May 28, 1951

Memorandum

To: Landon Strobel, Executive Secretary, Defense Minerals Administration

From: Executive Officer, Defense Minerals Administration Field Team, Region IV

Subject: DMA 22-50, Tennessee Metals Company, Mohave County, Arizona

We are attaching the original brochure of the above docket. The report was sent to Washington on May 23.

J. H. East, Jr.

J. H. East, Jr.

Attachment

JHE/cl
cc-Dom Files

May [illegible], 1[illegible]

Memorandum

To: Louis Pardee, Executive Secretary, Indiana Minerals Administration

From: [illegible] Field Team, Region [illegible]

Subject: [illegible] Project, Hillsgrove Mining Operation, Monroe County, Indiana

We are attaching the original and two copies of the report on [illegible] Project.

One attached is a sealed envelope in a confidential letter regarding the management of the management. This the confidential letter is well taken by Harold A. Hicks and Lloyd F. Fleming, both of whom are responsible mining engineers in Indiana. The [illegible] of the highwall can well be questioned. The confidential letter should not be shared in general circulation.

We concur with the recommendations made in the report.

The original brochure is being expedited from the Indiana office and will be forwarded by air mail as soon as it is received in this office.

(CONFIDENTIAL LETTER IN MR. EAST'S FILES)

J. H. East, Jr.

J. H. East, Jr.

A. H. Koschmann

A. H. Koschmann

Attachments

Original by air mail

Copy: [illegible], [illegible], Koschmann, Allison, [illegible] files

JHE/[illegible]

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSCAR L. CHAPMAN, SECRETARY

DEFENSE MINERALS ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMA Docket 21-50 - TENNESSEE-SCHUYLKILL PROJECT
WALLAPAI MINING DISTRICT
MOHAVE COUNTY, ARIZONA

FOR GOVERNMENT USE ONLY

M. J. Klaing and
L. L. Farnham
Mining Engineers
U. S. Bureau of Mines

John H. Faick and
Calvin S. Bromfield
Geologists
U. S. Geological Survey

May 1951

Mining Division
Region IV

May 23, 1952

Memorandum

To: BLM Field Team, Region IV

From: Chief, Mining Division

Subject: BLM Docket AZ-30, Tennessee Metals Co., Mohave County, Arizona

I have reviewed the reports by Rinehart, Fuchsen of the Bureau of Mines and Faich and Brownfield of the Geological Survey and noted the confidential letter regarding competence of management.

I concur in the conclusions presented and the recommendation for denial of the lease.

P. V. Allemann

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
200 New Customhouse
Denver 2, Colo.

May 22, 1951

Memorandum

To: Field Team, Region IV

From: A. H. Koschmann

Subject: DMA Dockets No. 21 and No. 50 - Tennessee-Schuylkill Project, Vallapai Mining District, Mohave County, Arizona

I herewith transmit the geologic report (original and 11 copies) by John N. Faick and Calvin S. Bromfield, covering the above listed docket. This report and the joint recommendation that the loan be denied on the basis of economics have the approval of C. A. Anderson, Supervising Geologist, Arizona-New Mexico.

A. H. Koschmann

A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Attachment

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Registered Mail
Return Receipt Requested

May 18, 1951

Retriever - Nat. Res. Rep.

Memorandum

To : Paul T. Allaman, Denver, Colorado

From : Chief, Arizona-New Mexico Sr., Mining Div., Region IV

Subject : Report on DMA Rocket RL-30, Tennessee Metals Co. Mohave County, Ariz.

Enclosed are original and 11 copies of Summary, Conclusions and Recommendations by Marvin J. Kleing and Lloyd L. Farnham of the Bureau of Mines, and John Faick and Calvin S. Brownfield of the Geological Survey; and the Engineering Report by Messrs. Kleing and Farnham.

This is a very good report and has my approval.

Walter E. Stoume

CC P. T. Allaman
C. A. Anderson
DMA RL-30
RF

WEStoume:frj

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By Morris J. Klaing[1], L. L. Farnham[1], John N. Raick[2], and C. S. Brosfield[2]

Tennessee Metals Corp. through its president, Ralph R. Langley, submitted an application to the Defense Minerals Administration for a loan of $300,000 to re-open the Tennessee Schuylkill mine, to rehabilitate its 150-ton flotation mill, and to put into production the Alpha, Summit, Copper Age, and other mines in the Wallapai district, Mohave County, Arizona. The application is a combination of DMA Packet 21 and 50. It was reviewed by the Lead-Zinc Branch of the Defense Minerals Administration and referred to the Field Team, Region IV, for investigation. The field investigation was made April 2 to 9, 1951.

The properties under lease by the applicant are at and within 10 miles of Chloride, Arizona, which is 21 miles northwest of Kingman, Arizona.

The Wallapai district occupies an area about 12 miles long by 4 miles wide in the Central part of the Cerbat Range in northwestern Arizona. The rocks underlying this area are summarized below:

Quarternary	Olivine basalt flows and detritus
Tertiary	Thick volcanics
(Mineralization)	
Mesozoic(?)	Granite porphyry, diabase, and lamprophyre dikes
Pre-Cambrian	Coarse-grained, porphyritic, gneissoid granites, granite altered to schist, diorite, amphibolite, graphite schist, pegmatite.

1/ Mining Engineers, Bureau of Mines, Mining Division, Region IV, Arizona-New Mexico Branch, Tucson, Arizona.
2/ Geologists, Geological Survey

The ore deposits are mostly northeasterly trending fissure veins in pre-Cambrian host rocks, but are genetically related in space and time to the Mesozoic granitic intrusions. Commercial ore are confined to relatively small shoots scattered erratically along numerous extensive quartz veins. The common ore minerals are galena, sphalerite, chalcopyrite, and nearly all of the ores contain values in gold and silver.

The Tennessee-Schuylkill is the most important of the mines. From 1901 through 1948 it has produced 605,000 tons of ore from which was recovered approximately 43,000 ounces gold, 1,500,000 ounces silver, 400,000 pounds copper, 62,000,000 pounds lead and 72,000,000 pounds zinc. From 1939 through 1948, a total of 251,581 tons of ore were mined and milled. The average recovered grade of this production in the form of concentrates was 0.05 ounce gold and 2.1 ounces silver per ton with 0.05 percent copper, 4.1 percent lead and 5.5 percent zinc.

The second most important of the applicants' mines is the Summit which from 1936 through 1948 produced approximately 30,000 tons of lead-zinc ore. The average grade of this ore is unknown but 4,900 tons mined in 1947 contained 0.05 ounce gold and 4.1 ounces silver per ton, with 0.5 percent copper, 3.6 percent lead and 5.5 percent zinc .

The Copper Age from 1946 through 1949 produced 7,672 tons with average mill heads of 0.045 ounce gold and 3.5 ounces silver per ton with 3.05 percent lead and 7.15 percent zinc.

The lead-zinc production of the Alpha and other mines is inconsequential.

With the exception of the Tennessee-Schuylkill mine none of the applicant's mines have measured or indicated ore. The ore reserves of the Tennessee-Schuylkill are as follows:

Summary of Ore Reserves - Tennessee-Schuylkill Mine

Class of Reserves	Tons	Ounces per Ton Gold	Ounces per Ton Silver	Percent Copper	Percent Lead	Percent Zinc
Measured	29,583	0.07	2.8	-	3.3	7.6
Indicated	52,209	0.04	1.9	-	2.9	7.6
Inferred	93,017	0.04	1.4	-	1.4	6.4
Total	174,729	0.044	1.76	-	3.22	6.98

Since the applicant proposes to treat ore from other mines not under lease to him it has been necessary to consider the possibilities of production from the entire district. The past history of some 300 producers in the district has been reviewed. All available production records of lead and zinc have been tabulated. The results of sampling in a score or more of mines has been studied. Widths of veins have been recorded.

An analysis of the costs of mining, milling and smelting, and the value of the ore at present prices of metals indicates that the Tennessee-Schuylkill, Summit, Alpha, Copper Age and other mines of

the applicant, as well as all other mines in the district, with the exception of two or three small lessee operations, are very definitely sub-marginal.

Therefore, it is recommended that the application for a loan be denied.

Should the need for lead and zinc really become critical a substantial premium price for the Wallapai district would result in an annual production of at least two to three million pounds of lead and three to four million pounds of zinc.

The lead-zinc ore deposits have not been "bottomed" and it is possible that the production could be double that mentioned and could continue for many years, if an adequate incentive were provided.

[illegible]-SCHUYLKILL PROJECT
HALLAPAI MINING DISTRICT
MOHAVE COUNTY, ARIZONA

Geology

By John H. Faick and Calvin S. Brosfield
Geologists, U. S. Geological Survey

Geology

[illegible] PROJECT
WALLAPAI MINING DISTRICT
[illegible] COUNTY, ARIZONA

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General Geology

The Wallapai district in northwest Arizona occupies the central part of the Cerbat range. The district extends an area about 12 miles long by 4 miles wide extending from about 6 miles northwest of Kingman to about 2 miles north of Chloride. The area includes several mining camps, the most important being Chloride, Mineral Park, Cerbat, and Stockton Hill.

The Wallapai district has been studied by a number of independent workers who have made substantial contributions to our knowledge of the geology and the mines of the region. Publications resulting from these studies are listed below.

Schrader, F. C., Mineral Deposits in the Cerbat Range, Black Mountains, and Grand Wash Cliffs, Mohave County, Arizona: U. S. Geol. Survey Bull. 397, 1909.

Bastin, E. S., Origin of Certain Rich Silver Ores Near Chloride and Kingman, Arizona: U. S. Geol. Survey Bull. 750, pp. 17-39, 1924.

Harmon, Robert R., Cerbat Mountains: Univ. of Arizona, Arizona Bur. of Mines Bull. 145, pp. 110-117, 1938.

Garrett, E. R., Tennessee-Schuylkill Mine: Univ. of Arizona, Arizona Bur. of Mines Bull. 145, pp. 117-119, 1938.

Schoder, Jacob and Allmann, Paul T., Mining and Milling Methods and Costs at the Tennessee-Schuylkill Corporation Mine, Chloride, Arizona: U. S. Bureau of Mines Information Circular 7077, 1939.

Tainter, Stanton L., Johnny Bull-Silver Knight Lead Mine Property, Cerbat Mountains, Mohave County, Arizona: U. S. Bureau of Mines Report of Investigations 3938, 1947.

Maury, R. H., Examination of Zinc-Lead Mines in the Wallapai Mining District, Mohave County, Arizona: Report of Investigations 4101, 1947.

Thomas B. C., Ore Deposits of the Wallapai District: Econ. Geology, Vol. 44, pp. 663-705, 1949.

Dings, McClelland G., Wallapai Mining District, Mohave County, Arizona: Univ. of Arizona, Arizona Bur. of Mines Bull. 156, pp. 138-142, 1950.

The first relatively complete geological study of the district was made by Schrader[1]. His description and classification of the rocks as summarized by Harrison[2] is shown below.

Quaternary.....Olivine basalt flows and detritus.

Tertiary.....Thick volcanics.

(?Mineralization)
Mesozoic (?).....Granite porphyry, diabase, minette and vogesite dikes.

Pre-Cambrian.....Coarse-grained, porphyritic, gneissoid granites, granite altered to schist, diorite, amphibolite, graphite schist, pegmatite.

According to Dings[3], the rocks of the district consist of pre-Cambrian crystalline rocks, chiefly of granitic composition, cut by large masses of Mesozoic (?) granite. Dikes are scattered throughout the area and remnants of volcanic rocks of probable Tertiary and Quaternary age lie around the margins of the Cerbat Mountains.

Near Mineral Park in the central part of the district a large granite stock, of probable late Jurassic or early Cretaceous age, has intruded the pre-Cambrian granites, gneisses, and schists. The granite is medium-grained, porphyritic, and intensely altered. Numerous small stocks and irregular bodies of greenish-black gabbro and associated

1/ Op. cit., pp. 49-118.
2/ Op. cit., p. 112.
3/ Op. cit., p. 139.

diabase dikes which occur most sparsely in the southern part of the district are probably differentiation facies of the granite stock. Mineralizing solutions that formed the veins in the district are believed to be genetically related to the late Mesozoic (?) granitic intrusion.

According to Hermon[1]:

"The ore deposits are associated with rocks of this group (Mesozoic) in space and time. The vein faults cut across the members of the pre-Cambrian group of rocks and probably across the diabase, but lamprophyric dikes and highly altered dikes with quartz phenocrysts intrude along the faults and are cut by the mineralized fissures. The lamprophyric dikes also intrude the vein faults and are mineralized. The diabase has been seen to form one wall of veins and appeared to be older than the vein faults."

Ore Deposits

The ore deposits occur in numerous quartz veins that commonly strike northwesterly and dip steeply to the northeast, but appreciable variation from this attitude is not uncommon. Veins are usually narrow, but range in width from a few inches to about 50 feet, and in general are persistent along the strike. Ulrich[2] reports the total aggregate length of the known veins to be about 85 miles. Ore shoots are distributed erratically along these veins.

The district has produced considerable quantities of primary sulfide and secondary enrichment ores. Only the primary sulfide ores will contribute to any substantial future production.

1/ Op. cit., p. 113.
2/ Op. cit., p. 111.

The unoxidized ore shoots are generally complex assemblages of galena, sphalerite, and gangue minerals, which carry gold, silver, and a small amount of copper. Indium is reported in some ores of the range. Ore shoots are relatively small and commonly range in width from 1 to 4 feet and lengths of 10 to 50 feet. However, much larger ore bodies were found in the Tennessee and Colonna mines where dimensions as great as 400 feet horizontally and 700 feet vertically are reported.

According to Hernon[1/],

"Ore shoots appear to be localized where changes of strike or dip of the vein faults gave rise to open spaces due to the reopening movements that occurred just before and during mineralization. Open space filling seems to have been most important as far as valuable vein minerals are concerned. Areas of faults choked by either clay gouge or greatly crushed rock were too tight for big ore shoots."

Ore Reserves

The district is not capable of large production unless new mines similar to the Tennessee and Colonna are discovered; an unlikely possibility under existing conditions. No single mine in the district is capable of supplying a large tonnage of ore for any sustained period of operation, although there are many small mines each capable of producing small tonnages, which in the aggregate should be sufficient to supply a small custom mill for several years. A 100 ton per day custom mill, obtaining ore from all of the district, could probably be supplied for several years under favorable economic conditions and judicious management.

1/ Op. cit., p. 116.

The following table summarizes the status of estimated ore reserves in a few mines of the district.

Mine	Measured	Indicated	Inferred
Tennessee-Schuylkill	29,503	50,000	100,000
Golconda		30,000	100,000
Summit		8,000	12,000
Champion	000	6,000	6,000
Copper King		7,000	7,000
Banner		4,000	5,000
Fountain Head	350		10,000

The Mines

Dingle[1] reports the district contains 225 mines and about 1,000 prospects, and that 87 percent of the total lead and zinc produced has come from the Tennessee and Golconda mines. At the present time all the mines and prospects are idle except for a few lessees working some of the smaller properties.

In connection with this examination only a few of the mines were visited with most attention being given to those most likely to contribute additional production, and those specifically referred to in WPA Dockets for which this examination was made.

Tennessee-Schuylkill Mine

The Tennessee-Schuylkill has been the largest producer of the Wallapai district. It has been developed to the 1600-foot level and extensively stoped above the 1400-foot level. The mine is credited with a production of 603,000 tons for the years 1901 to 1948, which includes the period of its greatest activity.

1/ Op. cit., p. 139.

Regarding the mine Barrett[1] says:

"The Tennessee-Schuylkill fissure vein, which can be traced for nearly 2 miles strikes N. 5° W. and dips 85 degrees NE - - -. The ore is in shoots which, above the 900 foot level, rake northward and between the 900 and 1400-foot levels are nearly vertical - - -. Most of the ore shoots range from 35 to 300 feet in length and average about 5 feet in width - - -. The only recognized control (of ore shoots) is that of strike and dip of the fissure - - -. The four shoots in the Tennessee-Schuylkill mine occur where the vein has changed to a more than average northwesterly strike. The ore filling is wider on steep dips than on flat dips."

According to Barrett[2] there is a marked tendency for the ore shoots to be zoned horizontally with relatively high values of gold and lead along the north boundaries of the shoots and relatively high zinc values along the south margins of the shoots. Zoning with depth is less well defined although it is stated there is an appreciable increase in sphalerite and crystalline pyrite with a general decrease of galena in the deeper levels.

The mine could not be entered for examination and it is reported to be flooded below 900-foot level. In an attempt to evaluate the remaining possibilities for ore, a careful study was made of all available maps and reports. Above the 1400-foot level the main part of the mine has been extensively mined, however, apparently many small blocks of minable ore remain, which, in the aggregate should amount to a substantial tonnage.

1/ Op. cit., p. 118
2/ Op. cit., p. 110

In addition to unmined remnants of ore in the older parts of the mine there appear to be definite possibilities of ore extension in depth below some of the old stopes. In the vicinity of the Schuylkill shaft the mine has been intensively stoped above 1350-level, but below this there has been very little mining or exploration. There is no information to indicate that this ore shoot terminates at the 1350-foot level, therefore it is assumed that an extension of it may be found with deeper exploration. Where last mined it had a length of 600 feet and average thickness of 4 feet. Assuming these dimensions, this shoot is capable of producing about 240 tons per foot of depth or a total of 30,000 tons of indicated ore if mining can be extended an additional 125 feet in depth. Assays of samples on 1350-level indicate this ore should contain about 8.2 percent zinc, 4.1 percent lead, and small amounts of gold and silver.

Another ore shoot with excellent possibilities for extensions in depth exists south of the Tennessee shaft and has been mined between 700 and 1000-foot levels. On 1000-foot level this ore shoot was 500 feet long and 4 feet wide and may be expected to produce about 200 tons per foot of depth or about 20,000 tons of indicated ore, assuming that the ore shoot will extend downward at least to the 1200-foot level. This ore may be expected to contain about 6.0 percent zinc, 2.7 percent lead and minor amounts of gold and silver.

Exploration on the 1600-foot level in the main ore shoot of the Tennessee mine found only a relatively small amount of spotty ore of good grade. The size and shape of the ore shoot as shown on old maps between 1200 and 1600-foot levels suggest that this ore shoot may have been bottomed and that a deeper extension of this ore shoot need not be expected.

Information available on old maps indicates that exploration of the Tennessee-Schuylkill vein, including extensions into the adjoining Elkhart and Johnny Bull mines, has not been adequate. It appears reasonable that thorough exploration will find additional ore shoots and extensions of ore shoots already known. It is impossible to predict this ore with any certainty but the possibility of finding an additional 100,000 tons of inferred ore in unexplored section of the vein is not unlikely.

Colorado Mine

The Colorado mine was the second largest in the district having a reported production of $8,000,000 in lead, zinc, gold, and silver. The mine has been idle since 1917, and little reliable information is available. It was visited in connection with this examination as being a possible future source of ore. The mine is inaccessible and the lower levels are reported to be flooded, consequently only the surface workings and remains of the surface plant can be seen.

The Colorado vein occupies a northwesterly-trending fissure dipping 70° NE. The country rock is largely gneissoid granite of pre-Cambrian age. The vein, which has been opened by a 1600-foot inclined shaft, has been extensively stoped above the 1400-foot level. The mine is reported to have had the largest ore shoot known in the district, and unverified reports state there is ore remaining in the lower levels. It is impossible to determine how much ore may be available but as an index to future potential production, this writer assumes that 20,000 tons of indicated ore may remain in developed parts of the mine. It is also assumed that 100,000 tons of inferred ore may be found by new exploration along the strike of the vein.

Summit Mine

The Summit vein occupies a northwesterly fissure in gneissoid granite and schist. The vein can be traced for several hundred feet and varies in width up to about 8 feet. The ore is localized in 3 shoots, none of which are known to exceed 200 feet in length. The ore shoots are nearly vertical or rake steeply to the north. The principal minerals are galena, sphalerite and chalcopyrite in a quartz gangue.

The mine has been developed and largely stoped out to a depth of 300 feet, and has produced about 30,000 tons of ore. According to Emery[1], a total of 6049 tons of ore was mined in the period from October, 1943 through April, 1946. This averaged 4.42 percent lead, 7.18 percent zinc and 0.76 percent copper. The precious-metal content per ton was .0733 ounce gold and 5.82 ounces silver.

At least two stopes on the Summit vein do not appear to have been mined out in depth. One of these, at the north end of the 160-level, has been mined by underhand stoping below this level, but has not been developed on the 300-foot level. This stope may easily contain 3000 tons of indicated ore above the 300-foot level. Another stope extends from 200 to 400 feet west of the main Summit shaft and has been mined from the 300-foot level to the surface. The ore does not appear to have been bottomed on the 300-foot level, and should extend to greater depths. A minimum of 5000 tons of indicated ore should be available from this ore shoot.

It appears probable that more ore than credited above will eventually be mined from these two stopes. In addition, another stope in the vicinity of the Summit shaft should yield more ore in depth, although it appears to have been exhausted above the 160-foot level. The Summit vein is on a strong, persistent, well mineralized structure that should yield more ore upon completion of deeper development work. Approximately 8000 tons of indicated ore and 12,000 tons of inferred ore are conservatively estimated above a proposed 500-foot level. This should be about the same grade as the ore previously milled.

1/ Op. cit., p. 29.

Champion Mine

The Champion mine, owned by A. H. George, Kingman, Arizona is being operated by two lessees: Frank H. Brennis and C. G. Pettersen, both of Chloride, Arizona. The vein, which is associated with one or more basic dikes, trends northwesterly and dips northeasterly, cutting across pre-Cambrian gneiss.

The mine is one of the oldest discoveries in the district and has been developed by means of a crosscut adit to the vein, an inclined shaft and several hundred feet of lateral work. The mine has been fully developed and extensively stoped above the adit level. Some ore, which is now being mined below adit level, averages about 8.5 percent lead, 15.5 percent zinc, with 10.0 ounces silver and .26 ounces of gold per ton. Only about 700 tons of measured ore remained in the area being stoped.

Possibilities for additional small production are excellent in the semi-developed area north of the inclined shaft and below the adit level. The stope now being worked south of the shaft should extend to greater depths. Some ore may remain in areas previously mined. These areas may contain 6000 tons of indicated ore and 6000 tons of inferred ore. This ore should average about 8 percent lead and 15 percent zinc with fair values in gold and silver.

Copper Age Mine

The Copper Age mine was visited with Mr. Alvin Larsen, one of the owners. The mine, which is reported to have produced about 15,000 tons of ore, has developed a vertical northwesterly-trending vein containing small shoots of lead-zinc ore with minor amounts of gold and silver. Three shoots have been mined, one about 250 feet long was mined

to an undetermined extent, another was mined for 150 feet on the strike and 175 feet vertically, and the third was mined for a length of 50 feet and a depth of about 140 feet. The average stope width was about 4 feet, and at least two of the stopes pitch steeply to the northwest.

The ore has been relatively low grade, 15,000 tons yielded 7.3 percent zinc, 3.6 percent lead, and $3.70 per ton in gold and silver.

Grab samples were taken from the southeast face of the upper and intermediate levels, both of which were low grade vein material. These assay as shown below.

Location	Width	Pb	Zn	Au	Ag
Intermediate Level	21 inches	1.5	2.7	0.08	2.6
Upper Level	18 "	0.2	1.0	0.04	1.8

There are two blocks of mineralized vein material that may constitute ore of a marginal grade. One block of low grade ore is exposed on the adit level from about 50 to 250 feet northwest of the shaft, the other is exposed in the southeast end of first level above one of the old stopes. The first block contains about 5,100 tons of ore, the other contains about 1600 tons, both of which are regarded as indicated ore of low grade. Another ore shoot may have been penetrated at the inaccessible face of the main adit, in which case the potential is somewhat greater. There is a reasonable possibility of finding about 7000 tons of inferred ore beyond the southeast end of the present workings.

The possibilities of finding appreciable tonnages of minable ore by new exploration are quite doubtful. The value of the expected ore may not pay the cost of exploration, development, and mining.

Banner and Fountain Head Mines

The Banner and Fountain Head mines are consolidated under a single manager, Mr. George F. Ood, Kingman, Arizona, who has a long term lease and option on the two old properties.

The veins are located in the old camp of Stockton Hill and have been extensively developed by many hundreds of feet of shafts, adits, drifts, and crosscuts. The veins are parallel, nearly vertical and trend northwesterly across pre-Cambrian country rock. The veins are small, averaging from 1 to 2 feet in width but are fairly persistent along the strike. A single stope on the Banner vein was mined for a strike distance of 600 feet, and averaged about 1.5 feet thick.

The vein was exploited for high grade ores and old maps show that 23,874 tons mined near the Banner shaft about 1911 averaged 22.57 percent lead, 11.9 percent zinc, 0.5 percent copper, and 0.21 ounces of gold, 7.4 ounces of silver per ton.

The Banner mine is inaccessible but old maps indicate that the vein pinches out about 60 feet below the old stopes. In this case only about 4000 tons of indicated ore and additional 5000 tons inferred ore remain in the mine.

The Fountain Head mine has also exploited high grade ores from a narrow persistent vein. Four ore shoots have been mined which, it is reported by the present lessee, have produced 6000 tons of ore averaging 15 percent zinc, 2 percent lead, 4 ounces silver and .25 ounces gold per ton. The remaining block of measured ore contains 350 tons for which the average assay is 10 percent zinc, 7 percent lead, 3.2 ounces silver and .1 ounce gold. This mine does not appear to be adequately developed

and it is reasonable to expect an additional 10,000 tons of inferred ore, around and below the old stopes and along the northwest extension of the vein, that will contain about 12 percent zinc, 5 percent lead, 3 ounces of silver and .15 ounce gold.

TRAUTMAN-SCHUYLKILL PROJECT
WALLPAPER MINING DISTRICT
MOHAVE COUNTY, ARIZONA

Engineering Report

By R. J. Kinling and
L. L. Farnham
Mining Engineers
U. S. Bureau of Mines

Engineering

TENNESSEE-SCHUYLKILL PROJECT
WALLAPAI MINING DISTRICT
MOHAVE COUNTY, ARIZONA

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ILLUSTRATIONS

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INTRODUCTION

The Tennessee Metals Corp., of which Ralph R. Langley is president, was formed and has acquired a lease on the mine and flotation mill of the Tennessee-Schuylkill Corp. as well as leases on the Summit, Alpha and other mines in the Wallapai district, Mohave County, Arizona.

Tennessee-Schuylkill Corp. has outstanding indebtedness of approximately $150,000. Some $50,000 is due the Internal Revenue Department for withholding taxes deducted from its former employees and not paid the Government. Approximately $100,000 is due Mohave County and State of Arizona, supply houses and individuals. The applicant believes that the entire indebtedness can be adjusted and liquidated for $100,000.

In order to rehabilitate the present flotation mill and the various mines and ultimately to increase milling facilities to 300 tons daily capacity the applicant requests a loan of $250,000. With the liquidation of the present indebtedness at $100,000 the loan requested becomes $150,000.

This application was reviewed by the Lead-Zinc Branch of the Bureau Minerals Administration and referred to the Field Team, Region IV, for investigation.

ACKNOWLEDGMENT

Acknowledgments are made herewith to V. F. Stuart, Collector of Internal Revenue at Phoenix and to William Mahoe, his assistant. They gave valuable information relative to past financial difficulties of the Tennessee-Ashaghill Corp. and expressed a desire to be of further assistance. Ralph E. Langley, president of the Tennessee Metals Corp., the applicant, provided invaluable assay maps and other data covering the Tennessee-Ashaghill mine and other valuable information regarding the Summit, Alpha, Copper Age and other mines. W. V. Wimmett, former mine superintendent of the Tennessee-Ashaghill, gave information relative to the former methods of mining and costs and other valuable information. John D. Fairk and C. E. Brenfield, Geologists, U. S. Geological Survey, made a brief reconnaissance study of the entire district.

LOCATION AND ACCESSIBILITY

The Vallapai district is divided into four districts, - Chloride, Cerbat, Mineral Park and Stockton Hill. Most of the more than 200 mines in these districts are located on the sides of the Cerbat Mountain range. A paved highway skirts this range and branch dirt roads lead from the highway to the various mines. The railroad, shipping point, and supply center is Kingman, 23 miles southeast of the town of Chloride. The area in which most of the mines occur is 10 miles long and 4 miles wide with Chloride at the northwestern end.

The topography is rugged in the most intensely mineralized area. This is advantageous as regards the possibility of development by tunnels rather than shafts, but disadvantageous from the standpoint of road construction. Only a few of the mines are more than 10 miles from either the Tennessee-Schuylkill or Keystone mills. The district is well provided with roads which are fairly easy to keep in condition.

HISTORY AND PRODUCTION

The early production of the Valkgal district was mainly gold and silver found in the oxidized zones of the lead-zinc veins. Most of the mines were discovered between 1863 and 1895. The earliest authentic records of the production of lead ore from the Tennessee-Schuylkill mine in 1901. There was some production previous to this. The first production of zinc from this mine was in 1911. Other mines in the district produced zinc in some quantity as early as 1906 and perhaps before this date.

Records of the net smelter returns of the Colorado mine are available from 1906 to 1917 when the mill burned. During this period the net smelter returns totalled $2,026,309.24. No records are available that show the tonnage or grade of the ore except for 1917 when the grade was reported to be 14.3 percent zinc with 6.2 ounces gold and 4.4 ounces silver. The price of zinc was 9.8¢ cents per pound and the net smelter returns were $14.73 per ton of ore produced for 9 months of 1917. It is estimated that the Colorado produced 40,000,000 pounds of zinc.

The Tennessee has produced from 1901 through 1946 a total of 482,886 tons of ore containing 43,325 ounces gold, 1,510,277 ounces silver, 632,868 pounds copper, 61,969,643 pounds lead and 71,688,214 pounds zinc.

The production of the Tennessee-Ophir Hill mine from 1901 through 1943 is shown in tables I and II.

Of the mines on which the applicant has leases the Summit is next in importance to the Tennessee-Ophir Hill. Reliable records of production are available from 1942 through 1943.

Summit Mine - Tonnage and Grade of Ore

Year	Tons	Gold	Silver	Copper	Lead	Zinc	Reference
1942	44	0.33	5.8	0.66	6.0	7.5	1/
1943	(23 cars)	0.33	5.0	0.50	6.3	6.5	2/
1944	3,131	0.06	3.2	0.68	4.2	7.3	3/
1945	3,473	0.07	4.0	0.52	3.9	6.1	4/
1946	4,543	0.08	4.2	0.57	3.8	5.5	5/
1947	6,906	0.05	4.1	0.50	3.8	5.5	5/
1948	620	0.05	5.2	0.64	5.8	6.7	6/

1/ Smelter settlement sheets.
2/ Arizona Department of Mineral Resources.
3/ Tonnage from Mineral Yearbook, grade of 2,944 tons from smelter settlement sheets.
4/ Tonnage from Mineral Yearbook, grade of 2,697 tons from smelter settlement sheets.
5/ Tonnage and grade from Mineral Yearbook.
6/ Tonnage from Mineral Yearbook, grade of 331 tons from smelter settlement sheets.

