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02/06/87

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: TONOPAH BELMONT

ALTERNATE NAMES:

BELMONT MCNEIL  
ECOMONY MINING  
EAST VULTURE

MARICOPA COUNTY MILS NUMBER: 97A

LOCATION: TOWNSHIP 4 N RANGE 7 W SECTION 36 QUARTER W2  
LATITUDE: N 33DEG 38MIN 46SEC LONGITUDE: W 112DEG 56MIN 04SEC  
TOPO MAP NAME: BELMONT MTS - 15 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:

LEAD  
COPPER  
GOLD LODE  
SILVER  
SILICON SILICA FLUX

BIBLIOGRAPHY:

- PORTION OF DEPOSIT IS HI SILICA, LOW ALUMINA
- ① ADMMR TONOPAH-BELMONT MINE FILE
  - MINING CONGRESS JOURNAL JUNE 1945 P 69
  - ✓ ELSING U & HEINEMAN R AZBM BULL 140 P 94 *EL Tiger*
  - ✓ MOORE R AZBM BULL 180 P 192
  - ✓ TENNEY J B AZBM BULL 125 P 83
  - ✓ TENNEY J B AZBM BULL 129 P 76-77
  - ABM MAPS UNDER BELMONT MCNEIL

TONOPAH-BELMONT

AKA: Belmont-McNeil

MARICOPA COUNTY  
T4N R7W Sec 36 W $\frac{1}{2}$

Production Possibilities of the Marginal  
Copper Mines In Arizona, 1941, p. 95

See: ABM # 129 p. 76

Mining Congress Journal, June 1945, p. 69

ABM Bul. 140, p. 94

ABM Bul. 180, p. 192

ABM Bul. 125, p. 83

MAPS \_ Upstairs in the Rolled file Boxes -ABM files - underground maps

MILS Sheet sequence number 0040130559

*(under Belmont-McNeil)*

MILS Maricopa Index 97A

TABLE 16.—Lead and zinc districts in Arizona—Continued

Locality No. in figs. 27 and 28 and county and district	Principal lead and zinc mines, date of discovery ( ), and years of principal production *	Mode of occurrence	References to mode of occurrence †
Maricopa—Continued			
28. Wickenburg-San Domingo	Small production of <u>lead</u> , 1942-50, as by-product of gold mines.	No data.	-----
29. Vulture	Monteruma (1863): <u>Lead</u> , variable production, 1936-50.	Lead-silver minerals in quartz gangue fill fissure veins in Precambrian granite and schist and Cretaceous(?) andesite.	Ariz. Bur. Mines file data.
30. Osborn	Belmont-McNeill, Moon Anchor: <u>Lead</u> , 1906-11, 1917, 1918-19.	Lead and copper sulfides and oxidized minerals carry gold and silver in a siliceous vein that strikes S. 60° E. and dips vertically. Vein occupies a brecciated zone in volcanic rocks that ranges from 1 foot to 20 feet wide.	No.
31. Gila Bend Mts.	One mine: <u>Lead</u> , 1 to 2 tons produced in 1935 and 1946.	No data.	-----
32. Big Horn	Lead byke: <u>Lead</u> , about 7 tons, 1947-49; <u>Zinc</u> , 500 lbs., 1949.	No data.	-----
Mohave			
33. Bentley	Grand Gulch (ca 1853): <u>Lead</u> , small shipments, 1911-14 and 1957.	Oxidized lead minerals occur in very small quantities with copper sulfides and oxidized minerals along the periphery of a pluglike body of unstratified sandstone, intrusive(?) into Supai Sandstone.	Hill, 1915, p. 48-49.
34. Copper Mtn. (Andrus Canon)	Copper Mine: <u>Lead-zinc</u> , 1949.	Oxidized lead and zinc minerals occur sparingly with oxidized copper minerals that also carry gold and silver. Minerals are localized along northwest trending fissures which dip steeply and cut the Precambrian Supai formation.	Hill, 1915, p. 56.
35. Minnesota (Gilderade Pass)	Several mines (ca 1900): Small shipments of rich gold-silver- <u>lead</u> ore, 1911-12.	Gold, silver, and lead minerals in quartz veins that cut Precambrian granite.	Schrader, 1909, p. 218.
36. Gold Basin	Several small mines (ca 1870): <u>Lead</u> , less than 20 tons, as byproduct of gold mining, 1937-41.	Galena and cerussite in gold-bearing quartz fissure veins that cut Precambrian granite, gneiss, and schist.	Schrader, 1909, p. 116-127.
37. Weaver	Several small operations (1892): <u>Lead</u> , less than 5 tons, as byproduct of gold mining, 1937-48.	Galena and free gold in quartz gangue occur as stringers and irregular masses along the walls of low-angle faults in andesite.	Schrader, 1909, p. 216; Wilson and others, 1934, p. 79.
38. Music Mtn.	Several small mines (ca 1880): <u>Lead</u> , less than 15 tons, as byproduct of gold mining, 1935-48.	Galena in gold-quartz fissure veins which strike N. 40°-50° W. and dip 75° to vertical. Veins cut Precambrian granite, gneiss, and schist and younger granite and diabase of uncertain age.	Schrader, 1909, p. 142-151.
39. Cottonwood	<u>Lead</u> , about 2 tons, as byproduct of gold mining, 1937-41.	No data.	-----

## TONOPAH BELMONT DEVELOPMENT COMPANY

The mine operated by this company is situated in the Big Horn Mountains, about 20 miles southwest of Wickenburg. The nearest railroad point is Palo Verde on the main line of the Southern Pacific Railroad, connected to the mine by a 22-mile road.

The Big Horn Mountains are made up of a basement of pre-Cambrian schist and gneiss, intruded and partly covered by Tertiary andesites. The ore deposits consist of veins cutting the andesite. The primary ore consists of galena, blende pyrite, and a little chalcopyrite, carrying important gold and silver values in a quartz gangue. The primary ore has been partly oxidized into carbonates and sulphates.

### MINING

The mine is opened up by a 500-foot shaft with levels on the 100, 250, 400, and 500. The ore occurs as a shoot in the vein, and is stoped by a modified shrinkage method. It is hoisted to the 100 level and trammed to the mill through an extraction tunnel.

### MILLING

The ore is treated in a 65-ton flotation concentrator, making a bulk concentrate. Sodium sulphide is used to float oxidized lead minerals. The ore from the mine is dumped in wooden mine ore bins from which it is drawn and crushed in a 10 by 16 Universal crusher and stored in a second crushed ore bin. It is transferred from this second bin by a Hamell feeder to a 5 by 5 C I W ball mill run in closed circuit with a 4'6" x 21'4" Dorr C classifier, the overflow going to a contact tank, and from there to 2 by 3 Callow flotation cells, arranged in three units of eight, three, and three cells each. The tails from the finishing cells are treated on two Wilfley tables, and the tails thickened in a 10 by 30 Dorr thickener, and the thickened tails go to the tailings pile. The flotation concentrates from the primary cells pass to a 20 by 10 Dorr thickener, the thickened concentrate pumped by a Dorco pressure pump to a 6-foot three-leaf American filter and the dewatered concentrate shipped to the El Paso smelter. The concentrates carry 5 to 6 percent zinc. Good extraction is made of lead and copper but poor extraction of gold.

