifts at Station 2-21. (See attached map).

An essentially north striking 1-foot wide vein was intersected some 23 feet in the crosscut. This vein was sampled by the examining geologist, however, the assay results are not yet available. Beyond this vein the country rock is predominantly andesite, and as the crosscut was advanced eastward the andesite became progressively altered, and more porphyritic nearer the face. Several bedding plane slips became flatter between 50 - 68 feet in the crosscut and a prominent flat fault plane dipping 20° east was penetrated at 68 feet. The fault was very gougy and the surrounding country rock is increasingly decomposed. Near 78 feet in the drift the flat fault appeared to join a strong west-northwest striking fault and fracture zone that appears to be an extension of the fracture zone in the main drift between station 2-23 and 2-24. The strong fault strikes N. 73° W. and dips 75° south.

It was recommended by the consulting and examining geologists to drill at least two long-holes northeast, and southeast from a point in the crosscut (see enclosed map) across the projected hanging wall split to test for its projection. If these two holes do not intersect the structure then a long hole south 30° east near station 2-21 for about 60 feet should be drilled to test the hanging wall structure in rocks known to be favorable for ore deposition. The main vein becomes tight and nonproductive northward from survey station 2-25, however the stopes off the copper vein or hanging wall split of the Rawley vein strongly projects into the area of the proposed exploration even though the projection is a long one. There could be a flattening of the vein, or the rocks within this area may be similar to those non-productive, intensely silicified portions of the main vein, as the portion just mentioned, or similar to the fresh, highly silicified andesite encountered beyond the structure 45 feet beyond the survey station 2-30, at which point the vein can be seen but it is tight and just plain non-productive.

The Operator has some 60 feet of long-hole drilling left that is allowable, and he will need at least 180 feet of additional long hole drilling to adequately test the hanging wall vein. This footage can be obtained by transferring that amount of money from assay costs as there is a surplus here. These funds can be used without endangering the project in any way. The transfer of $240.00 from assaying will still leave a balance of $435.00 for assays, and that much sampling should not now be needed. The Operator has been advised to request the transfer of these funds by an amendment to the contract as well as to ask for an extension of time, as the date for completion of the work is December 22, 1972. Additional time may be required to reach the objective, and heavy winter snows may seriously hamper the project, as the Rawley 200 level portal lies at an elevation of 10,870 feet above sea level. His request will be proposed and submitted to us for consideration.

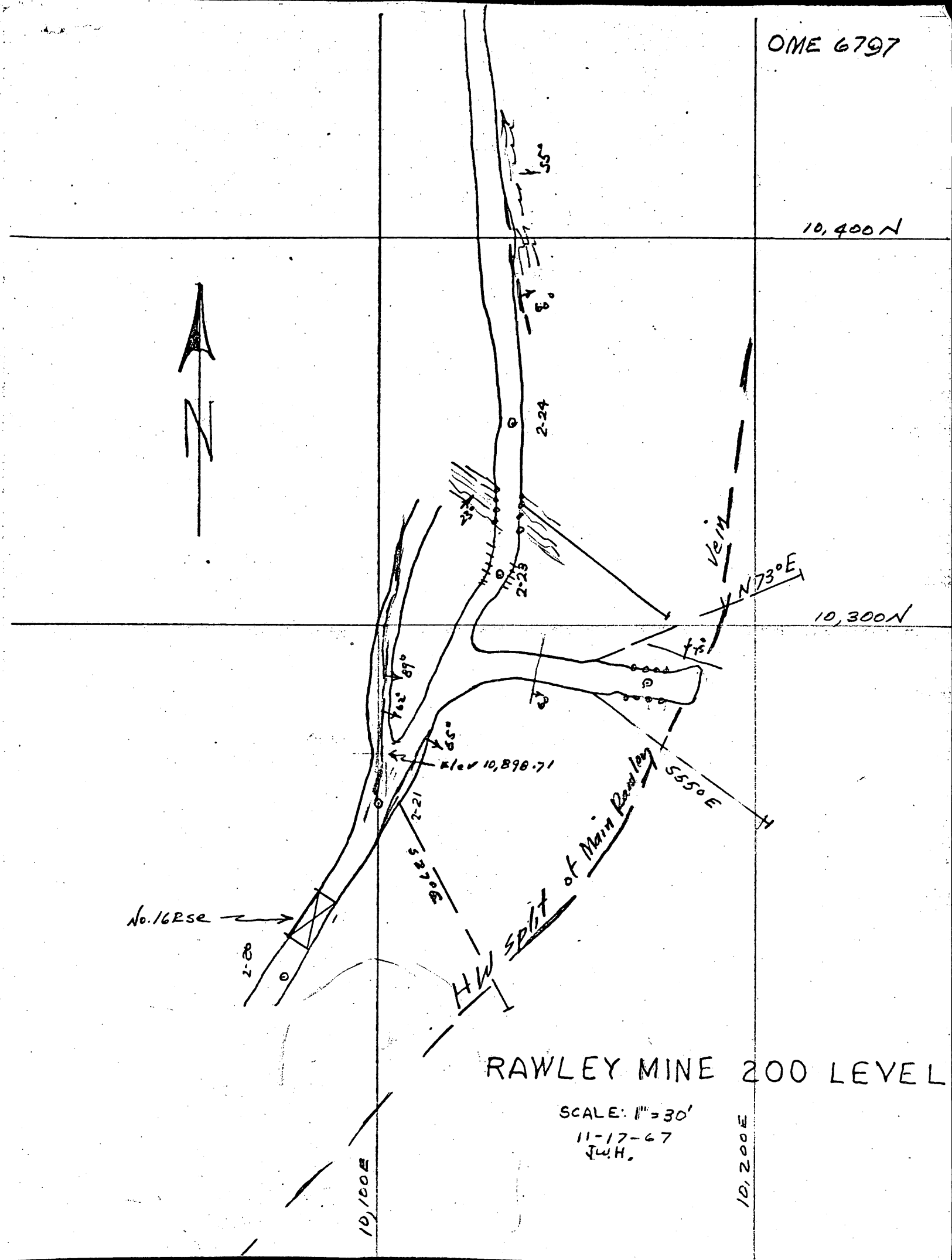
J. William Hasler

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

Enclosures

cc: OME-6797
OME chron
Mr. Hasler
Ex. Copy for Field Use

OME 6797


10,400 N
10,300 N
10,100 E
10,200 E
N
2-24
2-23
2-21
2-20
Vein
N 73° E
S 55° E
Elev 10,898.71
No. 16 Rse
HW split of Main Rawley
RAWLEY MINE 200 LEVEL
SCALE: 1" = 30'
11-17-67
J.W.H.