TABLE I. - Gold, silver, copper, lead, and zinc recovered from ores of the Tonopah-Goldfield mine, Nevada, Ariz., from 1901 to 1949 1/

Year	Ore, tons	Gold, ounces	Silver, ounces	Copper, pounds	Lead pounds	Zinc pounds
1901	25,885	9	2,469	-	4,421,678	-
1902	7,367	84	29,448	-	1,639,640	-
1903	1,898	15	4,360	-	279,468	-
1907	154	24	2,867	235	98,[illegible]	-
1909	70	3	127	-	6,484	-
1911	998	79	2,638	1,837	97,972	87,486
1912	1,398	267	13,127	2,361	489,772	260,946
1913	29,486	1,370	186,924	14,568	4,788,278	4,239,642
1914	22,881	739	74,748	11,981	3,697,382	4,932,108
1915	47,633	2,191	171,346	45,888	6,834,098	8,351,839
1916	47,823	1,864	135,158	38,285	5,886,277	7,537,687
1917	41,133	1,914	168,983	55,300	5,879,156	8,352,860
1924	144	13	829	435	38,884	32,697
1929	58	4	387	183	15,142	13,888
1936 2/	32,233	2,878	40,850	24,308	1,433,000	1,080,000
1937	59,998	10,467	138,968	188,000	4,553,000	3,434,000
1938	54,000	9,643	107,720	86,500	3,782,450	5,449,654
1939 3/	11,762	1,889	24,196	22,280	676,560	1,624,888
1940	35,377	3,290	132,745	29,988	4,687,648	9,543,188
1941	43,130	2,843	113,041	11,348	4,854,860	4,378,580
1942	48,035	2,278	108,384	17,168	3,284,880	3,383,988
1943	38,266	1,880	71,698	58,521	2,677,185	3,429,289
1944 4/	28,393	517	11,357	32,088	1,792,668	1,982,388
1945 5/*	11,186	608	23,127	23,588	984,240	934,688
1946 5/*	3,498	112	7,035	7,814	278,438	381,786
1947*	11,141	204	18,981	23,880	749,428	1,345,668
1948*	14,915	292	17,951	19,328	693,528	1,279,048
1949	None					
1901-38	358,925	31,258	992,989	374,985	43,399,278	43,645,889
1939-49	231,881	12,278	548,677	255,878	28,438,375	27,955,356
1901-49	590,806	43,528	1,539,321	632,848	71,969,645	72,601,244

1/ Years 1901-38 compiled by C. H. Gerry, Division of Mineral Production and Economics, Bureau of Mines, Salt Lake City, Utah, years 1939-49 from company records.
2/ Production 1.5 months
3/ Production 3 months
4/ Production 9 months
5/ Production 8 months
* Operated by contractors

TABLE II. - Gold, silver, copper, lead, and zinc recovered from ores at the Tombstone District mines, Cochise Co., Ariz., from 1881, to 1949 1/

Year	Ore Tons	Average Recovery Gold	Average Recovery Silver	Average Recovery Copper	Value Recovered Lead	Value Recovered Zinc
1881	23,805	-	6.1	-	2.0	-
1882	7,967	0.01	3.9	-	10.7	-
1883	1,000	0.08	4.0	-	12.4	-
1887	154	0.16	13.3	-	12.3	-
1900	79	0.07	1.8	-	4.8	-
1901	900	0.06	2.6	0.09	4.9	4.4
1902	1,300	0.10	3.7	0.12	14.0	9.1
1913	29,486	0.05	3.6	0.05	8.0	7.2
1914	18,883	0.03	3.4	0.08	8.3	11.2
1915	17,433	0.06	3.6	0.08	5.3	8.8
1916	47,813	0.03	2.9	0.03	3.4	8.0
1917	41,133	0.05	3.9	0.07	6.1	10.1
1918	144	0.08	1.0	0.13	6.8	10.0
1919	18	0.08	4.3	0.09	12.1	13.3
1920 2/	10,233	0.23	3.3	0.20	3.9	4.1
1927	38,990	0.17	2.3	0.08	3.8	3.8
1934	31,892	0.18	1.9	0.08	3.5	3.0
1935 3/	21,768	0.09	2.1	0.09	2.9	4.0
1940	55,977	0.06	2.4	0.08	4.2	4.3
1941	45,150	0.06	2.5	0.08	4.4	4.8
1942	40,054	0.06	2.4	0.08	4.1	4.4
1943	30,204	0.08	1.9	0.08	4.3	4.8
1944 4/	28,393	0.07	2.5	0.08	4.4	4.7
1945 5/	13,806	0.08	2.1	0.12	4.4	4.8
1946 6/	3,494	0.08	2.0	0.12	4.8	4.3
1947 7/	11,141	0.08	1.7	0.11	3.5	3.7
1948 8/	14,915	0.08	1.4	0.06	2.3	4.3
1949	None	-	-	-	-	-
1880-20	300,905	0.09	2.8	0.03	5.9	6.2
1920-40	311,882	0.04	2.1	0.08	4.1	3.4
1880-49	612,804	0.07	2.5	0.06	5.1	5.4

1/ Years 1881-1920 compiled by G. L. Gerry, Division of Mineral Production and Exploration, Bureau of Mines, Salt Lake City, Utah. Years 1920-49 from company records.

2/ Production 3.5 months

3/ Production 3 months

4/ Production 9 months

5/ Production 8 months

6/ Production 2 months

7/ Operated by contractors

The following information regarding the history of the property is briefly outlined.[1] In 1924, the U. S. Smelting, Refining and Mining Co., operating on a lease, sunk a vertical shaft. In 1936, the Keystone Mining Co. mined and shipped a considerable tonnage of ore. In 1942, the property was leased and sampled by Miles F. Ramsey, engineer for the U. S. Smelting, Refining, and Mining Co. In December 1942, the XX Bonnie Dover Mining Co. leased the mine and shipped ore and did some development work with a $20,000 Reconstruction Finance Corporation Loan.

A second Reconstruction Finance Corporation Loan for $23,000 was granted but the company shut down and returned the loan because it was not thought possible to operate at a profit.

VERSCHIP AND EQUITY

The Tennessee-Schuylkill mine, now under lease to the Tennessee-Metals Corp., is owned by the Tennessee-Schuylkill Corp. Since the latter corporation has an indebtedness of approximately $150,000, title to the property is very insecure. According to V. F. Stuart, Collector of Internal Revenue and William Milne his assistant, creditors are withholding any attempt to press their claims in hope that the property can be put into production at an early date and that claims against the company can be paid on the basis of 10 percent of the net smelter returns. Mr. Stuart stated that he was unwilling to take action against the company because such action

1/ Gaskins, R. N., War Minerals Report "Summit Mine, Mohave Co., Arizona" 1944.

might still further complicate the situation by court action and the appointment of a receiver. Under such conditions he thought that there would be very little chance for the Internal Revenue Department to collect any substantial part of the amount owed them. Apparently other creditors are of the same opinion.

It is believed that the only such way to operate the property would be to clear the title by the payment of its indebtedness. Whether this could be done for $300,000 instead of $150,000 actually owed the creditors is only a question. The applicant has included $300,000 for the liquidation of the indebtedness.

The Arizona Metals Co. apparently owns the Alpha-group and Summit mines. DM Docket 98 includes a lease from Caroline Daniels Moore of Hubbard Woods, Illinois to Ralph F. Langley on the Alpha, Omega, Magnolia and Wallapai (sic) patented claims. There is no lease from the Arizona Metals Co. to the Tennessee Metals Corp. The applicant claims to have a lease on the Copper Age mine but this was denied by one of the owners. The applicant claims leases or options of leases on numerous other properties in the district.

DESCRIPTION OF THE DEPOSITS

The two most striking characteristics of the veins of the Wallapai district are their persistence in length and depth and the lack of continuity of the valuable ore shoots. As seen in the numerous workings and as judged from numerous maps the veins can be almost as strong and persistent. On the other hand the ore shoots

are very erratic. In many places vein widths were from 5 to 7 feet from foot to hanging wall but minable ore was seldom more than 2 feet in width. It should be stated, however, that the better sections of the veins in the accessible workings have been mined. Open stopes indicate that a width of 4 or 5 feet had been mined in places. Stope maps of the Tennessee-Sunny Hill indicated the same characteristics of pinching and swelling but to a much more limited extent. Some ore shoots were mined for 700-800 feet in length with only minor pinches. The average of several hundred samples in the old workings show a vein width of 3.8 feet. Ore shoots on the lower levels average slightly less than 4 feet. The Colorado maps also show a long persistent ore shoot. The main ore shoot in the Summit was 225 feet long. The longest ore shoot in the Copper Age was approximately 175 feet long. An ore shoot in the Champion mine now being worked is producing ore running 10 to 12 percent lead and 12 to 15 percent zinc. The average width of the ore is approximately 2 feet. Scores of places were seen in the accessible workings in other mines where there was from 1 to 2 feet of ore but the length of these shoots was not sufficient to warrant stoping them.

MINEABLE ORE RESERVES

Of the mines the applicant proposes to operate the only one with measured and indicated ore reserves is the Tennessee-Sunny Hill. The present calculations of these reserves have been made from records

supplied by the company. Some of these records date back to 1912 and 1913 when the Meadlac Mining and Smelting Co. operated the property. In calculating these reserves, well over 1,000 samples have been used. A weighted average width with weighted average content of gold, silver, copper, lead and zinc have been obtained for each section of the mine sampled. A record of these averages has been shown on the accompanying longitudinal section of the Tennessee-Schuylkill mine (Fig. 1). While at the present time the grade and value of the ore is too low grade to be profitably mined it is believed that a permanent record should be kept of individual assays. Some day they will be of inestimable value and, therefore, every available assay and the calculations of average values has been placed in the appendix to this report.

Tennessee-Schuylkill Mine - Summary of Ore Reserves

Class of Reserves	Tons	Ounces per ton Gold	Silver	Percent Copper	Lead	Zinc
Measured	29,503	0.07	2.0	-	3.3	7.6
Indicated	52,209	0.06	1.9	-	2.9	7.6
Inferred	93,017	0.06	1.6	-	3.4	6.4
	174,729	0.064	1.74	-	3.27	6.98

In the drifts and raises where samples have been taken at intervals of 5 feet along any considerable distance it has been assumed that measured ore extends for a distance of 25 feet in either direction from the sampled section of the drift or raise. With few exceptions indicated ore is assumed to extend for an

additional 50 feet beyond the measured ore. Inferred ore has been calculated on an ant formula. The method of calculation can be seen by reference to the longitudinal section (fig. 1). Eleven cubic feet of ore in place was taken as equivalent to one ton. A small amount of ore occurs on the 1,600 level. In the northern end of the mine inferred ore is assumed to go as deep as the 1,600 level. There is no evidence to assume that ore will not be found below the 1,600 level. The mine has not been "exhausted" and the fact that inferred ore has been shown to extend only to that level should not be interpreted to mean that this is the case.

PROPERTY STATUS

Exploration and Development

The mines of the Wallagal district have been developed by many miles of underground workings from shafts and by tunnels. Only a small part of these workings are accessible. A considerable part of the development was done in the Tennessee and the Calaveras mines from shafts. Both of these mines are accessible.

The mines the applicant has specifically named and which he proposes to operate are the Tennessee-Schuylkill, Summit, Alpha and Copper Age. The Tennessee shaft is reported to be usable with minor repairs and most of the tunnels in the other mines are accessible.

Mining and Milling Facilities

The Tennessee shaft has one hoisting compartment, and a pipe and manway compartment. Since the mine water is acid the probabilities are that much of the piping will have to be replaced. The mine and mill were shut down the latter part of 1948. The equipment then in use is still at the property.

The other mines to be opened are not equipped for production with the exception of compressors at the Summit. The Keystone mill which the applicant proposes to acquire, if he does not build a new mill, is in working condition with minor repairs and replacements.

PROJECT PROPOSALS

Exploration and Development

The main source of the ore supply for operating the Tennessee-Schuylkill mill is the Tennessee-Schuylkill mine. It is proposed to put the Tennessee shaft into operating condition by replacing the present sheave wheel and putting on a new cable both of which the company has at the property. It is thought that approximately 200 feet of shaft guides will have to be replaced to put the shaft into operating condition to the 900 level. Water in the shaft stands between the 900 and 1,000 levels. It is not proposed to pump from the shaft until a crosscut 75 feet in length is driven to open up a shoot of ore on the 700 level. This ore shoot was sampled and assayed in 1912 and 1913 by the Needles Mining and Smelting Co., a subsidiary of the U. S. Smelting, Refining and Mining Co.

Having reopened the 700 level for production, it is proposed to start the mill and run it with the water supplied by pumping from the shaft. In the meantime it is proposed to drive a lower tunnel at the Summit to cut the Summit vein at a depth of 200 feet below the present lowest tunnel. To advance the connect tunnel to intersect the vein will require approximately 250 feet of work. It then is proposed to drift on the vein for 1,200 feet to get under the old Summit workings. Three raises are proposed, two of which are 200 feet high and a third 300 feet. To prepare the Summit mine for production on this program would necessitate 2,150 feet of work at a cost of approximately $50,000, and it will require alone to one year before an appreciable production could be made. The applicant reports that the vein width will be 6 feet. Some 70 samples in the upper workings indicate that the vein width is from 2 to 3 feet with a few samples showing a width of 5 feet.

It also is proposed to produce ore from the Alpha mine from a vein which shows 31 samples that average 26 inches in width with combined lead-zinc values of approximately 10 percent.

It is proposed to put the Copper Age or El Oro into production. There is no measured ore and little or no indicated ore.

Having obtained 100 tons per day from these sources with some overburden ore, the applicant proposes to open the lower levels of the Tomasovo-Ashley/Hill mine to produce 100 tons per day. He also

proposes to build another mill of 150 tons per day more centrally located to treat the ores from the Summit and other mines in that locality. He proposes as an alternative to erecting a new mill, the acquiring of the already existing Keystone custom mill of 70 tons capacity, which can be increased to a capacity of 150 tons.

Cost of Proposals

The following is the applicant's estimate of his capital requirements:

Tennessee mill equipment		$11,000.
Tennessee mine pumps		4,000.
Mining equipment		35,000.
Tools		3,000.
Supplies mine and mill		20,000.
Payroll 60 days		
Tennessee mill	$2,400	
Tennessee crosscut	3,000	
Summit crosscut	6,000	
Alpha crosscut	2,600	
For development	$14,000	14,000.
Tennessee mine	$9,000	
Tennessee mill	7,000	
Copper Age	3,000	
For mining payroll	$19,000	19,000.
Working Capital Fund		
Overhead, aid to other mines, utilities, deposits, power		27,000.
Compressors and trucks		10,000.
		$175,000.
To increase milling facilities to 300 tons daily		75,000.
		$250,000.
To liquidate indebtedness of the Tennessee-Schuylkill Corporation		100,000.
	Total	$350,000.

At a cost of $350,000 the applicant proposes to put into production two mills, each of 150-tons daily capacity, and to make available sufficient production to keep them operating.

New Equipment and Facilities

The new equipment and facilities to put into operation the first step of the program, i.e., the production from the Tennessee-Schuylkill, Summit, Alpha and Copper Age are not great. Equipment at the Tennessee-Schuylkill mine and mill are approximately as they were when the property was shut down at the end of 1948. Some repairs are necessary at the mill. It is probable that the applicant's estimate of the cost of doing this is approximately correct. The Summit mine has a compressor and would require cars, track and some minor equipment. The Copper Age would have to be completely equipped with a compressor, track, cars, and the other necessary equipment for stoping operations. One bins would have to be built at this and the other properties. No estimate of this cost has been specifically shown.

Transportation, Including Access Roads

The main items for transportation and the economic handling of ore would be the construction of ore bins at all of the properties that the applicant proposes to operate. Transportation of ore to the Tennessee-Schuylkill mill would be done by contractors at a cost of from $1.50 to $2.00 per wet ton of ore.

The receiving bin for custom ore at the Tennessee mill is not suitable for receiving custom ore and would have to be changed to allow for more efficient dumping. An efficient sampler, a jaw crusher, and a belt conveyor to get the ore to the mill would have to be installed.

Manpower

Manpower is a very serious problem. Chloride is an almost abandoned mining camp. There are housing facilities available for a considerable number of men. There are several properties operating outside of the Wallapai district, but near Kingman. Of these the Antlers is the most important. These properties do not have living facilities comparable to Chloride. It is most likely that should operations be started at Chloride it would attract miners from properties already in operation. There is already a shortage of miners and it is believed that it will become increasingly difficult to meet the present labor requirements to say nothing regarding new operations that are now under way in areas outside of the Wallapai district. Mr. Langley stated that he proposed to pay a wage that was $1.00 higher than that paid in the copper camps so that he could obtain sufficient miners. The situation is less serious as regard to common labor.

Power

Ample power is available for the operation of the Tennessee-Schuylkill mine and mill. This power comes from a transmission line from the Hoover Dam. Operations at the other mines would be supplied with gasoline and fuel oils.

Water

There is a definite water shortage at the Tennessee-Schuylkill mill. At the start of operations it is proposed to depend largely upon mine water for the operation of the mill. This water is strongly acid and will require treatment before it can be used. After the mine has been unwatered the water problem is not simple. The mine does not make sufficient water to operate the mill. Formerly water was obtained by pumps installed at the Burkeville mine. Apparently this supply is not now available as a late company report proposes that a pump and a 3-mile 2-inch pipe line be installed to augment the water supply.

PRODUCTION PLAN (AFTER COMPLETION OF PROJECT)

Time Schedule for Completion of Project

The applicant states "the Tennessee mine can be put in production at about 50 tons daily in 30 days time and the Tennessee mill can be reactivated for its 250 tons daily capacity in the same length of time. Within the same 30 days more than 50 tons of ore per day can be had from the Copper Age, Champion, Detroit, De La Fontaine and other mines or prospective mines in the district - thus the Tennessee mill can be supplied with capacity ore within 30 days time, provided proper equipment and financing is made available".

The applicant further states that production can be built up to 300 tons of ore daily in 6 to 9 months.

Rate of Production. Tons of Ore and Pounds of Recoverable Metal.

The applicant's statement that in 30 days the Tennessee mill can be supplied with 150 tons of ore daily and in from 6 to 9 months the daily production can be increased to 300 tons is fantastic.

Robert Paine, a very competent mill man, operated the Keystone mill for several years prior to closing it down in the latter part of 1949. The capacity of this mill is 70 tons per day. The average daily tonnage treated was approximately half of this capacity. As an ore buyer for this mill he has a very good idea of what the district as a whole can produce. He estimated a possible output of approximately 150 tons per day of a grade similar to the past production of the district.

It is estimated that an average grade for the district would be approximately 0.05 ounce of gold and 2.5 ounces silver, with 0.05 percent copper, 3.5 percent lead and 6.5 percent zinc. These average grades for lead and zinc are based on an unweighted average of ore shipped and the results of sampling from some 30 mines.

On the above basis the annual recovered base metals would be approximately

2,400,000 pounds of lead and

4,390,000 pounds of zinc.

This production is economically impossible at the present prices of metals.

Mining Methods and Costs

Jacob Schadev and Paul V. Allaman show in Information Circular 7077 [2] complete costs of mining and milling at the Tennessee-Schuylkill mine. During the first 9 months of 1938 a total of 48,288 tons of ore were mined and 41,641 tons were milled. The mine produced 4,476 tons per month. Assuming 30 operating days per month, mine production was at the rate of 134 tons per day.

In 1938, miners wages were $4.50 to $5.00 per shift and muckers and trammers received $4.00 per shift.

The present wage scale at Chloride as given by W. V. Bissett, former mine superintendent of the Tennessee mine, is $14 to $15 per shift for miners and $13 to $14 per shift for muckers. Present day labor costs are, therefore, three times those of 1938.

The present approximate costs of the more important supplies for mining as obtained from Tarr, McComb & Ware Commercial Co., Kingman, Arizona, are as follows:

Mine timber, carload lots	$95 per M ft.
Gelatine powder	21.50 per case
Fuse 3,000-foot lots	14.55 per M ft.
6,000 " "	13.15 per M. ft.
Caps 6 1 500 to 5,000	21.75 per M
Rails 12 and 16 lbs.	160.00 per ton
Drill steel 18-20-foot lengths	22.75 per cwt
Jack bits 200 - 400 lots	8.47 each
3/4-in pipe, black	11.00 per C. ft.
1-in " "	16.65 per C ft.
2-in " "	35.00 per C ft.
4-in " "	111.00 per C ft.

2/ Mining and Milling Methods and Costs at the Tennessee-Schuylkill Corporation Mine, Chloride, Ariz., Bur. of Mines I.C. 7077. 1939.

The Tennessee ground is classed as heavy and requires that the square-set method of mining be used. In a few instances the cut-and fill method was used but costs were less only by the amount of timber used in square setting.

The costs given below include development but do not show the amount done.

TABLE 3 - Estimated Mining Costs, Tennessee-Schuylkill Mine, Based on Costs of 9 months, 1938, Production 10,000

Items of Costs 1936 to 1938	Ratio of Costs per Ton: Actual For 9 mos. 1938	Estimated for 1938
Salaries and wages:		
Supervision	1:2	$0.39	$0.57
Stoping and timbering	1:3	1.82	5.43
Tracking and mucking	1:3	.61	1.83
Pumping and drainage	1:3	.20	.61
Hoisting	1:3	.27	.82
Service men	1:3	[illegible]	[illegible]
Total salaries and wages		$3.[illegible]	$9.[illegible]
Drill steel and supplies	1:2	.15	.30
Lumber and timber	1:3.2	.64	2.03
Equipment and repair parts	1:3	.23	.67
Power	1:1	.33	.33
Explosives	1:1.7	.17	.28
Compensation insurance	1:3.8	.26	.98
Unemployment tax	1:3.8	.10	.37
Old-age benefit tax	1:4.7	.03	.14
Medical expense	1:2	.06	.12
Yard and camp 1/	1:3	.06	.18
Miscellaneous and office expense	1:3	.14	.41
		$5.42	$13.[illegible]

1/ One-half assaying, engineering and office expense.

These costs do not include company overhead, depreciation, amortization and income taxes.

Statistical data for 1938 is as follows: Tons per man-shift underground is 1.44; explosives 0.807 pounds per ton ore; timber 20.8 board feet per ton; power 19.6 kilowatt hours per ton.

Milling Methods and Costs

The Tennessee-Schuylkill concentrator has a capacity of 150 tons per day. The method of concentration used is selective flotation. Two classes of concentrates are produced, (1) a lead concentrate which contains most of the gold, silver and copper and (2) a zinc concentrate with a small amount of gold and silver. The lead concentrate contains approximately 60 percent lead and the zinc concentrate contains approximately 54 percent zinc.

Labor costs in 1938 at the Tennessee-Schuylkill mill varied from $4 to $5 per shift. Present-day labor costs are three times those of 1938. Miscellaneous supplies have been calculated at twice those of 1938.

The estimated milling cost on the present day costs on the basis of treating 154 tons per day is $2.90 per ton. It would be a year or more before production could be built up to 100 tons of ore per day and with the small tonnage that would be treated at present, even considering custom ore, the milling cost would be at least $3.50 per ton.

This cost does not include company overhead, depreciation, amortization, and income taxes.

Based on the grade of the mill feed and the grade of concentrates produced for a period of 4 years, 1943, 1946, 1947 and 1948, the recoveries of the various metals at the Tennessee-Schuylkill were as follows:

	Percent mill recovery in Lead Concentrates	Zinc Concentrates
Gold	75	10
Silver	72	8
Copper	83	1/
Lead	90	5/
Zinc	2/	75

1/ Not paid for

Smelting Methods and Costs

The concentrates from milling include a lead concentrate containing gold, silver and some copper, and a zinc concentrate containing gold and silver. No payment is made for the zinc in the lead concentrate and no payment is made for the lead and copper in the zinc concentrate.

Lead concentrates have been shipped to the American Smelting and Refining Co. at El Paso, Texas and to the United States Smelting, Refining and Mining Co. at Midvale, Utah. Zinc concentrates are shipped to the Amarillo plant of the American Smelting and Refining Co. at Amarillo, Texas.

All smelter settlement sheets show that the basis for payment and smelting charges are substantially the same.

Payments for lead concentrates are approximately as follows:

Gold, 100 percent at $32.82 per ounce; silver, 95 percent at $0.90 per ounce; copper, less 0.5 percent at market price less 6.4 cents per pound; lead, less 1.5 percent and 90 percent of the remainder at the market price less 2 cents.

Smelting charges for lead concentrates are as follows:

Base charge, $9.50 per ton; credit of 10 cents per unit for lead over 31.5 percent; freight, Kingman to El Paso, $12.36 per wet ton or $13.73 per dry ton; trucking, mill to Kingman, $2.06 per wet ton or $2.29 per dry ton.

Payments for zinc concentrates are approximately as follows:

Gold, 80 percent at $32.21; silver, 80 percent at $0.90 per ounce; copper, 65 percent at 6.5 cents less than market; zinc, 85 percent at market 17.5 cents less 0.45 cents.

Smelting charges for zinc concentrates are as follows:

Base charge, $33.00 per ton; zinc adjustment charge $1.00 for each cent over a zinc price of 6 cents per pound which amounts to $11.50 per ton; labor adjustment amounts to $7.50 per ton; iron penalty, 50 cents for each percent over 12 amounting to $1.00 per ton; freight tax on spelter, $0.12 per ton. These costs total $58.12 per ton of concentrates.

The average grade of the measured, indicated and inferred ore reserves at the Tennessee-Schuylkill mine is 0.044 ounces gold and 1.76 ounces of silver per ton, with 3.22 percent lead and 6.98 percent zinc and a negligible amount of copper. On the basis of 100 tons of ore milled there will be 4.83 tons of lead concentrates and 9.71 tons of zinc concentrates with a grade as shown below:

Concentrates produced from 100 tons ore

Kind	Tons	Ounces per ton Gold	Ounces per ton Silver	Percent Lead	Percent Zinc	Ratio of Concentration
Lead	4.83	0.99	26.29	60.00	5.0	20.7
Zinc	9.71	0.07	1.45	3.00	54.0	10.3

Value of concentrates per ton

Kind	Gold	Silver	Copper	Lead	Zinc	Total
Lead	$32.49	$22.44	-	$157.95	1/	$212.92
Zinc	1.80	1.04	1/	1/	$156.52	159.36

1/ Not paid for.

Total value concentrates from 100 tons ore at mine before transportation and smelting

Lead 4.83 tons at $212.92 per ton		$1,028.40
Zinc 9.71 tons at 159.36 per ton		1,547.39
	Total value	$2,575.79

Total cost breaking, freight and smelting of lead and zinc concentrates

Kind	Tons	Per ton concentrates Breaking	Freight	Smelting	Total	Grand Total
Lead	4.83	$2.29	$13.73	$6.65	$22.67	$109.50
Zinc	9.71	2.29	10.55	58.12	70.96	689.02
				Total costs		$798.52

The net value of 100 tons of ore in concentrates at the mill is $2,575.79 less $798.52 or $1,777.27, which is $17.77 per ton of ore.

Royalty

According to a lease agreement dated January 25, 1951, the applicant, the Tennessee Metals Corp., is to pay the Tennessee-Schuylkill Corp. 10 percent of the net returns received from the sale of bullion, ores, concentrates, or other products derived from the leased property.

Should the applicant treat any custom ore in the Tennessee-Schuylkill mill he is to pay the Tennessee-Schuylkill Corp. 50 cents per ton for such ore treated.

Should the applicant transport any ore from neighboring properties not covered by his lease through the workings of the Tennessee-Schuylkill mine he is to pay the Tennessee-Schuylkill Corp. 25 cents per ton for such ore transported.

Ralph E. Langley stated, that although not mentioned in the lease, the Tennessee Metals Corp. was to pay an additional royalty of 2.5 percent personally to H. A. Wimer, President of the Tennessee-Schuylkill Corp., presumably to reimburse him for sums personally advanced by him in behalf of the corporation.

Amortization of Capital

The applicant proposes that if a loan for $250,000 is granted he will repay the same on the basis of 10 percent of the net smelter returns, and if the loan is for $350,000, repayment would be on the basis of 15 percent of the net smelter returns. His estimate of net smelter returns is $25.05 per ton on Summit ore and $20.36 per ton on Tennessee ore.

The average repayment on a loan of $250,000 would be approximately $2.25 per ton of ore and $3.37 per ton on a $350,000 loan. The repayment of the loan on the basis of the average grade of the present ore reserves on the basis of a $300,000 loan would be $2.67 per ton of ore.

SUMMARY

Capital requirements including development

The capital requirements as stated by the applicant for a production of 150 tons of ore per day from the Tennessee-Schuylkill are much too low. Before any production should be made, the Tennessee shaft should be sunk from the 1,440 to the 1,600 level and some 1,500 feet of work should be done on the 1,500 level so as to get below the known ore reserves. Several raises should be driven from the 1,600 to the 1,400 level for ventilation and extraction of ore. In the past, ore from the 1,400 level has been hoisted from that level to the 1,250 level through a winze and then trammed to the shaft. Ventilation was bad and the men working in this section of the mine were paid $1.00 more per shift than those working on the upper levels. The sinking of the shaft and the necessary drifts for economical extraction of ore would cost at least $150,000. This sum would be in addition to the proposed expenditures as shown by the applicant.

The expenditures for the development of the Summit, Alpha, and Copper Age have been very much underestimated. The minimum estimate for doing the things that the applicant proposes would be double his estimate of $250,000. If the indebtedness of the company can be liquidated for $100,000 the total capital requirements would be $600,000.

Operating Costs

It would take probably 6 months to build production up to 100 tons per day which would include 50 tons from the 700 level of the Tennessee shaft and 50 tons from the other properties. It is estimated that costs for mining at the other properties would be no less than at the Tennessee mine because the widths of the vein are definitely narrower. Estimated costs per ton are as follow on the basis of 100 tons of ore per day.

	Per Ton
Mining	$15.50
Milling	3.50
Trucking ore to mill	1.00 1/
Overhead	1.50
	$21.50
Royalty to Tennessee Schulkill Corp.	1.78
Royalty to Government (amortization)	2.67
	$25.95

1/ Trucking $2.00 per ton for ore trucked $1.00 per ton on total tonnage milled.

The above costs are based on accurate costs of mining and milling at the Tennessee-Schuylkill mine for a period of several years revised from 1938 to the present day costs of labor and supplies. Overhead, including administration, is probably under estimated. Ralph E. Langley has a very extravagant idea of managing a small property. He will be the general manager at $750 per month. He states in his application "the operating organization will include Walter Winsett, assistant manager, Thomas L. Chapman, E. M., consulting engineer and geologist, J. N. Payne, mill superintendent, Raymond L. Dyer, G. C. Patterson and J. M. Rathrick, mine superintendents, and other seasoned key men". The salaries for each of these men will vary from $300 to $400 per month.

The net smelter returns calculated on the basis of present ore reserves are $17.77 per ton. The Tennessee Metals Corp. pays a royalty to the Tennessee-Schuylkill Corp. of 15 percent of the net smelter returns.

The Tennessee Metals Corp. in its application proposes to pay the Government 15 percent of the net smelter returns provided the corporation is granted a loan of $150,000.

The amount of royalty paid the Government is amortization and consequently amortization is not shown as a separate item.

Indicated Profit or Loss

The estimated smelter returns based on the calculated grade of the ore reserves of the Tennessee-Schuylkill mine based on an average of more than 1,000 mine samples is $17.77 per ton of crude ore. The grade of the production of the various other mines proposed to be worked by the applicant is much the same. It is also believed that costs would not differ greatly. The narrower width of the vein would more than offset any decrease in costs due to more favorable mining conditions.

Returns per ton of ore are $17.77 and costs have been calculated at $25.95 or a loss of $8.18 per ton of ore.

CONCLUSIONS

From 1908 through 1949 the Wallapai district has produced 52,000,000 pounds of lead and 72,000,000 pounds of zinc with appreciable amounts of gold and silver and a little copper. It is doubtful if any appreciable amount of this production was made at a profit. The Wendlee Mining and Smelting Co., a subsidiary of the U. S. Smelting, Refining and Mining Co., operated the Tennessee-Schuylkill mine from 1921 to 1927 and then gave up their lease on the property. Other companies also operated the mine and mill for a few years and shut down. The Valcanda mine was operated from 1908 until the latter part of 1927 when the mill burned down and was never rebuilt. Some information has been obtained regarding 100 producers in the district. In the early

days it is probable that some production of gold and silver from the oxidized parts of the veins was profitable but when the sulphide zone was reached profitable operations ceased. Judging from the past history of the Tennessee-Schuylkill, operations as a whole were unprofitable. Net smelter returns from the Galena amounted to approximately $2,600,000. Whether or not this operation was profitable is unknown. It was not sufficiently profitable to warrant rebuilding the mill in 1917 or since that time. Some small production by lessees might have resulted in small profits mainly because most of the development was already done. The district has always been marginal or sub-marginal and under present conditions cannot be operated at a profit.

The past production of the Summit mine has a grade that is very similar to that of the Tennessee mine. Although it can be operated through a tunnel it is believed that the costs of production will be substantially the same. There is no possibility that profitable operations can be conducted at the Summit or other mines of the applicant under present economic conditions.

RECOMMENDATIONS

Because of high operating costs and present metal prices no substantial tonnage can be produced at a profit. It therefore is recommended that the application for a loan be denied.

APPENDIX

CALCULATION OF ORE RESERVES

OF THE

TENNESSEE-SENTINEL MINE

(See Figure 1)

APPENDIX

It is believed that some day the need for lead and zinc will be sufficiently great to warrant reopening the Tennessee-Schuylkill mine. The ore reserves have been calculated on the basis of more than 1,000 samples. It is believed that a record of the assay values of these samples will be of great value. They therefore, are made a part of this report and are shown in the appendix.

