



CONTACT INFORMATION

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Arizona Department of Mines and Mineral Resources Mining Collection

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PRINTED: 07-24-2012

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: PELICAN MINE

ALTERNATE NAMES:
BLUE BIRD

YAVAPAI COUNTY MILS NUMBER: 1342

LOCATION: TOWNSHIP 10 N RANGE 1 W SECTION 1 QUARTER NE
LATITUDE: N 34DEG 11MIN 44SEC LONGITUDE: W 112DEG 19MIN 38SEC
TOPO MAP NAME: CROWN KING - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:
COPPER

BIBLIOGRAPHY:
OP:HAGERTY RESEARCH & DEVELOPMENT CO.
BUR. MINES INFO.
ADMMR PELICAN MINE FILE

PELICAN MINE

YAVAPAI COUNTY

Hagerty is doing some repair work at the Pelican shaft near Crown King and is salvaging buildings etc. at the Swastika. FTJ WR 5-20-66

Took a call from Mr. Larry Smith of Black Canyon wanting information on the Hagerty property near Cleator, into which he had invested money. Told him that the Department records show intermittent development work as snow conditions allow. CLH WR 3-9-68

John P. Hagerty of Hagerty Research & Development Co., Crown King, Arizona, have Blue Bird & Pelican claims, is building a smelter to direct smelt the ores which are very hi-grade, a/c to him. All of the goodies will be retained, separated for better market conditions. GWI WR 12-14-68

WR GW 10-12-77 - John Haggerty has plans to start the Pelican mine, 4 miles NE of Crown King. A 210 cfm gas air compressor was moved in today. Seems late in the season to begin an operation at an elevation in excess of 7,000 ft. 10-18-77 bh

NJN WR 11/15/85: A U.S. Borax geologist reported that Texas-Gulf /U.S. Borax have drilled and left Haggerty's claims covering parts of the Pelican (f) and Lincoln (f) properties. A major anticline shown on Ed Dewitt's Master thesis map in the area of the Gold King Spring near the Pelican was drilled with the hope that it would make a structural trap. Only several minor folds (and no mineralization?) were found.

KAP WR 12/12/86: John Herty is still promoting his property and process at the Pelican (file) Yavapai County. A large amount of information was received for the file.

KAP WR 12/12/86: John Hagerty is still promoting his property and process at the Pelican (file) Yavapai County. A large amount of information was received for the file.

PELICAN MINE

YAVAPAI COUNTY

Learned that Hagerty Research and Development Co. are contemplating developing and mining the Pelican Mine which is near the Gladiator Mine.

FTJ WR 1/21/66

Moving some buildings from Swastika to Pelican when road conditions permit. John Hagerty and partner, Ken Sherwood, Box 246 Black Canyon, doing the Moving.

FTJ WR 3/18/66

Kennecott Corporation
Exploration
1515 East 100 South
P.O. Box 11248
Salt Lake City, Utah 84147
(801) 322-7000
FAX (801) 583-3129

Kennecott

October 11, 1990

Mr. Ernest G. Walters
HC 35 A
Dateland, Arizona 85333

Dear Mr. Walters:

In your recent letter, you are mistaken that Texas Gulf was bought out by Kennecott. As far as I know Texas Gulf is still a viable company. Kennecott did, however, acquire much data from our acquisition of U.S. Borax's metals properties. In the early 1980's U.S. Borax had a joint venture with Texas Gulf to explore the Peck Canyon property. On August 30, 1985, U.S. Borax terminated its interest in the joint venture at which time, complete control of the property reverted to Texas Gulf.

Although we do have some information concerning the Peck Canyon claims, our obligations concerning release of data are unclear. Kennecott is not in the habit of releasing data for competitors use. Your best bet for acquiring the Texas Gulf data is to contact that company directly:

Mr. Carl Gerity
Mining Manager
Texas Gulf Minerals
I 5932 McIntyre
Golden, Colorado 80403

Kennecott is currently reviewing all its data on Central Arizona. It is possible that we might wish to visit the Peck Canyon property later in the year. We will contact you if we decide to visit the area.

Sincerely,


Linus T. Keating
Geologist

HAGERTY RESEARCH & DEVELOPMENT CO., INC.
P.O. BOX 959
MAYER, ARIZONA 86333

October 8, 1990

Mr. Linus T. Keating
Kennecott Corp
1515 Mineral Square
P.O. Box 11248
Salt Lake City, Utah 84147

Dear Mr. Keating:

I have recently joined the Board of Directors of Hagerty Research & Development Co., Inc. It is my understanding that Kennecott Corp. purchased Texas Gulf and may have some files in their archives that would pertain to sixty six mining claims owned by Hagerty Research & Development Co., Inc..

Mr Hagerty who was president of the company has passed away and we are attempting to gather information on work done on the property by Texas Gulf. It seems that Texas Gulf drilled three exploration holes on the property and i was hoping that perhaps your firm had the results of that project in your files. The project was called the "PECK CANYON PROJECT, YAVAPAI COUNTY, ARIZONA. Two reports were written by Texas Gulf, one by Karl Kansberg of Sparks, Nevada and another by John L. White and David M. Brown of Tucson, Arizona.

We are in the process of trying to evaluate this property and if your firm has no further interest in this property, we would appreciate any information your company could release to us. Any help in this area would be appreciated.

I look forward to hearing from you on this matter.

Sincerely

Ernest G. Walters

P.S. You may mail any reports to the address on the letterhead, however my locations is as follows.

Ernest G. Walters
HC 35 A
Dateland, Az. 85333
(602) 454-2462

HAGERTY RESEARCH & DEVELOPMENT CO., INC.
P.O. BOX 959
MEYER, ARIZONA 86333

October 15, 1990

Mr. Carl Gerity
Mining Manager
Texas Gulf Minerals
I 5932 McIntyre
Golden, Colorado 80403

Dear Mr. Gerity

I have recently joined the Board of Directors of Hagerty Research & Development Co., Inc. It is my understanding that Texas Gulf Minerals has some files in their archives that would pertain to sixty six mining claims owned by Hargerty Research & Development Co., Inc.

Mr. Hagerty who was president of the company has passed away and we are attempting to gather information on work done on the property by a joint venture between Texas Gulf Minerals and U. S. Borax. The project was called the "PECK CANYON PROJECT, YAVAPAI COUNTY, ARIZONA. I have read two reports that were written by Texas Gulf, one by Karl Kansberg of Sparks, Nevada and another by John L. White and David M. Brown of Tucson, Arizona. In reviewing the file on this property at the Arizona State Department of Minerals I came across a map showing three drill holes completed by your joint venture with U. S. Borax. I have been told that this information was never given to Hagerty Research & Development, Perhaps it was simply overlooked when the joint venture was terminated. I have contacted Mr. Linus T. Keating with Kennecott about obtaining the results of these drill tests, and he referred me to your firm, informing me that when they terminated their joint venture with your firm they turned over the results of the drill tests and all other reports to you.

We are in the process of trying to evaluate this property and since your firm has no further interest in this property, we would appreciate any information your company could release to us. Any help in this area would be appreciated.

I look forward to hearing from you on this matter.

Sincerely

Ernest S. Walters

P.S. You may mail any reports to the address on the

HAGERTY RESEARCH & DEVELOPMENT CO., INC.

AN ARIZONA CORPORATION

P.O. BOX 2486, PRESCOTT, ARIZONA 86302

P.O. BOX 959, MAYER, ARIZONA 86333

MINES AT
CROWN KING, ARIZONA
MILL AT
CLEATOR, ARIZONA

PHONE — MAYER, ARIZONA
(602) 632-9228

July 10, 1987.

John W. Holt, District Ranger
Bradshaw Ranger District
USDA Forest Service
RFD # 11, Box 3451
Prescott, Arizona 86301

Attention: Bill Cotee, Minerals
and Lands Assistant.

Dear Mr. Holt,

Reference is made to Forest Service letter of May 26, 1987, in which time allocations for evaluations must be considered under 36 CFR 228.5. Our reply of June 3, 1987, prescribed phasing projections in view of the extensive amount of developments involved. In accord the following was furnished:

1. Development and Phasing, Consolidated Mines, Hagerty Research & Development Co., Inc., June 10, 1987 with Bar Chart in calendar Days.
2. Location and Layout Summary, Future Considerations, an Exhibit to the above Development and Phasing.

To further support and justify expense considerations the above Exhibit has been updated under the same title and consists of Sheets 1 and 2, which is enclosed and dated June 30, 1987. This has been prompted by a solution to better access road utility as set forth therein.

This submission completes out preliminary industrial engineering in general application. Subsequent engineering will be directed to detail elements. For now it is a matter of execution, with time allocation for evaluations to be determined by schedules as the need arises. For our immediate requirement directed to early cash flow realizations, the following is presented:

1. The items marked by a "star" in the Phasing Bar Chart.
2. The access road from "A" to "B" to "C" of new road construction.
3. Access road from "E" to "O", new road construction updated Dwg. No. 1.
4. Access road from "O" to bottom of arroyo or side canyon. Work trails from the arroyo to "P" have to be reopened and flagged.

The most important and difficult location is the arroyo near the lower cabin. The end result, however, will link the systems to the County Highway. In referring to the updated drawing, the distance from point "K", the most northerly location, to the County Highway is 4.16 miles. From the most active mine area, the Blue Bird Adit, the distance is 2.27 miles to the County Highway.

Sincerely yours,


John P. Hagerty
President

LOCATION AND LAYOUT SUMMARY, FUTURE CONSIDERATIONS
EXHIBIT TO DEVELOPMENT AND PHASING, CONSOLIDATED
MINES, JUNE 10, 1987, UPDATED TO JUNE 30, 1987.

The exhibit, sheets 1 and 2, illustrates the road systems and mining methods by crosscut haulage drifts.

ROADS

The road from "M" to "L" is located above the adits of the Douglas Fir Mine and does not contribute to operations at this location. The ore veins can be reached by a direct crosscut haulage drift from Peck Canyon. The haulage distance from the mine workings at the 6000 foot level to Peck Canyon is 1125 feet. Should the above road be put to use, from point "M" the distance to the same location in Peck Canyon is 7750 feet. The road serves no mining purpose.

The road "L" to "J" serves no mining purpose for the same reason as a crosscut from War Eagle Gulch will fill transport needs.

The roads have been well constructed. The high point on road "L" to "M" is usable as a heliport. The road "L" to "J" may have future use by other parties.

Unauthorized visitors have found the area of interest. Hazardous conditions for vehicle travel exist and entering old mine workings is both dangerous and unlawful. The roads can be obstructed at "L" to deny public use. In an emergency should the roads be needed, the obstructions could be removed very quickly by a dozer or endloader. The roads are of no use in Hagerty mining operations. Their retention or reclamation is a decision the Forest Service must make.

The road from point "I" running easterly is of use by Hagerty mining operations. The terrain is of sufficient bench areas to recover gold, silver, and other metals from the soils without disturbing tree growth. The enhanced soils would be removed for processing and replaced by non metal bearing soils followed by grass seeding.

This road ends at an exposure of a massive ore body containing a series of mineral bearing veins for a distance over 520 feet. See Plate 5, and Figures 3, 4, 5, and 6, of the material from the Texas Gulf Report by Karl Kanbergs, Geologist. Although silver is not expressed in this material, it occurs in such ores along with copper, lead, and other metals.

MINING PRACTICE

The method illustrated presents a unique feature in the capability of transport from westernmost areas underground directly to the access road in Muldoon Gulch, thence to the County Highway and on to the mill on Turkey Creek.

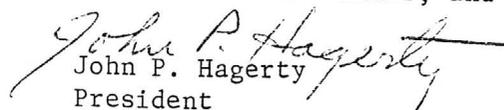
Before this stage is reached, however, outside overground transport must be adhered to. The distance from the most extended northerly location, "K" to the County Highway is 4.16 miles. From the Blue Bird adit location near "C" it is 2.27 miles to the County Highway.

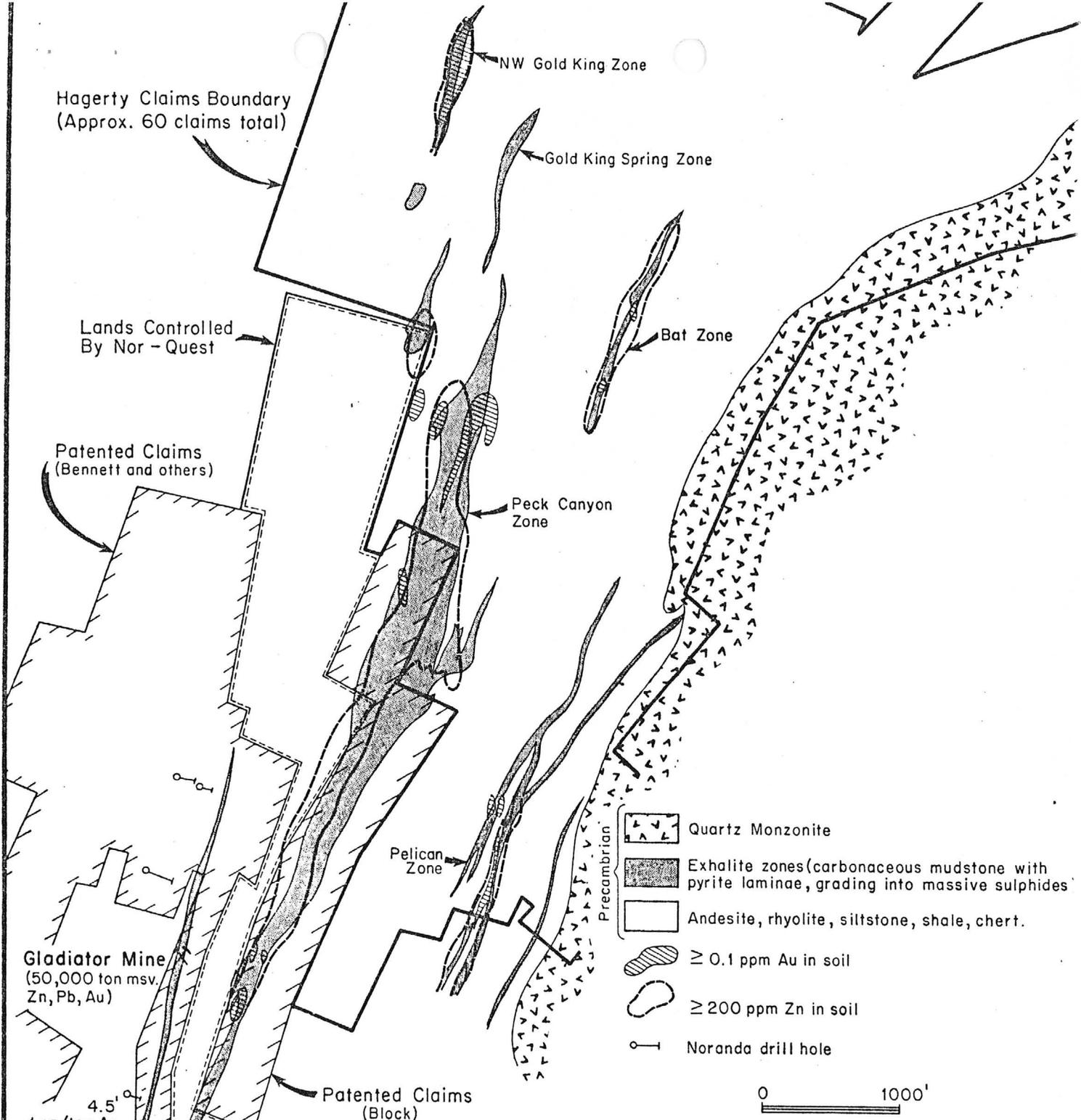
SUMMARY

The savings realized by transport, personnel travel, and by-passing the village of Crown King, together with travel time saved justifies the costs of new road construction as shown by "E" to "O" to "P", thence to the County Highway.

The new road construction "A" to "B", including the heliport, and to "C" effectively links the operations of the Pelican and Blue Bird mines, and such justifies their construction costs also.

July 10, 1987.


John P. Hagerty
President



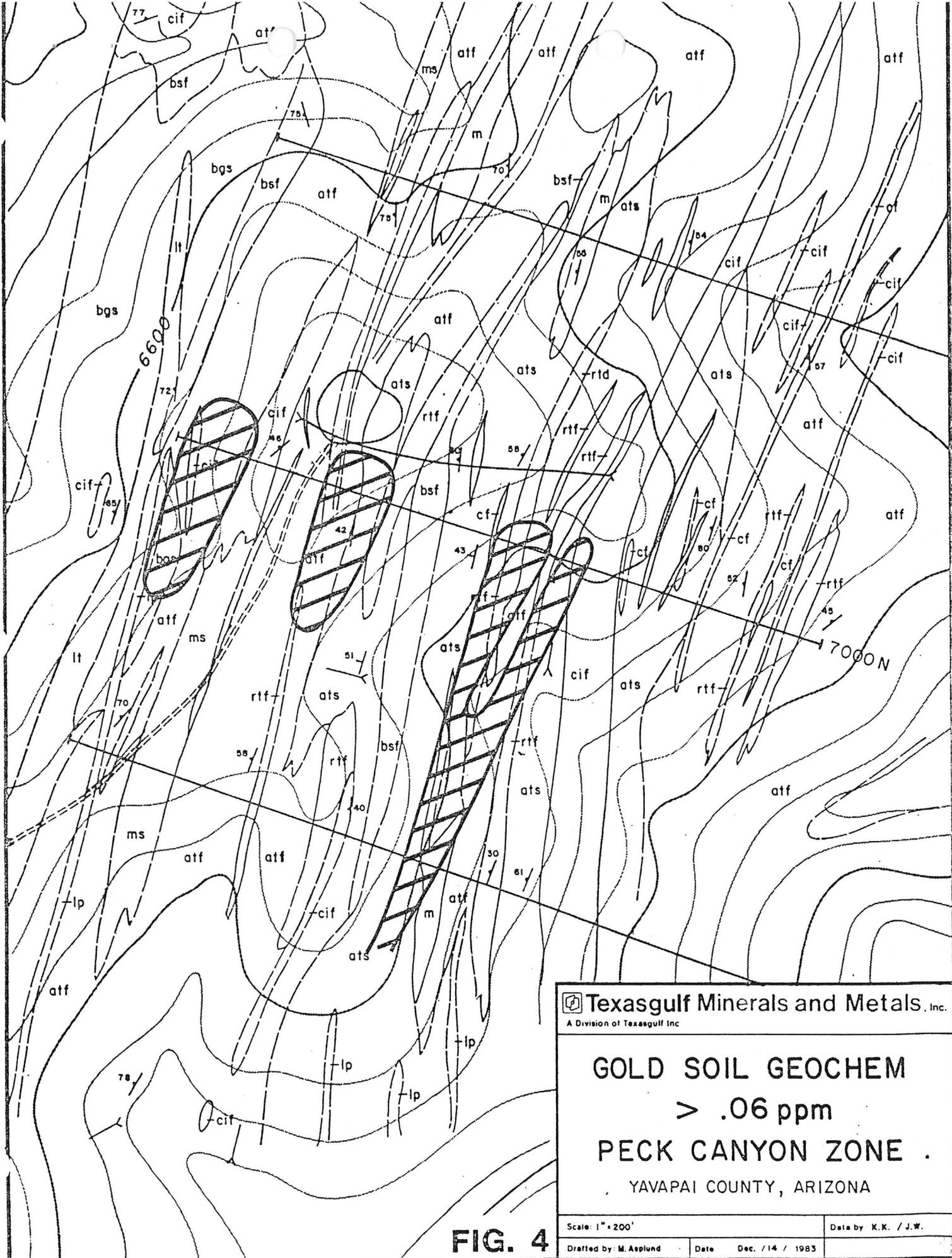
Texasgulf Western Inc.
 A Division of Texasgulf Inc. SPARKS, NEVADA

**SOIL GEOCHEMISTRY OF
 EXHALITE HORIZONS,
 PECK CANYON PROPERTY
 YAVAPAI COUNTY, ARIZONA**

Scale: 1" = 1000'	Data by:
Drafted by: PHILLIPS	Date: 2 / 9 / 1984
File No.:	

FIG. 3

BRUNING 44-131 54153



Texasgulf Minerals and Metals, Inc.
 A Division of Texasgulf Inc.