### POWER

Electric power is generated by Diesel engines, fuel being hauled from Palo Verde by truck.

## LABOR

Labor is partly Mexican and partly American, American predominating. Work is done on day's pay basis.

## PERSONNEL OF COMPANY

Superintendent .....	John L. Dynan .....	Belmont
Mill Superintendent.....	H. M. Lewers .....	Belmont

## EMPIRE MOUNTAINS

## LOCATION AND GENERAL GEOLOGY

The Empire Mountains form the north-east end of the Santa Rita Mountains, being separated from the main range by Empire Wash. The nearest settlement is Pantano, on the main line of the Southern Pacific Railroad. The mines are situated from 10 to 15 miles south of Pantano.

The Empires are made up of a basement of Paleozoic limestone, covered by a thick series of Cretaceous conglomerates, sandstones, and sandy shales. The whole has been extensively intruded by quartz porphyry and other minor intrusives. The lead ore bodies now being exploited are irregular replacements of Carboniferous limestone. All so far found have been thoroughly oxidized into carbonates and sulphates of lead, associated with a little copper carbonate and oxidized zinc minerals and abundant limonite. The association of these ore bodies with the quartz porphyry intrusions is not close.

## MINING PROPERTIES

The principal operating and producing company is the Hiltano Explorations (Subsidiary of Calumet & Arizona Mining Co.).

## MINING

Development work is being undertaken from a number of openings, and considerable ore shipped of a high lead tenor, chiefly from development faces.

## LABOR

Mexican labor is employed almost exclusively underground, with American skilled surface labor and bosses.

## PERSONNEL OF OPERATING COMPANY

Manager.....	H. A. Clark.....	Warren
Superintendent.....	J. B. Harper.....	Pantano

AZBM  
 Bull 129  
 P 76-77

railroad by trucks. It is shipped to the Copper Queen smelter at Douglas for treatment. Materials are hauled by truck, and mine timbers and supplies lowered in the skip. Men enter the mine through a tunnel and connecting raises.

*Power.*—Compressed air is generated at the mine by a Diesel engine direct connected with a compressor. The hoist is operated by gasoline.

*Labor.*—The mine employs ninety men underground and on the surface.

*1929 Production.*—Production commenced April 1, 1929, and the total for the nine months was as follows:

Tons mined	Pounds lead	Pounds copper	Ounces gold	Ounces silver
13.088	5,685,843	296,273	602.75	71,569

The average grade mined was 21.72 percent lead, 1.13 percent copper, 0.046 ounces gold, 5.468 ounces silver.

PERSONNEL OF COMPANY

Manager .....	D. C. Peacock ...	Hayden Junction
Superintendent .....	L. T. McElvany ..	Hayden Junction
Mine Foreman .....	L. S. Hovestadt ..	Hayden Junction

PHELPS DODGE CORPORATION, COPPER QUEEN BRANCH

This company continues to mine a small tonnage of direct shipping lead ore from its mines in Bisbee. The lead concentrator was closed in 1928, after a short run. The greater bulk of the ore is mined on company and lease account from the Southwest Mine.

*Smelter.*—No changes of note have been made at the smelter at Douglas.

TONAPAH-BELMONT DEVELOPMENT COMPANY

*Location and General Geology.*—The mine operated by this company is situated in the Big Horn Mountains in Maricopa County, 28 miles southwest of Wickenburg and an equal distance north of Hasayampa on the Southern Pacific main line. The Big Horn Mountains are made up of a core of pre-Cambrian schist covered by thick flows of andesite and rhyolite, and the whole intruded by rhyolite dikes. The ore occurs as shoots in a steeply inclined vein cutting rhyolite, in close association with a rhyolite intrusive plug. The mine is developed by a 500-foot shaft with levels at 100, 250, 400, and 500

feet. The ore is hoisted to the 100-foot tunnel level. Shrinkage stoping methods are employed. The mining is much complicated by post ore faulting. About fifty tons of ore are produced a day.

*Concentrator.*—No changes have been introduced in the concentrator since the publication of the first edition of *The Mineral Industries of Arizona*.

*Power.*—Power is generated by an Ingersoll-Rand 440-h. p. Diesel engine direct connected with a 375-kv.-a., G. E. generator furnishing electrical power for the operation of compressor, hoist, and concentrator.

*Water Supply.*—Water for camp and concentrator is obtained from a well six miles south of the mine, 600 feet deep, and 1,000 feet lower than the mine. The pump is run by a fifty-h. p. Diesel engine.

*Transportation.*—Concentrates and supplies are hauled on contract by trucks from Hassayampa. Concentrates are shipped to El Paso.

*Labor.*—About fifty men are employed at the mine and concentrator.

#### PERSONNEL OF COMPANY

Superintendent .....	John L. Dynan .....	Palo Verde
Mine Foreman .....	J. F. Bingaman .....	Palo Verde
Master Mechanic and Mill Superintendent .....	J. C. Thomson .....	Palo Verde
Purchasing Agent .....	F. G. Henckell .....	Palo Verde

#### SOUTHWESTERN EXPLORATION COMPANY

*Location and General Geology.*—This company operates the Trench Mine situated in the Patagonia Mountains, about twelve miles south of the town of Patagonia. The ore occurs as shoots in well defined veins cutting quartz diorite. The ore minerals are galena, pyrite, and subordinate zinc blende. The ore carries appreciable amounts of silver and gold.

*Mine Development.*—The mine is opened by a 500-foot vertical shaft with lateral work on the 500-foot level.

*Concentrator.*—The company controls the World's Fair Mine, a neighboring property, and operates the World's Fair mill on Trench Mine feed.

*Power.*—Electric power is purchased from the Nogales Power Company.

#### BUNKER HILL MINES, INCORPORATED

*Location and General Geology.*—This company, a subsidiary of Phelps Dodge Corporation, owns the principal holdings in the old bonanza camp of Tombstone. The ore occurs as shoots in veins cutting



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Northern Miner

8-22-85

Breccia pipe in Arizona



Arizona gold bet

*Northwest Miner  
6/28/84*



## FIELD VISIT

Mine: Tonopah Belmont  
Morning Star

Engineer: Nyal J. Niemuth

County: Maricopa

Date: April 5, 1988

At the invitation of, and in company with, Tom Gillett, geologist for Lakeshore Minerals, 1710-370 Bay St., Toronto, Ontario, Canada KOK 1R0, I visited the Tonopah Belmont (file) and Morning Star (file) mines.

