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Pelican(file)

HAGERTY RESEARCH & DEVELOPMENT CO., INC.

AN ARIZONA CORPORATION

P.O. BOX 2486, PRESCOTT, ARIZONA 86302

MINES AT
CROWN KING, ARIZONA

Phone, Mayer, Az., (602) 632-998

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

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. Seward 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 gereral 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 enhansed 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 pittable 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 ors 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	1250 Feet
	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 beck 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 x 6 x 400 = Displacement of 14,100,000 cubic feet. 14,100,000 x 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

John P. Hagerty
President

For the Annual Meeting of September 13, 1986.

HAGERTY RESEARCH & DEVELOPMENT CO., INC.

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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) Predominent gold with silver and other contained metallics.

   (b) Predominent 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

SUMMARY PROPOSAL, LONG TERM MINING OF PRECIOUS AND BASE METALS.

The Mineral Reserves contained in 80 lode mining claims are owned by a private, closely held corporation. It is seeking investment under a Joint Adventure to exploit the reserves in a progressive, organized manner.

The mines are young in terms of depletion, having a life expectancy of over 50 years of profitable mining operations. From professional determinations the following is presented:

"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 and exploration expertise.

Soil sampling indicates that gold is enhansed 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 massive 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."

Geological, geochemical, and geophysical surveys have been conducted for which reports are available. Although gold is the first consideration as an exploration target, other metals occur along with gold. Ores reported from the surveys carry silver, platinum and its group of metals, copper, lead, zinc, iron, manganese, tungsten, vanadium, and other metallics, thus very complex.

"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.

The mineralogy of the iron-manganese rich formations is probably the least understood feature on these properties. The banded iron formations are a mixture of oxide-carbonate-sulphide facies with corresponding variety of 'Ore' and 'Gangue' minerals. Principal gangue minerals of the iron formations are quartz (chert), siderite, and chlorite."

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 to form the ore veins of value, adding additional values to those contained in the strata.

The ore veins run generally north northeast in parallel sheeted structures presenting a means to conduct horizontal mining by crosscut adits from which drifts on the veins can be employed to take the ores. An estimate based on all contained metals, precious and base, with a safety factor of 25 percent reduction for tonnage computation is presented:

Depth of commercial grade ores	1000 feet
Mineral reserve, tons	32,907,600 tons
Average value per ton	$200.00 per ton
Value of reserve	$6,581,520,000

The mineral reserve less the costs of mining, milling, and processing to produce the end product is the expected returns dependent upon the function of management skills through the operating years to maintain the profit margin.

Geographical features of the properties make it necessary to divide them into two groups for operating facility. One group is composed of 14 claims, the other group of the 66 claims remaining. Industrial engineering has been completed for all of the properties covering mining methods, milling and processing to the end product, doré bullion and base metal concentrates.

The smaller division can go into production 9 months from receipt of funding. The larger division requires more area development, access roads and work areas. A ten acre mill site is available to service both divisions in the milling of ores, concentrating, and processing to the end product, gold-silver doré bullion.

There is on the smaller division some 6317 tons of mined material for processing into doré bullion. From this material 1580 troy ounces of gold will be available to sell under purchase order for future delivery at the fixed price of $300.00 per troy ounce, to be delivered in United States minted gold coins. This material inventory assays from 0.329 to 2.42 troy ounces of gold per ton. A safety factor of 0.25 troy ounces per ton is used to compute the amount of gold to sell.

Projection of revenues of the smaller division, the first phase of the overall mining operations covers underground mining only. Other costs must be considered, administrative, material handling, processing, and shipping costs. At an average value of $200.00 per ton for all contained metals, precious and base, operating on a three shift basis, 40 hours per week, the revenues are:

Advancing drift 30 feet per day	$35,136.00
Less operating costs per day	9,000.00
Net reveues per man day	$26,136.00

$130,680.00 per Week, $522,720.00 per Month.

The Owner will grant to the Investor, in consideration for the placement of a Purchase Order, as set forth above, an Option, without charge or costs, to consider and negotiate a Joint Venture arrangement whereby the owner and the investor share equally in the net revenues from the Smaller Division Mining Operation expressed in capital stock of the said division. The purchase must be for not less than 700 or more than 1000 troy ounces of gold available to sell as described in the foregoing. The Terms and Conditions of the Instrument is titled: "Purchase Order Agreement with Option to enter into Joint Adventure".

This Offer is firm. Particulars, details, and supporting material together with formal instrument are on hand at the Agent's Office.

APPROACH TO NEGOTIATIONS

WHAT WE HAVE: An unusually valuable mineral reserve, some facilities, machinery and equipment far short of needs, and no operating capital.

WHAT WE NEED: Funds to provide operating capital, procure machinery, equipment, and construct access roads and facilities.

WHAT AN INTERESTED PARTY HAS: Funds to enable the foregoing to be accomplished.

THE PRINCIPLE: A ralistic approach on a fair and equitable basis is the old "Grubstake Law" practiced in years gone by, but still effective. An investor willing to speculate supplied money, tools, supplies and equipment to a prospector. Whatever he faound was then shared equally between them. If he did not find anything, then they both suffered loss. Sometimes the prospector's own life.

ITS APPLICATION: We have the prospect, the mineral reserve. To exploit it an investor is needed. The situation is not speculative. Benefits to an investor and ourselves is clearly evident if operations are developed in a progressive, well organized manner. A true Joint Adventure is then in order as follows:

1. In consideration of Purchase Order an exclusive option, without costs, is granted to the investor to negotiate funding arrangements for the operation of the Hagerty Consolidated Mining Division. (Pelican-Blue Bird Mines)

2. The purchase order for not less than -700- or more than -1000- troy ounces of gold at the fixed price of $300.00 per troy ounce, to be delivered one year from the acceptance date of the order in the form of U.S. minted gold coins.

3. Funding for the Consolidated Mines (14 lode mining claims) $7,000,000 with the expectation that not all of the money will be expended to reach productive operations. The surplus to be rolled-over (allocated) to the Muldoon Gulch Mines development. (66 lode mining claims)

4. Operation of the Muldoon Gulch Mines will be under the same terms and conditions as applied to the Consolidated Mines, both to be by joint adventure under which the net revenues are to be shared on a 50-50 percent basis.

5. Hagerty R & D to be the Operator, the Investor, a Participating Party in major decisions relative to expenditures over ordinary operating expenses. Both above divisions to be incorporated in Arizona. 50 percent of the capital stock,then, issued to Hagerty R & D, and 50 percent to the Investor for each division, Consolidated and Muldoon Gulch Mines.

6. Funding requirements to be developed at a later date for the Muldoon Gulch Mines as jointly determined by the two parties. Determinations cannot be reached in these early stages with any degree of accuracy.

Summary Sheets covering our mining properties, features, profit potential, and funding arrangements desired have been prepared for distribution by our Agent to the Middle East, Europe, U.S. and Canada. This provides exposure to interested parties that we heretofore have not had. The Agent, Mr. Nezih Mohammed Nour Salem, is President of the International Middle East Associattes, has extensive contacts with investment money sources seeking investments in the U.S. and Canada, and mining is one of the fields of interest.

Jack Hagerty
President
January 9, 1987.

PRINCIPLES OF OPERATION

Hagerty Research & Development Co., Inc., an Arizona Corporation, engaged in Research and Development and Mining with its Attendant Processing Operations to Produce Precious and Base Metals.

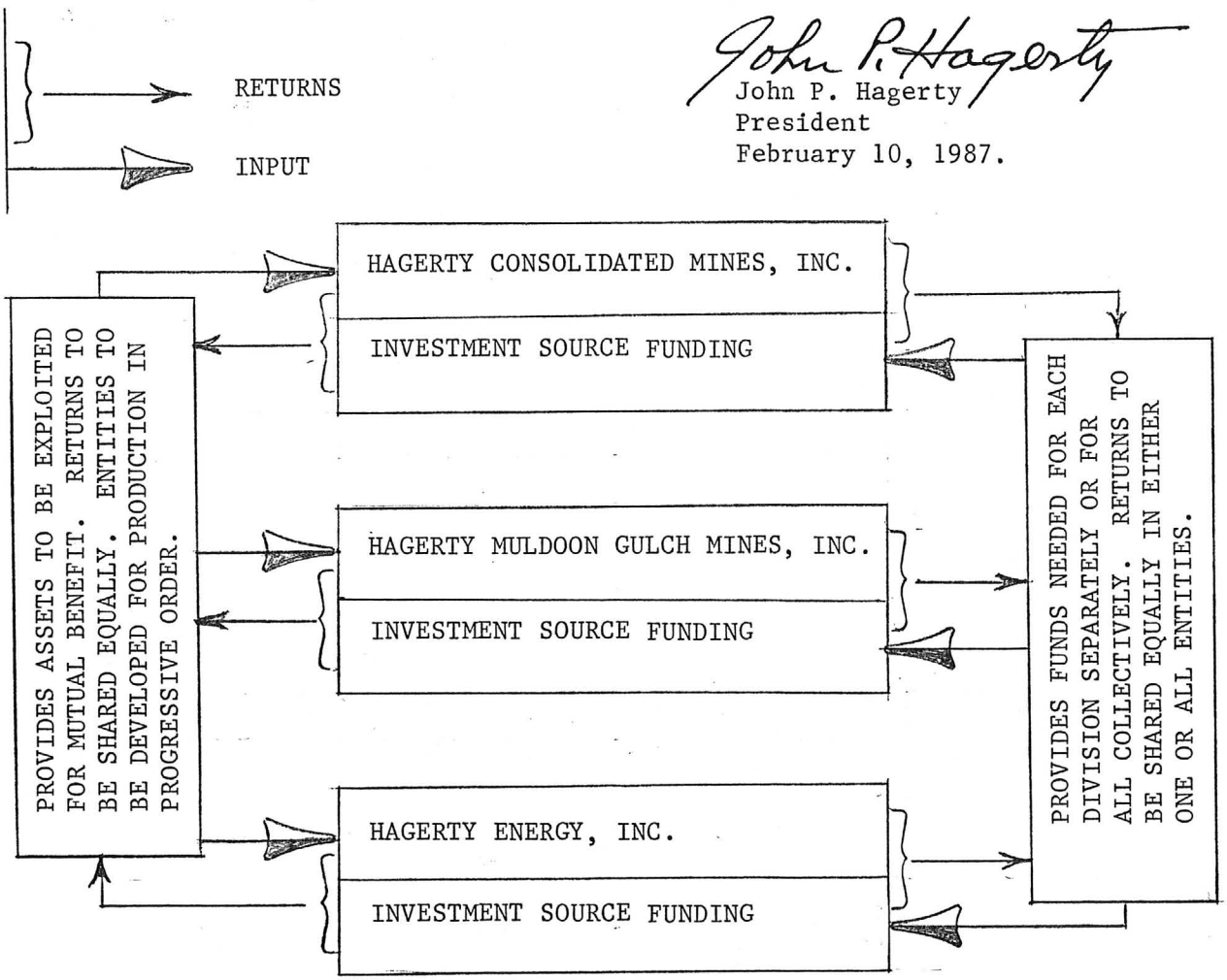
The Company owns valuable mineral reserves, to which attention is now focused, and U.S. Letters Patents in the energy field for devices that operate without the need of fossil fuels and do not polute the environment. Money is needed to exploit these assets.

An investment source for funds must be provided a beneficial return on sums of money invested. A fair and equitable arrangement therefor is proposed based upon the creation of subsidiary divisions of the enterprise to be progressively developed in logical sequence, the first being the mining activities. Such entities to be operated by the Company and the Investment Source with benefits to be shared on an equal basis under Joint Adventure.

The Hagerty Research & Development Co., Inc. is a personal holding company. Its stock is closely held and not sold to the public or traded on stock exchanges. It is not exposed to the workings of corporate raiders to obtain its assets. Thus both the Company and the Investment Source are protected from adverse actions that could happen in the case of public corporations by tender offers to buy up controlling amounts of stock traded on stock exchanges.

The arrangement proposed is illustrated below. A copy of an article in the California Mining Journal, February 1987, provides the outlook for metals.

John P. Hagerty
President
February 10, 1987.



Mayer File

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Arizona State Department of Mineral Resources
Mineral Building, Fairgrounds
Phoenix, Arizona 85007

Attention:
John A. Jett

Dear Sir;

Please furnish a copy of the latest "Laws and Regulations Governing Mineral Rights in Arizona, 9th edition" by Larry D. Clark and Victor H. Verity. If any charges, please bill us and remittance will be forwarded.

I am sending under separate cover our Plan of Operations as furnished to the USDA Forest Service. Enclosed copy of material furnished to the Department of Water Resources in an attempt to lift a protest by Maricopa Water District against our application to appropriate water from Turkey Creek where our mill site is located.

Sincerely yours,

John P. Hagerty

John P. Hagerty
President

IN FILE

Sent Laws and Reg 11-88

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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

John P. Hagerty
President

Copies, letter and materials to:

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

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EVENTS LEADING TO A WORTHY PROSPECT FOR PLATINUM GROUP METALS

The Hagerty Properties, lying northeast of Crown King, Arizona, were in ancient times under the seas. Banded iron and chert formations, chemical sediments of thin-bedded or laminated, containing layers of iron and chert (silica), poured out on the sea floor from volcanic action and fissuring under the waters. The level-lying strataform structures were then intruded and raised to their present positions by the upward thrust of the Crazy Basin Quartz Monzonite Batholith. This event and subsequent remobilizing forces made the rock structures friable with open voids, faults and fractures, all of low resistance to penetration by liquid and gaseous solutions rising from the magma to form the ore veins of importance.

Two general structures exist, the original strataform of banded iron and chert, and the latter day formations that developed from fissure filling, both running north northeast or northeast in parallel bodies in contact, one to another, or interspaced with silt or mudstones and porphyritic intrusives.

Sampling of the banded iron and chert formations disclosed gold and silver running about 0.08 gold, and 0.50 silver in ounces per ton. The later fissure-filled structures carry the gold, silver, and base metals of commercial value in ores of primary and secondary enrichment.

Weathering is severe in the Bradshaw Mountains causing outcrops to deteriorate and release contained metallics which concentrate in the soils of downward slopes. A sample taken below a prominent chert outcrop ran 0.423 gold, and 0.29 silver in ounces per ton. Approximately 50 pounds of soil samples in bulk were taken from a road bank descending from this location. The material was screened to 20 mesh minus; washed, boiled in borax solution, and panned until a sufficient amount would accumulate to make a charge for the roasting furnace.

Litharge was sprinkled lightly over the charge, which under roasting temperatures, can draw gold and silver from their ores as sulphides pass off in fume or change to oxides. The charge was heated to a red heat, then quenched in cold water, the purpose being to remove any coating on the metallic particles and bring out their colors. Colors vary according to the elements that alloy, one to another or by multiple alloying elements.

Gold, close to pure, will be yellow. With some silver alloy, it will be a pale yellow, Electrum. With about 25 percent silver alloy it will be green. Gold with copper alloy will be reddish yellow, and will display many other colors with the alloyage of various metals. Silver, the white metal in its pure state, appears black or brown in nature. Roasted or melted and quenched or allowed to cool, silver will appear black as it oxidizes rapidly, absorbing oxygen from the surrounding air.

