



## **CONTACT INFORMATION**

Mining Records Curator  
Arizona Geological Survey  
1520 West Adams St.  
Phoenix, AZ 85007  
602-771-1601  
<http://www.azgs.az.gov>  
[inquiries@azgs.az.gov](mailto:inquiries@azgs.az.gov)

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02/05/91

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: POLARIS GROUP

ALTERNATE NAMES:

AMAX INC.  
PARROT GROUP  
KING MTN. GROUP  
VICTORY MINING CO.  
GOLDEN EAGLE & PHONOLITE TUNL.  
EVANS POINT GOLD PLACERS  
ARICANA MINING CORP.

GREENLEE COUNTY MILS NUMBER: 28B

LOCATION: TOWNSHIP 3 S RANGE 29 E SECTION 25 QUARTER S2  
LATITUDE: N 33DEG 07MIN 00SEC LONGITUDE: W 109DEG 17MIN 35SEC  
TOPO MAP NAME: CLIFTON - 15 MIN

CURRENT STATUS: UNKNOWN

COMMODITY:

COPPER  
GOLD  
SILVER  
ZINC  
GOLD PLACER

BIBLIOGRAPHY:

ADMMR POLARIS GROUP FILE  
ADMMR U FILE  
ADMMR INFO  
SKILLINGS MINING REVEIW, THE STORY OF BANNER  
MINING CO. FEB. 22, 1969  
DOCKET 36, DEC. 7, 1970, P. 282-292, BANNER  
AMAX TO ESSEX, GREENLEE CO. RECORDERS OFFICE  
COE & VAN LOO INFORMATION  
BLM MINING DIST. SHEET 848, 847, 839, 837, 838  
PAT. MINING CLAIMS EXTEND INTO SEC. 35, 36,  
31, 2, 1, 6, 11, 12, 7 (31, 16 IN T3S-R30E)  
(6 AND 7 IN T4S-R30E)

*R. C. Manning*  
**El Rey Cheese Co.**

Manufacturers and Distributors of  
Finest American and Mexican Cheeses

115-119-121 N. Eastern Ave. - Phone ANgelus 2-5167  
LOS ANGELES 22, CALIFORNIA

August 7, 1947

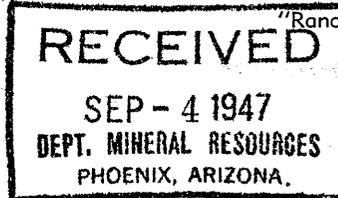
"Le Chef", "Taylor-Maid",  
and "Chef's Pride"  
Grated Cheese

"Taylor-Maid" & "Sunny Valley"  
Pimiento and American Sandwich Loaf  
Provolone Type Sandwich Loaf  
Swiss-Gruyere Type Sandwich Loaf  
Swiss American Type Sandwich Loaf

"La Barca" Chili Cheese

"Rancho Grande" Queso Fresco

Alan A. Sharp  
300 E. 44th St.  
New York City, N.Y.



Dear Sir:

Writer has been informed of your probable interest in a large mining undertaking, which is partially developed to the extent of \$100,000 and is available to lessee or purchaser on a straight royalty, no cash advance and paid for from 5 or 10% of ore proceeds applied to purchase price. Should you not be interested, possibly you would desire to refer this to someone who is, in which case 15% or \$30,000 would be allowed you for engineering or similar services. A short description follows:

**MINE:** Eastern Arizona. Gold, silver and copper. 41 claims. Development \$100,000. 3,000 feet of workings (tunnel). Over 5 miles extensive mineralized traceable veins, several reaching 15 to 20 feet wide and outcropping across property. Good assay values throughout. Authoritative data, hundreds of assays. Stands persistent investigation. Price \$200,000 on straight royalty basis, or other possible arrangement. Includes 55 acre dam and mill site on which government contemplates construction of \$1,000,000 to \$3,000,000 dam, which project recently again passed the United States Senate. Climate excellent for year 'round operation. Water plentiful. Now ready for mill. Property has great future potentialities.

Available only to large operator, financially able to operate on substantial scale, making it possible to avail themselves of several million tons of ore now in sight, and financially able to open the additional tonnage in the sulphides in the veins outcropping across property. Property obtainable only because of unusual circumstances. It is rare to find property of such potentialities not already in operation and producing. Owners are not versed in mining nor are they in position to undertake development or mining and milling, therefore it is offered for your consideration.

Engineers' and geologists' reports, geological and topographical maps, data of the United States Geological Survey and Bureau of Mines, vein and working maps, photographs and data, other than enclosed, are available on request.

Very truly yours,

E. HAGAN

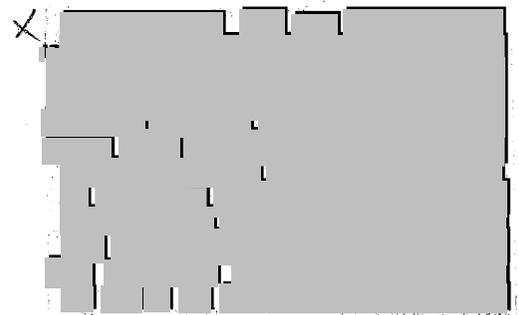
EH:ylt

LOOK FOR OUR TRADEMARKS

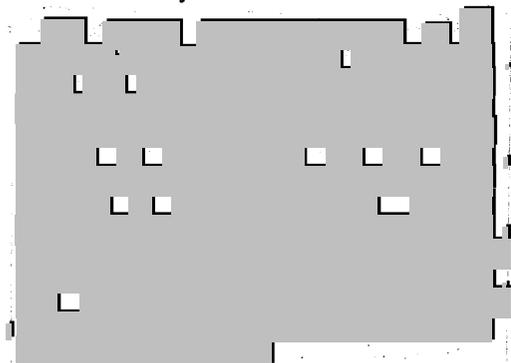
POLARIS GROUP

USGS P.P. 43 p. 363 ((Golden Eagle Mine)

Metal Mining & Processing August 1964 p. 18



efmd 9/64



August 30, 1943

Mr. J. W. Buckley  
P. O. Box 571  
Clifton, Arizona

*Polaris*

Dear Mr. Buckley:

I am in receipt of your two applications for a mine loan on the Victory Mining Company, also copies of your articles of incorporation.

I have read over the application and find that it is lacking in description and it seems to depend upon a description by Mr. Macfarlane, field engineer for the Department. This report from Macfarlane has not as yet arrived in the office but I have had blueprints made of the longitudinal sketch on the property.

Unless otherwise instructed I will hold your application on hand here in the office until I have the Macfarlane report. I am sending Macfarlane a copy of this letter.

Yours very truly,

J. S. Coupal, Director

JSC:LP

CC: Andrew Macfarlane

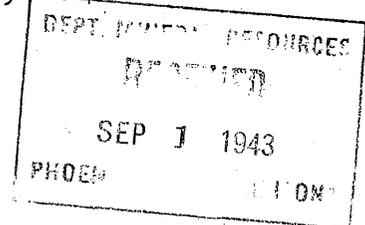
# AMERICAN SMELTING AND REFINING COMPANY

EL PASO SMELTING WORKS

R. D. BRADFORD  
MANAGER - SOUTHWESTERN DEPARTMENT  
EL PASO, TEXAS HAYDEN, ARIZONA

EL PASO, TEXAS

Aug. 24, 1943



Mr. J. W. Buckley, President  
Victory Mining Company, Inc.  
Clifton, Arizona

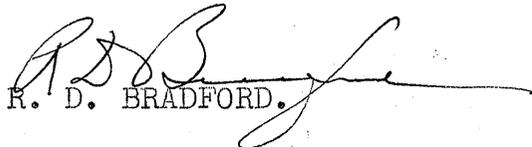
Dear Mr. Buckley:

I am pleased to learn from your letter of August 5th that you are resuming production at the Polaris Mine.

Assuming that your future shipments will be of substantially the same analysis as heretofore, we can readily use this material as copper converter flux either at our El Paso Plant or at our plant at Hayden, Arizona.

At the present time, we are short of highly silicious fluxing ores for our converter operations at Hayden. Consequently, after you get into steady production, we shall probably ask you to divert your shipments to that plant. In making these diversions, we would make settlement on the basis of the El Paso schedule and, until further notice, would absorb the difference in freight rate. In other words, your net return would be the same at Hayden as if you had shipped to El Paso.

Yours truly,

  
R. D. BRADFORD.

cc: B. N. Rickard  
H. O. Woods.

August 23, 1943

*Palares*

MEMORANDUM

VICTORY MINING CO.

TO: Andrew Macfarlane

FROM: J. S. Coupal

I have been holding map with blueprints on the Golden Eagle and Phonolite tunnels of the Victory Mining Company, Clifton, Arizona, but have had no report from you on this property.

I am returning herewith a blueprint of your sketch.

August 10, 1943

Mr. G. Preston  
337 South Hubart  
Los Angeles, 5  
California

Dear Mr. Preston:

In reply to your letter of August 3, I am sorry to say that I do not have the information you desire on the Polaris Mine. I would suggest that you write to the man in operating charge, who is Mr. J. W. Buckley.

Very truly yours,

J. S. Coupal, director

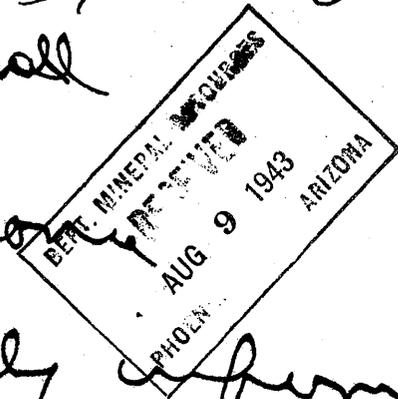
JSO:je

Los Angeles - Calif

Aug 3, 1943

Department of National  
Reserves.

Phoenix - Arizona



Dear Sir ~

Would you kindly inform  
me if the

Polaris mine

is producing and shipping  
ore at the present time if so,  
how much.

I thank you, I remain

Very truly

Yours,  
E. Preston

337 South Hobart

Los Angeles - Calif

Calif

also could you give me  
the price of the ore at the  
present time, also just this  
mine produces besides copper

May 25, 1943

MEMORANDUM

Polaris Mine  
Mr. Buckley  
Clifton, Arizona

TO: Andrew Macfarlane

FROM: J. S. Coupal

The next time you are in the Clifton area please contact Mr. Buckley and advise him regarding an application for a loan. He may need some assistance from you.

October 30, 1942

*H.*

Mr. J. W. Buckley  
P. O. Box 571  
Clifton, Arizona

Dear Mr. Buckley:

Many thanks for your information on the Polaris Mine.

I hope you will pardon my delay in replying to this, but we have taken all the information necessary and I will return your file to you when I am in Clifton, which will be at the meeting Wednesday, November 4.

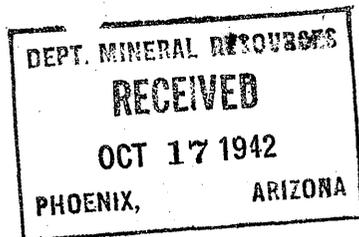
With best wishes and kindest regards, I am

Very truly yours,

J. S. Coupal  
Director

JSC:kk

P. S. I hope to see you at the meeting and I will have a chance to discuss the situation with you.



Clifton, Arizona  
October 12, 1942

Mr. J. S. Coupal, Director  
Department of Mineral Resources,  
Phoenix, Arizona

Dear Mr. Coupal:

In reply to your letter of October 2nd. relative to speeding up production and probably render assistance where needed.

I am enclosing copies of most of the exhibits I have mailed to Washington, D. C. in my application for a Development Loan of \$20,000.00. I think you will find they cover the questions and information requested in your Mine Owners' Report, Numbers from 1 to 33.

The main reason we are not producing is lack of finance, our equipment is meager as you will note, one small compressor only large enough to run one hammer.

About a year ago we moved it from the Golden Eagle, where we were able to produce in a small way as you will note from the Smelter Sheets. We moved up the canyon on what is known as the Black Prince and Lady Franklin veins, these veins are much larger than the Golden Eagle, but to date we have been able to develop only mill ore in quantities, notwithstanding the fact picked samples run high in Copper, Silver and Gold, however, we are now running a cross-cut from the Black Prince over to the Lady Franklin and expect to intersect the vein any round at 100 feet depth. We are hoping that at this depth we will encounter at least a portion of the vein of a shipping grade and enable us to go on production at an early date.

In our plan submitted to the R. F. C. for a loan to develop the Golden Eagle by sinking a shaft as outlined. Our reasons are first, the fact the Golden Eagle you might say is all ready a developed mine

in a small way. Second, the values in Copper and Zinc are fair and indications show that the Copper and Zinc values will materially increase as depth is gained. I realize that at this critical time when Copper, Zinc and other strategic metals are needed so much that Gold and Silver is more or less frowned upon, never the less, the values in these two metals will enable us to produce considerable Copper and Zinc without installing a mill which takes time and money and I realize from what you told me when I called on you in Phoenix that what was wanted was production now, which makes good sense. Third, we have a road up to the Golden Eagle which enables us to truck the ore to the railroad for \$2.00 per ton. To operate any other place on our property a road would have to be built or resort to a donkey's back.

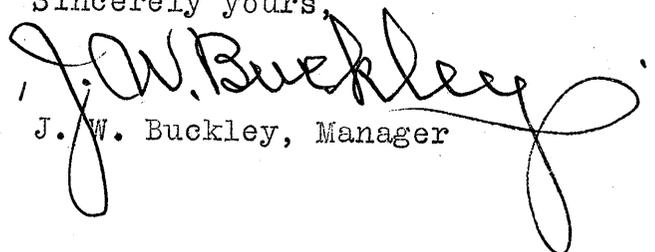
To make my story short, Mr. Coupal, if it is possible for you to crowd, say \$5,000.00 loan through at once it will enable us to go on production just as soon as we are able to install a compressor and some equipment. In the mean time the \$20,000.00 loan less the \$5,000.00 loan could be made if our showing justifies.

After going over our exhibits, maps, smelter returns, assay certificates and etc. you feel justified in sending one of your field men over here to check up on us and our property, I will be glad to meet him at Clifton and take him over the works, also furnish him all the information and data required.

Because of the fact that I must put most of my time in at the mine, on short notice wire me when to meet your field man % Mr. Harold Freeland, Central Hotel, Clifton, if it is a matter of days a regular letter will reach me in time for me to be in Clifton when he arrives.

I wish to state further that I have some first class used equipment in view that can be bought at a bargain such as we need.

Sincerely yours,

  
J. W. Buckley, Manager

8/11

October 2, 1942

Mr. J. W. Buckley  
Box 71  
Clifton, Arizona

Dear Mr. Buckley:

We are compiling a list of the potential copper producers in the state of Arizona at the request of the Army and Navy Munitions Board, which compilation will be used in formulating a policy to speed up production and probably a plan to render federal assistance where necessary.

I am enclosing a Mine Owner's Report form and we would like to have in our files a report on the Polaris Mine's holdings with detailed highlights regarding the property. In addition we would like an added paragraph on the problems connected with your property and under this heading we would like to know why the property is not producing, what production and what grade of ore could be obtained, how long it would take to get this production and how much money would be involved, as well as any other problems regarding difficulties in getting this production.

I would appreciate having this information for our files so that we might promptly finish our report.

Yours very truly,

J. S. Coupal, Director

JSC:LP  
Enc.

MP-14 POLARIS GROUP J. A. Hef , Box 933, Clifton, Ariz.