20'

11/29/30

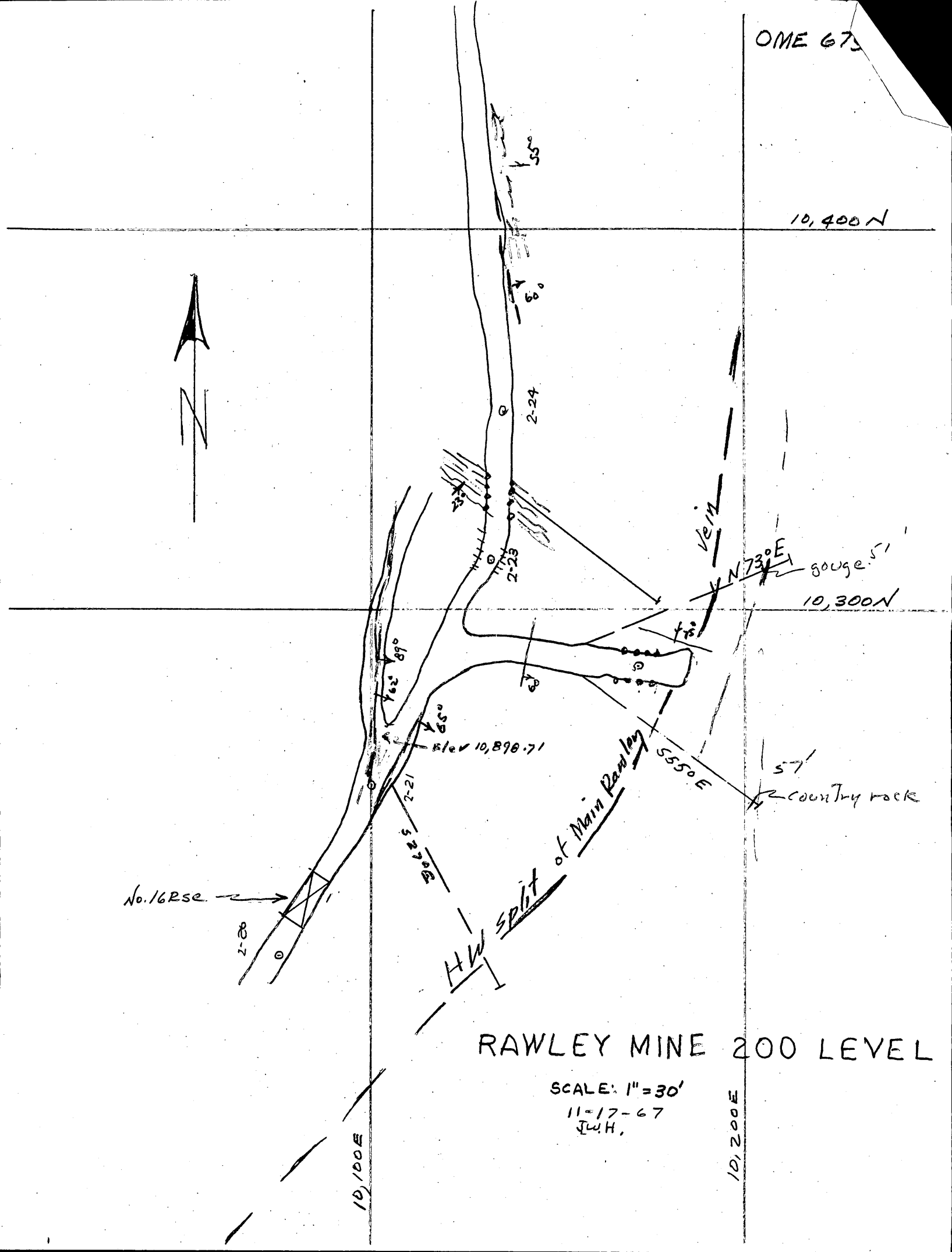
51
57
108'
60
48

Reid Johnson -
Drift 3 - 4 feet

Drilled North Hole

2' - Sam - 3 - 4 ft Drift

Chg Bit N. 73° E
46' Softening up
51' Heavy gouge 6" →
Sludge - gouge - Heavy
[illegible]



RAWLEY MINE 200 LEVEL

SCALE: 1" = 30'

11-17-67

J.W.H.

710 assume

643 Dwelling & Facilities

67 Balance Ft

Average

180
133
540
540
180
23940
1500 1.33

560
500

60' (180')

