OME region III

JUN 29 1966

Mr. Ronald W. Clark
President
Mineral Enterprises, Inc.
13150 Goodhue Street
Whittier, California

Re: CMX-6475 (Silver-Gold)
Mineral Enterprises, Inc.
Fourth of July, et al., Claims
Clear Creek County, Colorado

Dear Mr. Clark:

Careful study of the application of Mineral Enterprises, Inc. for financial assistance in exploration for silver-gold ore deposits on its mining claims in Clear Creek County, Colorado, and other available information, indicates that the probability of disclosing significant ore reserves of these metals on this property is not sufficiently promising to justify Government participation in the proposed exploration. Accordingly, we regret to inform you that this application is denied.

This denial is made, however, without prejudice to the property. Perhaps, additional work performed on the property by your company might reveal unexplored favorable geological target areas which would warrant Government assistance in exploration for silver-gold ore deposits. As a suggestion, the area on the Seaton No. 89 claim east of the stopes on the Seaton vein and west of the Pine Shade shaft appears to offer some possibility. To test this area, preliminary diamond drilling of at least three holes should be done. Two holes should be drilled to penetrate the Seaton vein at about the 5th level and a deeper hole to penetrate this vein nearer the proposed drifts eastward from the Foxhall tunnel, mid-way between the Seaton shaft workings and the Pine Shade shaft.

If the results of such work were favorable, consideration could be given to an application for financial assistance to explore this area by drifting, crosscutting, and raising.

If you perform the work as suggested and decide to reapply for exploration assistance, you should file a new set of application forms (MMX Form 40) and submit the results of the drilling, including drill hole logs and assays of drill hole core samples, with details of the proposed underground exploration and new cost estimates. Copies of new correspondence with at least two banks requesting the amount of funds needed also should be furnished. It would not be necessary to include material submitted in your previous application but only to make reference to this material in your new application.

You may be assured that any new application received will be given prompt and careful consideration.

Sincerely yours,

FRANK E. JOHNSON

Frank E. Johnson
Chief, Office of
Minerals Exploration

cc: Director's reading file
Division file
Economic Geology file
OME file
OME reading file
OME Region III

FEJohnson/bih 6/24/66

U. S. Geological Survey - Denver Federal Center
Building 25 - Room 2284
Denver, Colorado 80225

June 21, 1966

Memorandum

To: Chief, Office of Minerals Exploration

From: Field Officer, Region III

Subject: OME 6475 (Silver-Gold)
Mineral Enterprises, Inc.
Fourth of July et al Claims
Clear Creek County, Colorado

Transmitted herewith is an original and one copy of a report of examination on the subject property.

The applicant proposes to explore the Seaton, Casino and Trojan veins in the Idaho Springs District, Clear Creek County, Colorado by drifting, crosscutting and diamond drilling.

The Seaton vein has had considerable production, however the values are largely in copper, lead and zinc. It is problematical that the vein will be more adequately explored by the work proposed, except for some of the diamond drilling.

It is concluded that the chances of discovering significant quantities of silver are not too promising and that the application be denied without prejudice and that the applicant complete diamond drilling as suggested herein, then possibly reapply, depending upon the success of the diamond drilling.

Enclosures

J. William Hasler

cc: Original and 1 copy of report to Chief, OME
OME chron
Hasler chron
OME-6475

UNITED STATES

DEPARTMENT OF THE INTERIOR

STEWART L. UDALL, SECRETARY

U. S. GEOLOGICAL SURVEY

OFFICE OF MINERALS EXPLORATION

REPORT OF EXAMINATION

REGION III

OME-6475 (Silver-Gold)

MINERAL ENTERPRISES, INC.

Fourth of July, et al., Claims

Clear Creek County, Colorado

By

J. William Basler, Geologist

June 1, 1966

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Introduction and summary

The Mineral Enterprises, Inc. applied to the Office of Minerals Exploration for financial assistance to explore for gold, silver, lead, copper and zinc on the Seaton vein through the 4th of July workings in the Idaho Springs district, Clear Creek County, Colorado.

The application was referred to the field and an examination was made on March 25, 1966. Additional data and a somewhat revised program was submitted by the applicant April 20, 1966. Production from the Seaton vein has amounted to a tonnage in excess of 13,000 tons that averaged 0.50 oz. Au, 22.71 oz. Ag, 1.19% Cu, 12.75% Pb, and 9.05 oz. Zn. The gross value of the ore at present prices is $120.82 per ton, however the precious metal value is $46.86 per ton, whereas the total value of the base metals is $73.96 per ton, thus making the ore predominantly a base metal ore rather than a precious metal ore.

The applicant proposes to explore the Seaton vein through the Forbell tunnel by drifting and crosscutting, as well as diamond drilling on the Seaton, the Casino and Trojan veins.

There is a considerable amount of workings along the Seaton vein, and careful study indicates that the vein has been extensively mined from three ore bodies that appear to rake steeply southeastward. The applicant's proposed program will not adequately explore the vein especially at such a high cost. It is recommended that the application be denied without prejudice and that the applicant be recommended to complete some preliminary diamond core drilling to test the Seaton vein eastward from the Seaton shaft workings toward the Pine Shade shaft and to reapply if results prove encouraging.

The property

The property belonging to the Mineral Enterprises, Inc., of 15150 Goodhue Street, Whittier, California, lies in the Central City-Idaho Springs mining districts, Clear Creek County, Colorado and consist of the following claims: 4th of July, Little Emma, Seaton, Trojan, Sunnyside, Kangaroo No. 2, the Silver Queen No. 1857, Danube No. 1847, Tunnel Lode No. 1, No. 2252 Tunnel Lode No. 3, No. 2254, Beauty No. 2, No. 2253, Prince Henry, No. 15057, Dora No. 264, Trojan No. 4885, Good Enough No. 7448, and Little Casino Mining Claim Survey No. 1331. The property is all held under lease by the applicant company. Lien and subordination agreements have been executed and accompany the application, as well as supplementary data furnished during April 1966. The claims are easily accessible by state and county roads by travelling west from Denver, Colorado on U.S. Highway 6, for 35 miles to Idaho Springs then proceed north over an all-weather gravelled road from Idaho Springs on Colorado State highway 279 for 1 1/2 miles up Virginia Canyon.