Your name and address has been furnished to -

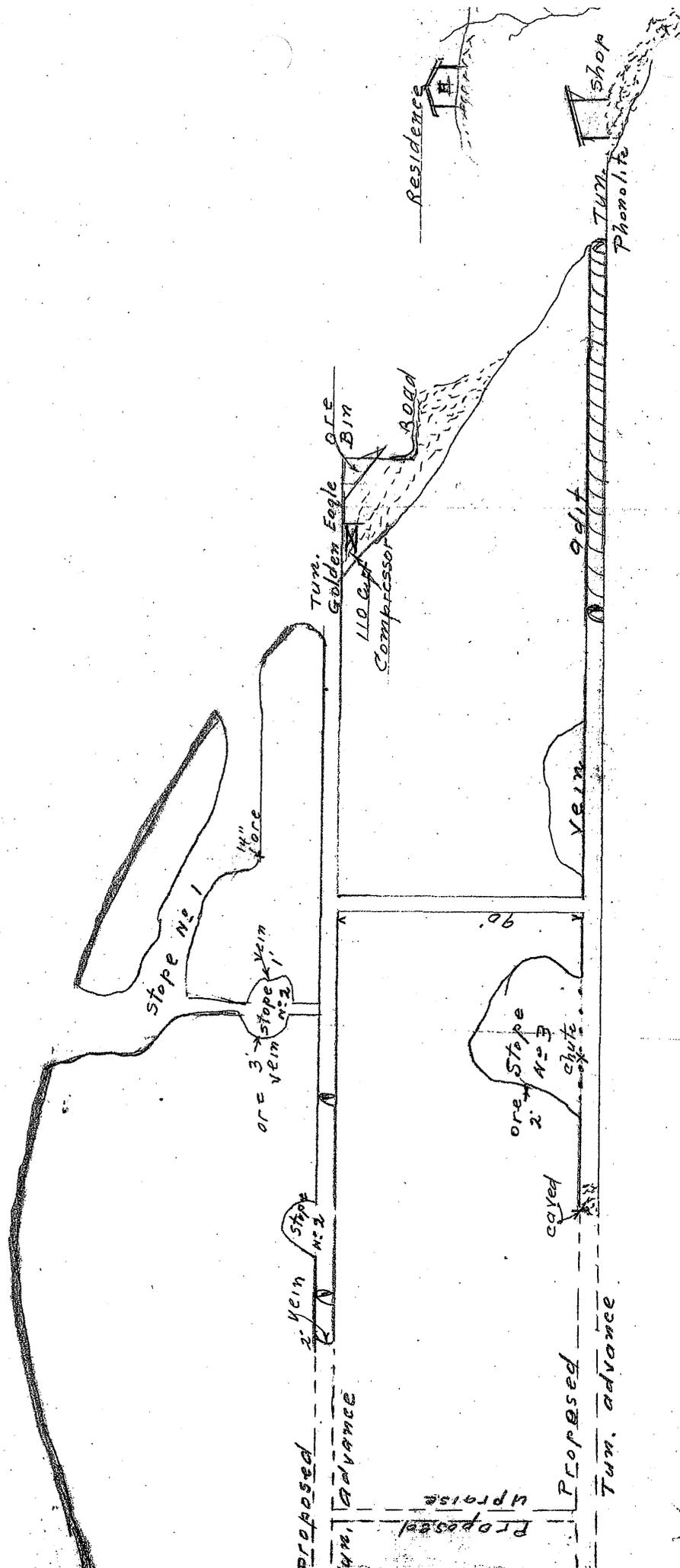
H. L. Loewenthal, 840 So. Flower St., Los Angeles, Calif.

who has made inquiry for the same with reference to property listed with the Department of Mineral Resources.

DEPARTMENT OF MINERAL RESOURCES

J. S. Coupal, Director





Tabulation of Ore Shipments

Stope Nos	Ozs Au	Ozs Ag	Cu% Si%	Tons
1	0.52	8.3	1.1	77.2
2	0.635	4.25	0.31	86.0
3	0.43	3.50	1.35	71.6
3	0.40	4.20	2.30	69.0
3	0.45	3.50	2.17	72.
3	1.06	5.30	3.30	59.2
3	0.26	4.40	1.10	78.0
Copied from Original				Total tons 236.04

Smelter Settlements By  
Field Engr.

LONGITUDINAL SKETCH  
GOLDEN EAGLE & PHONOILITE TUNNEL  
VICTORY MINING COMPANY  
 Grafton, Arizona Aug. 1st 1943  
 Notes Of Dept Of Mineral Resources  
 Globe Office A. Macfarlane F. Engr.  
 Approx. Scale 1 in to 50 ft

Dear Mr. Coupal;-

Thanks for sending me the form for filling in and correction. I really don't believe they will be able to finance the mill with shipping ore, as it is not rich enough to clear them very much, but if they should manage to get it on the ground, with a good millman in charge, they should soon be out of the red.

Yours truly,

J. A. Hagan

Nov 23  
Dayton

Rec'd for  
Hagan

~~Polaris~~

June 1900

POLARIS GROUP

GREENLEE COUNTY

Active Mine List Oct. 1966 - Exploration - Allen B. Bowman, Mgr. Banner Mng. Co.  
Active Mine List April 1967 - Expl.

No work at present time. GWI Note 2-6-68

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The Evans Point Lime quarry has been put in operation with the completion of the new tram line to the smelter. (Aerial Tram) GWI QR 10-1-70

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The Evans Point Lime quarry appears to be working full blast. GWI QR 6-30-71

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KAP WR 9/6/79: A visit was made to the Phelps Dodge Metcalf Mine in Greenlee County. In the company of Jim Madson, Mine Foreman, we toured the Metcalf open pit copper mining operation. The geology, mineralogy, and operations are well described in a variety of technical literature. However, a few interesting points were noted: The Metcalf crude ore storage, primary and secondary crushers and fine ore storage are linked by rail to the similar components at the Morenci Mine which facilitates transfer of ore back and forth for best utilization of crushing and mill capacity. The Metcalf Mine presently consists of three separate pit operations: The Metcalf, the Shannon or Standard and the King (King Mountain). They eventually will all become one pit. The Metcalf Mine produces oxide ore, sulfide and a mixed ore. The oxide-sulfide mixed ore is first crushed, ground and treated by flotation and the flotation tailings are then leached in a special tailings leach plant. 10/12/79 mw

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DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine           Polaris - King Mountain Groups           Date       Feb. 9, 1965  
District       Metcalf District - Greenlee County       Engineer   Axel L. Johnson  
Subject:       Field Engineer's report. Information from F. D. MacKenzie, geologist

References: Report of May 17, 1963

Present Mining Activity: Diamond drilling by Boyles Bros. Drilling Co. on contract was started recently. They are drilling on their first hole, which is now down a little over 600 ft.

The construction of the access roads was completed about one month ago.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine <sup>o</sup> Polaris- King Mountain Groups  
(formerly called Parrot Group)  
District Metcalf <sup>D</sup> District, Greenlee Co.

Date May 17, 1963

Engineer Axel L. Johnson

Subject: Field Engineers Report. Information from F. D. MacKenzie, geologist

References Report of Parrot Group under date of July 20, 1962.

Location Approximately Sections 25, 26, 35, & 36 -- T 3S -- R 29 E  
and Sections Sections 29, 30, 31 & 32 -- T 3 S -- R 30 E.  
about 8 miles N. of Clifton, and about 4 to 6 miles by air NE of Morenci pit.

Owners <sup>o</sup> Banner Mining Co., P. O. Box 5605, Tucson, Ariz.  
<sup>o</sup> Allen B. Bowman, Manager.

Number of Claims (a) 41 unpatented claims in the Polaris Group (formerly called  
Parrot Group). =  
(b) 100 patented and 40 unpatented claims in the King Mountain  
Group.

Principal Minerals <sup>o</sup> Copper.

Present Mining Activity Building access roads/ and miscell. annual assessment work.  
5 men working. 1 bulldozer used. Access roads will be used for possible future  
diamond drilling and other exploration work.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine Parrot Group\*  
(formerly Polaris Group)  
District Metcalf District, Greenlee Co.  
Date July 20, 1962  
Engineer Axel L. Johnson  
Subject: Field Engineers Report. Information from F. D. MacKenzie, geologist.

Location Sections 25, 26, 35, & 36 -- T 3 S - R 29 E. About 4 miles by air NE of Morenci pit, and adjoining some of Phelps Dodge Co. claims.

Number of Claims 41 unpatented claims, purchased recently from private owners.

Owners Banner Mining Co., P. O. Box 5605, Tucson, Ariz.  
Allen B. Bowman, Manager.

Principal Minerals Copper

Present Mining Activity None.

Review of Recent Operations One diamond drill hole was drilled by Glen Thatcher on contract to a depth of 600 ft. Hole was finished and diamond drilling discontinued about July 13. Hole was drilled to take care of the annual assessment work on the claims, and for preliminary testing.

POLARIS GROUP (PARROT GROUP)

GREENLEE COUNTY  
METCALF DIST.

Discussion of the Banner Mining Co. claims near Clifton and Morenci ---  
It was reported that the Banner Mining Co. is holding approximately 300 claims  
in this area, quite a number of these being patented claims. They were  
reported to have acquired these by purchase, lease, or location within the  
past 2 or 3 years. These claims lie in the area of 4.5 to 7.5 miles north  
of Clifton and NE of Morenci in the Colorado Gulch and Chase Creek area,  
and include the Polaris Group of 60 claims, the Colorado claims, and the  
Cottonwood claims.

AXEL L. JOHNSON - ASMOA - Clifton, 11-3-59

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DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine **Victory Mining Co.  
Golden Eagle and Phonolite Tunnels**  
District **Greenlee Co. Clifton, Arizona.**  
Subject: **Examination.**

Date **August 30th, 1943**  
Engineer **A. Macfarlane**  
**DEPT. MINERAL RESOURCES**  
**RECEIVED**  
**SEP 1 1943**  
**PHOENIX, ARIZONA**

Property; Known for many years as the **Polaris Group** composed of more than 20 unpatented claims, all now under option to and in control of the Victory Mining Co. of which Mr J.W. Buckley of Clifton, Arizona, is President and manager.

This report is limited to a statement of the mineralization as now visible, within the Golden Eagle tunnel and the Phonolite tunnel, about 90' lower than the Golden Eagle level.

Location; The Polaris claims are situated high up on an east slope and shoulder of the mountains about 10 miles northerly from Clifton, the elevation at the portal of the Golden Eagle tunnel is 4,500' while at the crossing of the San Francisco river some four miles southeasterly from the mine, the elevation read a little over 3,000'. In 4 miles of winding narrow road, nearly 1,300' difference of elevation was recorded.

Roads Leaving Clifton the San Francisco river road is followed up stream and in a general north direction for about 5 miles to a crossing which is only fordable for motor vehicle during dry season and low water. After crossing the river the road continues up the left bank for about 3 miles, thence turning more westerly, a narrow steep winding road reaches the Victory buildings and ore bin.

It is in project to construct a road from Chase creek and the Coronado Trail road, some few miles easterly, to serve the rather important mining belt, comprehending several small production mines of the Polaris area; giving them an all year transitable road to railroad switch at Clifton.

Vein Description ; As opened by the two above named tunnels is a fissure of considerable continuity, with walls defined and structurally deep seated. The vein width may range from 2' to 5' but the ore lenses or shoots are more accurately stated as being from one to three feet in width. This fissure has a dip of 80 Deg. towards the northwest subject to local deflections, slicken-sides and selvage along the walls, the vein material mostly quartz, highly silicious to being a converter flux, now required by most of the smelters.

Mineralization ; I beleive to be of the hot solution origin and that a large proportion of the deposition of silica, will contain more copper and iron pyrites, beneath the top oxidation.

It is noted that the copper content of the ores is higher in the floor and back of the Phonolite tunnel, than in the upper Golden Eagle, also the average thickness of the vein

seems to have increased slightly.

The ore shoots so far opened in these two tunnels are from 20' to 50' in length, then will pinch for a few feet to a narrow streak, to again reopen to 2' or more; ore faces of 3' are visible in the stope of the Phonolite tunnel.

As 7 settlement sheets from the smelter at El Paso, were examined for ore grade and analysis, I did not take vein samples, the owner designating the ore lots from the corresponding stopes.

The 236 tons sold to smelter per the records in hand show an average copper content of 2.5% almost .5 Oz gold and about 4. Ozs, silver; It is to be expected the copper content may be higher following the ore shoots below the floor of the Phonolite tunnel, as at this level more evidence of primary mineral is seen.

The vein on the Golden Eagle level is opened for fully 250' along its southwest course from portal and at the heading has attained a depth of about 110' beneath the cropping, the vein here being 2' thick.

The Phonolite tunnel is in all nearly 400' but the first 180' is an adit driven to cut the vein stratigraphically beneath the portal of the upper tunnel, thence follows the vein along its southwest strike for about 220'. The last or most innermost portion of this tunnel is caved and I was unable to determine the size or grade of the ore, except by ladder leading to over-head stope, the vein here varies around 3' in width.

Herewith attached a sketch map of the above described tunnels and stopes, forming the basis of this report.

Geological Features ; Igneous formations of the Pre-Cambrian age extending eastward from the schists of the Metcalfe area, are the casing rocks of the fissures within the Pollaris group.

A rhyolite dyke forms the east or footwall of the Golden Eagle vein and related metamorphic andesitic rocks surround and occupy the immediate area.

There are in close proximity other fissures and dykes, showing both in croppings and in the mine cuts attractive mineralization and structural extent, capable of housing similar ores, as now showing in the Phonolite tunnel.

Mine Development ; Of the vein system has been slow, as the Lessees are of small means, having to depend in a large measure on ore sales to provide working capital. The operators have neither the mine opened up sufficiently to allow of a proper commercial quantity of ore produced daily and for the past few years smelter ores from this locality, found a market at El Paso, Texas, quite distant and costly rail freight.

When the new smelter at Morenci will accept occasional carlots and engage in custom smelting, a saving should be made of \$2.00 per ton, in rail freight.

Further contemplated development of the vein, calls for advancing both tunnels along the southwest strike, until the limits of the mineralization are reached.

An Upraise from the Phonolite adhering to the ore shoots , to connect with the Golden Eagle tunnel some 100' or more beyond the present ends of the tunnels, should add greatly to the ore reserves.

Sinking a winze on the widest ore shoot found along the floor of the Phonolite tunnel to a depth of 50' or more, would also contribute to the rapid enlargement of this mine.

Economic Features ; There are continuous springs of water within the claims and by sinking on the Phonolite vein, it is possible that sufficient water for a metalurgical plant will be developed, as considerable seep is now noted from this vein; The SanFrancisco river nearest point to mine about 2 miles, is also a reliable sources of water for all purposes.

To market ores from the Pollaris group say at Morenci Smelter, the costs on an ore of a smelter assay value of \$20. are about as follows;.

	Gross Smelter Value per ton	\$20.00	
Smelting cost per ton	\$4.00		
Trucking to smelter	3.00		
		7.00	
		<hr/>	
	Net Smelter		13.00

On obtaining a full premium price for the copper content of the Pollaris ores, this would add about \$3.00 per ton on these 2 1/2% shipments and would cover the trucking cost from mine to smelter.

---

Field Engr.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Polaris Mining Co.

Date July 9, 1956

District Copper Mt. District, Greenlee Co.

Engineer Axel L. Johnson

Subject: Present Status.

Location 12 miles <sup>NORTH</sup> south of Clifton. --- Sec. 7 - T 4 S - R 30 E

Number of Claims Not reported.

Owner Evert Hagan, 115 North Eastern Ave., Los Angeles 22, Calif.  
(former owner, J. A. Hogan, Clifton, Ariz., now deceased.)

Operator None. Mine is idle.

Principal Minerals Gold, Silver, Copper.

NAME OF MINE: VICTORY Mining Co., Inc.  
(Polaris mine)

COUNTY: GREENLEE

DISTRICT:

METALS: E

OPERATOR AND ADDRESS:

MINE STATUS

CU, Au

DATE:

DATE:

5/1/44 J.S.  
Buckley, Clifton Box 571  
11/45 W. Hagen, Clifton, Box 933  
J.A.

5/1/44 Shipping  
8/44 Idle  
11/44 Some development

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
OWNERS MINE REPORT

Date October 22, 1942

1. Mine The Victory Company, Inc.
2. Mining District & County Gold Mountain Mining District, Greenlee, County
3. Former name Polaris Group
4. Location Clifton, Arizona
5. Owner The Victory Company, Inc.
6. Address (Owner)
7. Operator Same
8. Address (Operator) Box 571, Clifton, Arizona
9. President
10. Gen. Mgr. J. W. Buckley
11. Mine Supt.
12. Mill Supt.
13. Principal Metals Copper, zinc, gold
14. Men Employed
15. Production Rate
16. Mill: Type & Cap.
17. Power: Amt. & Type
18. Operations: Present None.
19. Operations Planned Reopen Golden Eagle section if \$20,000 RFC Loan is granted. Sink 300 ft. below lowest adit.
20. Number Claims, Title, etc. 41 Claims.
21. Description: Topography & Geography
22. Mine Workings: Amt. & Condition Two adits on Golden Eagle with maximum 250 ft. backs. Other workings not described.

23. Geology & Mineralization Ten Perp. fissure veins filled with quartz and porphyry--granite walls. Intrusive rhyolite dikes cut all N.E. formations--post mineral. Golden Eagle Vein 5 feet to 6 feet wide, partially leached. High silica content.

24. Ore: Positive & Probable, Ore Dumps, Tailings "Several thousand tons."

24-A Vein Width, Length, Value, etc. 5 to 6 foot vein. 300 foot ore shoots.