### Geology

General geologic setting of the mines area locates them on the western flank of the Tertiary Belmont granite, which forms part of a metamorphic core complex. Areas of lowest relief in the area are typically outcrops of grey schist, probably Yavapai series, exposed beneath a regional detachment fault of low angle. Upper plate rocks consist of Tertiary volcanics including rhyolites, green and purple andesites, and north trending quartz porphyry dikes. Locally in the NE1/4, SE1/4, Sec. 36, T4N, R7W remains of a vent occur. Here the volcanics are dominantly perlite with occasional obsidian areas and inclusions. This area is shown as tuff on ABGMT OF 85-14 map. It was probably mistaken for tuff due to its light color on aerial photographs.

The entire area's geologic relations are made more complex by a series of northeast and northwest trending faults of moderate to high angles. Some of these merge into the detachment fault while others seem to vertically displace it.

### Mineralization

Faults and associated multi-stage breccias are the main hosts for mineralization seen in the area. Silicification, hematization, and some argillation are the principal forms of alteration observed. Detailed mapping to determine fault locations and relationships is certainly necessary to understand the properties' potential and to estimate reserves from any drilling done. Ore minerals seen were limited to copper oxides and carbonates. Although primarily a gold exploration target now, no gold was observed in hand specimens. See attached gold geochemical map for distribution of gold values. Additional gold mineralization was reported in a stockwork of narrow quartz veins (1 - 2 inches wide) occurring in the perlite flow mentioned above. A drill hole in this area encountered a geothermal spring.

### Underground Workings

Although the old underground workings are open at both mines, no underground sampling or mapping has been done nor is any planned. Since the company's target is an open pit mine they do not feel the cost of retimbering the underground is worth the expense and would rather spend that money on surface drilling. Descriptions of the underground workings and their geology is well documented by previous workers' reports in the mine files.

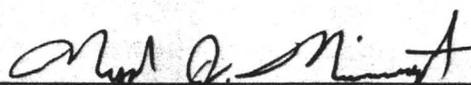
(cont)

### Work Summary

Mr. Gillett has been involved in the property for four winter field seasons. A geochemical sampling grid 9000' X 4000' was established. Sampling has been conducted on 200' centers with local areas of interest sampled every 100'. Samples have been analyzed and plotted for gold, silver, copper, lead and zinc. The attached gold geochemical survey map shows 3 areas with above 300 PPB values. Some geological mapping has been done at these anomalous areas with most work focused on the hill containing the old Tonopah Belmont workings. Road renovation/construction has been done with three goals in mind. First, to minimize surface damage and necessary reclamation, second, to expose geologic structures for sampling and mapping, and third, for siting of the drill holes. Drilling was conducted in 1987 and consisted of at least 8 rotary holes. Most holes have been 200' - 300' deep. Drilling was directed at determining geologic structures as well as intersecting mineralization. Mr. Gillett will loan us mylars of the sampling data and project summary to copy for our files.

### Future Work

The geochemical sampling done has indicated additional work is warranted to the southeast of the Morning Star and on some prospects southwest of the Tonopah Belmont. Early next fall detailed geologic mapping will be done on the hill containing the Tonopah Belmont. Following this a drilling program will be conducted with the purpose of identifying reserves in the large brecciated areas near the Tonopah Belmont.

  
Nyal J. Niemuzh, Mining Engineer

LAKESHORE MINERALS INC.  
MARICOPA COUNTY CLAIM GROUP  
GEOCHEMICAL SURVEY

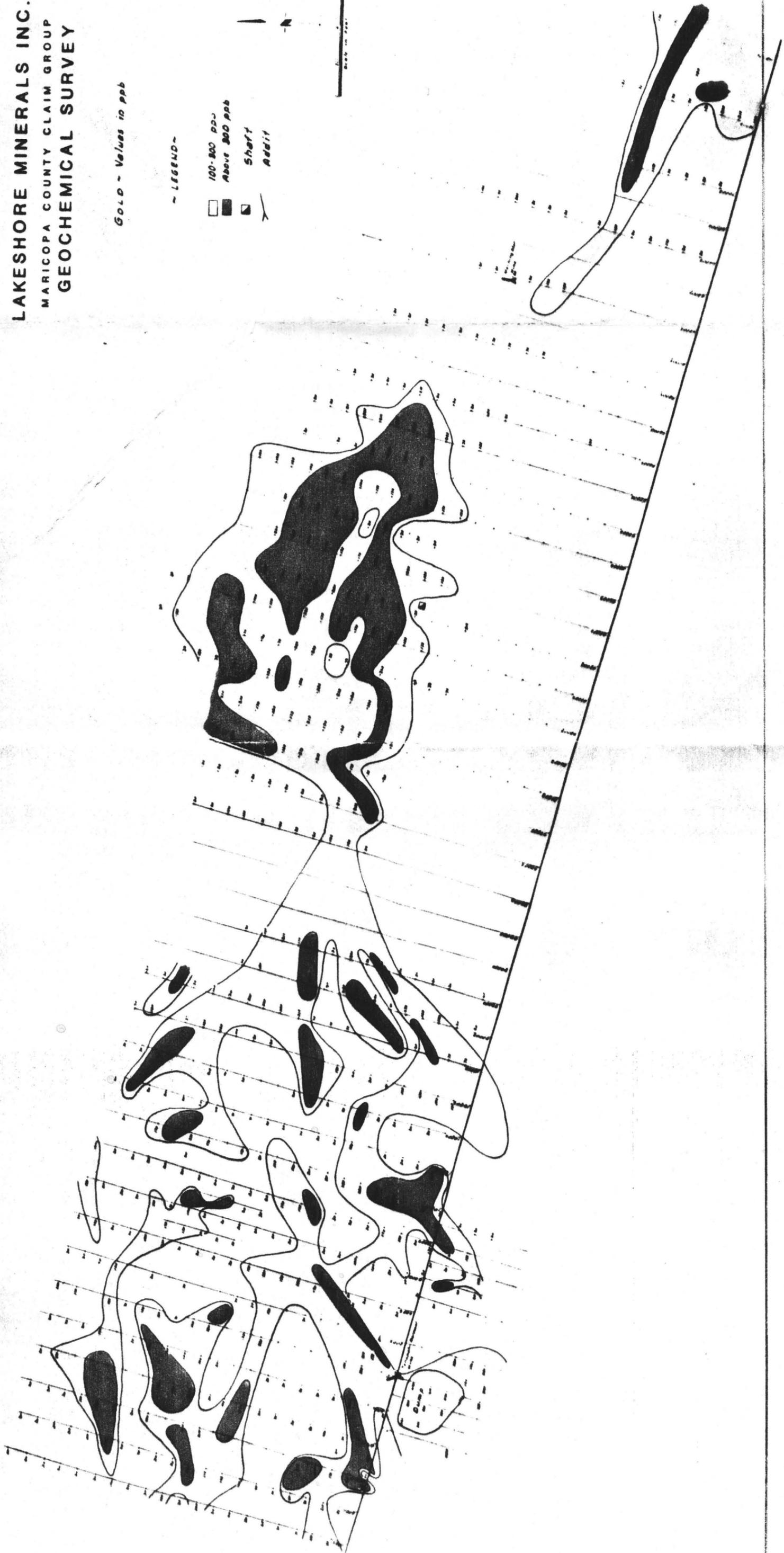
GOLD - Values in ppb

~ LEGEND ~

- 100-800 ppb
- Above 800 ppb
- ▣ Shaft
- ✈ Adit



Scale bar: 0 100 200 Feet



**FIELD VISIT**

Mine: Tonopah Belmont

Engineers: Ken A. Phillips  
Nyal J. Niemuth

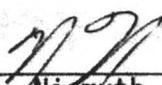
County: Maricopa

Date: February 25, 1988

On the way to the U.S. Mine a brief visit was made to the Tonopah Belmont to check on recent exploration activity. Mr. Thomas Gillette of Ontario Canada, consultant for Lakeshore Minerals, has been working on the property and invited us to visit. Unfortunately, he was not able to meet us at the property at this time.

