



CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
3550 N. Central Ave, 2nd floor
Phoenix, AZ, 85012
602-771-1601
<http://www.azgs.az.gov>
inquiries@azgs.az.gov

The following file is part of the G. M. Colvocoresses Mining Collection

ACCESS STATEMENT

These digitized collections are accessible for purposes of education and research. We have indicated what we know about copyright and rights of privacy, publicity, or trademark. Due to the nature of archival collections, we are not always able to identify this information. We are eager to hear from any rights owners, so that we may obtain accurate information. Upon request, we will remove material from public view while we address a rights issue.

CONSTRAINTS STATEMENT

The Arizona Geological Survey does not claim to control all rights for all materials in its collection. These rights include, but are not limited to: copyright, privacy rights, and cultural protection rights. The User hereby assumes all responsibility for obtaining any rights to use the material in excess of "fair use."

The Survey makes no intellectual property claims to the products created by individual authors in the manuscript collections, except when the author deeded those rights to the Survey or when those authors were employed by the State of Arizona and created intellectual products as a function of their official duties. The Survey does maintain property rights to the physical and digital representations of the works.

QUALITY STATEMENT

The Arizona Geological Survey is not responsible for the accuracy of the records, information, or opinions that may be contained in the files. The Survey collects, catalogs, and archives data on mineral properties regardless of its views of the veracity or accuracy of those data.

HERNDON J. NORRIS

FORMERLY OF THE FIRM OF

NORRIS, NORRIS & FLYNN

OF PRESCOTT, ARIZONA

ANNOUNCES THE OPENING OF OFFICES

FOR THE GENERAL PRACTICE OF LAW

AT 714 BANK OF ITALY BUILDING

LOS ANGELES, CALIFORNIA

PHONE TRINITY 0685

U.S. mine file 3/28. 42

ALVO V. ALVENSLEBY.

to E. M. Hay,
Lawyer

Colman Bldg
Seattle Wash.

U. S. MINE (NAVY GROUP)

Owned by Wm. F. Burns and J. W. Hobbs of Prescott who gave lease and option on January 16th, 1942. to H. L. Williams (Hillside Mine) for \$15,000 payable \$7500 on January 17th, 1943 and \$75.00 on January 17th, 1944, with 10% royalty on shipments and minimum rental payment of \$200.00 per month from April 17th, 1942, to apply on purchase price.

Williams assigned contract to Alvensleben who called 3/20 and 3/21 1942 .

Five unpatented Lode Claims

- (U. S. Lode
- (U. S. Lode Amended

U. S. Lode #1, 2, 3, & 4. Located on fair road $4\frac{1}{2}$ miles north west from Skull Valley.

Note report by Hinds and comment by Norville.

Estimate made to Alvensleben.

Ore, blocked out by shaft, etc. 48,800 tons at average value as per smelter returns on shipments of \$32.23 per ton (1927 prices) equals gross value of

\$1,572,824.

Less cost of mining, freight, etc. 390,400

Net profit on above \$ 1,182,424

Also ore on dump 10,000 tons at average value \$22.81 per ton having gross value of

\$ 228,100

Less freight & treatment 30,000

NET PROFIT 198,100

Additional probable ore developed by adit tunnel which cuts 45 degrees inclined shaft at depth of 212' from collar or 106' vertical depth.

28000 tons with average grade about as per Pitkin assay noted below.

There are 1600' of underground workings including 520' of inclined

shaft and drifts and crosscuts including the long adit.

Water now runs out of adit tunnel which is partly blocked by cave and which Alvenslaben expects to clean out for sampling at same time that he samples the dump and before unwatering the lower workings.

Ore along adit from portal to shaft is said to assay \$13.70 to \$60.00 per ton (1927 prices)

On 450' level a body of ore was developed of similar grade and Williams claims that there is a 3' vein of solid ore, very rich.

ASSAYS OF ORE.

	Shipment #2 in 1928 58349#. Smelter assay.	Pitkin assay of Engineer's sample.	Another Sample.
Au. oz.	0.20	0.01	0.02
Ag. oz.	6.47	21.10	20.90
Pb. %	35.3	52.14	18.0
Cu.	1.36	0.78	2.46
Zn.	12.0	5.51	21.0
Fe	10.3	19.0	13.0
S	20		25.
Insol.	17.1		9.6
Mn.	0.1		
CaO	1.4		4.2
As	Tr.		
Sb	Tr.		

