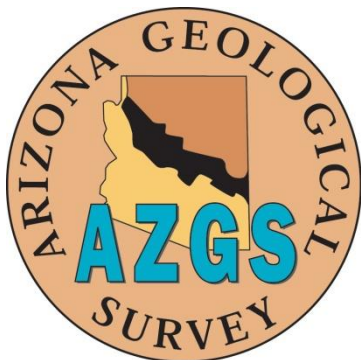




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Excerpt from U. S. Bureau of Mines R. I. 4101, "Examination of Zinc-Lead Mines in the Wallapai Mining District, Mohave County, Arizona." August 1947, by P. S. Haury - Pages 8-9.

## HERCULES-BADGER MINE

### LOCATION AND OWNERSHIP

The mine is situated 2 miles by road northeast of Chloride.

The Hercules-Badger Group, consisting of five patented claims, is owned by the Arizona and Western Mines Corp., A. T. Dunbar, President, Berkeley, California. Albin Larsen and J. E. Layton of Chlordie Ariz., the present operators, have a five year lease on the property.

### HISTORY

It is reported that the property has been worked intermittently since about 1900. Some production for 1911, 1912, and 1914 is recorded.

PRODUCTION 1901-1948 56103 Au; 12,287 oz Ag; 1,418 # Cu; 331,365 # Pb  
52,524 # Zn.

A considerable early production of gold-silver ore from the property is reported, but no reliable records are available. Smelter returns from one carload shipped in May 1941 were as follows: 3.10% Pb., 5.30% Zn., 0.27% Cu., 1.32 Oz. Au., and 6.10 Oz. Ag. per ton.

### DEVELOPMENT

The Badger mine workings consist of an adit drift 1,025 feet long, a 100 foot winze from the drift, and about 250 feet of drifts on levels 50 and 100 feet below the main drift. The adit drift attains a depth of 175 to 200 feet below the outcrop. All the workings are in the Badger Vein. Caved and flooded portions of the mine were reopened recently with the aid of an RFC loan. This work revealed that all the originally developed ore had been mined. The vein area from the lowest level to some distance above the main drift had been stoped. Lead-Zinc-Gold-Silver mineralization in a narrow vein is reported to continue downward from the 100 level, and a 2 to 5 inch vein of sulfides in the breast of the main drift is reported to assay 20% lead, 25% zinc, and about \$36 per ton in gold and silver. However, no exploratory or development work is being done in either of these places.

The present work consists of clearing the drift of cavings on the 100' level.

### DESCRIPTION OF THE DEPOSIT

Gold-silver-lead-zinc are occurred in lenticular shoots in a vein striking northwest and dipping about 80° northeast. Stope widths indicate the ore was locally as wide as 3 feet. Portions of the oxidized part of the vein near the surface carried considerable gold. High gold content has characterized the metal-bearing portions of the vein. Ore widths now exposed in the stope faces are too narrow to be minable.

Presented by  
DR. JAMES CRITCHFIELD  
APRIL 1980

Ref  
Dunbar  
1951  
p. 147

Copy of undated report by E.H. Crabtree, Los Angeles, Calif. on  
the Hercules-Badger mine

The Hercules-Badger Group  
of mining claims owned  
by  
Arizona Western Mines Company

1912  
1915

The Hercules-Badger group consists of six patented claims known as the Hercules, Badger, Woodchuck, Wild Cat, Majestic, and Water Witch, located on the western part of the Corbat Range in the northern part of the Wallapai Mining District. The property is about two miles from V Chloride, Mohave County, Ariz. and one mile from the Tennessee Mine, and is accessible by wagon road to the claims.

There are four distinct fissure veins running directly through the property, and the mineral belt can be traced for about 8 miles. These veins are in a direct line from the Banner Mine at Stockton Hill, and the ore in the Hercules Mine is practically the same as the ore at the Banner Mine.

A shaft has been sunk on the Hercules Claim 250 feet deep, and drifts at the bottom of the shaft to an extent of four hundred feet showed an average of two feet of ore the entire distance. This work was done by the direction of E.L. Talbot, E.M., who states that there is \$100,000 worth of ore blocked out in the Hercules claim. He also reports that the geological conditions are very similar to Butte, Montana, and that a depth of 500' to 1000' will open up the largest orebodies. This fact has been proven in the neighboring mines which have produced millions of dollars.