The green gold should not be confused with epidote. Green gold is heavy, whereas epidote has a specific gravity of only 3.4-3.5, and will fuse with heating, bubbling to a dull black scoriaceous glass. The roasting heat did not affect the green gold. Gold nuggets found in the Branshaw Mountains often display a greenish hue, indicating a high silver content.

At one point in panning, a black material was noticed that intermingled with or settled beneath the gold when shaken in a jar filled with water. It was very heavy and could not ground by hand in a mortar, and when subjected to nitric acid, and then aqua regia, it produced no reaction. Since it could not be put into a solution, it was believed to be iridium, which will resist all acids. The material was kept under aqua regia for over a year with no affect whatsoever.

Platinum, or any of its group of metals, had not been considered as occurring on the properties. A sample of the material being processed, and a sample of Pelican Mine concentrate, were taken to Fred Copeland, assayer and chemist, who ran assays by atomic absorption with the following results. Of these samples some black material was observed as residue which would not go into solution, which could have been iridium, and thus does not respond to this assay method:

Alluvial Material from Bulk Samples in troy ounces per ton	Gold	0.317
	Silver	26.25
	Platinum	1.75
Sulphide Concentrate, Pelican Mine in troy ounces per ton	Gold	0.821
	Silver	107.93
	Platinum	2.63

The platinum was unexpected, the iridium even more so. There is very little information as a guide to host rocks in which platinum group metals occur, if such rocks do in fact exist. Olivine, dunnites, proxenites, gabbros, peridots, and serpentine are mentioned as sources favorable to the metals. Such rocks are composed of materials common to meteorites ranging from pure magnesium silicate, through magnesium iron silicate, to iron silicate. On the other hand, recently found information may become pertinent. Iron, a major constituent of meteorites and comets, weathers rapidly, thereby releasing many metallic particles that are

corrosion resistant and unaffected by acids or salts. Such particles could be mechanically injested in a time sequence of fissure filling liquid and gaseous solutions rising from the magma. Could this platinum group of metals found on earth originate only from meteorites and comets impacting on the earth's surface?

Iridium and platinum are found to be more abundant in meteors than on earth. Scientific journals have put forth plans to be considered for mining platinum group metals from asteroids so important have these metals become. Scientists have found around 50 sites worldwide where 65 million year old rocks contain large amounts of iridium. The iridium rich rocks believed to have been formed from the dust when asteroids and comets impacted upon the earth's surface some 65 million years ago. The theory projected is that this occurance caused huge dust clouds that plunged the planet into cold and darkness, destroying food supplies and causing the extinction of dinosouers and many other creatures.

The studies were conducted by researchers from the University of California at Berkeley and Los Angeles, Lawrence Berkeley Laboratories, the University of Colorado, the U.S. Geological Survey and Los Alamos National Laboratory, as well as Dutch and Danish Scientists.

Notes on Platinum Group Metals from the Encyclopedia Americana are set forth. The United States depends on the importation of such metals from South Africa and the Soviet Union, thus the metals are of strategic importance. The only major source of Platinum and Palladium in the United States is the Stillwater Complex in Montana. The recovery of these metals is reported by the Bureau of Mines Report, the abstract of which is furnished. (Report RI 8970, 1985.)

PLATINUM: Its chief source is alluvial deposits. it occurs as rounded grains or scales. Commonly associated with gold. The color is steel grey shading into silver white. The specific gravity ranges from 14 to 19 due to percentages of iron, or palladium, ruthenium, or rhodium that may be present as alloys. The specific gravity for refined platinum is 21.48 to 21.50. Melting Pt.-1779 deg. C.

The five allied platinum group metals of the group, making six in all, have special characteristics:

PALLADIUM: Melting 1,360 Deg. C., Specific Gravity, 11.4. It has the lowest melting point of the group.

OSMIUM: Metallic element of the platinum group commonly found with iridium. It is heavy and most infuseable of the metals. Specific Gravity 21.3 to 22.48.

IRIDIUM: The heaviest of the group. Specific Gravity 22.6 to 22.8. The melting point is 2,200 Deg. C.

RHODIUM: Greyish white. Fusion point as high as 1,940 Deg. C. While very hard the Specific Gravity is low, not exceeding 12.1.

RUTHENIUM: Comes from residue produced by the separation of osmium from osmiridium. Specific Gravity is 12.26. It is unattactable by acids.

PLATINIRIDIUM: A native alloy of platinum and iridium. Found in small grains and crystals associated with native platinum.

IRIDOSMINE: Native alloy of iridium and osmium, usually containing some platinum. Appears silvery white and resists all known acids.

The following is from the Bureau of Mines Report regarding the Stillwater Complex. It is believed that the mineralogy of the Hagerty properties are similar. Should platinum group metal occurance of economic importance be confirmed, the extraction processes, with some modifications, as developed by the Bureau of Mines could be employed to produce the end products.

BUREAU OF MINES, U.S. DEPT. OF THE INTERIOR, RI 8970 REPORT

Microprobe examination showed that the concentrates were composed primarily of sulfide minerals in siliceous gangues. Although the mineralogy of the individual concentrates differed somewhat, the principal accessory minerals were pentlandite [$(Fe,Ni)_9S_8$], pyrite (FeS_2), and chalcopyrite ($CuFeS_2$), with minor to trace amounts of heazlewoodite (Ni_3S_2), galena (PbS), sphalerite (ZnS), and millerite (NiS). The PGM were distributed partly in the form of platinoid minerals (Pt-Fe alloys, PGM sulfides) and partly in solid-solution in the pentlandite, with palladium partially replacing nickel in the crystal lattice. The other principal PGM minerals observed in these samples were vysotskite (PdS) and braggite (Pt,PdS). The gangue minerals consisted of Al, Ca, Fe, and Mg silicates. Analyses of gangue materials are reported in table 1 and throughout the paper as oxides of aluminum, calcium, magnesium, and silicon.

It becomes necessary to advance exploration activities with the platinum group metals as a target, but not excluding gold, silver, and the base metals. In 1983 Texasgulf Minerals and Metals, Inc. conducted an exploration program on the Hagerty properties described from their report as follows:

"The 1983 program was designed around results of 1982 mapping and rock and soil sampling. From the 1982 program, a number of sulfide-bearing exhalite horizons that contain local zones of gold-rich massive base metal sulfides were defined (figure 3.). Based largely on magnitude and strike length of soil anomalies two of the zones (Peck Canyon Zone and NW Gold King Zone, figure 3.) were chosen for detailed work. The primary target was an open-pittable moderate grade orebody lying at shallow depth beneath soil anomalies, containing on the order of 500,000 ounces of gold. Potential occurance of a "blind" underground mineable orebody was also considered."

RECOVERY OF PLATINUM, PALLADIUM, AND GOLD FROM STILLWATER COMPLEX FLOTATION CONCENTRATE BY A ROASTING-LEACHING PROCEDURE

By E. G. Baglin,[1] J. M. Gomes,[2] T. G. Carnahan,[2] and J. M. Snider[3]

ABSTRACT

The Bureau of Mines devised a procedure for selectively extracting platinum-group metals (PGM) and gold from Stillwater Complex flotation concentrate. The Stillwater Complex is the only major U.S. PGM resource. Development of a suitable extraction technique will contribute to its exploitation. The concentrate was roasted at 1,050° C to convert host base-metal sulfides to oxides and the PGM from sulfide minerals to their elemental states. The roasted concentrate was preleached with dilute sulfuric acid to remove easily soluble gangue minerals. After preleaching, the concentrate was slurried with 6M HCl and leached at ambient temperature and pressure with a strong oxidizing agent. Hydrogen peroxide, chlorine, sodium hypochlorite, nitric acid, and a persulfate salt were the oxidants investigated. The two-stage leaching scheme extracted up to 97 pct of the platinum, 92 pct of the palladium, and 99 pct of the gold from the roasted concentrate. The base metals were not solubilized and reported to the residue. No attempt was made to devise a procedure to recover the copper and nickel because they comprise less than 5 pct of the value of the concentrate. Viable techniques for recovering the precious metals from the pregnant solution were sulfide precipitation, cementation with nickel, or adsorption on activated carbon.

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[2]Supervisory metallurgist.
[3]Chemical engineer.
Reno Research Center, Bureau of Mines, Reno, NV.

Plate, Figure 3, and Plate, Figure 2, show the selected zones for geochemical survey, and the location of the properties in relation to other mining properties. Material information relating to detail analysis and other data is the property of Texasgulf Mineral and Metals, Inc., Golden, Colorado.

A sample of alluvial material and one from the Pelican Mine have recently indicated that all of the platinum group metals, as well as gold and silver, occur on the properties.

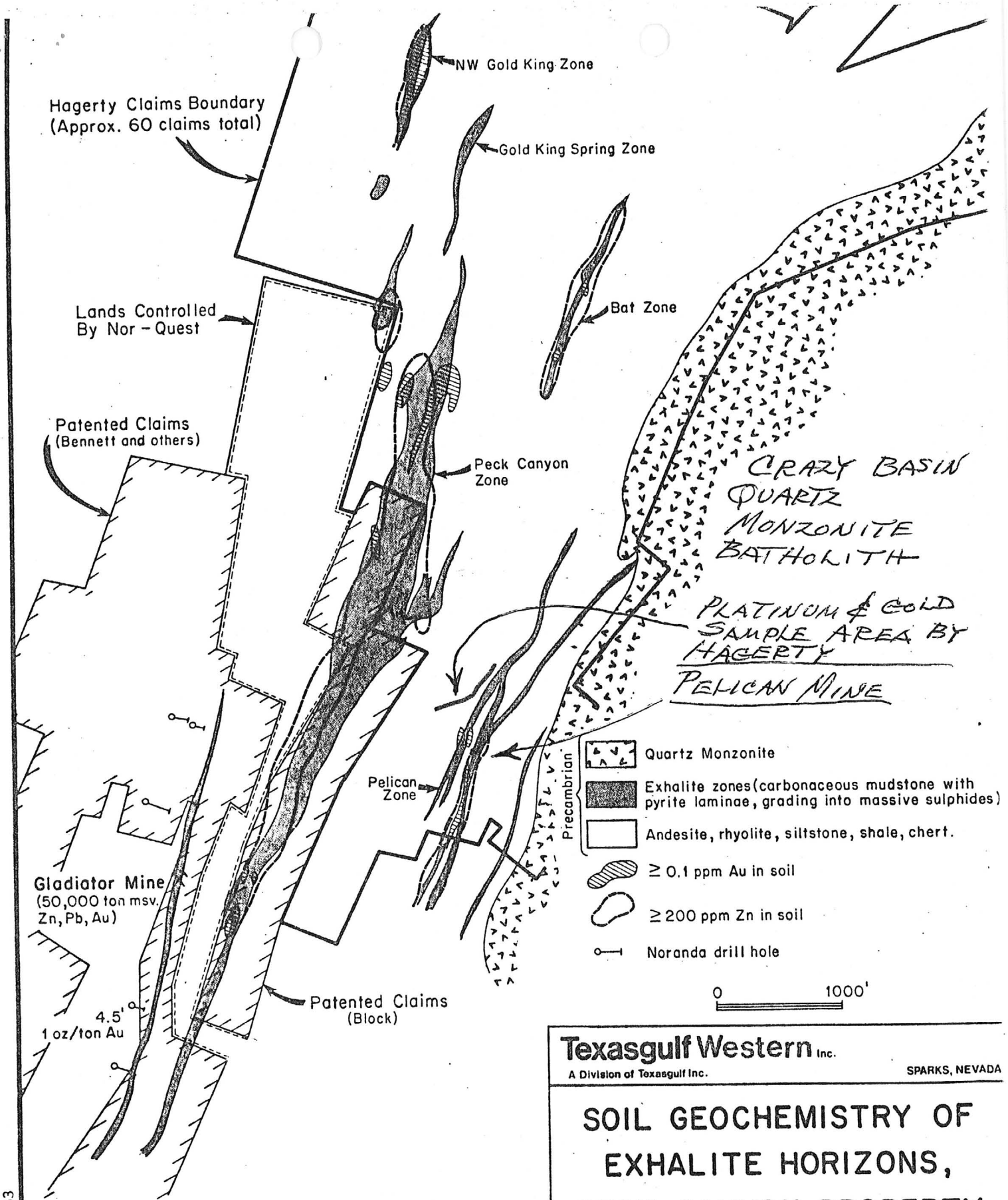
In comparison with platinum and its group of metals, gold is abundant. Gold, however, is recognized worldwide as a stable backing of currency in trade between countries. The recent Summet Meeting in Japan had in its purpose, the need to stabilize the U.S. Dollar against other currencies. An extremely high price for gold would defeat this purpose. A price for the metal must be agreed upon between the major industrial nations if a gold standard is to be established. $400.00 per troy ounce has often been considered as a floor price for gold. This, or a lower price, may be the accepted price.

The Congress enacted into law a bill authorizing the Treasury Department to mint gold coins with the proviso that gold for this purpose must be gold produced by U.S. producers. Eventually, a price will be established to coincide with the currency backing price, the price that the Treasury Department will purchase gold.

All of this with a fixed price for gold, will help mining and industries in other fields. Platinum, and its metals, will surely replace gold as the most valuable of the precious metals. In this respect, values will be based on supply and demand.

John P. Hagerty

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

Conditions that developed in past history relative to gold, silver, and copper affecting properties held by Hagert[illegible] D Co., Inc.

Silver in Arizona, and more about Gold

The Northern part of the State of Arizona is truly a slumbering mineral giant, not only for its gold and silver, but for other metallics now in demand such as tungsten, molybdenum, antimony, copper, lead, zinc and berylium, metallics not important in the early days of mining.

Silver and gold which stimulated early day mining became dormant but are ever present to be exploited. Why is this, history gives the answer ! From the book "Rock to Riches" by Dunning and Peplow, which briefly covers the history of mining in Arizona from the Spanish explorations to recent times:

"1880 to 1893, Silver is King . . . Until Dethroned.

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 products 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 Thombstone, the Silver King, Peck, Tip Top, McCrakin, McMillen Basin 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 considerations 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 th 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 definately established as king in Arizon

Note; In other historical references the area that we have located, our mining claims, 33 in number, was just before 1893 still in the prospecting and early mine development stage. Even though very high grade silver and gold bearing ores were in evidence, silver being the predominent ore, the area we now occupy was abandoned with the event of silver's price decline in 1893. I have re-discovered these old workings and many new outcrops (discoveries) which were not then visable to the old timers but which have become exposed by errosion. Our Coffee Pot and Dinner Pail mining claims abutt the famous Peck mine on the same strike.

The previous write-up gave an account of gold mining, its history etc. The account of both metals from the book Rock to Riches continues;

"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 maintain ence of interest in gold; and the beginnings of Arizona's real copper boom.