THREEMILE MINE

SUMMARY OF ORE RESERVES

	Tons	Ounces Gold	Ounces Silver	Pounds Lead	Pounds Zinc	Average Value Per Ton: Ounces Gold	Ounces Silver	Pounds Lead	Pounds Zinc
Measured	29,503	2,130	60,380	1,988,300	4,188,296	0.07	2.0	3.3	7.6
Indicated	32,209	3,346	98,400	3,038,226	7,987,424	0.06	1.9	2.9	7.6
Inferred	22,017	[illegible]	148,748	[illegible]	11,988,770	[illegible]	1.6	[illegible]	[illegible]
	143,[illegible]	11,[illegible]	[illegible]	[illegible]	[illegible]	0.06[illegible]	1.7[illegible]	[illegible]	[illegible]
Indicated	32,209	3,346	98,400	3,038,226	7,987,424	0.06	1.9	2.9	7.6
Inferred	22,017	[illegible]	148,748	[illegible]	11,988,770	[illegible]	1.6	[illegible]	[illegible]
Total	143,[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.06[illegible]	1.70	[illegible]	[illegible]

THOMPSON-GOTHLEIN - [redacted]

Stope	Location Level	Location Feet	Side	Level	Tons	Lead per Ton Gold	Lead per Ton Silver	Zinc per Ton Gold	Zinc per Ton Silver	Total Pounds Lead	Total Pounds Silver	Total Pounds Zinc	Total Pounds Gold
A	700	39 - 210	North	Above Below	6,206	0.11	3.9	3.9	14.2	672.7	23,883	476,266	1,734,104
B	1000	27 - 105	North	Above	3,882	0.02	1.5	2.7	6.0	65.6	4,923	177,288	393,840
D	1000	47 North to 485	South	Below	12,815	0.02	1.5	2.7	6.0	256.9	18,066	690,430	2,445,400
I	1000	910 - 940	North	Above	1,880	0.06	1.7	2.7	12.5	61.2	1,734	95,080	235,000
L	1070	1000 - 1098	North	Above	2,987	0.07	1.9	2.4	13.1	209.1	5,675	143,976	788,560
L	1070	1130 - 1220	North	Above	800	0.09	4.7	10.0	12.4	72.0	3,760	160,000	198,400
E	1100	0 - 60	North	Above	980	0.02	1.5	2.7	6.0	19.6	1,470	52,920	117,600
E	1100	0 - 56	North	Below	636	0.02	1.5	2.7	6.0	12.7	954	34,344	76,320
B	1150	66 - 205	North	Below	1,156	0.05	1.4	1.9	6.7	57.8	1,618	43,756	154,976
E	1150	68 - 195	North	Above	2,570	0.05	1.4	1.9	6.7	128.5	3,598	97,440	344,780
F	1150	610 - 772	North	Below	2,956	0.10	2.0	2.0	14.9	295.6	5,912	118,240	761,468
H	1350	1365 - 1425	North	Above	850	0.10	2.7	6.8	6.6	85.0	2,261	57,800	109,760
H	1350	1427 - 1530	North	Above	1,018	0.10	2.7	6.0	6.6	101.8	2,749	122,160	134,376
J	1370	1692 - 1752	North	Above	1,150	0.11	3.2	4.3	3.7	126.5	3,680	98,900	85,100
I	1350	1140 - 1675	North	Below	8,265	0.15	2.3	1.2	8.4	1,239.8	19,009	991,080	1,388,186
			Total		45,389					3,368.5	98,400	3,008,286	7,987,124
			15 Percent Dilution		[illegible]								
			Including Dilution		52,207	0.06	1.9	2.9	7.6				

[illegible] - [illegible]

Hole	Length	Feet	Hole	Level	Tons	Assay per Ton Gold Grams	Gold Ounces	Silver Grams	Silver Ounces	Total Ounces Gold	Total Ounces Silver	Pounds Lead	Pounds Zinc
A	900	33 - 228	North	Above Adits	3,280	0.11	3.9	3.9	11.2	552.8	12,100	269,600	708,800
B	1000	25 - 920	South	Below	6,[illegible]	0.02	1.5	2.7	6.8	105.4	9,[illegible]	305,180	782,440
C	1000	940 - 965	North	Above	1,[illegible]	0.08	1.7	2.4	12.6	88.3	1,775	50,312	663,088
D	1000	975 - 1000	North	Above	[illegible]	0.09	1.7	2.3	12.6	81.6	1,[illegible]	43,[illegible]	256,880
E	1000	1125 - 1225	North	Below	82	0.09	4.7	10.8	12.4	37.1	2,[illegible]	182,400	1,[illegible]
F	1170	1197 - 1207	North	Below	[illegible]	0.05	8.1	5.6	7.8	37.4	1,971	55,[illegible]	116,[illegible]
G	1190	40 - 203	North	Below	763	0.05	1.4	1.9	6.7	36.2	1,068	28,994	102,242
P	1250	650 - 772	North	Below	1,653	0.10	2.0	2.0	14.9	165.5	3,310	66,200	403,190
H	1250	1020 - 1095	North	Below	1,390	0.05	1.4	2.0	7.7	69.5	1,[illegible]	55,600	214,860
N	1250	1375 - 1393	North	Above	1,[illegible]	0.07	2.8	6.7	5.7	88.3	3,[illegible]	188,974	143,754
N	1250	1360 - 1387	North	Below	1,[illegible]	0.07	2.8	4.7	5.7	105.8	4,[illegible]	282,[illegible]	172,394
J	1250	1664 - 1734	North	Below	1,120	0.22	3.9	4.9	5.8	136.4	4,[illegible]	109,760	85,120
N	1350	1365 - 1450	North	Above	487	0.16	2.6	4.7	8.6	101.9	1,[illegible]	59,[illegible]	109,564
J	1350	1648 - 1698	North	Above	38[illegible]	0.10	1.8	3.4	3.7	38.4	[illegible]	26,112	88,416
L	1350	1688 - 1668	North	Below	4,[illegible]	0.15	2.3	4.3	8.4	655.2	10,[illegible]	[illegible]	731,[illegible]
			Total		25,655					2,130	40,180	1,928,300	4,482,896
			15 Percent Dilution		[illegible]								
			Including Dilution		[illegible]	0.07	2.0	3.3	7.6				

[illegible] - [illegible]

Area	Location Level	Location Elev.	Side	Level	Tons	Assay Per Ton Gold	Silver	Lead	Zinc	Total Ounces Gold	Total Ounces Silver	Total Pounds Lead	Total Pounds Zinc
A	700	60 - 225	South	Above	4,790	0.11	3.9	3.9	14.2	526.9	18,681	373,000	1,360,836
B	700	35 - 370	South	Above	18,833	0.03	1.0	2.2	6.1	565.0	18,833	828,692	2,287,606
C	1000	1090 - 1240	North	Above	2,850	0.07	2.4	2.4	12.5	199.7	6,841	136,200	709,300
D	1200	0 - 435	South	Above	6,050	0.02	1.5	2.7	6.0	121.0	12,135	436,860	970,800
E	1250	0 - 350	South	Above	16,000	0.08	1.5	2.7	6.0	320.0	24,000	864,000	1,920,000
F	1250	1365 - 1515	North	Above	2,900	0.07	2.8	6.7	5.7	203.0	8,120	388,600	330,600
I	1250	1165 - 1710	North	Below	24,525	0.15	2.5	4.2	8.4	3,678.8	56,100	2,060,100	4,120,200
K	1600	475 - 525	North	Above	2,[illegible]	0.05	1.8	2.2	3.8	[illegible]	[illegible]	1,[illegible]	[illegible]
				Total	80,[illegible]					5,741.4	148,748	6,321,068	11,[illegible],770
				15 Percent Dilution	12,[illegible]								
				Including Dilution	[illegible]	0.06	1.6	3.4	6.4				

TENNESSEE MINE

700 Level (Between Coordinates South 965 to South 1160)

Area "A"

Samples from Assay Plan by Needles Mining & Smelting Co., June 1912.

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Per-cent Lead	Feet times Lead	Per-cent Zinc	Feet times Zinc	
2.0	.44	.88	2.1	4.2	1.5	3.0	6.0	12.0	
4.4	.14	.62	4.6	20.2	3.2	14.1	7.1	31.2	
2.5	.10	.25	2.5	6.3	1.6	4.0	7.8	19.5	
(0.5	.02	.01	2.5	1.3	2.0	1.0	10.4	5.2)	One
(1.3	.02	.03	4.0	5.2	1.3	1.7	4.5	5.9)	Sample
2.5	.10	.25	2.2	5.5	1.6	4.0	7.8	19.5	
1.1	.04	.04	1.4	1.5	Tr	—	12.6	13.9	
1.2	.16	.19	6.5	7.8	10.0	12.0	13.5	16.2	
2.5	.04	.10	0.7	1.8	Tr	—	4.0	10.0	
2.0	.08	.16	0.7	1.4	Tr	—	1.7	3.4	
2.0	.04	.08	0.8	1.6	Tr	—	1.5	3.0	
2.0	.04	.08	1.2	2.4	Tr	—	9.5	19.0	
2.5	.10	.25	2.2	5.5	1.6	4.0	7.8	19.5	
2.5	.08	.20	1.7	4.3	Tr	—	13.1	32.8	
1.2	.08	.10	2.3	2.8	3.2	3.8	14.4	17.3	
1.1	.04	.04	3.6	4.0	2.5	2.8	24.2	26.6	
31.3		3.24		75.8		50.4		235.0	

15 Samples average: 2.1 feet - 0.10 Gold - 2.4 Silver - 1.6 Lead - 8.1 Zinc

Southerly lens - Length sampled - 60 feet.

TENNESSEE - 700 Level - Area "A" (Cont'd)

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Per-cent Lead	Feet times Lead	Per-cent Zinc	Feet times Zinc	
5.1	.16	.82	1.3	6.6	Tr	—	17.0	86.7	
(0.4	.10	.04	2.7	1.1	Tr	—	47.2	18.9)	One
(3.0	Tr	—	Tr	—	Tr	—	4.7	14.1)	Sample
(2.5	.06	.15	2.5	6.3	2.0	5.0	8.5	21.3)	One
(0.4	.08	.03	1.1	0.4	2.5	1.0	45.8	18.3)	Sample
3.0	.04	.12	1.4	4.2	Tr	—	9.8	29.4	
2.1	.02	.04	1.4	2.9	Tr	—	13.2	27.7	
2.1	.04	.08	1.3	2.7	3.0	6.3	12.3	25.8	
5.1	.02	.10	1.3	6.6	Tr	—	12.3	62.7	
4.7	.04	.19	1.3	6.1	Tr	—	9.3	44.7	
6.0	.04	.24	2.9	17.4	1.5	9.0	13.3	79.8	
3.1	.18	.56	2.9	9.0	2.7	8.4	17.8	55.2	
3.6	.08	.29	2.7	9.7	1.2	4.3	18.5	66.6	
6.0	.06	.48	3.5	21.0	1.3	7.8	17.7	106.2	
3.9	.08	.47	3.9	22.5	1.2	7.1	16.1	106.8	
6.0	.12	.72	3.8	22.8	1.5	9.0	15.5	93.0	
6.0	.04	.24	1.9	11.4	1.1	6.6	16.8	100.8	
4.1	.02	.33	9.3	38.1	1.2	4.9	13.0	53.3	
4.5	.08	.36	20.7	93.2	2.8	12.6	16.0	72.0	
(2.0	.06	.12	7.8	15.6	1.5	3.0	28.1	56.2)	One
(2.5	.04	.10	1.3	3.3	Tr	—	4.3	11.3)	Sample
3.7	.08	.30	3.2	11.8	1.8	6.7	23.2	85.8	
4.0	.16	.64	3.8	15.2	2.5	10.0	14.7	58.8	
5.8	.08	.40	1.8	9.0	2.3	11.5	5.5	27.5	
5.5	.16	.88	6.4	35.2	9.2	50.6	22.6	124.3	
(4.3	.16	.69	8.7	37.4	11.4	49.0	19.1	82.1)	One
(2.7	.03	.08	1.1	3.0	Tr	—	0.3	1.4)	Sample
4.0	.20	.80	3.3	13.2	8.6	34.4	19.2	76.8	
5.0	.20	1.00	7.5	37.5	13.2	66.0	23.4	117.0	
(3.0	.24	.72	2.7	8.1	4.1	12.3	14.3	42.9)	One
(2.7	.16	.43	5.8	15.7	14.6	39.4	8.2	22.1)	Sample
(5.3	.16	.85	2.8	14.8	11.7	62.0	15.2	80.6)	One
(2.5	.20	.50	6.2	15.5	5.6	14.0	10.5	26.3)	Sample
4.5	.20	.90	6.8	30.6	12.0	54.0	18.0	81.0	
4.0	.20	.80	2.9	11.6	12.4	49.6	23.4	93.6	
4.5	.10	.45	5.0	22.5	13.3	60.3	20.1	90.4	
138.8		14.92		502.0		389.2		2224.5	

30 Samples - Average: 4.6 feet - 0.11 Gold : 4.2 Silver : 4.4 Lead : 15.6 Zinc
Northerly lens - Length sampled - 125 feet

Both South and North Lenses - 45 Samples average: 3.8 feet - 0.11 Gold :
3.3 Silver : 3.9 Lead : 14.2 Zinc

WEBSTER MINE

900 Level (Between Coordinates South 1130 to South 1325)

Area "B"

Samples from Area, Map by Tennessee-Ochoylkill Corp., 1942

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Percent Lead	Feet Times Lead	Percent Zinc	Feet Times Zinc
4.5	.02	.09	0.9	4.1	0.8	3.6	4.2	18.9
5.5	.02	.11	0.1	0.6	1.4	7.7	5.5	30.3
7.0	.01	.07	0.6	4.2	0.7	4.9	6.7	46.9
10.0	.02	.20	0.5	5.0	1.3	13.0	6.0	60.0
9.0	.02	.18	1.4	1.3	2.2	19.8	5.5	49.5
5.0	.07	.35	2.8	14.0	5.2	26.0	8.2	41.0
10.0	.05	.50	1.4	14.0	2.4	24.0	8.0	80.0
10.0	.02	.20	0.6	6.0	0.3	3.0	4.7	47.0
10.0	.03	.30	1.2	12.0	2.5	25.0	10.3	103.0
10.5	.04	.42	1.6	16.8	1.7	17.9	10.4	109.2
9.0	.05	.45	1.4	12.6	2.3	20.7	7.6	68.4
9.0	.03	.27	1.1	9.9	1.2	10.8	9.4	84.6
8.5	.02	.17	0.9	7.7	1.8	15.3	6.0	51.0
8.0	.02	.16	0.6	4.8	1.5	12.0	7.3	58.4
7.0	.04	.28	1.5	10.5	1.7	11.9	10.7	74.9
7.0	.03	.21	1.7	11.9	1.0	7.0	17.4	121.8
7.5	.05	.39	1.7	12.7	2.4	18.0	12.5	93.8
8.0	.05	.40	1.2	9.6	1.9	15.2	17.9	143.2
8.0	.02	.16	0.6	4.8	1.5	12.0	7.4	59.2
10.5	.05	.52	0.7	7.4	0.8	8.4	4.0	42.0
10.5	.04	.42	1.6	16.8	2.8	29.4	6.6	69.3
10.0	.02	.20	0.1	1.0	0.6	6.0	3.3	33.0
5.0	.07	.35	2.1	10.5	2.1	10.5	9.0	45.0
5.0	.03	.15	0.8	4.0	0.8	4.0	1.2	6.0
5.5	.02	.11	0.2	1.1	1.7	9.4	1.2	6.6
6.0	.02	.12	0.5	3.0	0.5	3.0	2.2	13.2
6.0	.03	.18	1.4	8.4	1.8	10.8	3.3	19.8
5.0	.02	.10	2.2	11.0	6.6	33.0	6.0	30.0
5.0	.04	.20	3.5	17.0	5.8	29.0	11.0	55.0
6.0	.03	.18	2.0	12.0	5.6	33.6	3.6	21.6
5.5	.01	.06	0.4	2.2	0.5	2.8	4.6	25.4
6.0	.02	.12	0.9	5.4	0.5	3.0	3.2	19.2
6.0	.02	.12	0.2	1.2	Tr	—	2.8	16.8
6.0	.02	.12	0.3	1.8	Tr	—	4.0	24.0
6.0	.02	.12	0.4	2.4	0.5	3.0	3.3	19.8

THERESSEN - 900 Level - Area "B" (Cont'd)

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Percent Lead	Feet times Lead	Percent Zinc	Feet times Zinc
5.0	.04	.20	0.9	4.5	0.5	2.5	3.5	17.5
7.0	.02	.14	0.8	5.6	2.5	1.8	2.2	15.4
8.5	.06	.51	0.7	6.0	1.6	13.6	2.0	17.0
7.0	.03	.21	0.8	5.6	Tr	—	1.9	13.3
11.0	.07	.77	1.5	16.5	2.2	24.2	8.0	88.0
11.0	.06	.66	1.6	17.6	3.3	36.3	6.1	67.1
10.0	.03	.30	1.5	15.0	2.7	27.0	6.7	67.0
11.0	.07	.77	1.6	17.6	3.2	35.2	3.8	41.8
11.0	.01	.11	0.4	4.4	2.1	23.1	2.4	26.4
9.5	.04	.38	1.5	14.3	3.4	32.3	8.5	80.8
10.0	.06	.60	4.0	40.0	11.7	117.0	10.5	105.0
10.5	.01	.11	1.5	15.8	13.7	143.9	15.1	158.6
12.5	.02	.25	1.5	18.8	4.0	50.0	6.7	83.8
8.0	.02	.16	2.3	18.4	4.8	38.4	11.2	89.6
7.0	.01	.14	0.8	5.6	1.9	13.3	2.6	18.2
7.0	Tr	—	Tr	—	0.6	4.2	1.2	8.4
8.5	Tr	—	Tr	—	0.4	4.20	0.9	7.7
7.0	.01	.07	0.5	3.5	0.4	2.8	5.3	37.1
7.0	.01	.07	0.3	2.1	0.4	2.8	5.2	36.4
9.0	Tr	—	Tr	—	0.2	1.8	4.6	41.4
10.5	.01	.11	0.3	3.2	0.5	5.3	1.7	17.9
7.0	.01	.07	0.4	2.8	0.2	1.4	2.4	16.8
7.0	.01	.07	0.3	2.1	0.6	4.2	3.1	21.7
7.0	.01	.07	0.3	2.1	0.9	6.3	1.3	9.1
6.5	Tr	—	Tr	—	0.8	5.20	1.6	10.4
5.5	.01	.06	0.3	1.7	0.8	4.4	3.9	21.5
4.5	Tr	—	0.2	0.9	0.5	2.3	0.9	4.1
3.5	.02	.07	1.6	5.6	0.5	1.8	5.4	18.9
186.5		13.38		197.4		1,059.00		2,944.1

63 Samples average: 7.7 feet - 0.03 Ounces Gold - 1.0 Ounces Silver - 2.2 percent Lead - 6.1 percent Zinc

Length sampled - 375 feet.

TENNESSEE MINE

1000 Level (Between Coordinates South 160 to South 190)

Area "L"

Fuse Assay Map, Tennessee-Schuylkill Corp., 1940

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Percent Lead	Feet Times Lead	Percent Zinc	Feet Times Zinc
4.9	.06	.29	1.2	5.9	1.5	7.4	4.6	22.5
5.0	.07	.35	1.7	8.5	1.2	6.0	8.6	43.0
8.0	.05	.40	2.8	22.4	3.5	28.0	10.2	81.6
7.5	.08	.60	2.2	16.5	2.6	19.5	12.3	92.3
6.5	.06	.39	2.7	17.6	3.4	22.1	18.3	119.0
7.5	.02	.15	1.4	10.5	2.0	15.0	13.2	99.0
7.0	.04	.28	1.0	7.0	1.4	9.8	22.1	154.7
8.0	.06	.36	1.9	15.4	2.9	17.4	21.3	128.6
6.5	.06	.39	1.9	12.4	3.3	21.5	16.4	107.2
5.0	.05	.25	1.2	6.0	3.7	18.5	12.4	62.0
63.9		3.30		118.2		153.2		908.9

10 Samples average: 6.4 Feet - .05 Ounces Gold - 1.8 Ounces Silver - 2.6 Percent Lead - 14.2 Percent Zinc

Length Sampled: 30 Feet

TENNESSEE MINE

Vein 6 Mines (Coordinate South 215)

Area "L"

From Assay Map, Tennessee-Schuylkill Corp., 1940

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Percent Lead	Feet Times Lead	Percent Zinc	Feet Times Zinc
4.0	.02	.08	Tr	—	Tr	—	1.7	6.8
4.0	.26	1.04	1.1	4.4	8.8	35.2	13.1	52.4
5.0	.04	.20	0.9	4.5	1.7	8.5	17.3	86.5
6.5	.11	.68	2.5	15.5	5.5	35.5	9.8	57.5
4.5	.11	.46	3.0	12.6	3.3	13.9	10.1	42.4
5.0	.12	.60	6.0	30.0	10.5	52.5	25.1	125.5
4.0	.12	.48	2.4	9.6	1.8	7.2	13.5	54.0
4.0	.10	.40	2.7	10.8	4.2	16.8	18.5	74.0
4.5	.05	.24	4.6	20.7	2.1	9.5	22.6	101.7
4.5	.11	.50	0.8	3.6	0.6	2.7	13.9	62.6
5.0	.08	.40	1.1	5.5	1.0	5.0	15.4	77.0
5.0	.08	.40	0.8	4.0	0.5	2.5	8.8	44.0
5.0	.08	.40	0.5	2.5	1.4	7.0	3.4	17.0
4.5	.08	.36	0.8	3.6	3.0	13.5	8.8	39.6
3.5	.16	.56	0.4	1.4	1.0	3.5	9.6	33.6
2.5	.28	.70	1.8	4.5	3.3	8.3	14.5	36.3
3.0	.04	.12	0.8	2.4	Tr	—	8.5	25.5
2.0	.02	.04	Tr	—	Tr	—	0.8	1.6
76.5		7.39		135.5		188.5		796.3

All samples average: 4.4 feet - .09 Ounces Gold - 1.7 Ounces Silver - 2.3 Percent Lead - 12.6 Percent Zinc

Length Sampled: 100 Feet

TENNESSEE MINE

1000 Level (Between Stations South 225 to South 275)

Area "L"

From Ammy Ray, Tennessee-Schuylkill Corp., 1950

Width Feet	Ounces Gold	Feet Times Gold	Ounces Silver	Feet Times Silver	Percent Lead	Feet Times Lead	Percent Zinc	Feet Times Zinc
2.5	.07	.18	1.3	3.3	0.5	1.3	18.0	45.0
3.0	.04	.12	0.9	2.7	0.5	1.5	6.5	19.5
3.0	.06	.18	0.5	1.5	0.5	1.5	4.6	13.8
3.0	.09	.27	0.3	0.9	0.5	1.5	7.6	22.8
2.8	.08	.22	1.2	3.4	0.5	1.4	12.8	35.8
3.6	.05	.18	0.8	2.9	0.5	1.8	7.4	26.6
4.2	.08	.34	3.2	13.4	5.6	23.5	24.5	102.9
4.8	.05	.24	2.0	9.6	3.9	18.7	12.8	61.4
3.8	.09	.34	2.7	10.3	5.6	21.3	13.8	52.4
4.2	.05	.21	2.9	12.2	3.3	13.3	12.4	52.1
4.4	.04	.18	2.1	9.2	4.9	21.6	12.5	55.0
4.6	.08	.37	2.6	12.0	2.5	11.5	12.9	59.3
5.0	.03	.16	0.2	1.0	1.2	6.0	13.3	66.5
49.1		2.99		82.4		136.1		615.8

13 Samples average: 3.8 Feet - 0.06 Ounces Gold - 1.7 Ounces Silver - 2.7 Percent Lead - 12.5 Percent Zinc

Length Sampled: 53 Feet

[illegible] MINE

1070 Level -(Coordinates North 30 to South 60)

Area "L"

From Assay Map, Tennessee-Schuylkill Comp., 1948

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Percent Lead	Feet Times Lead	Percent Zinc	Feet Times Zinc
4.5	.08	.36	7.3	32.9	13.1	59.0	16.1	72.5
1.0	.13	.13	6.8	6.8	6.8	6.8	17.4	17.4
2.5	.07	.18	4.3	10.3	11.7	29.3	13.4	33.5
3.0	.08	.24	6.9	20.7	13.9	41.7	14.1	42.3
3.0	.10	.30	7.2	21.6	20.2	60.6	13.8	41.4
2.5	.08	.20	4.0	10.0	8.8	22.0	10.8	27.0
1.0	.12	.12	4.9	4.9	5.8	5.8	19.7	19.7
4.5	.07	.32	3.1	14.0	4.2	18.9	16.0	72.0
3.0	.07	.21	3.1	9.3	5.5	16.5	12.2	36.6
2.5	.15	.38	4.7	11.8	8.0	20.0	11.0	27.5
2.0	.07	.14	2.4	4.8	1.0	2.0	11.1	22.2
3.0	.06	.18	1.3	3.9	1.3	3.9	13.1	39.3
6.0	.06	.36	3.7	22.2	12.2	73.2	7.1	42.6
2.5	.07	.18	2.4	6.0	3.9	9.8	6.9	17.3
4.1	.13	.53	6.5	26.7	13.6	55.7	14.8	60.7
[illegible]		[illegible]		[illegible]		[illegible]		[illegible]

15 Samples average: 3.0 Feet - 0.09 Ounces Gold - 4.7 Ounces Silver - 10.0 Percent Lead - 12.4 Percent Zinc

Length Sampled: 90 Feet

THUNDER KING

1170 Level (Coordinates North 20 to South 20)

Area "L"

From Assay Map, Tennessee-Schuylkill Corp., 1940

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Per-cent Lead	Feet Times Lead	Per-cent Zinc	Feet Times Zinc
4.5	.06	.18	1.4	6.3	1.8	8.1	6.8	30.6
5.0	.04	.20	0.7	3.5	2.0	5.0	9.1	45.5
4.5	.07	.32	2.1	9.5	3.0	13.5	14.0	63.0
4.0	.09	.36	5.9	23.6	14.4	57.6	11.5	46.0
3.5	.09	.32	5.9	20.7	12.5	43.8	12.1	42.4
4.0	.05	.20	2.3	9.2	3.5	14.0	5.7	22.8
4.0	.06	.32	2.3	9.2	3.5	14.0	7.5	30.0
4.5	.05	.36	5.6	25.2	11.2	50.4	13.7	61.7
3.5	.05	.17	3.1	10.8	5.1	17.9	14.9	52.2
3.5	.09	.32	3.6	12.6	4.4	15.4	14.2	49.7
4.5	.03	.09	0.3	1.4	0.5	2.2	2.5	11.3
7.0	.02	.14	0.7	4.9	0.5	3.5	3.1	21.7
5.5	.02	.11	0.1	0.6	0.5	2.8	0.5	2.8
6.0	.02	.12	0.7	4.2	0.5	3.0	3.9	23.4
[illegible]	.03	[illegible]	0.6	[illegible]	0.8	[illegible]	3.2	[illegible]
[illegible]		[illegible]		[illegible]		[illegible]		[illegible]

13 Samples average: 4.7 Feet - .05 Ounces Gold - 2.1 Ounces Silver - 3.6 Percent Lead - 7.8 Percent Zinc

Length Sampled: 70 Feet

TENNESSEE MINE

1170 Level (Coordinates South 265 to South 305)

Area "H"

From Assay Map, Tennessee-Schuylkill Corp., 1940

Ounces Gold	Ounces Silver	Percent Lead	Percent Zinc
.04	0.6	0.8	7.3
.04	1.9	0.5	3.8
.04	0.7	0.5	3.5
.03	2.7	0.5	6.0
.02	0.2	0.5	6.6
.02	0.6	Tr	3.5
.02	0.5	Tr	2.1
.02	0.2	0.5	1.0
.02	0.4	0.5	2.1
.03	0.3	0.5	0.5
.03	0.4	Tr	0.5
.03	0.2	0.5	0.5
.03	1.0	0.6	1.4
.37	9.7	3.4	15.0

Arithmetical average of 13 Car Samples: 0.03 Ounces Gold - 0.7 Ounces Silver - 0.4 Percent Lead - 3.2 Percent Zinc

TENNESSEE MINE

1170 Level (Coordinates South 353 to South 398)

Area "H"

From Assay Map, Tennessee-Schuylkill Corp., 1942

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Percent Lead	Feet times Lead	Percent Zinc	Feet times Zinc
1.5	.04	.06	1.3	2.0	2.1	3.2	4.2	6.3
2.0	.05	.10	1.4	2.8	1.6	3.2	8.3	16.6
2.5	.02	.05	0.5	1.3	0.6	1.5	9.4	23.5
2.5	.08	.20	2.2	5.5	1.8	4.5	9.4	23.5
7.0	.07	.49	2.1	14.7	1.5	10.5	11.6	81.2
4.0	.04	.16	2.4	9.6	2.6	10.4	9.0	36.0
4.0	.04	.16	1.2	4.8	0.7	2.8	7.7	30.8
3.5	.05	.18	2.3	8.0	2.0	7.0	8.1	28.4
1.5	.04	.06	0.3	0.5	0.5	0.8	2.3	3.5
32.5		1.34		51.5		33.9		247.4

9 Samples average: 3.4 Feet - 0.03 Ounces Gold - 1.7 Ounces Silver - 1.5 Percent Lead - 8.4 Percent Zinc

Length Sampled: 45 Feet

TENNESSEE MINE

1170 Level (Coordinates South 475 to South 520)

Area "E"

From Assay Map, Tennessee-Schuylkill Corp., 1940

Width Feet	Ounces Gold	Feet Times Gold	Ounces Silver	Feet Ounces Silver	Percent Lead	Feet Times Lead	Percent Zinc	Feet Times Zinc
5.0	.02	.10	4.9	24.5	5.3	26.5	12.0	60.0
4.3	.04	.16	4.0	17.2	3.6	15.5	20.0	86.0
4.8	.06	.29	4.2	20.2	8.2	39.4	17.2	82.1
4.8	.06	.29	2.8	13.4	3.6	17.3	25.4	121.9
8.5	.05	.43	2.1	17.9	3.4	28.9	9.8	83.3
7.5	.06	.45	3.6	27.0	6.5	48.8	16.2	121.5
7.0	[illegible]	.56	8.6	60.2	18.2	127.4	14.9	104.3
7.5	.06	.45	2.0	15.0	6.1	45.8	13.7	102.8
7.0	.06	[illegible]	2.8	19.6	5.4	37.8	8.8	61.6
56.4		3.93		200.0		403.2		835.5

9 Samples average: 6.3 Feet - 0.06 Ounces Gold - 4.0 Ounces Silver - 7.1 Percent Lead - 14.6 Percent Zinc

Length Sampled: 45 Feet

TENNESSEE MINE

1270 Level (Coordinates South 165 to South 169)

Area "H"

From Assay Map, Tennessee-Schuylkill Corp., 1960

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Per-cent Lead	Feet times Lead	Per-cent Zinc	Feet times Zinc
8.5	.01	.09	0.4	3.4	0.5	4.3	7.6	64.6
5.0	.02	.10	0.2	1.0	Tr	—	Tr	—
6.0	.01	.06	Tr	—	0.5	3.0	Tr	—
6.0	.03	.18	0.4	2.4	0.6	3.6	1.0	6.0
6.7	.05	.34	0.8	5.4	0.5	3.4	4.1	27.5
6.0	.04	.24	0.9	5.4	0.5	3.0	3.2	19.2
7.0	.07	.49	1.2	8.4	1.1	7.7	10.3	72.1
6.0	.02	.14	0.7	4.2	0.7	4.2	6.3	44.2
52.0		1.64		31.2		29.2		233.6

8 Samples average: 6.5 Feet - 0.03 Ounces Gold - 0.6 Ounces Silver - 0.6 Percent Lead - 4.5 Percent Zinc

Length Sampled: 40 Feet

TENNESSEE MINE

1250 Level (Coordinates South 987 to South 1127)

Area "E"

From Assay Map, Tennessee-Schuylkill Corp., 1940

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Percent Lead	Feet times Lead	Percent Zinc	Feet times Zinc
1.8	.02	.04	1.2	2.2	Tr	—	6.2	11.2
2.3	.07	.16	1.0	2.2	Tr	—	6.1	14.0
2.0	.03	.06	1.2	2.4	0.7	1.4	6.8	13.6
0.9	.03	.03	0.3	0.3	Tr	—	0.9	0.9
1.9	.03	.06	0.4	0.8	1.7	3.2	2.3	4.4
2.0	.03	.10	0.4	0.8	1.2	2.4	2.3	4.6
2.4	.04	.10	0.4	0.9	0.6	1.4	1.7	4.1
2.5	.03	.13	0.7	1.8	0.7	1.8	12.1	30.3
2.0	.02	.04	0.2	0.4	0.5	1.0	2.1	4.2
2.3	.04	.10	0.8	1.8	0.5	1.2	9.8	22.5
2.7	.06	.16	1.9	5.1	4.5	12.1	[illegible]	54.0
3.0	.04	.15	1.1	3.3	1.6	4.8	2.4	7.2
4.0	.04	.16	1.3	5.2	3.8	15.2	8.5	34.0
3.0	.08	.24	3.0	9.0	6.4	19.2	5.0	15.0
3.5	.10	.35	4.0	14.0	2.8	7.0	7.1	24.9
35.3		1.88		49.3		98.7		222.9

35 Samples average: 2.4 Feet - 0.05 Ounces Gold - 1.4 Ounces Silver - 1.9 Percent Lead - 6.7 Percent Zinc

Length sampled: 140 Feet

TENNESSEE MINE

1250 Level (Coordinates South 455 to South 580)

Area "F"

From Assay Map, Tennessee-Schuylkill Corp., 1960

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Percent Lead	Feet Times Lead	Percent Zinc	Feet Times Zinc
3.4	.32	.40	1.7	5.8	2.2	7.5	9.6	32.4
3.4	.35	1.19	1.2	4.1	2.5	8.5	9.1	30.9
5.4	.49	3.2	2.6	14.0	Tr	—	8.6	3.2
5.0	.15	.75	3.1	15.5	3.2	16.0	16.8	84.0
5.0	.12	.60	3.1	15.5	1.6	8.0	20.1	100.5
3.5	.09	.32	2.3	8.1	1.8	6.3	10.7	37.5
6.2	.06	.37	1.5	9.3	0.9	5.4	10.2	63.2
4.8	.07	.34	3.9	18.7	4.8	23.0	18.0	86.4
3.0	.08	.24	2.2	6.6	3.4	10.2	25.6	76.8
4.4	.09	.41	1.4	6.4	3.1	14.3	10.2	46.9
2.1	.08	.17	2.4	5.0	3.0	6.3	23.5	49.4
4.5	.04	.18	4.0	18.0	7.5	33.8	16.1	72.5
7.1	.08	.28	1.6	11.4	1.3	9.2	30.4	215.8
8.0	.06	.48	1.8	14.4	2.6	20.8	23.0	184.0
6.0	.12	.72	3.6	21.6	4.5	27.0	21.1	126.6
4.2	.11	.46	2.9	12.2	2.4	10.1	22.8	95.8
2.7	.07	.19	4.1	11.1	5.0	13.5	18.0	48.5
1.1	.07	.08	1.3	1.4	7.3	8.0	17.5	19.3
4.0	.04	.16	2.8	11.2	1.8	7.2	14.7	58.8
2.3	.12	.28	3.7	8.5	3.3	7.6	14.4	33.1
2.0	.08	.16	2.4	4.8	2.5	5.0	22.5	45.0
2.0	.05	.10	1.3	2.6	5.2	10.4	24.8	49.6
8.9	.06	.53	5.8	51.6	10.2	90.8	13.3	118.4
85.3		11.15		231.4		287.5		1371.9