The orebodies of these mines have increased in size and richness as they obtained depth, ranging from four to twenty feet in width. The Hercules-Badger group of claims has the very same geological conditions as those mentioned above. The latter statements afford the best evidence of value contained in the ore, and these claims (Hercules) have the advantage of not being a depleted property, for it has only been worked in a small and crude manner which has tended to prove the merits of the property and values in large untouched orebodies.

There are two parallel veins running through the Badger ground and a tunnel 1025 feet long which penetrates the No. 1 vein, from which a large tonnage of high grade ore was shipped in former years. A shaft has recently been sunk on the No. 2 vein to a depth of 174 feet and a drift to the west for 30', together with a crosscut of 30' showing 30' of mineralized quartz across the vein, with 2' feet of ore in the face of the drift that assays \$36.00. It is the opinion that the face of the drift is just entering a large ore shoot, and that with greater depth an immense ore body will open up.

The three main veins intersect further up the canyon on the company's property, and at that point there should be very large bodies of rich ore. There are seven known ore shoots which show on the surface of the claims and as the ground has been only scratched up to the present time, the opportunities for future operations offer great possibilities.

(NOTE: This report was written for the promotion of the property, probably about 1915. The three veins may be easily seen on the surface. There is no known block of ore as described, although the shaft is not accessible)