Geology and ore deposits

The Idaho Springs district, an area of Tertiary gold- and silver-rich base metal sulfide veins in the central part of the Front Range Mineral belt lies within a terrane of Precambrian bedrock[1].

The Precambrian bedrock of the Idaho Springs district is composed largely of generally conformable gneissic rocks of three principal types--interlayered biotite gneisses (or biotite gneiss), granite gneiss and pegmatite (or granite gneiss, and microcline-quartz-plagioclase-biotite gneiss (or microcline gneiss)[1]. During the Laramide Orogeny, in early Tertiary time, the Precambrian rocks were invaded by a sequence of nine varieties of porphyritic intrusive rocks. The older rocks of this sequence generally form irregular plutons, thick dikes, and some thickly lenticular concordant masses, whereas the younger rocks typically form thin long dikes. The gneissic rocks were folded at least twice during Precambrian time[2].

Northwest-trending faults of the so-called "breccia reef" system may have originated in Precambrian time, after the later of the two major deformations.

Arching of the Front Range highland during the Laramide Orogeny probably produced the regional joint system, and porphyritic rocks were then emplaced, some on dikes along this joint system and others as plutons.

Laramide strike-slip faults of small displacement are distributed in three principal sets that trend northeast, east-northeast, and east; most of them dip north at medium to steep angles. The veins in the district typically fill fault fissures and are similar in structure and mineralogy to those classed as mesothermal by Lindgren. Pyrite, sphalerite, galena, chalcopyrite, and tennantite are the principal ore minerals, and quartz

and local carbonate minerals are the principal gangue minerals. The walls enclosing some veins are indistinct and consist of fractured zones as much as 30 feet wide but typically less than 5 feet wide. The veins are classified - on the basis of their mineral content - as pyrite veins, pyritic copper veins, pyritic lead-zinc veins and lead-zinc veins.

The principle ore deposits of the district are veins that are valued for their gold content, and to a smaller extent for their silver, copper, lead and zinc.

The applicant proposes to explore for gold and silver at depth on the Seaton vein through the Foxhall tunnel, and the Seaton vein is shown by Moench and others, (U.S.G.S. Bull. 1208, p. 57) to contain predominantly lead-zinc, however under the mineralogy descriptions the Seaton vein is mentioned as containing proustite-pyrargyrite (Bastin and Hill, 1917, p. 296), as well as some native silver. Telluride minerals reportedly occur in the Treasure Vault, Casino, and Gem Mines in the Virginia Canyon and Seaton Mountain areas.

Galena and sphalerite are the predominant metallic minerals in lead-zinc veins. Pyrite is fairly abundant locally but distinctly subordinate to galena and sphalerite, and chalcopyrite and tennantite are generally present in only small amounts. Good examples of the lead-zinc veins are the Seaton and Tropic veins near Seaton Mountain, the Franklin and Gold Medal veins on the east end of the J. L. Emerson-Gem vein system, and the Banta Hill and Bunkhouse veins in the extreme northeast corner of the district. Lead-zinc veins are valued chiefly for their silver, gold and lead content and to a lesser degree for their copper.

The Seaton vein is 1 to 5 feet thick, averaging about 2 feet. In the upper workings, the vein consists of hanging-wall and footwall splits which join near the surface, forming a rich pocket of ore. The splits also join on several levels both east and west of the shaft, localizing similar rich ore bodies. The valuable parts of the vein contain galena, sphalerite, and minor amounts of pyrite, chalcopyrite, tennantite, and rhodochrosite. Specimens of ore from the upper workings contain ruby silver, argentite, and native silver, indicating that the ore has been secondarily enriched with silver (Bastin and Hill, 1917, p. 296). This secondary enrichment in silver extended downward at least as far as the sixth level. The richest ore of the mine is said to have come from the fifth level (315 feet vertical depth). Gold tellurides may have been present locally in the vein, for shipments of 6,000 tons of smelting ore in 1902 contained 9,000 ounces of gold, much higher than average ore[2/].

Description of the Seaton mine

The Seaton mine, on Seaton Mountain, was opened in 1861 (Fossett, 1879, p. 584) and was one of the more valuable properties of Clear Creek County[3/]. It was worked steadily until 1872 and intermittently from that date until 1922. The Seaton attained notoriety in 1862, as it was the first Colorado mine that developed a vein that changed from rich gold ore at the surface to rich silver ore at depth (Fossett, 1879).

The mine is developed by a shaft, steeply inclined to the north, and 7 levels. A 100-foot winze sunk 150 feet east of the shaft on winze 270 feet farther east on the Foxhall level connects to 4 additional levels. The Seaton vein also is cut by the Argo tunnel about 6,980 feet from the portal at a vertical depth of about 1,200 feet. Laterals from the Argo tunnel extend 760 feet to the west and 500 feet to the east, but were caved near the main tunnel when examined by Bastin and Hill (1917, p. 294). In 1954 all these workings except a short segment of the Seaton drift in the Foxhall tunnel were inaccessible (see the description of the Foxhall tunnel). Most of the following is taken from the description of the Seaton mine by Bastin and Hill (1917, p. 294-297).

The Seaton shaft is collared in microcline gneiss, but the shaft passes in depth into biotite gneiss somewhere above the Foxhall tunnel level, and this rock prevails to the Argo tunnel level.