**GOLD SOIL GEOCHEM
 > .06 ppm
 PECK CANYON ZONE
 YAVAPAI COUNTY, ARIZONA**

Scale: 1" = 200'
 Data by: K.K. / J.W.
 Drafted by: M. Asplund Date: Dec. / 14 / 1983

FIG. 4

HAGERTY RESEARCH & DEVELOPMENT CO., INC.

AN ARIZONA CORPORATION

P.O. BOX 2486, PRESCOTT, ARIZONA 86302

P.O. BOX 959, MAYER, ARIZONA 86333

MINES AT
CROWN KING, ARIZONA
MILL AT
CLEATOR, ARIZONA

PHONE — MAYER, ARIZONA
(602) 632-9228

August 3, 1987.

John H. Jett, Director
Arizona Department of
Mines and Mineral Resources
Mineral Building, Fairgrounds
Phoenix, Arizona 85007

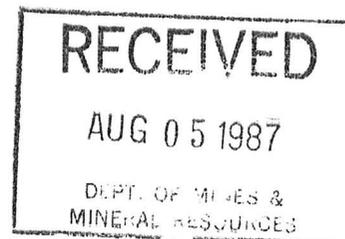
Dear Mr. Jett,

The enclosed material covers our current activities. Attached copy of letter to the Arizona Trend Magazine in reference to the "Super Water Pick" mentioned in one of the articles. This equipment can be put to considerable use in underground mines.

Department personnel are welcome to visit the properties at any time. A notice beforehand would be appreciated.

Sincerely yours,

John P. Hagerty
John P. Hagerty
President



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PHONE — MAYER, ARIZONA
(602) 632-9228

August 4, 1987.

Arizona Trend Magazine
Suite 2004
3003 North Central Avenue,
Phoenix, Arizona 85012

Attention: Kevin Helliker

Dear Mr. Helliker,

The August issue of Arizona Trend presents a fine article on Copper Mining in Arizona, and specifically, on Page 13, the "Super Water Pick: New Mining Tool?". It would be appreciated if we could be furnished the name and address of the equipment's manufacturer.

Enclosed a mining method to be employed to drive haulage drifts. However, its application has limitations. The taking of ores between drifts and stopes must still be by drilling and blasting. The water pick could perform these operations. Following is a list of applications for the pick:

1. Cutting off corners on drifts for mine rail turns.
2. Cutting cinch locations for structures.
3. Cutting out areas aside from haulage drifts for various purposes.
4. For building and equipment construction.
5. To remove rock obstruction access road construction.
6. Sinking and raising shafts and wenzes.

The enclosed material covers our completion of preliminary industrial engineering, under Plan of Operation, and a historical background pertaining to mining in our area. The following from "Rocks to Riches" by Dunning and Peplow:

"Thus, while 1880 to 1893, was significant it saw the dethroning of silver as King; the rapid advance of copper interests; the maintainence of interest in gold; and the beginning of Arizona's real copper boom."

Silver may once again compete with copper as King of Arizona Mining. It is still in the Bradshaw Mountains, and demand for it, no doubt, will increase as it is now a useful commodity as well as a precious metal.

Sincerely yours,


John P. Hagerty
President



DEPARTMENT OF THE TREASURY
UNITED STATES MINT
WASHINGTON, D.C. 20220

JUL 23 1987

Hagerty Research and Development Co., Inc.
An Arizona Corporation
P.O. Box 2486
Prescott, Arizona 86302

Dear Mr. Hagerty:

This letter is intended to serve as clarification concerning the terms and conditions under which the U.S. Mint purchases gold bullion for the minting of gold American Eagle coins.

The mint has attempted to purchase quantities of gold bullion on a daily basis as required to equal daily coin sales.

A standing set of qualified gold suppliers who have entered into identical Basic Ordering Agreements (BOA's) with the Mint have competed for each gold purchase on the basis of price alone. The Mint has been purchasing both newly mined U.S. gold and other than newly mined U.S. Gold. All gold furnished must be graded .9995 or better and in standard bars or 400 (+ or - 40) ounces.

Newly mined U.S. gold must bear the hallmark of a London or COMEX approved refiner and must be certified by the refiner as gold mined from natural deposits in the United States, or in a territory or possession of the United States. The quantity of gold which may be offered for purchase to the Mint as newly mined gold under each acceptable hallmark will be restricted to an amount not to exceed the amount processed within the preceding twelve months.

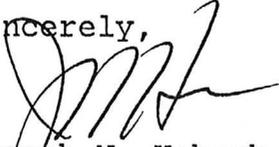
The Mint also considers alternative sources of gold offered when requirements based on sales exceed the availability of newly mined U.S. gold.

The suppliers of gold who have entered into a Basic Ordering Agreement with the Mint provide telex offers by 12:00 noon on each business day, Monday through Friday, based on the London p.m. fix of the following business day. Offers are submitted in a format specifying the hallmark, premium and applicable fix date for quantities offered, categorized according to whether gold is newly mined U.S. gold or other than newly mined U.S. gold.

The total price paid by the Mint comprises the applicable London p.m. fix as a benchmark price plus the additive premium established by the BOA holder. This premium includes but is not limited to transportation and fineness upgrade. The premium submitted and accepted by the Mint remains the same regardless of the amount of gold ordered.

Please contact me in the event that further information is required.

Sincerely,

A handwritten signature in black ink, appearing to be 'JNH', written over the word 'Sincerely,'.

Joseph N. Hoback
Contracting Officer

HAGERTY RESEARCH & DEVELOPMENT CO., INC.

AN ARIZONA CORPORATION

P.O. BOX 2486, PRESCOTT, ARIZONA 86302

P.O. BOX 959, MAYER, ARIZONA 86333

MINES AT
CROWN KING, ARIZONA
MILL AT
CLEATOR, ARIZONA

PHONE — MAYER, ARIZONA
(602) 632-9228

July 29, 1987.

United States Mint
Room 802
633 Third Street, North West
Washington, D.C. 20220

Attention: Mr. Joseph N. Hoback
Contracting Officer

Dear Mr. Hoback,

Thank you for your letter of July 23, 1987. In view of the terms and conditions expressed therein, it appears that we are on target in our planning to produce gold and silver doré anode bars.

The taper of the anode's configuration allows erosion to progress upward towards the bus bar during electrolysis. The configuration can be modified to suit a refiner's specifications. This is an advantage in sand casting the bars.

To meet U.S. Mint specifications, arrangements can be made with the Johnson Matthey Refiner at Salt Lake City, Utah, a Comex approved refiner.

Please advise if the same terms and conditions set forth in your above letter for gold are applicable to the purchase of silver.

Sincerely yours,


John P. Hagerty
President

HAGERTY RESEARCH & DEVELOPMENT CO., INC.

AN ARIZONA CORPORATION

P.O. BOX 2486, PRESCOTT, ARIZONA 86302

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(602) 632-9228

PREFACE

The City of Prescott, Arizona, came into existence as a result of mining activities in Northern Arizona becoming the first capital of the Arizona Territory, which then became the State of Arizona in 1912. Subsequent events, however, caused mining to stagnate as related herein.

It was not until 1976 that interest in Northern Arizona's mineral potential was rekindled by the Edward DeWitt Thesis published by the University of Arizona, Tucson, Arizona, titled: "Precambrian Geology and Ore Deposits of the Mayer-Crown King Area, Yavapai County, Arizona." His account and conclusion, quote:

I wish to thank Amoco Minerals Company for their Financial assistance during the Summer, 1975, both through employment during that period and defrayment expenses. Minor financial assistance in reproduction of figures, maps, and thesis material was afforded by Amoco during 1976. Mr. Jim Yeager and Amoco Minerals Company suggested the study to me during 1975; hence the project and results accrued are directly an outcome of the above company's interest. My personal thanks are extended to Mr. Jim Yeager for his comments during field mapping, 1975, and to other Amoco personnel who reviewed the project.

Personal communications with selected, fellow graduate students enhanced the outcome of this study. Premier among all, however, were discussions with Phil Anderson concerning the Mayer-Crown King area and regional Precambrian geology of central Arizona. Many hours were spent in the field with Phil Anderson reviewing the geologic problems of the thesis area. For this time and effort the author is deeply indebted. Tremendous help was afforded by the author's advisor, Dr. Donald E. Livingston, both in the classroom and field. The author's basic knowledge of Precambrian geology of Arizona stems either directly from classes and lectures by Dr. Livingston or indirectly by frequent discussions with him. Dr. Livingston's intense and active interest in the Precambrian evolution of the southwest United States have been a stimulus to the author throughout the study. Detailed and painstaking field checking of the thesis area was also initiated by the advisor, as was careful and critical review of the manuscript. The author is greatly appreciative of the many hours of work invested in this thesis by Dr. Livingston.

Special thanks are extended to Dude Barringer, Tom Cleator, St. Louis, and Neil of Cleator, Arizona, for their many delightful hours of conversation concerning the history of the Bradshaw Mountains mining district, especially the Bluebell-DeSoto area. Without their help the location of old mines and jeep trails would have been nearly impossible. Thanks to John P. Hagerty for permission and access to the Pelican Mine area, a most rugged and remote portion of the study area. My thanks to Neil Dickey, Crown King, Arizona, for his discussions and knowledge of the underground and surface geology of the DeSoto mine area, and especially for his invaluable wrecker service.

Lastly, I would like to thank whomever or whatever was responsible for the formation of chert horizons in the study area; without them as a mapping tool the detailed structural history of the area would have been impossible to unravel.

Mr. DeWitt's conclusion from the study: "Stratigraphic and structural reconstructions indicate that the Mayer-Crown King area was the site of extensive subaqueous volcanism during a period in the Precambrian."

Material pertinent to the study following shows the area and the economic geology of mines that have operated in Yavapai County. Mr. Swan, Geologist of Newmont Exploration, Ltd., who visited the area, April, 1978, pointed out that the sheeted structures were exhalant beds tilted upward pitching to the West.

Area examinations and explorations by other geologists followed with specific interest directed to the Hagerty properties and mining properties thereabout, the Peck, Swastika, Lincoln, Gladiator, and Block properties.

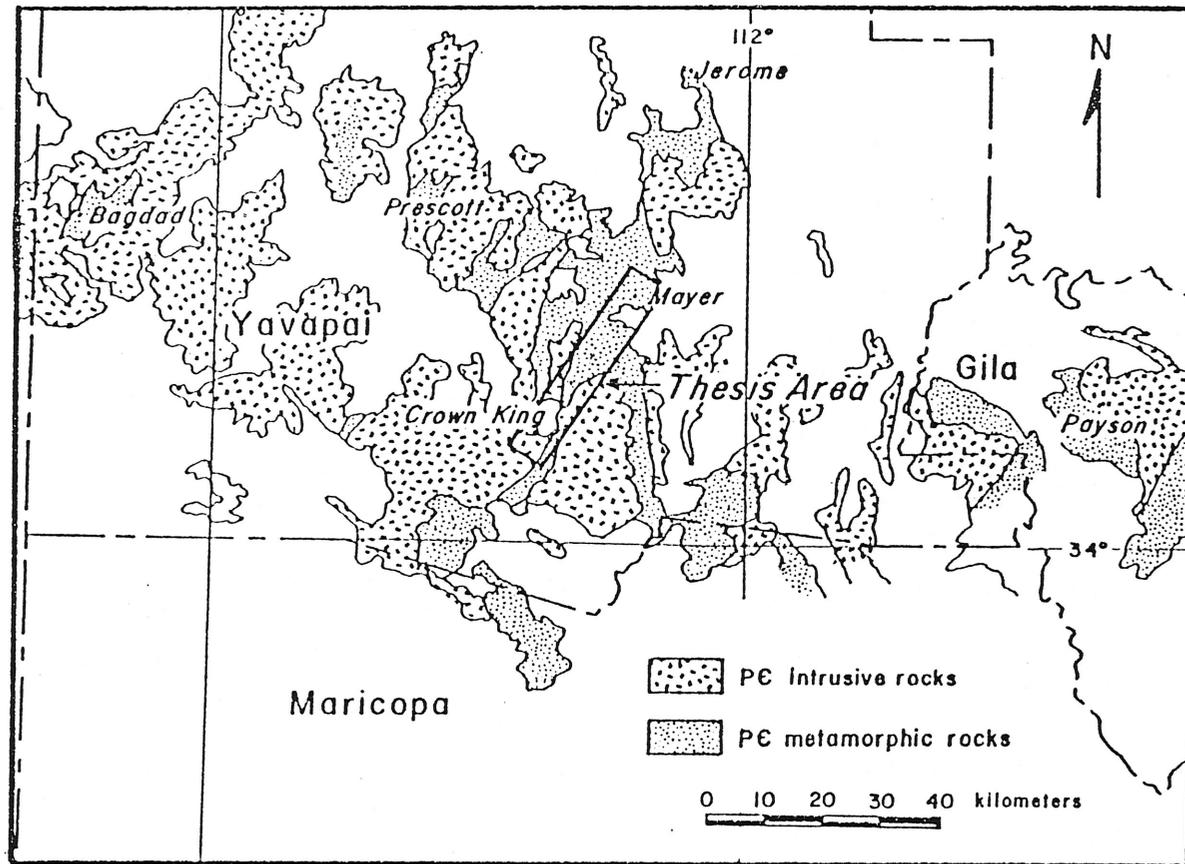


Figure 1. Location map, Mayer-Crown King area, Yavapai County, Arizona.

Table 11. Arizona "massive" sulfide deposits in Precambrian rocks.*

District and Mines	Years of Production	Tonnage (tons)	Grade	Dollar Value of Ore when Produced
Jerome area United Verde and Verde Extension	1900-1953	34,000,000	5.5 % Cu 1.68 oz/T. Ag .045 oz/T. Au	\$650,000,000
Iron King	1906-1964	5,100,000	7.34% Zn 2.50% Pb 0.19% Cu 3.69 oz/T. Ag 0.123 oz/T. Au	77,340,000
Bagdad area Old Dick, Copper Queen, and Bruce	1943-1976	1,800,000	12.0 % Zn 3.8 % Cu	66,000,000
Bluebell	1892-1926	1,000,000	3.0 % Cu 1.5 oz/T. Ag .05 oz/T. Au	14,100,000
DeSoto	1890-1930	180,000	3.75% Cu 1.0 oz/T. Ag .02 oz/T. Au	3,250,000
Antler	1943-1953	66,000	6.70% Zn 2.50% Cu	1,100,000

* Note: Production figures for most economic deposits in Arizona. Data from Anderson and Creasey (1958) for Jerome; Gilmour and Still (1968) for the Iron King; Clayton and Baker (1968) and Clayton (1976) for the Bagdad area; Elsing and Heineman (1936) and Dunning (1959) for the Bluebell and DeSoto; and Moore (1969) for the Antler Mine. Most dollar values have been computed by the author using metal prices during production eras.

Thesis by Edward DeWitt, Precambrian Geology and Ore Deposits of the Mayer-Crown King Area, Yavapai County, Arizona. Published in 1976. Studies and Field Work by Mr. DeWitt in 1975. Used as reference by Hagerty Research and Development Co., Inc. whose mining properties at Crown King, Arizona, were included in the study.

HISTORICAL BACKGROUND OF MINING IN ARIZONA

From the Book "Rock to Riches" by Dunning and Peplow.

in many respects the period between 1880 and 1893 was the most significant in the history of mining in Arizona. It was during this time that the railroads arrived in the Territory, thus facilitating transportation of the product of mines and also- a factor generally overlooked- greatly improving living conditions and the general economy of Arizona.

It was during this same period that silver reached the peak of its importance to the Territory, great mines in Arizona producing it in unprecedented quantity and the entire economy of the Territory being based largely upon the continuing good silver market. The Bland-Allison Act, which had passed Congress in 1878, had remonetized silver and had guaranteed a continuing profitable sale for the product of such mines as those at Tombstone, the Silver King, Peck, Tip Top, McGrakin and so on.

In the middle of this period, however, free silver (the unlimited coinage of silver) became a major political issue in the United States. Followers of William Jennings Bryan, "the silver-tongued orator", advocated such a policy, while incumbent political powers in the East held fast for a high tariff and the gold standard. In June, 1889, a bill was introduced into Congress providing for free silver; it passed the Senate but was refused by the House. Had it become law, it most certainly would have had a marked effect upon the history of Arizona and other silver States.

However, a compromise bill, the Sherman Silver Purchase Act, was adopted providing for the stabilization of the price of silver by requiring the Government to buy certain specified amounts of the metal.

In 1893, this temporary boon to Arizona's silver mines collapsed when the national financial panic occurred. The Sherman Act was repealed, silver once again was demonetized, and the price dropped from \$1.29 an ounce to an average of \$0.78. Almost immediately practically all Arizona silver mines closed, great numbers of miners were put out of work, and silver finally and permanently was dethroned as King of Arizona mining.

Meanwhile, other equally significant factors were at work in America's mining economy. The same consideration which had brought the free silver question into national prominence from 1884 to 1893 encouraged gold mining. A severe and continuing deflation of commodity prices resulted in a rise of the relative price of gold. The victory of the gold-standard advocates in national politics also helped largely to spur gold mining.

While silver thus continued to be the principal interest of Arizona's mining industry up to 1893, copper was making significant progress toward succeeding to the throne as soon as silver abdicated. Great ore bodies of copper had been discovered prior to 1880. However, the principal deterrents to their full exploitation were a lack of adequate transportation facilities and the lack of scientific know-how for treating any but the highest grade ores profitably.

The arrival of the railroads, of course, solved the first of these problems. Perhaps the most dramatic demonstration of the importance of the railroads to Arizona's budding copper industry is the fact that the price of copper at the beginning of this period was \$0.21 per pound; by the end of the period (1893) it had dropped with other commodity prices to \$0.10 a pound. Yet, by 1893, copper, even at this low price, was pretty definitely established as King in Arizona.

Again, much of the credit for the advances in the mining economy of Arizona- in gold and silver as well as copper- must go to the arrival of the railroads. Improved transportation meant appreciable reduction in costs. The cost of living fell; heavy machinery and equipment could be brought in at reasonable price; and shipment of products was much less expensive and difficult.

Thus basic factors in Arizona mining actually were revolutionized during the period. One effect of the arrival of less expensive machinery was that hard-rock gold mines could be worked, whereas the principal gold production of the Territory earlier had been from placers. The decline of commodity prices having increased the relative value of gold and decreased those of silver and copper, there was increased prospecting for gold.

Even though the price of silver was maintained fairly well during the period, however, there was little interest in prospecting for silver. Probably this was due to two factors: one, the national controversy over free silver bred fear that silver might not always be so valuable; and two, growing employment in copper and gold mines offered occupation enough to keep everybody busy who wanted to work.

Thus, while 1880 to 1893, was significant it saw the dethroning of silver as King; the rapid advance of copper interests; the maintainence of interest in gold; and the beginning of Arizona's real copper boom.

END OF EXCERPTS FROM ROCK TO RICHES

The mining properties held by Hagerty Research & Development Co., Inc. were the last areas to be prospected and mined to some extent during the period to 1893 when silver prices dropped drastically. Thereafter some mines, such as the Lincoln and Crown King Mines continued operations, but their values were in gold, not subject to depressed prices.

With the event of World War I gold mining was stopped by Governmental order. The mines at Jerome, Bagdad, and the Blue Bell, Iron King, and DeSoto Mines in our area continued active in the production of copper, lead, zinc, and manganese, metals needed for industrial growth and critical metals required by the war effort.