180 @ 1.33 = $ 239.40
79.80
.60

360.00

$ 159.60

$ 1500.00 investment
1237.50
$ 262.50

1.33
120
133
360
360
120
159.60

assuming

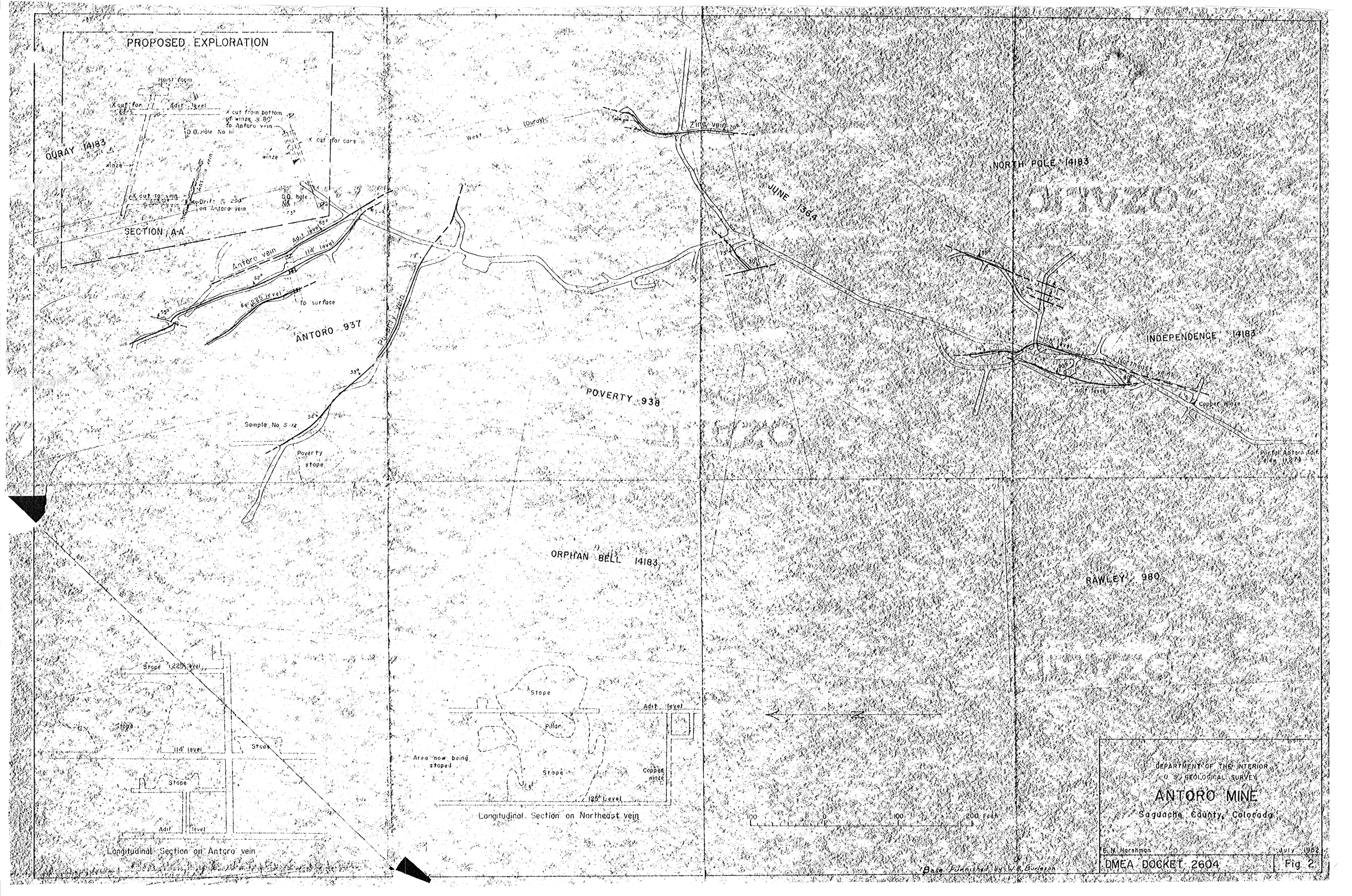
$ 715.00
240.00
500

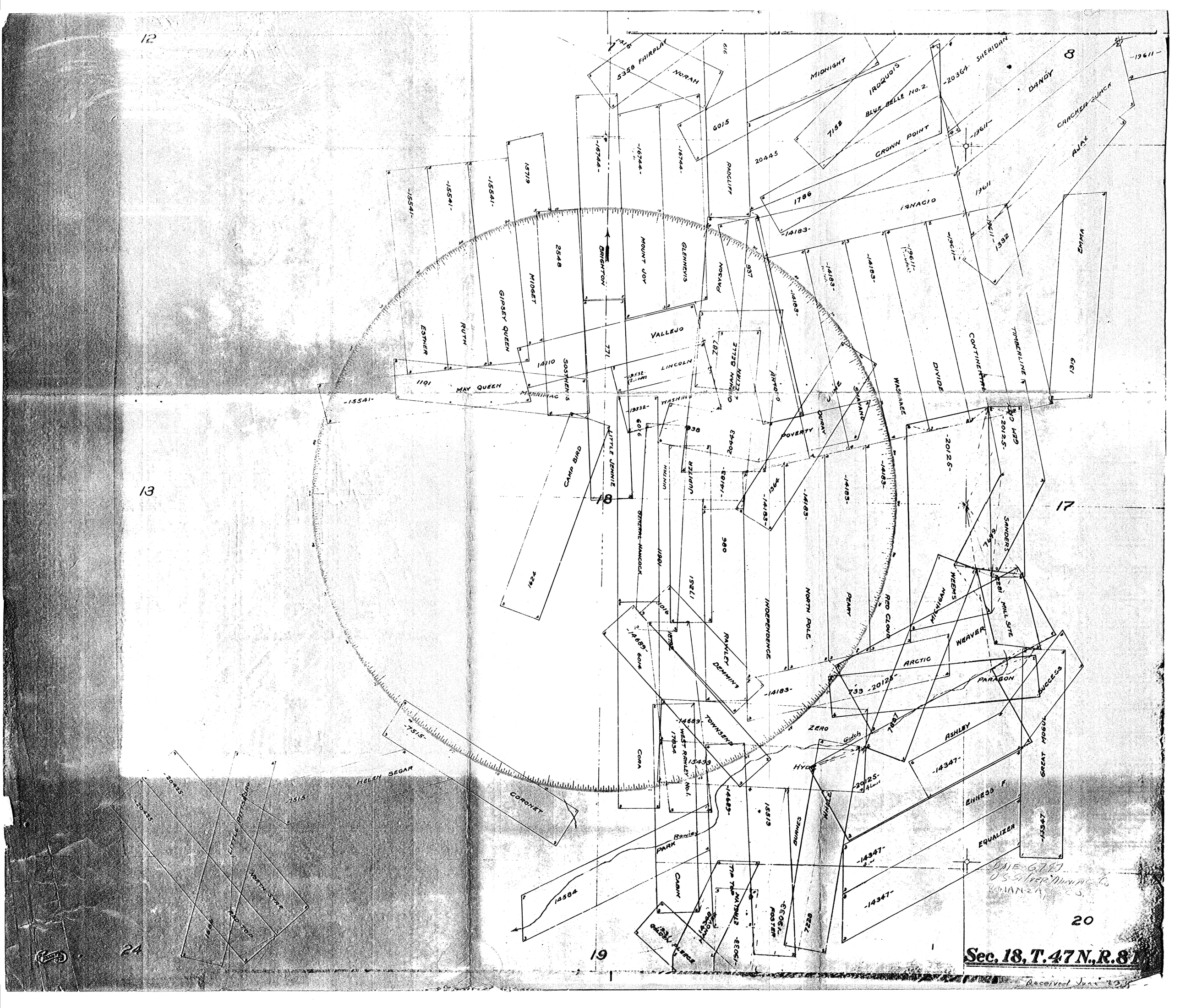
$ 675.00
160.00
$ 515.00
160.00
355.00

Fixed Unit Cost –

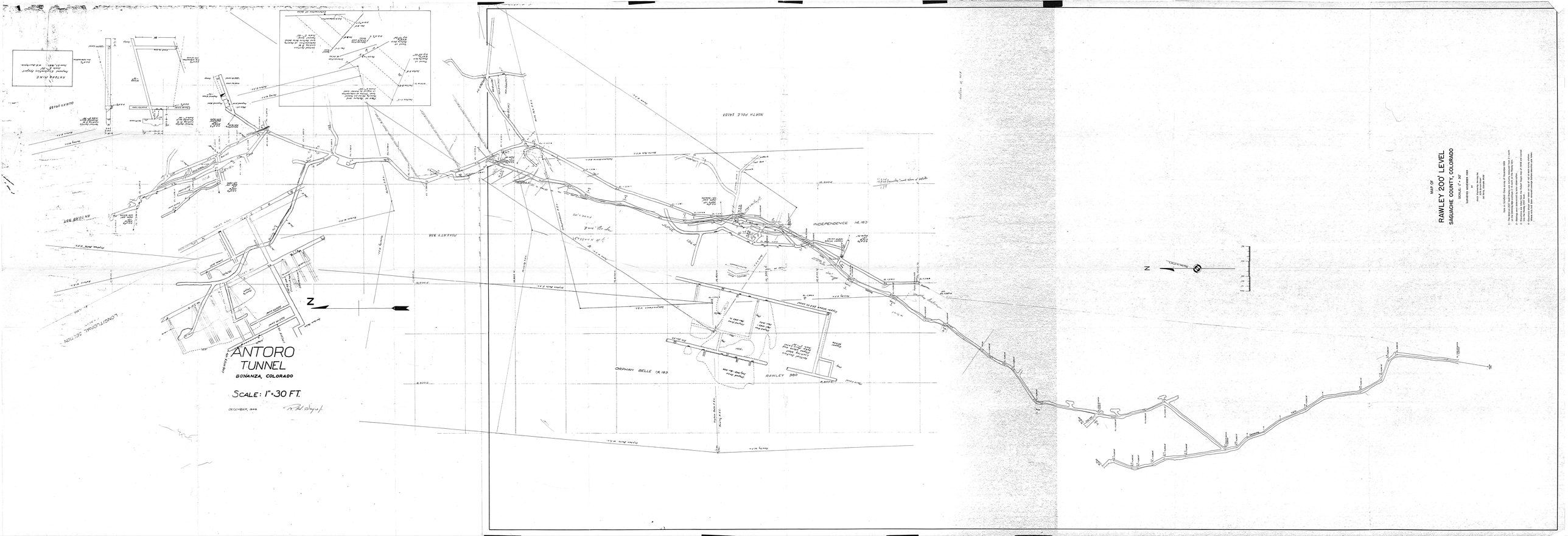
In assuming transformable to honey Hill

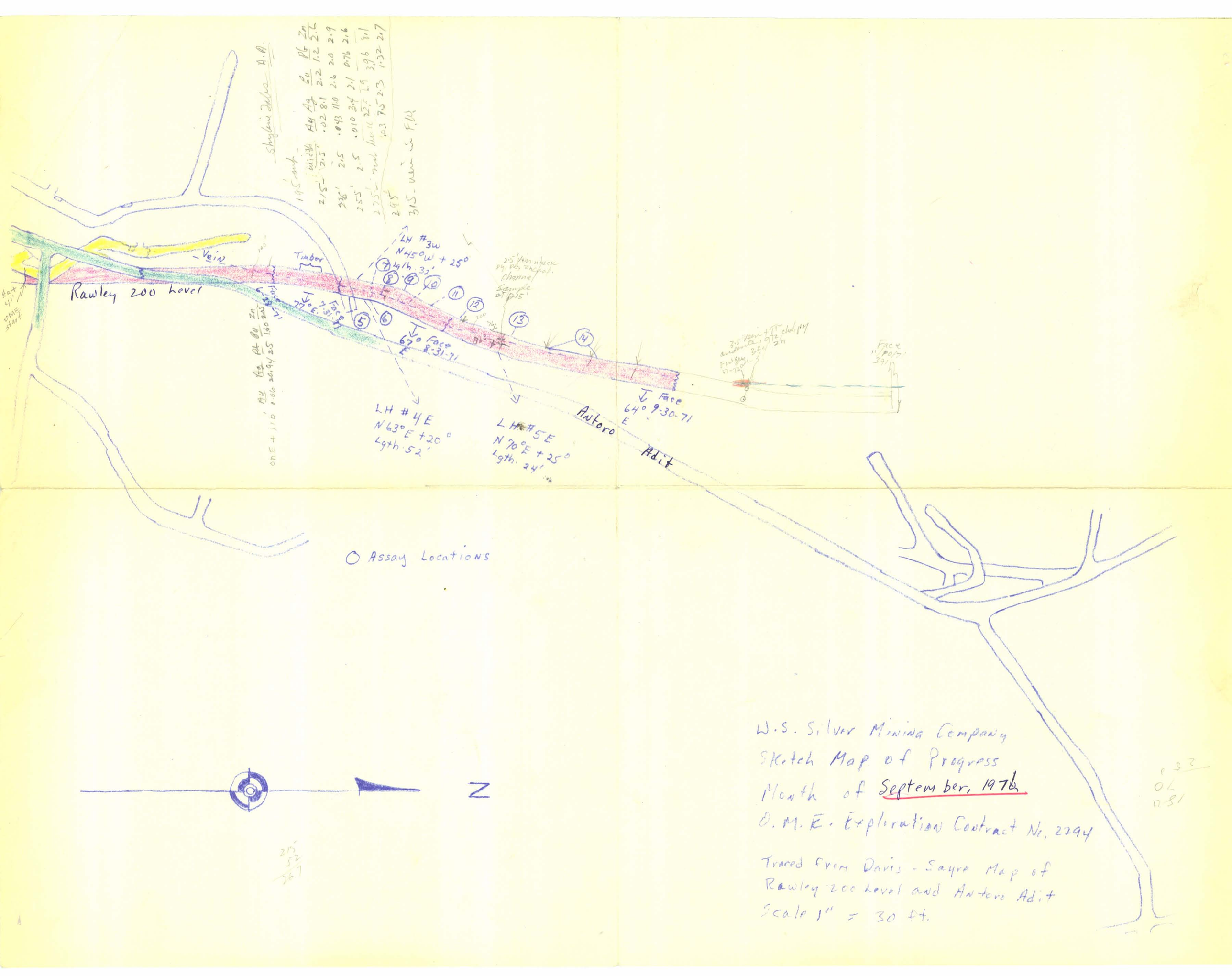
SW145
8108


PROPOSED EXPLORATION
Hoist room
X cut for cars
Adit level
X cut from bottom of winze @ 80' to Antoro vein
D.D. hole No
X cut for cars
OURAY 14183
Winze
Vein
X cut to vein
Drift 20' on Antoro vein
D.D. hole No
SECTION A-A'
Antoro vein
Adit level
114' level
225' level
To surface
ANTORO 937
Poverty vein
Sample No. S-12
Poverty stope
West S.L. (Ouray)
Zinc vein
JUNE 1364
POVERTY 938
ORPHAN BELL 14183
NORTH POLE 14183
INDEPENDENCE 14183
125' level
Northeast vein
Adit level
Copper Winze
Portal Antoro Adit
RAWLEY 980
Stope
225' level
114' level
Adit level
Longitudinal Section on Antoro vein
Stope
Pillar
Adit level
Area now being stoped