25. Mine, Mill Equipment & Flow Sheet

26. Road Conditions, Route Good.

27. Water Supply Ample.

28. Brief History

29. Special Problems, Reports Filed Lack of funds. Buckley report in file.

30. Remarks High silicious ore has been shipped from miscellaneous workings.

31. If property for sale: Price, terms and address to negotiate. No.

32. Signed.....  
(Data from Mr. Buckley)

33. Use additional sheets if necessary.

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
OWNERS MINE REPORT

Date August 8, 1939

Mine Polaris Group

District Clifton-Morenci

Location Greenlee County

Former name

Owner J. A. Hagan

Address Clifton, Arizona

Operator Polaris Mining Company

Address " "

President

Gen. Mgr.

Mine Supt.

Mill Supt.

Principal Metals Gold, Silver, Copper

Men Employed Two

Production Rate None

Mill: Type & Cap. None

Power: Amt. & Type None  
Compressor and air drills

Operations: Present Development

Operations Planned For sale

The plan at present, is to ship ore enough to purchase and install a mill or sell.

Number Claims, Title, etc. 41, Held by location

Description: Topog. & Geog. Elevation 4,000 to 6,500, 8 miles from Clifton,  
1 mile from river

Mine Workings: Amt. & Condition Mostly tunnels, one badly caved, the  
balance more or less accessible.

Geology & Mineralization Porphyry-quartz veins, granite walls. Veins large and continuous, some shipping ore, but classed as a milling proposition

Ore: Positive & Probable, Ore Dumps, Tailings Two or three thousand tons blocked out and wide veins of milling ore uncovered.

Mine, Mill Equipment & Flow Sheet

Road Conditions, Route Six miles fair mountain road, two miles narrow

Water Supply Possibly enough on property for small pilot mill if water used over. Plenty of water one mile distant.

Brief History Numerous prospectors grouped their claims to form a stock company, which finally went broke about 1905. The ore is complex and the mill they had would not save the values.

Special Problems, Reports Filed

Remarks

If property for sale: Price, terms and address to negotiate. Price \$100,000. Small payment down and balance on very favorable terms. J. A. Hagan, Box 933, Clifton, Arizona.

Signed.....

*J. A. Hagan*

Use additional sheets if necessary.

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine Victory Mining Company  
Golden Eagle and Phonolite Tunnels

Date August 30, 1943

District Greenlee County  
Clifton, Arizona  
Subject: Examination

Engineer A. Macfarlane

PROPERTY:

Known for many years as the Polaris Group composed of more than 20 unpatented claims, all now under option to and in control of the Victory Mining Company of which Mr. J. W. Buckley of Clifton, Arizona, is president and manager.

This report is limited to a statement of the mineralization as now visible, within the Golden Eagle tunnel and the Phonolite tunnel, about 90' lower than the Golden Eagle level.

LOCATION:

The Polaris claims are situated high up on an east slope and shoulder of the mountains about 10 miles northerly from Clifton, the elevation at the portal of the Golden Eagle tunnel is 4,500' while at the crossing of the San Francisco river some four miles south-easterly from the mine, the elevation read a little over 3,000'. In four miles of winding narrow road, nearly 1,300' difference of elevation was recorded.

ROADS:

Leaving Clifton and the San Francisco river road is followed up stream and in a general north direction for about 5 miles to a crossing which is only fordable for motor vehicle during dry season and low water. After crossing the river the road continues up the left bank for about 3 miles, thence turning more westerly, a narrow steep winding road reaches the Victory buildings and ore bin.

It is in project to construct a road from Chase creek and the Coronado Trail road, some few miles easterly, to serve the rather important mining belt, comprehending several small production mines of the Polaris area; giving them an all year transitable road to railroad switch at Clifton.

VEIN DESCRIPTION:

As opened by the two above named tunnels is a fissure of considerable continuity, with walls defined and structurally deep seated. The vein width may range from 2' to 5' but the ore lenses or shoots are more accurately stated as being from one to three feet in width. This fissure has a dip of 80 degrees towards the northwest subject to local deflections, slickensides and selvage along the walls, the vein material mostly quartz, highly siliceous to being a converter flux, now required by most of the smelters.

MINERALIZATION:

I believe to be of the hot solution origin and that a large proportion of the deposition of silica, will contain more copper and iron pyrites, beneath the top oxidation.

It is noted that the copper content of the ores is higher in the floor and back of the Phonolite tunnel, than in the upper Golden Eagle, also the average thickness of the vein seems to have increased slightly.

The ore shoots so far opened in these two tunnels are from 20' to 50' in length, then will pinch for a few feet to a narrow streak, to again reopen to 2' or more; ore faces of 3' are visible in the stope of the Phonolite tunnel.

As 7 settlement sheets from the smelter at El Paso, were examined for ore grade and analysis, I did not take vein samples the owner designating the ore lots from the corresponding stopes.

The 236 tons sold to smelter per the records in hand show an average copper content of 2.9% almost .5 oz gold and about 4. ozs, silver; it is to be expected the copper content may be higher following the ore shoots below the floor of the Phonolite tunnel, as at this level more evidence of primary mineral is seen.

The vein on the Golden Eagle level is opened for fully 250' along its southwest course from portal and at the heading has attained a depth of about 110' beneath the cropping, the vein here being 2' thick.

The Phonolite tunnel is in all nearly 400' but the first 180' is an adit driven to cut the vein stratigraphically beneath the portal of the upper tunnel, thence follows the vein along its southwest strike for about 220'. The last or most innermost portion of this tunnel is caved and I was unable to determine the size or grade of the ore, except by ladder leading to overhead stopes, the vein here varies around 3' in width.

Herewith attached a sketch map of the above described tunnels and stopes, forming the basis of this report.

#### GEOLOGICAL FEATURES:

Igneous formations of the Pre-Cambrian age extending eastward from the schists of the Metcalfe area, are the casing rocks of the fissures within the Pollaris group.

A rhyolite dyke forms the east or footwall of the Golden Eagle vein and related metamorphic andesitic rocks surround and occupy the immediate area.

There are in close proximity other fissures and dykes, showing both in croppings and in the mine cuts attractive mineralization and structural extent, capable of housing similar ores, as now shown in the Phonolite tunnel.

#### MINE DEVELOPMENT:

Of the vein system has been slow, as the Lessees are of small means, having to depend in a large measure on ore sales to provide working capital. The operators have neither the mine opened up sufficiently to allow of a proper commercial quantity of ore produced daily and for the past few years smelter ores from this locality, found a market at El Paso, Texas, quite distant and costly rail freight.

When the new smelter at Morenci will accept occasional carlots and engage in custom smelting, a saving should be made of \$2.00 per ton, in rail freight.

Further contemplated development of the vein, calls for advancing both tunnels along the southwest strike, until the limits of the mineralization are reached.

An upraise from the Phonolite adhering to the ore sheets, to connect with the Golden Eagle tunnel some 100' or more beyond the present ends of the tunnels, should add greatly to the ore reserves.

Sinking a winze on the widest ore shoot found along the floor of the Phonolite tunnel to a depth of 50' or more, would also contribute to the rapid enlargement of this mine.

**ECONOMIC FEATURES:**

There are continuous springs of water within the claims and by sinking on the Phenolite vein, it is possible that sufficient water for a metallurgical plant will be developed, as considerable seep is now noted from this vein; the San Francisco river nearest point to mine, about 2 miles, is also a reliable source of water for all purposes.

To market ores from the Polaris group say at Morenci Smelter, the costs on an ore of a smelter assay value of \$20. are about as follows:

		Gross Smelter Value per ton \$20.00
Smelting cost per ton	\$4.00	
Trucking to smelter	3.00	7.00
	Net smelter	13.00

On obtaining a full premium price for the copper content of the Polaris ores, this would add about \$3.00 per ton on these 2 1/2% shipments and would cover the trucking cost from mine to smelter.

A. MacFarlane  
Field Engineer

## BUCKLEY REPORT

C. GEOLOGY

THE VICTORY MINING CO. INC.

Reconstruction Finance Corporation

Gentlemen:

The following report upon the present condition of The Victory Mining Co. Inc. is hereby presented. For your convenience a summary is given first, followed by detailed discussion. A sketch map of the vein system accompanies this report.

### SUMMARY

Locations: In the Greenlee Gold Mountain Mining District, 7 miles north of Clifton, Greenlee County, Arizona. A little over a mile from the San Francisco River and from one to three thousand feet higher.

Facilities: An ideal climate, the property can be worked the year round. From the lower to the higher part of the claims there is a change in elevation of about 2000 feet and the slopes are nearly all abrupt and the veins perpendicular.

Geology: Perpendicular fissure veins filled with quartz and porphyry, usually with granite walls and run northeast and southwest. Sedimentaries appear on the western side of the property and the vein walls are sedimentary rock and contacts between sedimentaries and granite. After the veins were formed intrusive dykes of rhyolite and phonolite were thrust up from below, cutting all formations and veins alike. The property is situated near the northeast edge of the Clifton-Morenci mineral belt.

The Golden Eagle Vein is a proven mine with several thousand tons of ore opened 90 ft. between the Golden Eagle and Phonolite Tunnels for a distance of over 300 ft. on each level.

The ore runs well in copper and also some zinc as the smelter sheets and assay certificates show, when the secondary zone is reached, will without doubt produce much higher grade copper as the present works show that a greater portion of the vein is leached and gone down to lower depths.

The vein averages about 5 to 6 ft. wide, the greater portion leached. Depth is all that is needed to reach the secondary zone which in my opinion will produce much higher grade copper and zinc than the present showing and without doubt larger bodies of ore.

The Victory Mining Co. claims covers ten veins, most of them are large continuous veins and give much promise of developing large bodies

of high grade copper, zinc, silver and gold ores because of the fact that we are counting on centering our efforts on the Golden Eagle Vein I will not go into further details regarding the other veins at this time as they are situated up the canyon and off the road and can be developed later.

The Golden Eagle Vein runs parallel to and about 400 feet northwest of the Loco Boy. It crosses Polaris Gulch and continues on northeast.

On the south side of the Dorsey Gulch the vein is developed by the Golden Eagle Tunnel which drifts 330 feet on the vein and the Phonolite Tunnel which after crosscutting drifts 350 feet on the vein 90 feet below the Golden Eagle Tunnel. A winze connects the two and a raise goes to the surface from Golden Eagle Tunnel. These two tunnels show a hard, quartz ore shoot, copper glance and chalcopyrite and sulphide of iron. See smelter settlement sheets.

The average silica for a number of samples is 73.4 per cent, which is so high that the ore will serve for converter lining and therefore get the benefit of a very low smelter rate (about \$3.50 per ton).

If further development is to be done on the Golden Eagle Vein it should be done by sinking the present shaft 2 to 3 hundred feet and drift along the vein on the one, two and three hundred foot levels and stope the ore in the regular manner.

The Golden Eagle Vein is situated near the Southeast border line of the property. The values run good in copper, zinc, silver and gold, compares favorable with the Copper King ore which adjoins this property on the Southwest, (see map of vein systems of Polaris, also read Mr. H. C. White's letter to Polaris Co., dated Nov. 16, 1937, relating statistics of the Copper King Mine and his frank opinion of the similarity of the two properties).

All of the ore which the smelter sheets represents came from the Golden Eagle vein and Phonolite Stope. The pay streak averages from a few inches to about 3 ft. wide on the hanging wall side, the lower portion of the vein has leached and gone down to lower depths.

Exhibit A.

3. Estimated cost of development and plan of operations.

Install an air compressor (used one)	\$1500.00
One hoist (used one)	\$1000.00
Incidentals such as pipe, rails, ore bins, drilling machines pump, timber, road work, small tools, Social Security Ins. etc.	\$3500.00
300 ft. shaft at \$30.00 per ft.	\$9000.00
Drift along the vein both ways on the one, two and three hundred ft. levels, estimated cost	\$5000.00
TOTAL	<u>\$20,000.00</u>

Respectfully submitted,

(Signed) J. W. Buckley

POLARIS MINES - 41 CLAIMS AND  
EVANS POINT DAME SITE  
Price - both for \$10,000.00 - terms

In 1946 the Polaris was sold to one of Canada's largest mine operators after their engineers and geologists recommended it be core drilled to explore the sulphides (the property having never been drilled or the sulphides explored and determined). They first undertook to drill another mine I contracted to sell them but when copper went below 30¢ they declined to go ahead. Prior to this other Canadian interested purchased the property for \$175,000.00, triangulated it at a cost of \$3500.00 and prepared to drive a one-mile tunnel, reaching a maximum depth of 3500 feet to develop the entire property. Operation was to be undertaken under the name of ARICANA MINING CORPORATION (abbreviation for Arizona-Canada) and an Arizona subsidiary corporation under the same name. Friction developed between the Arizona management and the directors of the holding corporation in Canada and the delay caused me to foreclose the \$175,000.00 mortgage deed.

Ores shipped usually averaged about equal value of copper, gold and silver. All mined from near the surface pocket lenses of either enriched by redeposit or unleached ores (the quadrangle's) production is around 99% copper. Whether or not these gold values continue in the sulphides is undetermined as all development has been in the oxides and the depth of the sulphides is unknown though in the district they are usually from four to six hundred feet.

A hundred thousand dollars of near surface development has not made a mine out of this property. The oxide values being too irregular, apparently caused by extensive leaching. Practical further exploration would be drilling the sulphides to ascertain the extent and values. The P-D are drilling on their property immediately to the south where they have been drilling now for five years. Apparently a new pit is contemplated. Their present pit is said to be the second largest pit operation in the country (was 80,000 tons daily).

This mine does not warrant immediate operations. Presently copper is too low to make this feasible. It is an investment to hold until copper returns to a price that will permit profit.

The property was originally acquired by the writer in 1916. The family owned an interest in it since 1906. It was located around 1890 and small groups which later became the POLARIS MINING AND MILLING COMPANY. In about 1890 a smelter was installed for the property, presumably a promotional scheme. In 1904 an amalgamation mill, which failed to work because of the copper contents of all ores. In 1912 the company undertook to install a smelter, went broke and the writer's father, a creditor, acquired it.

The property as developed will apparently only support a milling operation. Shipping has extended over a 50-year period but the oxides ores encountered never indicated any particular merit for a shipping operation.

The proper is an excellent opportunity to invest for someone with practical foresight that realizes that the present depressed copper market is not permanent. Such declines have occurred in the past and the market always returned to normal to permit profitable operations and undoubtedly will again.

A BRIEF DESCRIPTION

( See reports for further information )

Location is in the northeast portion of the mineralized quadrangle, being the north end of the high ridge into which Dorsey Gulch heads, the south half of which is the P-D Copper King Mine (see government map of Morenci-Clifton quadrangle). Sycamore Gulch heads in the north side of the Polaris. The airline from Evans Point to the mine is less than two miles, the winding road three miles and two miles from the paved road in Gase Creek.

Adjoining the Polaris on the east are the Banner 100 patented claims and the P. D. adjoins on the south and now possibly on the west (I am informed they are locating claims on the west contemplating drilling the volcanic flow). To the north the mineralization continues a few miles and then is covered by the vast area of malpais. The San Francisco River is one and three-quarter miles east and contains a great fault of four or five hundred feet, to the east of which is the volcanic eruption of Sunset Peak, 7500 feet, covered the area east of the river. The P-D Copper King adjoins the Polaris on the south where, at 800 feet, large copper deposits have been encountered. South of this is the King mine, (old Arizona Copper Company now P-D) from which many millions have been taken and still contains fabulous copper ores.

Both the geology and mineralogy has been quite extensive covered in the reports on the Polaris. Some \$100,000.00 of surface exploration is not indicative of shipping ores. The possibilities in the property is apparently to come from the sulphides which have been the source of the 75 year production in the district.

The surface gold values (greatly increasing in the northeast portion of the quadrangle) are very irregular, ranging from low values to good shipping ores and occasionally high values, but in the oxides have not been persistent and could not be depended upon. Manganese is present in all ores and therefore there could be a redeposit of gold and most oxide ores have been subject to extensive leaching.

The reports, maps and other information pertaining to these properties cover a few dozen sheets and offer quite extensive data, copies of which are available to anyone further interested to gather with such other information as I might be able to offer.

I am not versed in mining, never operated or undertook milling. Property was acquired by mercantile credit in the general merchandise business. I am going to sell both the mines and the dam site for the best offer I can get for them by the end of this month (June) though if a reasonable offer is made I will sell immediately. Title is clear, having just finished quiet title action that was undertaken because of leases from ten to thirty years back. The offer is a "first come first serve" proposition, and being offered at a very unfavorable period, therefore practical a "giveaway" price. Exclusive options will not be given though a non-exclusive agreement as to price, etc., given to anyone.

If you are not interested, possibly you can refer this to someone who would be.