(NOTE BY G. M. C.) Hinds and Norville are not engineers of any reputation and reports seem to be much exaggerated and are probably worthless. Williams is notoriously unreliable. Shipment no doubt represents sorted ore and samples were probably carefully selected specimens. Calculations of profits are absurd. Assays show very erratic quantities of the different metals and ore is evidently complex and occurrence probably very pockety.

Mine may have value if properly developed and location etc. are favorable. Water for a mill could probably be obtained from wells sunk in local gulches.

Examination of adit and upper workings would probably involve 2 days work on ground with Brunton survey and cutting perhaps 30-50 samples

HAUSSERMANN, DAVISON & SHATTUCK

2.

Mr. George M. Colvocoresses

August 22, 1941

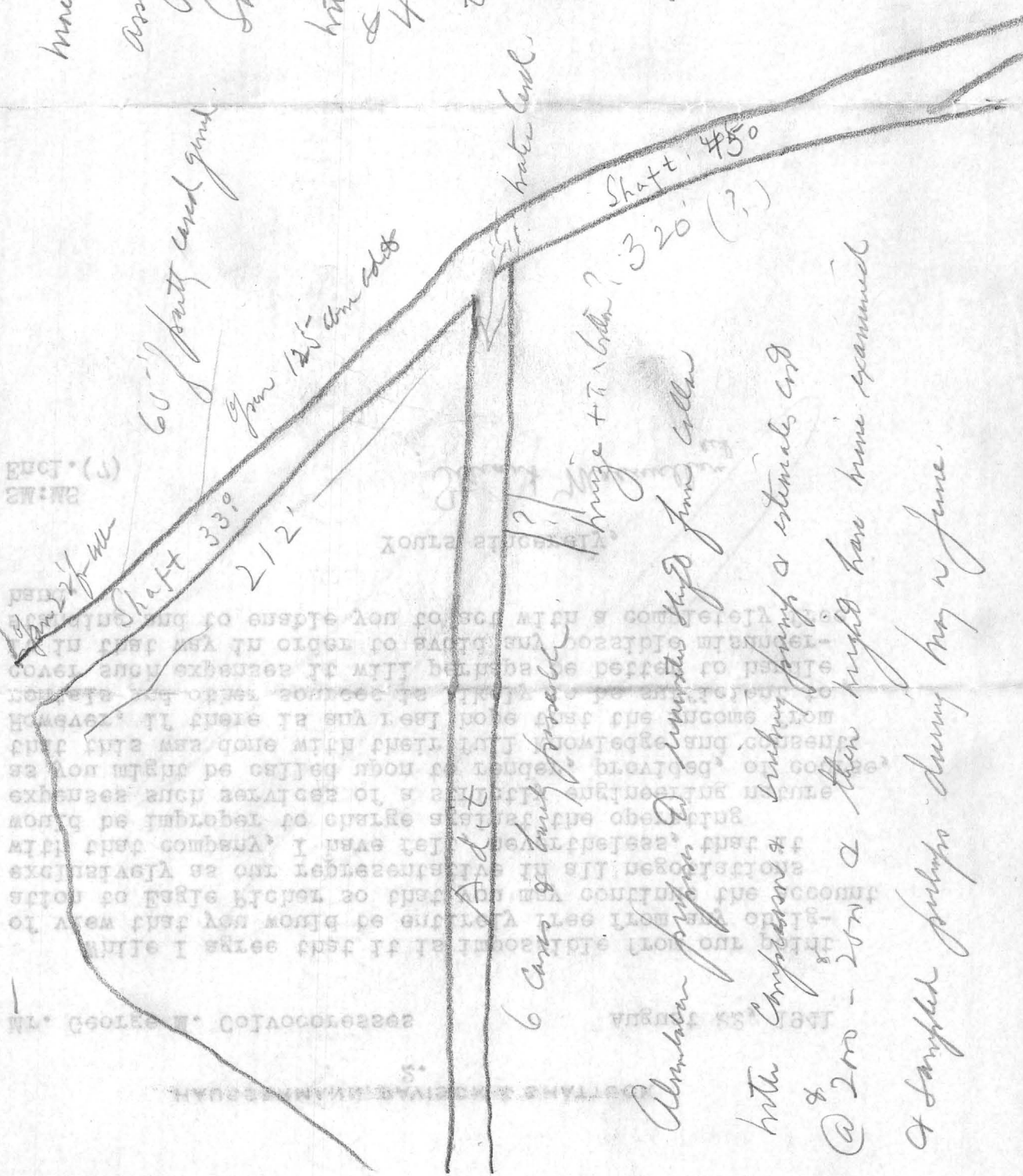
While I agree that it is impossible from our point of view that you would be entirely free from any obligation to Eagle Picher so that you may continue the account exclusively as our representative in all negotiations with that company, I have felt, nevertheless, that it would be improper to charge against the operating expenses such services of a strictly engineering nature as you might be called upon to render, provided, of course, that this was done with their full knowledge and consent. However, if there is any real hope that the income from rentals and other sources is likely to be sufficient to cover such expenses it will perhaps be better to handle it in that way in order to avoid any possible misunderstanding and to enable you to act with a completely free hand.