85 Samples average: 4.0 Feet - 0.18 Ounces Gold - 2.5 Ounces Silver - 2.9 Percent Lead - 17.3 Percent Zinc

Length Sampled: 125 Feet

TENNESSEE MINE

1250 Level (Coordinates South 415 to South 445)

Area "F"

From Assay Map, Tennessee-Schuylkill Corp., 1940

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Percent Lead	Feet times Lead	Percent Zinc	Feet times Zinc
5.0	.16	.80	1.7	8.5	1.4	7.0	14.6	73.0
6.0	.04	.24	1.7	10.2	0.7	4.2	8.9	53.4
4.0	.05	.20	2.1	12.6	0.7	4.2	15.6	93.6
6.5	.04	.26	8.5	5.3	Tr	—	7.7	50.1
7.3	.06	.44	8.3	2.2	Tr	—	7.6	55.5
7.0	.05	.35	1.3	9.1	0.5	3.5	21.6	151.2
7.0	.06	.42	1.0	7.0	0.7	4.9	9.3	65.1
7.5	.07	.53	0.6	4.5	0.6	4.5	7.0	52.5
8.0	.05	.40	1.0	8.0	0.6	4.8	12.7	101.6
60.3		3.84		65.4		33.1		696.0

9 Samples average: 6.7 Feet - 0.06 Ounces Gold - 1.1 Ounces Silver - 0.6 Percent Lead - 11.5 Percent Zinc

Length Sampled: 30 Feet

Average grade of Block "F":
32 Samples average: 4.7 Feet - 0.10 Ounces Gold - 2.0 Ounces Silver - 2.0 Percent Lead - 14.9 Percent Zinc

TIGERBACK MINE

1250 Level (Coordinates South 320 to South 420)

Area "H"

From Assay Map, Tennessee-Schuylkill Corp., 1960

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Percent Lead	Feet Times Lead	Percent Zinc	Feet Times Zinc
4.7	.02	0.13	0.2	.7	0.5	2.3	Tr	—
6.5	.02	0.13	0.8	5.2	0.5	3.3	2.6	16.9
6.0	.01	0.06	0.2	1.2	0.5	3.0	Tr	—
6.3	.03	.32	0.7	4.4	0.5	3.2	4.8	30.2
6.0	.02	.16	0.2	1.4	0.5	4.0	6.5	32.0
8.0	.03	.24	0.3	2.4	0.5	4.0	5.1	40.8
8.0	.04	.32	0.8	6.4	1.6	12.8	6.2	49.6
7.6	.39	2.96	1.9	14.4	1.0	7.6	7.1	54.0
7.0	.15	1.05	2.7	18.9	2.8	19.6	6.5	45.5
8.5	.05	0.43	0.5	4.3	1.4	11.9	3.5	29.8
4.3	.04	0.16	0.8	3.4	1.3	5.9	3.9	17.6
4.0	.07	.42	0.5	3.0	0.3	1.0	9.8	58.8
75.1		6.35		59.7		81.5		378.3

12 Samples average: 6.9 Feet - 0.08 Ounces Gold - 0.7 Ounces Silver
1.0 Percent Lead - 4.8 Percent Zinc

Length Sampled: 100 Feet

TENNESSEE MINE

1220 Raise: Coordinate South 196 (Between 1250 and 1170 Levels)

Area "H"

From Assay Map by Tennessee-Schuylkill Corp., 1959

Width Foot	Ounces Gold	Foot Ounces Gold	Ounces Silver	Foot Ounces Silver	Percent Lead	Foot times Lead	Percent Zinc	Foot times Zinc
3.0	.03	.09	0.4	1.2	0.5	1.5	7.2	21.6
3.5	.05	.21	1.6	5.6	1.7	6.0	8.9	31.2
3.0	.05	.15	2.3	6.9	4.5	13.0	11.9	35.7
4.0	.04	.16	1.0	4.0	0.7	2.8	8.4	33.6
2.0	.15	.30	1.2	2.4	1.0	2.0	11.5	23.0
3.5	.14	.49	1.6	5.6	0.5	1.8	6.7	23.5
2.5	.22	.55	0.5	1.3	0.5	1.3	3.8	9.5
3.0	.10	.30	9.1	27.3	5.0	15.0	4.2	12.6
3.0	.07	.21	1.3	3.9	0.8	2.4	10.3	30.9
2.5	.05	.13	6.4	16.0	13.5	33.8	13.1	32.8
3.5	.04	.14	1.9	6.7	3.6	12.6	9.0	31.5
3.0	.06	.18	3.0	9.0	6.2	18.6	16.9	50.7
4.5	.05	.23	3.7	16.7	8.2	36.9	9.4	42.3
37.5		3.06		97.2		131.3		358.3

33 Samples average: 3.0 Foot - 0.08 Ounces Gold - 2.59 Ounces Silver - 3.4 Percent Lead - 9.2 Percent Zinc

Length Sampled: 80 Feet

TENNESSEE MINE

1250 Level (Coordinates South 95 to South 180)

Area "E"

From Assay Map, Tennessee-Schuylkill Corp., 1939

Ounces Gold	Ounces Silver	Percent Lead	Percent Zinc
.05	0.6	0.5	5.0
.05	1.4	1.4	7.8
.04	1.0	1.1	4.1
.05	3.8	8.3	9.2
.04	1.1	1.3	2.4
.04	1.2	2.1	6.0
.04	1.1	1.2	6.9
.04	2.0	4.8	8.6
.07	1.2	1.8	15.5
.05	4.1	10.3	13.9
.05	1.2	1.2	7.1
.05	2.0	1.7	7.1
.05	1.4	1.8	8.8
.05	1.0	1.6	13.9
.10	1.8	1.0	13.9
.04	1.2	1.1	12.1
.04	0.4	0.6	6.9
.05	1.0	0.3	3.3
.06	0.7	0.5	4.2
.08	0.3	0.7	2.6
.09	0.6	0.3	1.1
.06	1.1	1.8	4.6
1.13	30.1	43.8	139.0

No sample width given; arithmetical average of 22 samples: 0.05 Ounces Gold - 1.4 Ounces Silver - 2.0 Percent Lead - 7.7 Percent Zinc

Length Sampled: 85 Feet

THUNDER MINE

1[illegible] Level (Coordinates South 75 to South 95)

From Assay Map, Tennessee-Springhill Corp., 1939

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Percent Lead	Feet times Lead	Percent Zinc	Feet times Zinc
4.0	.02	.12	0.1	.4	tr	—	1.4	5.4
6.5	.03	.20	0.3	2.0	0.5	3.3	4.0	26.0
3.0	.02	.06	0.4	2.0	0.5	2.5	1.5	7.5
4.9	.07	.34	0.7	3.4	1.1	5.4	4.4	21.6
3.0	.02	.06	1.2	3.6	0.8	2.4	8.2	24.6
2.5	.07	.18	0.5	1.3	0.5	1.3	2.0	5.0
2.5	.04	.10	0.6	1.5	1.1	2.8	4.3	10.8
3.5	.05	.18	1.9	6.7	1.1	3.9	4.3	15.0
3.5	.14	.49	1.7	6.0	0.7	2.7	13.0	50.7
5.0	.32	1.60	1.8	9.0	2.1	10.5	10.1	50.5
4.0	.18	.72	7.9	47.4	0.5	3.0	3.8	22.8
4.5	.03	.14	0.6	3.9	0.5	2.8	5.9	31.9
5.0	.11	.55	0.7	3.5	0.5	2.5	2.5	12.5
3.0	.05	.15	0.5	1.5	0.5	1.5	7.2	21.6
3.0	.04	.12	0.7	2.1	1.5	4.5	1.3	3.9
2.5	.08	.20	1.4	3.5	2.2	5.5	10.1	25.3
2.0	.05	.10	1.6	3.2	4.3	8.6	3.4	6.8
48.9		5.[illegible]		100.[illegible]		62.[illegible]		321.7

17 Samples average: 4.1 Feet - 0.09 Ounces Gold - 1.5 Ounces Silver - 0.9 Percent Lead - 5.0 Percent Zinc

Length Sampled: 60 Feet

[illegible] MINE

1250 Level (Coordinates North 50 to North 80)

From Assay Map, [illegible]-Schuylkill Corp., 1939

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Per-cent Lead	Feet Lbs. Lead	Per-cent Zinc	Feet Lbs. Zinc
4.5	.05	.23	3.6	16.2	6.6	29.7	11.5	49.8
4.0	.05	.20	4.0	16.0	9.0	36.0	7.8	31.2
7.0	.08	.56	3.4	23.8	8.0	56.0	9.7	67.9
6.5	.05	.30	3.7	24.1	8.2	27.3	10.8	70.2
6.0	.07	.42	3.6	21.6	6.5	39.0	9.6	57.6
5.5	.02	.11	1.0	5.5	0.8	4.4	5.0	27.5
5.0	.07	.35	2.7	13.5	8.1	40.5	5.4	27.0
3.0	.07	.21	1.0	3.0	0.5	1.5	1.8	5.4
3.5	.03	.11	0.5	1.8	1.1	3.9	1.5	5.3
4.0	.06	.24	1.9	7.6	3.2	12.8	5.8	23.2
3.0	.04	.12	0.6	1.8	0.5	1.5	1.9	5.7
3.0	.06	.18	2.0	6.0	3.6	10.8	9.0	27.0
7.5	.21	1.58	1.8	7.5	0.8	6.0	3.9	14.5
2.5	.10	.25	2.8	7.0	5.0	12.5	3.8	9.5
3.0	.61	1.83	0.7	2.1	0.5	1.5	2.5	7.5
70.0		7.[illegible]		126.9		221.1		374.1

15 Samples average: 4.7 Feet - 0.11 Ounces/- Gold 2.5 Ounces Silver - 4.1 Percent Lead - 6.8 Percent Zinc

Length Sampled: 60 Feet

TOMBSTONE MINE

1250 Level (Coordinates North 80 to North 160)

Face Assay Map, Tombstone-Schuylkill Corp., 1939

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Percent Lead	Feet times Lead	Percent Zinc	Feet times Zinc
5.0	.01	.05	0.4	2.0	0.5	2.5	1.0	5.0
4.0	.02	.08	0.3	1.2	0.5	2.0	0.5	2.0
4.5	.01	.05	0.1	0.5	0.5	2.3	0.5	2.3
5.0	.01	.05	0.1	0.5	Tr	—	0.5	2.5
6.0	.01	.06	0.2	1.2	1.7	10.2	9.4	56.4
7.0	.09	.63	1.1	7.7	Tr	—	5.4	37.8
6.0	.02	.12	0.2	1.2	Tr	—	0.5	3.0
5.0	.03	.15	0.5	2.5	Tr	—	Tr	—
43.5		.77		17.8		17.0		108.5

* Samples average: 5.3 Feet – 0.02 Ounces Gold – 0.4 Ounces Silver – 0.4 Percent Lead – 2.6 Percent Zinc

Length Sampled: 80 Feet

TENNESSEE MINE

1350 Level (Coordinates North 160 to North 365)

Area "F"

From Assay Map, Tennessee-Schuylkill Corp., 1939

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Percent Lead	Feet times Lead	Percent Zinc	Feet times Zinc
1.5	.03	.05	0.6	0.9	0.7	1.1	1.6	2.4
1.5	.05	.08	0.5	0.8	Tr	—	1.7	2.6
1.0	.14	.14	1.2	1.2	Tr	—	1.2	1.2
6.0	.04	.24	0.6	3.6	0.5	3.0	4.5	27.0
6.0	.05	.30	1.4	8.4	Tr	—	2.6	15.6
5.0	.06	.30	1.7	8.5	2.4	12.0	1.8	9.0
7.0	.06	.42	1.9	13.3	4.2	29.4	2.0	14.0
6.0	.06	.36	2.5	15.0	7.2	43.2	0.8	4.8
4.0	.07	.42	6.6	39.6	18.3	109.8	2.0	12.0
6.5	.08	.39	5.2	33.8	10.7	69.6	1.2	7.8
8.0	.06	.48	3.7	29.6	10.2	81.6	1.4	11.2
1.5	.11	.17	9.9	14.9	28.7	43.1	15.4	23.1
3.0	.09	.27	3.1	9.3	8.6	25.8	8.1	24.3
1.0	.09	.09	4.2	4.2	11.7	11.7	10.2	10.2
1.0	.08	.08	4.2	4.2	13.7	13.7	6.0	6.0
8.0	.07	.56	6.4	51.2	18.4	148.8	26.7	213.6
2.0	.05	.10	3.0	6.0	8.7	17.4	5.3	10.6
2.0	.05	.10	2.3	4.6	4.0	8.0	8.8	17.6
1.5	.06	.09	2.6	3.9	2.6	3.9	9.2	13.8
1.5	.12	.18	3.5	5.3	4.0	6.0	15.2	22.8
2.0	.13	.26	3.7	7.4	7.9	15.8	10.2	20.4
4.0	.06	.24	1.1	4.4	2.2	8.8	5.9	23.6
5.0	.06	.30	2.2	11.0	2.8	14.0	5.6	28.0
4.0	.06	.24	1.3	5.2	1.1	4.4	4.7	18.8
3.0	.04	.12	1.2	3.6	0.6	1.8	7.0	21.0
2.0	.37	.74	1.5	3.0	0.5	1.0	4.6	9.2
1.0	.08	.10	0.4	2.0	0.5	2.5	0.8	4.0
102.0		5.[illegible]		201.9		676.4		572.6

27 Samples average: 3.8 Feet - 0.07 Ounces Gold - 2.8 Ounces Silver - 6.7 Percent Lead - 5.7 Percent Zinc

Length Sampled: 203 Feet

THERMOPOLIS MINE

1250 Level (Coordinates North 369 to North 497)

From Assay Map, Tennessee-Schuylkill Corp., 1950

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Percent Lead	Feet Lead	Percent Zinc	Feet Zinc
1.5	.38	.57	3.5	5.3	4.9	7.4	14.6	21.9
7.0	.36	2.52	3.7	25.9	1.1	7.7	6.7	46.9
6.0	.25	1.50	1.9	11.4	3.4	20.4	3.8	22.8
6.5	.08	.52	7.2	46.8	18.5	120.2	12.3	79.9
6.0	.07	.42	5.7	34.2	15.9	95.4	4.8	28.8
6.0	.17	1.02	9.4	56.4	22.4	134.4	16.7	100.2
5.0	.16	.80	12.6	63.0	20.6	103.0	7.2	36.0
6.0	.05	.30	3.2	19.2	5.3	31.8	6.2	37.2
6.0	.13	.78	12.7	76.2	32.6	195.6	14.6	87.6
4.0	.04	.16	4.3	17.2	14.7	58.8	5.6	22.4
2.0	.11	.22	5.9	11.8	13.4	26.8	15.4	30.8
3.5	.11	.39	4.2	14.7	5.6	19.6	13.8	48.3
7.0	.07	.49	2.2	15.4	3.7	25.9	7.0	49.0
5.0	.06	.30	2.2	11.0	3.6	18.0	4.5	22.5
6.5	.05	.30	1.5	9.8	3.7	24.1	3.1	20.2
4.0	.04	.16	4.7	18.8	14.9	59.6	3.5	14.0
4.0	.48	2.92	4.3	17.2	3.8	15.2	15.4	61.6
5.0	.91	4.55	6.2	31.0	8.3	41.5	12.0	60.0
3.5	.60	2.10	9.7	33.9	13.8	48.3	7.5	26.3
4.0	.34	1.36	6.3	25.2	7.6	30.4	20.6	82.4
98.5		25.55		433.8		1141.9		784.7

20 Samples average: 4.9 Feet - 0.26 Ounces Gold - 5.5 Ounces Silver - 11.7 Percent Lead - 9.4 Percent Zinc

Length Sampled: 132 Feet

TENNESSEE MINE

1250 Level (Coordinates North 477 to North 607)

Area "J"

From Assay Map, Tennessee-Dalney/Hill Corp., 1940

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Percent Lead	Feet times Lead	Percent Zinc	Feet times Zinc
4.0	.05	.20	9.2	36.8	3.8	15.2	2.6	10.4
3.0	.08	.24	33.4	100.2	4.1	12.3	4.5	13.5
3.5	.07	.25	7.7	26.9	8.6	30.1	2.9	10.2
1.5	.09	.11	0.2	0.7	Tr	—	Tr	—
2.0	.05	.10	2.6	5.2	2.4	4.8	1.9	3.8
6.0	.10	.60	10.0	60.0	7.6	45.6	2.6	15.6
3.0	.06	.18	0.8	2.4	1.3	3.9	1.6	4.8
4.0	.06	.24	1.0	4.0	1.1	4.4	2.2	8.8
3.0	.04	.12	1.1	3.3	2.8	8.4	2.6	7.8
5.0	.05	.25	3.4	17.0	1.7	8.5	2.9	14.5
5.0	.07	.35	1.7	8.5	6.0	30.0	1.8	9.0
4.5	.06	.27	1.4	6.3	2.9	13.1	2.6	11.7
5.0	.10	.50	1.7	8.5	5.5	27.5	1.6	8.0
7.0	.09	.63	5.1	35.7	3.5	24.5	4.6	32.2
6.0	.04	.24	0.7	4.2	2.2	13.2	3.1	18.6
6.0	.04	.24	1.2	7.2	4.8	28.8	2.6	15.6
5.0	.56	2.80	2.7	13.5	5.3	26.5	7.5	37.5
7.0	.04	.28	0.5	3.5	1.6	11.2	2.4	16.8
4.0	.10	.40	5.7	22.8	14.0	56.0	6.0	24.0
10.0	.08	.80	4.16	41.6	10.0	100.0	5.0	50.0
9.5	.17	1.62	2.7	25.7	5.0	47.5	7.0	66.5
5.0	.31	1.55	5.2	26.0	9.8	49.0	8.6	77.4
132.5		15.07		303.9		628.9		489.1

22 Samples average: 5.8 Feet -- 0.12 Ounces Gold -- 3.9 Ounces Silver -- 4.9 Percent Lead -- 3.8 Percent Zinc

Length Sampled: 110 Feet

THREE-SIX MINE

1200 Level (Coordinates North 607 to North 697)

Area "J"

From Assay Map, Tennessee-Sidney/Hill Corp., 1940

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Percent Lead	Feet times Lead	Percent Zinc	Feet times Zinc
3.5	.01	.06	0.1	0.6	Tr	—	3.0	16.5
3.5	.01	.06	Tr	—	Tr	—	Tr	—
3.5	.01	.06	0.10	0.4	Tr	—	Tr	—
3.5	.01	.06	0.20	0.7	Tr	—	2.4	8.4
1.5	.01	.02	0.11	0.2	Tr	—	3.7	5.6
3.0	.02	.06	0.24	0.7	Tr	—	1.3	3.9
2.0	.03	.06	0.14	0.3	Tr	—	Tr	—
3.0	.02	.06	0.20	0.6	Tr	—	1.2	3.6
2.0	.01	.02	0.10	0.2	Tr	—	Tr	—
1.5	.02	.03	0.30	0.5	1.0	1.5	4.1	6.2
1.5	.02	.03	0.30	0.5	0.8	1.2	3.2	5.7
0.5	.04	.02	1.40	0.7	3.5	1.8	3.2	1.6
1.5	.05	.07	2.90	4.4	3.4	5.1	4.0	6.0
4.0	.02	.08	0.20	0.8	0.5	2.0	Tr	—
3.0	.01	.03	0.20	0.6	Tr	—	1.1	3.3
2.5	.01	.03	0.10	0.3	0.5	1.3	1.0	2.5
2.0	.02	.04	0.18	0.4	0.5	1.0	1.8	3.6
4.0	.01	.04	0.13	0.5	0.5	2.0	1.2	4.8
3.0	.01	.03	0.11	0.3	Tr	—	Tr	—
4.0	.01	.04	0.17	0.7	Tr	—	Tr	—
3.0	.01	.03	0.11	0.3	Tr	—	0.8	2.4
2.0	.01	.02	Tr	—	Tr	—	Tr	—
2.0	.02	.04	0.25	0.5	Tr	—	Tr	—
2.5	.02	.05	0.07	0.2	Tr	—	Tr	—
1.5	.02	.02	0.10	0.2	Tr	—	1.8	2.7
3.0	.01	.03	0.40	1.2	0.7	2.1	0.5	1.5
39.0		1.15		16.4		22.0		76.3

26 Samples average: 2.7 Feet - 0.02 Ounces Gold - 0.2 Ounces Silver - 0.3 Percent Lead - 1.1 Percent Zinc

Length Sampled: 90 Feet

TENNESSEE MINE

1300 Level (Coordinates North 460 to North 510)

Area "J"

From Assay Mgr., Tennessee-Schuylkill Corp., 1941

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Percent Lead	Feet Times Lead	Percent Zinc	Feet Times Zinc
1.5	0.16	.24	6.0	9.0	17.0	25.5	5.1	7.7
4.0	.32	.88	3.1	12.4	6.2	24.8	5.4	21.6
2.5	.22	.55	6.5	16.3	10.6	26.5	7.2	18.0
3.5	.15	.53	1.7	6.0	4.5	15.8	2.2	7.7
2.0	.02	.04	0.3	0.6	Tr	—	3.0	6.0
2.0	.13	.26	1.4	2.8	0.7	1.4	14.8	29.6
2.0	.04	.08	0.5	1.0	Tr	—	1.8	3.6
2.5	.10	.25	0.9	2.3	0.5	1.3	2.8	7.0
3.0	.02	.06	0.4	1.2	0.5	1.5	1.4	4.2
4.0	.02	.08	0.1	0.4	Tr	—	Tr	—
2.0	.02	.04	0.2	0.4	0.5	1.0	0.5	1.0
29.0		2.99		32.4		77.8		108.1

11 Samples average: 2.6 Feet - 0.10 Ounces Gold - 1.2 Ounces Silver - 3.4 Percent Lead - 3.7 Percent Zinc

Length Sampled: 50 Feet

TENNESSEE MINE

1300 Level (Coordinates North 286 to North 460)

Area "J"

From Assay Map, Tennessee-Shenghill Corp., 1951

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Per-cent Lead	Feet Times Lead	Per-cent Zinc	Feet Times Zinc
1.5	.08	.05	0.2	0.3	Tr	—	2.1	3.2
2.0	.01	.02	0.2	0.4	Tr	—	0.5	1.0
1.5	.43	.64	1.0	1.5	3.3	5.3	1.2	1.8
2.5	.02	.05	0.2	0.5	Tr	—	1.3	3.2
6.0	.03	.12	0.4	1.6	0.6	2.4	1.4	5.4
4.0	.09	.36	1.0	4.0	1.5	6.0	4.1	16.4
3.3	.05	.18	1.7	6.0	3.4	11.9	3.9	13.7
1.5	.12	.34	0.6	2.7	1.0	4.5	3.9	17.6
4.0	.06	.24	1.2	4.8	3.4	13.6	2.7	10.8
1.5	.42	.63	2.4	3.9	7.4	11.1	9.4	14.4
2.8	.13	.36	4.4	9.2	11.4	23.8	5.9	12.3
1.5	.09	.14	2.5	3.8	6.7	10.1	5.9	8.9
2.0	.08	.16	2.6	5.2	3.3	6.6	19.4	38.8
4.5	.12	0.54	0.8	3.6	Tr	—	4.3	19.4
6.0	.20	1.20	1.4	8.4	1.5	9.0	7.6	45.6
5.0	.07	0.35	1.1	5.5	0.6	3.0	10.3	51.5
4.5	.09	0.41	1.6	7.2	0.8	3.6	13.1	59.0
3.5	.04	0.14	0.4	1.4	0.8	2.8	8.0	28.0
4.5	.02	0.09	0.7	3.2	0.6	2.6	6.8	30.6
4.5	.03	0.14	0.8	3.6	1.1	4.9	3.4	15.3
2.0	.03	0.06	0.4	0.8	0.6	1.2	2.9	5.8
4.0	.11	0.44	1.6	6.4	2.3	9.2	10.9	43.6
3.0	.16	0.48	3.4	10.2	7.2	21.6	9.7	29.1
3.0	.09	0.27	1.3	3.9	1.0	3.0	6.6	19.8
3.0	.22	0.66	7.1	21.3	13.7	41.1	20.0	60.0
3.5	.18	.63	3.5	12.4	3.1	10.9	12.3	43.1
7.5	.39	2.97	5.1	37.8	4.5	33.8	22.5	99.7
4.0	.84	3.36	10.1	40.4	18.1	72.4	20.1	80.4
3.0	.74	2.22	6.5	19.5	10.5	31.5	17.4	52.2
2.0	.46	1.32	8.1	16.2	10.5	21.0	23.5	47.0
5.8	.26	1.50	2.5	14.5	4.1	23.8	5.3	30.5
4.5	.50	1.35	4.7	12.8	9.3	25.1	6.5	17.5
4.5	.32	1.44	3.9	17.5	10.4	46.8	8.8	39.6
3.0	.21	.63	4.4	13.2	10.7	32.1	8.3	24.9
2.5	.79	1.98	5.7	14.3	11.4	28.0	5.6	14.0
1.5	.02	0.03	0.5	0.8	2.0	3.0	Tr	—
4.5	.50	2.25	6.5	29.3	15.4	69.3	13.4	61.2

TERRIBLE - 1990 Level - Area "I" (Cont'd)

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Percent Lead	Feet Times Lead	Percent Zinc	Feet Times Zinc
3.5	.08	2.92	9.1	31.0	30.5	107.3	13.1	72.1
4.0	.40	1.60	10.2	40.8	28.9	115.6	12.9	51.6
2.5	.30	0.75	15.4	38.5	46.2	115.5	11.1	27.8
4.5	.14	.63	6.8	30.6	19.0	85.5	8.5	38.3
4.0	.47	1.88	9.6	38.4	18.8	75.2	13.9	55.6
3.0	.21	.63	13.3	39.9	31.8	95.4	14.6	43.8
5.5	.38	2.09	7.5	41.3	13.0	71.5	17.0	93.5
3.0	.06	.18	7.6	22.8	23.8	71.4	7.5	22.5
3.5	.50	1.75	5.8	20.3	13.5	46.4	10.5	36.8
3.0	.31	.93	4.7	14.1	10.4	31.2	11.0	33.0
3.5	.44	.84	7.5	28.5	20.0	76.0	11.0	38.5
3.0	.12	.36	4.2	12.6	8.2	24.6	15.1	45.3
3.0	.18	.54	2.1	6.3	3.0	9.0	7.4	22.2
3.5	.35	1.23	2.6	9.1	4.4	15.4	8.5	29.7
2.5	.37	.93	8.2	20.5	28.3	70.8	5.9	14.8
2.0	.56	1.12	2.7	5.4	4.4	8.8	5.2	10.4
4.5	.09	.41	1.0	4.5	3.7	16.6	6.3	28.4
[illegible]	.07	[illegible]	1.9	[illegible]	1.4	[illegible]	11.6	[illegible]
127.5		33.90		762.5		1,395.5		1,778.5

55 Samples average: 3.4 Feet - 0.26 Ounces Gold - 4.1 Ounces Silver - 8.5 Percent Lead - 9.5 Percent Zinc

Length Sampled: 194 Feet

TENNESSEE MINE

1390 Level (Coordinates North 181 to North 264)

Area "X" and "Y"

From Assay Map, Tennessee-Schuylkill Comp., 1941

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Percent Lead	Feet Times Lead	Percent Zinc	Feet times Zinc
3.0	.08	.24	2.7	8.1	5.0	15.0	8.5	25.5
1.5	.08	.12	2.4	3.6	1.5	2.3	22.9	34.4
1.0	.11	.11	4.1	4.1	4.7	4.7	21.8	21.8
3.0	.38	.38	3.0	9.0	3.9	11.7	19.3	57.9
5.0	.10	.50	1.4	7.0	3.0	15.0	11.6	58.0
3.5	.40	2.20	3.6	19.8	6.1	33.6	9.5	52.3
1.5	.07	.39	2.3	13.8	2.9	16.0	5.6	30.8
3.5	.05	.18	3.5	12.3	0.9	3.2	2.4	8.4
1.5	.09	.14	0.8	0.3	1.8	2.7	1.2	1.8
2.0	.28	.56	0.5	1.0	0.7	1.4	3.0	6.0
3.0	.05	.15	0.5	1.5	Tr	—	4.5	13.5
4.0	.12	.48	0.6	2.4	1.9	7.6	2.9	11.6
4.0	.07	.28	1.1	4.4	3.1	12.4	2.6	10.4
4.0	.22	.88	1.1	4.4	1.2	4.8	4.3	16.0
3.0	.46	1.38	8.2	24.6	21.7	65.1	13.4	40.2
4.0	.08	.32	5.4	21.6	14.5	58.0	17.5	70.0
53.5		8.77		150.7		253.5		350.6

16 Samples average: 3.3 Feet - 0.16 Ounces Gold - 2.6 Ounces Silver - 4.7 Percent Lead - 8.6 Percent Zinc

Length Sampled 85 Feet: Applies to Block "Y" above the level.

TENNESSEE MINE

1350 Level (Coordinates South 100 to North 181)

Area "I"

From Assay Map, Tennessee-Schuylkill Corp., 1961

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Percent Lead	Feet times Lead	Percent Zinc	Feet times Zinc
9.0	.01	.09	0.2	1.8	Tr	—	0.5	4.5
4.5	.03	.14	0.2	0.9	Tr	—	0.5	2.3
5.5	.01	.06	0.1	0.5	0.5	2.8	0.5	2.8
5.0	.38	1.90	0.7	3.5	1.0	5.0	1.2	6.0
6.0	.18	1.08	0.4	2.4	0.5	3.0	2.0	12.0
5.0	.04	.20	0.1	0.5	0.5	2.5	0.8	4.0
6.0	.30	1.80	0.8	4.8	2.4	14.4	3.2	19.2
5.5	.46	2.53	1.2	6.6	0.5	2.8	2.7	14.9
5.0	.09	.45	0.7	3.5	0.7	3.5	2.5	12.5
4.5	.07	.32	0.9	4.1	2.0	9.0	4.0	18.0
4.0	.44	1.76	1.6	6.4	1.5	6.0	8.0	32.0
4.5	.16	0.72	1.8	8.1	4.5	20.3	8.3	37.4
4.0	.12	0.48	1.6	6.4	4.0	16.0	9.9	39.6
3.0	.11	0.33	0.3	0.9	1.0	3.0	3.9	11.7
2.5	.16	0.40	0.4	1.0	0.8	2.0	7.4	18.5
1.5	.42	0.63	1.3	2.0	1.0	1.5	6.5	9.8
4.0	.03	.12	0.5	2.0	0.5	2.0	2.5	10.0
6.0	.05	.30	0.9	5.4	0.5	3.0	4.0	24.0
1.5	.20	.30	1.5	2.3	1.0	1.5	10.3	15.5
3.5	.05	.18	1.2	4.2	0.5	1.8	7.5	26.3
4.0	.26	1.04	1.7	6.8	2.5	10.0	6.6	26.4
3.0	.06	.18	0.6	1.8	0.5	1.5	8.6	25.8
3.0	.07	.21	0.2	0.6	1.0	3.0	3.4	10.2
3.0	.09	.27	0.7	2.1	0.5	1.5	2.7	8.1
4.0	.08	0.32	1.0	4.0	1.9	7.6	3.4	13.6
4.0	.05	0.20	0.4	1.6	0.7	2.8	1.0	4.0
4.5	.12	0.54	1.3	5.9	2.7	12.2	2.4	10.8
5.0	.06	.30	2.4	12.0	2.3	11.5	4.4	22.0
3.5	.16	.56	2.1	7.4	2.0	7.0	9.6	33.6
6.0	.12	.72	1.5	9.0	3.0	18.0	11.1	66.6
7.5	.10	.75	2.2	16.5	2.3	17.3	7.3	54.8
8.0	.06	.48	1.4	11.2	2.3	18.4	6.4	51.2
3.0	.08	.24	0.4	1.2	0.8	2.4	8.6	25.8
1.0	.11	.11	1.9	1.9	0.6	0.6	33.8	33.8
3.0	.16	.48	0.8	2.4	1.0	3.0	10.3	30.9
3.5	.10	.35	1.3	4.6	0.5	1.8	15.4	53.9
3.0	.03	.09	0.1	0.3	0.5	1.5	3.7	11.1
6.0	.07	.42	2.5	15.0	1.2	7.2	6.4	38.4

TRIBUTE - 1350 Level - Area "I" (Sub'd)

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Percent Lead	Feet Percent Lead	Percent Zinc	Feet Percent Zinc
6.0	.02	.10	2.0	12.0	2.7	16.2	11.9	71.4
7.0	.03	.21	1.2	8.4	0.5	3.5	11.8	82.6
8.5	.10	.70	2.2	5.5	0.4	1.3	29.1	72.8
2.5	.03	.08	0.3	0.8	0.5	1.3	9.1	22.8
8.0	.05	.40	0.6	4.8	1.0	8.0	7.5	60.0
4.0	.02	.12	0.3	1.2	0.5	2.0	1.3	5.2
5.0	.01	.05	0.1	0.5	TR	—	3.7	18.5
6.5	.01	.07	0.4	2.6	0.5	3.2	5.5	35.8
6.0	.02	.12	0.2	1.2	TR	—	8.0	48.0
6.0	.10	.60	0.7	4.2	0.8	4.8	26.0	156.0
2.5	.07	.18	0.6	1.5	0.5	1.3	17.2	43.0
1.5	.12	.18	0.9	1.1	0.7	1.1	37.9	56.9
2.0	.08	.16	1.5	3.0	2.3	4.7	9.4	18.8
4.0	.07	.28	2.9	11.6	2.7	10.8	14.6	58.4
4.0	.17	.68	1.3	5.0	1.9	7.4	14.7	58.8
1.5	.07	.07	1.4	1.7	3.2	17.4	12.2	67.1
6.0	.05	.30	3.7	22.2	4.1	24.6	15.0	90.0
7.0	.07	.49	1.5	10.5	0.8	5.6	6.6	46.2
4.0	.02	.08	TR	—	0.8	3.2	7.4	29.6
4.5	.04	.18	0.7	3.2	0.7	3.1	7.9	35.5
6.0	.08	.48	0.8	4.8	1.6	9.6	5.3	31.8
5.0	.05	.25	0.7	3.5	0.7	3.5	5.1	25.5
2.5	.14	.35	2.3	5.8	2.3	5.8	10.8	27.0
2.0	.15	.30	0.8	1.6	0.6	1.2	9.4	18.8
2.5	.06	.15	0.4	1.0	0.7	1.8	6.5	16.3
3.0	.06	.18	1.0	3.0	1.5	4.5	15.3	45.9
3.5	.07	.25	1.7	6.0	1.9	6.7	12.4	43.4
1.5	.14	.21	0.6	0.9	0.9	1.4	10.1	15.2
2.0	.13	.26	1.3	2.6	1.4	2.8	11.6	23.2
2.7	.05	.14	1.4	3.8	2.7	7.3	10.4	28.1
3.1	.07	.22	2.8	8.7	5.4	16.7	16.3	50.5
95.0		5.35		139.8		224.5		1,154.4

69 Samples averaged: 4.4 Feet - 0.20 Ounces Gold - 1.1 Ounces Silver - 1.4 Percent Lead - 7.8 Percent Zinc

Length Sampled: 95.0 Feet

[illegible] MINE

Summary 1350 Level (between Coordinates South 200 to North 440)

Area "I"

Number of Samples	Min of Widths	Feet Ounces Gold	Feet Ounces Silver	Percent Times Lead	Percent Times Zinc
35	1.07	45.90	753.5	1,973.8	1,774.5
16	35.5	0.77	130.7	253.5	140.6
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

110 Samples average: 3.9 Feet - 0.15 Ounces Gold - 2.3 Ounces Silver - 4.2 Percent Lead - 3.4 Percent Zinc

Length Sampled 360 Feet. Applies to Block "I" below the level.