## SAN FRANCISCO RIVER, ARIZONA - 55 ACRES

(Included with the 800-acre mine for \$10,000.00 )

Designated on all government topographical maps of the area as Evans Point. Was acquired by the writer's father in 1903 by Civil War script, being a narrow gorge some 200 feet wide with high perpendicular bluffs on both sides. This river, 14 miles south, empties into the Gila River which then winds through the canyon for 25 miles and opens into the great Safford Valley, continuing for some 50 miles to the Coolidge Dam.

This valley is usually subjected yearly to shortage of water and it is unexplainable why this dam site has not been used, long since, by the government, state of the farmer's Water Association to accumulate billions of gallons of water during the summer rainy season and the winter melting of snow to avoid the hundreds of thousands of dollars in loss of crops.

During the war I was approached by persons who did not disclose their principals, wanting to purchase this 55 acres. After they failed to negotiate, various representatives of the Federal Government contacted me to buy. I eventually refused to negotiate further. Apparently, at that time, I could have gotten a very substantial price had my sights been lowered and, of course, I now realize I was foolish in not having done so. Thereafter the government, as I recall under some war-time decree, seized the property resulting in my taking process in the Federal Courts of Arizona. Thereafter, investigation and exploration continued for one year, said to have cost the government \$240,000. The termination of the Federal Court action was that the government gave me \$1500.00 and I got my property back. As to what the government is ultimately going to do no one can possibly know. They are too busy financing ventures for other's throughout the world and with too little time to give attention to our own.

### BRIEF DESCRIPTION

(Request other data for further information)

The dam site is located on the San Francisco River three miles north of Clifton, the county seat of Greenlee County, and is reached by good roads and from there the Polaris jeep road leaves the river to climb to the divide to the Polaris mines. The dam would have three possible uses; storage of water for the Safford Valley; for hydroelectric power for the district and the copper mines; flood control, which has, in the past years, destroyed thousands of acres of agricultural land. The San Francisco River is a sizeable stream and flows the year around.

I do not wish to contend that the river gravels have a practical gold potential as it has been, at times assumed. In fact they do not, though many thousands of dollars in gold have been taken from the Evans Point gravels. These were concentrations deposited from the erosion of the Polaris and the adjoining properties over the ages. On the Polaris \$3005.00 was taken from a wagon load of gravel. Across the river \$7000.00 was taken out of a tunnel in semi-conglomerate. **ADVISE:** Don't try to repeat it! I did, resulting in being out of pocket some \$6000.00.

In 1906 a steam pump was installed at Evans Point and water was pumped upon the mesa for the Polaris amalgamation mill. Such water rights in Arizona are quite valuable. There are large cottonwood trees on the banks of the river and the scenery is very beautiful. Further to the north the tributaries enter the great pine forests covering thousands of square miles. A paved road leaves Clifton to the north, passing through magnificent scenery and forests where game and fish are plentiful.

The title to this dam site is clear. Nevertheless I am just now completing a quiet title to both the properties which is at the request of a prospective purchaser though such has no purpose as quiet title was completed in 1953, when I foreclosed the \$175,000 trust deed. The price of \$10,000.00 includes both properties, though I will sell either separately. The offer I now have will be accepted by June 30th so immediate attention is necessary for anyone desiring to purchase.

### COMMISSION OFFERED

I will pay the usual commission of 20% to anyone furnishing a buyer. The full commission will be paid at the time the sale is fully consummated, whether it be for cash or on terms.

Since the sale of these mines to Canadian interests two years ago and their return to me, interest in mines and mining has deteriorated. Unquestionably the unprecedented mining boom has largely tapered off. I have offered the Polaris mines on the assumption that they will sell if the price is low enough and the same applies to the dam site.

Recent past mining activities are like the real estate boom here in the Los Angeles area, which has broken all records in history. Selling, subdividing and building have made many millionaires with billions of dollars in profits during the past few years. The deserts are being filled with homes.

I have often considered Mexico for a mining undertaking, though the possibility of getting together a group to locate, investigate and finance a sufficiently sizeable venture to make it worth while can only be determined by an attempt to do so. A few years back, the average investor was still skeptical of the Mexican government, based on it's past conduct. I set up a Mexican corporation out of Mexico City to enter mining but it was not practical for me to "go it alone".

I have incurred a few thousand in expenses looking about in Mexico and additional sums in a little investigating, the more of which one undertakes the more they realize the great extent of the potentials yet existing in that country from undertakings that no one down there goes to the trouble to bother with.

A few years back, when the attitude of the Mexican government changed toward American investors, I attempted to find others to associate in a venture. The period was then no right as the investor was still reluctant, but now this appears to be rapidly changing.

As to what might be more practical and successful is something that in this modern age requires careful scientific investigation and is also affected by the extent of the privileges granted by the Mexican government and other factors. This entails, in most instances, much time and expense that may be considerable where a careful and detailed investigation is conducted.

It is advisable in Mexico for most all undertakings to be under a corporate charter. By so arranging, one can, under Mexican laws, have the rights of a Mexican citizen. There are several forms of corporations, but one in particular that is usually used is Sociedad Anonima and it is considered to be the most satisfactory. Occasionally subsidiaries of American corporations are used but are not too practical.

Taxes are certainly not acceptable. One must offset these by first arranging for special privileges not too difficult to obtain.

Sometime ago I investigated some undertakings in central South America but then decided that unless a very large activity it was not practical since the inconvenience became a substantial obstacle to progressing whereas Mexico there are similar possibilities that do not have some of the disadvantages that one encounters a thousand miles to the south, though taxes in some South American countries are more acceptable than those of Mexico. Gold production, though taxable, but by payment one obtains the right to dispose of it as he sees fit which is certainly not our privilege in the United States, except with placer gold. Mercury in Mexico is among one of the promising field to enter. I have been brought samples that ran above 10%. No doubt, of course, carefully selected (one should never expect to get an average sample from there).

= My offer to sell is only those properties I own or that I own an interest in.

If you are not interested in this offer, possibly you have someone in mind who will be and can hand them this information.

EVERT L. HAGAN 115 N. Eastern Ave. Los Angeles 22, Calif. Angelus 2-5109

RE ING TO THOSE INDICATING AN INTEREST THESE PROPERTIES

Leases operating on the Polaris mines have not, in the past, resulted in what could be described as successful under-leases, therefore to again lease the mines would not be practical. All attempts to operate the mines were shipping undertakings. Shipping is further impractical because the Phelps-Podge smelter at Morenci does not handle custom ore, and the nearest smelter is over a 200-mile rail haul and therefore a practical operation would require a mill to concentrate the ores.

In the past years I have received many thousands of dollars income from the property but in view of the large investment this income was substantially inadequate. I have made the mistake in not selling when substantial offers have been made at periods when copper mining was a practical undertaking. I always "kept my sights too high", resulting in losing the deal. Now time does not permit giving these properties any further attention, therefore the best offer buys them both.

As I have clearly, heretofore, indicated, this is not an opportune time to undertake copper mining. Should the property have any merit for the production of gold cannot be determined from the present development in the oxides. All ores increasing in copper contents usually do so proportionately in Gold and Silver. This condition is not to be found elsewhere in the quadrangle. What importance this indicates, if any, is unknown.

All of the \$100,000.00 of development has, from an engineering standpoint, been impractically undertaken. This work having been done from 20 to 50 years ago, none of which apparently was carried on under the supervision of an engineer, and the expense resulting in a waste of money. The writer is not versed to recommend what should now be undertaken. The last engineers and geologists, being top men from Canada, recommended the drilling the large veins to the surface. This they prepared to have their company do, which was not carried out because of the continued copper decline. During the time they held my mines, approximately a year, I received almost \$10,000.00, but when copper got below 30¢ they claimed the incentive to go ahead no longer existed, "pulled up stakes" and returned to Canada. This company was one of the world's largest operators of mines.

The title to both of these properties is presently clear and this will be further confirmed by a decree of the Superior Court of Greenlee County, Arizona in a quiet title proceedings which I instigated at the request of a prospective purchaser who makes a standing offer for both of the properties, which offer I have not accepted, but will should a better one not develop. There is actually, though, no purpose in this quiet title action, it only being undertaken to satisfy the prospective purchaser, should I decide to accept their offer.

I will emphasize that the potential in both of these properties is dependant upon more favorable conditions which do not, presently, exist. As to how soon these conditions are going to improve, your guess is as good as mine. For over fifty years, during all recessions or depressions, copper dropped to unexpected low prices.

The Government, as we know, usually waits until the need of something becomes a dire necessity before undertaking to supply it. Apparently during the last was the Evans Point dam project became such a requirement, since it was then they undertook to investigate the dam site and expended a large sum of money in doing so, though, as elsewhere stated there is a possibility that this was being undertaken for private use which the government represented and which I was never able to find out, though I expended no particular effort to do so.

Neither for the mining property nor for the dam can I offer anyone an immediate return of profit. This is entirely dependent upon circumstances as with most other real estate investments. The attitude of investors under conditions as of today is the same as it always has been. They won't buy until prices soar and then they clamor to get the chance to buy. I have just sold a large acreage near here for \$64,500.00 which I am positive would bring a quarter of a million dollar should normal times exist but presently I had difficulty in finding a buyer at this ridiculously low figure. This, as with the mines and dam site, I am tired of hothering with and neither do I have time to do so, the result being that the best offer will buy them.

Options are usually customary in transacting such deals but since the offer I make is not an ordinary one and exclusive option cannot be given except for a substantial consideration, though a contract to sell at an agreed price will be furnished to anyone.

The 1st of July I will be at the mining property, and could show it, and immediately close a deal with anyone, and if I am not successful in finding someone to pay a better price than the standing offer of less than what I ask for

POLARIS MINES - 41 CLAIMS AND  
EVANS POINT DAME SITE  
Price - both for \$10,000.00 - terms

In 1946 the Polaris was sold to one of Canada's largest mine operators after their engineers and geologists recommended it be core drilled to explore the sulphides (the property having never been drilled or the sulphides explored and determined). They first undertook to drill another mine I contracted to sell them but when copper went below 30¢ they decided to go ahead. Price to this other Canadian interested purchased the property for \$175,000.00, triangulated it at a cost of \$3500.00 and prepared to drive a one-mile tunnel reaching a maximum depth of 3500 feet to develop the entire property. Operation was to be undertaken under the name of ARICANA MINING CORPORATION (abbreviation for Arizona-Canada) and an Arizona subsidiary corporation under the same name. Friction developed between the Arizona management and the directors of the holding corporation in Canada and the delay caused me to foreclose the \$175,000.00 mortgage deed.

Ores shipped usually averaged about equal value of copper, gold and silver. All mined from near the surface pocket lenses of either enriched by redeposit or unleached ores (the quadrangle's production is around 99% copper). Whether or not these gold values continue in the sulphides is undetermined as all development has been in the oxides and the depth of the sulphides is unknown though in the district they are usually from four to six hundred feet.

A hundred thousand dollars of near surface development has not made a mine out of this property. The oxide values being too irregular, apparently caused by extensive leaching. Practical further exploration would be drilling the sulphides to ascertain the extent and values. The P-D are drilling on their property immediately to the south where they have been drilling now for five years. Apparently a new pit is contemplated. Their present pit is said to be the second largest pit operation in the country (was 80,000 tons daily).

This mine does not warrant immediate operations. Presently copper is too low to make this feasible. It is an investment to hold until copper returns to a price that will permit profit.

The property was originally acquired by the writer in 1916. The family owned an interest in it since 1906. It was located around 1890 and small groups which later became the POLARIS MINING AND MILLING COMPANY. In about 1890 a smelter was warranted for the property, presumably a promotional scheme. In 1904 an amalgamation mill, which failed to work because of the copper contents of all ores. In 1912 the company undertook to install a smelter, went broke and the writer's father, a creditor, acquired it.

The property as developed will apparently only support a milling operation. Shipping has extended over a 50-year period but the oxides ores encountered never indicated any particular merit for a shipping operation.

The property is an excellent opportunity to invest for someone with practical foresight that realizes that the present depressed copper market is not permanent. Such declines have occurred in the past and the market always returned to normal to permit profitable operations and undoubtedly will again.

#### A BRIEF DESCRIPTION

( See reports for further information )

Location is in the northeast portion of the mineralized quadrangle, being the north end of the high ridge into which Dorey Gulch heads, the south half of which is the P-D Copper King Mine (see government map of Morenci-Clifton quadrangle). Sycamore Gulch heads in the north side of the Polaris. The airline from Evans Point to the mine is less than two miles, the winding road three miles and two miles from the paved road by Case Creek.

Abutting the Polaris on the east are the Barker 100 patented claims and the P-D, adjoins on the south and now possibly on the west (I am informed they are locating claims on the west contemplating drilling the volcanic flow). To the north the mineralization continues a few miles and then is covered by the vast area of rhyolites. The San Francisco River is one and three-quarters miles east and contains a great fault of four or five hundred feet, to the east of which is the volcanic eruption of Sunset Peak, 2500 feet, covered for area east of the river. The P-D Copper King adjoins the Polaris on the south where, at 800 feet, large copper deposits have been encountered. South of this is the King mine, (old Arizona Copper Company now P-D) from which many millions have been taken and still contains fabulous copper ores.

Both the geology and mineralogy has been quite extensively covered in the reports on the Polaris. Some \$100,000.00 of surface exploration is not indicative of shipping ores. The possibilities in the property is apparently to come from the sulphides which have been the source of the 75 year production in the district.

The surface gold values (greatly increasing in the northeast portion of the quadrangle) are very irregular, ranging from low values to good shipping ores and occasionally high values, but in the oxides have not been persistent and could not be depended upon. Abundance is present in all ores and therefore there could be a redeposit of gold and most oxide ores have been subject to extensive leaching.

The reports, maps and other information pertaining to these properties cover a few dozen sheets and offer quite extensive data, copies of which are available to anyone further interested to gether with such other information as I might be able to offer.

I am not versed in mining, never operated or undertook milling. Property was acquired by mercantile credit in the general merchandise business. I am going to sell both the mines and the dam site for the best offer I can get for them by the end of this month (June) though if a reasonable offer is made I will sell immediately. Title is clear, having just finished quiet title action that was undependable because of leases from 1880 to thirty years back. The offer is a "first come first serve" proposition, and being offered at a very unfavorable period, therefore practical a "giveaway" price. Exclusive options will not be given though a non-exclusive agreement as to price, etc., given to anyone.

If you are not interested, possibly you can refer this to someone who would be

## SAN FRANCISCO RIVER, ARIZONA - 55 ACRES

(Included with the 800-acre mine for \$10,000.00 )

Designated on all government topographical maps of the area as Evans Point. Was acquired by the writer's father in 1903 by Civil War scrip, being a narrow gorge some 200 feet wide with high perpendicular bluffs on both sides. This river, 14 miles south, empties into the Gila River which then winds through the canyon for 25 miles and opens into the great Safford Valley, continuing for some 50 miles to the Coolidge Dam.

This valley is usually subjected yearly to shortage of water and it is unexplainable why this dam site has not been used, long since, by the government, state of the farmer's Water Association to accumulate billions of gallons of water during the summer rainy season and the winter melting of snow to avoid the hundreds of thousands of dollars in loss of crops.

During the war I was approached by persons who did not disclose their principals, wanting to purchase this 55 acres. After they failed to negotiate, various representatives of the Federal Government contacted me to buy. I eventually refused to negotiate further. Apparently, at that time, I could have gotten a very substantial price had my rights been lowered and, of course, I now realize I was foolish in not having done so. Thereafter the government, as I recall under some war-time decree, seized the property resulting in my taking process in the Federal Courts of Arizona. Thereafter, investigation and exploration continued for one year, said to have cost the government \$240,000. The termination of the Federal Court action was that the government gave me \$1500.00 and I got my property back. As to what the government is ultimately going to do no one can possibly know. They are too busy financing ventures for other's throughout the world as with too little time to give attention to our own.

### BRIEF DESCRIPTION

(Request other data for further information)

The dam site is located on the San Francisco River three miles north of Clifton, the county seat of Greenlee County, and is reached by good roads and from there the Polaris Joey road leaves the river to climb to the divide to the Polaris mines. The dam would have three possible uses; storage of water for the Safford Valley; for hydroelectric power for the district and the copper mines; flood control, which has, in the past years destroyed thousands of acres of agricultural land. The San Francisco River is a sizeable stream and flows the year around.

I do not wish to contend that the river gravels have a practical gold potential as it has been, at times assumed. In fact they do not, though many thousands of dollars in gold have been taken from the Evans Point gravels. These were concentrations deposited from the erosion of the Polaris and the adjoining properties over the ages. On the Polaris \$3000.00 was taken from a wagon load of gravel. Across the river \$7000.00 was taken out of a tunnel in semi-conglomerate. ALWISE: Don't try to repeat it! I did, resulting in being out of pocket some \$6000.00.