Yours sincerely,

SM:MS
Encl.(7)*Stuart Macmillan*
ad.

Paul Stanley made statement of the value
 of the mine -
 of the mine -
 of the mine -

Shump contains about
 500 tons of which had
 more than 600 tons in
 assaying day \$12.00
 Some of the mine samples
 with high galena assay
 & 40.00 in upper levels
 there are carbonates which
 have values in June -
 10.00 - 20.00
 One is probably present



Alumina from the mine
 with Compton's
 at 200 - 200'
 sampled perhaps during May or June.

C. J. Harbauer ✓ *C. J.*

Name: U. S. Navy Mine.

District: Copper Basin - 14 miles S. W. of Prescott, and 5 miles east of Skull Valley Station.

Owners: Verde Annex Mining Company, Providence, R. I.
Joe Hobbs, Superintendent.

Visited: July 24, 1929, by G. J. Harbauer. 2 men working at time of visit.

Geology: Country rock grano-diorite. Vein has an E. and W. strike, and a dip of about 30 degrees. Width up to 5'.

Ore: Ore consists of lead, zinc, copper and iron sulphides in a quartz gangue. The general run of ore would assay as follows:

<u>Au.</u>	<u>Ag.</u>	<u>Cu.</u>	<u>Pb.</u>	<u>Zn.</u>
\$5.00	20-30 ozs.	2%	15%	5-6%

Mr. Hobbs estimates a developed ore reserve of 100,000 tons.

Development: There is an incline shaft 520' deep sunk on the vein and a long tunnel connects with the shaft at the 200' level. The mine was unwatered to the 350' level at date of visit.

Equipment: The hoist is operated by steam. The air compressor is a portable gasoline driven machine. There are camp buildings for a small crew of men at the shaft.

Several carloads of sorted ore have been shipped recently to Douglas and there are several hundred tons of second class ore on the dump that would make good milling ore.

With additional development a maximum of 100 tons per day could be produced, according to Mr. Hobbs, and, no doubt, a production of at least 30 tons per day could be made without much more development.

Company is planning to build a mill to treat the mine run of ore. The lower levels contain more zinc than given in assays above. Ore is hauled to Skull Valley, a distance of five miles, over a good road on a down grade at a cost of \$2.00 per ton or less.

Property is a possible producer of lead-zinc ore or of lead-zinc concentrates in the near future.

G. J. Harbauer.

Notes by G. J. Harbauer, Aug 37

Small scale operations are now in progress.

Copy with Carlson
United State Mine (Copper Basin; Copper
owners, or lessees, but is not an especially attractive proposition for large operators.

Copy with Carlson
Mr. Kass informed me voluntarily that the ultimate price of the property to Mr. Shumate is \$10,000.00, payable in one year. In the meantime, Mr. Shumate is to work the property and provide a living for Mr. Kass.

THE UNITED STATES MINE

Visited by Holland Sept 1916.

Copy with Carlson
This property is located between the Kass claims and the Commercial Mining Company's property. The owner is said to be Mr. Biles (of the Biles-Lockhart Co., of Prescott). The mine is entirely shut down. It has a flat incline shaft, said to be 500' deep, apparently alongside of a dike in porphyry and granite. The surface equipment appears to be in good condition and contains an oil-fired boiler, about 100 HP, and a steam friction hoist. The small dump of sorted ore consists chiefly of pyrite in very coarse crystals, with some chalcopyrite, galena and zincblende.