Copper winze
125' Level
Longitudinal Section on Northeast vein
100 0 100 200 Feet
Base furnished by W.E. Burdeson
DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY
ANTORO MINE
Saguache County, Colorado
E.N. Harshman
July 1962
DMEA DOCKET 2604
Fig. 2


12
13
24
19
18
17
20
8
5358 FAIRPLAY
NORAH
MIDNIGHT
IROQUOIS
BLUE BELLE No. 2
CROWN POINT
SHERIDAN
DANDY
CRACKER JACK
AJAX
IGNACIO
PAYSON
GLENNEVIS
MOUNT JOY
BRIGHTON
ESTHER
RUTH
GIPSEY QUEEN
MIDGET
SOSTHENES
MAY QUEEN
MERRIMAC
VALLEJO
LINCOLN
WASHINGTON
CAMP BIRD
LITTLE JENNIE
UINTAH
JUPITER
GENERAL HANCOCK
OTTOMAN BELLE
ELTON
POVERTY
DUBAY
GRAND
WASHINGTON
DIVIDE
CONTINENTAL
TIMBERLINE
EMMA
INDEPENDENCE
NORTH POLE
PEARY
RED CLOUD
MICHIGAN
WEEMS
WEAVER
MILL SITE
SANDERS
ARCTIC
PARAGON
SUCCESS
ASHLEY
GREAT MOGUL
ENNESS F.
EQUALIZER
RAWLEY
DEMMING
TOWNSEND
WEST RAWLEY No. 1
CORA
ZERO
Gulch
HYDE
BURNES
WHITE
PARK
Rawley
CABIN
THE WALTER
HANOVER
FOSTER
HELEN SEGAR
CORONET
LITTLE PITTSBURG
NORTH STAR
DME 6797
U.S. SILVER MINING CO.
BONANZA CO.
Sec. 18, T. 47 N., R. 8 E.
Received June 23 1905