At the request of the U.S. Geological Survey, Waldemar Lindgren conducted a survey of the area in 1922. From his report "Ore Deposits of the Jerome and Bradshaw Mountain Quadrangles, Arizona", his coverage of the Peck Mine at the North East end of our properties is quoted:

THE PECK MINE

The Peck is one of the old-time silver bonanzas and at present is owned by O.Tawney of the Swastika Mine, near by. The Peck deposit, according to Raymond's reports, was discovered June 16, 1875 by E.J.Peck. Rich ore was found from the start. In the early days 10 tons were sold at Prescott for \$13,000 which was considered much below the actual value.

In the Mint Report of 1883 the mine is mentioned as highly productive. At that time the levels aggregated 1,400 feet in length, and a shaft 400 feet deep was sunk. There was a 10-stamp mill on the property. About \$1,000,000 to \$1,500,000 in silver is the reported production between 1875 and 1885. Since then there has been some intermittant work by lessees, and in 1922 steps were taken to reopen the property.

The country rock is quartzite, a lens in the Yavapai schist, with some amphibolite schist, that is N. 25 E. and 75 W. A porphyry dike 50 feet wide is said to

have been cut between the Peck and the Occidental veins. For the most part the ore appears to have been made in the quartzite. The outcrops of the vein appear in a bold quartzite bluff in the creek, rising about 50 feet above the stream grade. The tunnels following the veins start from the creek level, and there are two shafts, at the North and South ends of the property. The northerly shaft, now in operation, is 387 feet deep and the collar is 50 feet above the creek.

The veins are in places several feet wide. The ore consists mostly of dark-brown quartzite partly replaced by limonite. From the tunnel at creek level good specimens were obtained coated with green bromyite, also containing a little iodine. A specimen rich in native silver was obtained from Mr. Tawney. The principal gangue minerals are siderite or ankerite, now almost wholly converted to limonite. Barite is also present.

According to Mr. Towner, much rich oxidized ore was taken out from the shaft below the water level, though little of value was found in the lower levels. A specimen of sulphide ore from the 300 foot level is said to have contained 19.75 per cent of copper, 24 per cent of antimony, and 3,800 ounces of silver to the ton. Some zinc is also reported from the lower levels.

The extraordinary concentration of value in the oxidized zone of this vein is certainly remarkable, and it would seem possible that further exploration might reveal ore, though probably of lower grade in depth. No maps of the old workings are available.

END OF WALDEMAR LINDGREN REPORT

The Swastika Mine is a consolidation of the Black Warrior and Silver Prince Claims. The northerly boundary of the Hagerty properties joins the southerly end of the Swastika properties, which are also described by Waldemar Lindgren from his survey in 1922, quote:

THE SWASTIKA MINE

The Silver Prince is mentioned in Raymond's report of 1877 with the statement that the cost of packing the ore to Prescott was \$50 a ton. The Mint report for 1883 mentions both veins, stating that the Black Warrior was 2 to 3 feet wide, that \$40,000 in silver had been extracted so far, and that 8 tons a day was milled in a 4-stamp mill for a yield of 113 ounces of silver to the ton. About 1885 the mine was considered exhausted, and it was idle until reopened by F.W. Woods in 1910. From 1910 to 1915 the mine produced 600,000 ounces of silver. The total production is stated to be about 1,000,000 ounces. Since 1915 the mine has been in intermittent operation. Mr. Woods states that from 1875 to 1908 the Silver Prince had yielded \$480,000 and the Black Warrior \$385,000.

The country rock consists of Yavapai schist, mostly fissile and sericitic, with lenses of quartzite, but the outcrops are deeply oxidized. The two parallel veins strike due north and dip 60 deg. W., with the schist. The Prince lies 300 feet west of the Black Warrior. Between the two there is a 50 foot dike of light colored porphyry.

The Silver Prince is developed by tunnels and a 400 foot shaft about 600 feet to the north. The vein is at most a few feet wide and carries dark brown limonite ore. There is a little quartz, but the principal gangue mineral is a sideritic carbonate, with native silver, chloride, and some sulphides. The sulphides consist of a partly decomposed tetrahedrite rich in silver and a little chalcopyrite. The ore, which contains a little lead, was sold to El Paso and the lead smelter at Needles in 1914 and later shipped to Salt Lake City.

END OF WALDEMAR LINDGREN REPORT

The Lincoln Mine joins the southern end of the Hagerty properties at its north boundry. Its ore veins extend north north east into the Hagerty properties and is described by James A. Marsh, consulting mining geologist in his report dated 1980, as follows:

THE LINCOLN MINE

Exploration, development, and mining operation at the Lincoln Mine commenced in 1905. During the first few years of operation, ore was treated in a two (2) stamp mill and later in a five (5) stamp mill. The ore was oxidized, running entirely in gold, having a grade in excess of one (1) ounce per ton. Recoveries were reported to have been poor. During 1906, the five (5) stamp mill was replaced by a fifteen (15) mill, two Wilfley tables, and three (3) Freuranners, which resulted in better concentration. The tailings from this mill contained values from \$1.20 to \$1.80 per ton. Under a gold price of \$400.00 per ounce, these tailings would have a gross value of \$24.00 to \$36.00 per ton.

The main workings of the mine were closed down November 1, 1907, due to the closing down of the Humbolt Smelter, which owed the company for all of the October shipments. A limited amount of mining was conducted during 1910, 1911, 1918, and 1931 from the main workings and the south end of the property.

Geology: The country rock is essentially the Bradshaw granite and Yavapai schis with intrusive dykes of diorite, porphyry, dolomite, and greenstone. The region is very highly mineralized along contacts and fractures.

Veins and Ores: The main Lincoln vein strikes N-25 deg. to 30 deg. E and dips 65 to 70 deg. N.W. It is on contact between granite foot wall and dolomite hanging wall. It has an average width of two (2) feet along the surface outcrop. Where exposed by various underground workings, the vein widens and at the deepest point reached, 350 feet below the surface, it has a width of 40 feet from wall to wall. The vein is continuous and has been worked on four (4) consecutive claims from north to south. The vein throughout the length of the main level (1800') and other levels below is well defined between hard walls. The vein filling is composed of talcy, ground-up schist, highly silicified, with bands of quartz and heavily iron stained.

The sulphide ore is primarily gold ore consisting of the following minerals: free gold, pyrite, chalcopyrite, tetrahedrite. The value of the ore is shown in the attached tables from the original smelter sheets and mint returns. They cover all shipments made from the mine. (EXHIBIT "E") A considerable tonnage of ore was milled and shipped in 1910 over a period of five (5) months by parties who had the mine under lease. Authentic records of this work are not available.

END OF MARSH REPORT SEE EXHIBIT "E"

Table No-1

Record taken from original Smelter return sheets, ore and concentrates.
0000.....

EXHIBIT
 "E"

Date	Pounds	oz.	oz.	%	Gross	Net	per	Total	
	Weight	Kind	Gold	Silv.	Cu.	pr	ton	ton	payment Freight
July 31, 1905	45,432	conc	1.60	26.6	5.70	\$53.23	\$42.92	\$ 905.22	95.30
Aug 3	50,350	conc	1.70	30.0	3.90	53.25	41.00	1026.19	95.36
" 8	44,323	ore	1.00	16.5	5.10	35.30	17.10	373.32	33.06
Sept. 25	52,735	conc	1.75	33.8	6.00	67.86	61.15	1563.97	125.00
Oct. 19	33,750	ore	1.70	27.0	7.30	65.62	57.56	1104.06	264.50
" 30	48,000	"	1.76	27.6	7.30	62.71	54.31	1256.44	39.60
Nov. 4	25,775	conc	1.70	29.5	7.00	67.32	60.23	737.46	149.21
" 4	14,450	ore	2.30	31.8	6.30	97.11	70.10	501.43	103.79
" 13	52,040	"	1.19	22.0	4.30	44.49	34.23	379.90	57.50
" 23	74,330	"	1.35	19.9	5.01	51.03	41.42	1523.97	139.37
Dec. 19	60,000	"	1.60	19.6	5.30	56.45	47.02	1356.99	75.00
" 19	44,000	"	1.14	15.7	3.50	40.59	30.33	645.90	50.60
" 22	44,000	"	1.30	23.3	6.39	54.60	54.30	971.68	39.95
Jan. 11, 1906	31,300	"	2.42	35.2	6.66	67.02	78.27	1210.21	55.00
" 12	50,000	"	1.80	21.9	5.67	55.84	56.27	1373.61	75.00
" 21	53,720	"	1.35	23.7	6.30	62.68	53.13	1393.42	80.60
Feb. 12	47,220	"	1.25	33.2	6.21	63.12	52.37	1213.23	75.20
Mar. 21	55,350	"	0.20	9.6	4.68	21.79	11.43	298.07	45.67
Apr. 2	50,556	"	0.15	8.7	3.37	19.51	9.32	221.47	41.70
" 17	50,920	"	0.19	9.2	3.13	19.72	6.14	202.26	42.00
May 8	53,220	"	0.26	13.8	5.62	30.17	20.95	530.50	63.85
May 29	53,720	conc	2.19	29.0	7.92	86.60	78.42	1925.21	80.60
June 1	44,820	ore	0.24	13.4	6.02	30.95	21.67	461.20	42.90
" 12	49,220	"	0.46	15.3	6.35	37.61	26.45	673.45	56.60
" 12	51,300	conc	1.66	23.2	7.59	71.94	63.41	1485.69	76.95
July 2	49,060	"	1.57	24.4	8.64	72.90	64.90	1458.24	75.00
" 13	42,120	ore	0.32	10.0	4.36	26.51	17.51	362.12	48.75
Aug. 17	49,930	conc	2.30	26.2	7.66	83.32	77.38	1840.87	75.00
Oct. 5	36,030	conc	1.97	25.3	6.64	77.87	69.04	1124.66	66.00
" 25	43,320	ore	2.32	19.1	4.68	75.36	64.15	1297.75	66.00
Nov. 13	54,820	"	2.61	34.8	5.72	94.96	84.13	2242.72	90.00
Dec. 1	36,060	"	0.90	15.5	4.04	43.10	31.42	539.36	
" 1	16,160	conc	2.34	36.3	10.54	110.79	102.39	782.57	73.35
" 28	49,620	ore	1.76	20.5	4.46	65.12	53.74	1253.50	74.45
Jan 17 1907	62,090	"	3.52	27.0	4.56	106.43	95.36	2830.35	122.60
Feb. 11	59,300	"	3.41	24.0	3.87	98.51	87.21	2430.60	90.00

New
 M.L.L

Table No 2

BULLION FROM MINT.

Copied from Original mint return sheets.

	Date of Recd at mint:	Gross wt amalgam ozs.	Value of gold	Value of silver	Value of Charges.	Net amt paid
Old Mill Five Stamps	June 17, 1905	92.40	\$395.09	\$19.05	\$4.38	\$ 909.75
	July 21	55.55	1154.54	18.29	4.70	1167.93
	Aug. 4	70.00	897.25	10.58	3.63	904.20
	" 31	64.55	835.13	11.77	3.59	841.51
	Sept. 15	40.40	455.27	9.20	2.02	461.85
	Oct. 9	30.00	258.55	8.05	2.18	304.25
	June 24, 1906	53.54	405.55	7.32	2.35	411.29
	July 19	52.20	553.71	7.24	2.27	553.68
	Aug. 20	59.40	527.29	15.53	2.17	541.65
	Sept. 14	62.05	410.55	20.14	2.01	428.50
New Mill	Oct. 11	50.43	405.20	15.92	2.19	420.11
	Nov. 2	26.85	251.37	8.25	1.54	258.58
	Apr. 26, 1907	-----	Mint Record lost	-----	-----	501.55
	May 10	-----	"	-----	-----	1150.77
	" 22	53.03	735.15	10.80	3.22	742.71
	June 7	75.35	823.59	14.98	3.55	894.54
	June 20th	71.53	859.52	14.62	3.70	870.54
	July 10	81.54	949.59	16.91	4.05	952.54
	" 19	51.61	537.11	11.42	2.89	575.54
	Aug. 5	49.16	570.79	9.24	2.75	579.23
One liquidation appears lost.	" 21	51.45	349.71	7.15	2.17	354.75
	Sept 7	33.43	355.43	7.74	2.22	368.98
	" 25	26.43	316.09	6.51	2.03	320.65
	Oct. 5	39.95	446.09	8.57	2.48	454.13
	Nov. 6	57.50	526.37	12.14	2.99	537.52
	" 21	56.15	476.22	7.82	2.54	486.50
	Dec. 10	25.55	252.95	5.91	1.34	265.05
	Apr. 29, 1908	45.55	493.11	9.75	2.85	485.00
	May 7	45.60	491.79	7.99	2.71	475.97
						70 "

No. 5

Date	Pounds weight		Oz. Gold	Oz. Silly	% Cu	Gross per ton	Net per ton	Total payment	Freight
Jan. 17, 1907	62,000	ore.	3.53	27.0	4.56	\$106.43	\$ 95.36	\$2060.33	\$122.60
Feb. 11	59,300	"	3.41	24.0	3.87	93.51	87.21	2430.60	90.00
Mar. 19	77,120	"	3.21	23.7	4.32	96.76	86.27	3130.30	115.70
Apr. 11	63,000	"	4.29	26.0	4.41	118.51	108.20	3520.61	132.60
May 10	59,460	"	3.26	23.9	5.31	103.73	92.68	2719.50	117.00
May 16	29,720	Conc	5.00	25.4	5.76	100.99	91.33	1209.20	55.70
June 19	13,652	"	not off original			82.70		1684.20	
July 6	47,400	Ore	1.83	22.2	4.11	65.69	53.96	1230.20	102.35
" 12	20,000	Conc	3.34	22.9	4.23	97.42	88.42	339.00	104.50
" "	48,800	Ore	3.28	24.2	3.96	94.17	85.27	1970.80	
Aug. 15	21,720	Conc	4.06	27.5	5.22	115.79	106.34	1045.10	126.15
" "	42,960	Ore	3.73	37.6	7.36	121.25	110.32	2301.85	
Sept. 13	64,740	"	3.21	39.6	6.39	103.30	95.62	2990.00	126.25
Oct. 17	54,000	conc	(Oct.)						
" "		ore	(not off original, none made)					3370.00	Smelter failed loaned by Bank on the shipment
Feb. 1, 1910	16,740	Conc	1.61	50.2	3.60	61.23	56.24	423.15	Prepaid
Mar. 8	21,631	"	1.34	20.7	5.55	55.74	50.74	503.29	24.94
Apr. 12	15,119	"	2.23	20.3	4.32	61.06	55.79	385.90	20.51
May 10	15,456	"	1.82	16.3	4.90	51.78	45.77	341.67	
" "	12,513	ore	.71	13.4	5.40	28.35	19.09	117.29	25.40
" 24	3,543	conc	1.63	18.8	7.40	53.13	50.00	203.00	9.82

Page 7.

SUMMARY OF PRODUCTION

1905.

210.0 tons of ore shipped	@ \$51.20	equals	\$10,764
87.1 " " conc	@ 58.40	"	5,445
Bullion	"	"	4,589

1906.

182.5 tons of ore	@ \$87.40	"	12,520
126.2 " Conc	@ 80.50	"	10,290
173.7 " run of mine	@ 26.00	"	4,517
Bullion	"	"	2,419

1907.

253.4 tons of ore	@ \$101.20	"	26,875
45.5 " " conc	@ 99.80	"	4,555
Bullion	"	"	12,857

For over the three years

657.9 tons of ore	@ \$ 75.90	"	49,959
258.8 tons of concentrate	@ 78.10	"	20,270
173.7 tons run of mine	@ 25.00	"	4,517
Bullion	"	"	<u>19,875</u>

1090.4 tons shipped Total product \$94,621.21
 (Note-- @ means averaged.)
 Values are gross per ton.

The shipments during 1910 are in all probability not complete and are therefor not detailed. It is probable that they amounted to about # 9,000.00

Over the period that a record of tonnage milled was recorded as shown on bullion return sheets, shows that

1031 tons milled plated \$6,981.54 and concentrates during the same period were \$ 3,777.50, equivalent to

Saved per ton on plates	\$6.75
Saved per ton in concentrates	3.65
Total per ton milled	\$10.40

At a saving of 70% shows milling ore to have run \$15.00 per ton.

This record is complete and covers all production during the time that the mine was operated except when Lincoln himself operated same before in a very small way.

B. H. Doran

RECENT TIMES AND EXPLORATION ACTIVITIES RELATING TO THE HAGERTY PROPERTIES

The Hagerty properties bounded by the Peck and Swastika Mines on the North and the Lincoln Mine at the South, and lying therebetween, are in the same general strike zone. However, the ores differ as influenced by the upward thrust of the Crazy Basin Quartz Monzonite Batholith. John White, Texasgulf Geologist, covers this intrusive event in his report as:

The Crazy Basin quartz monzonite is a non-foliated granitic intrusive rock composed of course-medium-grained K-feldspar, and quartz with minor fine- to medium grained biotite. An unpublished radiometric date of 1.72 billion years is suggested for this rock by Leon Silver of the California Institute of technology (Dennis, and Donnelly, 1982). A contact metamorphic aureole extends up to 500 feet into country rock adjacent to the Crazy Basin quartz monzonite. (Aureole- heat radiated by the upward movement of the batholith) Rocks in the aureole are metamorphosed to amphibolite grade schists composed of medium-grained quartz and biotite, and local minor hornblend, garnet, tourmaline and sericite.

Patrick F. O'Hara, Phd, in his Thesis describes the event as:

The Crazy Basin Quartz Monzonite apparently intruded preexisting rocks as a diapir which caused local folding and faulting. Retrograde metamorphism, or hydrothermal alteration, is associated with the intrusive. Replacement of staurolite and andalusite by muscovite indicates that the pelitic rocks were open to potassium metasomatism at least locally. Alteration of plagioclas plus grossularite to epidote and of amphibole to chlorite or chlorite plus calcite suggests that these rocks were open to H₂O and CO₂ during this event.

Our Plan of Operation provided includes the Reports by William Burstow, Economic Geologist, for American Copper & Nickel, a division of International Nickel of Canada, John White, Geologist for Texasgulf, and Karl Kanbergs, Geologist for Texasgulf. An Abstract by Patrick F. O'Hara, Consulting Geologist, is also included.

Following is a report on the Hagerty Properties as an asset furnished to our stockholders, September 13, 1986. It specifically relates to the Hagerty mines identified as Hagerty Consolidated Mining for which \$5,000,000 is need to fund the operation. The mining industry, generally, has had difficult times but changes for the better are expected. Page 5. covers metal prices in 1982 as portrayed in Forbes magazine. The minting of U.S. Gold coins under recent laws enacted by the Congress will without doubt benefit the mining industry.

We are seeking a funding source ready, willing and able to fund our operations on a fair and equitable basis reached by negotiation, agreement in principle, and formal drawnp documents.


John P. Hagerty
President

October 20, 1986.

HAGERTY RESEARCH & DEVELOPMENT CO., INC.

AN ARIZONA CORPORATION

P.O. BOX 2486, PRESCOTT, ARIZONA 86302

MINES AT
CROWN KING, ARIZONA

THE HAGERTY MINING PROPERTIES, A MAJOR COMPANY ASSET

The following is quoted from the publication "SCIENCE", July 1986 edition, Volume 233, Number 4760, by Philip H. Abelson:

"Many people have the impression that gold occurs as nuggets in streambeds and being a noble metal is only dissolved by aqua regia, a mixture of concentrated hydrochloric and nitric acids. But gold occurs in other environments and is quite mobile under some natural conditions. The concentration of gold in the earth's crust is about 5 parts per billion. Yet a combination of natural chemical and physical processes has led to chunks of gold weighing as much as 30 kilograms. Economic geologists are still arguing about the mechanisms leading to ore formation, but their fund of knowledge and new tools are leading to successes in finding ore. Much of the new gold being found is not in placers but in stratiform deposits. In many of the latter, the gold is disseminated in host rocks in such a way that it is invisible to the naked eye.