In 1906 a steam pump was installed at Evans Point and water was pumped upon the mesa for the Polaris amalgamation mill. Such water rights in Arizona are quite valuable. There are large cottonwood trees on the banks of the river and the scenery is very beautiful. Further to the north the tributaries enter the great pine forests covering thousands of square miles. A paved road leaves Clifton to the north, passing through magnificent scenery and forests where game and fish are plentiful.

The title to this dam site is clear. Nevertheless I am just now completing a quiet title to both the properties which is at the request of a prospective purchaser though such has no purpose as quiet title was completed in 1953, when I foreclosed the \$175,000 trust deed. The price of \$10,000.00 includes both properties, though I will sell them separately. The offer I now have will be accepted by June 30th so immediate attention is necessary for anyone desiring to purchase.

### COMMISSION OFFERED

I will pay the usual commission of 20% to anyone furnishing a buyer. The full commission will be paid at the time the sale is fully consummated, whether it be for cash or on terms.

Since the sale of these mines to Canadian interests two years ago and their return to me, interest in mines and mining has deteriorated. Unquestionably the unprecedented mining boom has largely tapered off. I have offered the Polaris mines on the assumption that they will sell if the price is low enough and the same applies to the dam site.

Recent past mining activities are like the real estate boom here in the Los Angeles area, which has broken all records in history. Selling, subdividing and building have made many millionaires with billions of dollars in profits during the past few years. The deserts are being filled with homes.

I have often considered Mexico for a mining undertaking, though the possibility of getting together a group to locate, investigate and finance a sufficiently sizeable venture to make it worth while can only be determined by an attempt to do so. A few years back, the average investor was still skeptical of the Mexican government, based on it's past conduct. I set up a Mexican corporation out of Mexico City to enter mining but it was not practical for me to "go it alone".

I have incurred a few thousand in expenses looking about in Mexico and additional sums in a little investigating, the more of which one undertakes the more they realize the great extent of the potentials yet existing in that country from undertakings that no one down there goes to the trouble to bother with.

A few years back, when the attitude of the Mexican government changed toward American investors, I attempted to find others to associate in a venture. The period was then no right as the investor was still reluctant, but now this appears to be rapidly changing.

As to what might be more practical and successful is something that in this modern age requires careful scientific investigation and is also affected by the extent of the privileges granted by the Mexican government and other factors. This entails, in most instances, much time and expense that may be considerable where a careful and detailed investigation is conducted.

It is advisable in Mexico for most all undertakings to be under a corporate charter. By so arranging, one can, under Mexican laws, have the rights of a Mexican citizen. There are several forms of corporations, but one in particular that is usually used is Sociedad Anonima and it is considered to be the most satisfactory. Occasionally subsidiaries of American corporations are used but are not too practical.

Taxes are certainly not acceptable. One must offset these by first arranging for special privileges not too difficult to obtain.

Sometime ago I investigated some undertakings in central South America but then decided that unless a very large activity it was not practical since the inconvenience became a substantial obstacle to progressing whereas Mexico there are similar possibilities that do not have some of the disadvantages that one encounters a thousand miles to the south, though taxes in some South American countries are more acceptable than those of Mexico. Gold production, though taxable, but by payment one obtains the right to dispose of it as he sees fit which is certainly not our privilege in the United States, except with placer gold. Mercury in Mexico is among one of the promising fields to enter. I have been brought samples that ran above 10%. No doubt, of course, carefully selected (one should never expect to get an average sample from there).

= My offer to sell is only those properties I own or that I own an interest in.

If you are not interested in this offer, possibly you have someone in mind who will be and can hand them this information.

EVERET L. HAGAN 115 N. Eastern Ave. Los Angeles 22, Calif. Angelus 2-5109

Leases operating on the Polaris mines have not, in the past, resulted in what could be described as successful undertakings, therefore to again lease the mines would not be practical. All attempts to operate the mines were shipping undertakings. Shipping is further impractical because the Phelps-Dodge smelter at Morenci does not handle custom ores, and the nearest smelter is over a 300-mile rail haul and therefore a practical operation would require a mill to concentrate the ores.

In the past years I have received many thousands of dollars income from the property but in view of the large investment that income was substantially inadequate. I have made the mistake in not selling when substantial offers have been made at periods when copper mining was a practical undertaking. I always "kept my sights too high", resulting in losing the deal. Now time does not permit giving these properties any further attention, therefore the best offer buys them both.

As I have clearly, heretofore, indicated, this is not an opportune time to undertake copper mining. Should the property have any merit for the production of gold cannot be determined from the present development in the oxides. All ores increasing in copper content usually do to proportionately in Gold and Silver. This condition is not to be found elsewhere in the quadrangle. What importance this indicates, if any, is unknown.

All of the \$100,000.00 of development has, from an engineering standpoint, been impractically undertaken. This work having been done from 20 to 50 years ago, most of which apparently was carried on under the supervision of an engineer, and the expense resulting in a waste of money. The writer is not versed to recommend what should now be undertaken. The last engineers and geologists, being top men from Canada, recommended the drilling the large veins to the surface. This they prepared to have their company do, which was not carried out because of the continued copper decline. During the time they held my mines, approximately a year, I received almost \$10,000.00, but when copper got below 30¢ they claimed the incentive to go ahead no longer existed, "pulled up stakes" and returned to Canada. This company was one of the world's largest operators of mines.

The title to both of these properties is presently clear and this will be further confirmed by a decree of the Superior Court of Gila County, Arizona in a quiet title proceedings which I instigated at the request of a prospective purchaser who makes a standing offer for both of the properties, which offer I have not accepted, but will should a buyer be not develop. There is actually, though, no purpose in this quiet title action, it only being undertaken to satisfy the prospective purchaser, should I decide to accept their offer.

I will emphasize that the potential in both of these properties is dependent upon more favorable conditions which do not, presently, exist. As to how soon these conditions are going to improve, your guess is as good as mine. For over fifty years, during all recessions or depressions, copper dropped to unexpected low prices.

The Government, as we know, usually waits until the need of something becomes a dire necessity before undertaking to supply it. Apparently during the last war the Grand Point dam project became such a requirement, since it was then they undertook to investigate the dam site and expended a large sum of money in doing so, though, as elsewhere stated there is a possibility that this was being undertaken for private use which the government repudiated and which I was never able to find out, though I expended no particular effort to do so.

Neither for the mining property nor for the dam can I offer anyone an immediate return of profit. This is entirely dependent upon circumstances as with most other real estate investments. The attitude of investors under conditions as of today is the same as it always has been. They won't buy until prices rise and then they clamor to get the chance to buy. I have just sold a large average size tract for \$64,500.00 which I am positive would bring a quarter of a million dollar should normal times exist but properly I had difficulty in finding a buyer at this ridiculously low figure. This, as with the mines and dam etc., I am tired of hawking with and neither do I have time to do so, the result being that the best offer will buy them.

Options are usually customary in transacting such deals but since the offer I make is not an ordinary one and exclusive option cannot be given except for a substantial consideration, though a contract to call at an agreed price will be furnished to anyone.

The lot of July I will be at the mining property, and could show it, and immediately close a deal with anyone and if I am not successful in finding someone to pay a better price than the standing offer of less than what I ask for the properties I will, at that time, accept.

On another copy sheet I have suggested how the property can be easily located from the air should anyone want to take a quick look at both properties and possibly the district in general, as they could land at the Clifton airfield and arrange transportation, or should they advise me when I am in Clifton I will meet them at the airport and show them the property myself, though I could only meet them there from the end of June on for a few days at which time I will be thereabouts.

The climate is ideal for either a spring or fall vacation. Summers, though, are a little warm until the July late starts, and there is an occasional little snow in a winter but from early spring until early summer, or early fall until late you will find no more ideal climate anywhere. The crisp, dry atmosphere is most invigorating and even in the middle of the winter as soon as the sun rises they day becomes warm and pleasant. Because of the climate, scenery and all the surroundings it would be very desirable to make the trip once a year to take care of one's interest there, and it is not believed that you will find a more exhilarating climate anywhere in the United States.

A brief description of the district thereabouts will not be amiss. Entering the area from the south, either from Safford or Duncan (on Highway 70) on the Gila River, one, in thirty miles, drops into the tributary of the Gila, the San Francisco river, on all paved and excellent mountain roads. Clifton is a town of a few thousands built on river flat and a tributary, Chase creek. It is the county seat of Gila County from where, six miles west, is Morenci, the location of the second largest copper pit in the United States, and also the second largest copper operation, where a hundred million dollars was spent of government and Phelps-Dodge money after the war in preparation for the great mining operation that originally started about 75 years ago and is said to have been the first copper production in the state of Arizona. During this period Clifton and Morenci have been the location of five U.S. copper smelters and four large copper companies, all presently having been absorbed by the vast P-D operation.

A road leading up Chase Creek takes one, in a half hour, into the pine timber which continues north for hundreds of miles whereabouts is some of the most magnificent scenery in the United States. The road eventually ends at Springville on Highway 66.

From Clifton, one follows, three miles on a gravel road up the river that is good, to Evans Point from where a climbing mountain road over which it is preferable to use a jeep, climbs 3 miles up to the headwaters of the Polaris mines, from where it is necessary to either walk or ride 2500 feet to the end of the mining property from where a good road could be built to the paved road to Chase creek at a comparative small expense, an altitude of about 7 miles. From the top of the property the Phelps-Dodge holdings adjoin and extend to the south where they own from 12 to 14 hundred claims, I am told the largest mining property in the U.S.

By plane from L.A. one leaves in the morning and arrives at Clifton at 1 o'clock. I can show anyone the property during the afternoon and they could take the 5 o'clock plane the same day out of Clifton for L.A. This I could do four or 30th of June for a few days, during which time I will be at Clifton, or should they desire to see the property at any other time I can give them phone numbers by which they can make arrangements to have someone show them at the airport and show them the property which I am offering for sale.

DEPARTMENT OF MINERAL RESOURCES

State of Arizona

MINE OWNER'S REPORT

Date Oct 21-48

1. Mine: Polaris

2. Location: Sec. 7 Twp. 45 Range 30 E Nearest Town Clifton  
Distance 12 Direction South <sup>of Page - not Clifton</sup> Road Condition poor

3. Mining District & County: Copper Mountain, Greenlee

4. Former Name of Mine: same

5. Owner: J. A. Hogan

Address: Clifton, Ariz.

6. Operator: None

Address:

7. Principal Minerals: Au. Cu. Ag.

8. Number of Claims: Lode  Placer

Patented Unpatented

9. Type of Surrounding Terrain: Rough. High hills, steep valleys.

Sparsely vegetation. El. 4500

10. Geology & Mineralization: 2 1/2" vein quartz strike N70°W

Dip vert. Au. Cu. Ag. Country rock granite on surface.

11. Dimension & Value of Ore Body: 2 1/2" wide pinches down

considerably (about 1") in places. Is series of lenses. Exposed about 700' along strike underground. Outcrop traceable for 1500' on surface. Shaft full of water to adit level.

12. Ore "Blocked Out" or "In Sight":

Ore Probable: *Each prospect*

13. Mine Workings—Amount and Condition:

No.	Feet	Condition
Shafts..... 1	?	Full of water
Raises.....		
Tunnels..... 2		
Crosscuts.....		
Stopes.....	several	

14. Water Supply: *springs sufficient for camp. no data on amount of water mine makes.*

15. Brief History: *Worked intermittently.*

*Workings beginning to cave. Blacksmith shop office and boarding house could be repaired.*

16. Signature: *short visit by Manning 10-78 did not talk to owner. Short visit only.*

17. If Property for Sale, List Approximate Price and Terms:

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
FIELD ENGINEERS REPORT

Mine Polaris Mining Co.

Date July 9, 1956

District Copper Mt. District, Greenlee Co.

Engineer Axel L. Johnson

Subject: Present Status.

Location 12 miles <sup>North</sup> south of Clifton. ---- Sec. 7 - T 4 S - R 30 E

Number of Claims Not reported.

Owner Evert Hagan, 115 North Eastern Ave., Los Angeles 22, Calif.  
(former owner, J. A. Hogan, Clifton, Ariz., now deceased.)

Operator None. Mine is idle. <sup>Hagan</sup>

Principal Minerals Gold, Silver, Copper.

## BUCKLEY REPORT

C. GEOLOGY

THE VICTORY MINING CO. INC.

Reconstruction Finance Corporation

Gentlemen:

The following report upon the present condition of The Victory Mining Co. Inc. is hereby presented. For your convenience a summary is given first, followed by detailed discussion. A sketch map of the vein system accompanies this report.

### SUMMARY

Locations: In the Greenlee Gold Mountain Mining District, 7 miles north of Clifton, Greenlee County, Arizona. A little over a mile from the San Francisco River and from one to three thousand feet higher.

Facilities: An ideal climate, the property can be worked the year round. From the lower to the higher part of the claims there is a change in elevation of about 2000 feet and the slopes are nearly all abrupt and the veins perpendicular.

Geology: Perpendicular fissure veins filled with quartz and porphyry, usually with granite walls and run northeast and southwest. Sedimentaries appear on the western side of the property and the vein walls are sedimentary rock and contacts between sedimentaries and granite. After the veins were formed intrusive dykes of rhyolite and phonolite were thrust up from below, cutting all formations and veins alike. The property is situated near the northeast edge of the Clifton-Morenci mineral belt.

The Golden Eagle Vein is a proven mine with several thousand tons of ore opened 90 ft. between the Golden Eagle and Phonolite Tunnels for a distance of over 300 ft. on each level.

The ore runs well in copper and also some zinc as the smelter sheets and assay certificates show, when the secondary zone is reached, will without doubt produce much higher grade copper as the present works show that a greater portion of the vein is leached and gone down to lower depths.

The vein averages about 5 to 6 ft. wide, the greater portion leached. Depth is all that is needed to reach the secondary zone which in my opinion will produce much higher grade copper and zinc than the present showing and without doubt larger bodies of ore.

The Victory Mining Co. claims covers ten veins, most of them are large continuous veins and give much promise of developing large bodies

of high grade copper, zinc, silver and gold ores because of the fact that we are counting on centering our efforts on the Golden Eagle Vein I will not go into further details regarding the other veins at this time as they are situated up the canyon and off the road and can be developed later.

The Golden Eagle Vein runs parallel to and about 400 feet northwest of the Loco Boy. It crosses Polaris Gulch and continues on northeast.

On the south side of the Dorsey Gulch the vein is developed by the Golden Eagle Tunnel which drifts 330 feet on the vein and the Phonolite Tunnel which after crosscutting drifts 350 feet on the vein 90 feet below the Golden Eagle Tunnel. A winze connects the two and a raise goes to the surface from Golden Eagle Tunnel. These two tunnels show a hard, quartz ore shoot, copper glance and chalcopryrite and sulphide of iron. See smelter settlement sheets.

The average silica for a number of samples is 73.4 per cent, which is so high that the ore will serve for converter lining and therefore get the benefit of a very low smelter rate (about \$3.50 per ton).

If further development is to be done on the Golden Eagle Vein it should be done by sinking the present shaft 2 to 3 hundred feet and drift along the vein on the one, two and three hundred foot levels and stope the ore in the regular manner.

The Golden Eagle Vein is situated near the Southeast border line of the property. The values run good in copper, zinc, silver and gold, compares favorable with the Copper King ore which adjoins this property on the Southwest, (see map of vein systems of Polaris, also read Mr. H. C. White's letter to Polaris Co., dated Nov. 16, 1937, relating statistics of the Copper King Mine and his frank opinion of the similarity of the two properties).

All of the ore which the smelter sheets represents came from the Golden Eagle vein and Phonolite Stope. The pay streak averages from a few inches to about 3 ft. wide on the hanging wall side, the lower portion of the vein has leached and gone down to lower depths.

Exhibit A.

3. Estimated cost of development and plan of operations.

Install an air compressor (used one)	\$1500.00
One hoist (used one)	\$1000.00
Incidentals such as pipe, rails, ore bins, drilling machines pump, timber, road work, small tools, Social Security Ins. etc.	\$3500.00
300 ft. shaft at \$30.00 per ft.	\$9000.00
Drift along the vein both ways on the one, two and three hundred ft. levels, estimated cost	\$5000.00
<b>TOTAL</b>	<b>\$20,000.00</b>

Respectfully submitted,

(Signed) J. W. Buckley

*Evert Hagan*

*115 North Eastern Ave.  
Los Angeles 22, California  
Angelus 2 5109*

Gentlemen:

Your company being listed as active in mining, possibly another mine, if of sufficient merit and "dirt cheap" would be of interest.

If the enclosed is of interest I have considerable technical data that will be sent upon request.