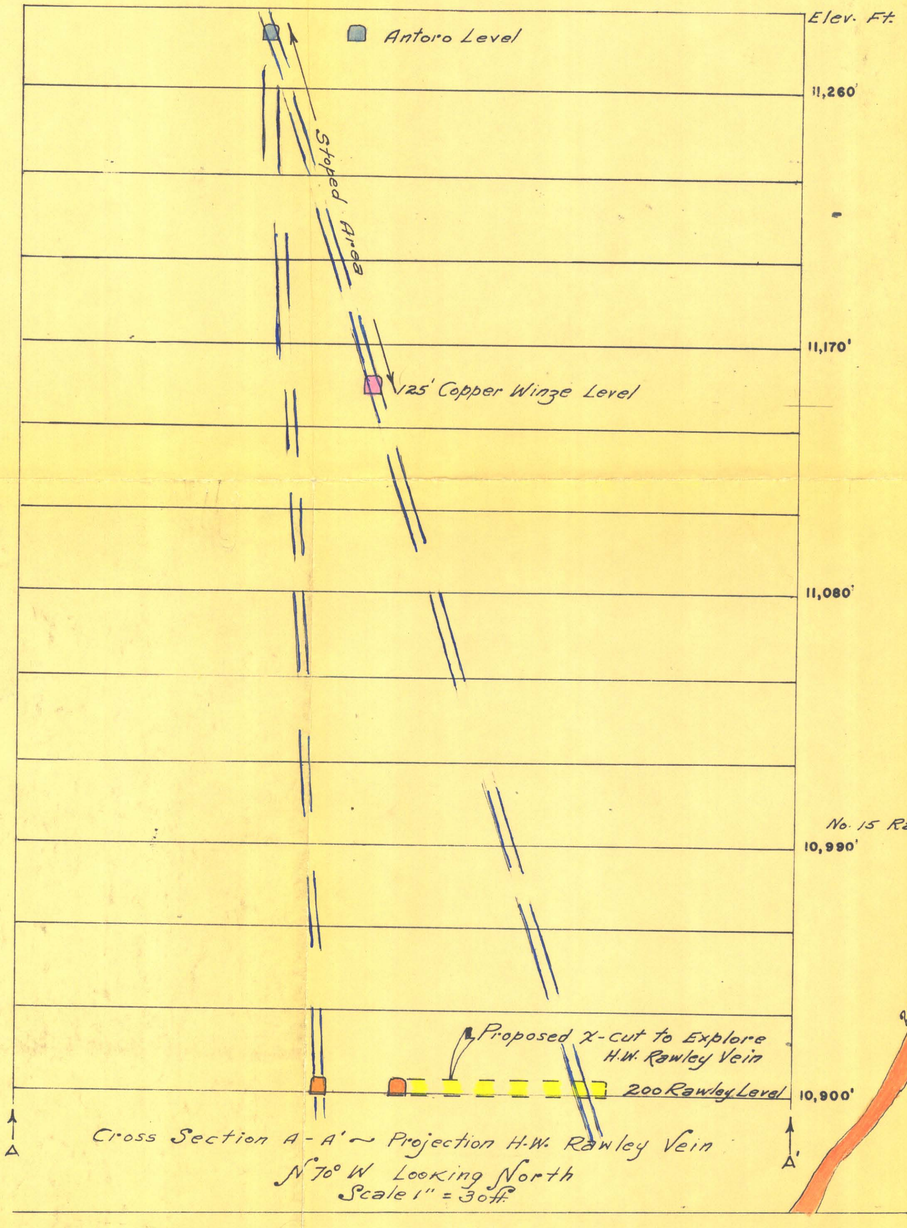
DRAWING A
U.S. SILVER MINING CO
BONANZA, COLORADO
U.S. SILVER MINING COMPANY
BONANZA, COLORADO
SCALE 1" = 100'
MAY 1969
N
19611 (2)
19611 (1)
20125 (3)
20125 (1)
20125 (2)
14183 (4)
14183 (7)
14183 (3)
14183 (6)
14183 (5)
14183 (2)
14183 (1)
14183 (9)
14183 (10)
14183 8
1364 JUNE
7152
1786
1416
6051
937 ANTORO
616
787 PAYSON
LEGAL TENDER SHAFT
RADCLIFF SHAFT
PAYSON SHAFT
OURAY
ORPHAN BELLE
NORTH POLE
INDEPENDENCE
PROPOSED EXPLORATION DRIFT
PRESENT #200 LEVEL DRIFT OPERATION
ANTORO TUNNEL
ELEV. 11,267
7837
SHAFT
MICHIGAN TUNNELS
NO. 3
NO. 2
PARAGON NO. 1
TUNNEL
7228
ARCTIC
14689 (3)
300' PORTAL
ELEV. 10,760
100 FT PORTAL
200' PORTALS
980 RAWLEY
18792
WEST RAWLEY NO. 1
JUPITER
938 POVERTY
17251 #1 JUPITER
18611
UNITAH
19532 (1)
19532 (2)
14110
1016
CORA SHAFT
DEMMING
6014
14689 (2) TOWNSEND
6016
14689 (1) ZERO
15499 HYDE
17834 CABIN
400' PORTAL
ELEV 10,670
15513
FOSTER
TIP TOP
14347 (1)
14347 (2)
19033 (1)
19033 (2)
966
1931
1932
WHALE ADIT
ELEV 10,900
14348
HANOVER TUNNEL
ELEV. APPROX. 10,860
HANOVER SHAFT
ELEV. APPROX. 10,850
SUPERIOR SHAFT
ELEV. APPROX. 11,104
7820
13580
UPPER ERIE
TUNNEL ELEV.
APPROX 11,100
LOWER SUPERIOR (ERIE)
TUNNEL ELEV.
APPROX. 10,882
1933
7515 (2)
14584
CREEK
18791 (1)
18791 (2)
16744 (3)
16744 (2)
16744 (1)
5858
771
11101
1624
LITTLE JENNIE
PORTAL
ELEV. 11,310
ELEV. 11,322
SOSTHENES TUNNEL
ELEV. 11,238
VALLEJO PORTAL
ELEV. 11,190
2548
15719
GYPSY QUEEN
PORTAL ELEV. 11,100
MAY QUEEN
TUNNEL ELEV.
APPROX 11,100
15541 (3)
15541 (2)
12000
11900
11800
11700
11600
11500
11400
11300
11200
11100
11000
10900
10800
10700
10600
10500
10400