A dam was built on the Hassayampa to provide storage water for gold placer mining. In 1896 unusually heavy rains fell which melted heavy snows that had fallen in the mountains. The dam could not hold the massive run-off and burst. The bursting of this dam, known as the Walnut Grove Dam, signalized the end of extensive placering. The event seemed, too, symbolic of the end of the reign of silver and gold as Arizona's most valuable mining products. The nameless victoms of the flood similarly seemed to symbolize the passing from the Arizona scene of the lonely, nameless, courageous and always optimistic prospectors who found almost every one of Arizona's major orebodie

Since the reference book was written and published, 1966, interest in silver and gold has been rekindled for the two metals have become commodities with their end use in many fields, silver mostly in photography and gold mostly in the electronics industry. Both metals are in short supply worldwide.

Jack Hagerty

Jack Hagerty

An Account of the Peck Mine in 1922 from "[illegible] Deposits of the Jerome and Bradshaw Mountain Quadrangles, Arizona", by Waldemar Lindgren in the summer of 1922 at the request of the Director of the U.S. Geological Survey.

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 intermittent 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. Towney much rich oxidised 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.

An Account of . Peck Mine from "Arizona . the West", the University of Arizona Press.

THE PECK MINE:
SILVER BONANZA IN THE BRADSHAW MOUNTAINS

by

Patrick C. Henderson

During the period of the mining boom that swept the Southwest in the late nineteenth century, many found to their dismay that the discovery of a rich ore deposit could be a mixed blessing. Too often elated prospectors, soon after organizing a district and broadcasting the news of their strike, became hopelessly involved in a depressing web of transportation problems, milling difficulties, and legal entanglements. Too often they invited financiers to invest in potentially valuable claims, only to see the profits from the mines diverted from their pockets when regular production began. The opening and development of the Peck Mine in the Bradshaw Mountains of Central Arizona in 1875 illustrated the perplexing situation the promoters of a new discovery repeatedly faced on that far frontier.

In May of 1863 prospectors climbed into the towering range extending south from Prescott to a point forty miles northwest of Phoenix to search for precious metals. Earlier in the month a group led by Joseph Reddeford Walker had found rich gold placers to the north in the headwaters of the Hassayampa, and there was a general feeling that the surrounding promontories were also mineral-laden. Among those seeking wealth were the Bradshaw brothers, William D. and Issac, who had joined the rush overland from the Colorado to the Walker district, and like many others turned south to less crowded country. In the foothills of the lofty range which thereafter bore their name, the Bradshaws struck pay dirt, but worked their claims only a short time, for they soon realized that the danger of indians and the difficulty of transportation would make the immediate development of the mines impossible. Abandoning their diggings, they returned to the Colorado. For several years there was little interest in the Bradshaws. Then in 1869 Jackson McCrackin and several companions discovered a rich silver lode in one of the inner canyons. They named the mine the Del Pasco, and to speed production packed a small stamp mill in to pulverize the ore rather than work it by the primative arrastra method. News of the silver strike now focused attention on the Bradshaws for the first time.

The discovery of the Tiger Mine southwest of the Del Pasco proved beyond a doubt that rich treasures were located in the mountains. Early in 1871 Dan Moreland and a man named Hammond arrived in Prescott with a mule train loaded with silver ore from a claim they had named the Tiger. They passed the ore around for assay, and quickly learned that in value their lode was far richer than the Del Pasco, which in 1870 assayed $73 per ton. The Tiger assay ran from $1,600 to $11,000 per ton! The report on the Tiger was made known on Sunday, and early the following day miners were on their way to the new district. Sales in footage adjacent to the original claim proceeded rapidly, as speculation over the mineral potential of the property increased. The mining law then in effect specified that in an unorganized area prospectors could claim 3,000 feet along the vein, and three hundred feet back on each side. It was also customary to offer sections of the

claim, measur[illegible]in "feet on the lode", t[illegible]tecomers for varying sums without showing actual production from the mine.

Near the Tiger strike Bradshaw City soon sprang up. Although the camp was a cluster of tents, crude log cabins and frame buildings, enthusiastic supporters declared it soon would have 20,000 inhabitants and be the leading metropolis in Arizona. But the excitement at the Tiger was short-lived; for capitalists from San Francisco, invited to consider investing in the mine, were cautious. Transportation into the mountains was expensive, hostile indians lurked in the vacinity, and the extent of the lode was unknown. Four years passed before the situation changed. Then, in 1875, with most of the indians of the area now on reservations and the Tiger ore remaining rich at depth, there was a resurgence of mining interest in the mountains south of Prescott. Claims were located which surpassed even the Tiger in mineral value. Of these discoveries, it was the Peck strike that brought roads and prosperity to the Bradshaws.

Edmund G. Peck had arrived in the Walker district in the late spring of 1863 with Lew Alters party, which had hurried overland from Albuquerque when word came of the strike in Arizona. Believing that he was better qualified as a scout than a miner, Peck went to the military post under construction near the diggings, and presented himself for employment. During the ensuing decade he worked in various capacities in and around Prescott. In the early summer of 1875, with his fortunes at a new low, Peck organized a party to prospect in the Bradshaws, which by then were humming with activity. T.M. Alexander, C.C. Bean, and William Cole- all early settlers in the region-accompanied him. With a pack train they climbed into the mountains, began searching for mineral veins northeast of the Tiger Mine, and near the head of War Eagle Creek found silver in paying quantities. But before a concerted effort was made to build a camp, Peck crossed the ridge to the East to hunt deer, and descending into a deep canyon he stumbled upon a rich outcropping of horn silver.

The site of the mineral outcropping was spectacular. Like an extended thumb or finger, an upended slab of rock rose fifty feet into the air; and at the base of this landmark a vein of silver surfaced. Peck was enough of a prospector to know that this was a potentially valuable claim, and he hurried to report the find to his companions. The men examined the silver float, and quickly moved their belongings into what became Peck Canyon. From June 16, the date Peck discovered the Bradshaw bonanza, the four prospectors spent two weeks working the lode, then headed for Prescott with several sacks of select ore. A.T. Rosenthal, assayer, tested the specimens carefully and announced that the ore should run from $6,000 to $7,000 a ton. This was the richest silver strike in the Bradshaws since the Tiger discovery four years earlier.

The early days at the Peck Mine were not as filled with excitement as had been the case at the Tiger. There was no wild sales in footage, nor did a town spring into being overnight. But all who visited the claim spoke optimistically of its future. In July General August V. Kautz, commanding the Department of Arizona and a speculator in mines elsewhere in the Bradshaws, inspected the ore at the Peck and predicted that the early development of the mine would stimulate an extensive search in the area for other lodes. Interest in the Peck increased i[illegible] August when C.C. Bean rode into Prescott with seventeen packloads of silver, and reported that eight tons of ore had been sacked at the mine and another forty tons were in the shaft. A.T. Rosenthal sampled

the Bean shipment, and paid $13,000 for ten tons of the ore. This was the first sale Peck and his associates made. The owners felt they had sold under the market, but welcomed the money for it made possible more extensive work at the diggings and eased the expense of transportation.

Until capital was available to hire men and animals to build a to the mine, Peck and his partners were forced to engage freighters move the ore down the mountains, and then west overland to the nearest smelter, which was at San Francisco. Bill Simmons, who owned a mule train at Bradshaw City, agreed to take the sacks of ore from the Peck north to Prescott, where Charles Beach transferred the shipment to his train and plodded west to Ehrenburg on the Colorado. At Ehrenburg the ore was loaded into wagons going northwest to San Francisco. Aware of these arrangements, Kautz in September began urging the people of Prescott to aid in the construction of a wagon road to the site, so that equipment could be hauled in to develop the mine properly. A mineral boom in the Bradshaws, he emphasized, would bring prosperity to the merchants of that town.

In November, when the vertical shaft at the Peck was down fifty feet, the miners began a cross cut, or horizontal tunnel, into the ledge. All were anxious to know whether they were excavating a rich lode, or digging in a pocket. In the past both miners and investors, fooled by a good surface show, had spent large sums of money, only to find themselves plunged into debt when the underground ore body quickly played out. When the cross cut revealed the lode to be quite extensive Peck and his partners on October 30, 1875, met at Peck's home with others from neighboring camps to lay out legal machinery for a mining district. The mining district had long been an important institution on the frontier. As soon as the Forty Niners learned there was no federal legislation to protect their claims on the public domain in California, they had held local meetings, and through the simple process of a voice vote had created districts and enacted regulations for self government. The prospectors in the Peck District, however, broke with this tradition by adopting the Mining Act of 1872 as their local code and agreeing to abide by the regulations that might be set by federal statute. Encouraged by the security afforded by district organization, the owners of the Peck pushed the work in the shaft through the fall of 1875; and the following February they aired the news that at the one hundred and five foot level the ore was still rich

The operations at the Peck continued without complication until Bill Cole, one of the partners, decided that his good fortune was sufficient cause for a prolonged spree. Cole had been a prospector in the Prescott area for a number of years, but apparently the Peck was his only profitable discovery. In the spring of 1876 he proceeded to dissipate his initial gains from the mine in an extended debauch on "Whiskey Row" in Prescott; and while inebriated he consigned his interest in the Peck to May Bean, the wife of his partner, C.C. Bean. His action precipitated a lengthly dispute that caused the owners of the Peck much hardship. A heated litigation followed between the Beans and Cole over the legal ownership of his stock. Cole brought suit for the return of his shares, contending that while intoxicated he had been unable to transact business and therefor could not have made a valid contract. Bean and his wife, on the other hand, asserted that Cole had executed the transfer while in possession of his faculties. As the trial progressed, the lawyers were forced to present the litigants in a light that would further their respective aims. Cole was portrayed by his attorney as a drunken, profligate, irresponsible individual, the

opposition held him up as a model, responsible citizen. In the Arizona Miner the editor wrote that he had sat in court and heard the plaintiff's own attorneys "traducing him in the vilest manner, while the opposing counsel were straining every nerve to make him out a gentleman". In November the trial ended. Judge French decreed that Col had been incapable of making a contract and therefor still owned his interest in the Peck. The magistrate then turned to Bean and absolved him of all intent to defraud his partner. But the legal difficulties h not been settled, for Bean immediately appealed the decision.

Perhaps in an attempt to remove the mine from the litigation between Cole and the Beans, Peck incorporated the Peck Mining Company under the laws of the Arizona Territory five days before the trial ended. Edmund Peck, May M. Bean, Leonora Jewell, and Catherine Alexander were listed as the incorporators. Catherine Alexander was Peck's mother-in-law; Leonora Jewell was the wife of L.B. Jewell, the assayer for the mine. Cole, Alexander, and Bean were not mentioned. Hoping to solve the ill feeling, Peck then informed May Bean that pending the outcome of the appeal of the Cole decision the company had issued and would hold for her 25,000 additional shares of stock. When the next meeting of the incorporators was held, May Bean proceeded to vote both the stock she claimed and that being held in her name.

Although struggling with transportation problems and shaken by litigation, the Peck management in 1876 optimistically made plans to expand production at the mine. To speed the process of crushing the ore the company leased a stamp mill on Groom Creek, and soon was sending shipments down the mountain to be pulverized by the pounding hammers. Initially named the Umpqua, the mill had been moved about and renamed the Azlan by the time the company put it into operation. The Azlan successfully worked the ores from the Peck for scarcely a year; then the company, striving to increase efficiency and reduce the expense of the long haul to Groom Creek, constructed its own stamp machinery near the main shaft early in 1877. The Arizona Enterprise on February 2 commented on the opening of the new mill:

> George Hogle, James Mee, and E.L. Gobin (managers and foremen at the mine) were present. The mill worked perfectly. It was a gala morning, sure enough, on the old gulch and wonder or not, dear reader, if we tell you the event was celebrated by taking various and sundry drinks. Old Sol, even, appeared pleased as he crept over the hill and saw what was going on in the gulch.

The mill proved a reassuring influence to those employed at the mine, for it made possible a regular production schedule.

The town of Alexandra, named probably for one of the discoverers, was established near the Peck, and soon showed promise as an urban center in Yavapai County. A collection of unpainted shacks and stores along a single street, with false front facade predominating, the young town became an important locality in the Bradshaws; and as late as 1903 it was shown on the United States Geological Survey map. Heartened by the boom at the Peck and the rise of Alexandra, the officials of Yavapai County now authorized $35,000 to build a road from Prescott to Alexandra. The citizens of Alexandra and Prescott hoped that the expanded production would induce the owners to cease their internecine struggle and let the mine work for profit. But unfortunately this was not to be.

New problems arose when Edmund Peck decided to manipulate the ownership of the mine. The Peck Mining Company already was incorporated

in the Territory of Arizona, but he deplored the lack of cooperation among his associates and believed further that by marketing stock on the San Francisco Exchange he could raise additional funds for mine expansion. Peck therefor incorporated the company in California with himself as the head. But in issuing new shares to bring capital into the Bradshaws, the company ownership again was disturbed by internal bickering. The death of William Cole on June 6, 1878, hopelessly complicated the matter. Bean pressed for a decision on his appeal, only to learn that Cole had died intestate and without heirs, and that the other stockholders wanted an equal division of the holdings of the deceased. To add to the confusion, May Bean demanded an interest in the California company to the amount of the shares she claimed in the Arizona company. Peck declared that May Bean had agreed verbally that she would not claim the 25,000 shares held in her name, and a wrangle arose as to the exact holdings of the Beans in the Peck Mining Company. The legal situation became farcical. Armed men carried silver bullion from the mill and deposited it at the local Wells Fargo Office, while the opposition sought court orders to have the ore impounded.

The impasse was broken in 1878 when California investors paid Bean $50,000 for his holdings in the Peck, and assumed direction of the mine. The following year, to insure his interest in the discovery, Peck sued the California corporation in an Arizona territorial court! The property involved was in Arizona; but the court stated that it had no jurisdiction over "foreign companies", and that Peck would have to bring suit in California. The decision in effect deprived Peck of further voice in the administration of the mine. The territorial newspapers had been aware of Peck's dilemma; and in commenting on the case the Phoenix Territorial Expositer on July 18, 1879, warned Arizona miners against allowing California capitalists into their schemes. Peck lived out his years prospecting, and died in 1910.

Law suits were not the only difficulties plaguing the owners of the mine in 1878. Mismanagement compounded the anguish of those wrestling for control of the Peck. A visitor to the mine found the employees using hand windlasses in many instances where steam power was available, and expending little effort to utilize fully the water resources at hand. Fortunately, the rich ore was easily worked, but with efficient management much more could have been realized from the property. With debt piling upon debt the owners, having used most of the estimated $1,200,000 in profit for legal fees and court actions, decided to close down operations. As excavations rapidly were approaching the four hundred and fifty foot level- the bottom of the vein- the decision was perhaps fortuitous. After 1880 there were several attempts to reopen the mine, but days of glory at the Peck had ended.

The significance of the Peck Mine cannot be evaluated entirely in terms of silver produced. Certainly its operation reflected the difficulties common to most mining ventures in the West. Perhaps the greatest importance of the mine lay in the fact that its fame stimulated the rise of a town nearby, the building of the first road into the Bradshaws, and the rush of hundreds of prospectors into the neighboring mountains to search out other bonanzas. The Silver Prince, The Black Warrior, the Oriental, and others were opened and worked profitably for years. Thus, during its brief period of activity, the Peck advanced materially the settlement and economic development of Central Arizona.

Note: The foregoing is based on authoritative references of record set forth in the text.