Yours truly,

*Evert L Hagan*

*Rec'd from G. F. Schott  
2-3-58*

THOMAS A. RHODIMER  
Consulting Mining Engineer  
Registered Washington, D.C.

A REPORT ON THE POLARIS GROUP OF MINING CLAIMS  
LOCATED NEAR CLIFTON, GREENLEE COUNTY, ARIZONA

by  
Will D. Hartmand & Thomas A. Rhodimer

**FOREWARD:** This property was visited for the purpose of checking information contained in old reports and for examining possibilities of future development.

**PROPERTY AND LOCATION:** The Polaris group of 41 mining claims is located 5 miles in a northerly direction from Clifton, Greenlee County, Arizona. The property may be reached by following four miles of easily passable road out of Clifton and paralleling the San Francisco River, and a 2-1/2 mile stretch of road which can be traversed by a short wheelbase vehicle. This second stretch of road can be improved, with very little additional work and expense, to allow the passage of any vehicle. The principal workings are approximately 2 miles from the San Francisco River, and there is 2,500 feet of difference in elevation. (NOTE BY OWNER: The lower elevation of the property is 1,500 feet above the San Francisco River, and the higher elevation of the property is 2,500 feet above the lower elevation.)

**HISTORY:** The history of this property has been discussed in some detail by other examiners, so only brief comment will be made here. The property has been mined by various persons and organizations even before the 20th century. Various methods of recovery have been tried and discarded. For the most part development has been ill-advised and haphazard. No large scale development program has ever been attempted. Most of the ore exposed by existing workings has been removed.

**TOPOGRAPHY:** The property is in steep moun terrain and has an elevation differential of approximately 2,500 feet.

**CLIMATE:** The climate is suitable for year-round operation. It is warm and dry in the summer but because of altitude the heat will never be uncomfortable. Light snows may be expected during the winter season but never heavy enough to curtail operation.

**CAMP AND LABOR:** The housing facilities now on the property will accomodate ten men. This will be adequate for a preliminary drilling crew and for the workmen who are to initiate the construction of additional housing. An adequate labor supply can be obtained in the district at the local standard of pay. Said rates are as follows:

Miner.....\$1.35 per hr.  
Labor (underground)..... 1.20 " "  
Labor (surface)..... 1.10 " "

**NATURE OF DEPOSIT AND DEVELOPMENT:** There are ten perpendicular or nearly perpendicular veins on the property which can be traced from the surface. The veins are fissure type filled with quartz and porphyry with granite foot and hanging walls. Examination of existing workings indicate that a contiguous lens formation predominates. Enough ground has been opened to prove that the ore is not in pocket formation. The lenses occur at regular intervals. There is every reason to believe that these lenses will become larger in size and contain better values as depth is attained.

The Golden Eagle Vein has been opened by the Phonolite or Blacksmith Tunnel, the Golden Eagle Tunnel, and the Grey Eagle Tunnel. The Phonolite Tunnel, on the north side of the Dorsey Gulch, has been completely stripped of all developed ore and apparently the vein has been lost and abandoned. The nearby Golden Eagle Tunnel has also been opened for ore on the same vein. Nearly all of the ore developed by this tunnel has also been stroped out. The condition of the dump as well as the thoroughness with which the ore was removed indicate that most of the vein material was of shipping grade. Much more material was removed from the workings than appears on the dump. Both of these workings show the continuous lens formation typical of other workings on the property.

On the north side of Dorsey Gulch, the Grey Eagle Tunnel and a short prospect tunnel above it have failed to expose ore of economic interest. To all appearances the Golden Eagle ore body has been lost in the existing workings. However, some diamond drilling would soon prove or disprove this observation.

A tunnel drive near the intersection of the Black Prince and Lady Franklin veins has been driven approximately 1,000 feet from portal to face on the Lady Franklin vein. However, due to lax and disinterested mining practice, this tunnel has been allowed to cave where it passed through a soft area in the formation.

Near the portal of the aforedescribed tunnel a shaft has been sunk to the Black Prince Vein to a depth of 134 feet. This shaft was sunk in vein material.

**METHOD OF SAMPLING:** Due to its size and extent, the Russian Bear Vein has been given particular attention. This vein will in all probability eventually become the big producer of the property. For this reason, beginning at the east end, 67 samples have

been taken from outcrops along this ore body. All samples taken from this vein and other vein outcrops were trenched across the vein, unless otherwise noted. All underground samples were cut across the vein except where otherwise noted.

Surface samples, in this type of formation, do not indicate the true values to be found in the ore bodies. Due to leaching action, values in this type of ore body are richer at depth than on the surface.

As can be seen from the attached record of sample assays, the Golden Eagle Vein has produced ore of economic interest. This deposit cannot be depended on for future production, but further development by drilling methods is definitely indicated.

**RECOMMENDATIONS:** A survey to accurately locate vein outcrops and a diamond drilling program should be initiated. These two jobs can be accomplished simultaneously and should be supervised by a competent mining engineer. A tractor with angle dozer should be put on the property for road building purposes. This should be done immediately as it will greatly facilitate and speed up exploration work.

Initial exploration work should center around the Black Prince and Lady Franklin veins. Two thousand feet of core drilling at a cost of \$6 a foot will locate the intersection of these two ore bodies and indicate a shaft site. A standard 2-compartment shaft should then be sunk on the site so located. This shaft should be sunk to a depth of 500 feet before production is attempted.

After exploitation of the Black Prince and Lady Franklin veins has commenced, attention should next be turned to the Russian Bear vein. A core drilling program will block out the ore, prove its extent and indicate method for exploitation. Proving of the Russian Bear will provide ore for many years of large scale operation.

At a later date the other veins on the property can be examined. There is reason to believe some of them will become producers.

A mill with modern flotation plant must be set up to treat the ore from this property. This mill should have a minimum capacity of 250 tons a day. The mill should be constructed with the idea of increasing capacity as more ore is developed on the property.

**CONCLUSIONS:** Care has been taken to make conservative estimates for the purpose of this report. There are definite grounds for assuming that the ore bodies will increase in value and possibly in size as depth is attained. There is also a good possibility of encountering other veins, not traceable on the surface, at depth.

With good management, this mine should become a successful producer. It cannot be too strongly recommended that development of this property be instigated only under the direction of a trained and experienced mining engineer. It is obvious that past failures on the Polaris property have been due to ignorance or under-financing.

(signed) Will D. Hartman  
(signed) Thomas A. Rhodimer

SAMPLES FROM OUTCROPS ON RUSSIAN BEAR VEIN, BEGINNING  
AT EAST END

SAMPLE NO.	WIDTH	AU	AC	CU%	TOTAL VALUE
RB 1	6.8 ft.	\$0.35	tr	0	\$ 0.35
" 2	12.3	tr	tr	0	
" 3	7.9	0.70	tr	tr	0.70
" 4	16.4	1.40	tr	0	1.40
" 5	12.3	tr	tr	0	
" 6	9.6	0.35	0.19	0	0.54
" 7	10.3	tr	tr	tr	
" 8	21.3	1.78	tr	0	1.78
" 9	18.2	0.35	tr	0	0.35
" 10	6.5	1.75	tr	0	1.75
" 11	4.4	tr	tr	tr	
" 12	13.9	0.35	0	0	0.35
" 13	9.2	1.05	tr	0	1.05
" 14	8.7	0.70	0.08	0	0.78
" 15	19.2	0.35	0.03	0	0.38
" 16	29.2	tr	0	0	
" 17	28.6	1.05	0.06	0	1.11
" 18	5.6	1.05	tr	0	1.06
" 19	8.4	0.35	tr	0	0.35

SAMPLE NO.	WIDTH	AU	AG	CU%	TOTAL VALUE
RB 20	17.3 ft	\$ 0.70	tr	0	\$ 0.70
" 21	6.9	2.80	0.82	0	3.62
" 22	14.5	1.05	tr	0	1.05
" 23	6.5	0.35	tr	0	0.35
" 24	11.3	0.70	1.10	0.3	3.20
" 25	2.9	2.10	0.08	0	2.18
" 26	12.7	1.05	tr	0	1.05
" 27	11.5	1.75	0.12	0	1.87
" 28	19.4	22.30	0.82	tr	22.12
" 29	39.2	0.35	tr	1.04	5.34
" 30	11.6	3.15	0.99	0	4.14
" 31	9.9	0.35	tr	0	0.35
" 32	14.6	tr	tr	0	
" 33	11.3	0.70	0.82	0	1.52
" 34	16.6	2.45	0.64	tr	3.09
" 35	13.9	10.85	0.47	0	11.32
" 36	11.3	1.40	0.02	0	1.42
" 37	9.9	0.35	tr	tr	
" 38	11.6	2.80	0.71	0	3.51
" 39	3.2	10.15	3.80	9.1	57.55*
" 40	3.4	1.05	0.64	0	1.69
" 41	10.4	0.70	0.04	0	0.74
" 42	14.7	0.35	tr	0	0.35
" 43	21.3	tr	tr	0	
" 44	4.8	1.05	0.45	0	1.50
" 45	3.8	3.15	2.09	3.01	20.14**
" 46	16.3	1.05	0.62	0	1.67
" 47	13.9	1.05	0.52	tr	1.57
" 48	9.9	0.35	tr	tr	
" 49	4.3	2.80	1.31	0.09	8.47
" 50	11.7	0.35	0.05	0	0.40
" 51	8.3	1.40	0.08	tr	1.48
" 52	14.5	2.10	0.73	tr	2.83
" 53	11.7	0.35	tr	0	0.35
" 54	16.3	2.10	0.54	0	2.64
" 55	8.6	1.05	0.82	tr	1.87
" 56	3.7	0.35	tr	0	0.35
" 57	11.9	0.70	tr	0	0.70
" 58	8.6	0.35	0	0	0.35
" 59	0.6	0.35	tr	0	0.35
" 60	10.6	1.08	0.82	tr	1.90
" 61	8.8	tr	tr	0	
" 62	9.9	1.40	0.36	0	1.76*
" 63	11.4	0.35	tr	tr	0.35
" 64	3.7	1.40	tr	0	1.40
" 65	14.5	1.75	0.55	0	2.30
" 66	9.3	10.15	6.64	tr	16.79***
" 67	2.1	14.35	7.28	6.4	52.33***

\* Picked sample. \*\* 10' prospect hole. \*\*\* 4' prospect hole.  
 \*\*\*\* 4' prospect hole picked.  
 Average width - 11.6 ft. Average Value \$2.62.  
 Outcrops from which foregoin g samples were taken extend 5,620 feet.

SAMPLES FROM BLACK PRINCE VEIN, OUTCROPS BEGINNING AT EAST END OF VEIN. Outcrops and pits extend 1,950 ft.

BP 1	5.9	\$ 2.13	0.92	0.32	\$ 4.39
" 2	3.4	0.95	0.28	0.02	1.32
" 3	4.4	2.80	0.36	tr	3.16
" 4	3.1	2.55	10.54	0	12.09- 4' Pit.
" 5	3.1	36.20	12.92	tr	49.12- Picked Sample.
" 6		.35	tr	0	6.35- Dump BP Tunnel.
" 7	4.1	3.15	1.19	tr	4.34
" 8	3.4	13.30	4.17	11.00	70.27
" 9	2.9	9.10	5.72	tr	14.82
" 10	4.9	14.35	8.38	tr	22.73-Open Cut.
" 11	3.5	3.15	0.55	0	3.70-Open Cut.
" 12	4.1	0.70	1.18	3.00	16.28
" 13	2.7	38.15	8.46	6.00	74.21-East face drift BP shaft.
" 14	2.6	35.35	9.28	5.03	60.03-10' from E. face BP drift.
" 15	3.1	34.65	8.83	3.00	57.88- 20' from E. face BP drift.
" 16	2.2	35.80	10.02	6.00	74.42- 30' from E. face BP drift.
" 17	2.7	43.05	6.09	5.00	73.14- 40' from E. face BP drift.
" 18	2.1	37.90	8.22	5.03	71.52- 50' from E. face BP Drift.
" 19	2.7	34.85	6.39	tr	41.24-West face BP drift.
" 20		77.35	14.88	11.00	145.03- Sam- sorted from BP dump.
" 21		120.40	15.51	13.00	198.31-Picked sample from bottom BP shaft.
" 22		42.15	5.73	tr	47.88- Sam- from bottom old shaft 46' west of BP.

Average width - 3.4 ft. Average value - \$33.69.  
 Black Prince Shaft is 134 ft deep.

SAMPLES FROM LADY FRANKLIN VEIN TAKEN FROM BOTH OUTCROPS AND PRESENT WORKINGS

SAMPLE NO.	WIDTH	AU	AG	CU%	TOTAL VALUE
LF 1 (Sorted from tunnel dump)		\$ 64.60	\$ 5.46	1.00	\$ 64.86
" 2 (30' from portal of tunnel width 1.1')	21.65	4.76	tr		26.41
" 3 (40' from portal of tunnel width 1.3')	18.55	3.72	tr		22.27
" 4 (50' from portal of tunnel width 3.4')	7.35	1.90	0		9.25
" 5 (60' from portal of tunnel width 1.8')	16.20	2.92	tr		19.12
" 6 (70' from portal of tunnel width 0.9')	17.85	3.66	0		21.51
" 7 (80' from portal of tunnel width 0.8')	35.70	8.38	tr		33.08
" 8 (90' from portal of tunnel width 1.7')	32.20	6.46	0		38.66
" 9 (100' from portal of tunnel width 0.3')	48.30	8.36	tr		56.66
" 10 (130' from portal of tunnel width 0.8')	33.95	5.64	0		39.59
" 11 (140' from portal of tunnel width 1.2')	28.35	6.39	tr		34.73
" 12 (180' from portal of tunnel width 3.6')	7.35	2.78	0		10.13
" 13 (180' from portal of tunnel width 2.2')	13.30	5.53	2.00		28.45
" 14 (Sample from sorted ore stored in tunnel 185 ft from face-- tunnel caved at this point and unsafe to enter)	50.05	7.92	3.00		72.37

SAMPLES FROM OUTCROPS OF VEIN STARTING FROM EAST END.

LF 15	3.4 ft	\$ 7.35	\$ .94	tr	8.29
" 16	4.1	3.15	.36	0	3.51
" 17	2.9	9.10	.94	tr	10.04
" 18	6.3	3.15	.18	0	3.33
" 19	2.1	3.85	.82	tr	4.87 from 12 ft prospect pit.
" 20	3.6	8.05	.36	0	8.41
" 21	4.3	3.15	.18	tr	3.33
" 22	1.7	12.60	1.72	tr	14.32
" 23	5.8	2.45	.28	0	2.73
" 24	2.1	12.60	.93	tr	13.53-9' Pit.
" 25	3.2	2.80	.85	tr	3.65
" 26	9.0	.70	.08	0	.78
" 27	3.5	7.35	.95	tr	8.30 from shallow pit.
" 28	2.6	3.15	.43	0	3.58
" 29	2.9	65.45	13.22	16.00	155.37 - 23' shaft near contact with RB bottom shaft.
" 30	1.7	31.85	8.28	11.00	93.03 - 73' west of sample 29 outcrop.
" 31	2.8	13.65	3.66	3.00	31.71

SAMPLES FROM WORKED OUT GOLDEN EAGLE VEIN (THIS VEIN MAY PRODUCE MORE ORE AT DEPTH)

GE 1 (Sample from gob under slope)		\$ 32.55	\$ 5.82	5.00	\$ 62.37
" 2 (Sample having wall of slope - red ore)		25.55	3.66	tr	29.21
" 3 (1.1' 30' from tunnel portal)		5.60	1.26	tr	5.86
" 4 (Picked sample from dump - red ore)		58.45	8.97	6.00	96.02

LOWER TUNNEL NORTH CREEK ON GOLDEN EAGLE VEIN

GE 5 (Face of tunnel)	2.5	6.35	0.85	tr	7.20
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SAMPLES FROM WORKED OUT GOLDEN EAGLE VEIN

GE 6 (Top of tunnel 15 ft from face)	1.8	15.15	3.69	tr	18.84
" 7 (Tunnel 30 - above lower tunnel)	2.4	7.35	0.90	tr	8.25
" 8 (10 ft from face.)	1.3	12.95	1.86	1.00	19.61
" 9 (Face of tunnel)	2.8	5.60	0.85	tr	6.45

NOTE: Values used for calculations are:  
 AU -- \$35.00 per ounce.  
 AG -- 0.91 per ounce.  
 CU -- 0.24 per ounce.

All samples were assayed for lead, but only traces found.

Rec'd from G.F. Schott  
2-3-58

TOPOGRAPHY AND GEOLOGY OF THE POLARIS MINING PROPERTY  
PARROT GROUP, 41 CLAIMS

NOTE: For more complete discussion of the above subjects, see COPPER KING AND POLARIS MOUNTAINS (6 pages).