Badger vein

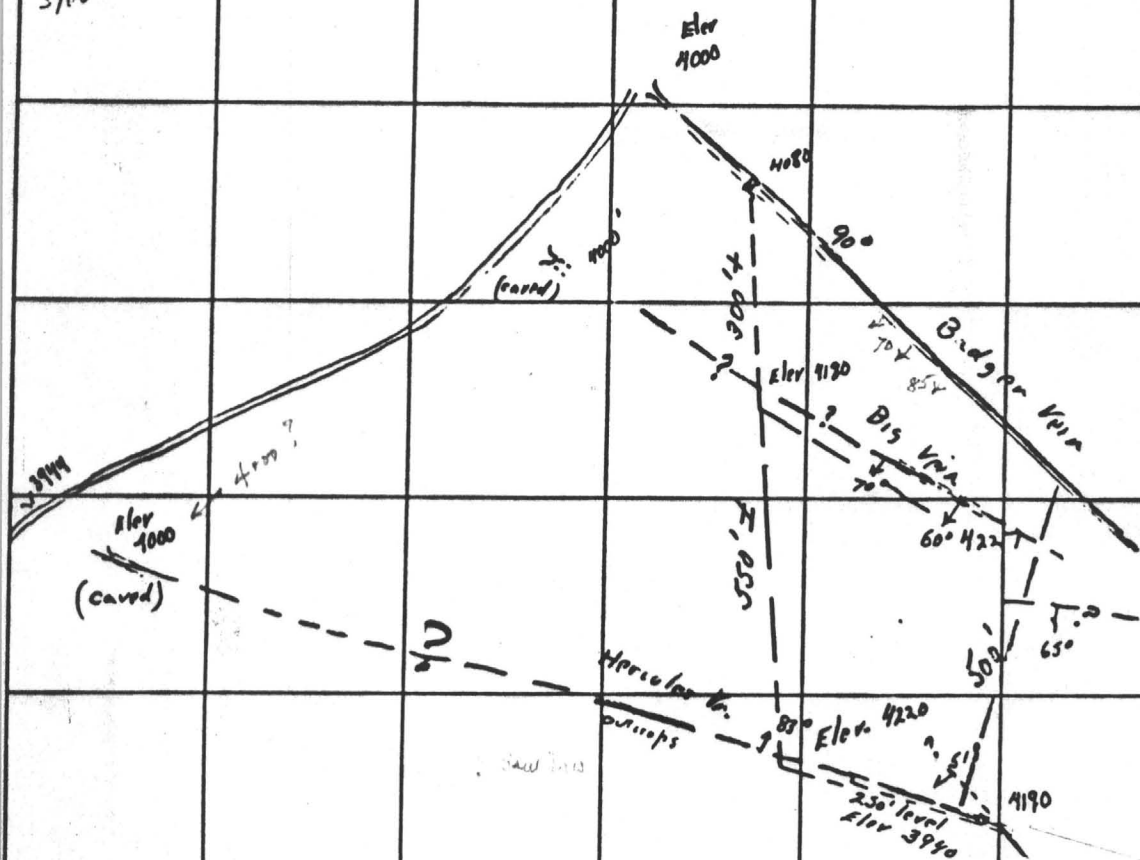
middle Big

13/4 207 A-

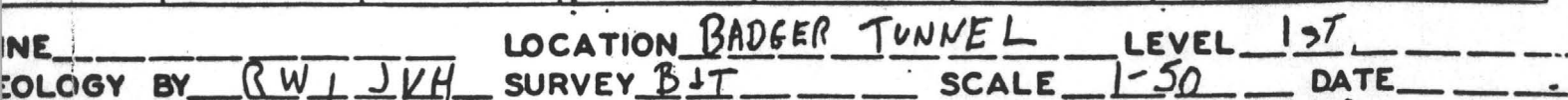




3760



MINE Hercules - Badger LOCATION Chloride, Ariz. LEVEL Proposed  
 GEOLOGY BY R.V. SURVEY SCALE 1"=300' DATE 11/1/63



encountered thus far has been taken from the 500-foot level. Here the vein is reported to be 14 feet thick and to contain some very high-grade ore. The dumps, which are large, contain much ore and are all to be milled.

#### DISTAFF MINE.

Three-quarters of a mile east of Chloride and about one-fifth of a mile west of the Tennessee vein and about parallel with it, lies the Distaff-Mollie Gibson vein, on which are situated the Distaff, Mollie Gibson, and other properties.

The Distaff mine is located on a patented claim in the foothills just north of Tennessee Wash, at an elevation of 4,100 to 4,400 feet. It is owned by Charles E. Sherman, of Mineral Park. The country rock is the younger medium-grained granite described under "Geology" as characteristic of the region lying north of Chloride. Hornblende and mica schist also occur, notably on the east side of the claim. The granite is roughly schistose and the vein is about parallel with the schistosity. The vein strikes north with vertical dip and has a known extent of about a mile. It is but 2 or 3 feet in width and is easily worked, but pinches on the northern part of the Distaff ground.

The principal developments consist of about 2,000 feet of underground workings, including a 240-foot shaft and drifts. Recent shipments of what was formerly considered low-grade ore from the old dumps of the Distaff are reported to have netted several hundred dollars per carload. The production has been about \$50,000, the ore being chiefly chloride or horn silver, with much native silver occurring in slabs or chunks many pounds in weight in the deeper part of the workings.

#### MOLLIE GIBSON MINE.

The Mollie Gibson is situated south of the Distaff and beyond Chloride Wash, the Bullion-Beck claim intervening. It is on the same vein as the Distaff. It is credited with developments 200 feet in depth and with having produced considerable lead-silver ore, some being of high grade.

#### HERCULES MINE.

The Hercules is a small mine, situated about 2 miles northeast of Chloride and about one-half mile east of Tennessee Wash, at an elevation of about 4,700 feet. It is close to the wagon road leading to the Lucky Boy and Samoa mines.

The Hercules was discovered about 1899 and held by Comstock & Ferguson until 1903. They drove a 60-foot tunnel from the canyon side and sunk four shafts to the depth of 20 feet, with no material results. In 1903 F. H. Kraft, the present manager and part owner

of the property, sunk a little deeper and struck good \$30 ore, and the mine has been a steady though small producer ever since.

The country rock is the usual pre-Cambrian gneiss. The vein is 25 to 30 feet in thickness. It trends N. 54° W. and dips about 70° E., with porphyritic granitic gneiss on the hanging wall and black hornblende-mica schist on the foot wall. A neighboring vein trends N. 80° W. and dips 80° N. It occurs in the dark foliated schist, and the mine is probably on a chimney or ore body enriched by the intersection of this vein with the Hercules.

The principal developments are a 90-foot shaft sunk on the vein and some drifting, notably on the 50-foot level. The bottom of the shaft shows a pay shoot of very good ore 1½ feet thick. The mine yields a plentiful supply of excellent potable water. The ore is galena, running high in silver and containing good values in gold.