Intra-Company Correspondence

SHATTUCK DENN MINING CORPORATION
and
SUBSIDIARIES

Humboldt Office

Date October 3, 1966

TO: C. R. Sundeen

FROM: J. Olaf Sund

SUBJECT: PELLICAN MINE
% John P. Hagerty
of Hagerty Research & Development
P.O. Box 398, Crown King, Arizona

TYPE: Silver, lead custom ore.

LOCATION:

The property is near the very summit of one of the highest mountains in the Crown King area. It is some two and one-half miles due north-northeast of the Crown King village or some four miles via narrow mountain-type gravel roads.

TERMS REQUESTED:

Mr. Hagerty approached S.D.M.C. with the idea of supplying custom ore at a rate of 30 tons per day.

GEOLOGY:

The property is entirely within part of a unit of siliceous and chloritic schists that are probably of volcanic origin. The general strike is north 30 to 35 degrees east and the dip is steeply west. Immediately west of the mine area are younger Tertiary (?) rhyolite porphyry dikes and sills. At the mine site, a shear zone parallel to the general schistosity is slightly veined and mineralized. This is part of the so-called Pellican vein structure which is probably some two to three feet wide and of undetermined length. The mineralized parts of the structure consist of a six inch galena vein with only minor disseminated sulphides in the hanging wall and a nearly barren foot wall.

Samples taken assayed as follows:

Sample No.	Location, Type & Width	Au	Ag	Pb	Zn	Cu
12790	100' level; 18" shear; hanging wall	Tr	Tr	Nil	0.3	0.1
12791	100' level; 18" shear?; foot wall	Tr	Tr	Nil	1.8	0.08
12792	100' level; 6" galena vein	0.24	13.2	25.9	15.0	0.32
12793	100' level grab of muck at face	0.10	10.5	27.0	6.8	0.28
12794	50' level; fw. 18" sheared rock	Tr	1.6	0.40	0.7	0.26
12795	50' level; 6" galena vein	0.03	4.6	2.9	0.8	0.42
12796	50' level; 3.0' hanging wall shear	Tr	Tr	0.1	0.5	0.09

DEVELOPMENT:

Mr. Hagerty has been working on the property for some two or three years. To date, he has improved some of the roads, retimbered the shaft, installed a tramway to

elevate the "ore" to existing roads and has merely started an ore bin in the center of the village of Crown King. Essentially, no ore has been mined and stockpiled for future shipments nor has any underground development been attempted. In fact, the continuity of the narrow galens stringer is open to question as an adit down slope and on strike with the main structure had no mineralization of any significance.

SUMMARY:

Mr. Hagerty is an optimist with dreams. He lacks any over all plan with regard to the development of his property. He is dealing with problems that he encounters, as they arise.

Mr. Hagerty has no conception of mineralized rock structures and what to expect from them or, for that matter, what to do with them. His 30 tons per day production is an arbitrary number only and has no basis on factual studies.

The property has only one very narrow galena vein that Hagerty expects to follow when "mining". Actually this may be only a very local mineralized zone in the sheared structure.

CONCLUSIONS:

In view of the above, nothing should be done with this property.

Similarly nothing should be expected from Mr. Hagerty and his ideas.

JOS/db

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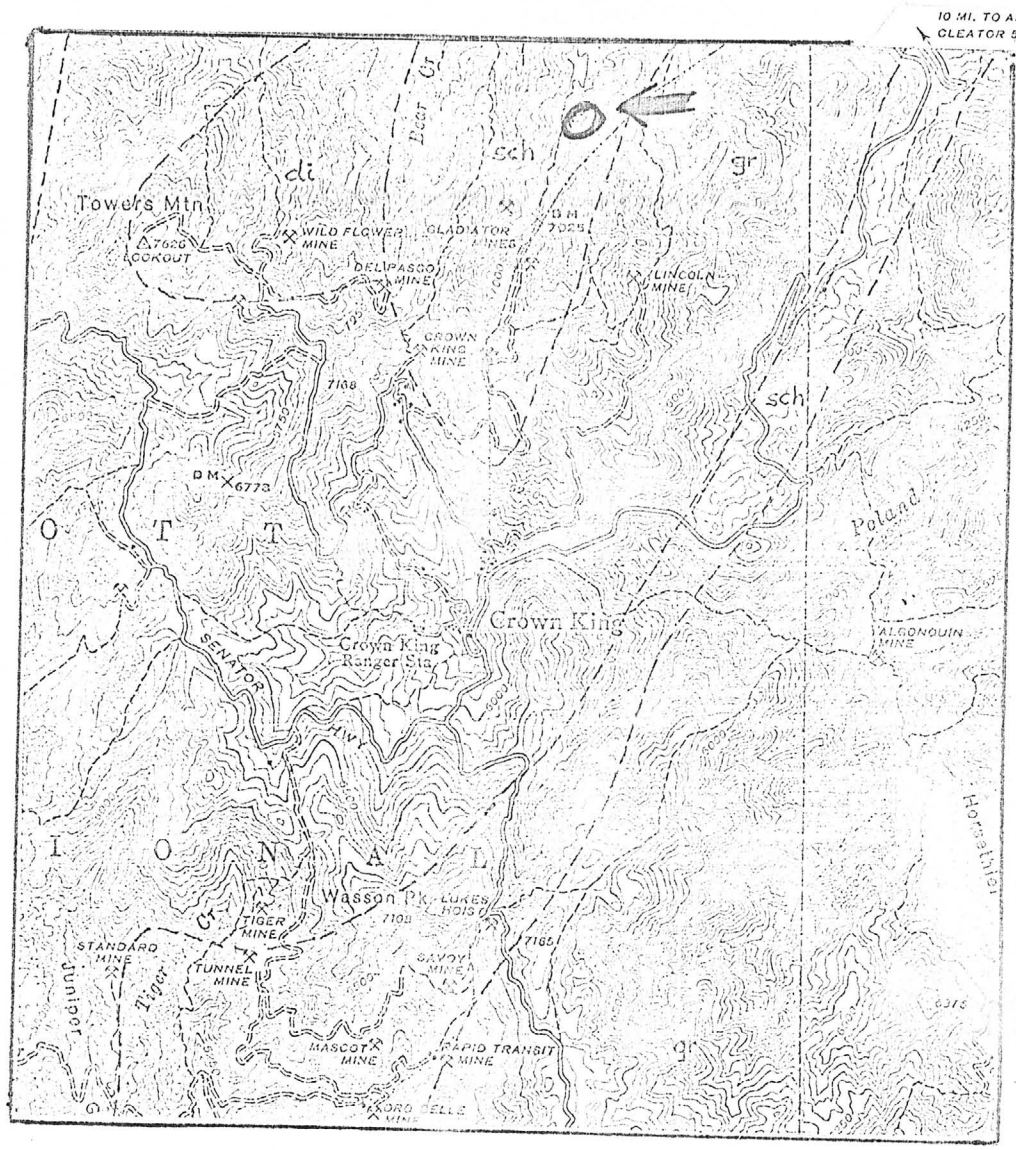
R 1 E



(T 10 N)

LOCATION OF PELLICAN MINE

(HAGERTY PROP.)

Scale 1 : 62,500

STILL & STILL
CONSULTING MINING ENGINEERS & GEOLOGISTS
330 GROVE AVE. PRESCOTT, ARIZONA

J. W. STILL
ARTHUR R. STILL

TELEPHONE 445-0610
POST OFFICE BOX 1512

February 22,1965

Mr. J. P. Hagerty
Crown King, Arizona

Re: Pellican and Blue Bird Mine Areas
Crown King District, Ariz.

Dear Mr. Hagerty:

The following will briefly summarize for you my opinions and conclusions regarding the above named properties that I visited, in your company, on January 29,1965.

There is enclosed herein a large map showing the relative location of the various cuts and mine workings visited as well as detailed plan maps of the workings. Also posted on this map are the locations, and values, of the 16 samples that were cut.

As you know, we covered a great deal of ground in this one day visit and, as such, the mapping should all be considered to be reconnaissance in nature.

Summary:

Of the five areas of workings visited, only one has, in my opinion, sufficient merit to warrant immediate further work. This is the area on the Pellican vein exposed by recent bulldozer trenching, which is designated as Site 1 on the maps enclosed. This immediate area should be further tested by hand trenching, and a short shaft, as detailed in the later text of this report.

A second area which may have some potential is the inclined shaft on the Pellican vein (Site 2). This shaft is in excellent shape and could be re-entered with minimum expenses. Sulphide vein material on the dump (Sample No. 2335) shows encouraging values in gold and silver, with lesser lead and zinc, although no definite knowledge can be had as to vein widths without entering the shaft. This work, however, should be done subsequent to the trenching at Site 1, if at all.

The other areas visited do not, in my opinion, have sufficient merit to justify any further work.

Discussion of Individual Areas:

Site 1: At this site bulldozer trenching has partially exposed a mineralized structure that is believed to be the Pellican vein. This mineralization is in the Precambrian schist approximately 25 ft. to the east of a sizeable Tertiary (?) rhyolite porphyry dike. At the

September 22, 1969.

Administrative Office
P.O. Box 2486
Prescott, Arizona 86301

Mr. R.G. Moore, Associate Editor
Small Mine Operators Association
P.O. Box 13384
Phoenix, Arizona 85002

Dear Mr. Moore,

Thank you for your letter of September 18th. I have sent information to Mr. MacKaller, U.S. Geological Survey, Washington, D.C., and while on a trip to Tucson was able to contact the Arizona Bureau of Mines at the University.

I have also sent information to the Arizona Department of Mineral Resources, but was unable to meet their field engineer in Prescott last Wednesday.

Enclosed some clippings of interest on silver and I wish to call to your attention the following publications: "1000 Old Arizona Mines"; Hintons Handbook of Arizona, 1878; and Hintons Handbook to Arizona, 1877, - all written by Richard J. Hinton who covered Arizona at that time in considerable detail. "1000 Old Arizona Mines" is now in print by Frontier Book Company, Fort Davis, Texas 79734. The other books are hard to come by.

It appears from our findings that what Mr. Hinton has written about the area we are located is accurate as to the mineral occurances. Also attached hereto is an account of the Peck Mine (file) by Lindgren in 1922. Our claims lie in the general strike area between the Lincoln and Peck Mines and some are on the same vein strike as the Peck, abbuting the southernmost Peck Claim.

At our Pelican Mine there are a series of sheeted or banded ore bearing veins over 1000 feet in extent across them. We have between thirty and forty claims held and being located in an area which I consider to be a major silver strike area. Numerous vein outcroppings have been exposed by access road construction thereby enabling the geologist to identify vein structures and evaluate the general area. Many outcrops have disintergrated on ridges disbursing ample float to further aid geological evaluations. Such float has been found to be valuable ore and the extent is such of the ore veins at the surface that much of our mining will be from the surface before underground development of workings is necessary.

We have living quarters at the Pelican Mine where visitors can stay but it is primative. There are accomodations at Crown King at "The Bunkhouse". Travel over roads to our mines should be in a proper vehicle, four speed two wheel drive or four speed four wheel drive vehicles. Thanking you again I remain,

Sincerely yours,

John P. Hagerty, President

Editor, Pay Dirt
Small Mine Operators Association
P.O. Box 13384
Phoenix, Arizona 85002

September 3, 1969
Administrative Office
P.O. Box 2486,
Prescott, Arizona 86301

Dear Sir;

Enclosed is information concerning our mining operations at Crown King, Arizona. A few years ago I talked with Mr. Stanley Secrist, the Association's President, about our projected plans for mine development and local extraction, which have now become a reality.

It would be of considerable help to us if you would supply the names and addresses of persons or agencies of authority in State and Federal mining activities who would be interested in visiting, examining and rendering reports on the area. There is much to be added from new information on mineral occurances which have now become exposed for sampling and evaluation.

Personnel from some agencies have visited our activities, the Arizona Corporation Commission, the Yavapai County Assessor, and the U.S. Department of the Interior engaged in up-dating maps and mine locations. We have been and will coordinate with the Forest Service as to our activities and access road construction.

Should you find our activity news worthy it is requested that no publication of it be made until after State or Federal Agencies of authority have visited and rendered reports concerning our mineral holdings.

We are at present selling a limited amount of capital stock, which offering expires November 15, 1969, and do not wish any publicity during this period.

I write this letter now in view of the short time left before snow comes making the area difficult to visit and examine.

Sincerely yours,

John P. Hagerty
President

Progress Report, Experimental Smelting.
Hagerty Research & Development Co., Inc.
July 28, 1969.

A letter has been received from Flame Propane, Prescott, Arizona, who will supply gas to all of our smelting facilities planned to be developed at all of our mine locations, in which they advise of action taken to help in our furnace design relative to the burners required fro proper combustion and heats. Such equipment can be supplied by the Ransome Torch & Burner Co. of Oakland, Calif., who say: "If compressed air is available I am certain we can come up with equipment to do the job".

We have and use compressed air at the mine and it has been found through recent experimental smelting, July 19 and 20, 1969, that gas fired furnaces will meet requirements. Present furnace operation is carried out with oak wood and coke combined urgen to high temperatures with a tuyere supplied with compressed air. However, combustion prodects from coke are not essential in view of a new method of metallic distillation now feasable.

Ores from the Pelican and Bat Mines were reduced:

Pelican Ore: A cake or matte was formed with visable silver beads released from the ore with the use of Bicarbonate of Soda. Some of this matte was heated in a small gas fired melting furnace. The crucible was too small to allow slag to form, being 2" in diameter and 5" in height, with the result that a freeze occurred in which the insoluable materials were bonded together with the visable metallics produced, gold and silver. A pronounced amount of gold is evident and far in excess of previous assays taken of this ore. Some of the metallic in both the matte and the freeze are grey in color and magnetic, a characteristic of platinum, under reducing conditions. Samples of the matte and freeze will be sent to the Keldon Laboratories in California for an analysis of all elements.

Bat Mine Ore: Ore was crushed and mixed with crushed limestone as charged into the furnace. Bicarbonate of Soda was added from time to time with rabbling. A previous observation of the formation of beads of silver on the cooling tank, then believed to be spillage, is not correct for it was observed that such beads form and grow larger in size, forming first small and then grow larger and larger until they drop from their own weight and splatter in the furnace. The silver as it collects and forms a bead is in a state of plastic deformation or the zone between a liquid and a solid. Silver thus deposited attracts more silver from the fume, moving always towards the cooler portion of the furnace.

It is now evident that the silver volatilized from the charged ore and in the fume generated precipitated in cooler parts of the furnace much as beads of water will form from the air on the outside of a container of ice water. A new process is then suggested that would be a short cut to higher purity metallics, eliminating many operations now in practice. A subsequent melting of the silver thus produced clensed with Borax or Bicarbonate of Soda would produce .999 fine silver bullion.

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The foregoing method has produced silver but not gold. However, it is believed that gold can be extracted in the same manner. Silver melts and becomes volatile above 1770 deg. F., while gold melts and becomes volatile above 1940 deg. F. It is logical, then, to extract silver first and then increase furnace temperatures to extract the gold. If successful this method would eliminate electrolysis as the final step in gold and silver refinement.