The property and surrounding claims show road improvement, new drill roads and geologic mapping/sampling trenches. Recent drilling has been conducted and a converted hammer to rotary drill rig along with compressor was on site. Target of the drilling appears to have been testing of dominant northwest trending breccia zones, mostly to the east of the old workings. The brecciated zones occur in tertiary volcanics and show multiple stages of brecciation, jasperoids and silicification. The only mineralization seen on the surface consisted of minor copper oxides in the existing dumps.

When Mr. Gillette returns, we will try to visit the property again to obtain more complete information.

  
Nyal J. Niemuth, Mining Engineer

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine Belmont-McNeil Date February 10, 1972  
District Vulture - Maricopa County Engineer J. H. JETT, Director  
Subject: Trip to Tonopah-Belmont Mining Co. operations

Trip out with Floyd Everett (of U. S. Bureau of Mines)

J. C. Kirk, owner  
Earl Woody, Chief Geologist and Engineer  
H. W. Halpin (assumed to be an officer in the company) Box 1652, Wickenburg, Ariz.  
Ross Russell.

This company contacted Mr. Everett regarding an OME loan for Platinum exploration. They claim to be recovering Pt in a pilot plant at this time. One pilot plant is at the mine site and one is in Wickenburg. The process involves heating a 10 lb sample to 2300F degrees. Plumbers lead is added. The molten mixture is poured off. A metallic button is recovered. This button is reheated to 450<sup>o</sup>, with certain fluxes added. Resultant button has Pt., Gallium, Indium, Cu, Ag, Au and other metals. They would not reveal fluxing agents. The button looks like lead. Tinge of blue and gold color possibly results from copper or perhaps Bismuth contaminant.

Mr. Woody stated positively they were not selling stock. However, Mr. Kirk said they would have the proper papers within 30 days and they would sell stock. In the meantime they are selling a certificate that guarantees delivery of stock when registration is complete.

*according to the principles*  
There are three types of ore. A green one, a red ore and a black ore. The green is highest grade with 4-1/2 oz. of pt. Red ore is 3-1/2 oz.

*later could not be verified*  
A leaching tank is under construction, made of concrete. Capacity is approximately 150T. Ore will be crushed to -1". A 3-day leach will follow. Tailings will then be dried and jig concentrated. Concentrate will contain the Pt. group. The black ore will probably be processed first since it averages approximately 1/2 oz. Au plus Ag.

It is interesting to note that Mr. Kirk is from Las Vegas and Mr. Woody is from California.

November 28, 1967

Mr. John Kirk  
1626 Newport Boulevard  
Costa Mesa, California

Dear Mr. Kirk:

In response to your query concerning the Tonopah-Belmont Mine, situated in Maricopa County, State of Arizona, I am pleased to submit the following information.

Following is a summary of my conclusions based on a physical examination of the property, reasearch of available data pertinent to the mine and interviews with responsible men who worked in the mine during it's "peak production" years. This work was performed by me at the instance of the Onego Corporation of Pittsburgh, Pennsylvania starting in May, 1961 and ending in April, 1962. Time spent at the mine was intermittant due to other commitments but I spent a total of approximately four months on the property.

#### Location and Accessibility

The mine is located in Sections 21, 35 and 4, Twp 4 and 7, R7W of Maricopa County, State of Arizona in the Big Horn Mountains, 27 miles SSW of Wickenburg on the Santa Fe Railroad and 18 miles N from Tonopah Station from which all shipments were made to the smelter on the Southern Pacific Railroad.

The road from Wickenburg is a well travelled road and maintained by the County with the exception of the last three miles which is maintained by the mine owner, Mr. Kirk. The old haulage road from the mine to the loading ramp at Tonopah Station is washed out and no longer maintained.

#### History

The mine was first discovered in 1907 by a Mr. George Dillard and who is still alive and living in Wickenburg. He and his partners, Dan McNeil and Charles Wilcox located the property

performed their yearly assessment work and in 1926 they sold to a mining group from the Tonopah- Belmont Mining Company of Nevada who re-named the mine the Tonopah- Belmont Mine.

The new owners sank a 500' shaft and developed the mine properly and shipped a large amount of high grade ore to the smelter (see attached photostat taken from page 94, Arizona Bureau of Mines Bulletin #140). The mine closed down in 1930 due to the depression prices of copper and lead and silver (cu @ 6¢, pb @ 4¢, ag @ 28¢ and au @ \$20.86 per oz.)

In 1941 thru to 1947 Mr. Ernest Dickie, later associated with the Bagdad Copper Mine as part owner and general manager, acquired the Tonopah Mine. From my examination of the underground workings of the mine it is apparent that he did nothing to develop the mine but rather strip it of the easily available "backs," pillars, even to the point of mining the ore out on both sides of the shaft. During my tenure at the Tonopah I wished to do diamond drilling from the bottom of the mine and asked the State Mine Inspector for permission. He flatly refused this permission because of the condition of the shaft and posted a notice of condemnation on the headframe.

The production figures shown from 1942 thru 1947, as shown on the photostat of pg. 94 of the Arizona Bureau of Mines do not reflect the true production of the mine during this period as Dickie shipped only high grade to the smelter and the remainder went to the cyanide mill at the Vulture Mine. Dickie and his brother were operating the mill at the Vulture and feeding it with ore from the Tonopah, U.S. Mine and other small mines in the vicinity.

### Geology

The mineralization of the Tonopah Mine occurs in the fractured zones and in the brecciated perimeter of the andesite plug which rises high above the low lying hills in the immediate vicinity. The area is composed of pre-cambrian schists, gneisses and granites intruded by tertiary andesites, latite porphyries and basalt lava flows. The host rock of the mine is an andesite plug measuring approximately 1,000 feet square with nearly vertical walls. The plug was forced up thru the surrounding schist and

granites which are covered with an old basalt flow. Evidences of the old basalt can still be observed on the sides of the plug.