THE COMMERCIAL MINING COMPANY'S PROPERTY.

The portion operated is entirely in the oxidized ores in Gabarino Hill. Shipments to Clarkdale are about to be resumed. Mr. Peach, the superintendent, informed me that the grade now shipped is from 3 to 3½% copper, with no gold and that practically all of a 200 foot belt is being mined. At my former visit, about two years ago, when I went thru the workings, the richer "streaks" only were being mined, 8% ore being shipped to Douglas and 6% ore to Jerome at that time. I saw some very high grade red and black oxides of copper being mined, sometimes from fissures only a few inches wide. It was then being proposed to leach the low-grade ore remaining.

A two hundred foot shaft, not operated now, reached sulphides. Mr. Peach informed me that the sulphides were "badly broken up" and very disappointing in copper values. It is possible that there is an impoverished sulphide zone

THE UNITED STATES MINE. (Copper Basin)

THE UNITED STATES MINE - visited by Holland, Sept. 1916.

This property is located between the Kass claims and the Commercial Mining Company's property. The owner is said to be Mr. Biles (of the Biles-Lockhart Co., of Prescott). The mine is entirely shut down. It has a flat incline shaft, said to be 500' deep, apparently alongside of a dike in porphyry and granite. The surface equipment appears to be in good condition and contains an oil-fired boiler, about 100HP, and a steam friction hoist. The small dump of sorted ore consists chiefly of pyrite in very coarse crystals, with some chalcopyrite, galena and zincblende.

U. S. MINE REPORT

LOCATION:

Situate in the COPPER BASIN MINING DISTRICT, YAVAPAI COUNTY, ARIZONA.
TWP. N.R. #3 W.

PROPERTY: Consists of 5 full mining claims, about 100 acres in all.

TITLE. The property was acquired by purchase from the original locators; all the necessary acts and filings have been made to comply with the Federal and State laws governing such titles, in the past, thus perfecting those rights acquired by the original locators. No debts or liens appear of record against the property.

WATER: There is sufficient water at and near the property for camp and mining purposes.

TIMBER; The property is without growth of any kind other than the scrub and brush common to that part of Arizona.

ROADS: A county road passes over the property within 300 yards of the working shaft and a private road has been graded in from the county road to the camp and work. This county road is from Prescott, on the east, to Skull Valley, on the west, a railroad and shipping point; to Skull Valley is $4\frac{1}{2}$ miles; to Prescott is 12 miles, both are railroad and supply points.

GEOLOGY: The geological conditions are represented by eruptive dykes and stocks, dating back to the Pre-Cambrian; these in turn have been altered by regional and local earth movements of great violence, fracturing and crushing the original formations, creating layer at pressure fractures and shear zones favorable to the bedding and deposit of those magmatic solutions common to ore precipitation from eruptive magma or from lethal solutions rising from depth.

In theory: silicious lenses, reefs of brecciated magma and plutonic rock porphyry in its several altered forms were mineralized (probably by the solutions that brought silification) with chalcopyrite, gold, silver, sphalerite, and galena; erosion and decay of the original surfaces changed part of these to carbonates and oxides, and carried downward as leaching progressed, such minerals as formed the descending solutions from the decaying sulphide; (natural processes); the greatest mineralization by the commercial metals occurs at and near the shear zones previously mentioned; acid dykes (rhyolite porphyry) indicates the source of those acids necessary to destroy the primary minerals in both formations and assist in the natural processes of the destruction of the original magma and the later bedding at depth, of such of the metals as were carried in the descending solutions; these would be copper and iron.

COMMERCIAL GEOLOGY:

The U. S. Ledge, the ledge under discussion, has a course of about N45E (of course magnetic) and is opened and identified for a distance of some 3700' northerly from the mouth of the tunnel on the southerly end of the U. S. Claim by various shafts, pits, tunnels and open cuts and follows the general course of a shear zone; the hanging wall is a metamorphosed quartz-diorite, the footwall a rhyolite-porphyry; the width of the ledge is not determined at any one point, some of the work being done on the hanging and some on the foot; my opinion is that it is at least 10' or more in width, all of the gangue carrying sulphide ore of greater or less value; to my knowledge no crosscut has been run from one wall to the other.