A means of collecting metallic beads from the fume will be developed so that beads so produced will drop when heavy into water and chill as granules. The granules can then be melted, clensed and poured into molds to produce ingot bullion or sold as granule bullion, a type of bullion desired by fabricators who must melt the silver for processing.

The foregoing method does not complete recovery of the metallics from the ore charged into the furnace which charge after the above described reduction contained gold and silver particles mechanically free but mixed together. Amalgamation with mercury can then be employed to recover this gold and silver which subsequently can be recovered by the precipitation chilling method as set forth in the foregoing.

The ore charged into the furnace weighed 3.5 pounds. A conservative estimate of silver produced is one troy ounce per pound of this ore or one troy ounce per 42 troy ounces of the ore. The percentage of silver would then be .08 percent. One ton of this ore would then produce 160 pounds of silver or 1920 troy ounces of silver to the ton.

The design configuration of the production model furnace cannot be completed until methods have been fully worked out and developed to incorporate essential features. Experimental smelting will continue with this objective.

The present access roads now under construction are vital not only to open up the mines but to permit servicing the furnaces with gas for fuel. The procurement of coke is no longer a problem.

John P. Hagerty
President

Hagerty Research & Development Co., Inc.
P.O. Box 2486, Prescott, Arizona 86301

Stock Offering, a private closely held stock not sold to the general public and limited by special characteristics.

Securities, stock exempt from registeration: Exempt securities are not common and not generally known. When a small amount of securities are employed to meet operating capital requirements and such are not to be sold to the genaral public or traded on any market, securities exempt from registeration fill the need.

The Arizona Corporation Commission under 44-1846, Arizona Revised Statutes, may exempt securities from registeration by Special Order in an aggregate amount not exceeding $200,000.00 upon written petition and upon a showing by the issuer that registeration is not essential to public interest or for protection of investors by reason of the special characteristics of the securities or transactions, or the limited character and duration of the offering or the special characteristics or limited number of investors.

The securities set forth in our petition were approved by Special Order of the Corporation Commission under date of July 29, 1969. The stock is common voting stock with a par value of $2.00 per share and is offered at this price. Its fair market value is $10.00 per share.

Organizational Structure: The authorized capitalization is 450,000 shares of $2.00 per share par value stock. The distribution of stock has and will be made to preclude any take over action by an outside interest. Over 50 percent of the outstanding stock is held by less than five persons placing the Company in Personal Holding Company status under the tax laws. Under this classification the Company is subject to an 85 percent personal holding company tax on undistributed income. Income, then, must be disbursed as dividends to escape this imposition and which is an advantage to the stockholder for dividends will increase in proportion to income earned.

Potential: Silver is the most predominent metal as to value, extent and assured income. Gold is present in the ores and has been found in all assays from trace quantities upward but its extraction methods have not been advanced as with silver. However, gold recovery methods will be developed along with silver extraction since the two metals occur combined in some of the ores. Common to such mineral occurances other metallics are also present; antimony, lead, zinc, copper, iron, tungsten, manganese and molybdenum.

Our present experimental smelter produced silver from ore which ran 08 percent silver per ton or 1920 troy ounces of silver per ton of ore. This is not our highest grade ore and is not unusual in our locality wherein our claims abutt the famous Peck Mine whose ores ran as high as $17,500.00 per ton in silver. (Hinton's Handbook to Arizona 1877).

We plan to process 20 tons of such ore daily. A possibility is then presented:

20	tons	)	(3200 pounds of silver per day
.08	% silver	) or (	
1.60	tons of silver per day	)	(38,400 troy ounces of silver/day

This is not an instant event. Time, effort and equipment are necessary and thus our need to sell a limited amount of stock. Mining is an activity full of mystery and there are many mis-conceptions. It would be prudent, then, if investment is contemplated, to engage a qualified consultant to examine our mining areas. Samples may be taken at any location.

John P. Hagerty

John P. Hagerty, President

Dear Mr. Johnson,

Enclosed our latest activity report -
The roads are open now & you
are welcome to visit any time.

Jack Hagerty

John P. Hagerty President
P.O. Box 398
Crownking Ariz

4/19/66

HAGERTY RESEARCH AND DEVELOPMENT CO., INC.
P.O. Box 398, Crown King, Arizona

Activity Report- April 11, 1966.

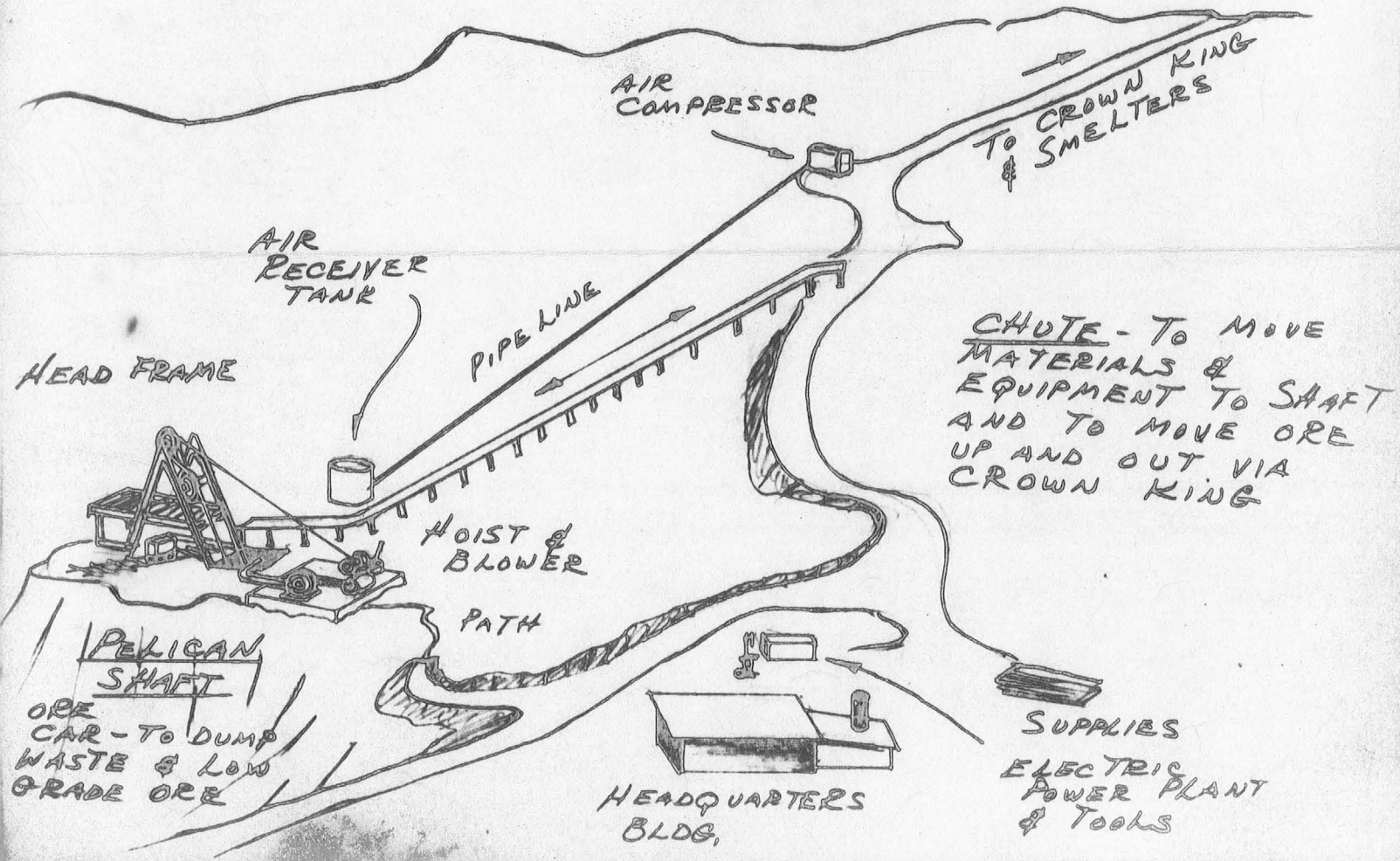
As the access road to the Pelican Mine commenced drying up materials and equipment was moved as close to the mine as possible. A salvage deal with the owners of the Swastika mine provided much that was needed and work was performed at this location, which is below the snow line, when snow and mud prevented us from getting to the Pelican Mine.

Now, with a break in the weather all items have been moved to the Pelican. Cut lumber to complete the shaft and collar was procured and is now at the site. A headquarters building has been erected for living accomodations together with a electric light plant, drill press and other machine tools to perform machine work on parts for the mine.

Arrangements have been made to ship high grade hand selected ores to American Smelting and Refining Co., at El Paso, Texas, for the lead-silver-gold ores, and to Inspiration Copper Company, at Miami, Arizona, for the silver-gold ores. These Companies will accept small shipments by truck because of the high grade of the ores. Some of this hand selected ore will run as high as $20,000.00 per ton of ore.

We are now able to complete the work necessary to prepare the mine for production and expect to commence mining in about thirty days.

John P. Hagerty
John P. Hagerty
President



HAGERTY RESEARCH AND DEVELOPMENT CO., INC.
P.O. Box 398, Crown King, Arizona

Activity Report- December 10, 1965.

On December 8, 1965 heavy timbers and ladder structure reached the 90 foot level in the Pelican shaft. This structure is designed to withstand blasting effects and to carry ventilation tubing, water lines, compressed air lines and electrical wiring down to the working level.

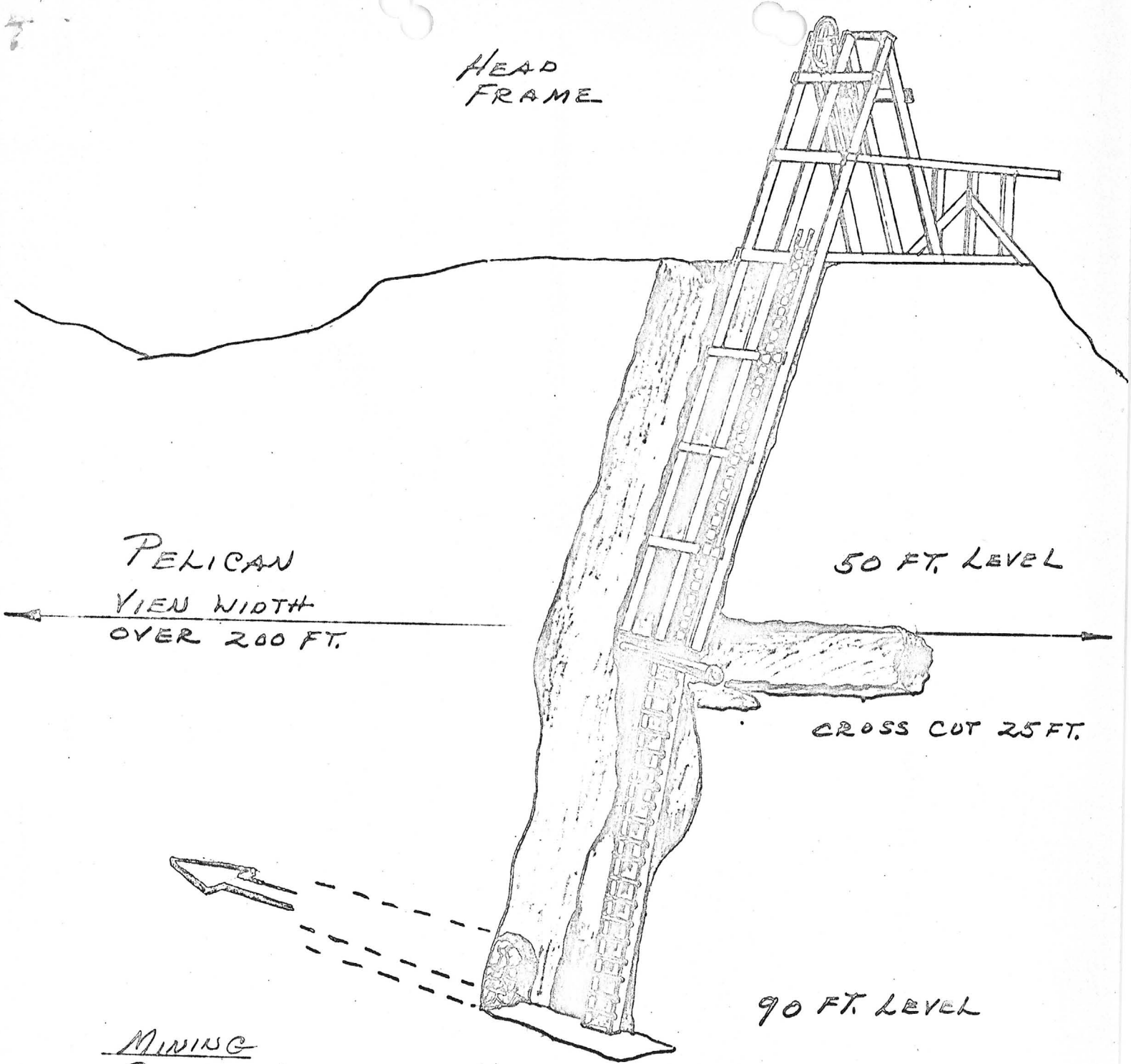
Mining will commence along the strike of the vein at the 90 foot level where argentite occurs in massive and chrystaline form intermingled with pure native silver. Argentite is 87% silver and 13% sulfur. From the surface down to the 90 foot level there are minable ores of high grade silver and lead and which ores carry gold in varying amounts. The proportion of silver to lead in the ores changes with deapth, the lead decreasing and the silver increasing as the 90 foot level is reached. These ores are sulphides but silver chlorides, silver bromides and silver iodides occur with them along with small amounts of copper and zinc. At about 70 feet below the surface a sample of ore carried, in addition to high grade silver, 2% gold or about 40 pounds of gold per ton of ore. This sample appears to have come from a pocket deposit which is typical of the occurance of gold in such a vein. A large gold deposit is spotty and cannot be predicted. Silver, however, is consistant and occurs more abundently.

At the suggestion of the geologists, who visited the mine, the width of the Pelican vein at the shaft has been checked on the surface from the foot wall to the hang wall contact with the rhyolite porphyry intrusive dyke and found to be more than 200 feet in width. These men are qualified and registered mineralogists, geologists and mining engineers who actively and professionally practice in these fields. They are not pseudo geologists found on the fringes of the mining field who may have obtained a deploma in college stating that they were geologists but who have never practiced or earned a living at such a vocation. They stated that the vein was highly mineralized and should carry across the vein to the rhyolite porphyry contact, hense their statement that the vein could be open pit mined or block caved.

This type of mining is extremely costly to effect but from the vast amount of tonnages produced is cheaper than underground mining. Only a Company with considerable financial resources could undertake such an operation and such a Company would want to purchase the property rather than lease. Since we have claims on the Pelican vein for about four miles with indications of the same mineral occurances it is prudent that some of these claims be considered for sale rather than the first two Pelican claims at which location we are now developing to mine ourselves.

By mining on a limited basis with underground methods with a small compliment of man power and low expenditures for equipment we can mine, handle and ship 30 tons of ore daily. If the ore averages $200.00 per ton, after shipping and smelting costs, it would mean a gross return of $6000.00 per day, which is a sufficient amount of income to progressively expand and develop our Company. Weather permitting, we should be in production during January, 1966.