#### BADGER MINE.

Two miles northeast of Chloride and one-eighth mile north of the Hercules mine, on what is known as the Badger ground, occurs a large 20-foot vein known as the "Big vein." It strikes N. 40° W. and dips 80° SW. It has produced considerable ore. Tests from surface pits sunk on it show \$10 ore, of which \$12 is in gold. In a canyon one-eighth mile east of the Hercules the vein is cut by a close sheeting or cleavage structure trending N. 80° E.

At about 250 feet northeast of the "Big vein" and parallel with it, but dipping 80° NE., lies the well-known Badger vein. It has been mined to a considerable extent at several points to the northwest and has produced considerable ore.

Among the properties situated on it are the Badger group and the Badger and Woodchuck mines, located on eastern tributaries of Tennessee Wash. The two latter, owned by S. L. Chadwick, have produced considerable rich lead ore, which occurs in large bodies, but some of the ore is said to contain much zinc. The Badger group property is reported to have produced several hundred tons of good ore, chiefly in gold and silver, from a 300-foot tunnel 150 feet deep at the face.

#### EMPIRE MINE.

The Empire mine is situated about 2 miles north-northeast of Chloride, in a northeast gulch of Tennessee Wash, on a large vein which is supposed to be the northwestward extension of the Badger vein. It is one of the oldest and first patented properties in the district. It is developed principally by a shaft 200 feet deep. The values are principally in silver, which is very soft and very rich, and the yield has been good from the surface down. The production has been about \$70,000. The mine was owned by William Raymond, one

# Partial List of Ore Shipments

from

Hercules-Badger Mines.

| <u>Pounds</u><br><u>Net</u> | <u>Ounces</u><br><u>Gold</u> | <u>Ounces</u><br><u>Silver</u> | <u>%</u><br><u>Lead</u> | <u>%</u><br><u>Zinc</u> | <u>Net Value</u><br><u>per ton</u> | <u>Net</u><br><u>Returns</u> | <u>Remarks</u>      |
|-----------------------------|------------------------------|--------------------------------|-------------------------|-------------------------|------------------------------------|------------------------------|---------------------|
| 17973 6-06                  | 1.38                         | 19.8                           | 21.6                    |                         | \$41.65                            | \$355.43)                    |                     |
| 24271 5-06                  | 0.76                         | 7.4                            | 7.5                     |                         | 10.76                              | 114.60)                      | . . . . . \$469.03  |
| 50321 8-06                  | 1.12                         | 12.4                           | 18.0                    |                         | 30.01                              | 704.92)                      | . . . . . 835.94    |
| 15689 8-06                  | 0.84                         | 9.4                            | 11.6                    |                         | 18.78                              | 131.02                       |                     |
| 30187 5-07                  | 0.92                         | 8.3                            | 16.0                    |                         | 22.32                              | 306.13)                      |                     |
| 17998 5-07                  | 0.75                         | 11.2                           | 34.3                    |                         | 33.41                              | 274.26)                      | - - - - - 580.39    |
| 24925 7-07                  | 1.11                         | 9.5                            | 18.2                    |                         | 27.66                              | 318.77)                      | - - - - -           |
| 20813 7-07                  | 0.73                         | 14.0                           | 39.7                    |                         | 37.14                              | 264.03                       | - - Concentrates    |
| 44518 9-07                  | 1.18                         | 12.0                           | 22.0                    |                         | 30.99                              | 643.28)                      | . . . . . 937.80    |
| 14312 9-07                  | 0.62                         | 19.2                           | 49.5                    |                         | 43.25                              | 294.52                       | - - - Concentrates. |
| 47550 1-08                  | 0.95                         | 17.8                           | 28.0                    |                         | 25.97                              | 572.43                       |                     |
| 31108 4-08                  | 0.62                         | 19.7                           | 40.5                    |                         | 26.90                              | 394.38)                      | . . . . . 856.90    |
| 37068 4-08                  | 1.13                         | 14.3                           | 21.5                    |                         | 24.60                              | 426.38                       | - - - Concentrates  |
|                             |                              | Balance paid after umpire      |                         |                         |                                    | \$30.30                      |                     |
| 16136 7-08                  | 1.03                         | 20.2                           | 38.0                    |                         | 30.30                              | 297.86                       |                     |
| 62725 1-11                  | 0.11                         | 36.1                           | 60.3                    | 10.7                    | 46.25                              | 1200.56                      | Conc. from 96 tons  |
| 6254 1-11                   | 1.64                         | 17.5                           | 24.8                    | 10.6                    | 44.42                              | 46.50                        | " " 44 "            |
| 25111 4-11                  | 0.08                         | 39.7                           | 49.8                    | 13.4                    | 38.63                              | 489.17                       |                     |
| 34972 -?                    |                              |                                |                         |                         |                                    | 413.23                       | Zinc Concentrates   |
| 82594 6-11                  | 0.52                         | 44.8                           | 41.4                    | 12.5                    | 45.08                              | 1108.06                      | Conc. from 209 tons |
| 64711 7-11                  | 0.02                         | 24.0                           | 1.6                     | 42.9                    | 34.18                              | Zn Conc                      | 349.63              |
| 36652 4-12                  | 0.09                         | 66.14                          | 33.2                    | 15.1                    | 45.10                              | 708.32)                      |                     |
| 9308 4-12                   | 1.75                         | 7.8                            | 13.0                    | 25.52                   |                                    | 99.96)                       | . . . . . \$808.28  |
| 61340 7-12                  | 0.94                         | 12.2                           | 18.7                    | 12.2                    | 29.35                              | 683.30                       |                     |
| 62770 4-13                  | 0.87                         | 15.5                           | 24.1                    | 10.8                    | 25.73                              | 752.38                       |                     |
| 35962 4-13                  | 0.67                         | 19.6                           | 37.7                    | 11.2                    | 33.93                              | 582.47                       | . . . . . 1354.85   |
| 65852 4-14                  | 0.21                         | 19.2                           | 13.5                    | 17.2                    | 8.51                               | 254.61                       |                     |
| 71577 4-14                  | 0.70                         | 10.3                           | 11.8                    | 9.7                     | 15.91                              | 339.86                       |                     |
|                             |                              |                                |                         |                         |                                    | <u>\$12,642.19</u>           |                     |