The following is derived from various sources of information, though quite old (principally from 1911 to 1913). Since this period exploration has offered but little additional information to alter conclusions of the former period. Offered is the topography, geology and mineralization, and the investigation (some being extensive and of a technical character). It is hoped this data will offer those who are investigating the possibilities of Polaris a clearer understanding of what will be encountered upon investigation.

**GEOGRAPHY AND GEOLOGY OF PROVINCE:** The state of Arizona may be divided into three physiographic regions: Clifton and Moencopie are within the mountain or central region. The central area consists of Paleozoic sandstones and limestones resting with marked unconformity on pre-Cambrian schists and granites. The prevailing structure is north-south, which often finds topographic expression in the steep frontal ranges of the ranges. In places the older rocks are covered by flows of basaltic rhyolites and andesites of the Tertiary age. Near Clifton the features described above are not so clearly developed. The boundary between the plateau and mountain regions is obscured by heavy volcanic flows, chiefly of basalt, which cover a very large area along the New Mexican boundary between the San Francisco and San Rafael, and which occupy the northern, eastern, and western parts of the Clifton quadrangle, leaving a comparatively small area in the central part in which older rocks show in light. These heavy lava flows effectively hide the range structure in this vicinity and produce an irregular topography without general or dominating features.

**LOCATION:** The Polaris mines are in the Clifton quadrangle, comprise 41 claims and are located 6 miles north of Clifton, Arizona. (Refer to government topographical map of this area.) Sycamore Canyon leads into it on the north and Dorsey Gulch, lower the east, Colorado Gulch from the south and Silver Gulch from the west. Elevation is from 3500 ft. at Head Point (designated on government topographic maps) on the north, to 2700 ft. at the high plateau on Polaris. The divide between San Francisco River and Colorado Creek, reached off Highway 79, and 26 miles north of Stafford, 30 miles northwest of Deming, and off Highway 50, 120 miles south of Springerville, 50 miles southeast of Silver City, N. Mex., Southern Pacific railroad terminal near Lordsburg, N. Mex., 70 miles. Recorded in Mining Location Notices of Graham County, Arizona, Book 1, page 55 to 60 inclusive in Book 2 of Mining Deeds, at pages 340-399 of the records, dated 1914.

Polaris Mountain lies between meridians 102 degrees, 47 minutes, and 10 degrees, 10 minutes west longitude, and parallels 33 degrees 7 minutes and 33 degrees 21 1/2 minutes north latitude, extending from 4 to 6 miles north of Clifton, Graham County, Arizona, and from 1 1/2 to 2 miles east of San Francisco River. The area drains into the river by Colorado Gulch, Polaris Canyon, Silver Gulch, and into Silver Gulch by Dorsey Gulch.

**ACCESSIBILITY:** A county road from Clifton extends up San Francisco River to Evans Point. From there Polaris Road climbs to 200 feet to the southeast corner of the Polaris property. Further accessibility is by trail only, from where the elevation rapidly increases over 2,000 feet.

**TOPOGRAPHY:** The area is composed of high ridges and complex of rugged hills. The geographical structure is evident but very clearly. A core of older rocks, granites, limestones and igneous stone, was deeply and irregularly eroded, and as a result of these conditions the area is of extremely regular topography. The granite masses composed of a series of angular summits, resting above the river, an exceedingly rough and precipitous and higher than the down from the summit. The summits rise boldly, with dark and crags 3,000 feet above the basalt filling the bottom of San Francisco Canyon.

**GENERAL GEOLOGY:** The oldest rocks are pre-Cambrian granite and quartzite schists separated from the covering Paleozoic strata. The base is Cambrian quartzite schists succeeded by Ordovician limestones, Devonian shale, and Argilleous limestones cover the Ordovician limestones, and the uppermost part of the Paleozoic rock-mass consists of heavy bedded limestones of carboniferous age. These strata are present with their usual characteristics. In places they are covered by small areas of shale. A quartz monzonite porphyry or copper, a diatrematic area in the head of the Polaris porphyry, and contains an included mass of fragments of quartzite, limestones and shale. The contact metamorphic aureole of the porphyry is, as a rule, slight and close by, and consists of the contact mass included in the porphyry development of muscovite, sphene, etc., and occasionally copper veins occur. Masses of light colored, white or pink limestones rhyolite and the granite and limestones and Dorsey Gulch, generally with a north-south trend.

**MINERALIZATION:** Polaris is a copper property with gold and silver values, the surface area has been exposed to leaching processes, either retreating away from the contact or re-depositing it or both. The oldest vein in the neighborhood is a contact vein at the surface of 20 feet. Outcroppings of 10 to 20 feet are scattered over the property. These veins between sulfidation and pyrite. After

the veins were formed, inclusive dikes of rhyolite and phonolite were dumped up from below. One near the surface consists of malachite and other oxidized minerals, which, at a depth are replaced by secondary chalcocite, covellite and replacing pyrite. At depth of primary ores, they will doubtless be found to consist of pyrite and calcopryrite. The ore are replacements of granite or porphyry and are accompanied by a soft quartz gangue. The ore bodies occur in shapes of variable form and attain to 8 ft. or more in thickness. The ore is fine grain, siliceous pyrite, calcopryrite and chalcocite. Copper should be the predominant ore in the sulfidation zone between 250 and 500 feet.

**GEOLOGY**

The oldest rocks are pre-Cambrian granite and quartzite schists separated by an important unconformity from the covering Paleozoic strata. Granite is deep-seated rock, and it of the same coarse granular type, consisting chiefly of quartz, orthoclase, and perthite, with a small amount of usually decomposed feldspar. All of the rocks have participated heavily in an uplift and a warping or doming succeeded by faulting. The effects of erosion, leaching and leaching are especially striking. These movements took place during latest Cretaceous or earliest Tertiary time. Erosion has continued the rock since early Tertiary, and a part of the massive granite has been carried away by the stream during the Cretaceous time and has spread out at the foot of the mountain in coarse and roughly bedded deposits.

**POPHYRY:** The porphyry form an almost continuous series of high-granite or predominantly high-granite rocks, covering from 2000 to 3000 feet through mountainous porphyry to granite, which, according to it, may be said the porphyry usually occur in the granite, and also in the Paleozoic strata. The ore bodies are not so high the form of dikes or sills in the Cretaceous schists, and the tendency is to form low, flat-topped masses, probably because of the lighter load and greater flexibility of the covering granite and calcopryrite also makes up the great lenticular mass of granite in and near the head of Silver Gulch on Polaris Mountain.

The stock of quartzite porphyry at the head of Silver Gulch has acquired a somewhat characteristic character of the porphyry in the district. While the limestones and shales on the north is not so extensive, the many small divisions of the same rock in the southern part of the stock are partly covered by epiphyse and rhyolite, and frequently show copper veins. The large dikes covering limestones near the head of Sycamore which on Polaris Mountain has climbed the north hill. These epiphyse appearing only in places. The general mode of movement of this particular alteration district by faulting, and metamorphism, with slight regional metamorphism, and regional metamorphism. The date of the factor is probably the presence of a quartz-bearing porphyry and the need for an alteration in retreating these changes to copper mineralization.

**BLOCK OF QUARTZITE AND LESTER:** Also the block of the porphyry, but before the aspect of the great lava flow, covering the present earth movements during which the horizontal granite was formed so as to acquire gentle dip, and probably, and also the series of blocks which descend from the stock in question. The aspect of important disturbance occurred during the Tertiary, and the paths rather during the earlier Tertiary.

The Copper King-Polaris block was eroded by over 2000 feet of "masses" of high-granite masses, bordered or fault lines are surrounded by granite mass fragments. This block, which outcrops in the mountainous, erodes in a north-northeast direction along the course of San Francisco River. Its highest elevation is 3000 feet, and as it is granite it is not covered by quartzite, limestones and shales, and the quartzite limestones cannot be distinguished. Though it is probably that the low-angled quartzite block is not the product of an elevation of about 700 feet. The dip of the block is either to the north or northeast. The block is limited by the San Francisco River, and total elevation as measured at Evans Point is at least 2000 feet, although it is probable that this amount is in some cases exaggerated on an inclined fault, and not easily traceable to the granite.

**TERTIARY LAYERS:** Erosion has exposed the pre-Cambrian rocks north of Evans Point, where they cover the early basalt and limestones and are in some covered by the high level of the limestones. The Devonian limestones of water runs have been eroded, and the limestones. The horizontal veins formed by the epiphyse and rhyolite, which the water. The dikes of the Copper King and Dorsey limestones were clearly not covered by these deposits.

**CONTACT VEINS:** The copper contact veins of the ore are the contact veins, and granite. Some of the veins are oxidized, and would seem that these oxidized veins had been formed a few hundred feet or more above of porphyry. In some places, the veins consist of pyrite, chalcopryrite, and zinc blende, magnetite being also extensively present. On the surface many of the veins have been completely leached, and now show nothing but limestones and oxidized porphyry. This rule is, however, not general, and, as a result of leaching, oxidized ore are sometimes found in the outcrops of the porphyry. Between the leached outcrops and the deep veins of pyrite and chalcopryrite is a zone of limestones, zone of chalcopryrite and copper minerals, deposited by secondary processes on the surface.

Along many of these dikes movement and dissolving has taken place, and varying amounts of copper ores have been discovered. The veins contain comparatively little gangue, the copper minerals being chiefly distributed through the altered porphyry or through the granite adjoining the dike. At the surface a small amount of carbonate may be found, but they change at slight depths, sometimes only a few feet from the surface, into an ore composed of chalcocite and pyrite which still farther down passes to change into pyrite and chalcocite. The most prominent deposit on this system of veins is the Copper King Mine, which is situated only a few hundred feet below the summit of the mountain of the same name.

In the case the history is more complicated. It has been shown that oxidation does not go to tertiary time, and that the water level then was considerably higher than it is at present. The action of descending sulphate solutions on pyrite, chalcocite was dissipated very extensively, and very likely the great vertical extent of the chalcocite zone ordinarily from 500 to 600 feet is due to slow and gradual changes in the water level. Disintegration and erosion removed the iron cap (the product of direct oxidation of the primary vein) and began to oxidize the exposed chalcocite zone. Practically all of the veins the surface zone or poor ore is due to the direct oxidation of chalcocite. The solutions from this part ascend and add richness to the upper part of the remaining chalcocite zone. But at the present low stand of the water level and the exceedingly dry climate the lower limit of the chalcocite zone probably almost stationary.

A study of the fluid inclusions in the vein quartz proves conclusively that the water was ionized in the presence of aqueous solutions and that the solutions were at a high temperature, for they contained various salts -- in part those of heavy metals, probably iron -- which have been separated during the cooling of the quartz. This affords an entirely new possibility that a vein was deposited by cold surface waters and points to three possible methods of deposition: (1) by atmospheric waters heated in contact with the cooling porphyry, (2) by ascending magmatic waters, or (3) by a mixture of both. In any case the metals must have been derived from the porphyry or from deep seated sources for the porphyry. For, as noted above, the presence of porphyry is the only common factor in all occurrences. In view of the evidence of the fluid inclusions in the quartz, together with the similarity of the products of the vein forming processes to those of contact metamorphism, it is seemingly certain that part of the mineral waters were derived directly from and formed part of the porphyry veins, and probably they were carried indirectly from this source. It seems likely that the flowing water took place after the cooling and some of escape for magmatic waters under the heavy pressure at lower levels, and that they ascended in these fissures, depositing the heavy metals and the silica and acquiring at the same time iron dioxide from the sediments which they traversed. Continued for the surface waters, an erosion gradually exposed the veins, to allow and stretch them in manifold forms.

From the evidence presented above, it must be concluded that most of the deposits, especially the fissure veins, were laid down by iron and attacked by surface waters at an early date, probably one the principal faulting movement, and certainly before the close of the Tertiary basalt and diorite. Oxidation has done so on them for a very long period.

The history of the veins, especially those which traverse the huge stock of follow the porphyry dikes is more complicated, as has been shown that oxidation carried to tertiary time, and the water level then was considerably higher than it is at present. The action of descending sulphate solutions on pyrite, chalcocite was dissipated very extensively, and very likely the great vertical extent of the chalcocite zone, ordinarily is due to slow and gradual changes in the water level. Disintegration and erosion removed the iron cap (the product of direct oxidation of the primary vein) and began to oxidize the exposed chalcocite zone, as practically all of the veins and surface zone of poor ore is due to the direct oxidation of chalcocite. The solutions from this part descend and richness to the upper part of the remaining chalcocite zone. The stock of quartzose porphyry at the head of Silver Creek, the northern margin of the quadrangle, is composed of diorite-hybr and has not changed the surrounding rock.

South of the Polaris mine, the copper ores of Moser and Mar, whether containing as much as 10% or as little as 1%, contain only traces of gold. At the Copper King mine, however, a size amount of gold is found and from this point northward, there is gold becomes considerably richer particularly on Polaris Mountain.

Along the foot of the Copper King Polaris Mine many adoptions for instance, as Richway Gulch, Doney Gulch, Sycamore, Little Spring, and Silver Creek. The water sinks as soon as reaches the volcanic formations at the base of the ridge. Originally, in the district, the ore mined averaged 3% to 4% of which 2% to 3% to 10% copper. In the year 1886 the Copper King mine became productive. Much mineral water has to transport the ore to the wagon road on the San Francisco

SAVER: The ordinary copper ores of Moser and Marcell contain only traces or very small amounts of silver. Even the copper ore rarely carries more than 2 or 3 ounces of silver per ton. SILVER: The late Quaternary bench gravels along the San Francisco above Clifton contain gold, and at several attempts have made to wash them by the hydraulic method, but the results are not encouraging. This gold is derived from a system of veins dipping on Doney, Polaris, and Colorado gulches.

COPPER KING POLARIS MOUNTAIN: These dikes of the Copper King mountain contact the San Francisco River about 3 miles above Clifton, from whose the elevation of 3,500 feet rises to near 7,000 ft at the crest of the ridge directly above the Great Copper King mine, which is west of the river about 2 miles from where the ridge runs to the north and becomes the Polaris half of the mountain, forming a great half circle or horseshoe into which Colorado and Doney Gulches cut, forming steep and precipitous canyon walls hundreds of feet in height. These great granite walls are seen from the river rising more than 3,000 ft to one of the higher elevations of the immediate district. Just above the San Francisco River is Sunset Peak rising 7,500 ft, a volcanic cone, with the river being a fault or vertical movement of some 400 feet.

The top of the Copper King half of the mountain is very rough terrain, but the Polaris half, a few hundred feet less elevation, is on top of a flat or rolling area of some hundred acres which also extends a mile or two to the northwest to where the Malpais Mountains commence.

Near the center of the top of the Polaris ridge there is some twenty or thirty acres of trees with no rocks, and by clearing the brush there would be a smooth airplane landing field. The upper slopes are covered with growth of vegetation, and in some places thick pine timber that has grown since it was cut some fifty years ago for timber. The lower elevations have cottonwood, alder, willows, mesquite and other vegetation.

The half dozen gulches draining this ridge all head into it but none cut through, and empty into the San Francisco River, which empties into the Gila, which empties into the Colorado. The sixteen miles of the San Francisco River south of Clifton, which pass through conglomerates but from Clifton north, without gravel bars, the banks of the river are composed of red granite bluffs which extend back from the river into a mass of lower ridges, minor plateaus and passes, among which there is no well defined range system or any dominating natural feature. The quadrangle elevation is from 3,350 ft to 7,000 ft in the northern part.

BARRY COPPER PRODUCTION: In 1905 the Arizona Copper Company consolidated 30,000,000 lbs.; the Detroit Consolidated 10,000,000; the Shannon Company 5,000,000 lbs. was produced in 1905 to 1906. In 1907 the Shannon Company found that their oxidized ore containing about 2% copper, whereas the Arizona Company mined oxide ore of 3%. Though these copper deposits were first discovered in 1872 little progress was made until the early 1890's, but was studied for the following ten years. It is interesting to note that in 1903 the Arizona district produced 62,000,000 lbs of copper and Clifton 45,000,000 and that year the greatest in the district show now take the same amount of copper in a short period as they did in 1870 in an entire year, besides the fact that copper now has about four times the value it had fifty years ago.

ROADS AND ACCESSIBILITY: The roads that are all paved crossing the district have heretofore been mentioned, being those to the south, east, northeast and north -- now in all. There are no other improved roads in the extremely rough mountainous area except those to the mines of the immediate central district, the road leading to the Polaris being one of these which connects up the banks of the San Francisco River to a point 1/2 mile below the city water works, where it runs from the river to the top of the vein, at Evans Point. This is the location of a future water power storage and power dam which I own. It then climbs up Colorado Gulch and to the north, crossing the heads of small gulches, which carry over decomposed granite, and 2 1/2 miles distant crosses the southeast corner of the Polaris property for 200 yards, where it ends in rough terrain. To go any farther from this it is necessary to go by trail, either up the steep Polaris canyon or by wagon trails. When the top is reached at 6,500 feet the terrain is rough and is either rolling or dotted with small mesas extending from the head of Sycamore Canyon, where the rolling country is a great contrast to that on the San Francisco side of the Clifton Polaris ridge.