John P. Hagerty
John P. Hagerty
President



MINING COMMENCES THIS DIRECTION

ARGENTITE - MASSIVE & CHRYSTALINE; NATIVE SILVER & SILVER CHLORIDES; GOLD & LEAD

HAGERTY RESEARCH & DEVELOPMENT CO., INC.
DECEMBER 1965.

HAGERTY RESEARCH AND DEVELOPMENT CO., INC.
P.O. Box 398, Crown King, Arizona

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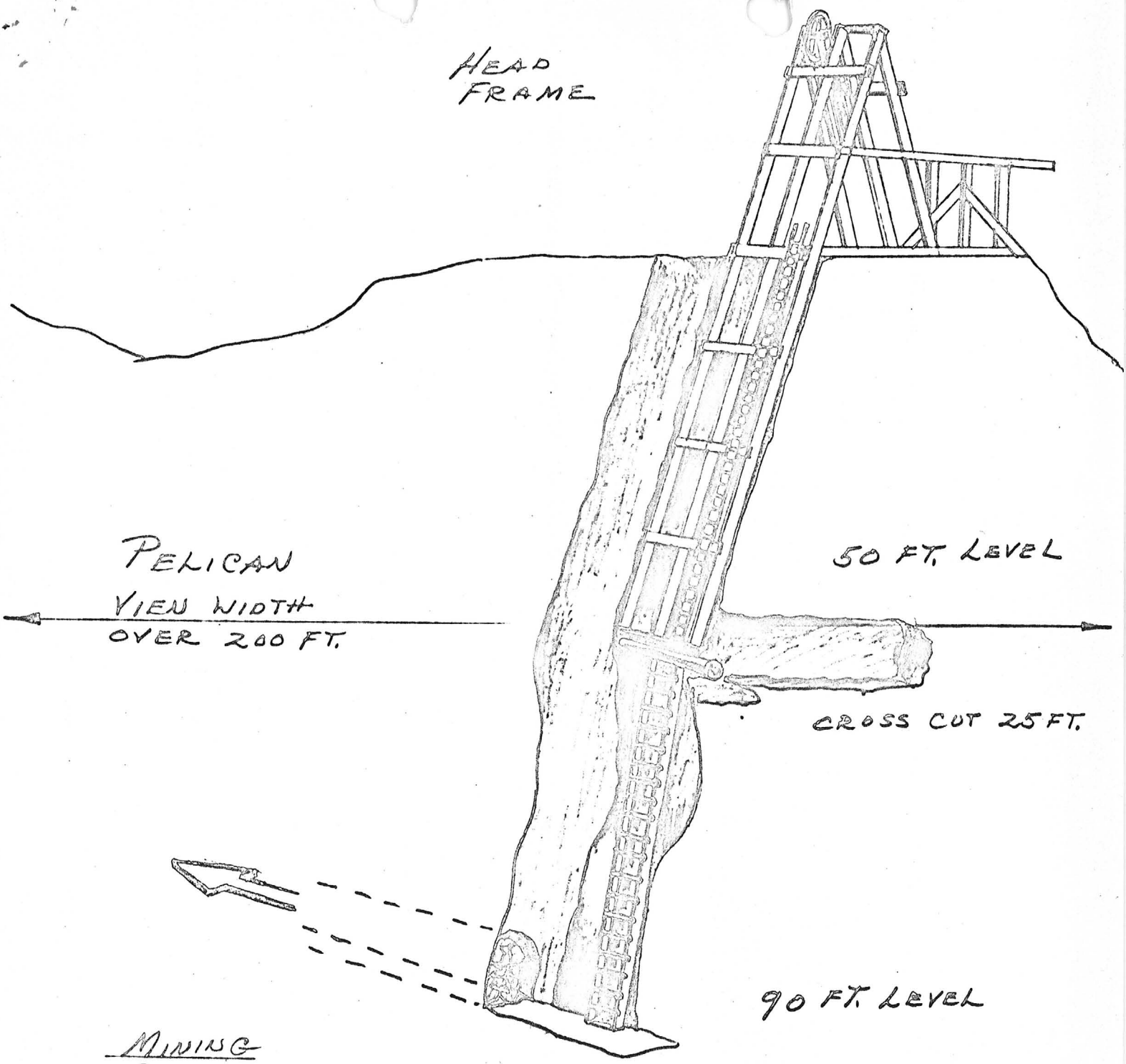
John P. Hagerty
President



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HAGERTY RESEARCH & DEVELOPMENT CO., INC.
DECEMBER 1965.

[illegible] RESEARCH AND DEVELOPMENT [illegible]., INC.
[illegible]
P.O. Box 598, Crown King, Arizona

Activity Report- November 22, 1965.

On Saturday, November 20th I was introduced to two men here at Crown King, a Mr. M.S. Pingado of 1927 Vermont N.E., Albuquerque, New Mexico, and a Mr. L.K. Regan, Walt Building, Salt Lake City, Utah. Both men are mineralogists, geologists and mining engineers. Mr. Pingado owns and operates silver mines in New Mexico and Colorado and Mr. Regan is a consultant engineer.

Mr. Pingado said that he and Mr. Regan had been engaged by a man, whose name I have forgotten, to locate mining properties to purchase for development and production within a hundred miles of Phoenix, Arizona, and that she had made considerable sums of money in uranium mining and had money to invest and mining equipment now available in Phoenix.

The two men requested a visit to the mines and while in transit I covered the history of our activity, the Still engineering report and our present program of getting the Pelican shaft ready for its production and the program of roping and sampling the Pelican vein with the American Smelting and Refining Co. doing the assay work.

At the Pelican shaft we went to the 50 foot level where a cross cut had been made across the vein and where I had performed location work by drifting on the vein at the entrance to the cross cut. They examined and took samples along the face of the cross cut, which is over 25 foot, and remarked that the mineralization extended on beyond the ends of the crosscut and that it was a highly mineralized oxidized zone with stringers of silver and lead metallics within mineralized enclosing vein materials which should carry westerly across the vein 60 foot or more to the rhyolite porphyry contact, the hangwall of the vein and an intrusive dyke very favorable for mineralization along its contact.

Along the face of the crosscut were soft black stringers which they identified as oxidized argentite which is very significant as the non oxidized argentite then occurs at greater depths on the vein. Argentite is 87% silver and 13% sulfur, a silver sulphide and the best ore of silver. They said that the Pelican vein at this location could be open pit mined or block caved, as performed at Climax, Colo., because of its width.

At the dozer cut they said that the exposed mineralization and vein material indicated depositation beneath the outcrop of primary ores and secondary enriched ores and that they were familiar with occurances such as this and which carried silver and molybdenum running together.

The adit with the tracks and ore car were next inspected and they said that the ore found there was good. At the Blue Bird vein they inspected the shaft, stopes and location hole site and found strong mineralized veins showing at the stopes and agreed that a cross cut driven below the Blue Bird vein in a North West direction to cut both the Blue Bird and Pelican veins would be the proper approach to extensive underground mining for as the cross cut intersected the veins at depths drifts could then be driven in opposite directions along the veins to mine and the cross cut used for haulage.

In summing up they remarked that just a few claims at the Pelican shaft area could make a good mine as indications point to valuable deposits extending in depth and advised me to concentrate on the Pelican shaft production for necessary income and conduct exploration work later as time or income would permit.

They asked me to furnish a copy of the Still report and other material pertinent to our Company and said that they would be back for further work in their line and probably accompanied by the woman's attorney to discuss or negotiate a deal.

The foregoing, together with the Still report, and the recognition expressed by the Magma Company, the Inspiration Company, American Smelting & Refining Company, and the Bureau of Mines representative in Tucson confirms all that I have set forth as to the mineralization of the mining properties we now hold and that we have a valuable mineral asset of considerable proportions. Both Mr. Pingado and Mr. Roque remarked that the mining industry is vicious, that stealing ore shipments is not uncommon and that some persons would do anything to get possession of valuable mineral holdings, using any and all means. In this respect I can say that we are an experienced Company and it is well that these experiences have been gained at this early stage.

John P. Hegarty
President

MICROFILMED

INSTRUMENT # 8727035
OFFICIAL RECORDS OF
YAVAPAI COUNTY
PATSY C. JENNEY
REQUEST OF:
HAGERTY RESEARCH AND DEV. CO.
DATE: 07/10/87 TIME: 14:15
FEE: 5.00
BOOK 1952 PAGE 423 PAGES: 001

INDEXED

$ 5	1	P	4	Co	5	St
		Map		Pcl		

MEMORANDUM DECLARATION OF INTENT TO SEEK AND NEGOTIATE
FOR FUNDS REQUIRED FOR THE OPERATION OF MINING PROPERTIES

Notice is hereby given on July 10, 1987 that the undersigned HAGERTY RESEARCH AND DEVELOPMENT CO., INC., an Arizona Corporation (hereinafter called "Owner"), whose address is P.O. Box 2486, Prescott, Arizona 86302, has progressively completed development of mining properties on the Prescott National Forest Lands in the Peck Mining District, Yavapai County, Arizona, AND does hereby give and grant unto a boni fide INVESTOR, OR INVESTORS (collectively); or FIRM; or CORPORATION, the right to inquire into the affairs of said Hagerty Research & Development Co., Inc., for information necessary to establish satisfaction regarding creditability of the Owner's operations.

The Owner does not interpose objection to such inquires for the purpose above stated to sources from whom knowledge of the Owner's activities may be obtained. Information regarding such sources may be obtained from the Owner at the above address.

IN WITNESS WHEREOF, the Owner has executed this Memorandum Declaration of Intent to Seek Funds for the Operation of Mining Properties effective as of the day and year first above written.

HAGERTY RESEARCH & DEVELOPMENT CO., INC.

By John P. Hagerty
John P. Hagerty, President

STATE OF ARIZONA)
) ss:
COUNTY OF YAVAPAI)

This instrument was acknowledged before me this 10th day of July, 1987, by John P. Hagerty, President of HAGERTY RESEARCH & DEVELOPMENT CO.,INC., an Arizona Corporation, on behalf of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

Karen C. Walser
Notary Public

(Seal)

Address: Yavapai Co. Recorders
255 E. Gurley
Prescott, Az 86301

My Commission Expires:

OFFICIAL SEAL
KAREN C. WALSER
NOTARY PUBLIC STATE OF ARIZONA
YAVAPAI COUNTY
My Comm Expires March 5, 1991

BOOK 1952 PAGE 423

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 27, 1987.

Gordon R. Peake
Executive Office
Texasgulf Minerals and Metals, Inc.
5932 McIntyre Street
Golden, Colorado 80403

Dear Gordon,

The 1982 Summary Report by John White and David M. Brown entitled "Geology and Geochemistry of the Hagerty Claims and Vicinity, Yavapai County, Arizona", has been received, and I thank you for your attention to our request.

As a matter of interest I am enclosing material showing our progress in developing the area for production. In effect, before we could progress, we had to develop a Plan of Operation for submission to the Forest Service. Our preliminary industrial engineering has been completed. Being poor one figures the cheapest way to get from point A to point B, so we decided to combine a foundry and smelting operation into one, and sand cast doré bullion. The event of minting U.S. gold coins has made a difference in mining, which has been sorely needed.

When owners of a mine disclose their values they are immediately regarded as a liar with a hole in the ground, a scam operator, or selling something too good to be true, and thus it has to be a confidence game! However, when the owner has material relating to his properties developed by professionals, it makes a big difference. We were glad to get the report, and regret that relations could not have continued.

Please give our regards to Larry and Mrs. Turner when next you see them.

Best ever,

Jack Hagerty

Jack Hagerty
President

Enclosures:

Plan of Operation to Forest Service 7-10-87.
Hagerty Properties and Mill Site
Foundry Smelter Unit, Gold-silver doré
bullion production.

HAGERTY RESEARCH & DEVELOPMENT CO., INC.

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(602) 632-9228

August 27, 1987.

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

Dear Mr. Helliker,

Than you for your information on the "Water Pick". I will follow it up. Enclosed herewith the latest material relative to our mining enterprise. Should technical detail need clarification the Department of Mines and Mineral Resources could be relied upon. A copy of this letter and the same material has been furnished to them.

Sould you wish to consider an article or articles on our mining operations, Arizona Trend Magazine is hereby granted permission and is authorized to publish articles based upon material we have furnished EXCEPT for that coverage of the BLOCK PROPERTIES, about which we cannot speak. The properties are owned by the Block Family Trust administered by Anita Swegart, P.O. Box 3125, Big Bear Lake, California 92315. Phone: (714) 866-4410.

Our Corporation is a closely held personal holding company and does not sell stock to the general public. However, we do have stockholders, and to preclude any contention that may arise relating to their invested interests it is requested that the article or articles carry at the terminal end notification that: "Particulars may be obtained by contacting the Hagerty Research & Development Co., Inc., P.O. Box 2486, Prescott, Arizona 86302."

This is a precautionary measure that came about as a result of a court case in which stockholders, not informed of a significant mineral discovery made by their company, contended that if they had known of it, they would not have sold their stock, or would have increased their investment in the company. They won the case. Since then, mining companies take pains to disclose new discoveries, discoveries that would affect a stockholder's invested interest.

A visit to the mines can be arranged with notification beforehand by writing to me at P.O. Box 959, Mayer, Arizona 86333, or by phone. However, I am away most of the time.

Sincerely yours,

John P. Hagerty

John P. Hagerty
President

Enclosure:

Composit Drawing, Texasgulf Summary Report, 1982, and related material.

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.
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5. John L. White, Geologist, Texasgulf, Inc., August, 1982.
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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.

John P. Hagerty
President

July 27, 1987.

HAGERTY RESEARCH & DEVELOPMENT CO., INC.

AN ARIZONA CORPORATION

P.O. BOX 2486, PRESCOTT, ARIZONA 86302
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MINES AT
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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 occurance 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, maxium, 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		
	Minimum	Maxium	Mean	Minimum	Maxium	Mean
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 metavolcanic 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

John P. Hagerty
President
August 14, 1987.

HAGERTY RESEARCH & DEVELOPMENT CO., INC.

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(602) 632-9228

August 27, 1987.

THE EFFECT OF THE TEXASGULF SUMMARY REPORT OF 1982, GEOLOGY AND GEOCHEMISTRY OF THE HAGERTY PROPERTIES BY WHITE AND BROWN.

Until receipt of the report, July, 1987, we were unaware of the exceptional mineral value disclosure resulting from the Texasgulf exploration program. The findings disclose a classic example of extremely rich occurrances of both precious and base metals. The concentration of gold in the anomalies is the result of most all of the other metals going into solution and descending to enrich other ores below, the gold lagging behind at the outcrops because it is not affected by the elements that put the other ores into solution.

Yet the above program covered only a portion of the properties. The anomaly at the Douglas Fir Mine described as "Open Ended" means that the occurrance is continuous, and was not covered by the program. Further in a northerly direction this anomaly becomes massive. In the Pellican and Blue Bird areas the sampling was not extensive to avoid repeating sampling performed by other geologists. For the coverage yet to be performed, there is the Coffee Pot, Dinner Pail, Gold King Mines, and the Muldoon Gulch areas. The adit of the Gold King Mine runs southerly below the anomaly shown above it. Exceptionally valuable gold-silver ores have come from this mine, which I entered in 1965, with hip boots going in water as far as I could go, and did not reach the face of the drift. This mine runs water continually, which will be collected and stored for use when it is de-watered and put in operation..