HERCULES BADGER MINE  
WALLAPAI MINING DISTRICT

CHLORIDE, ARIZONA

U. S. BUREAU OF MINES, PERMANENT RECORD CARD

**PRODUCTION  
RECORD:**

|      | <u>TONS</u>     | <u>Au. Oz.</u> | <u>Ag. Oz.</u>   | <u>Cu #</u>    | <u>Pb #</u>      | <u>Zn #</u>    |
|------|-----------------|----------------|------------------|----------------|------------------|----------------|
| 1901 | -               |                |                  |                |                  |                |
| 1902 | 21              | 3              | 820              | -              | 18,100           | -              |
| 1903 | -               |                |                  |                |                  |                |
| 1904 | -               |                |                  |                |                  |                |
| 1905 | -               |                |                  |                |                  |                |
| 1906 | -               |                |                  |                |                  |                |
| 1907 | 159             | 74             | 1007             |                | 40,755           |                |
| 1908 | -               |                |                  |                |                  |                |
| 1909 | -               |                |                  |                |                  |                |
| 1910 | -               |                |                  |                |                  |                |
| 1911 | -               |                |                  |                |                  |                |
| 1912 | 54              | 49             | 648              | 324            | 22,140           |                |
| 1913 | 49              | 39             | 834              | 258            | 28,538           |                |
| 1914 | -               |                |                  |                |                  |                |
| 1915 | 2               | 2              | 25               |                | 817              |                |
| 1916 | -               |                |                  |                |                  |                |
| 1917 | 27              | 31             | 352              | 108            | 13,716           |                |
| 1918 | 72              | 93             | 675              |                | 33,965           |                |
| 1919 | none            |                |                  |                |                  |                |
| to   |                 |                |                  |                |                  |                |
| 1936 | none            |                |                  |                |                  |                |
| 1937 | 78              | 47             | 872              | 320            | 14,894           | 3,783          |
| 1938 | 7               | 5              | 218              | 35             | 2,527            |                |
| 1939 | 110             | 12             | 118              | 39             | 4,028            |                |
| 1940 | 33              | 37             | 219              | 174            | 5,279            |                |
| 1941 | 25              | 33             | 150              | 133            | 3,983            |                |
| 1942 | none            |                |                  |                |                  |                |
| to   |                 |                |                  |                |                  |                |
| 1959 | none            |                |                  |                |                  |                |
|      | <u>637 tons</u> | <u>425 oz.</u> | <u>5,835 oz.</u> | <u>1,391 #</u> | <u>188,742 #</u> | <u>3,783 #</u> |