MAP OF
RAWLEY 200' LEVEL
SAGUACHE COUNTY, COLORADO
SCALE: 1" = 50'
SURVEYED NOVEMBER 1939
Alan Alexander Dorrie No.
Alan Alexander Dorrie Jr.
Jan Dorrie, Surveyor Asst.
Note: All CALCULATIONS during 1939 December 1939
1. The Rawley 200' Level is a 1939 survey of the Rawley workings in the Independence District, Saguache County, Colorado.
2. Elevations are based on the Rawley Mine Shaft Station.
3. Elevations are taken from the Rawley Mine map of 1939 and carried through the workings.
4. Elevations shown were taken at the top of rail and are approximate.
INDEPENDENCE 14,183
ORPHAN BELLE 14,183
RAWLEY 380
NORTH POLE 14,128
ANTORO
TUNNEL
BONANZA, COLORADO
SCALE: 1" = 30 FT.
DECEMBER, 1940
N

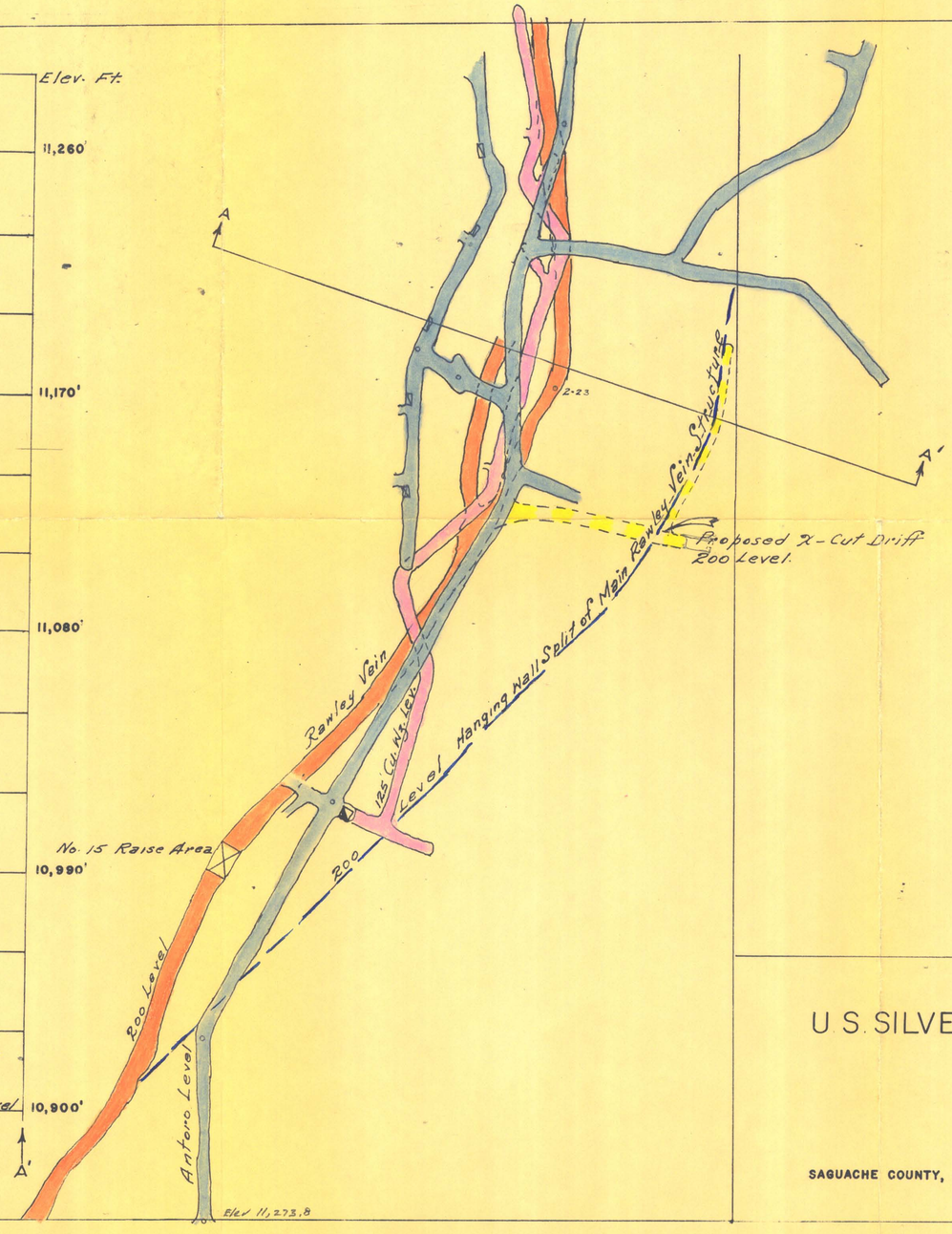


W.S. Silver Mining Company
Sketch Map of Progress
Month of September, 1971
O.M.E. Exploration Contract No. 2294

Traced from Davis - Sayre Map of
Rawley 200 level and Antoro Adit
Scale 1" = 30 ft.



Cross Section A-A' ~ Projection H.W. Rawley Vein
N 70° W Looking North
Scale 1" = 30 ft.