The outline of how gold is extracted from sedimentary or volcanic rocks in which it is present at levels of 5 parts per billion are generally agreed on. Some kind of complexing agent is involved that renders the gold soluble in a hot (175 deg. to 450 deg. C) aqueous fluid. The fluid under great pressure finds its way to a plumbing system, for example, a fault, leading toward the surface. On the way to the surface the complexing agent reacts with wall rock or in some other way loses its solubilizing capability. Gold is not the only element mobilized by this process. Other elements include antimony, arsenic, copper, lead, mercury, molybdenum, silver, and zinc. A number of different complexing agents have been proposed but the likeliest candidates are those involving sulfur. For example, T.M. Sewar conducted experiments with 0.5 molar NaSH at 1000 bars pressure. One kilogram of a solution having a pH of 7.47 at 20 deg. C dissolved 150 milligrams of gold at 300 deg. C. At 175 deg. C about 11 milligrams dissolved. The complex formed was probably $Au(HS)_2$."

The Hagerty properties fit this description with an additional feature. The stratiform deposits were tilted upward to their present position by the upward thrust of the Crazy Basin Quartz Monzonite Batholith, a huge irregular formation that was forced upward under extreme pressure intruding the overlying strata, the strata that formed in Precambrian Times under the seas. Batholiths form at extreme depths and have no floor, can be miles below the Earth's crust, have very steep sides and clearly defined contacts with surrounding rocks.

The mechanical and physical actions of the batholith as it took place with the resulting causes and effects is better understood by the definition of "Magma". It is the rocks that have congealed from a partly or wholly liquid rock melt. Such rocks are those that were once in the molten state. Lava, basalt, and granite are examples. Once formed, magmas tend to rise, becoming intrusions at higher levels or extruded on reaching the Earth's surface. Igneous rocks, magmas, formed at the earth's surface are extrusive or volcanic; those formed below the surface are intrusive. Both extrusive and intrusive events took place in the general areas between Crown King and Mayer. Reference Texasgulf Peck Canyon Project.

The strata, now resting on the steeply plunging slope of the batholith, could also extend to great depths. The gaseous and liquid mineral bearing fluids, which also originate from the depths, finding their way upward through the many friable fractured, faulted, and openly spaced cracks subsequent to or during the uplifted intrusive event, are the ore veins of importance. The mineralization of the level lying strata, now tilted, also contain the ores first formed during the Precambrian period. All of this has a direct bearing on the depth, lateral extent, and ore values anticipated. From the Texasgulf Report covering an area of the Hagerty properties comprising about one quarter of the total, the following is quoted:

"Soil sampling indicates that gold is enhanced in soils, - - - , Base metals and arsenic values correspond well with gold. Strike length of anomalies is spectacular and in the case of the Peck Canyon Zone approaches 1-1/2 miles. The strike length and clear base-metal gold and exhalite association argue favorably for syngenetic origin of the metals. (Page 6) . The primary target was an open pitable moderate grade orebody lying at shallow depth beneath the soil anomalies, containing on the order of 500,000 ounces of gold."

From our Plan of Operation two estimates of mineral reserve values are presented. The values do not mean that such is the value as an asset for the reason that costs of mining the reserves must be taken into account. The difference between the reserve value and the costs of mining is the asset. This difference must be prorated over the number of years expected to be the life of the mines and the production rate that in time depletes the reserves, along with processing the end product.

ESTIMATE NO. 1. Predicated on the assumption of value in depth on multiple, sheeted structures pitching to the West with lateral parallel extensions North North East.

Lateral length of ore veins placed end to end	52,800 feet (10 miles)
Average width of ore veins	6 feet
Expected depth of commercial grade ores	1000 feet
Average weight of typical ores in place	277 Lbs. per cubic foot
Displacement of ores 52,800 x 6 x 1000	316,800,000 cubic feet
Weight of ores, Lbs. 316,800,000 x 277	87,753,600,000 Lbs.
Weight of ores, Tons	43,876,800 Tons
Safety Factor at 25%, 43,876,800 x .25	10,969,200
Mineral Reserves, Tons 43,876,800 less 10,969,200	32,907,600 Tons
Average value ores, all extractable metals	\$400.00 per Ton
Value of Mineral Reserves 32,907,600 x \$400.00	\$13,163,040,000

ESTIMATE NO. 2. Predicated on the same assumptions as for No. 1. above.

Lateral length of ore veins placed end to end	52,800 feet (10 miles)
Average width of ore veins	6 feet
Expected depth of commercial grade ores	200 feet
Average weight of typical broken ore, weighed	90 Lbs. per cubic foot
Displacement of ores 52,800 x 6 x 200	63,360,000 cubic feet
Weight of ores, Lbs. 63,360,000 x 90	5,702,400,000 Lbs.
Weight of ores, Tons, as the mineral reserve	2,851,200 Tons
Average value ores, all extractable metals	\$200.00 per Ton
Value of Mineral Reserves 2,851,200 x \$200.00	\$570,240,000

For the Hagerty Consolidated Mines (Pelican-Blue Bird Mines) which are ready to be activated, the same value of the properties as an Asset used for Fiscal Year ending September 30, 1985, will be used on the Balance Sheet computed as follows:

MINERAL RESERVES, PELICAN-BLUE BIRD MINES, EXHIBIT TO BALANCE SHEET
FOR FISCAL YEAR ENDING SEPTEMBER 30, 1986 AS HAGERTY CONSOLIDATED MINING.

The vein structures of the Pelican and Blue Bird Mines, including the nearby Lincoln Mine vein extension into the Hagerty properties, comprise the principal reserves upon which a value for the assets has been reached. The factors on which computations are based follow:

1. The lateral extent of the above structures on the surface within the claims.

Blue Bird Strike	1625 Feet
Pelican Strike	3000 Feet
Lincoln Extension	<u>1250 Feet</u>
	5875 Feet Total

2. The ore veins are standing structures pitching to the West, raised to this position by the upward thrust of the Crazy Basin Quartz Monzonite Batholith. The veins vary in width, separating and coming back together, decreasing or swelling from hang wall to foot wall. The Lincoln extension vein increases in width from 2 feet at the surface to 40 feet at 350 feet below the surface. (Marsh Report, 1980) The northern part of this vein extends into the Hagerty properties. For an average mean width of the Pelican, Blue Bird, and Lincoln vein extension, to be mined by Hagerty, 6 feet is used as conservative and to compensate for variables.
3. The Oxide Zone, where valuable ores can be expected, is placed at 400 feet.
4. Based on assays by geologists and Hagerty, a mean average value of \$200.00 per ton is established for the precious and base metals.
5. A measured cubic foot of broken ore has been found to weigh 90 pounds.

COMPUTATION FORMULA: The displacement of structures x the weight of a cubic foot of broken ore divided by 2000 pounds gives the tonnage. Tonnage x value per ton gives the Value of the Reserve Insitu. (In its original place)

$5875 \times 6 \times 400 =$ Displacement of 14,100,000 cubic feet. $14,100,000 \times 90$, the broken ore weight per cubic foot is 1,260,000,000 pounds, which divided by 2000 pounds per ton is the tonnage of 630,000 tons x \$200.00 per ton = \$126,000,000 as the Insitu Reserve.

At the production rate of 20,000 tons per year the reserve of 630,000 tons would take 31.5 years to deplete. The Reserve Value of \$126,000,000 would then be for each year, assuming the production rate to be constant, \$4,000,000 for each year of operation. This figure is the Hagerty Consolidated Mining Balance Sheet Asset.

THE OUTLOOK

In view of events affecting precious metals worldwide, demand for gold, silver, platinum, and its group of metals may exceed supplies. The consumer consumption of gold coins alone that has grown considerably, will require more and more amounts of gold to meet the demand. Our mine product for these metals will be doré anode bars to be shipped to refiners for refining to the finished product. Refiner and buyers will need a dependable, ongoing supply of these metals which we can supply for many years to come.


John P. Hagerty
President

For the Annual Meeting of September 13, 1986.

Phoenix Vas. Co. (S)

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HAGERTY RESEARCH & DEVELOPMENT CO., INC.

AN ARIZONA CORPORATION

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MINES AT
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MILL AT
CLEATOR, ARIZONA

PHONE — MAYER, ARIZONA
(602) 632-9228

August 27, 1987.

Mr. John H. Jett, Director
Arizona Department of Mines and Mineral Resources
Mineral Building, Fairgrounds,
Phoenix, Arizona 85007

Dear Mr. Jett,

Attached copy of letter to Mr. Helliker, Staff Writer, Arizona Trend Magazine, and the same material that has been furnished to them.

Visits to the mines are welcome and can be arranged beforehand by writing to me at P.O. Box 959, Mayer, Arizona 86333. This location is where we have an office but at the mines most of the time and difficult to reach by phone. At this time we have no communication from the mines, but expect to in the future. I would suggest visits be made after the Monsoon Season as not pleasant to be out from shelter in the severe lightning storms.

Sincerely yours,

John P. Hagerty
John P. Hagerty
President

Enclosure:

Composit Drawing, Texasgulf - GOOD DATA
Report, 1982, and related material

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AUG 31 1987
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MINERAL RESOURCES

Report of Smelting Furnace Performance
First Fired April 15, 1969.

The furnace, installed at the Pelican Shaft Mine, was constructed from scrap materials and purchased items of hardware. The principle of steel liner with outside insulation was used with dirt, sand and rock fill contained by partitions to provide such insulation.

Various features were incorporated such as removeable hearths and water quench tank within the furnace. The hearths could be removed and tended during operation and the quench tank provided a means of chilling molten drops of metal running from the hearths thereby producing granular bullion more suitable for re-melting than the bullion cast in molds.

A tuyere was constructed beneath the furnace body to supply compressed air to the fuel to urge it to higher temperatures. A control valve and air pressure gage was installed and the compressed air supplied from an air compressor and receiver tank. Temperature indicating and/or temperature recording systems were not available and this lack of such equipment emphasized its need for furnace temperatures cannot be regulated without it.

The fuel used was dead oak and weathered coke. The furnace had one access door for stoking, rabbling, and tending the hearths. The furnace was placed in operation April 15, 1969, and has undergone two smelting cycles (two firings) with the following results:

1. Three different types of ore were reduced at the same time in a single furnace.
2. Oak is too hot in burning and hard to control. Coke is the proper fuel for use but a combination of gas and coke is desirable, the gas to first fire the coke on starting the furnace to ignite the coke, and thereafter to be used in burners to heat molds for casting bullion.
3. Temperature indicating and control systems are absolutely necessary to prevent excessive heats which would cause the metallics in the ore to volatilize.
4. On a recent examination of the furnace beads of silver were found adhering to parts of the furnace near its door compartment. The beads ranged from 1/32 inches to 3/16 inches in size. The larger could have resulted from spillage but the smaller size particles came from the atmosphere within or around the furnace. Volatilized silver if inhaled may not be harmful, since it is even used in medicine, but lead or mercury thus inhaled could cause poison or death to personnel.
5. A high heat zone developed in the vicinity of the chimney exhaust resulting in a lack of heat uniformity.
6. Difficulty was experienced in performing all furnace operations through one access door.

From the foregoing experience factors gained and from the resulting ore reductions which verified ore potentials the experimental and production furnace as constructed has paid for its costs many times over. Its first trial verified mineralization of the Pelican outcrop which justified building an access road to the Pelican shaft where mining near it will commence and the road is needed to service both the mining and smelting operations. The second trial verified ore from another mine about one mile away to which an access road will now be constructed. In brief the furnace was and can be used as a crude method of assay.

A production type smelting furnace is now in the design stage based upon experience gained. The present furnace will be used for experimental use and with minor modifications to produce silver bullion to be stockpiled for marketing. With availability of the new production furnace the experimental furnace will then be modified for use as a holding furnace, one used to maintain a charge, item or materials at a required temperature for later processing.

Changes will be made in the production furnace design to incorporate the following features:

1. Doubled capacity with hearths inclined to both ends of the furnace at which points access doors will be provided with rabbling ports in each door for tending.
2. A stoking door at the side of the furnace to enable fuel charging without disturbing the hearths.
3. The exhaust stack will be located in the center of the furnace with baffles to assure heat uniformity.
4. Vacuum or suction hoods will be provided at all access doors to assure personnel safety from hazardous atmospheres.
5. Temperature indicating and recording equipment will be provided for proper process control.
6. Compartments at each end of the furnace will be provided with gas fired heating elements for heating molds and quench tanks for chilling will be installed at the same locations.
7. Removeable and interchangeable hearths for various purposes such as roasting, metallic run off, or metallic contained melt and slag removal will be provided.
8. The furnace stack will be removeable and interchangeable to enable the recovery of precious metals that collect by condensation.

The production furnace as developed will be duplicated for use at each of our mine locations for extraction at these points.

The furnace has a potential as a manufactured product to be made complete or in kit form and sold to small mining companies faced with similar problems of marketing their production.

The furnace as designed is intended for use in custom smelting to reduce various types of ores, a system of reduction that cannot be employed by the very large smelters who must pattern their processes according to the type of ore, and who must process very large quantities of ore in a given period of time such as the copper smelters now in use in Arizona. Custom smelting is an absolute necessity for reducing complex ores, otherwise valuable metallics are sacrificed.

For large volume smelting capacities the furnace can be utilized in multiples as required to meet capacities and ore variations. Its construction will be much less in cost than masonry built furnaces. The capacity per unit furnace can be increased in sizes constructed proportionly larger.

Arizona has no lead or zinc smelters, or reduction capabilities for other metallics such as tungsten, molybdenum, antimony, bismuth, rhenium, platinum or the rare earth metallics, nor is there a refinery for the gold, silver and platinum. It is believed that the above described furnace will become an important step in the further development of mining in Arizona.

John P. Hagerty
President, Hagerty Research &

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MINES AT
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MILL AT
CLEATOR, ARIZONA

September 7, 1987.

Mr. Kevin Helliker, Staff Writer
Arizona Trend Magazine
3003 North Central Avenue
Suite 2004
Phoenix, Arizona 85012

Dear Mr. Helliker,

The enclosed is additional information relating to the Texasgulf Summary Report previously furnished. It has, along with the other material, been furnished to the Arizona Republic, Tucson Newspaper, Prescott Courier, and the California and Pay Dirt magazines.

Publicity would present exposure of our mining properties to parties seeking such properties. The search for gold properties, especially, is regarded as intense, mostly by foreign investors. U.S. investors are more orientated to real estate, goods and services, and other enterprise except mining.

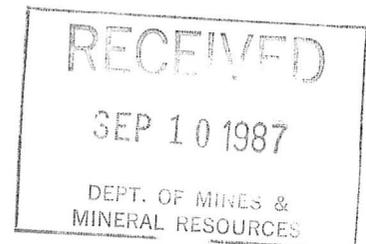
Sincerely yours,

John P. Hagerty
John P. Hagerty
President

Enclosure:

Texasgulf Reports, White, Brown, Kanbergs,
and Burstow, International Nickel of Canada

Copy: Arizona Dept., Mines & Mineral Resources.



THE TEXASGULF SUMMARY REPORT OF 1982, BY WHITE AND BROWN, AND SUBSEQUENT REPORT OF FURTHER EXPLORATION BY THE KANBERGS REPORT OF 1984, AND A PRIOR REPORT BY BURSTOW, AMERICAN COPPER & NICKEL, SUBSIDIARY OF INTERNATIONAL NICKEL OF CANADA.

The ore veins are of strataform nature formed under the seas in Precambrian times and forced to tilted position by the upward thrust of a batholith. The strata made friable by this event provided avenues through which gaseous and liquid mineral bearing fluids penetrated upward from the magma forming the ore veins.

The exceptional values disclosed in the Summary Report discloses a classic example of extremely rich occurrences of both precious and base metals. This has been reinforced by the later Kanbergs Report from which the following is quoted:

"A number of low to moderate tonnage potentials with high gold grades occur which should be considered with the concept of developing a number of small mines with a central mill. The discovery potential for a larger orebody of 500,000 to 1,500,000 ounces of gold will be a direct function of drill footage.

Soil sampling indicates that gold is enhanced in soils. Strike length of anomalies is spectacular approaching 1-1/2 miles. The primary target was an open-pittable moderate grade ore body lying at shallow depth beneath soil anomalies, containing on the order of 500,000 ounces of gold. Four types of economic gold bearing mineralized systems may be expected:

1. Gold-bearing base metal rich sulfides.
2. Gold-bearing semi-massive sulfide to sulfide bearing zones associated with submarine hydrothermal systems, silica, chlorite, sericite and carbonate alteration.
3. Hydrothermally remobilized gold-base metal vein-veinlet systems associated with auriferous banded iron formations. Gold grades are high (Locally plus 1 ounce per ton)
4. Stockwork and vein quartz plus sulfide deposits associated with Pre-Cambrian stocks."

Ores reported from surveys carry gold, silver, platinum and its group of metals, copper, lead, zinc, iron, manganese, tungsten, vanadium, thus very complex. The extraordinary concentration of value in the ores is expressed by Mr. Burstow in his Report of June, 1982 setting forth the ores that occur, as:

"Tetrahedrite, freibergite, tennantite, galena, argentiferous galena, sphalerite, pyrite, chalcopyrite, pyrargyrite, proustite, hematite, magnetite, pyrolustite, hausmannite, cuprite, native gold and silver.

Secondary Mineralization: Goethite, wad, psilomelane, cerargyrite, bromyrite, azurite, malachite, smithsonite, cerussite, anglesite and melanterite."

A mineral reserve of \$ 6,581,520,000 reached by conservative estimate by the Hagerty Research & Development Co., Inc. is well supported by work performed by professional people and exploration activities by the Hagerty Research & Development Co., itself.

Following are conversion factors relating to the Texasgulf Summary Report of 1982 furnished herewith according to Hagerty Research;

$$\frac{\text{Parts per Million}}{34.28} = \text{Oz. per Ton, U.S.} \quad (\text{Precious and Base Metals})$$

$$\frac{\text{Oz. per Ton, U.S.} \times 14.58}{16} = \text{Troy Oz. per Ton} \quad (\text{Precious Metals})$$

HAGERTY RESEARCH & DEVELOPMENT CO., INC.

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CLEATOR, ARIZONA

PHONE — MAYER, ARIZONA
(602) 632-9228

October 16, 1987.

Irma Hardin, Supervisor
Unclaimed Property Processing Unit
Arizona Department of Revenue
1700 West Washington
Phoenix, Arizona 85007

Dear Ms. Hardin,

Enclosed Register of Unclaimed Shares of Stock paid to holders as a stock dividend from the retained earnings account. (Capital Surplus) One share is paid for each share held.

September 30, 1987, is the end of our Fiscal Year. The Proxy Statement and Annual Report enclosed summarizes current activities. Cash dividends or other distributions, when declared, will be paid to the shares of stock set forth in the Total Column of the Register.

Efforts to locate missing stockholders will continue as addresses become lost from time to time. The enclosed stock certificates, 103 in number, bear a serial number followed by the letter "D", designating a "stock dividend".

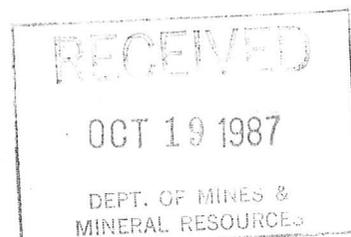
Receipt of the Shipment would be appreciated.

Sincerely yours,


John P. Hagerty
President

Enclosures:

Register of Unclaimed shares of stock
Proxy Statement and Annual Report to September 30, 1987.
103 Stock Certificates as enumerated in the Register.
Report of Abandoned Property to September 30, 1987.



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MEMORANDUM SUMMARY AND DECLARATION RELATING TO OPERATIONS OF HAGERTY RESEARCH & DEVELOPMENT CO., INC.

The Company is the owner of a significant mineral reserve in Lode Mining Claims on the Prescott National Forest, Yavapai County, Arizona. The Company is a closely held, personal holding company. As such, it has not and does not intend to sell stock to the general public.

Funding requirements can be met by, an independent investor; or investors (collectively); or firm; or corporation.

Under the Plan of Operation furnished to the USDA Forest Service, the preliminary industrial engineering has been completed. Activation of operations will commence upon receipt of funds.