The ore shoot, as it appears on the surface, has a length of about 400' and has been worked out down to the sulphide ore, a depth of 50 to 75 ft. the sulphide has been followed down to a depth of 500ft. in an incline shaft started nearly in the center of the U. S. claim and also of the "shoot" as it shows on the surface; the ore in the incline is continuous

2-

from top to bottom, a drift from the 350' level to the N. E. a distance of 160' shows $2\frac{1}{2}$ ft. of ore for the entire distance and having the following values: gold \$7.00, silver, 8 oz; lead 25%; zinc 23%, copper $1\frac{1}{2}$ % iron 12%, no determination of the balance of the ledge has been made that I know of.

On the 450' level, the shoot was picked up about 50' from the shaft to the N E and entered for a distance of some 5'; this showed a solid face of sulphide ore; and about 4'; have no assays from this point, but judging from the appearance would say that it is a better grade than on the 350' level in gold, lead, silver, and copper, the copper appearing in minute tetrahedral crystals thru the ore mass. The presence at this point would indicate to me that the ore is a secondary sulphide rather than a primary.

The fact that the ore does not appear to the south of the shaft on the 450' level also determines the dip of the "pipe" or shoot in the ledge, which is important. As previously mentioned, the oxidized zone in the ledge has been removed and shipped at some previous time; the attached sheets are copies I made from four of the original sheets which I had in 1917 when the examination for this report was made. The ore in these and many other shipments was taken from a shaft now caved in, about 75 ft. to the SW of the present working shaft.

ORE: The amount and value of the ore which may be called "in sight" may be calculated and the following seems to me to be a reasonable estimate; 160 x 350 x 2' divided by 5, the number of cubic ft. per ton in the standing ore; this gives us 22,500 tons, this to the N E of the shaft; we may safely assume that the SW portion of the shoot to the SW of the shaft will produce at least 15,000 tons more, this allows 2' for the average width of the better grade ore.

If we allow for this tonnage the average value of the four smelter sheets, \$32.23 we find a gross value of the standing ore of \$1,218,625.00; if but 75% of this is allowed, we find a gross value of \$913,968.75. This does not take into consideration the large tonnage of low grade ore that will be susceptible of some form of treatment at the mine.

Note also, the difference in prices in 1914 and now.

Supplementary report covering tunnel previously mentioned, situate at the southern end of the U. S. Claim.

This tunnel starts with a crosscut to reach the ledge at that point and has been driven a distance of 340'.

The work has been done piecemeal as assessment; where first opened, the ledge was small and tight and had little or no value; some little ore began to show about at the 200' point; from that point to the fact it has steadily increased both in width and value; from the 250' point bunches of heavy sulphide began to occur in the gangue; at the 300' point quite a lense of the sulphide was passed thru and much more fine sulphide crystals appeared in the gangue increasing toward the breast; an assay of the breast gave a little better than \$12.00; this was an average of 4' x 7', the values being mostly lead and silver; the distance of the breast of the tunnel to the shaft is about 400' and will cut the shaft at the 218' point.

My thought of this condition is that it is approaching the lower side of the shoot and from the changes occurring in the last 50' indicate that another 100' will reach the shoot. Should my thought be right in this a continuation of this work would be advisable, in fact, this should be done to explore the bottom of the shoot; also crosscut should be run from wall to wall to determine the width and conditions of the ledge at that point.

Respectfully submitted,

Justin Thayer Hinds, E. M.

Prescott, Jan. 1, 1927

U. S. MINE REPORT

LOCATION:

Situate in the COPPER BASIN MINING DISTRICT, YAVAPAI COUNTY, ARIZONA.
TWP. N.R. #3 W.

PROPERTY: Consists of 5 full mining claims, about 100 acres in all.

TITLE. The property was acquired by purchase from the original locators; all the necessary acts and filings have been made to comply with the Federal and State laws governing such titles, in the past, thus perfecting those rights acquired by the original locators. No debts or liens appear of record against the property.

WATER: There is sufficient water at and near the property for camp and mining purposes.

TIMBER; The property is without growth of any kind other than the scrub and brush common to that part of Arizona.