TENNESSEE MINE

1350 Level (Southbound South 300 to South 345)

Area "K"

From Assay Map, Tennessee-Schuylkill Corp., 1942

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Percent Lead	Feet Times Lead	Percent Zinc	Feet Times Zinc
6.0	Tr	—	Tr	—	Tr	—	Tr	—
6.5	.02	.20	0.5	3.3	Tr	—	0.7	4.6
5.0	.06	.30	0.7	3.5	0.7	3.5	7.0	35.0
4.0	.06	.24	0.6	2.4	1.0	4.0	5.5	22.0
5.0	.10	.50	0.4	2.0	0.6	3.0	1.1	5.5
4.5	.06	.27	0.7	3.2	1.1	5.0	3.2	14.4
4.5	.03	.14	0.1	0.5	0.6	3.6	2.0	9.0
4.0	.02	.08	0.4	1.6	0.5	2.0	1.4	5.6
4.0	.03	.12	0.4	1.6	0.5	2.0	3.4	13.6
4.0	.07	.28	0.8	3.2	1.1	4.4	4.6	18.4
47.5		2.03		21.5		27.5		128.1

10 Samples average: 4.8 Feet - 0.04 Ounces Gold - 0.4 Ounces Silver - 0.6 Percent Lead - 2.7 Percent Zinc

Length Sampled: 45 Feet

TENNESSEE MINE

1400 Level (Coordinates South 370 to South 570)

Area "H"

From Assay Map, Tennessee-Schuylkill Corp., 1933

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Percent Lead	Feet times Lead	Percent Zinc	Feet times Zinc
2.0	.03	.06	0.2	0.4	Tr	—	1.8	3.6
2.0	.04	.08	1.4	2.8	2.0	4.0	6.3	12.6
2.0	.06	.12	0.6	1.2	0.5	1.0	4.2	8.4
2.0	.04	.08	0.7	1.4	1.5	3.0	5.9	11.8
3.0	.02	.06	Tr	—	Tr	—	0.5	1.5
2.3	Tr	—	Tr	—	Tr	—	0.5	1.3
2.0	Tr	—	0.2	0.4	Tr	—	1.7	3.4
3.0	.02	.06	0.2	0.6	Tr	—	1.6	4.8
2.0	.04	.08	0.3	0.6	Tr	—	0.6	1.2
2.0	.02	.04	0.1	0.2	Tr	—	1.3	3.6
1.8	.04	.07	0.2	0.4	Tr	—	1.0	1.8
2.8	.02	.06	0.6	1.7	Tr	—	5.8	16.2
2.1	.08	.17	1.2	2.5	1.3	2.7	4.1	8.6
2.7	.06	.16	1.0	2.7	1.7	4.6	1.1	3.0
2.2	.04	.09	Tr	—	Tr	—	0.5	1.1
1.8	.01	.02	Tr	—	Tr	—	0.5	0.9
1.4	.02	.03	0.1	0.1	Tr	—	2.1	2.9
2.1	Tr	—	Tr	—	Tr	—	1.0	2.1
1.9	.02	.04	0.1	0.2	Tr	—	0.8	1.5
2.6	Tr	—	Tr	—	Tr	—	1.2	3.1
2.0	.02	.04	0.2	0.4	Tr	—	0.9	1.8
43.7		1.26		15.6		15.3		93.2

All Samples average: 2.2 Feet - 0.03 Ounces Gold - 0.3 Ounces Silver - 0.3 Percent Lead - 2.1 Percent Zinc

Length Sampled: 200 Feet

TENDERFOOT MINE

1450 Level (Coordinates South 700 to South 870)

From Assay Map, Hecla Mining and Smelting Co., 1916

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Percent Lead	Feet Times Lead	Percent Zinc	Feet Times Zinc
2.1	.15	.32	19.0	39.9	18.8	39.5	10.9	22.9
2.1	.09	.19	13.2	27.8	13.3	27.9	18.9	39.8
1.5	.12	0.18	4.1	6.2	3.0	4.5	6.8	10.2
2.2	.10	0.22	5.7	12.5	4.2	9.2	22.7	49.9
1.8	.09	0.16	8.9	16.0	5.2	9.4	35.7	64.3
2.0	.05	0.10	5.4	10.8	3.4	6.8	35.6	71.2
2.8	.06	0.17	6.4	17.9	1.3	3.6	22.3	62.4
4.0	.05	.20	2.8	11.2	7.8	31.2	13.3	53.2
4.8	.07	.34	4.7	22.6	4.9	23.5	16.1	77.3
4.3	.07	.32	7.5	32.2	2.4	10.3	14.9	64.1
3.8	.06	.20	6.7	25.5	14.3	54.3	5.5	20.9
3.8	.05	.20	3.9	14.8	1.3	4.9	28.4	107.9
1.0	.14	.14	6.4	12.4	12.1	12.1	20.6	20.6
31.8		3.35		251.8		223.9		675.5

19 Samples average: 2.9 Feet - 0.09 Ounces Gold - 6.7 Ounces Silver - 6.8 Percent Lead - 17.9 Percent Zinc

Length Sampled: 90 Feet. Mined prior to 1917 by Hecla Mining and Smelting Co.

[illegible] MINE

1400 Level (Coordinates South 590 to South 640)

From Assay Map, Tennessee-Schuylkill Corp., 1938

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Percent Lead	Feet times Lead	Percent Zinc	Feet times Zinc
2.3	.02	.05	Tr	—	Tr	—	7.0	16.1
2.4	.03	.07	.13	0.3	Tr	—	4.7	11.3
2.0	.03	.06	Tr	—	Tr	—	7.6	15.2
2.7	.04	.11	.09	2.4	1.6	4.3	4.6	12.4
3.0	.04	.12	1.0	3.0	2.7	8.1	3.8	11.4
2.7	.02	.07	0.5	1.9	Tr	—	6.9	23.5
2.1	.02	.03	0.6	2.6	0.5	2.2	5.7	[illegible]
20.4		.37		11.2		11.6		116.4

7 Samples average: 2.9 Feet – 0.05 Ounces Gold – 0.5 Ounces Silver – 0.7 Percent Lead – 5.7 Percent Zinc

Length Sampled: 50 Feet

1400 Level (Coordinates South 672 to South 692)

3.2	.25	.80	12.0	38.4	10.9	34.9	11.4	36.5
4.4	.07	.31	6.3	27.7	7.9	34.8	7.4	32.6
3.7	.04	.15	4.8	17.8	10.4	38.5	14.3	52.9
11.3		1.26		83.9		108.2		122.0

3 Samples average: 3.8 Feet – 0.11 Ounces Gold – 7.4 Ounces Silver – 9.6 Percent Lead – 10.8 Percent Zinc

Length Sampled: 20 Feet

THREESOME MINE

1600 Level: 112 Feet to 122 Feet South of 1600 Winze

Area "A"

From Assay Dep, Meadow Mining and Smelting Co., Sept. 1916

Width Feet	Ounces Gold	Feet Ounces Gold	Ounces Silver	Feet Ounces Silver	Per-cent Lead	Feet times Lead	Per-cent Zinc	Feet times Zinc
2.3	.02	.02	2.1	4.8	13.0	30.0	3.3	7.6
2.7	.02	.05	5.6	15.1	16.2	43.7	12.0	32.4
3.1	.02	.07	5.8	18.1	14.0	43.4	13.8	42.8
8.1		.14		38.0		117.1		82.8

3 Samples average: 2.8 Feet - 0.02 Ounces Gold - 4.7 Ounces Silver - 14.4 Percent Lead - 10.2 Percent Zinc

Length Sampled: 10 Feet

1600 Level: 60 Feet to 77 Feet South of 1600 Winze

2.2	.02	.05	1.6	3.1	14.5	46.4	0.4	1.3
2.1	.02	.03	0.9	1.9	2.0	5.0	2.3	5.8
2.0	.04	.08	1.0	2.0	18.5	37.0	0.5	1.0
6.7		.16		10.1		108.9		8.1

3 Samples average: 2.9 Feet - 0.02 Ounces Gold - 1.2 Ounces Silver - 12.3 Percent Lead - 0.9 Percent Zinc

Length Sampled: 17 Feet

1600 Level: 43 Feet to 79 Feet North of 1600 Winze

2.5	.04	.10	1.2	3.0	22.4	55.5	5.0	12.5
2.0	.03	.09	0.9	2.7	23.2	69.6	2.0	6.0
2.0	.02	.04	1.5	3.0	19.2	57.6	4.5	13.5
6.5		.23		16.2		182.7		32.0

3 Samples average: 2.2 Feet - 0.03 Ounces Gold - 1.2 Ounces Silver - 22.2 Percent Lead - 3.8 Percent Zinc

Length Sampled: 12 Feet

1600 Level: 113 Feet to 126 Feet North of 1600 Winze

3.5	.02	.04	1.1	3.9	7.8	27.3	tr	--
1.4	.02	.02	0.4	0.6	7.6	10.6	1.1	1.5
7.9		.06		5.7		60.7		1.5

2 Samples average: 3.9 Feet - 0.02 Ounces Gold - 0.7 Ounces Silver - 7.7 Percent Lead - 0.4 Percent Zinc - Length Sampled 12 Feet

224 New Customhouse
Denver, Colorado

June 18, 1951

Memorandum

To: Landon Strobel, ExecutiveSecretary, Defense Minerals Administration

From: Executive Officer, DMA Field Team, Region XV

Subject: DMA Docket 21-50 and 494

We are enclosing a memorandum from W. R. Storms, dated June 8, with copies of a confidential letter from M. J. Kising, consulting mining engineer, Tucson, and L. L. Farnham, Bureau of Mines engineer, regarding the Tennessee-Schuylkill project and Mohave Metal Mining and Reduction Company project, both located in the Wallapai district, Mohave County, Arizona.

These letters should be made a part of the reports previously submitted for your consideration.

J. H. East, Jr.

Attachments
Copy to Otto Herres

Copy to Allmann and Koschmann

JHE/el
cc dma files

Allsman

June 8, 1951

Memorandum

To : Paul T. Allsman, Denver, Colorado

From : Chief, Arizona-New Mexico Br., Mining Div., Region IV

Subject : Letter regarding BMA Dockets 21-50 and 494

Enclosed are original and 7 copies of a letter from Morris J. Kising, our consulting mining engineer, which explains why he and L. L. Farnham were so long in completing their reports on the above dockets.

It might be wise to have this letter included in Kising's and Farnham's final reports.

Walter R. Storms

CC P. T. Allsman (7)
BMA 21-50
BMA 494
RF

WRStorms:frj

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
MINING DIVISION
REGION IV

Arizona-New Mexico Branch
Box 4097

Tucson, Arizona

May 25, 1951

Memorandum

To : Walter R. Sterns, Tucson, Arizona

From : M. J. Kising, Consulting Mining Engineer, Tucson

Subject : RMA Docket 21-50, Tennessee Metals Corp.

On April 6, 1951, L. L. Farnham and I completed our field investigations of RMA Docket 21-50 covering the Tennessee-Schuylkill project and RMA Docket 494 covering the Mohave Metal Mining and Reduction Co. project, both located in the Wallapai district, Mohave County, Ariz.

The first application requests a loan of $350,000 to provide for the mining of 300 tons of ore per day and the second application requests a loan of $400,000 to provide milling and other treatment facilities for 400 tons per day.

The rough draft of the report on the Tennessee-Schuylkill project was completed May 11 and the rough draft of the report on the Mohave Metal Mining and Reduction Co. was completed May 21, 1951.

It is realized that the preparation of these reports has taken a great deal of time. I would like to show for the records what has been done and why it was considered so important to make the investigations so complete.

In the first place the conclusions to be drawn were not regarding two or three mines but the whole Wallapai district which includes 225 mines of which some 150 have produced ore.

It did not take long to arrive at a conclusion but it has taken a long time to assemble the data to prove that the conclusion is correct beyond the shadow of a doubt. A great many people besides the applicants are looking forward to the reopening of the Wallapai district and no doubt they will be greatly disturbed at our conclusion that the district is sub-marginal under present economic conditions of prices of metals and the cost of their production.

We have studied a great mass of data. At the Tennessee mine Mr. Langley allowed us to take everything we wanted in the line of maps. There was no single map showing ore reserves. Our first step in studying the Tennessee-Schuylkill mine was to make a composite assay map. We took assays from 24 separate assay maps and combined them so that ore reserves could be calculated. In calculating ore reserves we used over 600 samples. Average widths of ore were taken for each section of the mine and a weighted average grade was calculated for gold, silver, lead and zinc.

A table was made showing the yearly production of the mine since 1901 showing the average grade of the ore for each year in ounces of gold and silver per ton and the average percentage of copper lead and zinc.

Mr. Langley did not have a summary of the production and grade of the ore from the Summit, Alpha and other mines he proposed to work. We had to get this information from smelter settlement sheets, a long tedious job.

Except in the Tennessee-Schuylkill mine there is very little measured ore. Our conclusions as to possible production of the Wallapai district had to be based on the past production of scores of small producers. Some information was obtained and tabulated regarding 100 mines in the district.

Farnham and I have felt that the district should not be turned down without getting as much information about it as was available. We think our conclusions are unbiased and impartial and we are very willing to defend our position anywhere at any time.

M. J. HSIDO
Consulting Mining Engineer

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DOCKET DMA 50 and 21

Summary of conference with Mr. W. P. Stuart and Mr. McRae of the Internal Revenue Department, Phoenix, Arizona, April 2 and 5, 1951

On March 26, 1951, the DMA Field Team, Region IV, requested that a conference be held with Messrs. F. L. Hyo, J. A. Rathbick and Robert Paine of Kingman, Arizona, and Mr. W. P. Stuart, Collector of Internal Revenue at Phoenix, Arizona, in regard to the application of the Tennessee Metals Co. for an exploitation loan (DMA Docket 21-50). Therefore, Mr. Paine was interviewed in Kingman and Mr. Stuart in Phoenix by the Bureau of Mines examining engineers.

Messrs. Rhing and Rathbick spent two hours and a half on April 2 discussing the operation of the Tennessee Schaylkill mine with Mr. McRae. Mr. W. P. Stuart, the head of the Internal Revenue Department was not in the office. Mr. McRae is handling negotiations respecting the Department's attempt to collect the money due the Government accrued during the operation of the property by K. A. Winer, President of the Tennessee Schaylkill Corporation.

The total indebtedness of the Tennessee Schaylkill Corporation is approximately $80,000. Of this amount $40,000 to $50,000 is due the Internal Revenue Department largely resulting from Winer's deducting withholding taxes from the employees and not paying these deductions to the Internal Revenue Department. Approximately $100,000 is owed the State and County and supply houses and individuals. Mr. McRae stated:

1. The U. S. claims are ahead of all others except a state tax sale certificate for $18,000.

2. He thought the company indebtedness could be discounted from $150,000 to $100,000 but the Internal Revenue would not agree to a discount. (On April 5 at a second conference Mr. Kleing saw Mr. Stuart and Mr. McKee at which time Mr. Stuart volunteered the information that his department would consider accepting settlement on the basis of a discount.)

3. He wanted to see the mine in operation and would hold off any foreclosure proceedings provided some reliable party took over.

4. He wanted 10 percent of the net smelter returns to apply on the company's indebtedness to the Internal Revenue Department.

5. He was very favorable to the operation of the property by Rathbick, Dye and Paine who are long time operators in the district and have established excellent reputations.

6. He had made trips to Los Angeles to try to interest possible operators of the property. The Harvey Hold answers was mildly interested but would make no cash payments of any kind and would not pay more than 7.5 percent royalty. He was unable to get any action because of the very complicated financial mess into which the company had gotten itself. He also discussed the operation of the property with the Redhead Locks, Inc., Anaheim, California. The company had under consideration the purchase of the property for $300,000 on the basis of a 15 percent royalty. He did not think that the lock company was entirely disinterested.

7. Mr. Rufus was very emphatic in stating that he would not be sympathetic to operation of the property by Winer. He further stated that R. R. Langley, President of the Tennessee Metals Company and Winer had mutual interests in the Tennessee Metals Company, the new company now making application for a Government loan, and that he thought the Internal Revenue Department might force Winer out of the picture by threatening foreclosure proceedings.

We learned from Langley that Winer has a 28 percent interest in the new company held in another name and that in addition to a 10 percent royalty to be paid by the Tennessee Metals Company to the Tennessee Schuylkill Corporation an additional 2 percent royalty was to be paid to Winer supposedly to reimburse him for money advanced the Tennessee Schuylkill from his personal funds.

On April 5 Mr. Stuart was also very emphatic in stating that he was very much against Winer's participation in the operation of the property. He said he thought the Department would have just as much trouble with collecting taxes as before if Winer remained in the picture. Mr. Stuart said Winer had been under indictment in some western state.

Mr. R. R. Langley, president of the Tennessee Metals Company, stated that he proposed to employ Mr. Rabinick as mine superintendent, Mr. Pabst as mill superintendent, and Mr. Eye as an assistant to himself.

Mr. Palmer was interviewed at Kingman particularly as to the daily tonnage of ore that the Walapai District could produce.

In a letter dated March 16 addressed to Mr. James Boyd, Mr. Palmer denied any association with the project.

M. J. HIGGINS

L. L. PARKER

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DOCKET DMA 30 and 31

Summary of conference with Mr. W. F. Stuart and Mr. Nelson of the Internal Revenue Department, Phoenix, Arizona, April 2 and 3, 1951.

On March 26, 1951, the DMA Field Team, Region IV, requested that a conference be held with Messrs. F. L. Dye, J. A. Hubbrick and Robert Paint of Kingman, Arizona, and Mr. W. F. Stuart, Collector of Internal Revenue at Phoenix, Arizona, in regard to the application of the Tennessee Metals Co. for an exploration loan (DMA Docket 31-30). Therefore, Mr. Paint was interviewed in Kingman and Mr. Stuart in Phoenix by the Bureau of Mines examining engineers.

Messrs. Kinzing and Renshaw spent two hours and a half on April 2 discussing the operation of the Tennessee Schuylkill mine with Mr. Nelson. Mr. W. F. Stuart, the head of the Internal Revenue Department was not in the office. Mr. Nelson is handling negotiations respecting the Department's attempt to collect the money due the Government accrued during the operation of the property by R. A. Vinsor, President of the Tennessee Schuylkill Corporation.

The total indebtedness of the Tennessee Schuylkill Corporation is approximately $150,000. Of this amount $40,000 to $50,000 is due the Internal Revenue Department largely resulting from Vinsor's deducting withholding taxes from the employees and not paying these deductions to the Internal Revenue Department. Approximately $100,000 is owed the State and County and supply houses and individuals.

Mr. Nelson stated:

1. The U. S. Claims are ahead of all others except a state tax sale certificate for $18,000.

2. He thought the company indebtedness could be discounted from $135,000 to $100,000 but the Internal Revenue would not agree to a discount. (On April 5 at a second conference Mr. Kling saw Mr. Stuart and Mr. Hefter at which time Mr. Stuart volunteered the information that his department would consider accepting settlement on the basis of a discount)

3. He wished to see the mine in operation and would hold off any foreclosure proceedings provided some reliable party took over.

4. He wished 10 percent of the net smelter returns to apply on the company's indebtedness to the Internal Revenue Department.

5. He was very favorable to the operation of the property by Rabinick, Rye and Paine who are long time operators in the district and have established excellent reputations.

6. He had made trips to Los Angeles to try to interest possible operators of the property. The Harvey Hall company was mildly interested but would make no cash payments of any kind and would not pay more than 7.5 percent royalty. He was unable to get any action because of the very complicated financial mess into which the company had gotten itself. He also discussed the operation of the property with the Hallmark Lodge, Inc., Anaheim, California. The company had under consideration the purchase of the property for $300,000 on the basis of a 15 percent royalty. He did not think that the lock company was entirely disinterested.

7. Mr. Ashe was very emphatic in stating that he would not be sympathetic to operation of the property by Vinar. He further stated that R. R. Langley, President of the Tennessee Metals Company and Vinar had mutual interests in the Tennessee Metals Company, the new company now making application for a Government lease, and that he thought the Internal Revenue Department might force Vinar out of the picture by threatening foreclosure proceedings.

We learned from Langley that Vinar has a 25 percent interest in the new company held in another name and that in addition to a 10 percent royalty to be paid by the Tennessee Metals Company to the Tennessee Schuylkill Corporation an additional 2 percent royalty was to be paid to Vinar supposedly to reimburse him for money advanced the Tennessee Schuylkill from his personal funds.

On April 5 Mr. Stuart was also very emphatic in stating that he was very much against Vinar's participation in the operation of the property. He said he thought the Department would have just as much trouble with collecting taxes as before if Vinar remained in the picture. Mr. Stuart said Vinar had been under indictment in some eastern state.

Mr. R. R. Langley, president of the Tennessee Metals Company, stated that he proposed to employ Mr. Dotterick as mine superintendent, Mr. Fulton as mill superintendent, and Mr. Dye as an assistant to himself.

Mr. Paine was interviewed at Kingman particularly as to the daily tonnage of ore that the Walkapai District could produce.

In a letter dated March 16 addressed to Mr. James Boyd, Mr. Paine denied any association with the project.

W. J. KEATING

L. L. PARSONS

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DOCKET DMA 30 and 31

Summary of conference with Mr. W. P. Stuart and Mr. Nelson of the Internal Revenue Department, Phoenix, Arizona, April 2 and 3, 1951

On March 26, 1951, the DMA Field Team, Region IV, requested that a conference be held with Messrs. F. L. Dye, J. L. Hathrick and Robert Paine of Kingman, Arizona, and Mr. W. P. Stuart, Collector of Internal Revenue at Phoenix, Arizona, in regard to the application of the Tennessee Metals Co. for an exploitation lease (DMA Docket 21-56). Therefore, Mr. Paine was interviewed in Kingman and Mr. Stuart in Phoenix by the Bureau of Mines examining engineers.

Messrs. Elsing and Farnham spent two hours and a half on April 2 discussing the operation of the Tennessee Schuylkill mine with Mr. Nelson. Mr. W. P. Stuart, the head of the Internal Revenue Department was not in the office. Mr. Nelson is handling negotiations respecting the Department's attempt to collect the money due the Government accrued during the operation of the property by E. A. Winer, President of the Tennessee Schuylkill Corporation.

The total indebtedness of the Tennessee Schuylkill Corporation is approximately $150,000. Of this amount $40,000 to $50,000 is due the Internal Revenue Department largely resulting from Winer's deducting withholding taxes from the employees and not paying these deductions to the Internal Revenue Department. Approximately $100,000 is owed the State and County and supply houses and individuals. Mr. Nelson stated:

1. The U. S. claims are ahead of all others except a state tax sale certificate for $18,000.

2. He thought the company indebtedness could be discounted from $130,000 to $100,000 but the Internal Revenue would not agree to a discount. (On April 5 at a second conference Mr. Kizing was Mr. Stuart and Mr. McKee at which time Mr. Stuart volunteered the information that his department would consider accepting settlement on the basis of a discount)

3. He wanted to see the mine in operation and would hold off any foreclosure proceedings provided some reliable party took over.

4. He wanted 10 percent of the net smelter returns to apply on the company's indebtedness to the Internal Revenue Department.

5. He was very favorable to the operation of the property by Dubinsky, Rye and Paine who are long time operators in the district and have established excellent reputations.

6. He had made trips to Los Angeles to try to interest possible operators of the property. The Harvey Hunt syndicate was mildly interested but would make no cash payments of any kind and would not pay more than 7.5 percent royalty. He was unable to get any action because of the very complicated financial mess into which the company had gotten itself. He also discussed the operation of the property with the Hickrot Locks, Inc., Anaheim, California. The company had under consideration the purchase of the property for $300,000 on the basis of a 15 percent royalty. He did not think that the lock company was entirely disinterested.

7. Mr. Keller was very emphatic in stating that he would not be sympathetic to operation of the property by Wimer. He further stated that R. E. Langley, President of the Tennessee Metals Company and Wimer had mutual interests in the Tennessee Metals Company, the new company now making application for a Government loan, and that he thought the Internal Revenue Department might force Wimer out of the picture by threatening foreclosure proceedings.

We learned from Langley that Wimer has a 28 percent interest in the new company held in another name and that in addition to a 10 percent royalty to be paid by the Tennessee Metals Company to the Tennessee Schuylkill Corporation an additional 2 percent royalty was to be paid to Wimer supposedly to reimburse him for money advanced the Tennessee Schuylkill from his personal funds.

On April 5 Mr. Stuart was also very emphatic in stating that he was very much against Wimer's participation in the operation of the property. He said he thought the Department would have just as much trouble with collecting taxes as before if Wimer remained in the picture. Mr. Stuart said Wimer had been under indictment in some eastern state.

Mr. R. E. Langley, president of the Tennessee Metals Company, stated that he proposed to employ Mr. Patrick as mine superintendent, Mr. Pekus as mill superintendent, and Mr. Dye as an assistant to himself.

Mr. Paine was interviewed at Kingman particularly as to the daily tonnage of ore that the Hallopeh District could produce.

In a letter dated March 16 addressed to Mr. James Boyd, Mr. Paine denied any association with the project.

M. J. RIBIN

L. L. PARKER

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DOCKET DMA 50 and 51

Summary of conference with Mr. W. F. Stuart and Mr. Nelson of the Internal Revenue Department, Phoenix, Arizona, April 2 and 3, 1951

On March 24, 1951, the DMA Field Team, Region IV, requested that a conference be held with Messrs. F. L. Dye, J. A. Bethrick and Robert Paine of Kingman, Arizona, and Mr. W. F. Stuart, Collector of Internal Revenue at Phoenix, Arizona, in regard to the application of the Tennessee Metals Co. for an exploitation loan (DMA Docket 21-50). Therefore, Mr. Paine was interviewed in Kingman and Mr. Stuart in Phoenix by the Bureau of Mines mining engineers.

Messrs. Kinsing and Rushton spent two hours and a half on April 2 discussing the operation of the Tennessee Schuylkill mine with Mr. Nelson. Mr. W. F. Stuart, the head of the Internal Revenue Department was not in the office. Mr. Nelson is handling negotiations respecting the Department's attempt to collect the money due the Government accrued during the operation of the property by H. A. Winny, President of the Tennessee Schuylkill Corporation.

The total indebtedness of the Tennessee Schuylkill Corporation is approximately $150,000. Of this amount $40,000 to $50,000 is due the Internal Revenue Department largely resulting from Winny's deducting withholding taxes from the employees and not paying these deductions to the Internal Revenue Department. Approximately $100,000 is owed the State and County and supply houses and individuals. Mr. Nelson stated:

1. The U. S. claims are ahead of all others except a state tax sale certificate for $16,000.

2. He thought the company indebtedness could be discounted from $150,000 to $100,000 but the Internal Revenue would not agree to a discount. (On April 5 at a second conference Mr. Kleing saw Mr. Stuart and Mr. Nelson at which time Mr. Stuart volunteered the information that his department would consider accepting settlement on the basis of a discount.)

3. He wanted to see the mine in operation and would hold off any foreclosure proceedings provided some reliable party took over.

4. He wanted 10 percent of the net smelter returns to apply on the company's indebtedness to the Internal Revenue Department.

5. He was very favorable to the operation of the property by Rathbick, Rye and Paine who are long time operators in the district and have established excellent reputations.

6. He had made trips to Los Angeles to try to interest possible operators of the property. The Harvey Hubd company was mildly interested but would make no cash payments of any kind and would not pay more than 7.5 percent royalty. He was unable to get any action because of the very complicated financial mess into which the company had gotten itself. He also discussed the operation of the property with the Bullnose Leaks, Inc., Anaheim, California. The company had under consideration the purchase of the property for $300,000 on the basis of a 13 percent royalty. He did not think that the leak company was entirely disinterested.

7. Mr. Nolan was very emphatic in stating that he would not be sympathetic to operation of the property by Winer. He further stated that R. E. Langley, President of the Tennessee Metals Company and Winer had mutual interests in the Tennessee Metals Company, the new company now making application for a Government loan, and that he thought the Internal Revenue Department might force Winer out of the picture by threatening foreclosure proceedings.

We learned from Langley that Winer has a 28 percent interest in the new company held in another name and that in addition to a 10 percent royalty to be paid by the Tennessee Metals Company to the Tennessee Schuylkill Corporation an additional 2 percent royalty was to be paid to Winer supposedly to reimburse him for money advanced the Tennessee Schuylkill from his personal funds.

On April 5 Mr. Stuart was also very emphatic in stating that he was very much against Winer's participation in the operation of the property. He said he thought the Department would have just as much trouble with collecting taxes as before if Winer remained in the picture. Mr. Stuart said Winer had been under indictment in some eastern state.

Mr. R. E. Langley, president of the Tennessee Metals Company, stated that he proposed to employ Mr. Bakirtzk as mine superintendent, Mr. Paine as mill superintendent, and Mr. Hyde as an assistant to himself.

Mr. Palms was interviewed at Kingman particularly as to the daily tonnage of ore that the Walapai District could produce.

In a letter dated March 16 addressed to Mr. James Boyd, Mr. Palms denied any association with the project.

R. J. ELDING

L. L. FARNHAM

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[illegible]

Summary of conferences with Mr. W. P. Stuart and Mr. Nelson of the Internal Revenue Department, Phoenix, Arizona, April 2 and 5, 1951

On March 26, 1951, the DMA Field Team, Region IV, requested that a conference be held with Messrs. F. L. Dye, J. A. Sobbrink and Robert Paine of Kingman, Arizona, and Mr. W. P. Stuart, Collector of Internal Revenue at Phoenix, Arizona, in regard to the application of the Tennessee Metals Co. for an exploration lease (DMA Docket ZL-50). Therefore, Mr. Paine was interviewed in Kingman and Mr. Stuart in Phoenix by the Bureau of Mines examining engineers.

Messrs. Ehling and Farnham spent two hours and a half on April 2 discussing the operation of the Tennessee Schuylkill mine with Mr. Nelson. Mr. W. P. Stuart, the head of the Internal Revenue Department was not in the office. Mr. Nelson is handling negotiations regarding the Department's attempt to collect the money due the Government accrued during the operation of the property by E. A. Kinney, President of the Tennessee Schuylkill Corporation.

The total indebtedness of the Tennessee Schuylkill Corporation is approximately $150,000. Of this amount $40,000 to $50,000 is due the Internal Revenue Department largely resulting from Kinney's deducting withholding taxes from the employees and not paying these deductions to the Internal Revenue Department. Approximately $100,000 is owed the State and County and supply houses and individuals. Mr. Nelson stated:

1. The U. S. claims are ahead of all others except a state tax sale certificate for $16,000.

2. He thought the company indebtedness could be discounted from $130,000 to $100,000 but the Internal Revenue would not agree to a discount. (On April 5 at a second conference Mr. Kleing saw Mr. Stuart and Mr. Kuhns at which time Mr. Stuart volunteered the information that his department would consider accepting settlement on the basis of a discount.)

3. He wanted to see the mine in operation and would hold off any foreclosure proceedings provided some reliable party took over.

4. He wanted 10 percent of the net smelter returns to apply on the company's indebtedness to the Internal Revenue Department.

5. He was very favorable to the operation of the property by Hubbard, Ryn and Fulton who are long time operators in the district and have established excellent reputations.