The Seaton is an important vein that strikes nearly east and dips 45° to 80° N., averaging about 60°. It can be traced on the surface to a point about 500 feet west of the shaft and to Gilson Gulch on the east. The eastern extension is developed by the Pine Shade and Sunny Side mines, and by the Tropic tunnel (G-III, 5). The east-northeast-striking Tropic vein branches from the Seaton vein about 740 feet east of the Seaton shaft, and the east-northeast-striking Pine Shade vein branches from the Seaton vein about 1,100 feet east of the Seaton shaft. The Seaton vein is crossed by the Grantham vein, which dips about 20° S., about 100 feet below the collar of the Seaton shaft.

The known production from the Seaton vein was shipped from the Foxhall tunnel (see fig. 33), and is combined with that property's production. Revaluated to 1955's average metal prices, this ore would be worth about $1,215,000. The Seaton mine is said to have produced $600,000 prior to 1899 (Callbreath, 1899, p. 196).

Ore extracted from the Seaton vein through the Argo tunnel was rich in both lead and zinc; 45 tons of ore shipped from the Seaton lateral of the Argo tunnel contained an average of 0.50 oz. gold per ton, 25 oz. silver per ton, 20 percent lead, and 15 percent zinc (Bastin and Hill, 1917, p. 297).

Table 1. Tenor of ore from some lead-zinc veins

Location	Year(s)	Short tons	Gold	Silver	Copper	Lead	Zinc
			Ounces per ton			Percent	
Foxhall tunnel							
Seaton Vein	1902	6,000	1.50	50.00	3.00	15.00	----
Seaton Vein	1913	815	.13	6.29	.19	1.98	1.71
Seaton Vein	1920	189	.38	15.32	.29	9.35	12.66
Tropic tunnel							
(Tropic Vein)	1902-1935	648	.50	53.00	.33	6.50	5.00
Total average and grade		7,652	.627	31.15	.95	8.20	4.84

(Abstracted from Table 9, p. 65, U.S.G.S. Bull. 1208, 1966, Moench and Drake.)

Production figures from the Seaton mine from 1901-1922 as reported by the applicant totaled some 11,719 tons of ore that assayed the following: 1 oz. Au, 35 oz. Ag, 1.5 percent copper, 8.5 percent lead and 6 percent Zn per ton. Additional production from the Seaton vein through Kangaroo, Pine Shade, Fourth of July and Trojan workings as reported by the applicant totaled 1,328 tons that assayed the following: .22 oz. Au, 11.8 oz. Ag, 0.33 percent Cu, 5.16 percent Pb and 2.5 percent Zn.

1/ Moench, Robert H., 1964, Geology of Precambrian Rocks, Idaho Springs District, Colorado: U. S. Geol. Survey Bull. 1182-A, p. A1-A2.

2/ Moench, R. H., and Drake, A. A., Jr., 1966: Economic Geology of the Idaho Springs District, Clear Creek and Gilpin Counties, Colorado, p. 1, 2, and 3, 65.

3/ Moench, R. H., and Drake, A. A., Jr. 1966, Mines and Prospects, Idaho Springs District, Clear Creek and Gilpin Counties, Colorado, U. S. Geol. Survey, Open File Report.

Production reported from various mine workings along the Seaton vein by applicant.

	Tons	oz. Au	oz. Ag	% Cu	% Pb	% Zn
Argo tunnel	45	0.50	25.00	-	20.00	15.0
Seaton vein	11,719	1.00	35.00	1.5	8.50	6.0
Other workings	1,328	.22	11.80	0.33	5.16	2.5
4th of July	1	.29	19.06	1.75	17.34	16.12
Total	13,093	2.01	90.86	3.58	51.00	39.62
Average grade		0.50	22.71	1.19	12.75	9.05

A shipment from the Fourth of July workings during 1965 totaling 1.0965 tons assayed 0.294 oz. Au, 14.06 oz. Ag, 1.75 percent Cu, 1734 percent lead and 16.12 percent Zn, and as shown by the attached settlement sheet was not of high enough grade to pay for shipment to the Smelter at Tooele, Utah.

A former operator estimates that the average clean smelting ore between the 5th and 6th level at 1.6 oz. Au, 55 oz. Ag, 23 percent Pb, and 18 percent Zn.

The applicants samples of the Seeton vein from the Fourth of July and Kangaroo workings showed the following values:

Width	oz Au	oz Ag	% Cu	% Pb	% Zn
0'-7"	0.11	2.2	0.9	1.8	16.8
5'-6"	0.11	6.1	1.9	8.2	15.8
0'-6"	0.33	11.4	1.3	24.4	19.8
0'-6"	0.25	13.25	1.2	47.8	18.0
1'-6"	0.05	7.5	---	14.2	14.6
3'-0"	0.06	3.5	---	8.2	9.2
3'	0.22	1.1	---	0.3	5.5
3'	0.05	tr.	---	4.1	3.7
Average	.15	5.63	0.6	13.6	12.9

Description of the Foxhall tunnel[3/]

The Foxhall tunnel, at the head of Seaton Gulch, was started prior to 1900 and was worked until 1922. It was probably reopened in the 1930's but no record of such work is available.

U.S. Bureau of Mines recorded 12,740 tons of crude ore and 339 tons of concentrates shipped from the tunnel between 1901 and 1922. This ore yielded 12,735 oz gold, 450,010 oz silver, 388,214 lbs copper, 2,134,117 lbs lead, and 211,867 lbs zinc. Most of this ore was produced from the Seaton vein, but between 1901 and 1909 some was produced from the Inter Ocean(?) and Total Eclipse veins. According to U.S. Mint records the mine produced 890 oz gold, 57,299 oz silver, 6,840 lbs copper, and 60,988 lbs lead between 1887 and 1892 (Kimball, 1886-1889; Leech, 1890-1893).

The tunnel is 1,309 feet long and trends N. 17° W. (fig. 33). Three main drifts have been driven from the tunnel and are accessible for a few feet to a few hundred feet (fig. 33). The ground above these drifts has been largely stoped. A winze has been sunk from the main tunnel about 20 feet south of the Inter Ocean(?) drift. A level is turned from this winze at a depth of 150 feet (Bastin and Hill, 1917, p. 299). The winze workings were inaccessible in 1953. A 100-foot raise from the Seaton drift about 440 feet east of the tunnel connects to the seventh level of the Seaton mine, and a winze from which four levels have been turned was sunk about 700 feet east of the tunnel.