53,630 shares of unclaimed stock have been forwarded to the Arizona Department of Revenue for deposit in the Permanent State School Fund, into which the future cash dividends or other distributions will be paid. Reference is made to the Annual Report furnished herewith.

Material relating to the mineral reserve based on the Texasgulf Geochemistry Project and the manner of estimating the mineral reserve value is furnished.

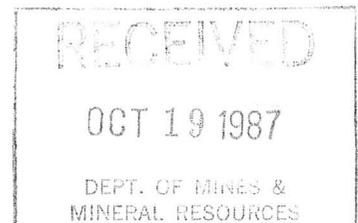
This Letter and Material Content is furnished herewith as a matter of record with distribution as follows:

Forest Service, Department of Agriculture, Prescott, Arizona
Federal Bureau of Investigation, Flagstaff, Arizona
Arizona Department of Mines and Mineral Resources, Phoenix, Arizona
The Arizona Corporation Commission, Phoenix, Arizona
Arizona Department of Water Resources, Phoenix, Arizona


John P. Hagerty
President
October 16, 1987.

Enclosures:

Annual Report to September 30, 1987.
Composit Drawings, Geology and Geochemistry
of Hagerty Claims by Texasgulf Minerals and Metals
Method of Estimating Mineral Reserves, Precious and
Base Metals with conversion of Parts per Million
to Troy Ounces per Ton.
Copy of Cover Letter to Arizona Department of Revenue
Location of Properties and Mill Site
Operational Phasing Bar Chart



HAGERTY RESEARCH & DEVELOPMENT CO., INC. OCT 19 1987

AN ARIZONA CORPORATION

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PROXY STATEMENT INCLUDING ANNUAL REPORT

PROXIES

This statement has been prepared in connection with and for use at the Annual Meeting called to be held on Saturday, October 17, 1987, and at any adjournment thereof, for the purpose of considering and acting upon the election of Directors and other matters brought before the meeting.

- (9) A proxy is an authorization by a stockholder to someone else to vote his or her stock and is necessary if the stockholder is not able to attend the meeting. In order to determine the necessary number of votes to constitute a quorum, proxies must be filed with the Secretary before or at the time the meeting is called. Otherwise, if not so filed, they are void for all intents and purposes.
- (10) A proxy stating "It will be voted in favor of a proposed action unless otherwise specified" will allow the proxy, even though left blank as to an appointment, to be voted in favor of management's proposal provided the proxy is signed by the stockholder.
- (11) A proxy marked "Irrevocable" requires an action to be carried out beyond the time of the meeting to resolve, in some cases, a complaint requiring a response from management. The complaint must be in writing, dated, signed, furnished with the proxy, and filed with the Statutory Agent before or at the time the meeting is called. It is the duty of the Statutory Agent to see to its delivery to management for response.
- (12) A Form shall be provided to be executed by the person complaining. It shall contain provisions to have the complaint read before the assembly at the option of the person complaining. In either case, whether read or not read, the complaint together with management's response shall be entered in the Report of Annual Stockholders' Meeting.
- (13) The proxies need not be notarized unless the stockholder desires it to be done upon signing. Instructions shall be provided on the proxy for the signing otherwise.
- (14) A proxy shall not be sold, given, or loaned to another party. It shall be employed only by the stockholder owner(s) who shall appoint an agent or proxy to act in the owner(s) behalf, which agent or proxy need not be a stockholder of record.

(The paragraphs above enumerated are Sections 9,10,11,12,13, and 14 of the ARTICLE I of the BY-LAWS, as new by-laws to be adopted at the Annual Meeting.)

The Statutory Agent mentioned herein is Mrs. Loraine Elliott, as of record with the Arizona Corporation Commission, address: 2847 East Shangri La, Phoenix, Arizona 85028.

AMENDMENT, LOST STOCK CERTIFICATES

The Company serves as Transfer Agent for stock issued. Experience gained in this capacity calls for an amendment to Section 4. of Article X of the By-Laws, to read as follows:

Section 4. Lost Certificates Should the owner of any certificate of stock make application to the Company for issuance of a duplicate certificate by reason of the loss or destruction of his or her certificate, or any other form of ownership such as a trust, corporate entity, or dealer in securities, the application shall be accompanied by an affidavit setting forth the time, place, and circumstances of such loss or destruction.

Should the Transfer Agent be satisfied, from the matter set forth in the affidavit, that the certificate has been lost or destroyed, may thereupon issue a duplicate certificate, which shall be identified as a duplicate certificate on its receipt stub, or on a separate receipt acknowledged by the owner, and made a part of permanent stock records.

(A copy of the complete By-Laws of the Company shall be furnished on request)

UNCLAIMED SHARES OF STOCK AND DIVIDENDS

By the Notice of Annual Meeting held October 15, 1983, stockholders were advised that under Arizona Law unclaimed shares of stock and dividends are to be deposited or paid into a permanent school fund. The following excerpts are from Article XI, Section 8. of the Constitution of Arizona relating thereto.

Permanent State School Fund; - - - from all estates or distributive shares of estates that may escheat to the State; from all unclaimed shares and dividends of any corporation incorporated under the Laws of Arizona - - - the income derived from the investment of the Permanent School Fund - - - shall be apportioned annually to the various counties of the State in proportion to the number of pupils of school age residing therein.

Stockholders who fail to notify the Company of a new address or otherwise become lost and thus cannot be located shall be deemed to be lost, or deceased without estate settlement notification, and undelivered shares of stock or dividends shall be deposited in the State Permanent School Fund. Filing change of address with the Secretary is very important.

Claim for unclaimed shares or dividends; A person who is the owner, or the heir, devisee, successor or assign of the owner, of monies or securities -acquired by the State pursuant to Article XI, Section 8, Constitution of Arizona, as unclaimed shares or dividends of a corporation, may file a verified claim for them with the Department of Administration Division of Finance alleging the nature of the claim and pray that the monies or shares be paid or delivered to him.

THE COMPANY'S CONDITION

The Balance Sheet for Fiscal Year ending September 30, 1987, outlines the Company's condition with specific reliance on its major asset, the Mineral Reserve in 80 Lode Mining Claims. Material relating to this asset is covered by the Texasgulf letter copy with notations extending through pages 1, 2, and 3. The estimates value of the reserve, placed at \$6,581,520,000, is substantially confirmed and supported thereby.

The Company's properties are on the Prescott National Forest administered by the USDA Forest Service, and other Federal and State Agencies. The material relating to the Company's mineral reserve has been filed for record with the District Ranger, USDA Forest Service; Federal Bureau of Investigation, Flagstaff, Arizona; Arizona Department of Mines and Mineral Resources; Arizona Department of Water Resources; and the Arizona Corporation Commission.

INCOME STATUS AND DIVIDENDS

The mineral reserves will take some 50 years or more to deplete. During such time the value of the stock will appreciate along with dividend yield to benefit not only the stockholder, but his or her children and heirs who would inherit the stock. With sales of mine products the stock will become a high dividend paying stock. Dividends must be paid on undistributed income to avoid the high personal holding company tax on such income.

Doré bullion is the mine product to be produced by a combined foundry-smelter operation. Doré bullion is an incomplete product and must be electrolytic refined to produce gold or silver to high purity acceptable in commerce. The following computation was made when gold and silver were much lower in price than at present:

Two types will be produced: predominant gold with silver and other metals, and predominant silver with gold and other metals. The standard configuration for both bars of 5 cubic inches in volume are shown by the drawing attached.

THE GOLD TYPE, Weight of gold is 10.165 troy ounces per cubic inch.

5 x 10.165	is	50.825	troy ounces
	Less	7.624	15% silver and other metals
		<u>43.201</u>	troy ounces gold each bar

THE SILVER TYPE, Weight of silver is 5.53 troy ounces per cubic inch.

5 x 5.53	is	27.65	troy ounces
	Less	4.15	15% silver and other metals
		<u>23.50</u>	troy ounces silver each bar

VALUES FOR INDIVIDUAL BARS, metal quotes February 10, 1987, gold \$402.85, and silver \$5.54,- in troy ounces.

Gold type- 43.201 x \$402.85 is \$17,403.42.

Silver Type- 23.50 x 5.54 is \$130.19.

VALUES PER SHIPMENT OF 18 DORE ANODE BARS. Furnace melt 18 bars sand cast.

Gold doré bars (18 each) \$ 314,261.56

Silver doré bars (18 each) \$ 2,343.42

The doré bullion can be sold locally for 10% below the market price, or shipped to a refinery for refining to high purity, then sold at the market price in commerce, or sold to the U.S. Mint at a premium price if refined to .9995 or better. Note Mint letter attached.

The pouring of dore anode bars is scheduled 96 calendar days from the closing of funding arrangements. From the date of fund availability the construction of the Foundry-Smelter building and procurement of furnaces and equipment will commence.

A drawing and description of the Foundry-Smelter Building is available on request. It combines foundry and smelting practice into one, sand casting the doré bars.

FUNDING

Properties of gold, silver, lead, copper, zinc, and other metals are in demand, principally by foreign investors. U.S. Investors generally do not invest in mining operations. The U.S. Bureau of Mines says: "In the absence of domestic buyers, foreign investors have helped to maintain a viable domestic minerals industry". Abstract of the Bureau's Circular follows.

ABSTRACT

This Bureau of Mines report examines aggregate trends in foreign direct investment in the U.S. mining and mineral processing industries between 1977 and 1984, and provides an analysis of foreign investment in several major mineral commodity industries.

In 1984, 11.1 pct of total employment in the U.S. minerals industry was at firms that were U.S. affiliates of foreign firms. In 1985, the proportion of U.S. capacity held by foreign investors in nine major mineral commodity industries was as follows: steel, 5 pct; silver, 16 pct; lead, 18 pct; aluminum, 25 pct; zinc, 26 pct; copper, 30 pct; cement, 32 pct; gold, 44 pct; and ferroalloys, 56 pct. Almost 90 pct of the total foreign investment in the U.S. minerals industry was accounted for by eight countries—Canada, the United Kingdom, France, Federal Republic of Germany, Switzerland, Japan, Australia, and the Republic of South Africa. The most fundamental reason behind the growth in foreign investment in the U.S. minerals industry has been that an increasing proportion of U.S. mineral firms and assets have been for sale, while foreign mineral companies have been the ones most willing and able to purchase these firms and/or their assets. While the growth in foreign ownership in the minerals industry has not been without controversy, it has helped save jobs, reduce the minerals trade deficit, and— from the national defense perspective—maintain the Nation's overall mineral and metal self-sufficiency at reasonably high levels. In the absence of domestic buyers, foreign investors have helped to maintain a viable domestic minerals industry.

The mineral reserve value expressed herein is not the value forthcoming. Realization of return on investment must be based on the subtracted costs and expense of mining, milling, concentrating, smelting, refining, and marketing through the years of operation.

The Company does not and does not intend to sell stock to the general public for funding needs, but to offer to an investor shares of stock for an equity position. To meet this capability, the Consolidated and Muldoon Gulch Mines, each, shall be incorporated with an authorized capitalization of 1,000,000 shares of common stock at \$2.00 per share par value. Investors able to provide funds required are interested only in extensive acreage containing multiple mining claims. Our properties meet this criteria.

To negotiate a deal considerable time must be allocated, first to reach an agreement in principle, then to go into the multiple details that must be resolved within each party's own framework, and between the parties themselves.

As a prerequisite to negotiation we seek funds from the sale of gold, -2000- ounces, which is available in ores and concentrates that need only processing to dore bullion. The buyer, in this event, would be granted an option at no costs to consider funding the mining operations. Revenues from the sale would enable early startup and area developments.

The Consolidated Mines will be funded initially as the most likely for early cash flow, then followed by the Muldoon Gulch Mines. An estimate for both mines is \$27,000,000.

The preliminary industrial engineering under the Plan of Operation has been completed and submitted to the USDA Forest Service to meet the requirement of Federal Regulation 36 CFR 228.5. The Forest Service has their own mining personnel assigned to the administration of mining matters, Geologists/Mining Engineers. The Forest Service policy is a welcome factor. It is set forth in the following from the California Mining Journal.

Forest Service Minerals Program Policy Emphasized by Agency Chief

Washington, D.C.—In a recent directive to Regional Foresters, Forest Service Chief R. Max Peterson provided the following summary of FSM 2800 Zero Code—Forest Service Minerals Policy.

Forest Service Minerals Program Policy

The availability of mineral and energy resources within the National Forests and Grasslands significantly affects the development, economic growth, and defense of the Nation. The mission of the Forest Service in relation to minerals management is to encourage, facilitate, and administer the orderly exploration, development, and production of mineral and energy resources on National Forest System lands to help meet the present and future needs of the Nation.

The Forest Service administers its mineral program to:

1.) Encourage and facilitate the orderly exploration, development, and pro-

duction of mineral and energy resources within the National Forest System in order to maintain a viable, healthy minerals industry and to promote self-sufficiency in those minerals and energy resources necessary for economic growth and the national defense.

2.) Ensure that exploration, development, and production of mineral and energy resources are conducted in an environmentally sound manner and that these activities are integrated with the planning and management of other National Forest resources.

3.) Ensure that lands disturbed by mineral and energy activities are reclaimed for other productive uses.

Our mines are the most extensive relative to mineral reserves in the state containing metals of strategic importance, especially the platinum group metals, Platinum, Ruthenium, Rhodium, Rhenium, Palladium, Osmium, and Iridium. Gold, silver, copper, lead, zinc, and manganese are also important.


John P. Hagerty
President

 **Texasgulf Minerals and Metals**, Inc.

5932 McIntyre Street Golden, Colorado 80403

Executive Office
(303) 279-9181

July 16, 1987

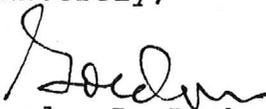
Mr. Jack Hagerty
Hagerty Research & Development Co., Inc.
Box 2486
Prescott, AZ 86302

Dear Jack:

Pursuant to your telephone request I've enclosed the 1982 Summary Report by John White and David M. Brown entitled "Geology and Geochemistry of the Hagerty Claims and Vicinity, Yavapai County, Arizona".

Hope you find this helpful and good luck in your endeavors.

Sincerely,


Gordon R. Peake

NOTE: An Exploration Agreement with Option to Lease was entered into between Hagerty Research & Development Co., Inc. and Texasgulf Minerals and Metals, Inc. on June 21, 1983. The agreement covered all of the mining claims held by Hagerty with the exception of six claims excluded from the agreement covering the Pelican and Blue Bird Mines. Due to economic reasons Texasgulf was unable to exercise the Option and the properties were released back to Hagerty, December 3, 1985, and recorded at the Yavapai County Recorder's Office by Hagerty on December 9, 1985.

The termination of relations was regretted. The program carried out was performed in a businesslike, effective, and commendable manner. Upon my request Mr. Peake sent a copy of their Internal Report covering the Hagerty Properties and properties in the vicinity. Its use will contribute much to additional material information required for future planning and development. Prior to this report Texasgulf conducted infrared aerial surveys of the Bradshaw Mountains, which focused attention to the Hagerty Properties. Exploration activities to January, 1983, summarized this conclusion, quote:

"The Hagerty property and vicinity consists of a sequence of predominantly andesitic metavolcanic and mesasedimentary rocks of Precambrian age. Several sulfide-rich exhalite horizons within the metavolcanic sequence contain local zones of gold-rich massive base metal sulfides. Quartz veining and argillic alteration associated with gold-rich zones indicate the mineralization is probably a product of epigenetic remobilization of metals within the sulfide-rich horizons. These gold-rich zones have a cumulative potential to produce between 500,000 and 1,200,000 tons of high grade gold and silver ore. The potential should be sufficient to maintain Texasgulf's interest in the area."

The subsequent report by Karl Kanbergs, Texasgulf Geologist, reinforced this summary conclusion and gives an account of further exploration activities. The operations conducted, however, cover only a portion of the properties. The Muldoon Gulch area is yet to be explored. It is the edge of the uplifted strata raised to this position by the upward thrust of the batholith. The vein structures show much promise, but the area is extremely difficult for travel on foot due to dense growth and elevated outcroppings of the strata. This area will be penetrated by access road construction, which will open it up for exploration coverage.

Thereafter, Hagerty conducted exploration activities in the Pelican-Blue Bird mine areas to confirm values sufficient to justify development of the mines for production. With commercially valuable ores confirmed, not only in this area but throughout the properties, the Plan of Operation for all of the properties has been developed and identified as the Consolidated Mines group (Pelican and Blue Bird), and the Muldoon Gulch Mines group, both interwoven one into the other.

Reports by other and Texasgulf Geologists, are listed and are available. The Texasgulf Internal Report may be examined and notes taken, but it is not for distribution:

1. Arthur Still, Geologist/Mining Engineer, 1965.
2. G.W. Pickard, Geologist, ASARCO, 1977.
3. Monte Swan, Geologist, Newmont Exploration, Ltd., 1978.
4. William D. Burstow, Economic Geologist, for American Copper & Nickel, INCO (International Nickel), 1982.
5. John L. White, Geologist, Texasgulf, Inc., August, 1982.
6. Karl Kanbergs, Geologist, Texasgulf Minerals & Metals, 1984.

The Internal Texasgulf Report "Geology and Geochemistry of the Hagerty Claims and Vicinity, January, 1983" includes:

Plates:

1. Geological Map of the Hagerty Properties and Vicinity.
2. Rock Chip Geochemical Location Map.
3. through 8. Soil Geochemistry, Au, Ag, Cu, Pb, Zn, and As.
9. through 11. Hand Contoured Soil Geochemical Results.
12. Location Map, Significant Anomalies.

The event of the U.S. minting of the gold bullion coin, the American Eagle, now predominates as the supporting factor to U.S. mining. To meet demand worldwide considerable amounts of gold must be produced for only U.S. mined gold can be used to produce the coins.

July 27, 1987.


John P. Hagerty
President

THE TEXASGULF SUMMARY REPORT OF 1982, BY WHITE AND BROWN, AND
SUBSEQUENT REPORT OF FURTHER EXPLORATION BY THE KANBERGS REPORT
OF 1984, AND A PRIOR REPORT BY BURSTOW, AMERICAN COPPER & NICKEL,
SUBSIDIARY OF INTERNATIONAL NICKEL OF CANADA.

The ore veins are of strataform nature formed under the seas in Precambrian times and forced to tilted position by the upward thrust of a batholith. The strata made friable by this event provided avenues through which gaseous and liquid mineral bearing fluids penetrated upward from the magma forming the ore veins.

The exceptional values disclosed in the Summary Report discloses a classic example of extremely rich occurrences of both precious and base metals. This has been reinforced by the later Kanbergs Report from which the following is quoted:

"A number of low to moderate tonnage potentials with high gold grades occur which should be considered with the concept of developing a number of small mines with a central mill. The discovery potential for a larger orebody of 500,000 to 1,500,000 ounces of gold will be a direct function of drill footage.

Soil sampling indicates that gold is enhanced in soils. Strike length of anomalies is spectacular approaching 1-1/2 miles. The primary target was an open-pittable moderate grade ore body lying at shallow depth beneath soil anomalies, containing on the order of 500,000 ounces of gold. Four types of economic gold bearing mineralized systems may be expected:

1. Gold-bearing base metal rich sulfides.
2. Gold-bearing semi-massive sulfide to sulfide bearing zones associated with submarine hydrothermal systems, silica, chlorite, sericite and carbonate alteration.
3. Hydrothermally remobilized gold-base metal vein-veinlet systems associated with auriferous banded iron formations. Gold grades are high (Locally plus 1 ounce per ton)
4. Stockwork and vein quartz plus sulfide deposits associated with Pre-Cambrian stocks."

Ores reported from surveys carry gold, silver, platinum and its group of metals, copper, lead, zinc, iron, manganese, tungsten, vanadium, thus very complex. The extraordinary concentration of value in the ores is expressed by Mr. Burstow in his Report of June, 1982 setting forth the ores that occur, as:

"Tetrahedrite, freibergite, tennantite, galena, argentiferous galena, sphalerite, pyrite, chalcopyrite, pyrargyrite, proustite, hematite, magnetite, pyrolustite, hausmannite, cuprite, native gold and silver.