6. He had made trips to Los Angeles to try to interest possible operators of the property. The Harvey Gold Company was mildly interested but would make no cash payments of any kind and would not pay more than 7.5 percent royalty. He was unable to get any action because of the very complicated financial mess into which the company had gotten itself. He also discussed the operation of the property with the Hallmark Locks, Inc., Anaheim, California. The company had under consideration the purchase of the property for $300,000 on the basis of a 15 percent royalty. He did not think that the lock company was seriously disinterested.

7. Mr. Kohler was very emphatic in stating that he would not be sympathetic to operation of the property by Vinny. He further stated that R. E. Langley, President of the Tennessee Metals Company and Vinny had mutual interests in the Tennessee Metals Company, the new company now making application for a Government loan, and that he thought the Internal Revenue Department might force Vinny out of the picture by threatening foreclosure proceedings.

We learned from Langley that Vinny has a 55 percent interest in the new company held in another name and that in addition to a 10 percent royalty to be paid by the Tennessee Metals Company to the Tennessee Schuylkill Corporation an additional 2 percent royalty was to be paid to Vinny supposedly to reimburse him for money advanced the Tennessee Schuylkill from his personal funds.

On April 5 Mr. Stuart was also very emphatic in stating that he was very much against Vinny's participation in the operation of the property. He said he thought the Department would have just as much trouble with collecting taxes as before if Vinny remained in the picture. Mr. Stuart said Vinny had been under indictment for some numbers rackets.

Mr. R. E. Langley, president of the Tennessee Metals Company, stated that he proposed to employ Mr. Rothstein as mine superintendent, Mr. Palm as mill superintendent, and Mr. Nye as an assistant to himself.

Mr. Paine was interviewed at Ringwood particularly as to the daily coverage of one that the national District would produce.

In a letter dated March 16 addressed to Mr. James Boyd, Mr. Paine denied any association with the project.

M. J. KLING

L. L. PARKER

CONFIDENTIAL

CONFIDENTIAL

DOCKET NOS 50 and 51

Summary of conference with Mr. W. F. Stuart and Mr. Nolan of the Internal Revenue Department, Phoenix, Arizona, April 2 and 5, 1951

On March 26, 1951, the RMA Field Team, Region IV, requested that a conference be held with Messrs. F. L. Rye, J. A. Rabbitch and Robert Paine of Kingman, Arizona, and Mr. W. F. Stuart, Collector of Internal Revenue at Phoenix, Arizona, in regard to the application of the Tennessee Metals Co. for an exploration loan (RMA Docket 21-50). Therefore, Mr. Paine was interviewed in Kingman and Mr. Stuart in Phoenix by the Bureau of Mines mining engineers.

Messrs. Rising and Hartman spent two hours and a half on April 2 discussing the operation of the Tennessee Schuylkill mine with Mr. Nolan. Mr. W. F. Stuart, the head of the Internal Revenue Department was not in the office. Mr. Nolan is handling negotiations respecting the Department's attempt to collect the money due the Government accrued during the operation of the property by E. A. Wimer, President of the Tennessee Schuylkill Corporation.

The total indebtedness of the Tennessee Schuylkill Corporation is approximately $250,000. Of this amount $40,000 to $50,000 is due the Internal Revenue Department largely resulting from Wimer's deducting withholding taxes from the employees but not paying these deductions to the Internal Revenue Department. Approximately $100,000 is owed the State and County and supply houses and individuals.

Mr. Nolan stated:

1. The U. S. claims are cleared of all liens except a state tax sale certificate for $[illegible],000.

2. He thought the company indebtedness would be discounted from $[illegible],000 to $[illegible],000 but the Internal Revenue would not agree to a discount. (On April 5 at a second conference Mr. Kling saw Mr. Stuart and Mr. Hafner at which time Mr. Stuart volunteered the information that his department would consider accepting settlement on the basis of a discount.)

3. He wanted to see the mine in operation and would hold off any foreclosure proceedings provided some suitable party took over.

4. He wanted 10 percent of the net smelter returns to apply on the company's indebtedness to the Internal Revenue Department.

5. He was very favorable to the operation of the property by Rabbitch, Dye and Paine who are long time operators in the district and have established excellent reputations.

6. He had made trips to Los Angeles to try to interest possible operators of the property. The Harvey Hold Corporation was mildly interested but would make no cash payments of any kind and would not pay more than 7.5 percent royalty. It was useless to get any action because of the very complicated financial mess into which the company had gotten itself. He also discussed the operation of the property with the Kalbest Lease, Inc., Anaheim, California. The company had under consideration the purchase of the property for $[illegible],000 on the basis of a 15 percent royalty. He did not think that the lease company was entirely disinterested.

7. Mr. Nelson was very emphatic in stating that he would not be sympathetic to operation of the property by Vinar. He further stated that R. R. Langley, President of the Tennessee Metals Company and Vinar had equal interests in the Tennessee Metals Company, the new company now making application for a Government lease, and that he thought the Internal Revenue Department might force Vinar out of the picture by threatening foreclosure proceedings.

We learned from Langley that Vinar has a 20 percent interest in the new company held in another name and that in addition to a 10 percent royalty to be paid by the Tennessee Metals Company to the Tennessee Schuylkill Corporation an additional 2 percent royalty was to be paid to Vinar supposedly to reimburse him for money advanced the Tennessee Schuylkill from his personal funds.

On April 5 Mr. Stuart was also very emphatic in stating that he was very much against Vinar's participation in the operation of the property. He said he thought the Department would have just as much trouble with a collecting lease as before if Vinar remained in the picture. Mr. Stuart said Vinar had been under indictment in some eastern state.

Mr. R. R. Langley, president of the Tennessee Metals Company, stated that he proposed to employ Mr. Entwistle as mine superintendent, Mr. Paine as mill superintendent, and Mr. Dye as an assistant to himself.

Mr. Paine was interviewed at Kingman particularly as to the daily tonnage of ore that the Wallapai District would produce.

In a letter dated March 16 addressed to Mr. James Boyd, Mr. Paine denied any association with the project.

H. J. MAIN

L. L. PAINE

CONFIDENTIAL

CONFIDENTIAL

DOCKET NOS. [illegible]

Summary of conference with Mr. W. P. Stuart and Mr. Nolan of the Internal Revenue Department, Phoenix, Arizona, April 2 and 3, 1951.

On March 26, 1951, the DMA Field Team, Region IV, requested that a conference be held with Messrs. F. L. Eyre, J. A. Bethrick and Robert Paine of Kingman, Arizona, and Mr. W. P. Stuart, Collector of Internal Revenue at Phoenix, Arizona, in regard to the application of the Tennessee Metals Co. for an exploitation loan (DMA Docket 21-60). Therefore, Mr. Paine was interviewed in Kingman and Mr. Stuart in Phoenix by the Bureau of Mines examining engineers.

Messrs. Kiling and Wernham spent two hours and a half on April 2 discussing the operation of the Tennessee Schuylkill mine with Mr. Nolan. Mr. W. P. Stuart, the head of the Internal Revenue Department was not in the office. Mr. Nolan is handling negotiations respecting the Department's attempt to collect the money due the Government accrued during the operation of the property by N. A. Winer, President of the Tennessee Schuylkill Corporation.

The total indebtedness of the Tennessee Schuylkill Corporation is approximately $[illegible],000. Of this amount $[illegible],000 to $[illegible],000 is due the Internal Revenue Department largely resulting from Winer's deducting withholding taxes from the employees and not paying these deductions to the Internal Revenue Department. Approximately $100,000 is owed the State and County and supply houses and individuals. Mr. Nolan stated:

1. The U. S. claims are ahead of all others except a state tax sale certificate for $18,000.

2. He thought the company indebtedness could be discounted from $130,000 to $100,000 but the Internal Revenue would not agree to a discount. (On April 5 at a second conference Mr. Kling saw Mr. Stewart and Mr. Nelson at which time Mr. Stewart volunteered the information that his department would consider accepting settlement on the basis of a discount.)

3. He wanted to see the mine in operation and would hold off any foreclosure proceedings pending some reliable party took over.

4. He wanted 10 percent of the net profit returns to apply on the company's indebtedness to the Internal Revenue Department.

5. He was very favorable to the operation of the property by Rehfeldt, Dye and Paine who are long time operators in the district and have established excellent reputations.

6. He had made trips to Los Angeles to try to interest possible operators of the property. The Harvey Hall company was wildly interested but would make no cash payments of any kind and would not pay more than 7.5 percent royalty. He was unable to get any action because of the very complicated financial mess into which the company had gotten itself. He also discussed the operation of the property with the Hallmark Locks, Inc., Anaheim, California. The company had under consideration the purchase of the property for $300,000 on the basis of a 15 percent royalty. He did not think that the lock company was entirely disinterested.

7. Mr. Keller was very emphatic in stating that he would not be sympathetic to operation of the property by Winer. He further stated that R. E. Langley, President of the Tennessee Metals Company and Winer had mutual interests in the Tennessee Metals Company, the new company now making application for a Government loan, and that he thought the Internal Revenue Department might force Winer out of the picture by threatening foreclosure proceedings.

We learned from Langley that Winer had a 28 percent interest in the new company held in another name and that in addition to a 10 percent royalty to be paid by the Tennessee Metals Company to the Tennessee Schuylkill Corporation an additional 2 percent royalty was to be paid to Winer supposedly to reimburse him for money advanced the Tennessee Schuylkill from his personal funds.

On April 5 Mr. Stuart was also very emphatic in stating that he was very much against Winer's participation in the operation of the property. He said he thought the Department would have just as much trouble with collecting taxes as before if Winer remained in the picture. Mr. Stuart said Winer had been under indictment in some custom state.

Mr. R. E. Langley, president of the Tennessee Metals Company, stated that he proposed to employ Mr. Dotterick as mine superintendent, Mr. Paine as mill superintendent, and Mr. Rye as an assistant to himself.

Mr. Paine was interviewed at Niagara particularly as to the daily tonnage of ore that the Hellgate District could produce.

In a letter dated March 16 addressed to Mr. James Boyd, Mr. Paine denied any association with the project.

K. J. ELLING

L. L. FARRIER

224 New Customhouse
Denver, Colorado

June 18, 1951

Memorandum

To: Landon Strobel, Executive Secretary, Defense Minerals Administration

From: Executive Officer, DMA Field Team, Region IV

Subject: DMA Docket 21-50 and 494

We are enclosing a memorandum from W. R. Storum, dated June 8, with copies of a confidential letter from M. J. Kisling, consulting mining engineer, Tucson, and L. L. Parham, Bureau of Mines engineer, regarding the Kingman-Hackberry project and Mohave Metal Mining and Reduction Company project, both located in the Walapai district, Mohave County, Arizona.

These letters should be made a part of the reports previously submitted for your consideration.

J. H. East, Jr.

J. H. East, Jr.

Copy to Allmann and Kopelmann

JHE/el
cc - dma files

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Arizona-New Mexico Branch
[redacted]
Box 4097
University Station

Tucson, Arizona

June 8, 1951

Memorandum

To : Paul T. Allsman, Denver, Colorado

From : Chief, Arizona-New Mexico Br., Mining Div., Region IV

Subject : Letter regarding DMA Dockets 21-50 and 494

Enclosed are original and 7 copies of a letter from Morris J. Elsing, our consulting mining engineer, which explains why he and L. L. Farnham were so long in completing their reports on the above dockets.

It might be wise to have this letter included in Elsing's and Farnham's final reports.

Walter R. Storms

Walter R. Storms

CC P. T. Allsman (7)
DMA 21--50
DMA 494
DF

Mining Division
Date Rec'd.
JUN 11 1951
BUREAU OF MINES
Denver, Colorado

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
MINING DIVISION
REGION IV

Arizona-New Mexico Branch
Box 4097

Tucson, Arizona

May 25, 1951

Memorandum

To : Walter R. Storms, Tucson, Arizona

From : M. J. Elsing, Consulting Mining Engineer, Tucson

Subject : DMA Docket 21-50, Tennessee Metals Corp.

On April 6, 1951, L. L. Farnham and I completed our field investigations of DMA Docket 21-50 covering the Tennessee-Schuylkill project and DMA Docket 494 covering the Mohave Metal Mining and Reduction Co. project, both located in the Wallapai district, Mohave County, Ariz.

The first application requests a loan of $350,000 to provide for the mining of 300 tons of ore per day and the second application requests a loan of $400,000 to provide milling and other treatment facilities for 400 tons per day.

The rough draft of the report on the Tennessee-Schuylkill project was completed May 11 and the rough draft of the report on the Mohave Metal Mining and Reduction Co. was completed May 21, 1951.

It is realized that the preparation of these reports has taken a great deal of time. I would like to show for the records what has been done and why it was considered so important to make the investigations so complete.

In the first place the conclusions to be drawn were not regarding two or three mines but the whole Wallapai district which includes 225 mines of which some 150 have produced ore.

It did not take long to arrive at a conclusion but it has taken a long time to assemble the data to prove that the conclusion is correct beyond the shadow of a doubt. A great many people besides the applicants are looking forward to the reopening of the Wallapai district and no doubt they will be greatly disturbed at our conclusion that the district is sub-marginal under present economic conditions of prices of metals and the cost of their production.

We have studied a great mass of data. At the Tennessee mine Mr. Langley allowed us to take everything we wanted in the line of maps. There was no single map showing ore reserves. Our first step in studying the Tennessee-Schuylkill mine was to make a composite assay map. We took assays from 24 separate assay maps and combined them so that ore reserves could be calculated. In calculating ore reserves we used over 600 samples. Average widths of ore were taken for each section of the mine and a weighted average grade was calculated for gold, silver, lead and zinc.

A table was made showing the yearly production of the mine since 1901 showing the average grade of the ore for each year in ounces of gold and silver per ton and the average percentage of copper lead and zinc.

Mr. Langley did not have a summary of the production and grade of the ore from the Summit, Alpha and other mines he proposed to work. We had to get this information from smelter settlement sheets, a long tedious job.

Except in the Tennessee-Schuylkill mine there is very little measured ore. Our conclusions as to possible production of the Wallapai district had to be based on the past production of scores of small producers. Some information was obtained and tabulated regarding 100 mines in the district.

Farnham and I have felt that the district should not be turned down without getting as much information about it as was available. We think our conclusions are unbiased and impartial and we are very willing to defend our position anywhere at any time.

M. J. Elsing

M. J. ELSING
Consulting Mining Engineer

Allaman

Here is your
laugh for the
day JFE

REGIONAL DIRECTOR'S
OFFICE
REGION IV
JUN 21 1951
BUREAU OF MINES
DENVER, COLORADO

June 13, 1951

Memorandum

Re: Dockets DMA 21 and 50
DMA 21 and 50X
Tennessee Metals Corporation
Lead-Zinc

To: Executive Secretary, D.M.A.

From: Chief, Lead-Zinc Branch, D.M.A.

Subject: Denial of production loan and of exploration proposal

DMA
P.F.A.

Routine

The field team report makes a thorough analysis of mining costs at this property versus expected income at present metal prices, and concludes that the proposed operation would be carried out at a loss of $8.18 per ton of ore treated. Hence, the field team recommends against a production loan. The Lead-Zinc Branch has reviewed the report of the field team and concurs in this conclusion.

The field team also points out that all of the mines of the district are submarginal under present metal prices and costs. The character and grade of ore to be expected from further exploration would be approximately the same as that of presently known ores in the district. The Lead-Zinc Branch therefore concludes that further exploration by the applicant is not warranted.

You also have in your files a confidential letter regarding the competence of the applicant, which is pertinent to both the decisions reached.

It is recommended that attached letter of denial be sent to applicant.

Returned herewith are:

1 Report of field team - transmittal date May 23, 1951.
3 copies of application forms 103, DMA 21 and 50X, dated May 25, 1951.
Original application, DMA 21 and 50, on NSRB Form 146, dated January 25, 1951, which is accompanied by various exhibits including longitudinal section on the mine, assay map, lease agreements, etc.
Numerous transmittal letters, correspondence with applicant, etc. (attached to January 25 docket).

Otto Herres

Approved:

Tom Lyon

Director, Supply Division

Otto Herres, Chief
Lead-Zinc Branch

ETMcKNIGHT:emp
6/13/51
Copies to: H.H. East, Jr.
Chief, Lead-Zinc Br
E. T. McKnight 420
R. H. Mote
Br. r. file 4214

L. F. Strobel
Directors r. file 4214 GSA

June 13, 1951

Re: Dockets DMA-21 and 30

Mr. Ralph R. Langley, President
Tennessee Metals Corporation
8943 Wilshire Boulevard
Beverly Hills, California

Dear Mr. Langley:

The Lead-Zinc Branch of the Defense Minerals Administration has reviewed the report that the field team has prepared on the properties of Tennessee Metals Corporation.

On the basis of this review, we must conclude that the grade of ore available is not rich enough at present metal prices to offset the high costs that would be involved in reopening and operating this property. As the operation cannot be operated at a profit, we are, therefore, not justified in recommending that the Reconstruction Finance Corporation advance public funds to finance the proposed operation.

We believe that the chances of finding higher grade reserves than those available at present or mined in the past are too remote to justify an additional outlay of funds for exploration when the economic situation is such that the existing ore reserves cannot be profitable mined.

I regret the decision that we have had to come to, and I can assure you that it was arrived at only after a thorough study of the many problems involved.

Very truly yours,

Tom Lyon

ETMcKNIGHT:emp
G 6/13/51

Tom Lyon, Director
Supply Division

Copies to: J.H. East, Jr. Region IV (2)
Chief, Lead-Zinc Br.
E. T. McKnight 4204 GSA
R. H. Mote
L. F. Strobel
Directors r. file 4214 GSA
Br. r. file 4214 GSA
Files

Box 1266 Kingman, Arizona

June 6, 1951

Memorandum

To: Landon Strobel, Executive Secretary, Defense Minerals Administration

From: Executive Officer, DMA Field Team, Region IV

Subject: DMA 21-58, Tennessee Metals Co.

We are enclosing additional information on the brochure for the Tennessee Metals Company, which was just received from the field. The report was mailed to you on May 23.

J. H. East, Jr.

Enclosure

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
MINING DIVISION
REGION IV

Arizona-New Mexico Branch
[redacted]
Box 4097
UNIVERSITY STATION

Mining Division
Date Rec'd.
JUN 4 1951
BUREAU OF MINES
Denver, Colorado

TUCSON, ARIZONA

May 31, 1951

Memorandum

To : Paul T. Allsman, Denver, Colorado

From : Chief, Arizona-New Mexico Br., Mining Div., Region IV

Subject : DMA 21-50, Tennessee Metals Co., Mohave County, Ariz.

Enclosed is brochure for the Arizona Metals Co., which Andy Shride just handed me. Evidently this is the original application for this company under DMA Docket 50 which was sent to C. A. Anderson. As you know, a later application was for the Tennessee Metals Co. and was docketed as DMA 21-50.

Walter R. Storms

Walter R. Storms

CC C. A. Anderson
DMA 21-50
DF

FOR VICTORY
BUY UNITED STATES SAVINGS BONDS AND STAMPS

May 28, 1951

Memorandum

To: Landon Strobel, Executive Secretary, Defense Minerals Administration

From: Executive Officer, Defense Minerals Administration Field Team, Region IV

Subject: DMA 21-50, Tennessee Metals Company, Mohave County, Arizona

We are attaching the original brochure of the above docket. The report was sent to Washington on May 23.

J. R. Hunt, Jr.

Attachment

JRH/ek
cc-Sam Allen

Mining Division
Region IV

May 23, 1952

Memorandum

To: BSM Field Team, Region IV

From: Chief, Mining Division

Subject: BSM Docket XI-49, Tennessee Metals Co., Mineral County, Arkansas

I have reviewed the reports by Ekling, Parker of the Bureau of Mines and Pabst and Brookfield of the Geological Survey and extend the confidential letter regarding compliance of management.

I concur in the conclusions presented and the recommendation for denial of the loan.

Paul T. Allsman

P. T. Allsman

OVOK DN 235 CLG TS 2841 PLSO EP TS EP OK O

TS 2841 T EP OPR EP OPR AG TS PLS OK VVMM

TS 2841 OK TSN 2841 GA PLS

THIS IS DENVER BUREAU OF MINES WILL YOU RELAY MESSAGE TO OUR OFICE TUCSON TLV

WILL DO GA PLS

DN 235 BUR MINES 5-22-51 4 20

W R STORMS BUR MINES TUCSON

REPORTS ON DMA 21 AND 269 TENNESSEE METALS AND BANNER MINING BEING HELP UP PENDING RECEIPT OF ORIGINAL BROCHURES WHICH DIDNOT ACCOMPANY YOUR REPORTS.

PT ALLSMAN

END PLS ACK CL THANKS

R 1 OK TNX

Mining Division
Region IV

May 22, 1951

Mr. Ralph E. Langley
Tennessee Metals Corporation
1045 South Bedford Street
Los Angeles 35, California

21-50

Dear Mr. Langley:

This is in reply to your letter of May 18, 1951, concerning your application for a loan by your Tennessee Metals Corporation under Docket Nos. DMA 21 and 50.

Unless you have specific instructions from Washington to fill out additional forms, it is my opinion that they are not required. It has been stated several times that the old original applications that were prepared before the new forms would be accepted.

The report from the Field Team in Tucson has been completed, and the geologic section has already been received. We expect the engineering section very shortly, and it will be submitted to Washington as soon as received.

If you are required to apply for serialization under Form MV-100, it is alright to refer to the original docket in answering any of the questions required.

Very truly yours,

Paul T. Allsman
Chief, Mining Division

PTA:ftm

WR Storms
DMA
Allsman
Chron.

Mining Division
Date Rec'd.
MAY 21 1951
BUREAU OF MINES
Denver, Colorado

TENNESSEE METALS CORPORATION
POST OFFICE BOX SIX
CHLORIDE, ARIZONA

May I8th, I95I

Mr. Paul T Allsman, Chief,
Mining Division,
U.S. Bureau of Mines,
224 New Customhouse,
Denver 2,
Colorado.

Dear Mr. Allsman;

Thanks for your letter of the I4th.

I will appreciate it very much if you will advise me when the report is sent on to Washington--and for whose attention there.

I have been reading some of the different forms--for obtaining priorities in getting equipment and also with respect to the matching fund.

On May 7 we sent to Washington--to Mr. Boyd--a set of the MF-I00 forms which is the application for priority. Instead of attaching the information and exhibits asked for we stated that all of the information and exhibits were contained in our application for financial assistance and gave the docket number.

Now I find that form MF-I03--under Mineral Order 5--asks for approximately the same information and states that if most of the questions asked therein have been answered on form MF-I00 we are not required to repeat on these MF-I03 forms.

In order to safe guard ourselves and be within the time limit stated we intend to file form MF-I03 also but I am uncertain whether it is sufficient to have given the information requested in form MF-I00 by reference to the Docket DMA 50 & 2I and then give the information asked for in form MF-I03 also by reference to DMA 50 & 2I? Nearly all of our data, reports, maps and records were given to the field team so we are without the necessary papers with which to make up the information asked for in form MF-I00 and part of that asked for in MF-I03.

What do you suggest we do about that?

Best wishes,

Ralph R. Langley

Ralph R. Langley
I045 South Bedford Street,
Los Angeles 35, Calif.

Mining Division
Data Rec'd.
MAY 24 1951
BUREAU OF MINES
Denver, Colorado

May 22, 1951

Mr. Ralph R. Langley,
1047 So. Bedford St.
Los Angeles 35, Calif.

My dear Mr. Langley:

We have sent Mr. W. G. Winsett, Chloride, Ariz., by registered mail, all of the maps and other data regarding the Tennessee-Schuylkill mine loaned Messrs. Elsing and Farnham.

We are today returning to you by registered mail all of the data regarding the Summit, Alpha, and other mines you loaned Elsing and Farnham, except a copy of your letter of January 25, 1951 to Mr. James Boyd and one copy of a map of the Alpha mine and one copy of a map of the Summit. We have kept these data for our files in as much as your letter of May 15 advises us to retain what we need.

We are also sending you a print of a tracing we have made of the big Tennessee-Schuylkill mine map.

We want to thank you very much for your cooperation in loaning us these data.

Sincerely yours,

Walter R. Storms, Chief
Arizona-New Mexico Branch

CC P. T. Allsman
21-50
DF

MJElsing:frj

May 29, 1951

Memorandum

To: Landon Sterns, Executive Secretary, Defense Minerals Administration

From: DMA Field Team, Region IV

Subject: DMA Project RI-20, Tennessee-Schuylkill Project, Vallecito Mining District, Mohave County, Arizona

We are attaching the original and two copies of the report on DMA Project RI-20, Tennessee-Schuylkill Project.

Also attached in a sealed envelope is a confidential letter regarding the competence of the management. From the statements made in this letter by Harold J. Kinney and Lloyd F. Fergusson, both of whom are responsible mining engineers in Arizona, the competence of the applicants can well be questioned. This confidential letter should not be allowed in general circulation.

We concur with the recommendations made in the report.

The original brochure as been requested from the Tucson office and will be forwarded by air mail as soon as it is received in this office.

(CONFIDENTIAL LETTER IN MR. EAST'S FILES)

J. H. East

J. H. East, Jr.

A. H. Koechmann

A. H. Koechmann

Attachments:
Original by air mail.
Two copies by regular mail.

Copies to Sterns, Anderson, Koechmann, Allmann, DMA files
JHE/cl

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

REGIONAL DIRECTOR'S OFFICE
REGION IV
JUN 4 - 1951
BUREAU OF MINES
DENVER, COLORADO

May 25, 1951

Honorable Carl Hayden
United States Senate
Washington 25, D. C.

4-50

My dear Senator Hayden:

I wish to thank you for your letter of May 19 calling to my attention a communication you received from F. J. Mullen of Kingman, Arizona, and a copy of a petition from residents of that section in support of the application made by Tennessee Metals Corporation to Defense Minerals Administration for Government financial assistance. Mr. Mullen's letter and the petition are returned herewith.

As stated in Mr. Mullen's letter, the DMA field team has completed their examination on the properties of Tennessee Metals Corporation and adjoining properties. It is expected that this report will be received at our Washington office in the very near future.

I wish to assure you that the application of Tennessee Metals Corporation will receive prompt and careful consideration as soon as the report comes in.

In case I can be of further assistance to you at any time, please do not hesitate to call on me.

Yours very truly,

JAMES BOYD

Administrator

OHERRES:ks

cc: Administrator
Strobel
Moon
2 copies to Region IV
Mote
McKnight
Herres
Files

Route

Date

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

REGIONAL DIRECTOR'S
OFFICE
REGION IV
MAY 21 1951
BUREAU OF MINES
DENVER, COLORADO

May 16, 1951

DMA 60 & 21
Tennessee Metals Corporation
Chloride District, Arizona

Honorable Carl Hayden
United States Senate
Washington 25, D. C.

Routed

My dear Senator Hayden:

I have your letter of May 10 requesting advice as to whether the report on the Tennessee Metals Corporation has been received.

The Tennessee Metals Corporation application and the area related to it comprise a rather extensive project and one that requires considerable investigation on the part of the field team. The report has not yet been completed in the field office although the field examination was finished on April 6 as mentioned in my previous letter.

I shall be pleased to let you know when final action is taken on the matter.

If I can be of further assistance to you at any time, please feel free to call on me.

Sincerely yours,

JAMES BOYD

Administrator

OHERRES:ks

cc: Administrator
Strobel
Moon
Mote
McKnight
Herres
2 copies Mr. J. H. East Jr. Region IV
Files

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

May 16, 1951

DMA-50 & 21
Tennessee Metals Corporation
Chloride District, Arizona

Mr. Ralph H. Langley, President
Tennessee Metals Corporation
8943 Wilshire Boulevard
Beverly Hills, California

Dear Mr. Langley:

I have your letter of May 12 requesting information concerning RFC loans.

It is my understanding that a request may be made directly to RFC for a loan in which case it examines and approves or disapproves the application. In the event that the application is made to DMA for a loan that RFC cannot handle, the procedure is for DMA, if the application is approved, to recommend the loan to DPA. Certification by DPA on approval of the DMA recommendation then is a directive to RFC to undertake the loan.

The report on your project has not yet been received from the field office. It will be considered promptly when it is received.

In case I can be of further assistance, kindly let me know.

Yours very truly,

Otto Herres

OTTO HERRES, Chief
Lead-Zinc Branch

OHERRES:ks

cc: Strobel
Moon
Mote
McKnight
Herres
Files
2 copies to Mr. J. H. East Region IV
Files

Mining Division
Region IV

May 15, 1951

Mr. Ralph R. Langley, President
8943 Wilshire Blvd.
Beverly Hills, California

Dear Mr. Langley:

This will acknowledge your letter to Mr. East, dated May 12, 1951 concerning Docket DMA 50 & 21. We already have copies of this correspondence.

Sincerely yours,

Paul T. Alleman
Chief, Mining Division

WDMcMillan:mo

TENNESSEE METALS CORPORATION
POST OFFICE BOX SIX
CHLORIDE, ARIZONA

May 12, 1951

Mr. J. H. East, Jr.
Regional Director
U. S. Bureau of Mines
224 New Customhouse
Denver, 2, Colorado

Re: Docket DMA 50 & 21

Dear Mr. East:

For your information we are sending you, herewith, the following:

Copy of	letter	from Mr.	Storms	dated	May 1st
"	"	"	"	"	4th
"	"	to	"	"	11th
"	"	from Mr.	Herres	"	7th
"	"	to	"	"	12th

Very truly yours,

TENNESSEE METALS CORPORATION

By Ralph R. Langley

Ralph R. Langley - President

REGIONAL DIRECTOR'S OFFICE
REGION IV
MAY 14 1951
BUREAU OF MINES
DENVER, COLORADO

RRL:D

Reply To
8943 Wilshire Blvd.
Beverly Hills, Calif.
CRestview 5-5371

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Arizona-New Mexico Branch
Box 4097
University Station

MINING DIVISION
REGION IV

Tucson, Arizona

May 1, 1951

Mr. Ralph R. Langley, Pres.,
Tennessee Metals Corp.,
P. O. Box 6
Chloride, Arizona

Dear Mr. Langley:

Your letter of April 25, attention of Messrs. Elsing and Farnham, has been received and contents noted.

The numerous other mines you mention and a score of others are being given consideration as their past grade, tonnage, smelter returns, and costs have a very definite bearing upon the possibilities of the district.

We are fully aware of your problem of doing assessment work before June 30 and we wish to be as helpful as possible, but it is not for us to say that your application will be approved or disapproved, or how long it will take to get the final answer. The matter of doing assessment work is for your decision.

Sincerely yours,

s/ Walter R. Storms

Walter R. Storms, Chief
Arizona-New Mexico Branch

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Arizona-New Mexico Branch
Box 4097
University Station

MINING DIVISION
REGION IV

Tucson, Arizona

May 4, 1951

Re: Docket DMA 50-21
Tennessee Metals Co.,
Mohave County, Ariz.

Mr. Ralph R. Langley
8943 Wilshire Blvd.
Beverly Hills, Calif.

My dear Mr. Langley:

This is in reply to your letter of May 2 to which are attached (1) a copy of your letter of May 2 to Otto Herres, Chief, Lead-Zinc Branch, Defense Mineral Administration, Washington, D. C.; (2) a copy of my letter to you of April 23 and (3) a copy of your letter of May 2 to Mr. J. H. East, Jr., Regional Director, Region IV, U. S. Bureau of Mines, Denver, Colo.

In your letter to Mr. Herres you state that you understood from Mr. Elsing that an over-the-market price contract was available. The past history of the district was discussed with you relative to production under the premium price plan and it was suggested that an analysis of present-day costs of production and present prices of metals might indicate that any appreciable production might require a premium price. Mr. Elsing knew that an over-the-market price contract was not available and any impression that you might have gotten that there was such a contract is an error on your part.

The problem before us is the study of an entire district. The final conclusions must be backed by all possible engineering and geological information. As with respect to your properties you have given this. We are doing everything possible to finish our report as promptly as possible.

Sincerely yours,

S/ Walter R. Storms

Walter R. Storms, Chief
Arizona-New Mexico Branch

COPY

FROM

TENNESSEE METALS CORPORATION

POST OFFICE BOX SIX

CHLORIDE, ARIZONA

May 11, 1951

Mr. Walter R. Storms, Chief
Arizona-New Mexico Branch
U. S. Bureau of Mines
University Station
Tucson, Arizona

Reply To
8943 Wilshire Blvd.
Beverly Hills, Calif.
CRestview 5-5371

Re: Docket DMA 50 & 21

Dear Mr. Storms:

Your letters of the 1st and 4th received.

It seems advisable to put the record straight with respect to the matter of over the market contracts and that of expanding the scope of the field examinations to include all of the many prospects and workings in the district - lest the attitude of the applicant appear incorrectly in the record.

As to over the market contracts - the records and facts - and our own personal realistic experience and knowledge of the situation, clearly indicate that, at present metal prices, if operating in substantial volume and with competent management, the values are such as will yield a quite satisfactory margin of profit to the operator without any such contract. However, we are interested in such a contract, if available, for protection against any drop in metal prices until any loan we may get is liquidated.

I do not recall any direct statement by Mr. Elsing that such contracts are available but, during our conversations the inferences and implications, with respect to that subject, were so strong that I may have simply taken it for granted that he was working out the cost and income phases with such a contract in mind.

Your understanding with respect to such contracts seems to be contrary to that of DMA and General Services Administration for I have before me letters from both Agencies advising us that such contracts are available and applicable. However, as stated above, if costs and values are figured as our experience indicates they should be, we do not need any such contract - at present metal prices - for the properties named in our application, except for the purpose indicated.

As to the many prospects and workings in our district, other than those mentioned in our application, none of them are related to nor in any way have any bearing upon, the properties covered by our application and none of them, nor production from them, are needed in order to provide the amount of production estimated in our application.