The wallrocks of the mine are largely biotite gneiss and subordinate amounts of pegmatite, amphibolite, and two dikes of bostonite porphyry (fig. 33). Rock mapped as migmatite (fig. 33) is biotite gneiss that contains about equal amounts of pegmatite as thin, conformable layers. The Precambrian rocks strike generally east-northeast and are folded along east- to northeast-trending axes.

Several veins are cut in the Foxhall tunnel, but only the Total Eclipse, Inter Ocean(?), and Seaton veins have been extensively mined. The bulk of the production was from the Seaton vein. Possibly the Inter Ocean(?) vein of figure 33 was called the Casino vein by Bastin and Hill (1917, p. 299), but the Casino vein, as worked through the Casino tunnel and shaft, is thought to cross or branch from the Inter Ocean (?) vein to the east of the Foxhall tunnel.

The Total Eclipse vein, cut about 365 feet from the portal, strikes about N. 55° E. and dips 60°-77° NW. As the vein is largely stoped in the accessible drift its mineralogic character was not seen. At places the vein is a nearly barren fracture zone 2 to 2½ inches wide, but at other places it contains as much as 12 inches of pyrite-bearing gray quartz. Probably it also contains some galena, sphalerite, and copper minerals.

The Inter Ocean(?) vein, cut about 165 feet north of the Total Eclipse vein, strikes about N. 70° E. and dips 68°-85° SE. Several branching fractures pass from the vein into the hanging wall of the drift. The vein has been largely stoped out, and little could be seen of its mineralogic character. About 60 feet west of the tunnel it consists of 12 to 18 inches of silicified rock cut by several gouge-filled fractures. According to Bastin and Hill (1917, p. 299), the vein (called the Casino vein by them) on the sublevel about 95 feet west of the shaft consists of three narrow veinlets 1/2 to 2 inches thick that lie nearly parallel to the foliation. The veinlets contain fine-grained sphalerite, galena, tennantite, and subordinate amounts of pyrite in a gangue of gray quartz and rhodochrosite(?).

Another small vein is cut about 297 feet north of the Inter Ocean(?) vein. It strikes N. 77° E., dips 70°-80° NW., and is a 12- to 18-inch fracture zone that contains a few veinlets of galena and sphalerite. The vein parallels overturned fold axes.

A thin vein about 340 feet north of the Inter Ocean(?) possibly correlates with the Casino vein.

The Seaton vein, cut about 1,173 feet from the portal, averages about 2 feet in thickness and is made up of several imbricating subparallel vein elements that have a general N. 80° E. trend. It is highly variable in dip, ranging from 43° to 70° NW. subparallel to the wallrock foliation. Near the caved part of the west drift three separate veins are present. The footwall vein consists of 6 inches of gouge and sparse pyrite. The connecting vein is composed of 3 inches of sphalerite and galena, and the hanging-wall vein contains about 12 inches of gouge and half an inch of galena. About 65 feet east of the tunnel the vein contains as much as 8 inches of sheared galena, sphalerite, and a minor amount of late(?) pyrite. The vein in the winze consists of gouge, altered and pyritized wallrock, and a 5-inch band of galena, sphalerite, and subordinate pyrite and quartz (Bastin and Hill, 1917, p. 296). The grade of ore from the Seaton vein is variable. Tennantite-rich parts of the vein are reported to contain high values in silver; a specimen from the winze, just below the tunnel level, assay 1 oz gold and 118.4 oz silver per ton (Bastin and Hill, 1917, p. 296).

Twenty-seven lots of ore shipped to the Idaho Springs Sampling Works between 1902 and 1910 assayed 0.12 to 2.35 (avg 1.13) oz gold per ton; 7.5 to 105 (avg 39.66) oz silver per ton; 2.55 percent or less copper; 26.4 percent or less lead; and 24 percent or less zinc (Bastin and Hill, 1917, p. 296).

Proposed Exploration

The applicant proposed to explore for silver and gold below known stoped areas in the 4th of July workings by drifting and sinking on the Seaton vein. The program was discussed with the applicant at the time of the field examination and it was suggested to him that the program as presently proposed consisted essentially of development work and that a more exploratory type program should be requested. On April 20, 1966 the applicant submitted supplementary material for consideration which consists of rehabilitation, crosscutting drifting, raising and diamond drilling on the Seaton and Casino and Trojan veins. The total estimated cost of the proposed program is $87,647.80. The applicant's breakdown of exploration work is as follows:

(1) Drift 800 feet along the Seaton vein from the Foxhall tunnel.

(2) Drift 200 feet along the Casino vein west of the Foxhall tunnel at a depth of 70 feet below the surface.

(3) Diamond core drill a total of 400 feet to test the Casino vein at depth, at a depth of 200 feet below the surface.

Considerable rehabilitation and crosscutting to by-pass an old stoped area in the Seaton vein will be required before actaul exploration work can be effectively done. The total amount estimated cost for this work is approximately $29,712.80 or in excess of 30 percent of the total estimated cost of the project of $87,650.00. The rehabilitation costs required to perform the work outlined in the proposal appear too high, proportionately, to warrant the exploration of the Seaton and Casino veins as outlined in the application. I do not believe that there will be enough significant reserves of silver and gold discovered from new exploration work to warrant the costs that would be expended to further explore the Seaton vein from the Foxhall tunnel.

Production records reported show that some 13,093 tons of ore have been mined from the Seaton vein and that the ore averages 0.50 oz Au, 22.71 oz Ag, 1.19 percent Cu, 12.75 percent Pb, and 9.05 percent zinc. The gross value of the ore at current prices totals $120.82. Precious metals, Au and Ag, total $46.86, and base metals total $73.96. Even though there may be ore worth as much as $100.00 per ton the silver and gold content consists of only 38 percent of the total value of the ore.