An analogy can here be drawn between the Tonopah plug and other successful mines of the same character where the ore bearing solutions come in, rise and fill the brecciated zones on the perimeter of the plug in the form of a corona and also cause the fracture planes in the plug itself to become mineralized. The mineralized corona showing copper is evident on the North, South and East sides of the plug.

The veins filling the fractures are 400' plus long and 4' wide until the intersection of veins #2, #3 and #4 are reached at which place they attain a width of up to 40'. The dip of the NE vein is 78 degrees S and the rake is eastward. The SE vein has almost a vertical dip and rakes N. These ore shoots were mined thru to the surface from the 400' level below the adit level. The adit level is 200' plus and minus (allowing for contour) below the surface.

The rake of the vein after intersection plunges sharply to the East and because of this deviation the shaft penetrated the end of the ore shoot. An X-cut was driven South from the bottom of the shaft to allow for the dip of the vein and then a drift tunnel was driven E to pick up the vein at the point where the vein raked into it. The vein at this point is eight feet wide and was drifted on for a distance of about 400'. The ore was stoped upward for about 15' and the vein is strong and consistent the full length of the drift from the point where the vein raked into the drift.

Two winzes were sunk to a depth of 20' on the level and both are damp from about 10' down and water about two feet deep is standing in the bottoms of each. They both contain sulphides and indicate that water level has been attained. There is no diminution of the vein at the bottom of the winzes and it is my conviction that the vein will continue downward to a great depth. I cut chip samples from the faces at the bottom of the winzes and the assays revealed 12.2% copper, .43 oz. gold, 3.6 oz silver

Conclusions and Recommendations

I believe that the Tonopah has the potential of becoming a large producer, ranking along with the other large underground mines of Arizona and that a modest drilling program will confirm this belief.

In spite of the good production record of the mine I am convinced that it's past production represents only a very small fraction of it's potential.

I recommend this mine without any reservations.

Very truly yours,

*James E. Wilson*  
James. E. Wilson E.M.



# Engineers Testing Laboratories, Inc.

1910 Arizona Avenue  
20 Miles Pike

783-5280  
774-4881

Yuma, Arizona 85364  
Flagstaff, Arizona 86001

423 South Olsen  
2525 E. Indian School Road

622-3663  
264-4781

Tucson, Arizona 85719  
Phoenix, Arizona 85016

## REPORT ON LABORATORY TESTS

Lab. No. 40 0416

Client: TONOPAH-BELMONT MINING CORPORATION  
Box 1851  
WICKENBURG, ARIZONA

Date 12-20-71

Date Rec'd 12-16-71

Project NO DATA Location NO DATA  
Source of Sample NO DATA  
Material METAL AND ORE Sampled By NO DATA  
Submitted By EARL WOODY Requested By EARL WOODY  
Tested EMISSION SPECTROGRAPH

### TEST RESULTS

SAMPLE No. 1 - BLACK METAL BUTTON

MAJOR ELEMENTS (MORE THAN 1%):

SILICON, BORON, PHOSPHORUS, LEAD, COPPER, IRON, SILVER, SODIUM

MINOR ELEMENTS (0.01 TO 1%):

MAGNESIUM, MOLYBDENUM, ZINC, CALCIUM, CHROMIUM

TRACE ELEMENTS (LESS THAN 0.01%):

TIN, ALUMINUM, MANGANESE, GOLD, BISMUTH, GALLIUM, GERMANIUM,  
INDIUM, NICKEL, TITANIUM  
PLATINUM AND RUTHENIUM - BORDERLINE TRACE.

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3/FJ

Respectfully submitted,  
ENGINEERS TESTING LABORATORIES, INC.

*Robert W. Owen*  
ROBERT W. OWEN

SAMPLE No. 2 - SILVERY METAL BUTTON

MAJOR ELEMENTS (MORE THAN 1%):

SILICON, BORON, LEAD

MINOR ELEMENTS (0.01 TO 1%):

PHOSPHORUS, MAGNESIUM, COPPER, IRON, MOLYBDENUM, SODIUM,  
TITANIUM, CALCIUM, CHROMIUM.

TRACE TO MINOR ELEMENTS (ABOUT 0.01%):

SILVER

TRACE ELEMENTS (LESS THAN 0.01%):

MANGANESE, ALUMINUM, TIN, BISMUTH, POSSIBLY RUTHENIUM.

SAMPLE No. 3 - ORE

MAJOR ELEMENTS (MORE THAN 1%):

SILICON, PHOSPHORUS, ALUMINUM, MAGNESIUM, IRON, SODIUM,  
TITANIUM, CALCIUM.

MINOR ELEMENTS (0.01 TO 1%):

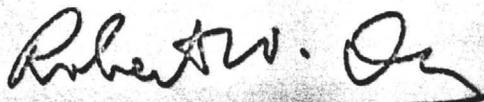
MANGANESE, MOLYBDENUM, NICKEL, ZINC, CHROMIUM.

TRACE ELEMENTS (LESS THAN 0.01%):

BORON, LEAD, GALLIUM, VANADIUM, PLATINUM, TIN, INDIUM,  
SILVER.

POSSIBLY IRRIDIUM AND RHENIUM.

RESPECTFULLY SUBMITTED,  
ENGINEERS TESTING LABORATORIES, INC.



ROBERT W. OWEN  
CHIEF CHEMIST

/CM

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Ed

1967

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TONOPAH BELMONT MINING  
Box 1851  
WICKENBURG, ARIZONA

ATTENTION: EARL WOOD

SUBJECT: PRELIMINARY  
BELMONT MINING  
VALUE

SUBJECT PROPERTY CONSISTS OF 51 CLAIMS, 20 ACRES EACH SOUTH OF THE OLD VULTURE MINE, WHICH IS SOUTH AND SLIGHTLY WEST OF WICKENBURG, ARIZONA.

THERE IS ONE AREA, APPROXIMATELY 1,500 FEET BY 2,600 FEET (3,900,000 SQUARE FEET) WHICH CONTAINS MINERALIZED ROCK OF PURPLE, GREEN AND PINK HUES. THE AVERAGE ASSAYS ON SAMPLES TAKEN FROM OUTCROPPINGS IN THIS AREA ARE AS FOLLOWS:

<u>METAL</u>	<u>TROY OUNCES/TON</u>	<u>PRICE, DOLLARS/OZ.</u>	<u>VALUE, DOLLARS/TZ.</u>
PLATINUM	3.43	100.00	343.00
GOLD	0.46	43.00	19.78
SILVER	3.15	1.50	4.72
TOTAL ...			360.50

ASSUMING A DENSITY OF 150 POUNDS PER CUBIC FOOT, A ONE SQUARE FOOT AREA, 13 FEET 4 INCHES DEEP WOULD WEIGH ONE TON. WITH THE FURTHER ASSUMPTION THAT THE AVERAGE ASSAYS ARE VALID OVER THE ENTIRE AREA AND FOR THE ABOVE STATED DEPTH, THE TOTAL VALUE IS \$1,430,450,000.