Average grade:

0.66 Oz. Au/ton  
7.48 Oz. Ag/ton  
14.81 % Pb

\$ 148.50  
 41.14  
 88.80  


---

 \$ 278.44 / ton (1978)

396.00  
 224.40  
 88.80  


---

 709.20

# AMERICAN SMELTING AND REFINING COMPANY

## EL PASO SMELTING WORKS

1/15/71  
19

BOUGHT OF Intermountain Exploration Co. EL PASO, TEXAS, 3535  
 ADDRESS PO Box 472 Boulder City, Nev. SMELTER LOT  
 SHIPPING POINT Kingman, Ariz. 8902 SHIPPERS LOT  
 NAME OF MINE Badger CLASSIFICATION 1st S.  
 RATES, EXCEPT ON CONTRACTS, SUBJECT TO CHANGE WITHOUT NOTICE PURCHASE TERMS 4402

| MIX | ARRIVAL DATE | CAR NUMBER | RR  | GROSS WEIGHT | TARE WEIGHT | CONTAINERS NO. | WEIGHT | WET WEIGHT | % H <sub>2</sub> O | DRY WEIGHT | QUOTATIONS                                         |
|-----|--------------|------------|-----|--------------|-------------|----------------|--------|------------|--------------------|------------|----------------------------------------------------|
| 902 | 12-9         | 72329      | AT. |              |             |                |        | 17140      | 5.5                | 16197      | SILVER 1.6084<br>LEAD .1450<br>COPPER<br>Pm. 37.24 |

| ASSAYS    | OZ. PER TON |        | WET LEAD % | COPPER % | SiO <sub>2</sub> % | FE % | CaO % | Zn % | S % | AL <sub>2</sub> O <sub>3</sub> % | AS % | SB % | NI % | BI % | % | % |
|-----------|-------------|--------|------------|----------|--------------------|------|-------|------|-----|----------------------------------|------|------|------|------|---|---|
|           | GOLD        | SILVER |            |          |                    |      |       |      |     |                                  |      |      |      |      |   |   |
| SMELTER   | .045        | 25.2   | 42.4       | .15      |                    |      |       | 3.6  |     |                                  | .30  | .25  |      | .20  |   |   |
| SHIPPER   | .06         | 22.11  | 42.36      | .11      |                    |      |       |      |     |                                  |      |      |      |      |   |   |
| UMPIRE    |             |        |            |          |                    |      |       |      |     |                                  |      |      |      |      |   |   |
| METALLICS |             |        |            |          |                    |      |       |      |     |                                  |      |      |      |      |   |   |
| SETTLE    | .0525       | 35.155 | 42.38      |          |                    |      |       |      |     |                                  |      |      |      |      |   |   |

| VALUES PER TON               |  |  |  |  | DEDUCTIONS  |                             |  | CHARGE | CREDIT |         |
|------------------------------|--|--|--|--|-------------|-----------------------------|--|--------|--------|---------|
| PAYMENT                      |  |  |  |  | FREIGHT     | BASE, INCL. LABOR ADJ.      |  |        | 15 50  |         |
|                              |  |  |  |  | (FIXED)     | EXCESS VALUE OVER \$        |  |        |        |         |
|                              |  |  |  |  |             | \$ PER UNIT Pb/Cu ± %       |  |        |        |         |
|                              |  |  |  |  |             | LEAD-COPPER PRICE ESCALATOR |  |        |        |         |
|                              |  |  |  |  |             | ZINC                        |  |        |        |         |
|                              |  |  |  |  |             | AS: SB: BI:                 |  |        |        |         |
|                              |  |  |  |  |             | NET CHARGE                  |  |        | 15 50  |         |
| GROSS VALUE                  |  |  |  |  | 139 14      | WET TON                     |  |        | DEBITS | CREDITS |
| LESS DEDUCTIONS (NET CHARGE) |  |  |  |  | 15 50       | DRY TONS                    |  |        |        |         |
| FREIGHT VALUE                |  |  |  |  | X X X       |                             |  |        |        |         |
| NET VALUE                    |  |  |  |  | 123 64      |                             |  |        |        | 1001 30 |
| LESS FREIGHT:                |  |  |  |  | WET TONS 90 | P.T.                        |  |        |        |         |
| LESS SWITCHING:              |  |  |  |  | RESETS:     | REWEIGHS:                   |  |        |        |         |
| LESS SAMPLING:               |  |  |  |  |             |                             |  |        |        |         |
| LESS UMPIRE:                 |  |  |  |  |             |                             |  |        |        |         |
| LESS HAULING:                |  |  |  |  |             |                             |  |        |        |         |
| LESS REPRESENTATION:         |  |  |  |  |             |                             |  |        |        |         |
| LESS ROYALTY:                |  |  |  |  |             |                             |  |        |        |         |
| LESS ADVANCE:                |  |  |  |  |             |                             |  |        |        |         |
| TOTALS                       |  |  |  |  |             |                             |  |        | 939 80 | 1001 30 |