Secondary Mineralization: Goethite, wad, psilomelane, cerargyrite, bromyrite, azurite, malachite, smithsonite, cerussite, anglesite and melanterite."

A mineral reserve of \$ 6,581,520,000 reached by conservative estimate by the Hagerty Research & Development Co., Inc. is well supported by work performed by professional people and exploration activities by the Hagerty Research & Development Co., itself.

Following are conversion factors relating to the Texasgulf Summary Report of 1982 furnished herewith according to Hagerty Research;

$$\frac{\text{Parts per Million}}{34.28} = \text{Oz. per Ton, U.S.} \quad (\text{Precious and Base Metals})$$

$$\frac{\text{Oz. per Ton, U.S.} \times 14.58}{16} = \text{Troy Oz. per Ton} \quad (\text{Precious Metals})$$

HAGERTY RESEARCH & DEVELOPMENT CO., INC.
AN ARIZONA CORPORATION

P.O. BOX 2486, PRESCOTT, ARIZONA 86302
P.O. BOX 959, MAYER, ARIZONA 86333

MINES AT
CROWN KING, ARIZONA
MILL AT
CLEATOR, ARIZONA

PHONE — MAYER, ARIZONA
(602) 632-9228

REVUE OF THE TEXASGULF MINERALS AND METALS, INC.
SUMMARY REPORT OF 1982, GEOLOGY AND GEOCHEMISTRY
OF THE HAGERTY CLAIMS AND VICINITY, YAVAPAI COUNTY,
ARIZONA, BY GEOLOGISTS JOHN L. WHITE AND DAVID M.
BROWN, WHO COMPILED THE REPORT, JANUARY, 1983.

An anomaly expresses an exceptional condition. The term is used in mining to disclose an exceptional occurrence of metals or other materials. The Report has set forth 4 such anomalies on the Hagerty properties containing gold, silver, copper, lead, zinc, and arsenic.

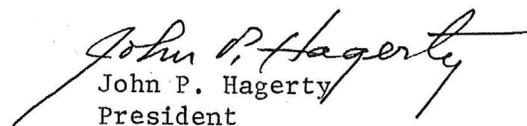
The geochemistry project confirming these anomalies covered the sampling of the soils at spaced intervals along a base line striking North 21 degrees East, for 10,000 feet. 208 samples were taken and assayed in parts per million parts (PPM). The values obtained are expressed in minimum, maximum, and mean quantities, as set forth below, and converted to ounces per ton by the formula:

$$\text{Ounces per Ton} = \frac{\text{PPM}}{34.28}$$

	PARTS PER MILLION			OUNCES PER TON (U.S. Oz.)		
	<u>Minimum</u>	<u>Maximum</u>	<u>Mean</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Mean</u>
GOLD	4	1000	49.51	0.116	29.17	1.44
SILVER	2	670	9.32	0.058	19.54	0.26
COPPER	35	2100	112.23	1.02	61.26	3.27
LEAD	1	2800	49.96	0.29	81.7	1.45
ZINC	45	3200	381.11	1.31	93.34	11.11
ARSENIC	1	3400	200.86	0.29	99.18	2.88

The Report summarized this conclusion, quote: "The Hagerty Property and vicinity consists of a sequence of predominantly andesitic metavolcanic and mesasedimentary rocks of Precambrian age. Several sulfide-rich exhalite horizons within the meta-volcanic sequence contain local zones of gold-rich massive base sulfides. - - - - These gold-rich zones have a cumulative potential to produce between 500,000 and 1,200,000 tons of high grade gold and silver ore."

The subsequent Report by Karl Kanbergs, Texasgulf Geologist, has reinforced this summary conclusion in further exploration activities conducted in 1984.


John P. Hagerty
President
August 14, 1987.



DEPARTMENT OF THE TREASURY
UNITED STATES MINT
WASHINGTON, D.C. 20220

JUL 23 1987

Hagerty Research and Development Co., Inc.
An Arizona Corporation
P.O. Box 2486
Prescott, Arizona 86302

Dear Mr. Hagerty:

This letter is intended to serve as clarification concerning the terms and conditions under which the U.S. Mint purchases gold bullion for the minting of gold American Eagle coins.

The mint has attempted to purchase quantities of gold bullion on a daily basis as required to equal daily coin sales.

A standing set of qualified gold suppliers who have entered into identical Basic Ordering Agreements (BOA's) with the Mint have competed for each gold purchase on the basis of price alone. The Mint has been purchasing both newly mined U.S. gold and other than newly mined U.S. Gold. All gold furnished must be graded .9995 or better and in standard bars or 400 (+ or - 40) ounces.

Newly mined U.S. gold must bear the hallmark of a London or COMEX approved refiner and must be certified by the refiner as gold mined from natural deposits in the United States, or in a territory or possession of the United States. The quantity of gold which may be offered for purchase to the Mint as newly mined gold under each acceptable hallmark will be restricted to an amount not to exceed the amount processed within the preceding twelve months.

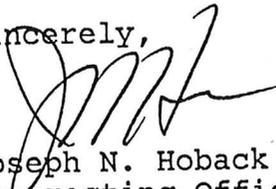
The Mint also considers alternative sources of gold offered when requirements based on sales exceed the availability of newly mined U.S. gold.

The suppliers of gold who have entered into a Basic Ordering Agreement with the Mint provide telex offers by 12:00 noon on each business day, Monday through Friday, based on the London p.m. fix of the following business day. Offers are submitted in a format specifying the hallmark, premium and applicable fix date for quantities offered, categorized according to whether gold is newly mined U.S. gold or other than newly mined U.S. gold.

The total price paid by the Mint comprises the applicable London p.m. fix as a benchmark price plus the additive premium established by the BOA holder. This premium includes but is not limited to transportation and fineness upgrade. The premium submitted and accepted by the Mint remains the same regardless of the amount of gold ordered.

Please contact me in the event that further information is required.

Sincerely,


Joseph N. Hoback
Contracting Officer

HAGERTY RESEARCH & DEVELOPMENT CO., INC.
AN ARIZONA CORPORATION

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P.O. BOX 959, MAYER, ARIZONA 86333

PHONE — MAYER, ARIZONA
(602) 632-9228

MINES AT
CROWN KING, ARIZONA
MILL AT
CLEATOR, ARIZONA

July 29, 1987.

United States Mint
Room 802
633 Third Street, North West
Washington, D.C. 20220

Attention: Mr. Joseph N. Hoback
Contracting Officer

Dear Mr. Hoback,

Thank you for your letter of July 23, 1987. In view of the terms and conditions expressed therein, it appears that we are on target in our planning to produce gold and silver doré anode bars.

The taper of the anode's configuration allows erosion to progress upward towards the bus bar during electrolysis. The configuration can be modified to suit a refiner's specifications. This is an advantage in sand casting the bars.

To meet U.S. Mint specifications, arrangements can be made with the Johnson Matthey Refiner at Salt Lake City, Utah, a Comex approved refiner.

Please advise if the same terms and conditions set forth in your above letter for gold are applicable to the purchase of silver.

Sincerely yours,


John P. Hagerty
President

Pelican (P)

Circulate
Rams

THE DISCOVERY AND CONFIRMATION OF PLATINUM GROUP METALS, AN EXPLORATION PROGRAM WITH ASSISTANCE BY THE GEOLOGICAL SURVEY, U.S. DEPARTMENT OF THE INTERIOR, MENLO PARK, CALIFORNIA.

From the November Issue of the California Mining Journal the following are quoted from the Article "Platinum Discovered in Alaskan Gold Ores" as pertinent to the project:

"Analyses of the gold ore samples were performed as a part of an ongoing USGS program designed to investigate and evaluate domestic mineral resources, with an emphasis being placed on potential development and mining of any mineral discoveries by the private mining sector."

"Analyses for platinum are difficult and expensive," said John B. Cathrall, a geologist with USGS in Denver, - - - "The USGS laboratories in Denver are among the few laboratories that have expertise in platinum analysis. Rocks that contain only a fraction of an ounce of platinum per ton of rock could be profitable, and contribute to the nation's needs."

Platinum was discovered on the Hagerty properties quite by accident upon identifying iridium, a platinum group metal, followed by assays for platinum by atomic absorption. By letter of January 15, 1988, the Geological Survey proposed the submission of rocks for detection of the platinum group elements, rocks suspected of containing such elements. Accordingly the present project was initiated: to sample the soils for the elements, then trace their origin from rock structures.

On May 16, 1988, the sampling project was started along a road bank that descended to other locations to be tested. Previous bulk samples at this location disclosed gold, silver, and platinum by assay: Gold 0.317, silver 26.25, and platinum 1.75 in ounces per ton.

Six samples of the material taken over 30 feet confirmed the presence of platinum group metals along with gold and silver. It is obvious that the metals accumulated in the soils as outcrops weathered and disintegrated at the higher elevations, working their way downward over the many millions of years to where they are now found.

The location of the metals' origin in vein structures is the purpose of the project. The host rocks will be sent to the U.S. Geological Survey at Menlo Park, California for detail analysis.

The rocks outcropping are ultramafic (dark color igneous rocks), and quartz intrusives lying close to porphyry intrusives running generally parallel. The quartz carries gold and silver in fern, wire, flakes, and colloidal forms. This type of rocks are most favorable for the occurrence of platinum group metals as well as gold and silver. Such rocks are practically devoid of sulphides, yet platinum has been found to occur in sulphide ores of the Pelican Mine some six hundred feet away from the location, by the following assay: Gold 0.821, Silver 107.93, and platinum 2.63 in ounces per ton.

The sampling program will be carried out for approximately one quarter of a mile to positively trace the origin of the metals emanating from the outcrops.

The project with help from the Geological Survey will determine whether or not that the properties can become a major source and supplier of the platinum group metals, along with gold and silver. The only major source for the metals in the United States is the Stillwater Complex in Montana, at present.

A confirmation of large quantities of platinum group metals is very important, not only for the value of the metals, but their availability as strategic metals to supply domestic needs, and decrease U.S. dependence on foreign imports. How critical this is is set forth in the attachment.

John P. Hagerty

John P. Hagerty

President

May 27, 1988.

Minerals & Metal Imports

Minerals and Metal	Net import % consumption
Columbium	100
Mica (sheet)	100
Strontium	100
Manganese	▲ 98
Tantalum	97
Cobalt	97
Bauxite & alumina	▲ 93
Chromium	92
Platinum-group metals	▲ 91
Asbestos	84
Fluorine	82
Tin	81
Nickel	77
Cadmium	▲ 66
Zinc	▲ 62
Potassium	61
Selenium	▲ 61
Mercury	57
Gold	▲ 54
Tungsten	▲ 50
Antimony	▲ 48
Silver	▲ 41
Barium	40
Titanium (ilmenite)	39
Gypsum	34
Iron ore	▲ 29
Vanadium	▲ 27
Copper	▲ 19

Bureau of Mines, U.S. Department of Interior (import-export data from Bureau of the Census)

■ RELATION TO DEFENSE

Strategic minerals are a basic component of this nation's defense system. High performance and advanced technology weapons systems require special alloys, which must be made with certain elements. There are no substitutes.

For example, the F-15 and F-16 fighter planes contain the F-100 turbofan fighter engine. This engine, like all other jet engines, is made from high-performance alloys containing strategic and critical elements derived from imported minerals.

If these are not readily available, major delays and increased costs could occur. The United States could be forced to turn to its strategic stockpile for these minerals to manufacture both new engines and replacement parts.

In contrast to U.S. dependency on foreign sources for its strategic-minerals supply, the Soviet Union imports only five minerals and, ironically, is one of America's suppliers of chromium, platinum-group metals and gold.

The United States faces a problem of relying on its strategic stockpile if a military or economic crisis occurs. U.S. strategic-minerals holdings are not completely adequate in quantity or quality.

An illustration of one nation's ability to overshadow the minerals markets is the 1978 price escalation of cobalt, a necessary component in making steel alloys, jet engines, and other components of weapons systems.

In May 1978, shortly after the Soviet Union made a large purchase of cobalt, Zaire's cobalt-mining region (the Shaba Province) was invaded by Soviet-supported rebels. As a result, exports of cobalt fell drastically. The price of cobalt rose from \$7.22 a pound in May 1978 to \$25 a pound in February 1979.

Metals that occur on the Hagerty Properties - ▲



United States Department of the Interior

GEOLOGICAL SURVEY

Branch of Resource Analysis
345 Middlefield Road, MS-984
Menlo Park, California 94025

January 15, 1988

Mr. John P. Hagerty
P.O. Box 2486
Prescott, Arizona 86302

Dear Mr. Hagerty:

Your letter of November 20, 1987, to Elwin L. Mosier and John C. Aytweiler finally arrived at my desk. After examining the materials that you sent with the letter, we have decided we could examine some rock samples of the ore materials to determine independently if members of the platinum-group are present as a preliminary step. Such a process could take several months and requires 5 to 10 whole rock samples (not crushed) that weigh about 2 to 5 pounds which you suspect or know contain platinum-group elements. Of course, the USGS would have no commercial interest and would treat the results in a confidential manner. If you wish to pursue this proposal, please send the samples to me along with a map showing their location or if you have further questions please contact me at 415-329-5361 in Menlo Park, California

Sincerely,

Norman J Page
Platinum Resource Specialist

cc: M. L. Zientek
E. L. Mosier
Glenn Allcott

HAGERTY RESEARCH & DEVELOPMENT CO., INC.

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CLEATOR, ARIZONA

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(602) 632-9228

January 25, 1988.

Norman J. Page
Platinum Resource Specialist
Geological Survey
U.S. Department of the Interior
345 Middlefield Road
Menlo Park, California 94025

Dear Mr. Page,

Thank you for your letter of January 15, 1988. Geological Survey interest is appreciated. At this time the mines are covered with a heavy blanket of snow. Usually, it is gone by March, at which time we will commence gathering samples for shipment to your agency for analysis, with site locations marked on the ground and identified on maps of the area.

Some ores are very complex wherein sulfides, others less so where occurring in silicious, dolomite, or calcite gangues. More attention will be paid to siltstone occurrences where, in one case, favorable gold-silver values were found. The vein structures are numerous and very wide. At one location 520 feet. (Note enclosures from Texasgulf exploration on one of the four anomalies found on the properties).

The nature of gold, silver, and platinum occurrences:

Gold: Alloyed or associated with silver, lead, zinc, copper, iron, platinum, manganese, and other metals.

As native, colloidal, arborescent in quartz, and wires in vugs.

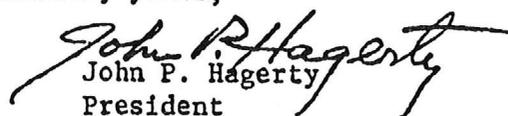
Silver: Alloyed or associated with lead, zinc, copper, manganese, gold platinum and other metals.

As arborescent in quartz, native, argentite, galena, pyrrargyrite, proustite, cerargyrite, and other silver bearing ores.

Platinum: Observed in concentrates as silvery flakes and grains. Since silver appears as black or dark grey in nature, it was taken as a tungsten ore, but subsequent assays confirmed it as platinum. Near the batholith contact the ores contain tungsten and molybdenum along with the above metal types. The ores have not been checked for platinum, but will be.

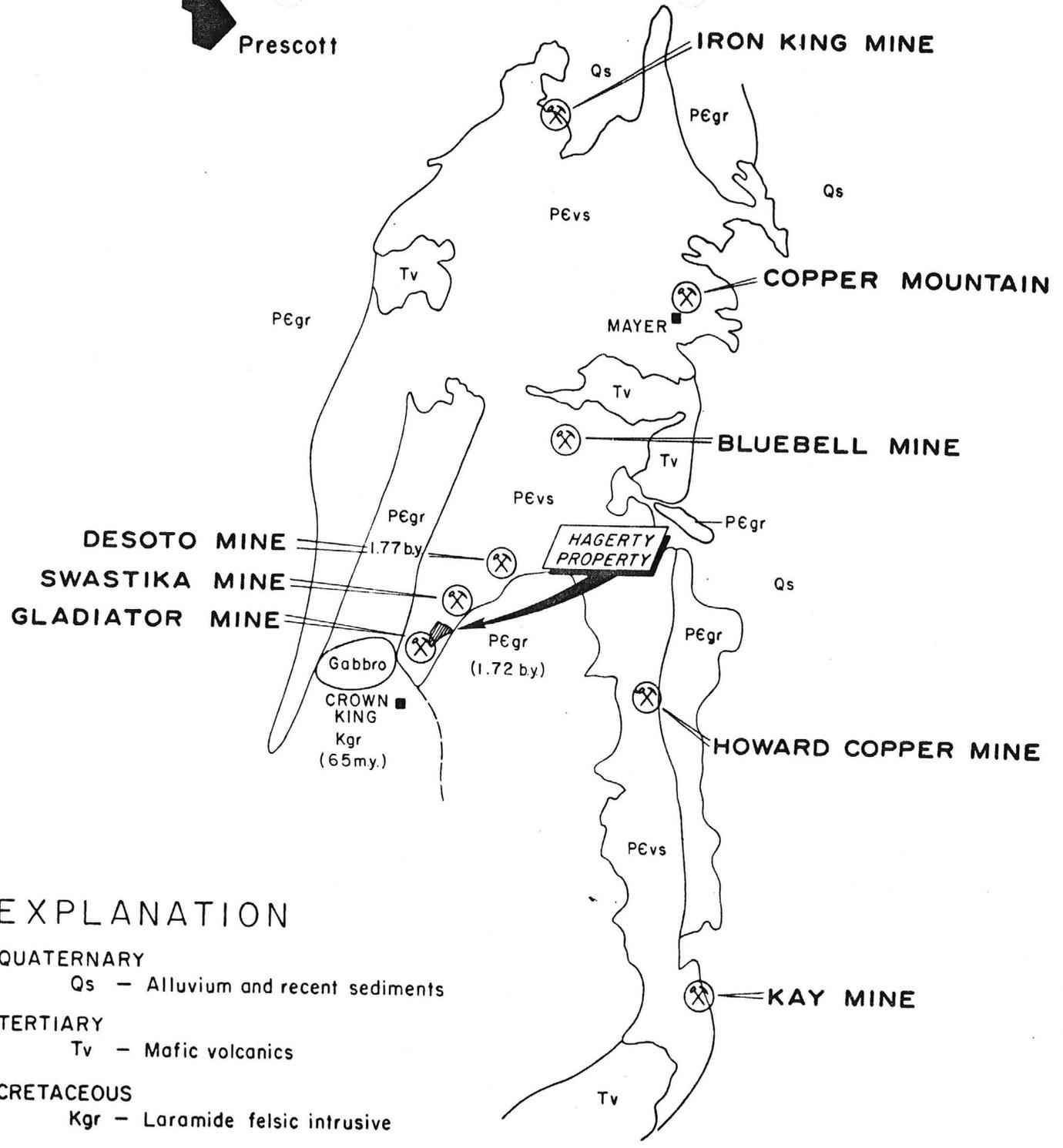
The enclosed material illustrates the mineral reserve and exploration that has been carried out. A copy of this letter and material has been sent to Mr. Mosier in Denver.

Sincerely yours,


John P. Hagerty
President

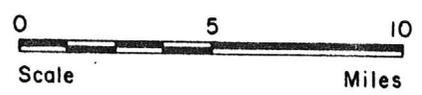


Prescott



EXPLANATION

- QUATERNARY**
Qs - Alluvium and recent sediments
- TERTIARY**
Tv - Mafic volcanics
- CRETACEOUS**
Kgr - Laramide felsic intrusive
- PROTEROZOIC**
PЄvs - Meta-volcanic and sedimentary rocks
PЄgr - Granitic rocks



Texasgulf Minerals and Metals, Inc.
A Division of Texasgulf Inc.