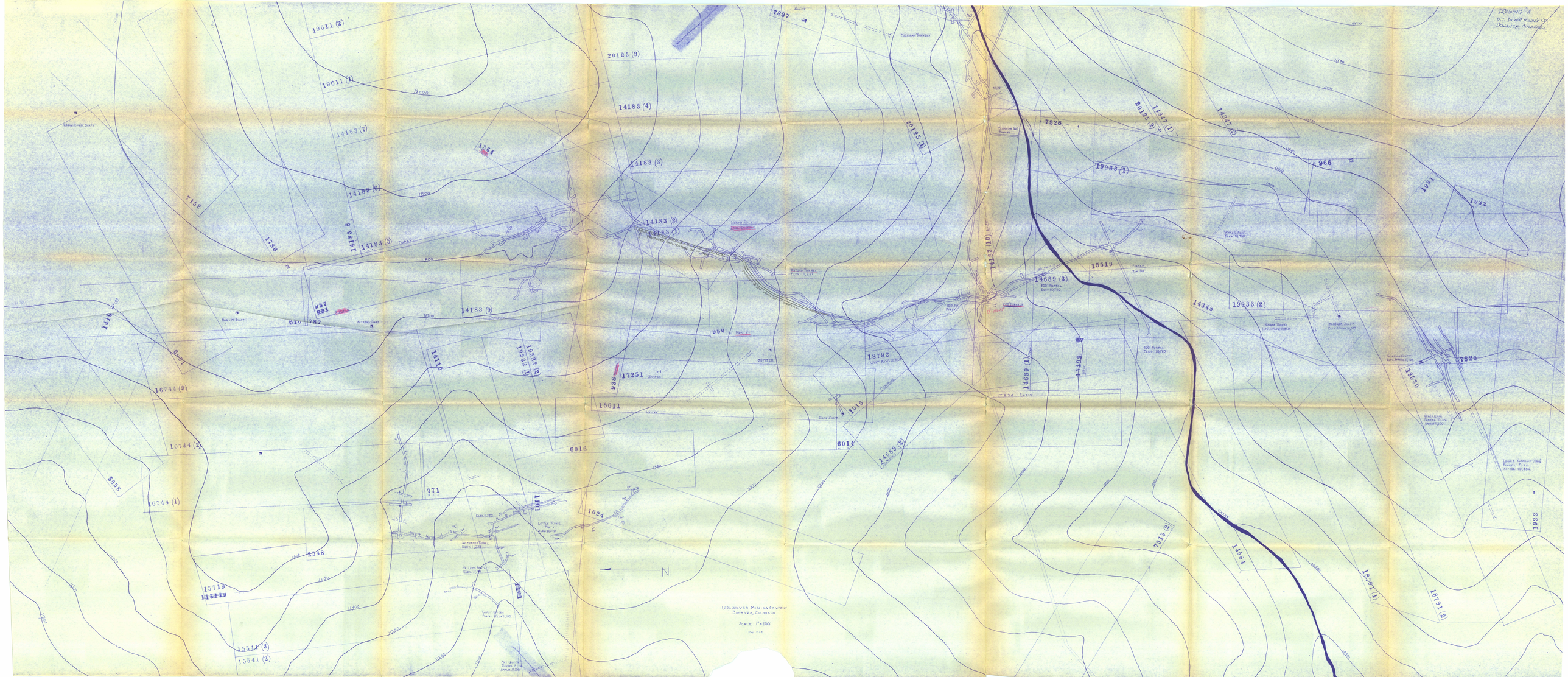
U.S. SILVER MINING COMPANY

RAWLEY MINE

SCALE: 1" = 30'

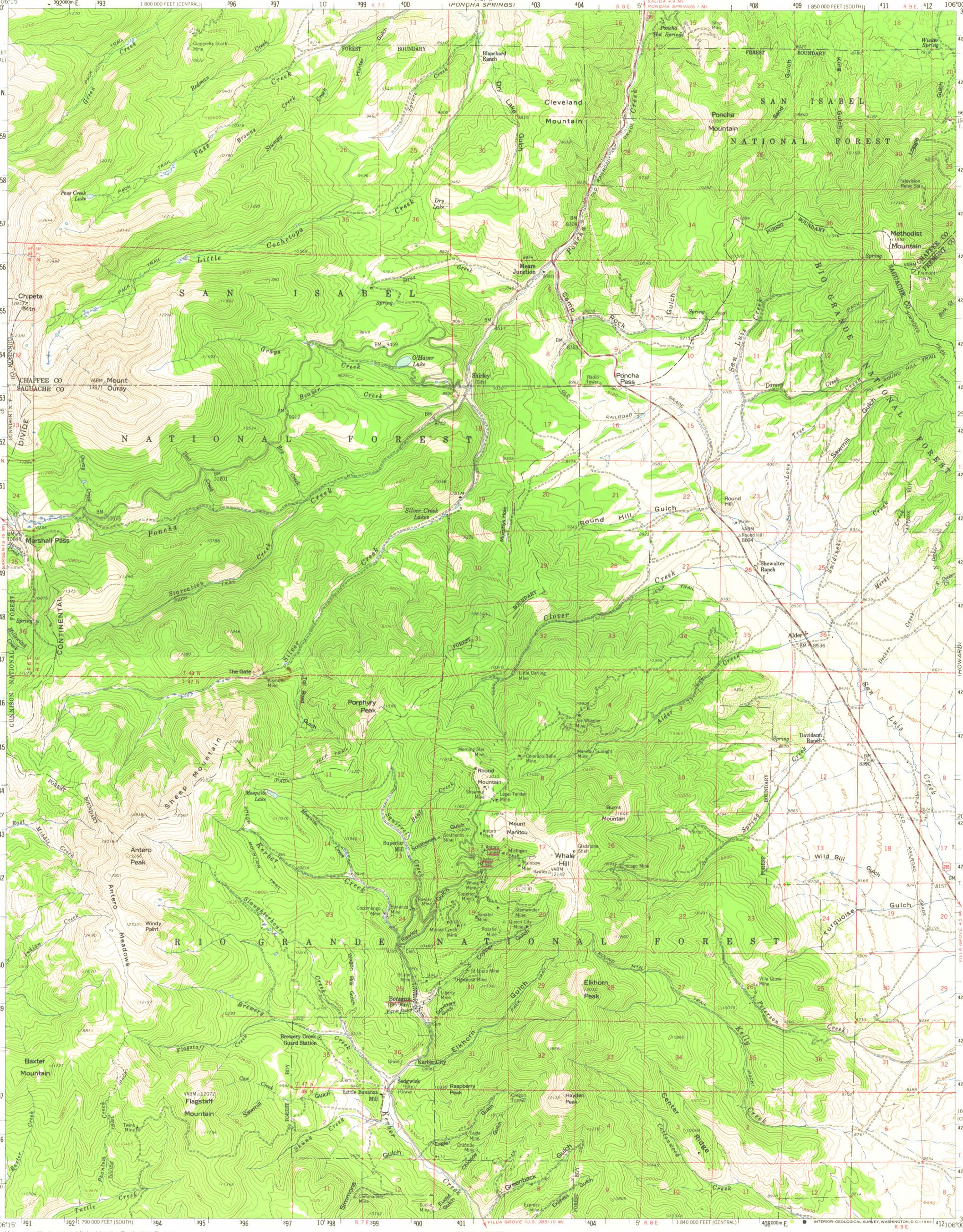
SAGUACHE COUNTY, COLORADO

M.T. Evans 5-72


DRAWING A
U.S. SILVER MINING CO.
SHIRANZA, COLORADO
U.S. SILVER MINING COMPANY
SHIRANZA, COLORADO
SCALE 1" = 100'
N
JUPITER
PARADISE
DURAY
SHAFT
MICHIGAN SHAFT
TAYLOR NO. TUNNEL
WALKER TUNNEL
ELEV. 11,247
NORTH DRIFT
WHALE RAIL
ELEV. 10,760
400' PORTAL
ELEV. 10,670
17,836 CABIN
CORA SHAFT
LITTLE JENNIE
PORTAL
ELEV. 11,310
SOUTHERN TUNNEL
ELEV. 11,238
VALLEY PORTAL
ELEV. 11,115
GIPSY QUEEN
PORTAL ELEV. 11,100
MAY QUEEN
TUNNEL ELEV.
APPROX. 11,100
SUNRISE SHAFT
ELEV. APPROX. 10,830
SUNRISE SHAFT
ELEV. APPROX. 11,185
WHITE ENVE
TUNNEL ELEV.
APPROX. 11,100
LOWER SUNRISE (ENE)
TUNNEL ELEV.
APPROX. 10,552
19611 (2)
19611 (1)
20125 (3)
14183 (4)
14183 (7)
14183 (6)
14183 (3)
14183 (2)
14183 (1)
14183 (5)
14183 (9)
14183 (8)
20125 (1)
7887
7228
20132 (2)
14347 (1)
14417 (2)
19933 (1)
966
1931
1932
15513
14689 (3)
14348
19933 (2)
7820
13580
1933
13291 (1)
18791 (2)
14584
7515 (2)
15499
14689 (1)
18792
980
17251
938
18611
6016
6014
14689 (2)
1016
1024
771
1011
1364
7132
1746
997
610
1419
1411
19332 (1)
19332 (2)
16744 (3)
16744 (2)
16744 (1)
5838
2548
15719
15541 (3)
15541 (2)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