IN A SECOND AREA, THERE IS A TUNNEL FROM PREVIOUS MINING ACTIVITY. THIS VEIN IS APPROXIMATELY 75 FEET BY 1,300 FEET, OR 97,500 SQUARE FEET. THE ORE HERE IS A DENSE BLACK ROCK, WHICH SHOWS WHAT ARE APPARENTLY METALLIC VALUES. AVERAGES OF ASSAYS ON SAMPLES TAKEN FROM SIDES OF THE TUNNEL INDICATE THE FOLLOWING:

<u>METAL</u>	<u>TROY OUNCES/TON</u>	<u>PRICE DOLLARS/OUNCE</u>	<u>VALUE DOLLARS/OUNCE</u>
PLATINUM	3.52	100.00	352.00
GOLD	0.55	43.00	23.65
SILVER	0.15	1.50	<u>0.22</u>
		TOTAL ...	375.87

WITH THE SAME ASSUMPTIONS ON DENSITY AND VALIDITY OF ASSAYS FOR THE TOTAL VEIN, THE VALUE OF A 13 FOOT 4 INCH DEPTH OF THIS DEPOSIT WOULD BE \$36,646,825. IT HAS BEEN REPORTED THAT ONE TEST BORING OF 1,000 FEET SHOWED THE SAME TYPE OF ORE THROUGHOUT THE ENTIRE DEPTH.

IT IS TO BE NOTED THAT THE VALUATION OF THESE CLAIMS IS BASED ON EVIDENCE WHICH IS NOT COMPLETE, AND THAT CONCLUSIONS SHOULD BE DRAWN WITH CARE.

## DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine Belmont-McNeil

Date February 20, 1962

~~District Big Horn District, Maricopa County~~~~Engineer Lewis A. Smith~~Subject: Interview with Fred Ramsing<sup>Consultant</sup> and summary of available data on the property.Lessee: 1961-1962 - Milca Mining Co., Uniontown, PennsylvaniaAgent: Jim Wilson, 68 Frontier Street, Wickenburg.

History: As early as 1927 the Tonopah-Belmont Company of Tonopah, Nevada, had the property under the Tonopah Belmont Development Co. Under them production amounted to \$610,000 worth of ore which yielded 700,000 pounds of copper, 6,000,000 pounds of lead, \$210,000 in gold, and \$120,000 in silver. According to the Mines Handbook (1931) p 1630, the mine produced 2326 tons in 1927 (0.39 oz. gold, 3.2 ounces silver, 5.3 per cent lead, and 0.70 per cent copper) and 21,094 tons during 1928 (gross value \$22.41 per ton at cost of \$21.19).

During 1940-1941, Pierce Perry shipped 2724 pounds of ore to the Wickenburg ore market. This ran 0.04 ounces gold, 4.8 ounces silver, 7.5 per cent lead, and 11 per cent copper. Perry also reported two other veins. The first vein is 5 feet wide and assayed 10 per cent copper, 7 per cent lead, 2.40 in gold and 11.50 in silver. The second vein is 2 feet wide and assayed 3.5 per cent copper, 4 per cent lead, 24.00 in gold and 5.00 in silver.

Shortly thereafter the property was leased by George F. Reed of Wickenburg. He shipped 2 cars of siliceous copper ore and one car of siliceous lead ore. Reed was drafted for service in late 1942 and the property was taken over by L. L. Pickie and John Lincoln, who were affiliated with Bagdad Copper Co. L. L. Pickie and John Lincoln operated the mine during 1944-1946 as the Economy Mining or Best Culture Mining Co. and shipped an unknown amount of ore, mainly from pillars. (According to Ramsing the mine workings were hurt by too much pillar robbing.)

During 1957 the Arizona Mine Inspectors office reported that a Mr. McPherson of Wickenburg, was the owner and had leased the property to E. Bradford Blossom, Box 1268, Wickenburg. W.H. Wright was superintendent and Ike Kusisto, both of Wickenburg, were at the mine.

During 1961 & 1962 Milca took over, repaired the shaft and drilled a 1043 foot test diamond drill hole (completed early in February 1962) which yielded relatively negative results, according to Fred Ramsing. It was proposed that 2000 feet in 3 holes be drilled in all. Further drilling might be influenced by the results of the first hole.

Work: The Belmont-McNeil property has 450, 100 & 15 foot shafts and a total of over 12,000 ft. of lateral work. The 100 and 15 foot shafts are on the north end of the belt. These shafts are about 210 feet apart and the first lies about 300 feet north of the main shaft. The main shaft is 450 feet deep and, along with a 150 foot winze, totals 600 feet of vertical depth. The 300 foot and adit levels are open and were the main working levels. Several hundred feet of stope backs are present. Mr. Ramsing felt that the remaining back ore would not pay to go after since much cost and some hazard would be required for its removal.

Mr. Ramsing reported that the diamond drill hole started on a course of N 10<sup>1</sup>/<sub>2</sub>° W and ended up on a course of N 38° W. It began on an incline of 56 degrees, steepened

Belmont McNeil (continued)

at 400 feet to 63 degrees and ended up at 53 degrees. He also reported that at 800 feet a zone of 95 degree temperature was passed. He was not sure whether this increased temperature is due to hot water or to oxidizing pyrite, but favored the hot water idea. Little ore was found in the adit level or the 300 foot level. The hole deviated about 350 feet from the initial course.

Samples taken from the two northermost shafts assayed 5-7 ounces silver, 0.03 ounces gold, 3.8 per cent copper and 2.5 per cent silver. Ramsing and Dick Mieritz both felt that this part of the area is worth prospecting because the ore contains 70-75 per cent silica and 1-10 per cent alumina. It would be useful for flux. Ramsing suggested that beneficiation to separate the copper and lead would be feasible.

Geology: Ramsing stated that the ore shoots were concentrated around or along side of an andesite "plug" or "chimney," but may continue downward into the older basal Pre-Cambrian schists and granitic rocks. A rhyolite porphyry dike cuts the formations approximately in a N-S direction. The ore shoots rake eastward from this at about 70 degrees. Several intersecting veins surround or lie in the andesitic "plug." The veins tend to pitch out from the fracture locus. Ramsing believed that the ore locus would be concentrated in the plug and that copper mineralization might be encountered in depth without notable displacement. The dike is sheared where the breccia zone should cross it. This may be reopening since both are pre-mineral.

Other observers mention that a shattered zone accompanies the east wall of the rhyolite dike and the ore was found here especially where the andesite "plug" was encountered.

Ramsing made a Brunton compass survey of the adit and 300 foot levels and did some sampling there. He and Dick Mieritz, <sup>consulting geologist</sup> both believed that more detailed geological mapping should be done prior to further drilling. The ore shoots appear to lie mostly to the east of the rhyolite which suggests that it may have been more or less impervious to ore solutions and it could signify the termination of the ore zone to the west. Some further work should be done west of the dike to make sure of this. If true, the prospectable area would be much better delimited.