PECK CANYON PROJECT
GEOLOGIC MAP OF THE
MAYER-CROWN KING-
BLACK CANYON BELT
YAVAPAI COUNTY, ARIZONA

Scale: As shown	Date by: K. K.
Drafted by: M. Asplund	Date: Dec. /14/ 1983

FIG. 2

"Pelican Mine" (F) Yavapai Co

JK

HAGERTY RESEARCH & DEVELOPMENT CO., INC.

AN ARIZONA CORPORATION

P.O. BOX 2486, PRESCOTT, ARIZONA 86302

MINES AT
CROWN KING, ARIZONA

Phone: Mayer, Az. (602) 632-9228

~~PHONE PRESCOTT~~
~~1602-466-8773~~

April 14, 1987.

John W. Holt, District Ranger
Bradshaw Ranger District
USDA Forest Service
Holiday Hills Box 3451
Prescott, Arizona 86301

Attention: Bill Cotee

Dear Mr. Holt,

Enclosed Copy of our Drawings and Description of a Foundry Smelter Unit for the production of Dore Anode Bars. We plan to begin leveling ground for its construction this Spring, but beforehand must decide on the facility's location. In this respect assistance by the Forest Service would be of great help to firm up our selection of the site in view of access road considerations.

To review what we have, both the Upper Cabin and Pelican Shaft areas are unsuitable. At the cabin just a few automobiles make the limited area congested, and very strong westerly winds prevail during winter and summer storms. The area at the Pelican Mine shaft will be used for milling and concentrating operations, and no additional space is available beyond these activities.

A topographical map of the area identifies these locations which is used for the purpose of this letter. Referring to the map, Site "A" has been covered in our initial Plan of Operation submitted as a processing area and has been enlarged for this purpose. It provides sufficient space.

Site "B" must also be considered as it is naturally close to being level and is not tree covered. At either locations the unit can service both the Pelican and Blue Bird Mines with some access road work as shown in green color. The two sites, jointly, could service the mines with one for the unit and the other as a staging area for vehicles and incoming and outgoing materials.

The line in solid red outlines the old burro trail from the Lincoln Mine to Peck Canyon, which runs along favorable grades. Anticipating large trucks and heavy hauling northerly through Peck Canyon, money would have to be spent on the existing road section from point "D" to "E". Approximately the same amount of money could be expended to construct a new road on better grades following the old burro trail, from point "F" to "E". This would better service the facilities where underground mining will commence at "C", for change house and first aid, and explosive storage.

Aside from the area covered, an access road through Muldoon Gulch to the lower Bat Mine adit is projected. This is the most difficult area in which to construct a road as it extends along and over numerous outcrops. Its purpose, however, will give access to mineralized zones. From the adit its extension out to the County Highway is less of a problem.

Mining developments must be implemented and phased in progressive sequence in which time is necessary. Forest Service administration and assistance in pertinent detail is essential. Comments relating to the foregoing will be appreciated. It is understood that the course of road layout must be flagged prior to Forest Service evaluation.

As soon as we have studied the terrain for road to be considered at the sites "A" and "B", and the possible use of the old burro trail, which we will flag, your office will be advised.

Sincerely yours,


John P. Hagerty
President

HAGERTY RESEARCH & DEVELOPMENT CO., INC.
AN ARIZONA CORPORATION

MINES AT
CROWN KING, ARIZONA

P.O. BOX 2486, PRESCOTT, ARIZONA 86302
Phone: Mayer, Az. (602) 632-9228

~~PHONE X PRESCOTT X~~
~~802 448 8778 X~~

March 12, 1987.

United States
Department of the Treasury
501-13th Street North West
Washington, D.C. 20220/376-0837

Attention: Mr. Michael J. Brown

Dear Sir;

In a recent issue of the California Mining Journal it was reported that an alternative qualifying procedure for companies interested in becoming coin distributors to purchase gold American Eagles directly from the Mint.

We are interested in this program and wish to offer an arrangement for consideration. Our mine product is dore bullion. A copy of description and offer to buyers is attached, which can be modified to suit a buyer's terms and conditions.

If it can be arranged we would like to sell our dore production directly to the Mint in exchange for U.S. minted gold eagle coins in equal value of transactions at the prevailing market price at the time of delivery. That is, if our dore product shipped amounted to \$20,000.00 we would receive \$20,000.00 worth of gold coins as payment in exchange, which, of course, would be based on gold's market price at the time of delivery. It is understood that a refining cost by the Mint for the precious metals to be processed would be charged to the shipper, or prorated as a deduction against the gross value of the dore shipment.

We believe that the Mint will need an ongoing supply of precious metals to meet demands for the Treasury's accomodation of coin purchases, and that the foregoing arrangement could be mutually beneficial.

A description of our mineral reserves is enclosed, and our mining properties that have been under development for over 20 years. Your comments relative to the foregoing will be appreciated. Our operations will be underway this coming Spring.

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Enclosures:

The Hagerty Mining Properties.
Assays and history relating to
Hagerty Consolidated Mines.
Drawing of Location and
Identification of Properties
and Mill Site.
Processing Equipment Forcast.
Abstract, Edward DeWitt, PhD, 1975.

Principles of Operation

HAGERTY RESEARCH & DEVELOPMENT CO., INC.

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MINES AT
CROWN KING, ARIZONA

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Phone: Mayer, Az. (602) 632-9228

~~PHONE: PRESCOTT~~
~~ARIZONA 86302~~

SALE OF MINE PRODUCT, GOLD-SILVER DORÉ ANODE BARS

The Hagerty Research & Development Co., Inc. can produce a continuous supply of precious metals to the trade. As a mining company, dore bullion is preferred as the product to sell rather than ores or concentrates.

Following are terms and conditions relating thereto as applied to buyers of our mine products, refiners, brokers or dealers.

DORÉ BULLION AS THE PRODUCT

1. The doré bars will be produced by sand casting to suit a refiner's configuration relative to approximate weight and dimensions for an anode bar, to minimize erosion near the contact location as electrolysis takes place. Such doré bars, generally, will taper from the bus attachment downward to the end of the anode.
 2. The melt, as poured, will fill the mold and a cavity provided to cast a test bar, which will be severed from the anodes to be used for assay. The melt shall be identified by serial number. A certified copy of the assay will be furnished to the buyer along with a portion of the test bar identified with the melt by the same serial number impressed on the metal.
 3. The assay will be conducted by a qualified, registered assayer from drill cuttings produced by drilling into the test bar.
 4. The doré anode bars shall be produced as:
 - (a) Predominant gold with silver and other contained metallics.
 - (b) Predominant silver with gold and other contained metallics.
 5. The two types of bars will result from the chemical parting of silver from gold in the concentrates prior to melting the types separately.
 6. Shipping of multiple anode bars shall be in suitable containers, properly packed and identified. Shipments shall be under Bills of Lading. The seller shall bear the shipping costs including insurance.
 7. Based on the certified assay of values, Hagerty Research shall be paid 80 percent of such values at the quoted prices of the metals at the time of delivery, which payment shall constitute the initial payment on the purchase order.
 8. Settlements for values not paid for on the shipment shall be made within 30 days of the date of receipt of the shipment at the same quoted price of the metals. The rate of payment to the seller from the buyer shall be 10 percent below the quoted market price as above set forth. Quoted prices for the metals shall be by _____
-
9. Any metals of value other than gold and silver, such as platinum or metals of the platinum group, produced in anode slimes or residues from the processing by the refiner, shall be credited to the account of the seller.
 10. The Hagerty research & Development Co., Inc. will consider an agreement to sell the entire output of gold-silver doré bars from its mines as herein set forth.


John P. Hagerty
President

ABSTRACT

Detailed study in the Mayer-Crown King area, Arizona, reveals the following Precambrian geologic history: (1) deposition of intermediate to mafic submarine volcanic flows, agglomerates, and near-surface sills interlayered with minor calcareous sediments and chert; (2) eruption of rhyolite flows, breccias, crystal tuffs, and genetically related strata-form "massive" sulfide deposits (total volcanic stratigraphy estimated at 3,500 meters); (3) regional tilting; (4) deposition of shales and siltstones; (5) possible regional deformation resulting from granodiorite intrusions; (6) major isoclinal folding of volcanic and sedimentary rocks about northeast-striking axial planes with fold axes that plunge steeply northwest, and concomitant regional metamorphism of all rocks to upper greenschist-lower amphibolite facies; (7) intrusion of quartz monzonite-alaskite batholiths resulting in minor polyphase folding, retrograde metamorphism of surrounding metamorphic rocks, and fragmentation of the metamorphic terrane.

Important revisions in Precambrian geologic history drawn from this study include the recognition of steeply inclined, isoclinal folding instead of gently plunging, asymmetric isoclinal folding, and the revision of previously proposed stratigraphy.

INTRODUCTION

The Mayer-Crown King area contains two historically productive "massive" sulfide deposits, the Bluebell and DeSoto. The stratiform nature of the deposits exemplifies the need for understanding of regional stratigraphy in the search for additional economic deposits. Clearly, a basic knowledge of the Precambrian evolution of the area is needed.

Purpose

As originally designed by Mr. Jim Yeager and Amoco Minerals Company, reconnaissance geologic mapping between the Bluebell and DeSoto Mines was to delineate favorable exploration targets for "massive" sulfide deposits of the stratiform type. As the geologic history of the area became better understood, detailed mapping was extended to adjacent areas in an attempt to delineate more exploration target areas. The finished mapping and thesis provides a base map and report for further exploration, geologic study, and understanding of the Precambrian evolution of central Arizona.

Methods

An exhaustive literature search was undertaken at the outset to familiarize the author with geology of the Mayer-Crown King area. Standard geologic field mapping during a five-month period in the summer of 1975 supplied the basic data for the thesis. Detailed structural,

stratigraphic, and metamorphic data were recorded for later synthesis. Thin sections were prepared from selected samples for petrographic analysis. Such analyses form the data used in interpretation of the metamorphic history. Synthesis of all data resulted in the inferred geologic history of the Mayer-Crown King area.

Location

The thesis area is located in north-central Arizona, 32 kilometers southeast of Prescott, and 100 km north-north-west of Phoenix (Figure 1). Extending from three kilometers north of Mayer, Arizona, to five kilometers south of Crown King, Arizona, the study area is approximately 28 km long and 3-6 km wide, and occupies 100 km² in the Mount Union 15', Mayer 15', and Crown King 7½' quadrangles.

Climate of the region is semidesert, with rainfall averaging less than 20 centimeters per year below 1,300 meters elevation, 20-35 cm per year from 1,300-2,000 m, and 35-45 cm annually above 2,000 meters. Topography in the area varies considerably, from gentle hills to steep-sided canyons and mountainous slopes with 300 meters relief. Elevation ranges from 1,200 m to 2,100 m with the corresponding vegetation types: cactus; manzanita and brushy oak or chaparral; and pine forest.

Previous Work

Earliest geologic reconnaissance of the Bradshaw mountains area was by Jaggar and Palache (1905). Subsequent economic and regional geologic reports have been written by Lindgren (1926) and Anderson and

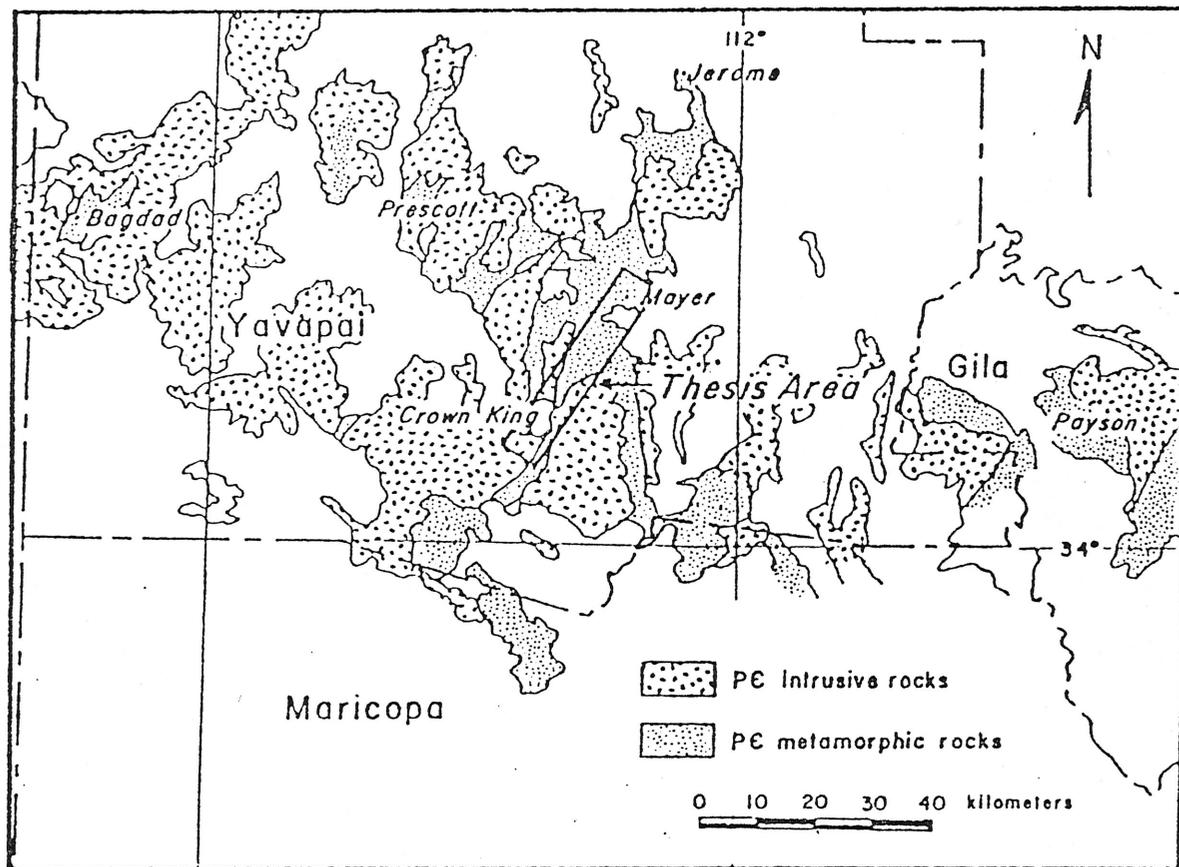


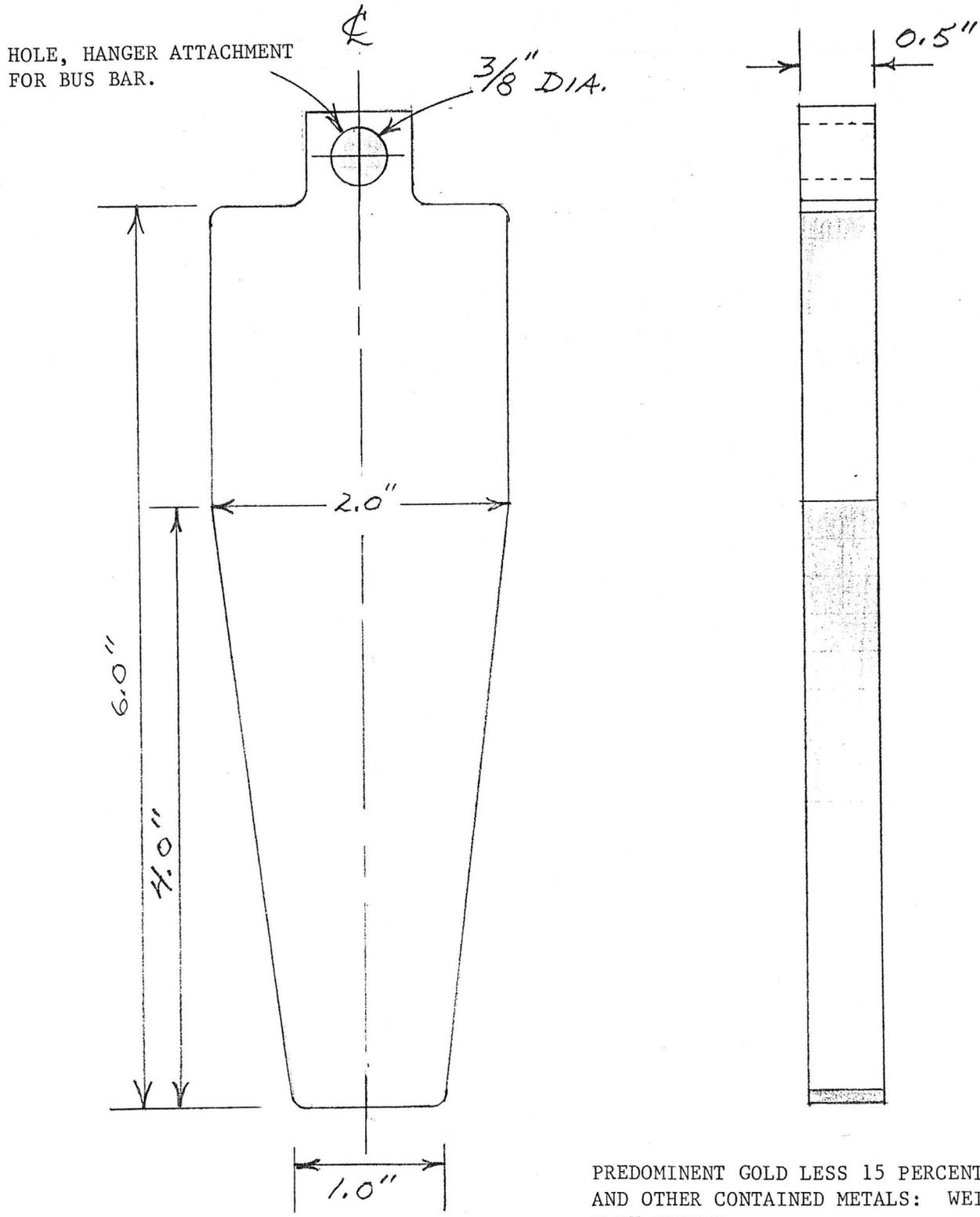
Figure 1. Location map, Mayer-Crown King area, Yavapai County, Arizona.

Creasey (1958). More recently the geology of the Mount Union southeast 7½' quadrangle was extensively reported by Blacet (1968). Stemming from Blacet and Anderson's previous work are numerous reports on the Jerome-Prescott area, including Anderson (1972) and Anderson and Blacet (1972a). Additionally two geologic maps by Anderson and Blacet (1972b, 1972c), GQ 996 and GQ 997, have been published by the U. S. Geological Survey. Revisions of Precambrian geology of the area include those by Anderson et al. (1971), and Anderson and Nash (1972). Recent reports not dealing specifically with the thesis area include Gilmour and Still (1968) in the Iron King area, Brook (1974) in the Binghampton area, and Handverger (1975) and Lindberg (1975) in the Jerome area.

DORÉ ANODE BAR, SAND CAST CONFIGURATION

VOLUME: 5 Cubic Inches

MARCH 16, 1987.



SCALE: FULL SIZE, 1" equals 1"

PREDOMINANT GOLD LESS 15 PERCENT SILVER
AND OTHER CONTAINED METALS: WEIGHT 43.201
TROY OUNCES.

PREDOMINANT SILVER LESS 15 PERCENT GOLD
AND OTHER CONTAINED METALS: WEIGHT 23.50
TROY OUNCES.

Pollock Mine (F) Yavapai Co.

[Handwritten initials]

HAGERTY RESEARCH & DEVELOPMENT CO., INC.
AN ARIZONA CORPORATION

MINES AT
CROWN KING, ARIZONA P.O. BOX 2486, PRESCOTT, ARIZONA 86302
Phone: Mayer, Az. (602) 632-9228

~~PHONE X-PRESCOTT~~
~~X-602/445-8773~~

March 12, 1987.

John A. Jett, Director
Department of Mines and Mineral Resources
State of Arizona
Mineral Building, State Fairgrounds
Phoenix, Arizona 85007

Dear Mr. Jett,

Thank you for your letter of March 2nd. The enclosed relates to the natural resource, water. There is and will be conflict against mining, an industry that real estate developers would just as soon see disappear from the scene. The new policy of the Forest Service is very significant and favorable to mining.