Samples obtained by the applicant from the Seaton vein in the 4th of July workings range in thickness from 0-5 feet and average possibly two feet. Assays average 0.14 oz Au, 6.43 oz Ag, 1.3 percent Cu, 13.6 percent Pb and 12.9 percent Zn. This ore would gross $100.78 per ton with gold and silver totaling $13.21 per ton as against a total of $87.57 for base metals.

The applicant proposes to expend $87,650.00 to explore for new and undiscovered ore bodies along the strike of the 1,000 feet Seaton and Casino veins, through the Foxhall tunnel that lies some 400 feet below the surface. The applicant's cross section along the Seaton vein shows a southeasterly rake of three separate ore bodies on the Seaton vein system each ore body mined from the 4th of July workings, the Seaton shaft workings and the Pine Shade shaft.

The Seaton vein has been explored eastward from the Seaton shaft on the No. 6 level some 300 feet from the stopes, with no apparent success. (See applicants latest maps submitted April 1966). The proposed 500 foot drift from the Foxhall tunnel would actually explore an additional 225 feet horizontally and about 100 feet vertically. The Seaton vein has been explored westward on the 7th level for 480 feet, also with no apparent success as no stoping is known to have been done in this distance along

the vein. The proposed 300 feet westward exploration may possibly intersect ore bodies, that might rake eastward from the 4th of July and Idaho tunnel workings.

The three proposed diamond drill holes are designed to penetrate the Seaton and Trojan veins at depth. Diamond drill hole No. 1 is designed to penetrate the Seaton vein west of the Pine Shade shaft at a depth of 300 feet below the surface. Proposed hole No. 2 is planned to intersect the Casino vein some 60 feet below the outcrop.

Conclusions and Recommendations

The Seaton vein in the Idaho Springs district has had considerable production of lead, zinc, silver, gold and copper ore since 1871 and as late as 1965. Some 13,093 tons of ore have been mined that averaged 0.50 oz Au, 22.71 oz Ag, 1.19 percent Cu, 12.75 Pb, and 9.05 percent Zn. Estimated value per ton of ore at current prices would total $120.82. Of the $120.82, gold and silver values would total $46.86 per ton and base metal values would total $73.96 per ton. A careful review of all the data submitted by the applicant shows the precious metal value of the ore to be roughly one-third the total value of the ore. This ratio of precious to base metal values would possibly prevent silver from being eligible for OMS assistance as it is much less than fifty-percent of the total value of the ore. If there were the possibility of finding significant new and undiscovered reserves of silver and gold, the exploration program proposed might be considered.

The applicant proposes to explore for silver and gold along the strike of the Seaton and Casino veins by drifting and crosscutting from the Foxhall tunnel that lies some 400 feet below the surface.

The Seaton vein has been mined extensively along its strike from three ore bodies that appear to rake steeply southeastward. The applicant's proposed exploration east and west from the Foxhall tunnel level will not adquately test the vein, especially at such a high cost. Workings from the Seaton shaft eastward on the No. 6 level appears not to have discovered mineable ore. There is a possibility that work westward towards the 4th of July workings might intersect new ore bodies if the rake is to the southeast.

The applicant proposed diamond drilling program to test the Seaton, Casino and Trojan vein has some merit although work should be concentrated on the Seaton vein. It is concluded that the Seaton vein has been quite adequately explored, and that exploration east and west from the Foxhall tunnel appears to be too expensive for the amount of mineable material that may be discovered and the ore bodies in the Seaton vein appear to be quite sporadic. It is concluded that the chances of discovering a significant amount of silver and gold are only moderate, and it is recommended that the application be denied without prejudice, and the applicant be requested to diamond drill at least three holes into the Seaton vein east of the stopes on the Seaton No. 89 claim and west of the Pine Shade shaft. Two holes should penetrate the Seaton vein at about the 5th level and a deeper hole nearer the proposed drifts eastward from the Foxhall tunnel, mid-way between Seaton shaft workings and the Pine Shade shaft. These holes would test the vein between the two major ore bodies along the Seaton vein. If this exploration work proves successful then additional exploration work by drifting, crosscutting and raising may be warranted and the applicant could reapply for financial assistance.

SAMPLING AND MILL RETURN REPORT BY MARCHINGTON
SUNNYSIDE AND PINE SHADE MINES

Date	Gold oz.	Silver oz.	Zinc %	Lead %	Copper %	Net Weight lbs.	Value per ton	
1891								
5/1	.57	132.74	27	20		7652	$119.71	
5/5	.25	31	17	13		4776	19.28	
5/13	.60	112.5	22.5	19		7203	103.21	
5/19	.60	95.2	25.5	16		6465	84.05	
5/22	.62	53.95	21.5	10		5722	46.75	
5/23	.75	71.87	24	12		6584	63.45	
5/25	.65	64.35	25	14.5		6678	56.	
1896								
4/27	.60	53.55	24.2	17.9		2639	39.87	
4/27	.22	17.2	12.4	2.3		9142	6.30	
3/7	.32	85.4	23	14.4		17978	53.74	
8/7	.30	21.4	11.6			9801	9.95	
8/7	.52	66.5	22.14	18.4		13813	47.49	
8/19	.20	37.5	16.2	5		5851	17.81	
9/24	.60	80.42	22.12	21.7		8306	40.67	
9/24	.42	20.3	13.5	3.2		?	10.10	
1936								
1/15	.295	15.45	14			18371	10.95	
2/11	.295	10.4	10.5	5.3		21481	8.82	Mill Dirt
2/28	.19	15.2	12	4.5		16839	9.06	Mill Dirt
4/28	.22	22.57	15	7.6		39320	16.31	
5/19	.245	21.85	15.2	6.5	1.5	38667		
1937 5/24	.66	6.1	5	2		14340		
1939								
3/13	.336	32.55	17.3	10.4		28644		
5/13	.37	28.7	7.3	4.75		25190	24.15	
6/22	.58	13	10.01	7.15		20041	22.88	
6/27	1.45	24.2	6.08	5.65		12434	42.42	
6/29	.355	23.8	17.03	10.75		13484	19.87	
8/12	.39	19.5	9	5.05		7118	20.18	
9/18	.26	22.5	9.5	9.2		12024	22.86	
9/27	.38	25	14	9		8840	25.73	
10/8	.49	17.1	12.6	8.4		12056	23.96	
1940								
6/27	.34	8.1				9012	7.76	Surface
1942								
5/19	1.06	15.05		6.8	2.0	9682	42.03	