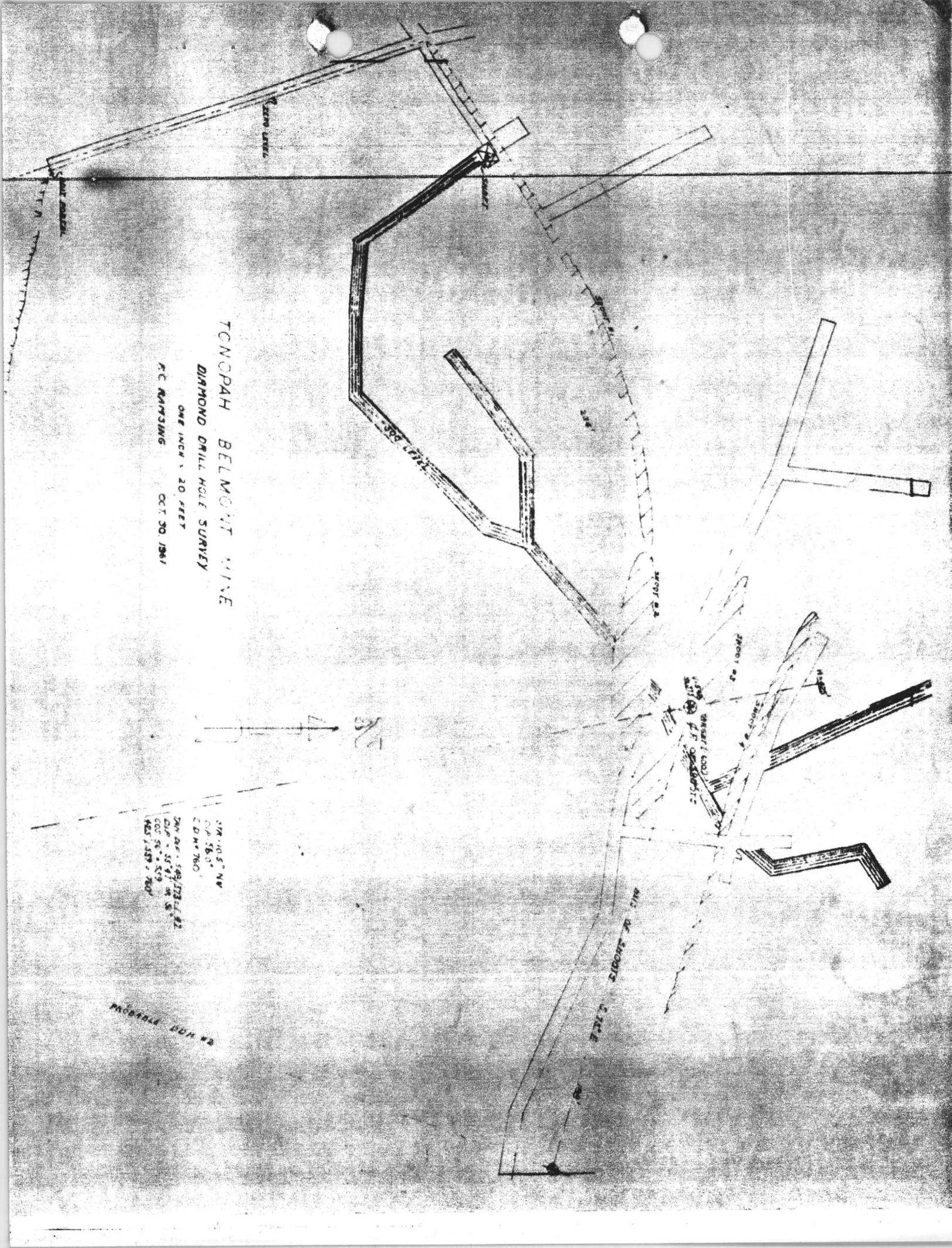
Active 2-1962 JPL

**TCONOPAH BELMONT MINE**  
**DIAMOND DRILL HOLE SURVEY**  
 ONE INCH = 20 FEET  
 F.C. RAYNSING      OCT 30, 1961



STA 10.5" NW  
 CP 58.0'  
 C.D.M. 760'  
 D.M. 200' - 580' / 760' / 82'  
 D.M. 10' - 50' / 50' / 50'  
 C.D.M. 10' - 50' / 50' / 50'  
 F.C. 100' - 760'

IN HAND PIVOTING  
 PROBABLE D.M. 20



## GEOLOGIC REPORT OF THE TONOPAH-BELMONT MINE

### Introduction:

The Tonopah-Belmont mine is located in the Bighorn Mountains of Arizona, which is about twenty-five miles southwest of Wickenburg, a station on the Santa Fe Ry., and a like distance northwest of Palo Verde on the Southern Pacific Ry. from which point the ore and concentrates were shipped to Texas.

The mine was discovered in 1904 and was subsequently named the Belmont-McNeal. The early day record of production and work is not available now. In the years 1926 to 1930 the mine was operated by a group of Nevada miners who renamed it the Tonopah-Belmont Mine. It is asserted on good authority, which seems logical, that the mine closed down because of low metal prices at the beginning of the Depression. Copper sold for 8¢, lead for 4¢, silver for 28¢ per oz. and gold for \$20.86. It has not been operated seriously since then. A 60 ton bulk flotation plant was built to beneficiate the ore, but a mine only 400 feet deep must be within the oxide zone at this location. It is obvious then that copper values would hardly be recovered because of its tendency to oxidize readily.

As stated the mine is 400 feet deep below the present adit level, however this fact cannot be verified now because the lowest accessible level is the 300. It is also stated that the ore was faulted off below the 400, and if this is true, there should be no difficulty in relocating it by present core drilling methods. The two present levels, the adit and the 300, have been surveyed by me using the Brunton Compass. The points exterior to the mine were surveyed by a standard and accurate transit and tied to the underground survey to correlate the data in plan.

My observation on the surface had indicated that there were two intersecting vein systems each containing at least two vein-fractures. One trends northeasterly and the other trends southeasterly. The southerly vein of the first system intersects the westerly vein of the second system to form expanded and large ore-shoots at their intersection. The fractures containing the veins of both systems are easily indentified because they are filled with friction-breccia.

I am prepared to show that other ore-shoots can be expected at the intersection of the southerly vein of the first system with the easterly vein of the second system. This area has not been drilled or otherwise been prospected although it is only 125 feet from the eastern workings on the 300, where the exposed vein is known to continue eastward. I shall also indicate that the ore continues downward under the present ore-shoots into the sulfide zone.

### Topography:

The area surrounding the mine is typical semi-desert country, abounding in cacti but containing no desiduous trees. It lies in an old mid-tertiary lake bed out of which drownd mountain ranges arise. The latter are not over 1,000 feet above the lake beds in elevation, therefore the dirt roads leading to the mine are generally level and good until the mountains are reached. Even here the gradient is low and toward the shipping points, water exists in the washes at a depth about 700 feet below the present adit level. This is presumed to be the present ground water level based on wells of the area.