Other than selling gold to stockholders for operating expense support, the purpose of selling gold, 2000 ounces, to an investment source as prerequisite for early operating expenses, is no longer necessary in view of the report that discloses and confirms mineral reserves of exceptional value as a basis for investment interest without selling gold at $300.00 per ounce. In other words, why sell at this price when it can be sold at the going market price!

It would benefit both the Investor and Hagerty to receive gold on a continuous basis rather than on a one time deal. In view of the foregoing we must seek funding needs directly without selling gold as an inducement by virtue of its discounted price.

A mineral reserve of $6,581,520,000, reached by conservative estimate, does in fact exist. This is what we have to offer in consideration of funds provided to develop and operate the mines.

John P. Hagerty

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:

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

Sincerely,

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John P. Hagerty
President

July 27, 1987.

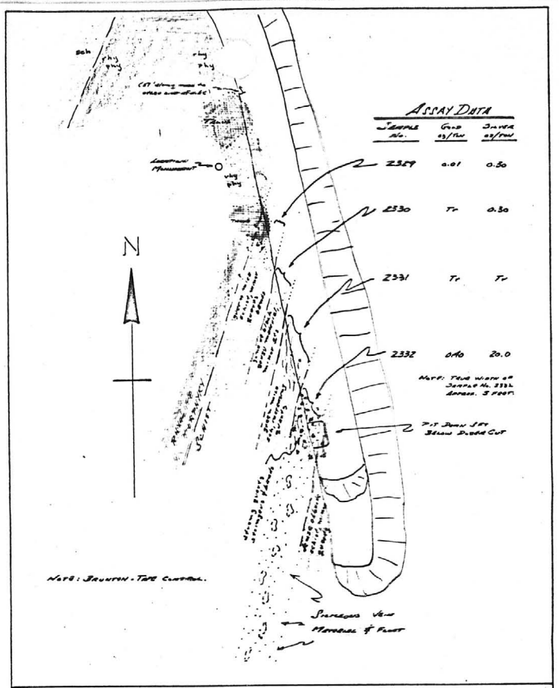
Reference Texasgulf Report on Hagerty Properties and Vicinity:

In 1982, soil sampling was conducted by Texasgulf along a base line originating at the junction of the road leading East to the Hagerty properties and West to the Gladiator Mine, striking North, 21 degrees, East.

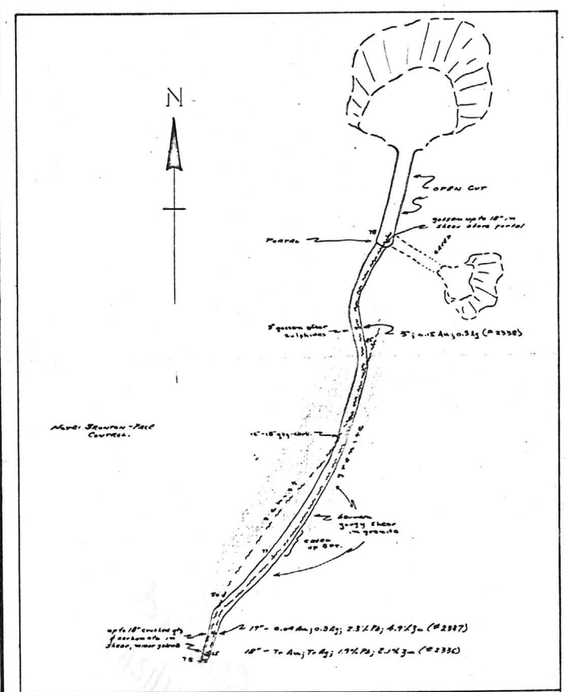
Samples were taken East-West from this base line and disclosed 5 anomalies. (Exceptional gold occurance) One is on the Block properties, and four are on the Hagerty properties. Other anomalies include silver, copper, lead, zinc and arsenic.

A composite drawing will be prepared covering location of work performed by Texasgulf in their geochemical and geophysical activities, along with other locations of ores occuring in vein structures.

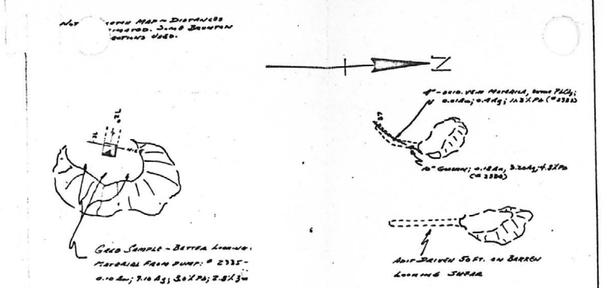
The above report was of material owned by Texasgulf and has been released to Hagerty, Owner of the properties.



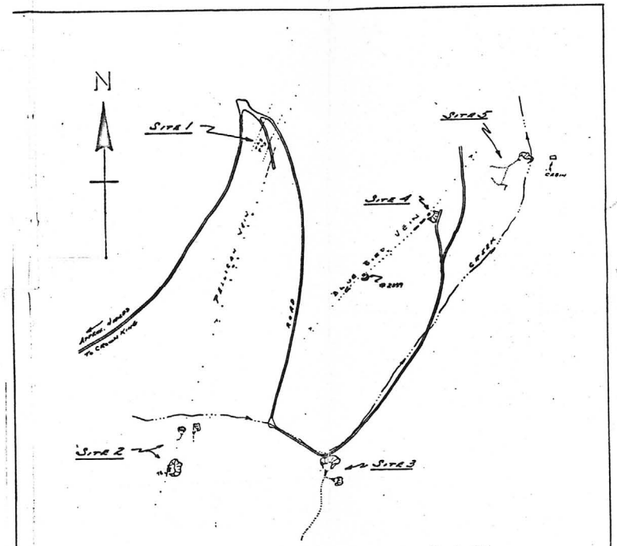
Site 1
Bulldozer Cut on Pelican Vein
A.R.S. 1"=20' 3/65



Site 3
Adit Driven on Unknown Vein
A.R.S. 1"=40' 3/65



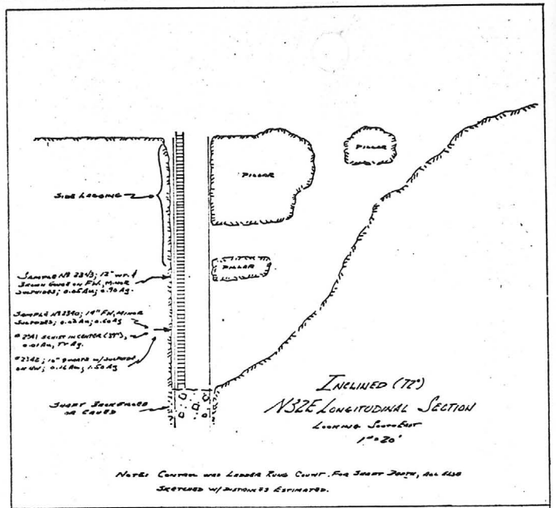
Site No 2 ~ Area Around Pelican Adits & Shaft
A.R.S. 1"=50' 3/65

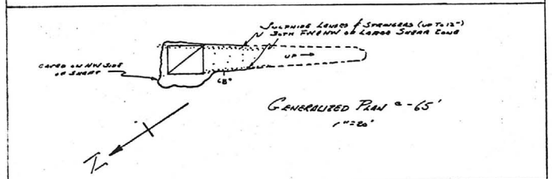


General Index Sketch Map
Area of Blue Bird & Pelican Veins
A.R. Still Approx. 1"=300' Feb. 1965

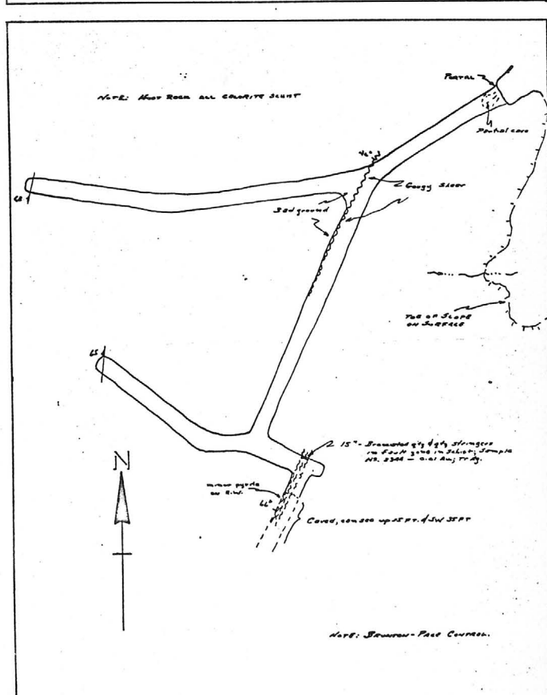
Still & Still ~ Prescott, Ariz.

INDEX & DETAIL MAPS
PELICAN & BLUE BIRD (HAGERTY) PROPERTIES
Crown King Mining District
Yavapai County, Ariz.
Scales As Shown
Feb. 1965





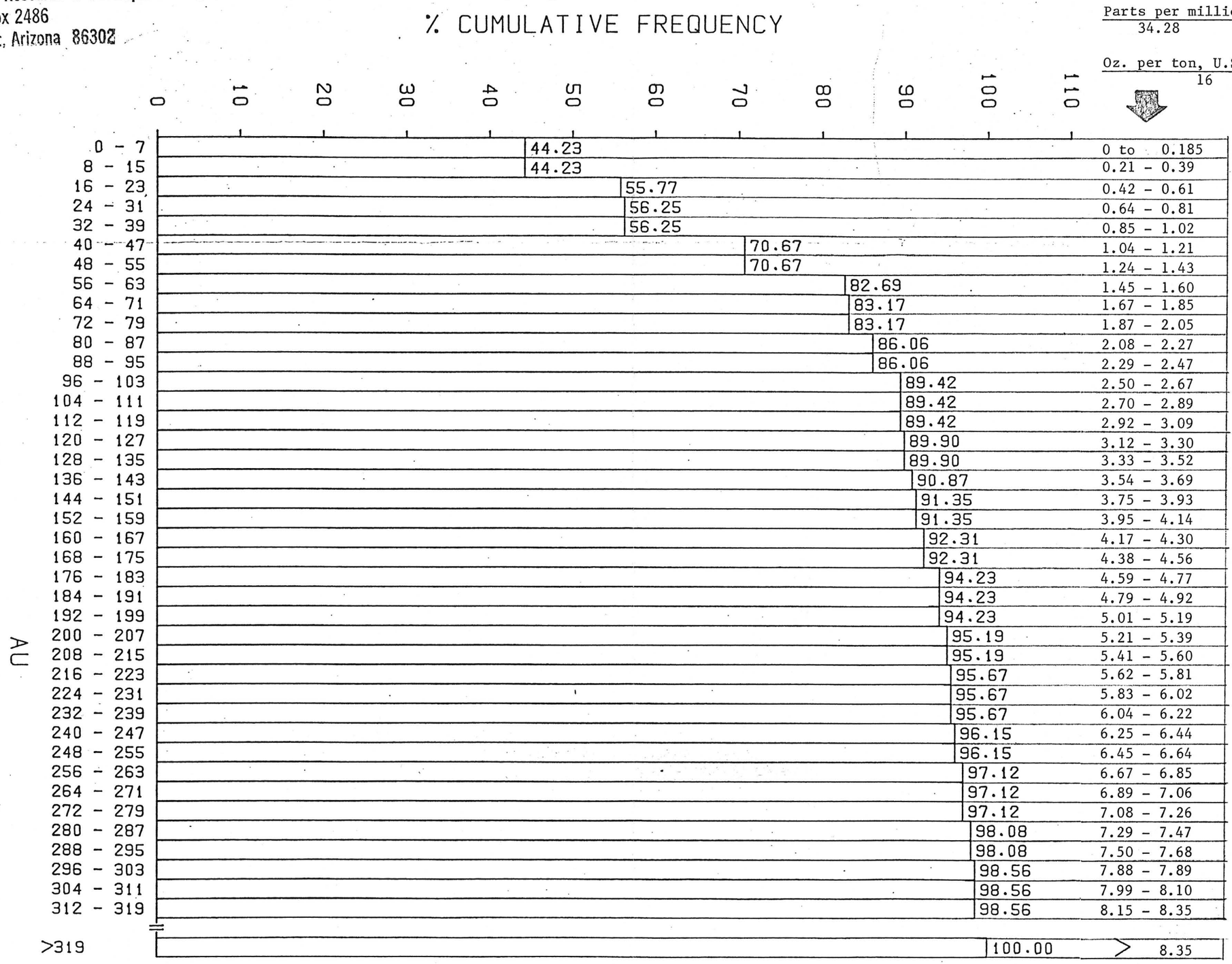
Site 4
Plan & Longitudinal Section - Blue Bird Shaft
A.R.S. Scales as Shown 3/65



Site 5
Adit & Workings Near Cabin
A.R.S. 1"=20' 3/65

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

FIGURE 6: HAGERTY CLAIMS, AZ. SOIL GEOCHEMISTRY [IN PPM(X10-3)]



CONVERSION OF PARTS PER MILLION TO TROY OUNCES PER TON. FACTORS:

$\frac{\text{Parts per million}}{34.28}$ = Oz./ton U.S.

$\frac{\text{Oz. per ton, U.S.} \times 14.28}{16}$ = Troy Oz./ton

ESTIMATE OF MINERAL VALUE CONTAINED IN THE MINERAL RESERVE BASED ON ALL METALS HAVING COMMERCIAL VALUE.

THE ESTIMATE IS SUPPORTED BY SURVEYS CONDUCTED BY PROFESSIONAL GEOLOGISTS IN 1965, 1977, 1978, 1982 AND 1983. THE DATA COLLECTED IS FURTHER AUGMENTED BY THE TEXASGULF EXPLORATION ACTIVITIES AND REPORTS BY WHITE, BROWN, AND KANBERGS, TEXASGULF GEOLOGISTS.

MATERIAL GENERATED HEREIN IS BASED ON THE TEXASGULF REPORT "GEOLOGY AND GEOCHEMISTRY OF THE HAGERTY CLAIMS AND VACINITY, OF JANUARY, 1983."

MINERAL RESERVES

SHEET 1. of 2.

SEPTEMBER 30, 1987.

GOLD

VALUES IN

TROY OZ/TON

TEXASGULF REPORT, GEOLOGY AND GEOCHEMISTRY OF THE HAGERTY PROPERTIES. TWO OF THE FOUR ANOMALIES ARE SHOWN, THE BAT AND DOUGLAS FIR MINES. THE OTHER TWO ANOMALIES LIE TO THE SOUTH, THE GOLD KING AND THE PELICAN MINES.