SAMPLING AND MILL RETURN REPORT BY MARCHINGTON
TROJAN MINE

Date	Gold oz.	Silver oz.	Zinc %	Lead %	Copper %	Net Weight lbs.	Value per ton
1887							
10/11	.87	66.62				922	$56.04
1888							
4/11	1.84	144				1817	157.35
9/20	.80	66.25	14	6		2322	60.89
9/21	.40	100	14	6		1980	84.78
12/10	.10	71.2	19.5			3920	46.22
1889							
2/6	2.35	130.5				1096	144.63
4/1	1.6	100				2574	103.04
4/1	.43	71.2				990	53.65
5/31	.90	134	14	4.2		2817	118.74
7/18	1.70	171	15	5		1272	166.35
7/18	.65	42				1421	33.58
1890							
4/18	2.20	111.63				990	131.58
4/18	1.85	61.65				920	58.72
1891							
3/12	.10	18				5820	21.23
1893							
8/22	.33	47.5				6644	24.34
9/11	.35	55				7424	29.44
10/9	.35	47				5424	23.35
10/20	.60	59.75				6830	36.77
1894							
8/4	1.90	178				802	104.62
8/28	.55	48		2		1052	25.32
8/28	.80	163	17	5		1762	99.13
10/10	.60	140	17	6		1302	78.69
10/10	.40	59	9	2		1204	29.33
11/11	.46	24				7638	9.65
11/13	1.25	97		7.5		2501	65.88
11/13	.85	147.9		4		3615	87.46
1895							
3/28	.80	92				1466	59.92
4/30	.47	46.5				4650	24.14
5/21	.65	79				1832	58.87
1900							
9/25	.20	128	22	6.5		1368	61.52
9/25	1.06	41	22	5		1004	26.36
1901							
3/23	.35	107.45	13	10		1372	55.88
3/23	.26	38.8				5723	17.00
1917							
1/22	.35	66.4				2325	50.46
1918							
3/5	.39	26.5				1754	32.80
1929							
9/4	.75	33.2				7113	34.75
1938							
6/10	.79	49.95				1222	43.46

PROPERTY DESCRIPTION

Claim Name	No.	Approx. Acres	Type Vein	Shafts	Tunnels	Prospect Pits
Seaton	72	0.6	300' Pb-Zn Tell.	1	0	0
Seaton (west 600')	69	0.7	300' Pb-Zn Tell. 500' Pb-Zn	4	0	0
Seaton	335	0.8	400' Pb-Zn Tell. 300' Pb-Zn	4	0	0
Fourth of July	1431	2.0	800' Pb-Zn	1	1	0
Little Emma	1718	1.0	150' Pb-Zn	0	3	0
Little Casino	1331	3.3	650' Pb-Zn Tell. 100' Pb-Zn 250' Uncl.	2	1	0
Moon	7651	3.4	700' Comp.	1	0	5
Silver Queen	1857	3.4	200' Pb-Zn Tell. 450' Uncl.	3	0	1
France	2228	5.2	600' Uncl.	0	1	1
France Ext.	2229	5.0	750' Uncl.	3	0	2
DeLesseps	8310	5.2	1100' Pb-Zn	2	1	0
Champion	5243	3.2	700' Pb-Zn 600' Uncl.	1	4	0
Kangaroo No. 2	281	1.2	100' Pb.-Zn	1	0	0
Shafter	608	5.2	1500' Cu-pyritic-Au	2	2	2
Fairmount	938	1.9	1050' Cu-pyritic-Au	1	1	1
Sunnyside	2314	3.4	800' Pb-Zn	3	0	0
Blind	14578	2.3	600' Uncl.	4	0	0
Trojan	4885	3.1	1050' Uncl.	5	0	1
Main Trunk W/o	5741	2.0	1200' Comp.	2	0	1
Dora	264	1.2	600' Uncl.			
Good Enough	17448	3.1	300' Uncl. 200' Pb-Zn	3	1	0
Queen, west 400'	205	0.5	300' Uncl.	0	0	1
Prince Henry	15857	1.3	200' Pb-Zn	1	0	1
Tunnel Lode #1	2264	2.4	700' Uncl.	0	0	0
Tunnel Lode #3	2252	3.4	150' Pb-Zn 1200' Uncl.	1	0	0
Beauty #2	2253	3.8	150' Pb-Zn 400' Uncl.	1	0	0
Danube	1847	5.2	350' Pb-Zn 200' Pb-Zn Tell.	0	2	0

Uncl.	Unclassified Veins
Pb-Zn	Predominately galena-sphalerite veins with silver and some gold and copper
Pb-Zn Tell.	Galena-sphalerite veins with silver and gold telluride
Cu pyritic Au	Gold bearing copper pyritic veins
Comp.	Composite veins containing lead-zinc-silver veins and pyritic gold veins

The vein types and lengths and the number and types of workings have been taken from U. S. G. S. Bulletin 1182-A, written in 1965

Duplicate, retain!

FORM 100 12-62

INTERNATIONAL SMELTING AND REFINING COMPANY

TOOELE PLANT

Bought of Mineral Enterprises, Inc., Berne, Inc., Lessee Denver, Colorado.