BONANZA QUADRANGLE
COLORADO
15 MINUTE SERIES (TOPOGRAPHIC)



Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Topography from aerial photographs by photogrammetric methods
Aerial photographs taken 1954 Field check 1959

Polyconic projection 1927 North American datum
10,000-foot grid based on Colorado coordinate system, south and central zones
1000-meter Universal Transverse Mercator grid ticks, zone 13, shown in blue

Dashed land lines indicate approximate locations
Land lines omitted in T. 48 N. Rs. 7 and 9 E. and in parts of Ts. 46 and 49 N.-Rs. 6 and 7 E. because of insufficient data

UTM GRID AND 1959 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET
GN MN 0°42' 12 MILS 14° 249 MILS

SCALE 1:62 500
1 ½ 0 1 2 3 4 MILES
3000 0 3000 6000 9000 12000 15000 18000 21000 FEET
1 .5 0 1 2 3 4 5 KILOMETERS

CONTOUR INTERVAL 80 FEET
DATUM IS MEAN SEA LEVEL

COLORADO
QUADRANGLE LOCATION

ROAD CLASSIFICATION
Medium-duty — Light-duty —
Unimproved dirt
U.S. Route

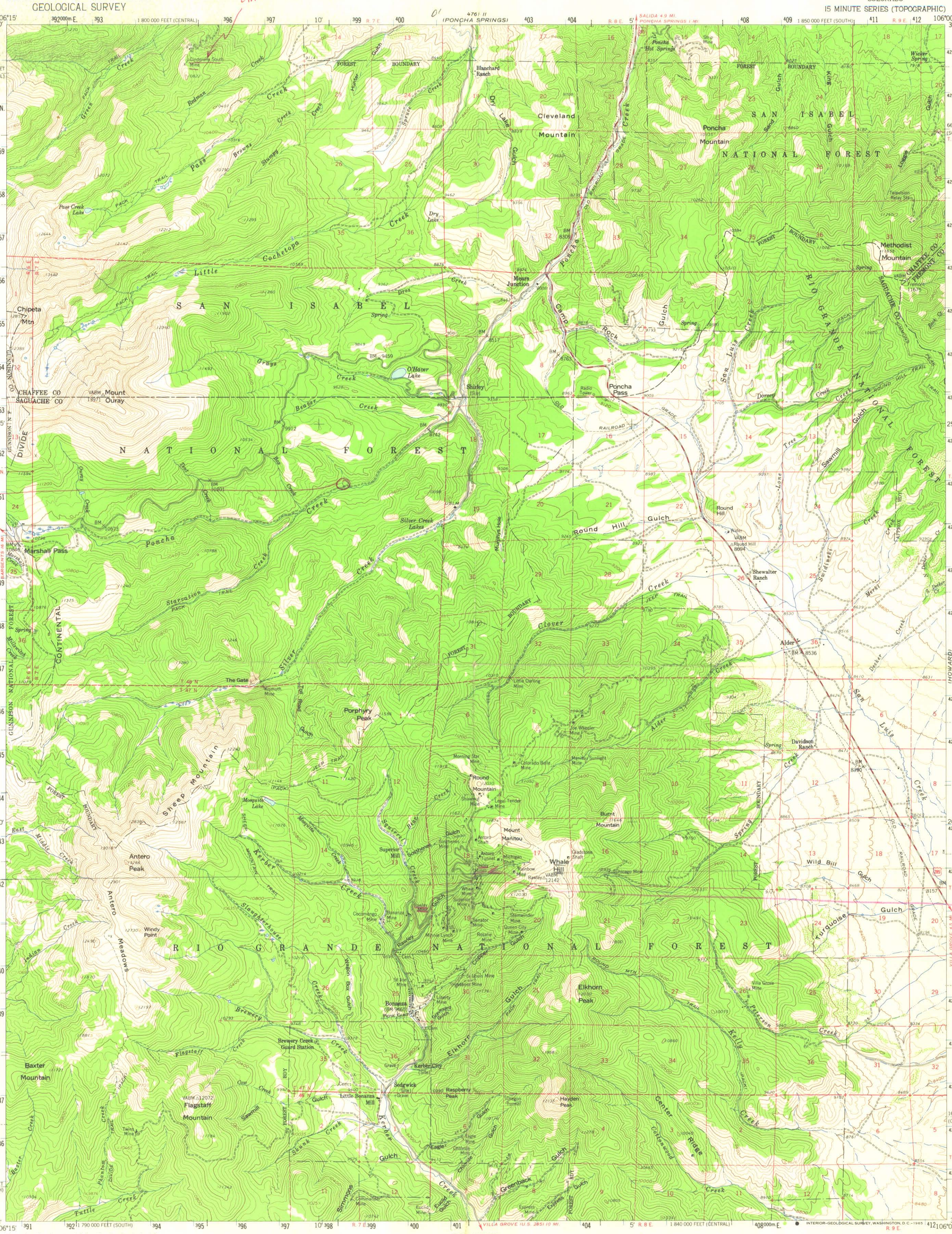
THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR WASHINGTON, D. C. 20242
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

BONANZA, COLO.
N3815—W10600/15
1959
A° 4760 I—SERIES V777

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Cinderella Mine
OME 6434

BONANZA QUADRANGLE
COLORADO
15 MINUTE SERIES (TOPOGRAPHIC)



PMA 4730
U-B&J U. Bonita

OME 6797
US Silver
Rawley Mine
200 Level
10,879'

Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Topography from aerial photographs by photogrammetric methods
Aerial photographs taken 1954. Field check 1959

Polyconic projection. 1927 North American datum
10,000-foot grid based on Colorado coordinate system, south and central zones
1000-meter Universal Transverse Mercator grid ticks, zone 13, shown in blue

Dashed land lines indicate approximate locations
Land lines omitted in T. 48 N. Rs. 7 and 9 E. and in parts of Ts. 46 and 49 N., Rs. 6 and 7 E. because of insufficient data

UTM GRID AND 1959 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET
GN MN 0°42' 12 MILS 14° 249 MILS

SCALE 1:62 500
1 ½ 0 1 2 3 4 MILES
3000 0 3000 6000 9000 12000 15000 18000 21000 FEET
1 .5 0 1 2 3 4 5 KILOMETERS

CONTOUR INTERVAL 80 FEET
DATUM IS MEAN SEA LEVEL

COLORADO
QUADRANGLE LOCATION

ROAD CLASSIFICATION
Medium-duty — Light-duty
Unimproved dirt
U.S. Route

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR WASHINGTON, D. C. 20242
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

BONANZA, COLO.
N3815—W10600/15

1959

AMS 4760 I—SERIES V777