We have lived and operated in our district for many years and believe we know, generally at least, all of the properties, prospects and workings therein as completely as they can be known. Had we believed that any other property, within economical transportation limits of our own, were sufficiently important or would add anything, we would have included that in our project.

If such matters as the above, and all other phases of an applicant project, were laid out in the open and frankly discussed between the field examiners and representatives of the applicant, while making up a report, the report would or could correctly reflect the views of the applicant as well as the views and conclusions of the field team - thus saving much time and perhaps avoiding the necessity of asking for a re-examination or reconsideration.

We have no desire to be controversial. On the contrary, we want to work constructively with you. We are only interested in having a report reflect our own views correctly and in having a report completed - and in knowing when it is completed - as soon as possible.

Sincerely,

TENNESSEE METALS CORPORATION

By

Ralph R. Langley - President

Reply To
[illegible] Wilshire Blvd.
[illegible], Calif.
[illegible] 3[illegible]71

RRL:D

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

May 7, 1951

DMA- 50 & 21
Tennessee Metals Corporation

Mr. Ralph R. Langley, President
Tennessee Metals Corporation
8945 Wilshire Boulevard
Beverly Hills, California

Dear Mr. Langley:

I have your letter of May 2 concerning the field examination of your project and your correspondence with Mr. Storms in relation to the Golconda and certain other mines in the district under consideration.

Your comments with respect to the Golconda and other properties will be given attention when the report from the field team is received.

We have no information on the matter of over-the-market price contracts for lead and zinc ores which you state were discussed with Captain H. C. Maull during your visit with him in Phoenix on March 28. It is my understanding that no over-the-market contracts have received approval up to this time for lead and zinc under the Defense Production Act.

In case you are not interested in matching funds for exploration assistance, Government aid may be possible in the following forms:

1. Loans from the Reconstruction Finance Corporation upon certification by the Defense Minerals Administration.

2. Procurement contract which guarantees to the producer a floor price based on smelter settlement for the zinc content of his ore for a period and on terms to be arrived at by negotiation.

3. Tax amortization which must be certified by DMA.

I shall be pleased to do what I can to see that your application receives prompt consideration when it comes in from the field. In case I can be of further assistance, kindly let me know.

Yours very truly,

S/ Otto Herres

Otto Herres, Chief
Lead-Zinc Branch

COPY

FROM

TENNESSEE METALS CORPORATION

POST OFFICE BOX SIX

CHLORIDE, ARIZONA

May 1[illegible], 1951

Mr. Otto Herres, Chief
Lead-Zinc Branch
U. S. Department of Interior
Defense Minerals Administration
Washington 25, D. C.

Reply To
8943 Wilshire Blvd.
Beverly Hills, Calif.
CRestview 5-6371

Re: Docket DMA 50 & 51

Dear Mr. Herres:

Thanks for your letter dated the 7th.

I am now informed that the official term is "Procurement Contract" as used by you rather than the expression "Over-the-Market Contract" which I used in my letters. What we are interested in, if available, is some protection against a drop in present metal prices, at least until any loan granted us is liquidated.

With respect to loans, it has been my understanding that the RFC does not examine, approve or disapprove applications for loans but acts as fiscal agent for DMA and that a certification by DMA to RFC is a directive to RFC to make a loan in the amount and upon the terms and conditions stated in the certification. Is that correct?

We are greatly concerned about the delay in the field engineers report - and about the cause of the delay. I am sending you, herewith, copies of letters from Mr. Storms dated the 1st and 4th of May and also copy of my letter to Mr. Storms dated the 11th.

We do not believe that any properties, prospects or workings in the District other than those mentioned in our application, have any material bearing on our project. We believe that any other properties in the District which appear important to the engineers should be discussed in a separate report made after a report directly upon our project has been submitted, thus avoiding such costly delays.

We feel that our project should be considered on its own strength and merit, within the scope covered in the application and that no other elements should be added or considered as a part of or as having any bearing upon our application or project, without our knowledge and approval and at least without first discussing the particular matter with us in detail.

I hope the report will be submitted without further delay.

Sincerely,

TENNESSEE METALS CORPORATION

By

Ralph H. Langley - President

RHL:D

REGIONAL DIRECTOR'S OFFICE REGION IV MAY 17 1951 BUREAU OF MINES DENVER, COLORADO

Mining Division Date Rec'd. MAY 17 1951 BUREAU OF MINES Denver, Colorado

50-21

May 15, 1951

Mr. Ralph R. Langley
1047 South Bedford St
Los Angeles 35, Calif.

My dear Mr. Langley:

As requested in your telephone conversation of this afternoon, I am enclosing two sets (10 copies) of Form MF-103 and one copy of MD-5. The latter sheet gives the regulations governing exploration grants under the Defense Production Act of 1950. Submit four copies of Form MF-103 to the Defense Minerals Administration in Washington for each prospective loan.

As I have already sent you copies of Form MF-100, I assume you have sent them to Washington, so you will not need to re-submit that form. On Form MF-103, near the center of page 1, merely enter the date that you mailed Form MF-100 to Washington.

As requested, we will mail your maps to Chloride.

Sincerely yours,

Walter R. Storms, Chief
Arizona-New Mexico Branch

CC P. T. Allsman
DMA EXL
DF

WRStorms:frj

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Arizona-New Mexico Branch
SOUTHWEST EXPERIMENT STATION
Box 4097
UNIVERSITY STATION

MINING DIVISION
REGION IV

TUCSON, ARIZONA

Mining Division
Date Rec'd.
MAY 17 1951
BUREAU OF MINES
Denver, Colorado

May 15, 1951

Memorandum

To : Paul T. Allsman, Denver, Colorado

From : Chief, Arizona-New Mexico Br., Mining Div., Region IV

Subject : Twin Buttes & Mineral Hill Mines, Pima County, Ariz.

In regard to your telegram of May 9, attention T. M. Romslo, asking that we contact Mr. A. B. Bowman about the above docket, we have given Mr. Bowman two sets of Forms MF-100 and MF-103. He will mail them to the company's president in Oklahoma for his signature after answering all technical questions.

Bowman also took sets of Form MF-100 in order to apply for serial numbers for Twin Buttes and Mineral Hill in Arizona, and the Bonney-Manila and Misers Chest mines near Lordsburg, N. Mex.

Walter R. Storms
Walter R. Storms

CC P. T. Allsman
DMA-269
DF

Mining Division
Region IV

May 14, 1951

Mr. Ralph H. Langley, President
Tennessee Metals Corporation
1044 South Bedford Street
Los Angeles 35, California

2

Dear Mr. Langley:

In the absence of Mr. East, I am replying to your letter of May 2, 1951, regarding your application under the Defense Minerals Administration.

I have been advised by Mr. Storms that the report is in the process of typing and we expect to receive it this week. It will be forwarded to Washington immediately. We realize that considerable time has been consumed in making the examination. However, if we had not gone into it thoroughly, it is likely that it would have been returned from Washington for further investigation. We trust this will preclude any such necessity, and the application can be processed rapidly.

Very truly yours,

Paul T. Allsman
Chief, Mining Division

Copy to: W.R. Storms

PTA:ftm

DMA File
Allsman File
Chron. File

Altman
pls write
Langley and tell him
we expect report by May 18
and are doing all possible
to expedite report

East:

Discussed with Storm. Elsing expected to complete report about May 11-1951. Finished typing about May 18-1951.

P.T.C.

Acknowledge
Rec'd
with thanks
file

TENNESSEE METALS CORPORATION
POST OFFICE BOX SIX
CHLORIDE, ARIZONA

1045 S. Bedford Street
Los Angeles 35, Calif.

REGIONAL DIRECTOR'S
OFFICE
REGION IV
MAY 3 - 1951
BUREAU OF MINES
DENVER, COLORADO

May 2, 1951

Mr. J. H. East, Jr.
Regional Director
U. S. Bureau of Mines
224 New Customhouse
Denver 2, Colorado

Dear Mr. East:

You will understand from the attached that we are becoming quite concerned about the progress of our application for financial assistance.

The time element - particularly with respect to assessment work and other carrying charges is becoming quite important to us.

We will surely appreciate the expediting of the matter through your office.

The attached are for your information and files.

Sincerely,

TENNESSEE METALS CORPORATION

By Ralph R. Langley
Ralph R. Langley - President

RRL:D

COPY

FROM

TENNESSEE METALS CORPORATION

POST OFFICE BOX SIX

CHLORIDE, ARIZONA

May 2, 1951

Mr. Otto Herres, Chief
Lead-Zinc Branch
U. S. Department of Interior
Defense Minerals Administration
Washington 25, D. C.

Re: Docket DMA 50 and 21

Dear Mr. Herres:

Your letter of April 24th in which you say you are informed that the field examination of our project was completed around April 6th, received. That is about right. The two engineers, Messers Farnham and Elsing, finished their work on the 6th and the two geologists on the 9th. By the end of this week the engineers will have had four weeks, since completing their examination, in which to prepare their report.

The attached copy of letter from Mr. Storms, dated April 23rd, indicates the progress being made by the engineers as of that date. You will note his comments with respect to considering the district as a whole.

Our application embraces all of the properties in the district which can be gotten into important production reasonably soon. The engineers and geologists visited the properties named in the application. They also visited the Golconda property which was included in an application field by another applicant.

On April 25th I wrote Mr. Storms regarding the Golconda and certain other dormant mines or prospective mines in the district. An attaching copy of that letter.

The properties or prospects mentioned in paragraph seven of that letter are simply the general run of prospects found in any mining district. Those and the mines covered in our application embrace the entire district. There are no others. By supplying milling facilities for their ore, the owners of some of those prospects might start some production but such prospective properties are not of sufficient importance to justify delaying a report on our application.

The Golconda may be considered as a logical - but not necessarily essential - addition to our project. It would be unwise to attempt to open up that property and get it into production in less than one year from a standing start and with less than $100,000.00. We are interested in taking it on - provided the DMA is sufficiently interested to provide the necessary funds with which to handle it. And again, we would not like to have the report on our project held up awaiting a decision on the Golconda.

After an approval is effective we can then encourage production from such properties as those mentioned in paragraph seven and can then also consider adding the Golconda to the project.

In discussing the situation as a whole with Messers Farnham and Elsing I gained the impression that it was their intention to calculate and estimate,

from the records, maps and data furnished them, what safe average ore values they think could be depended upon, what the over-all operating costs would be, over a five year period and what, if any, over the market price contract we should have to insure steady volume operation at a fair profit to the operator. I consider that good mining wise business and as agreeable to them being ultra conservative in their estimates as to ore values. I have an idea their estimates in that respect will be substantially less than what our experience indicates the values will be.

I did not have the over-the-market price contract idea in mind when we filed our application but understand from Mr. Kising that such a contract is available and that understanding was confirmed by Captain H. C. Maull in my visit with him in Phoenix on March 28th and in a letter from his office dated March 19th.

We are not interested in the $10,000,000 matching fund for development program. We, like all of the less than major mining entities, are not in position to do any matching of funds. Such a program is definitely not applicable to us.

What we are particularly interested in is expiditing our application to a successful conclusion as fast as possible. What do we do to bring about a conclusion of our matter after the field report leaves Tucson?

I had expected to discuss with the field men the several important phases - such as the amount of funds required for each important part or phase of the project - the total amount considered safe and practical by the field men, the over-the-market price contract phase, the rate and method of pay back, and any other elements, so that their report would be a complete package on which they and we would be in agreement, thus expiditing the matter and avoid the necessity of making trips to Washington - but Mr. Storms advises that "these reports are confidential until released by the Defense Minerals Administration in Washington."

To us that is a wholly unexpected and unsatisfactory attitude. Responding to the urge and the promise of the Congress and the DMA, the respective owners of the Tennessee, Summit and other properties, changed their respective situations, tied their properties together, abandoned other programs which may have been advantageous and at considerable expense have held the combined project together, relying upon the promise and direction of Congress and DMA with respect to financing - for many months.

The matter is of great concern to us. We have a very large investment at stake. Why should anything with respect to our own business with the DMA be confidential as between the DMA and us? Are we not supposed to be working together - each applicant - with the DMA - in an effort to increase the supply of base metals for National Defense? We may not be in complete agreement with the fieldmen in all respects but we certainly are entitled to discuss all phases of our own business with them before their final report is filed in Washington

With respect to basis of financing and pay back, it was clearly the intention of the Congress that the DMA would loan money to and otherwise aid qualified mining projects to increase the supply of base metals on a basis which would not be acceptable to banks or investment bankers. If the DMA or its field teams have a different understanding of that phase of the situation we should have been so informed long ago.

Many of us are frustrated and concerned as to what we may expect. A number of us who know you and your background are depending on you for realistic performance and treatment in our dealing with the DMA.

It has been a long time since our application was dispatched on February 6th to the field team for examination. Now that the field team has examined the project - four weeks ago - we are hoping for reasonably fast procedure.

Sincerely,

TENNESSEE METALS CORPORATION

By

Ralph R. Langley - President

Reply To
8943 Wilshire Blvd.
Beverly Hills, Calif.
CRestview 5-5371

RRL:D

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Arizona-New Mexico Branch
Box 4097
University Station

MINING DIVISION
REGION IV

Tucson, Arizona

April 25, 1951

Re: Docket DMA-51-21

Mr. Ralph R. Langley
1045 S. Bedford St.
Los Angeles 35, Calif.

My dear Mr. Langley:

This is in reply to your letter to me of April 19 and your letter to Messrs. Farnham and Elsing of the same date.

You no doubt realize that consideration of Tennessee Metals Corporation Dockets DMA 50-21 necessitates a study of the district as a whole. We have much data including many reports on the district and we want to make a careful study of these before drawing any conclusions. Messrs. Farnham and Elsing are devoting their entire time to this matter and will continue to do so until their report is completed.

We are not only considering your applications, but also the operation of the entire district which makes the problem a big one.

In regard to your request of April 20 for a copy of the large map of the Tennessee workings, I would say that if possible we will supply you with one.

We note that upon completion of our work you wish the data on the Tennessee to be sent to Mr. Winsett and other data to be sent you. This will be done.

Sincerely,

S/ Walter R. Storms

Walter R. Storms, Chief
Arizona-New Mexico Branch

c.c. R. R. Langley, Box 1266, Kingman, Ariz.

COPY

FROM

TENNESSEE METALS CORPORATION

POST OFFICE BOX SIX

CHLORIDE, ARIZONA

Los Angeles California.
April 25th, 1951.

Mr. Walter R. Storms, Chief,
Arizona-New Mexico Branch,
U.S. Bureau of Mines,
University Station,
Tucson, Arizona.

Attention Messers
L. L. Farnham and Morris J. Maling.
Docket DM-50 & 51.

Dear Mr. Storms;

I am today advised by Mr. J. P. Ryan that he has sold the Producers Mill, near Chloride, to Salt Lake People who will dismantle and sell it off, probably at auction, thus, he advises, the options and agreements, including a lease on the Golconda mine, upon the basis of which Mr. Baggs and associates asked the DMA for financial assistance, are terminated.

The principal owners of the Golconda mine now advise me that they are terminating the lease to Messers Baggs and Reed and have asked me to consider taking a lease thereon.

Since you examined that property you are aware of its location with respect to the Summit Alpha and other mines or prospective mines which make up the Tennessee Metals project and I assume you have estimated the cost and time element of opening the Golconda mine for production.

If you believe the Golconda mine might materially add to the production of the district, that its potential justifies the additional financing --and itional to the amount required for the Tennessee Metals project as now set up--and if you believe, as I do, that the Golconda might well be included in our one major entity set up for the district as a whole, then if you think best to supplement your report on Tennessee Metals Corporation project with a report and recommendation on the Golconda and will so advise me, I will arrange for a lease or other arrangement on the Golconda and make it a part of our permanent ownership set up--provided any such arrangement does not delay or prolong the approval and consummation of our application as now set up.

I assume that you or Messers Falck and Broomfield got from Mr. Baggs the maps, reports and data, with respect to the Golconda, which he borrowed from the owners. If not I can supply you with copies.

The properties covered by our application--namely the Tennessee, Summit, Silver Legion, Copper Cage, Champion and

COPY

FROM

TENNESSEE METALS CORPORATION

possibly Detroit and Devil Mountain, are the only ones promising quick (60 days) production. The Golconda is generally expected to again become a large volume producer but not for perhaps twelve or eighteen months after development funds are available.

You probably have reports of the Bureau of Mines and Department of Mineral Resources of Arizona in your possession mostly reflecting conditions as of several years ago, on several other properties such as Samoia (Brighter Days) , Lone Jack, Silver Hill, Eureka, Juno, Manzineta, Minnesota Connor, Tintec, Columbus, Hercules-Badger, Pay Dirt and others.

We are acquainted with all those and realize that some of them may soon produce nominal amounts of ore--and may eventually develop volume production--but they are dormant now and each of them will require realistic supervision, equipment and payroll financing all of which should be provided by a major operator equipped to purchase and mill the ore--but no major operator shch as Tennessee Metals Corporation--should spread its facilities and finances out too soon or so fast or to such an extent as might interfere with its primary objective of getting the most available ore bodies into production in the shortest possible period of time.

As a whole, I feel certain that our set up as we have, and as we are herewith presenting it, particularly if supplemented with a five year over the market contract, is sound and, when property financed, will soon start a flow of increased base metal production which can be increased in volume to 300 tons or more daily within twelve to eighteen months after funds are available.

The time element is becoming rather critical, partly due to the necessity of doing assessment work before June 30th. Nearly all of our assessment work, including that of the Golconda, will be taken care of under our normal operations when we actually start operating whereas, if it must be done before our permanent financing is available it becomes quite a burden and problem. It is therefore quite important to us to know when you have completed and forwarded your report.

Respectfully submitted,

Tennessee Metals Corporation,

By_____ President.
Ralph R. Langley

COPY

FROM

TENNESSEE METALS CORPORATION

POST OFFICE BOX SIX

CHLORIDE, ARIZONA

May 2, 1951

Mr. Walter R. Storms, Chief
Arizona-New Mexico Branch
U. S. Bureau of Mines
University Station
Tucson, Arizona

Re: Docket DMA 50 & 21

Dear Mr. Storms:

The attached copies of letters to Messers Herres and East are for your information.

Sincerely,

TENNESSEE METALS CORPORATION

By

Ralph R. Langley - President

Reply To
9943 Wilshire Blvd.
Beverly Hills, Calif.
CRestview 6-5371

RRL:D

Mining Division
Date Rec'd.
MAY 1951
BUREAU OF MINES
Denver, Colorado

May 7, 1951

Air Mail

Memorandum

To : Paul T. Allsman, Denver, Colorado

From : Chief, Arizona-New Mexico Br., Mining Div., Region IV

Subject : Report on DMA Dockets 21-50 and 494

In answer to your recent memo with attached memorandum from Regional Director East, the rough draft of the reports for the above dockets should be completed by Messrs. Elsing and Farnham the end of this week. They then should be typed and mailed to you about May 17.

In writing this report, Messrs. Elsing and Farnham have had to weigh over 1,000 assays for gold, silver, copper, lead and zinc in calculating ore reserves. They also have had to examine data on at least 70 mines in the Kingman area.

Elsing and Farnham have found that, in general, none of the mines in the Kingman-Chloride area can produce at a profit at present metal prices. Therefore, they are obtaining enough data to thoroughly substantiate their position of rejecting applications in that area.

Both DMA Dockets 21-50 and 494 will be rejected unless higher than market prices are paid. We cannot tell Langley this so have had to stall him along.

Walter R. Storms

CC P. T. Allsman
DMA 21-50
DMA 494
DF

WRStorms:frj

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Arizona-New Mexico Branch
SOUTHWESTERN EXPERIMENT STATION
Box 4097
UNIVERSITY STATION

Mining Division
Date Rec'd.
MAY 8 1951
BUREAU OF MINES
Denver, Colorado

MINING DIVISION
REGION IV

TUCSON, ARIZONA

May 7, 1951

Air Mail

Memorandum

To : Paul T. Allsman, Denver, Colorado

From : Chief, Arizona-New Mexico Br., Mining Div., Region IV

Subject : Report on DMA Dockets 21-50 and 494

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Both DMA Dockets 21-50 and 494 will be rejected unless higher than market prices are paid. We cannot tell Langley this so have had to stall him along.

Walter R. Storms
Walter R. Storms

CC P. T. Allsman
DMA 21-50
DMA 494
DF

Mining Division
Date Rec'd.
MAY 3 1951
BUREAU OF MINES
Denver, Colorado

May 1, 1951

Mr. Ralph R. Langley, Pres.,
Tennessee Metals Corp.,
P.O. Box 6,
Chloride, Arizona

Dear Mr. Langley:

Your letter of April 25, attention of Messrs. Elsing and Farnham, has been received and contents noted.

The numerous other mines you mention and a score of others are being given consideration as their past grade, tonnage, smelter returns, and costs have a very definite bearing upon the possibilities of the district.

We are fully aware of your problem of doing assessment work before June 30 and we wish to be as helpful as possible, but it is not for us to say that your application will be approved or disapproved, or how long it will take to get the final answer. The matter of doing assessment work is for your decision.

Sincerely yours,

Walter R. Storms, Chief
Arizona-New Mexico Branch

CC P. T. Allsman
DMA 21-50
DF

MJElsing:frj

Mining Division
Data Feed
MAY 2 1951
Bureau of Mines
Denver, Colorado

April 30, 1951

Mr. Ralph H. Langley
1045 South Bedford Street
Los Angeles 35, Calif.

Dear Mr. Langley:

In answer to your letter of April 23, we are sending you 10 copies of Form MF-100, "General Technical Data for Use Under the Defense Production Act of 1950."

We are sorry that we have no extra copies of the Defense Minerals Administration's Order MO-7. This order states that you should apply, on Form MF-100, for a serial number not later than June 1. Priority and allocation assistance under the programs of the Defense Minerals Administration will be given only to producers who have been granted serial numbers as provided in this order. Send your applications to the Defense Minerals Administration, Department of the Interior, Washington 25, D. C.

Sincerely yours,

Walter H. Storms, Chief
Arizona-New Mexico Branch

CC P. T. Allsman
DMA Serialization
DF

WHStorms:frj

REGIONAL DIRECTOR'S
OFFICE
REGION IV
MAY 7 - 1951
BUREAU OF MINES
DENVER, COLORADO

May 4, 1951

Re: Docket DMA 50-21
Tennessee Metals
Co., Mohave
County, Ariz.

Mr. Ralph R. Langley
8943 Wilshire Blvd
Beverly Hills, Calif.

My dear Mr. Langley:

This is in reply to your letter of May 2 to which are attached (1) a copy of your letter of May 2 to Otto Herres, Chief, Lead-Zinc Branch, Defense Mineral Administration, Washington, D. C.; (2) a copy of my letter to you of April 23, and (3) a copy of your letter of May 2 to Mr. J. H. East, Jr., Regional Director, Region IV, U. S. Bureau of Mines, Denver, Colo.

In your letter to Mr. Herres you state that you understood from Mr. Klsing that an over-the-market price contract was available. The past history of the district was discussed with you relative to production under the premium price plan and it was suggested that an analysis of present-day costs of production and present prices of metals might indicate that any appreciable production might require a premium price. Mr. Klsing knew that an over-the-market price contract was not available and any impression that you might have gotten that there was such a contract is an error on your part.

The problem before us is the study of an entire district. The final conclusions must be backed by all possible engineering and geological information. As with respect to your properties you have given this. We are doing everything possible to finish our report as promptly as possible.

Sincerely yours,

Walter R. Storms, Chief
Arizona-New Mexico Branch

CC J. H. East, Jr.
P. T. Allsman
Mr. O. Herres
DMA 21-50
DF

MJElsing:frj

April 30, 1951

Memorandum

To: P. T. Allman

C. A. Anderson

From: Executive Officer, DMA Field Team, Region IV

Subject: Docket DMA 21-50, Tennessee Metals Company

It is noted in the weekly report that the Docket DMA 21-50, Tennessee Metals Company, report will not be ready until late in May, although the field work was done on April 6.

We are having so much heat put on us regarding this report, we will appreciate anything you can do to expedite forwarding the final report to this office.

J. H. East, Jr.

JHe/pl
Dr-DMA Files
Reading

CONFIDENTIAL

April 25, 1951

Memorandum

To: Landon Strobel, Executive Secretary, Defense Minerals Administration

From: DMA Field Team, Region IV

Subject: DMA Docket 21-50, Tennessee Metals Company

In a letter to Senator Carl Hayden from the Administrator, dated March 19, it was requested that the Field Team, Region IV, confer with certain individuals in connection with the investigation of the above docket. These parties were contacted and their confidential report is enclosed.

F. T. Allsman, Alternate

A. H. Koschmann

Enclosure

FTA/cl
cc-DMA files
Koschmann
Allsman

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Arizona-New Mexico Branch
[redacted]
Box 4097
University Station

Mining Division
Date Rec'd. MINING DIVISION
REGION IV

APR 24 1951

BUREAU OF MINES
Denver, Colorado

TUCSON, ARIZONA

April 23, 1951

Air Mail

Memorandum

To : Paul T. Allsman, Denver, Colorado

From : Chief, Arizona-New Mexico Br., Mining Div., Region IV

Subject : Confidential letter regarding DMA Docket 21-50, Tennessee Metals Co., Mohave County, Ariz.

Enclosed are original and 11 copies of a confidential letter by Morris J. Elsing and Lloyd L. Farnham of this office regarding the indebtedness of the Tennessee Schuylkill Corp., as requested by Dr. Boyd.

It would seem that the Tennessee Metals Co. probably was organized to "get around" this debt.

Elsing and Farnham are working on their report. As the docket is a "hot potato", they are trying to cover all angles.

Walter R. Storms

Walter R. Storms

CC P. T. Allsman
DMA21-50
DF

CONFIDENTIAL

DOCKET DMA 50 and 21

Summary of conference with Mr. W. P. Stuart and Mr. McRae of the Internal Revenue Department, Phoenix, Arizona, April 2 and 5, 1951

On March 26, 1951, the DMA Field Team, Region IV, requested that a conference be held with Messrs. F. L. Dye, J. A. Bathrick and Robert Paine of Kingman, Arizona, and Mr. W. P. Stuart, Collector of Internal Revenue at Phoenix, Arizona, in regard to the application of the Tennessee Metals Co. for an exploitation loan (DMA Docket 21-50). Therefore, Mr. Paine was interviewed in Kingman and Mr. Stuart in Phoenix by the Bureau of Mines examining engineers.

Messrs. Elsing and Farnham spent two hours and a half on April 2 discussing the operation of the Tennessee Schuylkill mine with Mr. McRae. Mr. W. P. Stuart, the head of the Internal Revenue Department was not in the office. Mr. McRae is handling negotiations respecting the Department's attempt to collect the money due the Government accrued during the operation of the property by N. A. Wimer, President of the Tennessee Schuylkill Corporation.

The total indebtedness of the Tennessee Schuylkill Corporation is approximately $150,000. Of this amount $49,000 to $50,000 is due the Internal Revenue Department largely resulting from Wimer's deducting withholding taxes from the employees and not paying these deductions to the Internal Revenue Department. Approximately $100,000 is owed the State and County and supply houses and individuals. Mr. McRae stated:

1. The U. S. claims are ahead of all others except a state tax sale certificate for $18,000.

2. He thought the company indebtedness could be discounted from $150,000 to $100,000 but the Internal Revenue would not agree to a discount. (On April 5 at a second conference Mr. Elsing saw Mr. Stuart and Mr. McRae at which time Mr. Stuart volunteered the information that his department would consider accepting settlement on the basis of a discount.)

3. He wanted to see the mine in operation and would hold off any foreclosure proceedings provided some reliable party took over.

4. He wanted 10 percent of the net smelter returns to apply on the company's indebtedness to the Internal Revenue Department.

5. He was very favorable to the operation of the property by Bathrick, Dye and Paine who are long time operators in the district and have established excellent reputations.

6. He had made trips to Los Angeles to try to interest possible operators of the property. The Harvey Mudd concern was mildly interested but would make no cash payments of any kind and would not pay more than 7.5 percent royalty. He was unable to get any action because of the very complicated financial mess into which the company had gotten itself. He also discussed the operation of the property with the Kwikset Locks, Inc., Anaheim, California. The company had under consideration the purchase of the property for $300,000 on the basis of a 15 percent royalty. He did not think that the lock company was entirely disinterested.

7. Mr. McRae was very emphatic in stating that he would not be sympathetic to operation of the property by Wimer. He further stated that R. R. Langley, President of the Tennessee Metals Company and Wimer had mutual interests in the Tennessee Metals Company, the new company now making application for a Government loan, and that he thought the Internal Revenue Department might force Wimer out of the picture by threatening foreclosure proceedings.

We learned from Langley that Wimer has a 28 percent interest in the new company held in another name and that in addition to a 10 percent royalty to be paid by the Tennessee Metals Company to the Tennessee Schuylkill Corporation an additional 2 percent royalty was to be paid to Wimer supposedly to reimburse him for money advanced the Tennessee Schuylkill from his personal funds.

On April 5 Mr. Stuart was also very emphatic in stating that he was very much against Wimer's participation in the operation of the property. He said he thought the Department would have just as much trouble with collecting taxes as before if Wimer remained in the picture. Mr. Stuart said Wimer had been under indictment in some eastern state.

Mr. R. R. Langley, president of the Tennessee Metals Company, stated that he proposed to employ Mr. Bathrick as mine superintendent, Mr. Paine as mill superintendent, and Mr. Dye as an assistant to himself.

Mr. Paine was interviewed at Kingman particularly as to the daily tonnage of ore that the Wallapai District could produce.

In a letter dated March 16 addressed to Mr. James Boyd, Mr. Paine denied any association with the project.

M. J. Elsing

M. J. ELSING

L. L. Farnham

L. L. FARNHAM

Mining Division
Date Rec'd.
APR 25 1951
BUREAU OF MINES
Denver, Colorado

April 23, 1951

Re: Docket DMA-51-21

Mr. Ralph R. Langley
1045 S. Bedford St.
Los Angeles 35, Calif.

My dear Mr. Langley:

This is in reply to your letter to me of April 19 and your letter to Messrs. Farnham and Klaing of the same date.

You no doubt realize that consideration of Tennessee Metals Corporation Docket DMA 50-21 necessitates a study of the district as a whole. We have much data including many reports on the district and we want to make a careful study of these before drawing any conclusions. Messrs. Farnham and Klaing are devoting their entire time to this matter and will continue to do so until their report is completed.

We are not only considering your applications, but also the operation of the entire district which makes the problem a big one.

In regard to your request of April 20 for a copy of the large map of the Tennessee workings, I would say that if possible we will supply you with one.

We note that upon completion of our work you wish the data on the Tennessee to be sent to Mr. Wimmett and other data to be sent you. This will be done.

Sincerely yours,

Walter H. Storms, Chief
Arizona-New Mexico Branch

CC R. R. Langley, Box 1266, Kingman, Ariz.
P. T. Allsman,
DMA 50-21
DF

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

REGIONAL DIRECTOR'S OFFICE
REGION IV
APR 30 1951
BUREAU OF MINES
DENVER, COLORADO

April 24, 1951

DMA 50 A 21
Tennessee Metals Corporation
Chloride District, Arizona

Mr. Ralph E. Langley, President
Tennessee Metals Corporation
P. O. Box 1266
Kingman, Arizona

Dear Mr. Langley:

Your letters dated March 7 and April 10 to Mr. James Boyd have been referred to me for reply.

I am informed that the field examination of your property was completed around April 6 and the report is expected in Washington very soon.

Mr. East is making every effort to expedite examination work and is sending out more than one man, that is, an engineer and geologist, only where it is considered that both may be needed.

In reply to your question concerning the use of Government funds to repay money borrowed prior to the approval of an application, I am enclosing for your information forms and regulations in relation to the Government exploration program. You will note that the regulations state work performed or costs incurred before the date of the contract shall not be allowed as costs in which the Government will participate. The same is true in case of an application for a loan or procurement contract. No commitment can be made prior to final action on the application.

In case I can be of further assistance, kindly let me know.

Yours very truly,

Otto Herres

OHERRES:ks

cc: Mr. Strobel
Mr. Moon
2 copies Mr. East Region IV
Mr. McKnight

OTTO HERRES, Chief
Lead-Zinc Branch

Enclosure Mr. Mote Mr. Herres Files
Mr. Langeley, 1045 S. Bedford St., Los Angeles 35, Calif.

Mining Division
Date Rec'd.

MAR 19 1951

BUREAU OF MINES
Denver, Colorado

March 16, 1951

DMA Docket 21-50
Tennessee Metals Co.,
Mohave Co., Ariz.

Mr. Ralph R. Langley
Box 1266
Kingman, Ariz.

My dear Mr. Langley:

In answer to your letter of March 15, it now seems that we will have engineers and a geologist visit your Tennessee Metals Company's property near Kingman, Mohave County, Arizona on April 3, 1951. However, if other examinations and reports are completed before that date we may be able to examine it on March 27.

If the April 3 date is changed I will notify you far enough in advance so you can have the power turned on and the water drained from the tunnel you mention.

Sincerely yours,

Walter R. Storms, Chief
Arizona-New Mexico Branch

CC R. R. Langley, Los Angeles
P. T. Allsman
C. A. Anderson
DMA 21-50
DF

WRStorms:frj

Mining Division
Date Rec'd.
APR 16 1951
Bureau of Mines
Denver, Colorado

REGIONAL DIRECTOR'S
OFFICE
REGION IV
APR 13 1951

REGIONAL DIRECTOR'S
OFFICE
REGION IV
APR 13 1951
BUREAU OF MINES
SAN FRANCISCO

2-50

April 11, 1951

Mr. Ralph R. Langley, Pres.
Tennessee Metals Corp.
P. O. Box 1266
Kingman, Ariz.