Toocle, Utah Oct. 27, 1965

Mine *Shipped from* Virginia Canyon, Colo.

Received 10/8 10/15 *Sampled* 10/16 10/22 *By* *Class* Crude *Mine Lot* 1, 2, 3 *Smelter Lot* I-3656 L-3657

ASSAYS	LEAD PER CENT	COPPER PER CENT	ZINC PER CENT	SILVER OZ. PER TON	GOLD OZ. PER TON	INSOLUBLE PER CENT	IRON PER CENT	SULPHUR PER CENT	LIME PER CENT	ARSENIC PER CENT	ANTIMONY PER CENT	PER CENT
(Composite) I. S. & R. CO.	17.34	1.75	16.12	19.06	.294	37.36	4.67	18.96	2.	.55	.27	
MINING CO.												
UMPIRE												
	-1.5	-.75										
SETTLEMENT	15.84	1.00										

E. & M. J. METAL QUOTATIONS

Copper	(Average for Week Ending)	10/16	35	600
Lead	(Average for Week Ending)	10/16	16	000
Zinc	(Average for Week Ending)	10/16	14	500
Silver	(Average for Week Ending)	10/16	128	900
Gold			$35	000

VALUES PER TON

Copper	90%	@	.266 .243	4	788
Lead	90%	@	.135 .125	38	491
Zinc	75%	@	.0435 .0326	10	518
Silver	95%	@	1.269 1.206	22	978
Gold	91%	@	35.000 31.85	9	364
Gross Metal Payment				86	139
Less Treatment				17	102
Net Value Per Ton				69	037

TREATMENT

Base	14	370
Credit Treatment to break even	1	268
	13	102
Insoluble % @		
Sulphur 16.96 % @ .25, Max.	4	000
Zinc % @		
Iron % @		
Lime % @		
Manganese % @		
Net Treatment	17	102

INITIAL	CAR NUMBER	WEIGHT
Truck	3 Drums	
Total Freight Weight		2388
Less Weight of Drums		182
Net Wet Weight		2206
% Moisture 0.59		
Dry Weight		2193

PAYMENT

1.0965 Dry Tons @ 69.037 Per Ton — 75 70

Handling Charge - under 10 tons $15.00

(Waived this lot only)

Assaying,

Umpire

Representation, pay

Hauling Wet Tons @ $ Per Ton, pay

Royalty % of $, pay

Barton Truck Line, Tooele, Utah.

Freight Bill No. C719185 of 10/4/65 33.55

Freight Bill No. C722513 of 10/12/65 42.15 — 75 70

Freight @ Per Ton (R. R. Value not over $)

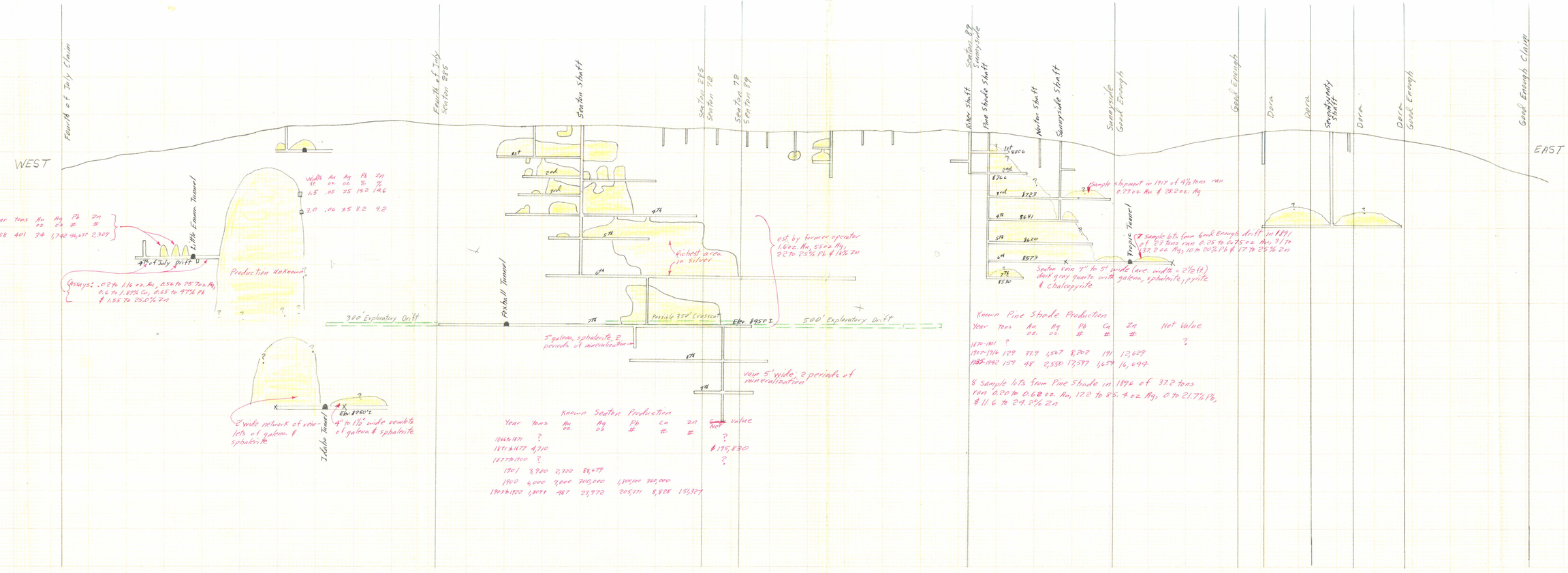
Shipped By

Mine Lot 1, 2, 3 Total — 75 70

Smelter Lot I-3656-57-58 Voucher No. Net Proceeds — 0 00

An extra charge made for sampling all lots less than carload. Rates, except on contracts for specified time or specified tonnage, subject to change without notice.