ROADS: A county road passes over the property within 300 yards of the working shaft and a private road has been graded in from the county road to the camp and work. This county road is from Prescott, on the east, to Skull Valley, on the west, a railroad and shipping point; to Skull Valley is $4\frac{1}{2}$ miles; to Prescott is 12 miles, both are railroad and supply points.

GEOLOGY: The geological conditions are represented by eruptive dykes and stocks, dating back to the Pre-Cambrian; these in turn have been altered by regional and local earth movements of great violence, fracturing and crushing the original formations, creating layer at pressure fractures and shear zones favorable to the bedding and deposit of those magmatic solutions common to ore precipitation from eruptive magma or from lethal solutions rising from depth.

In theory: silicious lenses, reefs of brecciated magma and plutonic rock porphyry in its several altered forms were mineralized (probably by the solutions that brought silification) with chalcopyrite, gold, silver, sphalerite, and galena; erosion and decay of the original surfaces changed part of these to carbonates and oxides, and carried downward as leaching progressed, such minerals as formed the descending solutions from the decaying sulphide; (natural processes); the greatest mineralization by the commercial metals occurs at and near the shear zones previously mentioned; acid dykes (rhyolite porphyry) indicates the source of those acids necessary to destroy the primary minerals in both formations and assist in the natural processes of the destruction of the original magma and the later bedding at depth, of such of the metals as were carried in the descending solutions; these would be copper and iron.

COMMERCIAL GEOLOGY:

The U. S. Ledge, the ledge under discussion, has a course of about N45E (of course magnetic) and is opened and identified for a distance of some 3700' northerly from the mouth of the tunnel on the southerly end of the U. S. Claim by various shafts, pits, tunnels and open cuts and follows the general course of a shear zone; the hanging wall is a metamorphosed quartz-diorite, the footwall a rhyolite-porphyry; the width of the ledge is not determined at any one point, some of the work being done on the hanging and some on the foot; my opinion is that it is at least 10' or more in width, all of the gangue carrying sulphide ore of greater or less value; to my knowledge no crosscut has been run from one wall to the other.

The ore shoot, as it appears on the surface, has a length of about 400' and has been worked out down to the sulphide ore, a depth of 50 to 75 ft. the sulphide has been followed down to a depth of 500ft. in an incline shaft started nearly in the center of the U. S. claim and also of the "shoot" as it shows on the surface; the ore in the incline is continuous

2-

from top to bottom, a drift from the 350' level to the N. E. a distance of 160' shows $2\frac{1}{2}$ ft. of ore for the entire distance and having the following values: gold \$7.00, silver, 8 oz; lead 25%; zinc 23%, copper $1\frac{1}{2}$ % iron 12%, no determination of the balance of the ledge has been made that I know of.

On the 450' level, the shoot was picked up about 50' from the shaft to the N E and entered for a distance of some 5'; this showed a solid face of sulphide ore; and about 4'; have no assays from this point, but judging from the appearance would say that it is a better grade than on the 350' level in gold, lead, silver, and copper, the copper appearing in minute tetrahedral crystals thru the ore mass. The presence at this point would indicate to me that the ore is a secondary sulphide rather than a primary.

The fact that the ore does not appear to the south of the shaft on the 450' level also determines the dip of the "pipe" or shoot in the ledge, which is important. As previously mentioned, the oxidized zone in the ledge has been removed and shipped at some previous time; the attached sheets are copies I made from four of the original sheets which I had in 1917 when the examination for this report was made. The ore in these and many other shipments was taken from a shaft now caved in, about 75 ft. to the SW of the present working shaft.

ORE: The amount and value of the ore which may be called "in sight" may be calculated and the following seems to me to be a reasonable estimate; $160 \times 350 \times 2'$ divided by 5, the number of cubic ft. per ton in the standing ore; this gives us 22,500 tons, this to the N.E of the shaft; we may safely assume that the SW portion of the shoot to the SW of the shaft will produce at least 15,000 tons more, this allows 2' for the average width of the better grade ore.

If we allow for this tonnage the average value of the four smelter sheets, \$32.23 we find a gross value of the standing ore of \$1,218,625.00; if but 75% of this is allowed, we find a gross value of \$913,968.75. This does not take into consideration the large tonnage of low grade ore that will be susceptible of some form of treatment at the mine.