GEOCHEMICAL SURVEY

NUMBER OF SAMPLES	208
MINIMUM VALUE	4
MAXIMUM VALUE	1000
MEAN	49.5096
STD. DEV.	92.589
VARIANCE	8572.7021
MEDIAN	20.0000
MODE	4.0000
SKEWNESS	0.9561
KURTOSIS	52.3293
CLASS INTERVAL	8
NUMBER OF CLASSES	40

U.S. Oz./ton	Troy Oz./ton
0.116	0.104
29.17	26.03
1.44	1.31

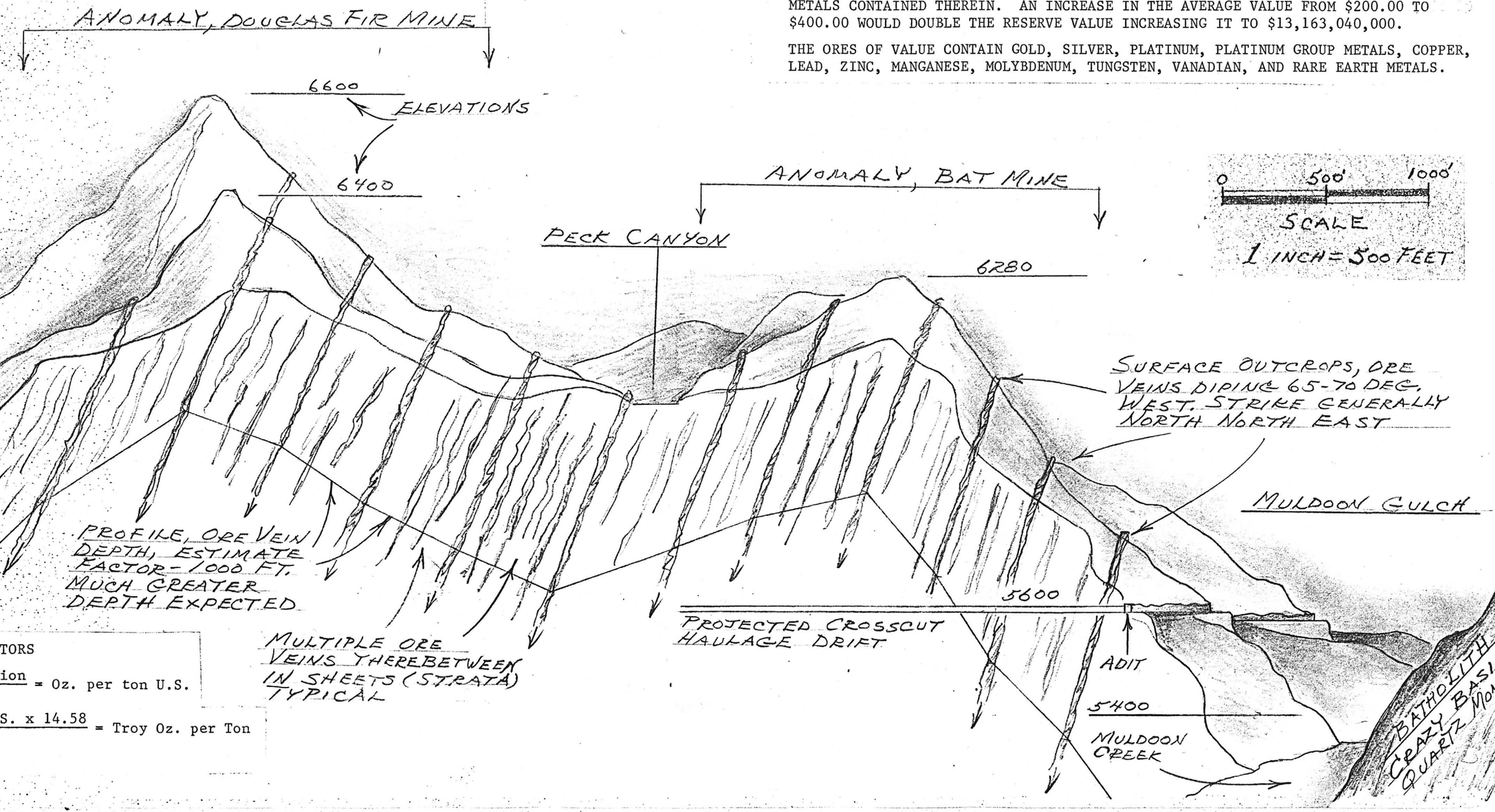
MINERAL RESERVES
SHEET NO. 2.
SEPTEMBER 30, 1981.

HAGERTY RESEARC & DEVELOPMENT CO., INC. METHOD ESTIMATING THE MINERAL RESERVES IN SOME 80 LODE MINING CLAIMS WITH VALUES BASED ON ALL METALS CONTAINED IN THE ORES, BOTH PRECIOUS AND BASE METALS AT $200.00 PER TON.

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	$200.00 per Ton
Value of the Mineral Reserves 32,907,600 x $200.00	$6,581,520,000

THE VALUE OF THE RESERVES WILL VARY IN ACCORD WITH THE MARKET PRICES OF THE METALS CONTAINED THEREIN. AN INCREASE IN THE AVERAGE VALUE FROM $200.00 TO $400.00 WOULD DOUBLE THE RESERVE VALUE INCREASING IT TO $13,163,040,000.

THE ORES OF VALUE CONTAIN GOLD, SILVER, PLATINUM, PLATINUM GROUP METALS, COPPER, LEAD, ZINC, MANGANESE, MOLYBDENUM, TUNGSTEN, VANADIAN, AND RARE EARTH METALS.

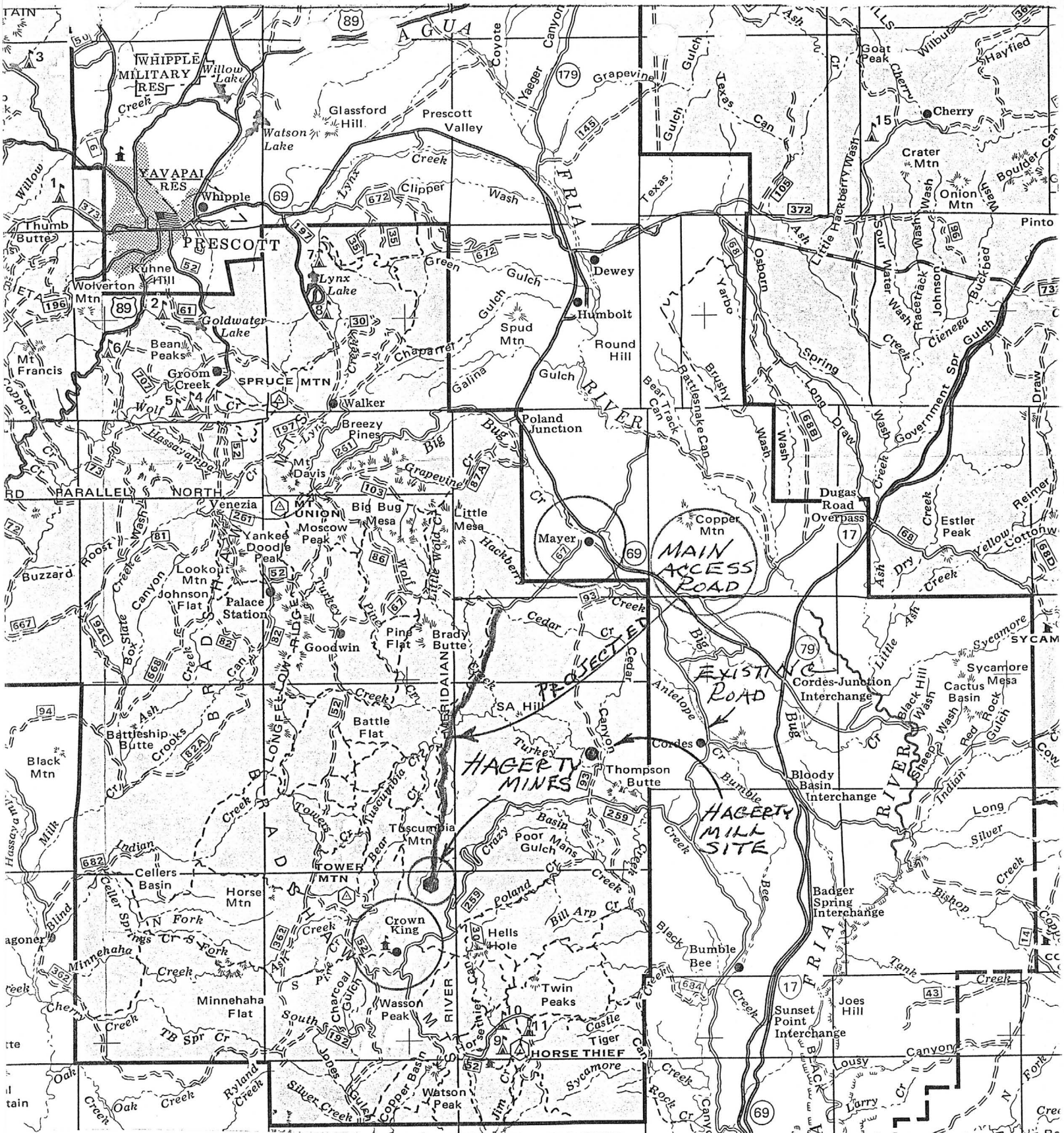


CONVERSION FACTORS

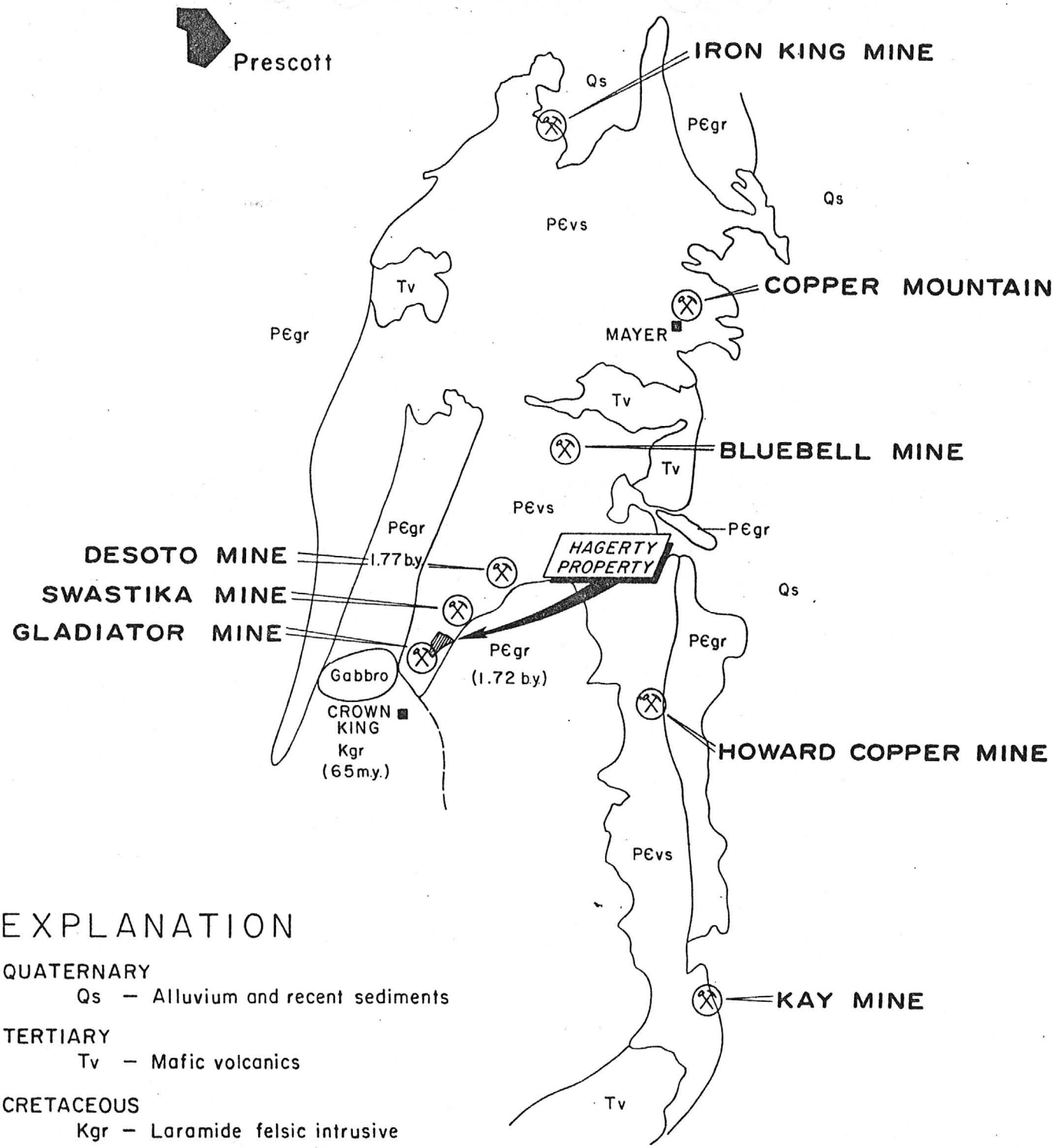
$\frac{\text{Parts per million}}{34.28}$ = Oz. per ton U.S.

$\frac{\text{Oz. per Ton U.S. x } 14.58}{16}$ = Troy Oz. per Ton


BAT MINE
6362
6600
5600
MULDOON GULCH
WATER SUPPLY
6200
LOWER CABIN
6800
BLUE BIRD MINE
FOREST SERVICE
HELI PORT
UPPER CABIN
PELICAN MINE
6400
7108
GATE
Lincoln
Mine
TOPOGRAPHIC FEATURES, PELICAN AND
BLUE BIRD MINES
HAGERTY RESEARCH & DEVELOPMENT CO., INC.
SCALE: ONE INCH = 500 FEET



PROTEST AGAINST HAGERTY RESEARCH BY MARICOPA WATER DISTRICT IF ESTABLISHED AS A LEGAL PRECEDENT MUST BE APPLIED TO ALL PARTIES SEEKING SURFACE WATER ON ALL TRIBUTARIES TO THE AGUA FRIA RIVER. AN INJUSTICE TO INTERESTS IN YAVAPAI COUNTY TO FAVOR MARICOPA COUNTY INTERESTS.



EXPLANATION

QUATERNARY

Qs — Alluvium and recent sediments

TERTIARY

Tv — Mafic volcanics

CRETACEOUS

Kgr — Laramide felsic intrusive

PROTEROZOIC

PEvs — Meta-volcanic and sedimentary rocks

PEgr — Granitic rocks

0 5 10

Scale Miles

N

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		Data by: K. K.
Drafted by: M. Asplund	Date: Dec. /14 / 1983	

FIG. 2

HAGERTY RESEARCH & DEVELOPMENT CO., INC.
AN ARIZONA CORPORATION
P.O. BOX 2486, PRESCOTT, ARIZONA 86302

MINES AT
CROWN KING, ARIZONA

PHONE — PRESCOTT
(602) 445-8773

Mason Coggin

Attached material covering some of the area around Crown King.

Enclosed two sets of drawings, part of the De Witt Thesis, and two sets of material relating to our activities- one set for you and one for Ken Phillips. If he wants a copy of the De Witt Thesis material I gave to you he can have it reproduced.

The material can be used any way you or Phillips wish.

Jack Hagerty
Jack Hagerty