## HERCULES-BADGER MINE

### CHLORIDE, ARIZONA

January 2, 1969

#### Location and Physical Conditions

The Hercules-Badger group, consisting of six patented mining claims, lies one and one-half miles east of Chloride, Arizona, and is accessible via automobile over a road which was recently repaired (December, 1968) by Intermountain Exploration Company. Maintenance will be done by the county without extra charge except the occasional encouragement to the grader operator.

The climate is mild the year around, and there is an ample supply of local labor for a small operation available at Chloride. Mining contractors are also available locally for such work as may be desired.

Electricity is available at the Tennessee Mine about one mile west and down the draw. The Black Rock Spring, where the Tennessee obtained milling water, is just west of the property. Water is available in the mine, where the level stands about six feet below the adit sill; although it has not been pumped, and we have no knowledge of its quantity. The town of Chloride was somewhat interested in this water in former years.

The nearest railroad loading point for shipments to southern Arizona or El Paso would be on the Santa Fe at Kingman (25 miles distance), all but the mine road (one and one-half miles) being paved highway. For north-bound ore to Tooele, the nearest loading point is on the Union Pacific at Boulder City, Nevada (60 miles north by paved highway).

#### Ore Reserves and Possibilities

The dump of the old Hercules shaft indicates much drifting was done on the vein, and considerable galeña is seen on the dump. The copy of the enclosed report by Crabtree contains the claim of an ore body which, as can be seen from the production record, has not been mined. The most recent work has been done through the Badger Tunnel, subject of the report by the U. S. Bureau of Mines.

The intermediate vein has had even less work and was described in a report as being 20 feet wide. However, that report is not enclosed herewith. The shaft collar of the Hercules has been caved by vandals but can be repaired for access without undue expense. The shaft on the intermediate vein is full of water but appears in good shape. The work on the Badger Tunnel is cleaned up partway through a caving stope and is shown on the enclosed map--geologic and assay plan.

### Ore Reserves and Possibilities (cont.)

About 10 tons of ore is on the tunnel dump, which runs .055 oz. Au, 11.1 oz. Ag, and 10.1% Pb. A study of the shipping record shows that the ore shipped was usually much better than this. In fact, much production went unreported, as a comparison of the old shipping record with the USEM record will show.

About 7,000 tons of dump material is available for handling through a portable plant to recover sulfides and heavy minerals.

Vein widths will probably be narrow and high grade, in any case; and from the exposures and stopes seen, a width of two to three feet would be expected for the vein. Narrower high grade veins may be reused.

The order of magnitude of the ore which could be developed can be ascertained, although exact data is lacking concerning possible reserves. In the Badger Tunnel they drifted on the vein for over 1,000'. Much is stoped, and we can assume that half the distance was ore. The widths were as noted, but if they averaged 3' of ore, there would be 110 tons per foot of depth. If similar bodies are found on the other two veins, an expectation of 300 tons per foot of depth becomes possible. The potential to the southeast of other ore shoots, or the still untested possibility of a shoot where the veins converge, gives greater promise to the property.

In the nearby mines the ore shoots indeed became wider and longer with depth, a fact worthy of note. Also no mine in the district has bottomed mineralogically, although two have been developed to 1,600 feet. The uniform structure and mineralogy, typical of mesothermal conditions of deposition, allow projections to greater depths with confidence.