### Stratigraphy and Petrography:

The immediate area of the mine contains no recent i. e. post-cambrian sedimentary rocks. It is an area of precambrian schists, gneisses and granites intruded by tertiary andesites, latite porphyries, basalts flows. There is good reason to believe that granitic monzonites underlie this area also.

The host rock of this mine is an andesite plug which is roughly prismatic and approximately 900 feet square. Its intrusive nature is indicated by its nearly vertical and fluted walls that simulate a volcanic plug. This has been forced up through the surrounding schist and old granites which had been covered by an old basalt flow. The remnants of the latter can be seen on the steep slopes of the plug. This ejection movement was no doubt part of a greater regional thrust, because the premineral fractures containing breccia extend at least a mile to the west, and the second system is said to extend far to the southeast. Both of these transect the plug, but in the outer reaches of the fractures and perhaps in the plug itself they are in part filled by the latite porphyry. There is definite evidence that the mineralizing solutions came up the sides of these dikes and into the breccia, partly filling it and partly replacing it to form the present ore-bodies.

### Veins:

The veins, filling the fractures are about 300 feet long and average four feet thick before the intersection is entered. At the latter point the ore pipe is roughly 30 feet wide and of varying length. The northeasterly vein dips south at an eighty degree angle. The rake is eastward or vertical. The southeasterly vein has a vertical dip and rakes northward. The shoots now indicate that they were mined from the surface to the present 300 foot level below the adit. This height is a maximum of 500 feet. It is at once obvious that the lower portions of these veins are still in the oxidized zone, and it is unusual in Arizona to find a vein as large as either of these to end or bottom at this depth. It is presumed for this reason as well as the fact that this mine has not been diamond drilled to our knowledge, that the sulfide ore will be found below the present ore-shoots. As stated previously there is also the intersection of the northeasterly vein with the second parallel fracture which can easily be seen on the surface. The latter can be shown to be heavily mineralized at one point, where copper ore has been uncovered just east of the plug at the surface. This fracture is also brecciated.

### Future prospecting:

The two good possibilities for discovering new ore can be made by the use of the diamond drill. One to three holes at least 150 feet deep must be drilled horizontally to intersect the intersection of the two veins to the east. This would prove or disprove this premise of another large ore-shoot. These are best drilled from the present 300 foot level below the adit. The other premise is that of the underlying primary sulfide zone. This can be drilled from the 300 or the cleaned out 400 or from the surface. From the 400 foot level the drill holes should reach down at least 200 feet. Five holes should be planned. From the 300 these holes would be 300 feet deep. The surface holes would have to be about 600 feet deep. The first case east of the 300 and at the intersection of the vein may also be drilled from the outside but the depth of the holes have not been computed. This same intersection may be found by drifting eastward 125 feet on this level.

**Ore shipments and sampling:**

The ore concentrates in the past were shipped to El Paso, Texas. This is a lead smelter and would not pay for copper from this bulk flotation. Obviously much of the latter went into the tails because of its oxidized nature. These tails were later recovered during the last war by leasers. Nothing remains from these tailings. Between the years of 1926 to 1930 the following record is available on production: Copper - 700,000 lbs; lead - 6,000,000 lbs; gold - \$210,000.00; silver - \$120,000.00.

On April 2, 1957 two miners were instructed to take samples on the 300 foot level. In view of the difficulty and danger of getting down the present shaft I did not witness the sampling. I presume the samples are better than average, so I discarded the two high readings for copper and the three high readings for lead. Gold and silver cannot be seen or identified as such in the ore and are therefore taken at face value. The corrected values are as follows from twenty-one samples-

Lead	2.96%	59.2 lbs.	X .95 X	.125 (Conc.val)	\$ 7.00	gross
Copper	4.3	86.0	.95	.30	24.50	"
Gold		.406 Oz.	.95	35.00	13.50	"
Silver		2.95	.95	.90	2.52	"
Total per ton					\$ 47.52	"

**Conclusions:**

I believe this is one of the best prospective mines that it has been my pleasure to examine in Arizona.

Respectfully submitted to the,  
Bradford Mining Co.

D. C. Blossom, President.  
May 20, 1957.

By F. C. Ramsing, B. M.



ARIZONA DEPARTMENT OF MINERAL RESOURCES  
Capitol Building, Phoenix, Arizona

Name of property. Belmont McNeil

Location and accessibility of property. Located in western Maricopa County, 26 miles north from Dixie siding, on the Southern Pacific R.R., where good loading facilities are now available. A first class county maintained dirt road leads from Dixie to property, over which ore can be hauled by truck cheaply.

History of ownership.

Property now owned by the "ECONOMY MINING CO."; Pierre Perry, lessee, P. O. Box 251, Buckeye, Arizona. Formerly owned by Tenopah Belmont Dev. Co., which operated mine between 1926 to 1930, inclusive, during which period \$610,000 in copper, lead, gold and silver was produced (see table below).

Production history.

Year	Copper, lbs.	Lead, lbs.	Gold, value	Silver, value	Total, value
1926-30	700,000	6,000,000	\$210,000	\$120,000	\$610,000

Also, during May, 1941, a lot consisting of 2,724 pounds was sold to the Wickenburg Ore Market, by Pierre Perry, said lot yielding:

Gold ----- 0.04 ounces per ton.  
Silver ----- 6.80 " " "  
Copper ----- 11.00 per cent.  
Lead ----- 7.50 " "

General geology (brief)

Vein is a contact fissure in diabase and rhyolite. Ore contains gold, silver, lead and copper, with gold predominating.

Ore occurrence. Two new veins have recently been uncovered on property by Pierre Perry - one five and the other nine feet wide, traceable 800 feet. The five-foot vein averaging 10% copper, 7% lead, \$2.40 gold and \$1.80 silver. The nine-foot vein assays 3.5% copper, \$4.00 gold, \$5.00 silver and 4.0% lead.

Ore reserve (quantities and values).

While there is no positive ore now exposed in mine, due to the discovery of the two veins mentioned, it is believed exploratory work will result in uncovering a great deal of new ore, of the grade indicated <sup>above</sup> ~~below~~.

Accessory metals of value. Gold, silver and lead.

Development work done.

The mine is opened by 450-foot shaft and a 150-foot winze to a total depth of 600 feet. Mine workings total 12,500 feet. This mine was shut down by the Tonopah Belmont Development Company on January 21, 1930, and shortly thereafter the entire equipment, including buildings, the mill and power plant were sold. Property has since been worked from time to time by lessees.

Plants (with capacity) already on property.

Present lessee, Pierre Perry, has following equipment installed at mine: One Ingersoll Rand 220 cubic foot air compressor; ore bin; 3 mine cars and car tracks; two houses; four water tanks; blacksmithing equipment and mine tools.

Note: The above data was turned in by Pierre Perry by personal interview.