No assent, express or implied, by this Company to any breach or waiver of any covenant contained in any agreement shall be deemed a waiver of any succeeding breach of the same covenant.



Section along Seaton Vein assuming vein dips at 60°

Scale: 1" = 100'

All known workings and Production shown

Proposed Exploration Shown

100' vertically = 116' along vein

= = = Proposed Exploratory Drifts

R. Clark March 31, 1965

Mineral Enterprises, Inc.

OME 6475 (Silver-Gold)

MINERAL ENTERPRISES, INC.
OME 6475 (Silver-Gold)

Scale: 1" = 100'

Vein Outcroppings on Surface

Claims Under Application

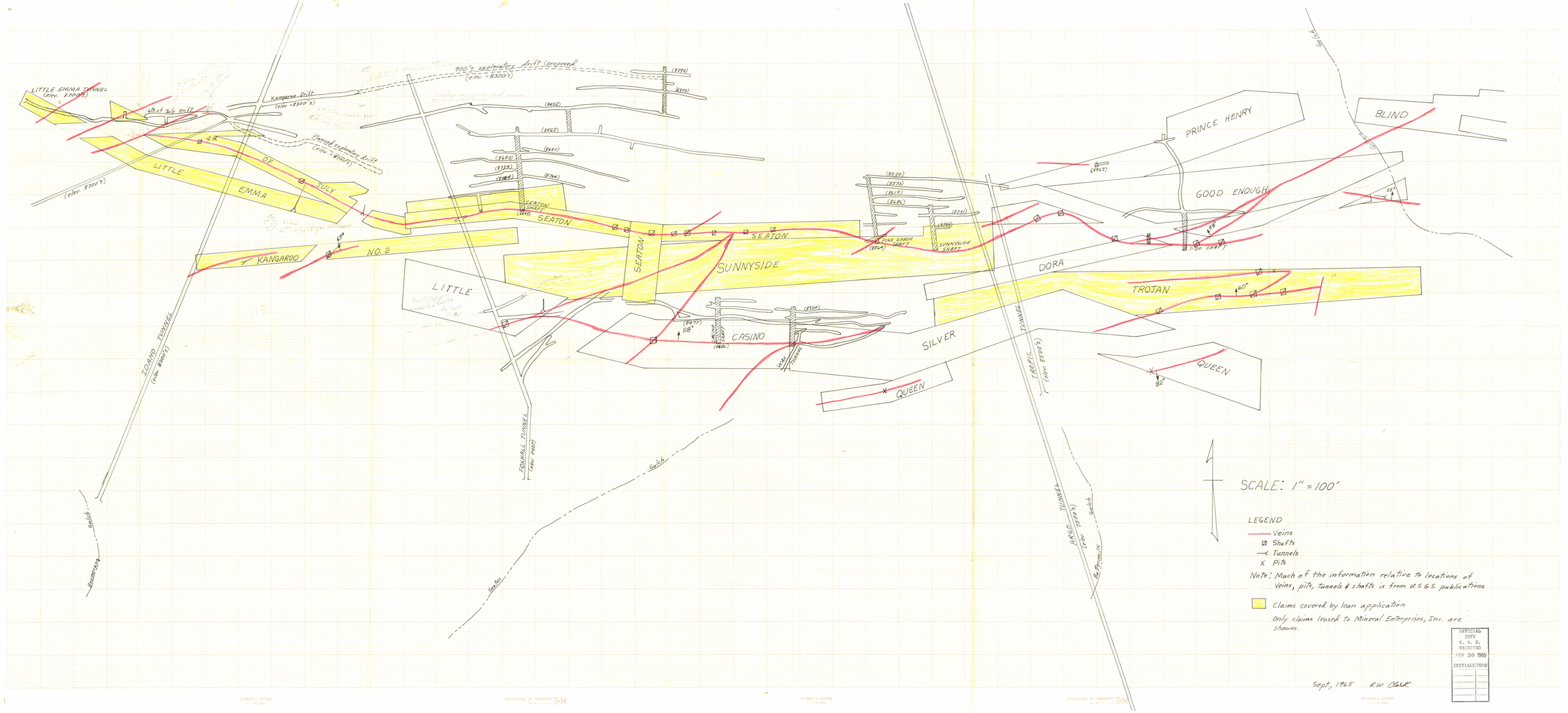
Note: Little Emma Tunnel and Proposed Drifting along Fourth of July not shown

Proposed Drift

Proposed Drill Hole

R. Clark

March, 1966


LITTLE EMMA TUNNEL
(elev. 8700'±)
4th of July Drift
900's exploratory drift (proposed)
(elev. ~8300'±)
Kangaroo Drift
(elev. ~8300'±)
Planned exploratory drift
(elev. ~8900'±)
4th OF JULY
LITTLE EMMA
(elev. 8700'±)
KANGAROO
NO. 2
SEATON SHAFT
SEATON
SEATON
SUNNYSIDE
LITTLE
PINE SHADE SHAFT
SUNNYSIDE SHAFT
CASINO
WAR EAGLE TUNNEL
SILVER
QUEEN
DORA
TROJAN
PRINCE HENRY
GOOD ENOUGH
(7-20 SHAFT)
BLIND
QUEEN
IDAHO TUNNEL
(elev. 8000'±)
FOXHALL TUNNEL
(elev. 8400')
TROPIC TUNNEL
(elev. 8000'±)
OREGO TUNNEL
(elev. 8000'±)
Gulch
Gulch
Gulch
Gulch
Gulch
Bonanza
Seaton
Bo Peep Mt.
SCALE: 1" = 100'
LEGEND
Veins
Shafts
Tunnels
Pits
Note: Much of the information relative to locations of Veins, pits, Tunnels & shafts is from U.S.G.S. publications
Claims covered by loan application
Only claims leased to Mineral Enterprises, Inc. are shown.
OFFICIAL COPY
O. M. E.
RECEIVED
SEP 30 1965
INITIALS CODE
Sept, 1965 R.W. Clark