### Conclusions

The ore that has been worked through the Badger Tunnel is of sufficient grade to allow profitable mining of the narrow width. Old reports are sufficiently accurate to suggest a similar situation of the other two veins. Extensions to the south and possible vein intersection have not been tested. The mine has a good possibility of increasing in size gradually with depth.

The 300 tons per foot of depth would probably be the most reasonable possibility for the property. Additional tonnages would be the subject of further work. Grade of ore, which is a sulfide, should be comparable to that produced in the past except for variations in leaching of zinc or enrichment of silver near the surface.



Recommendations

1. Recovery of collar of Hercules Shaft and examination of the purported ore block.
2. Repair cave in the Badger Tunnel. This work will give access to ground at depth under the hill from which long hole or diamond drilling can be accomplished and which will allow further drifting on the vein.
3. Long hole drilling of the No. 2 vein, the first vein south of the Badger Tunnel.
4. Crosscut from Badger Tunnel to Hercules vein.

|                         |              |
|-------------------------|--------------|
| Estimated cost of above | #1. \$ 4,000 |
|                         | #2. \$ 3,000 |
|                         | #3. \$ 1,200 |
|                         | #4. \$25,000 |

Dump material consists of 7,000 tons which can be concentrated by tables and jigs. Grab samples averaged 0.19 oz. Au, 2.20 oz. Ag and 2.65% Pb. A concentration ratio of 20/1 should yield over 300 tons of shipping ore worth \$300/ton in recoverable values.

Richard V. Wyman  
Registered Geologist  
President, Intermountain  
Exploration Company

RW:gft

Encl.

1. Pictures of mine dumps
2. U. S. Bureau of Mines Report
3. U. S. Bureau of Mines record of production (incomplete)
4. Copy of ore shipments from Badger Tunnel
5. Copy of undated report by E. H. Crabtree, E. M.
6. Maps in back cover
  - a. Patent plat
  - b. Underground mapping
  - c. Recommended work

### HERCULES-BADGER MINE

The Hercules-Badger mine consists of six patented mining claims owned in fee by the Intermountain Exploration Company. They are approximately  $1\frac{1}{2}$  miles east of Chloride Arizona, in the Wallapai Mining District, in approximately Section 35, T 24 N, R 18 W, G. & S. R. B. & M.

### GEOLOGY

The claims cover a series of nearly vertical veins which strike northwest through pre-Cambrian biotite granite gneiss. Parallel with the Badger vein, which has received the principal development in the past, is a diorite dike, which appears to be structurally related to vein emplacement. In some places the vein follows the contact, and in all cases there is some mineralization along this contact.

No attempt has been made as yet to map the surface outcrops, which appear to be predominantly one rock type. One useful function this mapping would serve would be the locating of diorite dikes and other related structural phenomena.

The Badger tunnel has been mapped for over 300 feet, to a point where stope fill blocked further work. The vein on the main adit (tunnel) level appears as a narrow vein steeply north dipping, and containing visible sulfides of lead and zinc in a gangue of quartz, sericite, and limonite.

Sampling showed unexpectedly high silver values, but did not show any ore with commercial widths.

A winze, reported to be 100' deep, was filled with water to within 6 feet of the tunnel level. The vein below was reported to be narrow and stoped to the 100 level, but this could not be observed. Stoping above the tunnel level showed a narrow vein, with average width of about 2'.

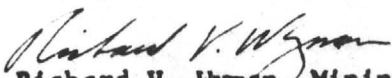
The other veins of similar character occur on the property, at distances of 200' and 500' south of the Badger vein. Surface workings and inaccessible shafts on these veins have exposed veins that contain galena, sphalerite, gold, and silver in important amounts. Other veins could well exist between these known veins and beneath other parts of the property where the outcrops are poor.

### RECOMMENDATION AND PROPOSED WORK

Intermountain Exploration Company proposes to clean up the caved stope fill and retimber the drift on the Badger vein, to give access to the full 1025 feet of old drifting. No attempt will be made at present to pump out the lower level of the mine. From the geologic mapping of the reopened drift, other exploration will likely be planned. During this period of rehabilitation, an attempt will be made to rescue the collar of the Hercules shaft, and repair this for access to the mine workings.

Exploration of the Hercules vein and the intermediate vein can be done with a diamond drill from the surface when more is known concerning disposition of ore shoots.

7/11/59

  
Richard V. Wyman, Mining Geologist