My dear Mr. Langley:

This is in reply to your letters of April 6 and 10th to Messrs. Kleing and Farnham.

They have advised me that it will be unnecessary for you to supply copies of maps we already have. We do, however, thank you for your offer.

We also wish to thank you for Mr. Payne's statement of the grade of the mill feed from the Copper Age during the operation of the Mohave Lead and Zinc Company.

Sincerely yours,

Walter R. Stearns, Chief
Arizona-New Mexico Branch

CC Mr. Langley, 1045 S. Bedford St., Los Angeles 35.
P. T. Allsman
21-50
DF

Mining Division
Date Rec'd.
APR 12 1951
BUREAU OF MINES
Denver, Colorado

April 10, 1951

Mr. Ralph H. Langley
Box 1266
Kingman, Arizona

My dear Mr. Langley:

Thank you very much for your letters of April 8 and 9. In regard to your letter of the 8th, asking if you could come down and help with the final report, these reports are confidential until released by the Defense Minerals Administration in Washington so I am afraid it would merely be an added expense for you to come to Tucson. We want to thank you for your help, but I believe Messrs. Kipling and Farnham have all the information that they need at this time.

In regard to your letter of the 9th about the Geological Survey's examination of your property, I am certain that Messrs. Paick and Bromfield made a very complete examination, but if you are not satisfied I would suggest that you get in touch with Mr. C. A. Anderson, District Supervisor for the Survey in Prescott. Mr. Anderson supervises all Geological Survey work in Arizona and New Mexico, and has charge of the Survey's Defense Minerals Administration examinations.

Sincerely yours,

Walter R. Storms, Chief
Arizona-New Mexico Branch

CC P. T. Allsman
CA. Anderson
DMA21-50
DF

WRStorms:frj

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Region IV

April 4, 1951

Memorandum

To: W. R. Storms, Tucson, Arizona

From: Chief, Mining Division

Subject: DMA 50-21, Tennessee Metals Corporation

The attached copy of a letter from J. R. Payne of Kingman is for your information in evaluating the above application.

P. T. Allsman

Attachment

PTA:vt

cc: File
DMA Files

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

REGION IV

OFFICE OF
REGIONAL DIRECTOR

224 NEW CUSTOMHOUSE
DENVER 2, COLORADO

April 2, 1951

Memorandum

To: P. T. Allsman (2)

Charles Anderson (2)

From: Executive Officer, DMA Field Team, Region IV

Subject: DMA 50-21, Tennessee Metals Corporation

The Chief of the Lead-Zinc Branch has forwarded a copy of a letter from J. R. Payne of Kingman, Arizona, denying that he is to be associated with the project. Please attach this to your copy of the brochure.

J. H. East, Jr.

J. H. East, Jr.

Attachment

COPY

Kingman, Arizona
March 14, 1951

Dr. James Boyd
Director Defense Minerals Administration
Washington 25, D. C.

Dear Dr. Boyd:

It has just been brought to my attention by Mr. McCree of the Treasury Department, Bureau of Internal Revenue, that in an application for a loan by the Tennessee Metals Co., an embryo corporation to reactivate the Tennessee Mine in Mohave County, Arizona, my name has been used indicating that I would be in charge of the mill and all surface operations.

I am writing this letter to disclaim any foreward knowledge of the use of my name and any arrangements or association with the project.

Sincerely ;yours,

/s/ J. R. Payne

April 2, 1951

Memorandum

To: P. T. Allsman (2)

Charles Anderson (2)

From: Executive Officer, DMA Field Team, Region IV

Subject: DMA 50-21, Tennessee Metals Corporation

The Chief of the Lead-Zinc Branch has forwarded a copy of a letter from J. R. Payne of Kingman, Arizona, denying that he is to be associated with the project. Please attach this to your copy of the brochure.

J. H. East, Jr.

J. H. East, Jr.

Attachment
JHE/el

~~cc-Keechmann~~
DMA files

DMA

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

March 27, 1951

REGIONAL DIRECTOR'S OFFICE REGION IV APR 2 - 1951 BUREAU OF MINES DENVER, COLORADO

Mr. J. R. Payne
Kingman
Arizona

DMA 50 & 21
Tennessee Metals
Corporation

Dear Mr. Payne:

Your letter dated March 14 to Dr. James Boyd concerning your lack of association with the project submitted by Tennessee Metals Corporation has been brought to my attention.

A copy of your letter disclaiming your approval of the use of your name in connection with the application for a loan is being referred to the field team for their information in investigating the project.

Yours very truly,

Otto Herres

OTTO HERRES, Chief
Lead-Zinc Branch

OHERRES:ks

cc: Mr. Strobel
Mr. Moon
Mr. Mote
Mr. McKnight
Mr. Herres
2 copies Executive Officer Field Team Region IV
224 New Customhouse Building
Denver 2, Colorado
Files

MTE

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

March 27, 1951

Mr. J. R. Payne
Kingman
Arizona

DMA 50 & 21
Tennessee Metals
Corporation

Dear Mr. Payne:

Your letter dated March 14 to Dr. James Boyd concerning your lack of association with the project submitted by Tennessee Metals Corporation has been brought to my attention.

A copy of your letter disclaiming your approval of the use of your name in connection with the application for a loan is being referred to the field team for their information in investigating the project.

Yours very truly,

Otto Herres

OTTO HERRES, Chief
Lead-Zinc Branch

OHERRES:ks

cc: Mr. Strobel
Mr. Moon
Mr. Mote
Mr. McKnight
Mr. Herres
2 copies Executive Officer Field Team Region IV
224 New Customhouse Building
Denver 2, Colorado
Files

C
O
P
Y

Kingman, Arizona
March 14, 1951

Dr. James Boyd
Director Defense Minerals Administration
Washington 25, D. C.

Dear Dr. Boyd:

It has just been brought to my attention by Mr. McCrea of the Treasury Department, Bureau of Internal Revenue, that in an application for a loan by the Tennessee Metals Co., an embryo corporation to reactivate the Tennessee Mine in Mohave County, Arizona, my name has been used indicating that I would be in charge of the mill and all surface operations.

I am writing this letter to disclaim any foreward knowledge of the use of my name and any arrangements or association with the project.

Sincerely yours,

/s/ J. R. PAYNE
J. R. PAYNE

Copy

C
O
P
Y

Kingman, Arizona
March 14, 1951

Dr. James Boyd
Director Defense Minerals Administration
Washington 25, D. C.

Dear Dr. Boyd:

It has just been brought to my attention by Mr. McCrea of the Treasury Department, Bureau of Internal Revenue, that in an application for a lease by the Tennessee Metals Co., an embryo corporation to reactivate the Tennessee Mine in Mohave County, Arizona, my name has been used indicating that I would be in charge of the mill and all surface operations.

I am writing this letter to disclaim any foreward knowledge of the use of my name and any arrangements or association with the project.

Sincerely yours,

/s/ J. R. PAYNE
J. R. PAYNE

Mining Division
Region IV

March 28, 1951

Memorandum

To: W. R. Storms

From: Chief, Mining Division, Region IV

Subject: DMA 50, Tennessee Metals Corporation

Please note the attached copy of a memorandum from the Field Team in connection with the above docket. I don't understand the purpose of this request. You may.

P. T. Allsman

PTa/cl

cc: DMA files
Allsman

March 26, 1951

Memorandum

To: P.T. Allman

Charles Anderson

From: TVA Field Team, Region IV

Subject: [illegible] 50, Tennessee Metals Corporation

Administrator James Boyd has requested the Field Team to confer with Mr. H. L. Dye, Mr. J. A. Goldrick and Mr. Robert Prino, all of Kingman, Arizona, and Mr. W. D. Stuart, Collector of Internal Revenue at Phoenix, in connection with the investigation of the DPA application of the Tennessee Metals Corporation, Docket [illegible] 50.

Before completing your investigation, please contact these men and make a separate report on the results of the interviews.

J. H. East, Jr.

J. H. East, Jr.

A. H. Koschmann

A. H. Koschmann

JHE/cl
cc-Koschmann
TVA files

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

March 19, 1951

DMA-50
Tennessee Metals
Corporation

Honorable Carl Hayden
United States Senate
Washington 25, D. C.

My dear Senator Hayden:

I wish to thank you for the letter to Mr. Otto Herres, Chief of the Lead-Zinc Branch DMA, dated March 13, confirming telephone conversation with your secretary Mr. Edward Hedgpeth relating to the application of Tennessee Metals Corporation DMA-50 for Government assistance.

The field team for Region IV is being requested to confer with Mr. R. L. Lyo, Mr. J. A. Sethrick and Mr. Robert Paine, all of Kingman, Arizona, as well as Mr. E. P. Stuart, Collector of Internal Revenue at Phoenix, Arizona, in their investigation of this project.

allegan
Scott

Your interest in this connection is appreciated and will be most helpful in our consideration of this particular application.

Sincerely yours,

JAMES BOYD

Administrator

O HERRES:KS

cc: Mr. Nete
Mr. McKnight
Mr. Herres
Mr. Strobel
Mr. Moon
2 copies Executive Officer Field Team
Mr. J. H. East, Jr.,
224 New Customhouse Bldg.,
Denver 2, Colorado
Administrator
Deputy Administrator
Files

March 7, 1951

21

Ralph R. Langley
1045 South Bedford Street
Los Angeles 35, California

Dear Mr. Langley:

This will acknowledge your letter, dated March 6, in reference to a procurement contract for the Tennessee Metals Corporation. When you are in a position to show that you can produce a given tonnage of concentrates, you should write to Captain H. C. Maull, Jr., Federal Supply Service, General Services Administration, 7th and D Streets, Washington 25, D. C., and it is possible that you can negotiate a procurement contract which will give you a guaranteed price. Procurement contracts are not given in connection with a Defense Minerals Administration loan. The details of a procurement contract can be obtained by writing to Captain Maull.

Procurement contracts are negotiated on a project-by-project basis. As a general rule, the General Services Administration will request that the Defense Minerals Administration make an examination to show the potentialities of the property in question. The information taken by the DMA engineers and geologists are virtually the same as when making application for a loan.

Sincerely yours,

J. H. East, Jr.

J. H. East, Jr.
Regional Director

JHE/cl
cc-DMA files

TENNESSEE METALS CORPORATION

POST OFFICE BOX SIX

CHLORIDE, ARIZONA

REGIONAL DIRECTOR'S OFFICE REGION IV MAR 7 - 1951 BUREAU OF MINES DENVER, COLORADO

LosAngeles California.
March 6th, 1951.

MR. J. H. East Jr.,
Regional Director,
U.S. Bureau of Mines,
224 New Customhouse,
Denver 2, Colorado.

Dear Mr. East;

Your remarks about a Procurement Contract at Tucson last week were very interesting but that matter is not clear to me. Will you please give me the facts with respect to such contracts.

Are such contracts given in connection with an approved application such as that of Tennessee Metals Corporation?

Are we eligible for a procurement contract which would guarantee present metal prices for as long as any part of such loan as may be granted remains due--or for any other definite time.

How do we go about making application for such a contract--and when?

At present metal prices our project can make satisfactory profit to pay the royalty to the Tennessee Schuylkill Corporation and to pay off the loan on a 10% of net smelter return basis and leave something besides--but at lower prices, so long as we have the two 10% s to pay we might run in the red.

Will appreciate whatever information you can send me.

Sincerely,

Ralph R. Langley

Ralph R. Langley

1045 South Bedford Street,
Los Angeles 35,
California.

JME

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

REGIONAL DIRECTOR'S
OFFICE
REGION IV
MAR 12 1951
BUREAU OF MINES
DENVER, COLORADO

March 7, 1951

Mr. Ralph R. Langley
President, Tennessee Metals Corp.
Box 1266
Kingman, Arizona

Re: Docket DMA - 50 & 21

DMA file attached

Dear Mr. Langley:

In reply to your letter of February 17, concerning the present status of the Tennessee Metals Corporation application for Government aid:

This application was reviewed by the Lead-Zinc Branch of the Defense Minerals Administration and referred on February 6, for information and advice to the Executive Officer, Field Team, Region IV, 224 New Customhouse Building, Denver 2, Colorado. No doubt by this time you have received some information from J. H. East, Jr., as to the action to be taken by the Field Team.

I trust this information satisfactorily answers your inquiry. If I can be of further service to you at any time, please feel free to call upon me.

Very truly yours,

OTTO HERRES

OTTO HERRES, Chief
Lead-Zinc Branch, DMA

RHMOTE/ppm

Copy to - Base Metals Br.
Mrs. Parker
R. H. Mote
Otto Herres, Lead-Zinc Br.
Lowell B. Moon, Minerals Div.
Ed McKnight, Geological Surv.
C. O. Mittendorf
L. F. Strobel
Files

2 copies to Executive Officer
Field Team, Region 4
Mr. J. H. East, Jr.
and
A. J. Koschmann
224 New Customhouse
Denver 2, Colorado

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

REGIONAL DIRECTOR'S
OFFICE
REGION IV
MAR 12 1951
BUREAU OF MINES
DENVER, COLORADO

March 8, 1951

Treasury Department
Internal Revenue Service
Office of the Collector
Phoenix, Arizona

IT:WMcR:PBJ

Attention: William McRae
Head, Income Tax Division

In re: DMA-50
Tennessee Schuylkill Corporation
Tennessee Metals Corporation
Mining Property - Chloride, Arizona

This will acknowledge and thank you for your letter dated February 23 concerning the application submitted to us by Tennessee Metals Corporation for a loan of $125,000.

The information given in your letter to the effect Kwikset Locks, Inc. of Los Angeles is interested in the possibility of being able to acquire the property with the view of financing operations by means of private capital is of interest. It is possible that this information will be helpful to us in further consideration of applications for assistance in operating the property.

OTTO HERRES

OTTO HERRES, Chief
Lead-Zinc Branch

OHERRES:ks

cc: Mr. Strobel
Mr. Mote
Mr. McKnight
Mr. Herres
2 copies to Executive Officer Field Team Region IV (with encl.)
224 Customhouse Bldg.
Denver 2, Colorado
Files

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

March 8, 1951

Treasury Department
Internal Revenue Service
Office of the Collector
Phoenix, Arizona

IT:WMcR:FBJ

Attention: William McRae
Head, Income Tax Division

In re: IMA-50
Tennessee Schuylkill Corporation
Tennessee Metals Corporation
Mining Property - Chloride, Arizona

This will acknowledge and thank you for your letter dated February 23 concerning the application submitted to us by Tennessee Metals Corporation for a loan of $125,000.

The information given in your letter to the effect Kwikset Locks, Inc. of Los Angeles is interested in the possibility of being able to acquire the property with the view of financing operations by means of private capital is of interest. It is possible that this information will be helpful to us in further consideration of applications for assistance in operating the property.

OTTO HERRES

OTTO HERRES, Chief
Lead-Zinc Branch

OHERRES:ks

cc: Mr. Strobel
Mr. Mote
Mr. McKnight
Mr. Herres
2 copies to Executive Officer Field Team Region IV
224 Customhouse Bldg.
Denver 2, Colorado
Files

~~LANDON F. STROBEL~~
Herres

TREASURY DEPARTMENT

INTERNAL REVENUE SERVICE

PHOENIX, ARIZ.

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

OFFICE OF THE COLLECTOR
DISTRICT OF ARIZONA

IN REPLYING REFER TO IT:WMcR:PBJ

February 23, 1951

REGIONAL DIRECTOR'S OFFICE REGION IV
MAR 1 5 1951
BUREAU OF MINES DENVER, COLORADO

Defense Minerals Administration
U. S. Department of the Interior
Washington 25, D. C.

Attention: Otto Herres, Chief
Lead-Zinc Branch

In re: DMA-50
Tennessee Schuylkill Corporation
Tennessee Metals Corporation
Mining Property - Chloride, Arizona

Reference is made to your letter dated February 15, 1951 concerning the application submitted by Tennessee Metals Corporation for a loan of $125,000. An application was previously submitted by Tennessee Schuylkill Corporation which, we are informed, was superseded by the application of Tennessee Metals Corporation. We are informed that the application of Tennessee Metals provided for a loan of $125,000 for certain purposes and that the application also included additional amounts which, if made, would aggregate $350,000.

We are today in receipt of a communication from Mr. Wimer of the Tennessee Schuylkill Corporation that the Bureau of Mines at Tucson, Arizona, and Salt Lake City has been requested to examine the mine and to submit the reports on the properties involved.

It is stated in your letter that it would be helpful if we would let you know more of the possibility of an independent party being able to acquire the property with the view of financing operations by means of private capital. Mr. William J. Currer, attorney at law, 411 West Fifth Street, Los Angeles 13, California, representing Kwikset Locks, Inc. of Los Angeles, has advised this office that his client contemplated submitting an offer to acquire the property under a lease and option agreement. The terms of the lease and option agreement were approximately as follows:

Royalty payments on ore having a value of more than $25 per ton	15%
Royalty payments on ore having a value of more than $15 but less than $25 per ton	12-1/2%
Royalty payments on ore having a value of less than $15 per ton	10%

Aggregate royalty payments $300,000.

MAR 1 1951

Copy of financial statement submitted by Kwikset Locks, Inc. indicated net worth of $1,476,339.83 and cash and Government bonds in the amount of $589,851.33. We are advised by Mr. Currer that the reason the offer has not been submitted to the Tennessee Schuylkill Corporation was the possibility of becoming involved in a law suit with Mr. Langley and/or the Summit Alpha Mines, of which Mr. Langley is the principal shareholder and officer. We were advised by long-distance telephone this week by Mr. Currer that his client was still interested in acquiring the property.

We are of the opinion that the Tennessee Schuylkill Corporation has not been merged with Arizona Metals Corporation or the Summit Alpha Mine. Mr. Wimer and Mr. Langley both stated that a lease agreement was entered into with Tennessee Metals Corporation and that this corporation had also acquired leases on the Arizona Metals Corporation mining property and the Summit Mine.

W. P. STUART, Collector

By William McRae
Head, Income Tax Division

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Mining Division
Date Rec'd.
MAR 15 1951
BUREAU OF MINES
Denver, Colorado

Arizona-New Mexico Branch
[redacted] EXPERIMENT STATION
Box 4097
UNIVERSITY STATION

MINING DIVISION
REGION IV

TUCSON, ARIZONA
March 13, 1951

Memorandum

To : Paul T. Allsman, Denver, Colorado

From : Chief, Arizona-New Mexico Br., Mining Div., Region IV

Subject : DMA Docket 21-50, Tennessee Metals Corp., Mohave Co., Ariz.

In the brochure for the above docket, the company frequently refers to a letter written to Dr. James Boyd on January 25, 1951. No copy of this letter came with the brochure so we are in the dark about the items referred to in the letter.

Will you see if the Field Team can obtain a copy of this letter?

I intend to send Farnham and Elsing up to check this application if Farnham ever reports for duty.

Walter R. Storms

Walter R. Storms

CC DMA 21-50
DF

Dr. Boyd's attached

no answer required

February 20, 1951

Memorandum

To: P. T. Allsman, Chief, Mining Division

Charles Anderson, USGS

From: Field Team, DMA, Region IV

Subject: Tennessee Schuylkill Company and Arizona Metals Company, Dockets DMA 21 and 50.

Enclosed is a revised application of the Tennessee Schuylkill Company and the Arizona Metals Company, Dockets DMA 21 and 50. You should note that a new company has been formed under the name of Tennessee Metals Company. All correspondence relating to this application should be referred to by both docket numbers, that is, DMA 21 and 50.

Please arrange to make a thorough examination of this property. In past correspondence, I recall that Mr. Ralph Langley requested that he be given advance information so that he would be present or have someone present to show you the property. Please comply with Mr. Langley's request.

This application is rather "hot" inasmuch as considerable political pressure has been put on our Washington office.

We are forwarding the brochure to Mr. Allsman to to attach to Docket DMA 50, which was forwarded to him on January 10 by the Field Team.

J. H. East, Jr.

J. H. East, Jr.

Attachments -
Memo to Field Team, 2/6/51
MSRB 146 (one copy)
5 exhibits

A. H. Koschmann

A. H. Koschmann

Copy to - Allsman (2)
Anderson
Koschmann
DMA files

JHE/cl

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

February 6, 1951

Re: Docket DMA 50 and
DMA 21

Memorandum

To: Executive Officer of Field Team, Region IV

From: Lead-Zinc Branch, DMA

Subject: Docket DMA-50 and DMA-21
Tennessee Metals Corporation
Chloride, Arizona

REGIONAL DIRECTOR'S
OFFICE
REGION IV
FEB 13 1951
BUREAU OF MINES
DENVER, COLORADO

These documents represent the revised application of the Tennessee Schuylkill Company and Arizona Metals Company for Government assistance under the Defense Production Act of 1950, referred to in my memorandum of January 23, 1951. It should be noted that the two companies have merged and formed a new company, Tennessee Metals Corporation.

This application supersedes the original applications DMA-50 and DMA-21 but a new docket number has not been given this revised version, therefore all correspondence relating to these properties must carry the original docket numbers.

Edwin T. McKnight
for OTTO HERRES, Chief
Lead-Zinc Branch, DMA

Approved:
DMA Operating Committee

C. O. Mittendorf
Acting Chairman

J. H. Hedges
J. H. Hedges

T. P. Thayer
for Olaf N. Rove

DMA

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

FEB 20 1951

February 15, 1951

In re: DMA-50
Tennessee Schuylkill Corp.
Tennessee Metal Corporation
Mining Property - Chloride,
Arizona

Mr. W. P. Stuart
Collector, Internal Revenue Service
Treasury Department
Phoenix, Arizona

Dear Mr. Stuart:

This will acknowledge your inquiry of February 2 forwarded to us by Mr. J. H. East, Jr., Director, Region IV, Bureau of Mines, concerning the indebtedness of the above named corporation.

We are advised that Tennessee Schuylkill Corporation has been merged with Arizona Metals Corporation to form a new company named Tennessee Metals Corporation. Application from the new company has been received requesting a loan of $125,000. This application has been forwarded by the Lead-Zinc Branch DMA to the field team Region IV for investigation. A report giving information as to the engineering and geological aspects of the company's proposal is required before we can determine whether or not the application should be approved. In this connection, it would be helpful if you would let us know more about the possibility of an independent party being able to acquire the property and finance operations by means of private capital.

Very truly yours,

OTTO HERRES, Chief
Lead-Zinc Branch

O HERRES:ks

cc: Mr. Mote
Mr. McKnight
Mr. Herres
2 copies to Field Team Region IV
Files

February 6, 1951

Memorandum

To: Otto Harres, Chief, Lead-Zinc Branch, DMA

From: Field Team, DMA, Region IV

Subject: Internal Revenue Service letter regarding Tennessee Schuylkill Corporation.

We are attaching a letter from William McRae, Head, Income Tax Division, Internal Revenue Service, Treasury Department, Phoenix, Arizona, dated February 2, regarding the Tennessee Schuylkill Corporation (DMA 50, DMA 21). A copy of our reply to this letter is attached. Please reply to the Income Tax Division letter and send us a copy of your letter.

J. H. East, Jr.

A. H. Koschmann

Attachment

JHE/cl
cc-DMA files
~~Koschmann~~
PT Allsman

February 6, 1951

Mr. W. P. Stuart
Collector, Internal Revenue Service
Treasury Department
Phoenix, Arizona

Attention: William McRae
Head, Income Tax Division

Dear Mr. Stuart;

Referring to your letter of February 2 regarding the Tennessee Schuylkill Corporation, it is our understanding that the applications for Government assistance made by Arizona Metals Company has been withdrawn and that a joint application of the Arizona MetalsCompany, SummittAlpha Mines, and the Tennessee Schuylkill Corporation, is to be filed. We have not yet received the joint application. The engineers and geologists of the Defense Minerals Administration have not examined the property and therefore cannot supply you with any information regarding possible future recommendations.

We are forwarding your letter to Mr. Otto Herres, Chief, Lead-Zinc Branch, Defense Minerals Administration, Washington, D.C., for further reply.

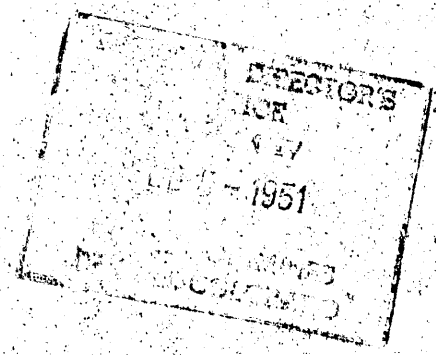
Sincerely yours,

J. H. East, Jr.
Executive Officer
Field Team, DMA

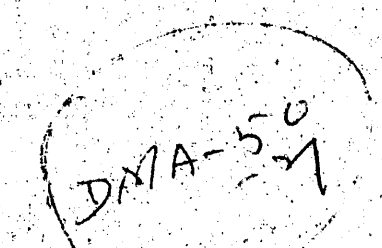
JHE/cl
cc-PT Allsman
DMA files

DMA files

IT:MicR:PBJ



February 2, 1951



J. H. East, Jr.
Regional Director
Bureau of Mines
224 New Customhouse
Denver 2, Colorado

In re: Tennessee Schuylkill Corporation
c/o N. A. Winer, President
9943 Wilshire boulevard
Beverly Hills, California
Tennessee Metals Corporation
Mining Property-Chloride, Arizona

The above-named corporation is indebted to the United States on account of Federal taxes assessed and outstanding for the years 1943 through 1949 in the aggregate amount of approximately $50,000, including interest. According to information on file in this office, the corporation's indebtedness aggregates approximately $125,000, including Federal taxes and state and county taxes, amounting to approximately $36,000.

We are advised by Mr. Winer that an application for a loan has been submitted to the Defense Minerals Administration and/or to your office in the amount of $250,000. We shall appreciate your courtesy in advising us at the earliest possible date whether or not the application has been submitted through your office and the present status of the application, that is, whether or not it will probably receive favorable consideration.

This inquiry should not be considered as an implied recommendation that the loan be made nor should this statement be considered as a recommendation that the loan be rejected. The information is needed, however, to determine whether or not the Collector's consent should be given to another offer by an independent party to acquire the property under lease and option and which would contemplate operations financed by private capital.

We shall appreciate an immediate reply from you, together with any comment you may care to make concerning the application for a loan.

W. P. STUART, Collector

By William McRae
Head, Income Tax Division

ADDRESS ALL COMMUNICATIONS TO
THE DIRECTOR, U. S. BUREAU OF MINES
WASHINGTON, D. C.

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
~~BUREAU OF MINES~~

WASHINGTON 25, D. C.

RECEIVED
CENTRAL
REGION IV
FEB 2 - 1951
BUREAU OF MINES
DENVER, COLORADO

January 24, 1951

Hon. Carl Hayden
United States Senate
Washington, D. C.

Dear Senator Hayden:

Your letter of January 16 concerning Docket DMA-50, and enclosing a letter dated January 9 addressed to you from Mr. N. A. Wimer, President, Tennessee Schuylkill Corporation has been received.

I am sending a copy of Mr. Wimer's letter to the field team that has been assigned the examination of the Arizona Metals Company property with the suggestion that information be gathered so that your proposal and that of the Arizona Metals Company may be considered either separately or jointly. With the information in the hands of the field team it will be possible to expedite consideration of the application for assistance in either separate or joint form.

I am taking no action on the tax lien matter as it seems to me that any action in that direction would come appropriately from your office. I shall be very happy, however, to furnish the Internal Revenue Commissioner with a progress report in DMA's consideration of these applications upon request.

The correspondence from Mr. Wimer is returned herewith, as requested. If I can be of further service at any time, please do not hesitate to call upon me.

Very truly yours,

CHARLES W. MERRILL, Chief
Base Metals Branch

CWMERRILL/rhr

Copy to: Base Metals Branch (2)
O. N. Love
J. H. Hedges
O. Herres
Files
S. H. Williston
L. F. Strobel
E. C. McKnight
R. H. Mote
2 carbons to Executive Field Officer, Region IV - A. S. Koschmann
J. H. East, Jr.

ADDRESS ALL COMMUNICATIONS TO
THE DIRECTOR, U. S. BUREAU OF MINES
WASHINGTON, D. C.

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
~~BUREAU OF MINES~~

WASHINGTON 25, D. C.

FEB 2 - 1951

DMA

January 25, 1951

Hon. Carl Hayden
United States Senate
Washington, D. C.

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The correspondence from Mr. Wimer is returned herewith, as requested. If I can be of further service at any time, please do not hesitate to call upon me.

Sincerely yours,

JAMES BOYD

Administrator

Enclosure

CAMERILL/rhr

Copy to: Base Metals Branch (2)
O. N. Rove
J. H. Hedges
S. H. Williston
C. Herres
R. H. Mote
L. F. Strobel
W. T. McKnight
Files
~~2~~ carbons to Executive Field Officer, Region IV
A. S. Koschmann
J. H. East, Jr.

Mining Division
Region IV

January 24, 1951

Memorandum

To: W. R. Storms

From: P. T. Allsman, Chief, Mining Division

Subject: DMA Dockets 50 and 21, filed by Arizona Metals Co. and the Tennessee Schuylkill Corporation, respectively.

Please be guided by the instructions contained in the copy of a letter from the Field Team, DMA, Region IV, enclosed.

P. T. Allsman

Enclosure

cc: PT Allsman
DMA files
Chron

January 22, 1951

Memorandum

To: P. T. Allaman, Chief, Mining Division, Bureau of Mines, Region IV.

Charles Andersen, U. S. Geological Survey, Prescott, Arizona.

From: ~~Regional Director, IV~~. Field Team, DMA, Region II

Subject: DMA Dockets 50 and 21, filed by Arizona Metals Co. and the Tennessee Schuylkill Corporation, respectively.

We are in receipt of a letter from the Operating Committee advising that DMA Dockets 50 and 21, filed by Arizona Metals Co. and the Tennessee Schuylkill Corporation, respectively, have been cancelled and that a combined application will be filed in the near future. There is to be no work done on DMA Dockets 50 and 21 until further advice is received.

J. H. Ernst Jr.
J. H. Ernst, Jr.

A. H. Koschmann
A. H. Koschmann

Copies to: A. H. Koschmann
Charles Andersen (?)
P. T. Allaman
DMA files
J. H. Ernst, Jr.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

MINERALS DEFENSE ADMINISTRATION
OFFICE
REGION IV
JAN 16 1951
BUREAU OF MINES
DENVER, COLORADO

January 11, 1951

Memorandum

To: John H. East, Jr., Executive Officer, Field Team Region IV

From: Lead-Zinc Division, DMA

Subject: DMA Dockets 50 and 21, filed by Arizona Metals Co. and Schuylkill Corp. respectively

As you may recall, there has been some correspondence recently between Ralph R. Langley and the Bureau of Mines regarding a possible merger of the Arizona Metals Company and the Tennessee Schuylkill Corporation. I received a telephone call late Monday, January 8 from both Langley and N. A. Wimer, who is president of the Tennessee Schuylkill Corporation, which indicated that the two companies have completed their negotiations for consolidating their holdings. It was their wish that no further action be taken on Dockets 21 and 50 as they are preparing a new proposal covering both properties. When the new proposal from Langley and Wimer is received, it will be forwarded promptly for field review and recommendation. It will, therefore, be unnecessary to process further the original proposals from these companies which are now in your hands.

Otto Herres

OTTO HERRES, Chief
Lead-Zinc Division, DMA

APPROVED -

Act.Chairman, Operating Committee

J. N. Hedges

J.H.Hedges

for Quentin T. Fogelquist

Olaf N. Rove

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

January 11, 1951

Memorandum

To: John H. East, Jr., Executive Officer, Field Team Region IV

From: Lead-Zinc Division, DMA

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OTTO HERRES

OTTO HERRES, Chief
Lead-Zinc Division, DMA

Copy to Executive Field Officer, Field Team Region IV
John H. East, Jr.
A. S. Koschmann

APPROVED -
S. H. WILLISTON
Act. Chairman, Operating Committee

J. H. Hedges,
J. H. Hedges

for Singewald
Olaf N. Rove

REGIONAL DIRECTOR

Region IV

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
224 NEW CUSTOMHOUSE
DENVER 2, COLORADO

October 24, 1950

Mr. E. A. Ulmer, President
Tennessee Schuylkill Corporation
[illegible] Wilshire Boulevard
Beverly Hills, California

Dear Mr. Ulmer:

This will acknowledge your letter dated October 21, 1950, which was received in duplicate, in reference to an application for a loan under the Defense Production Act of 1950.

We have placed your application in our files pending the promulgation of the rules regarding loans, at which time action will be taken.

Sincerely yours,

J. H. East, Jr.
J. H. East, Jr.
Regional Director

JHEJr:

cc: [illegible] Gillman
[illegible] Bozma

Form 6-98

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

U. S. GOVERNMENT PRINTING OFFICE 16—53493-2

TENNESSEE - SCHUYLKILL CORPORATION
Wallapai District
STOPE MAP
Mohave County, Ariz.
SCALE: 1" = 50'
By: S.K.G.
LEGEND
MINED
MEASURED
INDICATED
INFERRED
Sample assay order: Au, Ag, Pb, Zn
For detailed assays see appendix.
Figure 1 (DMA docket 21-50)
TENNESSEE SHAFT
SCHUYLKILL SHAFT
TENNESSEE CLAIM
JOHNNY BULL CLAIM
SCHUYLKILL CLAIM
PROPOSED DRIFT
1600 ELEVATION
FAULT
OLD STOPE
1600 WINZE
OLD 500 WINZE
MINED PRIOR TO 1918
STOPED PRIOR TO 1917
Property North End line (Approx.)