The real estate development activities are rapid and extensive, even reaching away from the major cities to impose a severe demand for water. The village of Bumble Bee has been purchased and will be developed for homes and contominiums. The village of Cleator may soon go the same way. People move to Phoenix and Tucson for what they believe is an ideal life-style only to find worse conditions than they left behind. Then they move to better areas such as Flagstaff and the Prescott areas, locations already beginning to experience pollution, heavy traffic problems, along with greater needs for water.

The mines can no longer be accused of polluting the air and water as well as the land, it's automobiles and people. New developments in mining and processing are impressive, directed to lower costs of operation and staying well within the environmental standards. The enclosed is a progressive step.

We will be glad to keep your Department informed of our activities. The more informed State Agencies connected with mining are, the better it will be to present an understanding of problems of mutual concern.

Sincerely yours,

John P. Hagerty
John P. Hagerty
President

Copies, letter and materials to:
Maricopa Water District
Forest Service, Supervisor's Office and
Bradshaw District Ranger
State Department of Water Resources

RECEIVED
MAR 18 1987
DEPT. OF MINES &
MINERAL RESOURCES

HAGERTY RESEARCH & DEVELOPMENT CO., INC.

AN ARIZONA CORPORATION

P.O. BOX 2486, PRESCOTT, ARIZONA 86302

MINES AT
CROWN KING, ARIZONA Phone: Mayer, Az. (602) 632-9228

~~PHONE - PRESCOTT~~
~~ARIZONA 86302~~

March 12, 1987.

Lawrence A. Ramsey
Branch Chief, Surface Water/Adjudication
Department of Water Resources
State of Arizona
99 East Virginia Avenue
Phoenix, Arizona 85004

Re: Application to Appropriate Water No. 33-90315

Dear Mr. Ramsey,

Reference is made to your letter of October 17, 1986 and November 7, 1986 copy of our letter, copies of which are furnished for reference.

In paragraph 2. of your letter quote: "I can only suggest that you make arrangements to procure the necessary water by either drilling your own well or getting it from a supplier."

Is it possible to have our above referenced application amended or converted to application for water rights by drilling a well at our mill site? Attempts to remove the Maricopa Water Company protest of the referenced application has proved to be futile. The mining industry in Arizona is not getting the consideration it deserves in view of the critical need for strategic metals that can be produced. The following is quoted from the California Mining Journal, March issue: Washington, D.C.- In a recent directive to Regional Foresters, Forest Service Chief R. Max Peterson provided the following summary of FSM 2800 Zero Code-Forest Service Minerals Policy.

"The availability of mineral and energy resources within the National Forests and Grasslands significantly affects the development, economic growth, and defense of the Nation. The mission of the Forest Service in relation to minerals management is to encourage, facilitate, and administer the orderly exploration, development, and production of mineral and energy resources on National Forest System lands to help meet the present and future needs of the Nation.

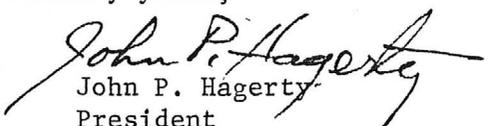
The Forest Service administers its mineral program to:

(1.) Encourage and facilitate the orderly exploration, development, and production of mineral and energy resources within the National Forest System in order to maintain a viable, healthy minerals industry and to promote self-sufficiency in those mineral and energy resources necessary for economic growth and the National Defense." I underline the last two words!

A copy of letter to an equipment supplier outlining metals that occur, many of which are strategic, is furnished. In the matter of water, will mining be able to obtain the water and rights thereto that it deserves, or is to become subordinate to the demands of real estate developers?

Copies to Forest Service Agencies, State
Dept. of Mines and Mineral Resources, and
Maricopa Water District.

Sincerely yours,


John P. Hagerty
President

State of Arizona

DEPARTMENT OF WATER RESOURCES

99 E. Virginia Avenue, Phoenix, Arizona 85004



BRUCE BABBITT, Governor
KATHLEEN FERRIS, Director

October 17, 1986

John P. Hagerty, President
Hagerty Research & Development Co., Inc.
P. O. Box 2486
Prescott, Arizona 86302

RE: Application to Appropriate No. 33-90315

Dear Mr. Hagerty:

I am in receipt of your letter of October 9, 1986 and at this time can offer you only an interim reply. Your application is not denied, rather, it is protested and until the protest is resolved, a permit can not be issued.

If you must proceed immediately with your mining and milling operation, I can only suggest that you make arrangements to procure the necessary water by either drilling your own well or getting it from a supplier. I can offer you no other hope for a quick resolution to the problem.

Because of the extensive effort that you have made to resolve the protest to your application, I have recommended that your file be examined carefully in light of current Department policy. While it is under active consideration, I can not assure you of any more favorable results. In the interim, you may contemplate alternative means of soliciting a favorable response from Mr. Falbo who has restated his protest to your application.

Very truly yours,

Lawrence A. (Al) Ramsey
Section Manager
Surface Water/Adjudication

LAR:mmi

Think Conservation!

Office of Director 255-1554

Administration 255-1550, Water Resources and Flood Control Planning 255-1566, Dam Safety 255-1541,
Flood Warning Office 255-1548, Water Rights Administration 255-1581, Hydrology 255-1586.

HAGERTY RESEARCH & DEVELOPMENT CO., INC.

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MINES AT
CROWN KING, ARIZONA

P.O. BOX 2486, PRESCOTT, ARIZONA 86302
Phone: Mayer, Az. (602) 632-9228

PHONE — PRESCOTT
(602) 445-8773

November 7, 1986

Mr. Lawrence A. Ramsey
Branch Chief, Surface Water/Adjudication
Department of Water Resources
State of Arizona
99 East Virginia Avenue
Phoenix, Arizona 85004

Re: Application to Appropriate Water No. 33-90315

Dear Mr. Ramsey,

Thank you for your letter of October 30, 1986, enclosing copy of letter from the Maricopa Water District reaffirming their protest against our Application No. 33-90315 dated October 19, 1986.

To appropriate water under our application would not in any way infringe Maricopa's water rights, either legally, or physically relative to water reaching the Agua Fria River near Black Canyon City.

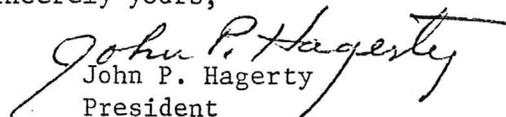
In dealing with the USDA Forest Service we have agreed to accept the position as junior appropriator with secondary water rights to the water of Turkey Creek while it is flowing, and offered this same agreement to Maricopa under letter of May 29, 1986, for like consideration, which was denied.

It is pointed out that the continuation of protest by Maricopa, if allowed to stand, establishes a legal precedent that must be applied to all persons or entities seeking surface water rights on any and all tributary systems to the Agua Fria River. Should this be, then injustice prevails against Yavapai County interests to favor interests in Maricopa County. The State's natural resource, water, would not be given equitable, beneficial distribution.

Mining, once a major industry in Arizona, is expected to become reestablished in the Northern part of the State and will have a direct impact on the State's economy. Many of the mines now under development can produce metals of strategic importance to the national security, which now must depend on such metals to be imported from other countries. Enclosed papers setting forth our activities in this respect.

The recirculation of water now becoming a practice in processing materials to extract the metals that have become pregnant in solution is not only beneficial but serves to conserve water. Please note "From Pollution Control to Platinum Mining" attached.

Sincerely yours,


John P. Hagerty
President

Copies, letter and materials to:

Maricopa Water District
Forest Service, Supervisor's Office and
Bradshaw District Ranger.

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~~PHONE X PRESCOTT~~
~~XXXXXXX~~
(602) 445-8773

February 24, 1987.

Keene Engineering
9330 Corbin Avenue
Northridge, California
91324

Mail: P.O. Box 959, Mayer, Arizona 86333

Dear Sir;

Please forward your free catalog as advertised in the California Mining Journal with price list. Enclosed remittance of \$3.00 for a one ounce sample of pre-ionized mercury, reference page 39, of the same magazine, February issue.

Our approach to processing as-mined ores in the industrial engineering phase is dictated by the exceptional complexity of the ores, which have been found to contain, in variable amounts, gold, silver, lead, copper, zinc, platinum, tungsten, manganese, molybdenum, tin, mercury, cadmium, iron, aluminum, germanium, vanadium, lanthanum, yttrium, zirconium, erbium, gallium, antimony, magnesium, titanium, selenium, promethium, boron, iridium, osmium, nickel, rubidium, cobalt and bismuth.

Conventional milling and smelting operations cannot serve the purpose. The processing machinery and equipment must be versatile in the production line of flow to provide alternate processing methods to be employed for the best method of recovery developed by experiment beforehand.

Our concept is to employ multiple small units collectively in families. The capacity can then be increased as required by simply incorporating an additional family or families.

Your products would be suitable for this type of operation and I believe most of your equipment could find use. Would it be possible to obtain quantity discount on prices, and would it be possible to procure the items direct from your facility to be shipped by motor freight to our destination at our transport costs?

Our mines are presently under a heavy cover of snow. Activities are planned for this coming Spring. Enclosed copy of a paper furnished to our stockholders relating to the mineral reserve assets, and our plans outlined in Principles of Operation.

Sincerely yours,


John P. Hagerty
President

HAGERTY RESEARCH & DEVELOPMENT CO., INC.

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Phone: Mayer, Az. (602) 632-9228

~~PHONE X PRESCOTT~~
~~(602) 468-8773~~

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United States
Department of the Treasury
501-13th Street North West
Washington, D.C. 20220/376-0837

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Principles of Operation

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~~(602) 445-8778~~

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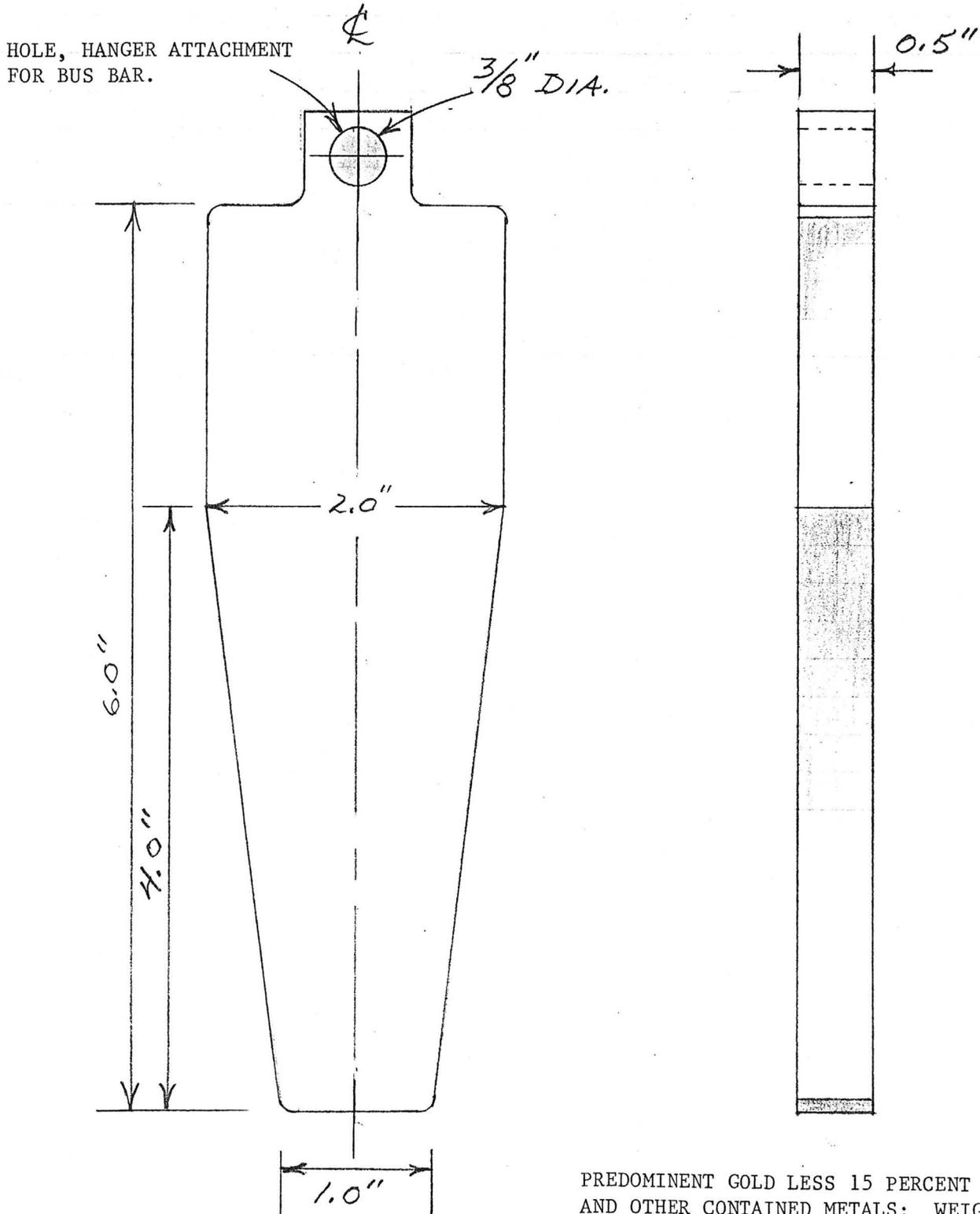

John P. Hagerty
President

Hagerty Research & Development Co., Inc.
P. O. Box 2486
Prescott, Arizona 86302

DORÉ ANODE BAR, SAND CAST CONFIGURATION

VOLUME: 5 Cubic Inches

MARCH 16, 1987.



SCALE: FULL SIZE, 1" equals 1"

PREDOMINANT GOLD LESS 15 PERCENT SILVER
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As originally designed by Mr. Jim Yeager and Amoco Minerals Company, reconnaissance geologic mapping between the Bluebell and DeSoto Mines was to delineate favorable exploration targets for "massive" sulfide deposits of the stratiform type. As the geologic history of the area became better understood, detailed mapping was extended to adjacent areas in an attempt to delineate more exploration target areas. The finished mapping and thesis provides a base map and report for further exploration, geologic study, and understanding of the Precambrian evolution of central Arizona.

Methods

An exhaustive literature search was undertaken at the outset to familiarize the author with geology of the Mayer-Crown King area. Standard geologic field mapping during a five-month period in the summer of 1975 supplied the basic data for the thesis. Detailed structural,

stratigraphic, and metamorphic data were recorded for later synthesis. Thin sections were prepared from selected samples for petrographic analysis. Such analyses form the data used in interpretation of the metamorphic history. Synthesis of all data resulted in the inferred geologic history of the Mayer-Crown King area.

Location

The thesis area is located in north-central Arizona, 32 kilometers southeast of Prescott, and 100 km north-north-west of Phoenix (Figure 1). Extending from three kilometers north of Mayer, Arizona, to five kilometers south of Crown King, Arizona, the study area is approximately 28 km long and 3-6 km wide, and occupies 100 km² in the Mount Union 15', Mayer 15', and Crown King 7½' quadrangles.

Climate of the region is semidesert, with rainfall averaging less than 20 centimeters per year below 1,300 meters elevation, 20-35 cm per year from 1,300-2,000 m, and 35-45 cm annually above 2,000 meters. Topography in the area varies considerably, from gentle hills to steep-sided canyons and mountainous slopes with 300 meters relief. Elevation ranges from 1,200 m to 2,100 m with the corresponding vegetation types: cactus; manzanita and brushy oak or chaparral; and pine forest.

Previous Work

Earliest geologic reconnaissance of the Bradshaw mountains area was by Jaggar and Palache (1905). Subsequent economic and regional geologic reports have been written by Lindgren (1926) and Anderson and

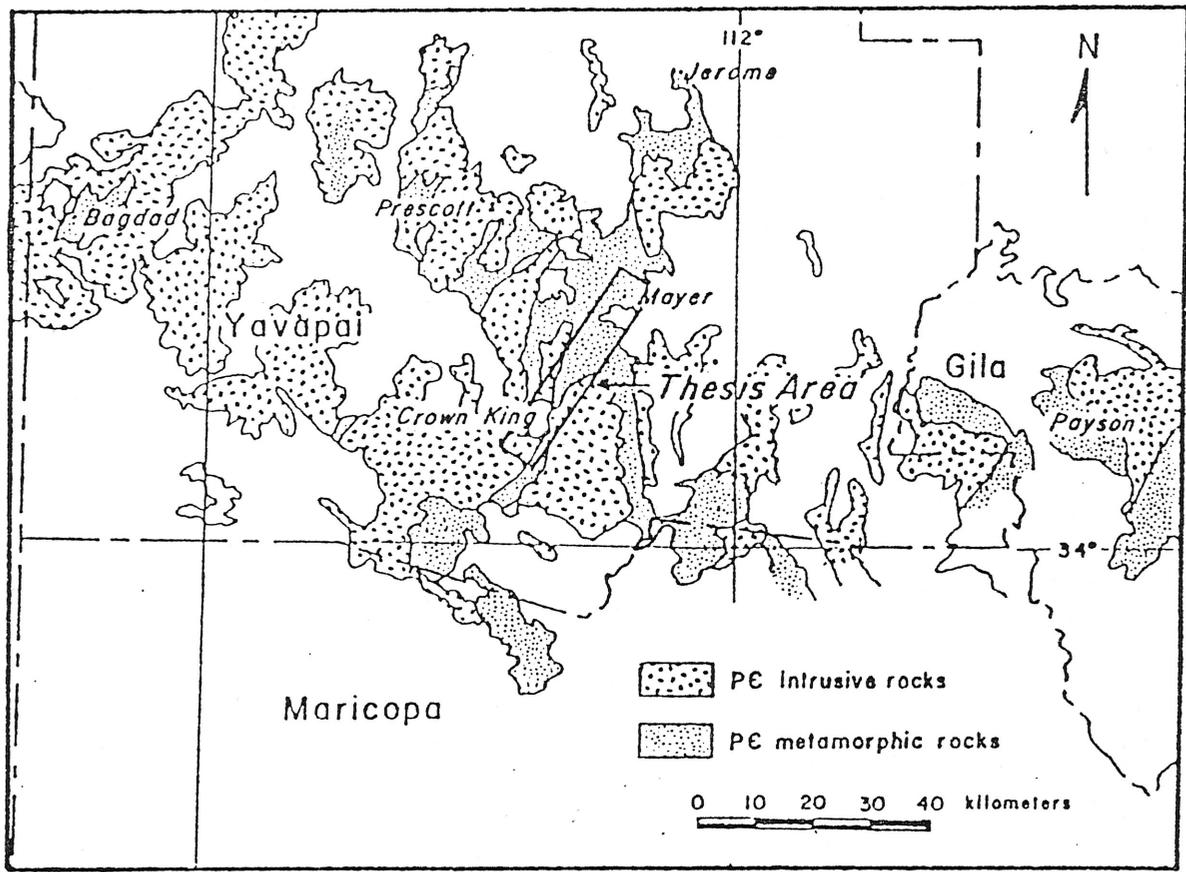


Figure 1. Location map, Mayer-Crown King area, Yavapai County, Arizona.

Creasey (1958). More recently the geology of the Mount Union southeast 7½' quadrangle was extensively reported by Blacet (1968). Stemming from Blacet and Anderson's previous work are numerous reports on the Jerome-Prescott area, including Anderson (1972) and Anderson and Blacet (1972a). Additionally two geologic maps by Anderson and Blacet (1972b, 1972c), GQ 996 and GQ 997, have been published by the U. S. Geological Survey. Revisions of Precambrian geology of the area include those by Anderson et al. (1971), and Anderson and Nash (1972). Recent reports not dealing specifically with the thesis area include Gilmour and Still (1968) in the Iron King area, Brook (1974) in the Binghampton area, and Handverger (1975) and Lindberg (1975) in the Jerome area.