Note also, the difference in prices in 1914 and now.

Supplementary report covering tunnel previously mentioned, situate at the southern end of the U. S. Claim.

This tunnel starts with a crosscut to reach the ledge at that point and has been driven a distance of 340'.

The work has been done piecemeal as assessment; where first opened, the ledge was small and tight and had little or no value; some little ore began to show about at the 200' point; from that point to the fact it has steadily increased both in width and value; from the 250' point bunches of heavy sulphide began to occur in the gangue; at the 300' point quite a lense of the sulphide was passed thru and much more fine sulphide crystals appeared in the gangue increasing toward the breast; an assay of the breast gave a little better than \$12.00; this was an average of $4' \times 7'$, the values being mostly lead and silver; the distance of the breast of the tunnel to the shaft is about 400' and will cut the shaft at the 218' point.

My thought of this condition is that it is approaching the lower side of the shoot and from the changes occurring in the last 50' indicate that another 100' will reach the shoot. Should my thought be right in this a continuation of this work would be advisable, in fact, this should be done to explore the bottom of the shoot; also crosscut should be run from wall to wall to determine the width and conditions of the ledge at that point.

Respectfully submitted,

Justin Thayer Hinds, E. M.

Prescott, Jan. 1, 1927

HOWARD O. NORVILLE
Mining Engineer
Prescott, Arizona

October 21, 1935.

Mr. W. P. Burns,
Prescott, Arizona

Dear Mr. Burns:

In the limited time that has been available for making the examination, I have checked the report of Justin Thayer Hinds, E. M. dated January 1, 1927, covering the property known as the U. S. Mine, located in Copper Basin between Prescott and Skull Valley, and find it to be accurate in every respect.

Shipments of ore and further development since that date of the report disclose possibilities of operation exceeding those anticipated at that time.

An examination of smelter sheets and records of shipments show ore of an average value of \$40.00 per ton at the old prices for gold and silver and no allowance for the zinc content of the ore.

Present day metallurgical processes of course have made it possible to treat ores of this character by **selective flotation**, thereby giving value to metals contained in the ore on which smelters previously placed a penalty. With metal market prices at the present level, this property should become a very active producer.

Very truly yours,

Howard C. Norville

Registered Engineer

Arizona Registration No. 602

March 21st, 1942

Mr. Alven Von Alvenslaben
Seattle
Washington

(Luhn Hotel)

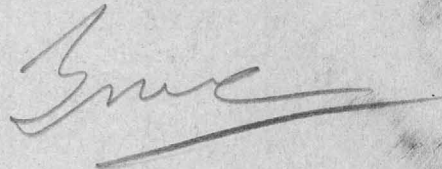
Re: U. S. Mine

Dear Sir:

Confirming verbal conversation of this morning should you decide to have me make an engineering examination of the U. S. Mine near Skull Valley after the adit level and upper workings are accessible for sampling I shall be glad to undertake this work and prepare an assay map and complete report insofar as conditions permit for the sum of Five Hundred Dollars (\$500.00) which will include my professional fee and the expenses of the examination, including assaying of samples.

I should ask that Two Hundred Dollars (\$200.00) be paid in advance to cover expenses and the balance upon submission of my report.

Yours very truly,



CMC:DF

HOWARD O. NORVILLE
Mining Engineer
Prescott, Arizona

October 21, 1935.

Mr. W. P. Burns,
Prescott, Arizona

Dear Mr. Burns:

In the limited time that has been available for making the examination, I have checked the report of Justin Thayer Hinds, E. M. dated January 1, 1927, covering the property known as the U. S. Mine, located in Copper Basin between Prescott and Skull Valley, and find it to be accurate in every respect.

Shipments of ore and further development since that date of the report disclose possibilities of operation exceeding those anticipated at that time.

An examination of smelter sheets and records of shipments show ore of an average value of \$40.00 per ton at the old prices for gold and silver and no allowance for the zinc content of the ore.

Present day metallurgical processes of course have made it possible to treat ores of this character by **selective flotation**, thereby giving value to metals contained in the ore on which smelters previously placed a penalty. With metal market prices at the present level, this property should become a very active producer.

Very truly yours,

Howard C. Norville

Registered Engineer

Arizona Registration No. 602