In the point where it leaves the low hillsides, it is a well light up gravel road, some 3 ft at least the other side, paved, with sharp curves and roads that may be made if the terrain is good, being either gravel or decomposed granite. A better road equipped with a good construction, a good bridge to the present road was certainly constructed by pick and shovel in the use of wagons.

From the paved road leading north up Clifton the road leads off toward the Polaris, which might be a convenient access to the higher elevations and rolling country on top. The road constructed from the San Francisco side would be expensive because of the necessary grading to make the road level. There would be no difficulty in the construction of a good road across the property but making all of the paved or gravel roads would be expensive unless the upper portions are situated from the west. Possibly some operations commenced roads could be of little use as all mining would probably be done from a central operating tunnel for the entire property. For the location of such a tunnel, engineers suggest an excellent mill-site and that before the road across the Polaris property, from where a proper road tunnel would cut all known veins at once angle.

## BUCKLEY REPORT

C. GEOLOGY

THE VICTORY MINING CO. INC.

Reconstruction Finance Corporation

Gentlemen:

The following report upon the present condition of The Victory Mining Co. Inc. is hereby presented. For your convenience a summary is given first, followed by detailed discussion. A sketch map of the vein system accompanies this report.

### SUMMARY

Locations: In the Greenlee Gold Mountain Mining District, 7 miles north of Clifton, Greenlee County, Arizona. A little over a mile from the San Francisco River and from one to three thousand feet higher.

Facilities: An ideal climate, the property can be worked the year round. From the lower to the higher part of the claims there is a change in elevation of about 2000 feet and the slopes are nearly all abrupt and the veins perpendicular.

Geology: Perpendicular fissure veins filled with quartz and porphyry, usually with granite walls and run northeast and southwest. Sedimentaries appear on the western side of the property and the vein walls are sedimentary rock and contacts between sedimentaries and granite. After the veins were formed intrusive dykes of rhyolite and phonolite were thrust up from below, cutting all formations and veins alike. The property is situated near the northeast edge of the Clifton-Morenci mineral belt.

The Golden Eagle Vein is a proven mine with several thousand tons of ore opened 90 ft. between the Golden Eagle and Phonolite Tunnels for a distance of over 300 ft. on each level.

The ore runs well in copper and also some zinc as the smelter sheets and assay certificates show, when the secondary zone is reached, will without doubt produce much higher grade copper as the present works show that a greater portion of the vein is leached and gone down to lower depths.

The vein averages about 5 to 6 ft. wide, the greater portion leached. Depth is all that is needed to reach the secondary zone which in my opinion will produce much higher grade copper and zinc than the present showing and without doubt larger bodies of ore.

The Victory Mining Co. claims covers ten veins, most of them are large continuous veins and give much promise of developing large bodies

of high grade copper, zinc, silver and gold ores because of the fact that we are counting on centering our efforts on the Golden Eagle Vein I will not go into further details regarding the other veins at this time as they are situated up the canyon and off the road and can be developed later.

The Golden Eagle Vein runs parallel to and about 400 feet north-west of the Loez Boy. It crosses Polaris Gulch and continues on northeast.

On the south side of the Dorsey Gulch the vein is developed by the Golden Eagle Tunnel which drifts 330 feet on the vein and the Phonolite Tunnel which after crosscutting drifts 350 feet on the vein 90 feet below the Golden Eagle Tunnel. A winze connects the two and a raise goes to the surface from Golden Eagle Tunnel. These two tunnels show a hard, quartz ore shoot, copper glance and chalcopryrite and sulphide of iron. See smelter settlement sheets.

The average silica for a number of samples is 73.4 per cent, which is so high that the ore will serve for converter lining and therefore get the benefit of a very low smelter rate (about \$3.50 per ton).

If further development is to be done on the Golden Eagle Vein it should be done by sinking the present shaft 2 to 3 hundred feet and drift along the vein on the one, two and three hundred foot levels and stope the ore in the regular manner.

The Golden Eagle Vein is situated near the Southeast border line of the property. The values run good in copper, zinc, silver and gold, compares favorable with the Copper King ore which adjoins this property on the Southwest, (see map of vein systems of Polaris, also read Mr. H. C. White's letter to Polaris Co., dated Nov. 16, 1937, relating statistics of the Copper King Mine and his frank opinion of the similarity of the two properties).

All of the ore which the smelter sheets represents came from the Golden Eagle vein and Phonolite Stope. The pay streak averages from a few inches to about 3 ft. wide on the hanging wall side, the lower portion of the vein has leached and gone down to lower depths.

Exhibit A.

3. Estimated cost of development and plan of operations.

Install an air compressor (used one)	\$1500.00
One hoist (used one)	\$1000.00
Incidentals such as pipe, rails, ore bins, drilling machines pump, timber, road work, small tools, Social Security Ins. etc.	\$3500.00
300 ft. shaft at \$30.00 per ft.	\$9000.00
Drift along the vein both ways on the one, two and three hundred ft. levels, estimated cost	\$5000.00
<b>TOTAL</b>	<b>\$20,000.00</b>

Respectfully submitted,

(Signed) J. W. Buckley

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The Victory Mining Co. claims covers ten veins, most of them are large continuous veins and give much promise of developing large bodies

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
MINE OWNER'S REPORT

Date 10-22-42

1. Mine *The Victory Co, Inc.*
2. Location *Clifton, Ariz.*
3. Mining District & County *Gold Mountain, Greenlee*
4. Former name *Polaris Iscamp*
5. Owner *The Victory Co, Inc.*
6. Address (Owner)
7. Operator *Same*
8. Address (Operator) *Box 571, Clifton*
9. President, Owing Co.
- 9A. President, Operating Co.
10. Gen. Mgr. *J. W. Buehley*
14. Principal Minerals *Cu, Zn, Au.*
1. Mine Supt. ✓
15. Production Rate ✓
2. Mill Supt. ✓
16. Mill: Type & Cap. ✓
3. Men Employed
17. Power: Amt. & Type ✓
8. Operations: Present *None*

9. Operations: Planned *Reopen Golden Eagle section if \$20,000.00 P.F.C. loan is granted & sink 300 ft. below lowest adit.*

20. Number Claims, Title, etc. *41*

#23

Description: Topography & Geography

~~P.F.C.~~  
*10 Perp. fissure veins filled with quartz & porphyry - granite walls. Intensive shysolite dikes cut all NE formations - part mineral. Golden Eagle vein 5'-6' wide, partially leached. High silica cont.*

22. Mine Workings: Amt. & Condition

*2 adits on Golden Eagle with max 250 ft. backs. other workings not described.*

Ore: Positive & Probable, Ore Dumps, Tailings "Several thousand tons"

A. Dimensions and Value of Ore body  
5-6 ft. vein, ~~only sh.~~ 300 ft.  
one shoots

Mine, Mill Equipment & Flow-Sheet

Road Conditions, Route *Good*

Water Supply *ample*

Brief History

Special Problems, Reports Filed *Lack of funds. — Buskley report in file.*

Remarks *High silicious ore has been shipped from nec. workings.*

If property for sale: Price, terms and address to negotiate. *No.*

32. Signature *(Data from Mrs. Buskley)*

3. Use additional sheets if necessary.

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
OWNERS MINE REPORT

Date October 22, 1942

1. Mine The Victory Company, Inc.
2. Mining District & County Gold Mountain Mining District, Greenlee, County
3. Former name Polaris Group
4. Location Clifton, Arizona
5. Owner The Victory Company, Inc.
6. Address (Owner)
7. Operator Same
8. Address (Operator) Box 571, Clifton, Arizona
9. President
10. Gen. Mgr. J. W. Buckley
11. Mine Supt.
12. Mill Supt.
13. Principal Metals Copper, zinc, gold
14. Men Employed
15. Production Rate
16. Mill: Type & Cap.
17. Power: Amt. & Type
18. Operations: Present None.
19. Operations Planned Reopen Golden Eagle section if \$20,000 RFC Loan is granted. Sink 300 ft. below lowest adit.
20. Number Claims, Title, etc. 41 Claims.
21. Description: Topography & Geography
22. Mine Workings: Amt. & Condition Two adits on Golden Eagle with maximum 250 ft. backs. Other workings not described.

23. Geology & Mineralization Ten Perp. fissure veins filled with quartz and porphyry-- granite walls. Intrusive rhyolite dikes cut all N.E. formations--post mineral. Golden Eagle Vein 5 feet to 6 feet wide, partially leached. High silica content.

24. Ore: Positive & Probable, Ore Dumps, Tailings "Several thousand tons."

24-A Vein Width, Length, Value, etc. 5 to 6 foot vein. 300 foot ore shoots.

25. Mine, Mill Equipment & Flow Sheet

26. Road Conditions, Route Good.

27. Water Supply Ample.

28. Brief History

29. Special Problems, Reports Filed Lack of funds. Buckley report in file.

30. Remarks High silicious ore has been shipped from miscellaneous workings.

31. If property for sale: Price, terms and address to negotiate. No.

32. Signed.....  
(Data from Mr. Buckley)

33. Use additional sheets if necessary.

*my*  
DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
OWNERS MINE REPORT

Date August 8, 1939

Mine **Polaris Group**

District **Clifton-Morenci**

Location **Greenlee County**

Former name

Owner **J. A. Hagan**

Address **Clifton, Arizona**

Operator **Polaris Mining Company**

Address " "

President

Gen. Mgr.

Mine Supt.

Mill Supt.

Principal Metals **Gold, silver, copper**

Men Employed **Two**

Production Rate **None**

Mill: Type & Cap. **None**

Power: Amt. & Type **None**

Operations: Present **Development**

Operations Planned **For sale**

Number Claims, Title, etc. **41, held by location**

Description: Topog. & Geog. **Elevation 4,000 to 6,500 - 8 miles from Clifton,  
1 mile from river**

Mine Workings: Amt. & Condition **Mostly tunnels, one badly caved, the balance  
more or less accessible.**

(over)

Geology & Mineralization Porphyry-quartz veins, granite walls. Veins large and continuous, some shipping ore, but classed as a milling proposition

Ore: Positive & Probable, Ore Dumps, Tailings Two or three thousand tons blocked out and wide veins of milling ore uncovered

Mine, Mill Equipment & Flow Sheet

Road Conditions, Route Six miles fair mountain road, two miles narrow

Water Supply Possibly enough on property for small pilot mill if water used over. Plenty of water one mile distant.

Brief History Numerous prospectors grouped their claims to form a stock company, which finally went broke about 1905. The ore is complex and the mill they had would not save the values.

Special Problems, Reports Filed

Remarks

If property for sale: Price, terms and address to negotiate.

Price \$100,000. Small payment down and balance on very favorable terms. J. A. Hagan, Box 933, Clifton, Arizona

Signed..... J. A. Hagan

Use additional sheets if necessary.

DEPARTMENT OF MINERAL RESOURCES  
STATE OF ARIZONA  
OWNERS MINE REPORT

Date August 8, 1939

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District **Clifton-Morenci**

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Owner **J. A. Hagan**

Address **Clifton, Arizona**

Operator **Polaris Mining Company**

Address " "

President

Gen. Mgr. **J. W. Buckley**

Mine Supt.

Mill Supt.

Principal Metals **Gold, silver, copper**

Men Employed **Four**

Production Rate **None**, at present.

Mill: Type & Cap. **None**

Power: Amt. & Type **Compressor and air drills**

Operations: Present **Development**

Operations Planned **The plan at present, is to ship ore enough to purchase and install a mill, or, sell.**

Number Claims, Title, etc. **41, held by location**

Description: Topog. & Geog. **Elevation 4,000 to 6,500 - 8 miles from Clifton, 1 mile from river**

Mine Workings: Amt. & Condition **Mostly tunnels, one badly caved, the balance more or less accessible.**

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Use additional sheets if necessary.

## THE POLARIS MINE

THE DATA COVERS A PERIOD OF APPROXIMATELY FORTY YEARS OBTAINED FROM COMPANY RECORDS, U.S. GOVERNMENT SOURCES, GEOLOGISTS, ENGINEERS AND MINING MEN, ETC.

AREA - Southeastern Arizona and Eastern Greenlee County

PROPERTY - Forty-one claims of gold, silver and copper development \$100,000.00. Three thousand feet of working (tunnels) over five miles extensive mineralized traceable veins reaching fifteen to twenty feet wide extending across property. Continuous good assays. Year-around excellent climate, water plentiful. Now ready for Mill.

MILL SITE INCLUDES Evans Point Dam and Mill Site fifty-five acres which project recently passed Senate contemplating construction of \$1,000,000 dam.

ACCESSIBILITY - Three miles of good county road. Three miles of fair mountain road.

HISTORY dates back prior to this century when rasters were used in obtaining surface gold value.

TITLE by location and deed from the United States executed by Theodore Roosevelt.

MINERALIZATION - Fissure veins in granite. Inclusive dikes of rhyolite and phonolites. Surface ores, malachite and other oxidized minerals. In depth replaced by secondary chalcocite, coating and replacing pyrite. The ore is fine-grain, siliceous pyrite, calcopyrite, and calcopyrite.

GEOLOGY - The oldest rocks are pre-cambrian granite and quartzite schists separated from the covering paleozoic strata. The base is cambrian, quartzite, sandstone, succeeded by ordovician limestone, devonian shale and argillaceous limestone cover of the ordovician beds and the upper part of the paleozoic sediments consist of heavy bedded limestone of carboniferous age. A quartz monzonite porphyry occupies a semi-circular area in the basin of the Polaris property and contains as inclusive masses fragments of quartzite, limestone and shale. The contact metamorphic action of this porphyry included in the porphyry development of magnetite and epivote. Dikes of light colored white or pink colored rhyolite cut the granite.

TOPOGRAPHY - The area is composed of high ridges and complex rugged hills. The geographical structure explains this condition of affairs very clearly. A core of older rocks, granite, limestones and sandstones was deeply and irregularly eroded, as a result of these conditions the area is an extremely irregular topography.

GENERAL INFORMATION - Elevation from 3,500 feet at Evans Point to 6,500 feet at crest of Polaris. San Francisco River passing through Evans Point, a sizable stream. Property extends East and West one mile, approximately the same North and South. The terrain is very irregular and probably the surface area is twice the survey area.

ASSAYS: from engineers report May, 1947. Total samples 129. Group One - 67 samples. Extent 5,620 feet. Outcroppings and surface workings. Value from 38¢ to \$57.88. Group Two - Samples 22. Extending 1,950 feet. Lowest value 35¢. Highest value \$128.00. Average value \$73.00. Group Three - 14 samples, extending 4,000 feet. Lowest value \$9.00. Highest value \$72.00. Average value \$34.08 (from workings) Group Four - 17 samples. Lowest value \$3.33. Highest value \$155.37. Average value \$12.79. Extent of sampling 4,000 feet. Group Five - 9 samples. Lowest sample \$5.86. Highest sample \$96.02. Average \$28.09.

### EXCERPTS AND STATEMENTS FROM THE AVAILABLE DATA ON THE POLARIS PROPERTY

By Engineers and Geologists Weideman, Lindgreen, Ferrish, James, Winchel, Calhoun, Reid, etc.

MINERALIZATION "The mineralization of this property is not given sufficient credit in the old reports (40 years ago). Possibly the examining engineers in those days realized the great difficulties to be encountered by the impossibility of milling, distance to smelter and low value of metal."

SUPERVISION "The early operation was conducted under gross mismanagement. Engineers and geologists' advice evidently was not obtained and it is presumed that the owners were not mining men."

OPERATION "Incompetency, mismanagement and neglect are clearly indicated. Under proper supervision and finances this property should have been a big producer long ago."

SCARCITY "An extensively mineralized area of a showing of this character is difficult to locate that is not already in operation. The ore deposits cover an exceptionally large area. Indications are that it is deep-seated and some surprising showings are possibly evident in the sulphides."

EXPLORATION "Determination of the potentialities of this property would require extensive exploration because of the extent of the mineralization. Values, both shipping and milling, have been encountered generally throughout the property where any particular degree of development was undertaken. The indications for exceptionally large ore bodies are excellent."

DEVELOPMENT "The eventual large scale mining of this property should be from a 4,000 ft. tunnel from Dorsey Gulch, cutting all of the immense veins. This tunnel should be a haulage tunnel and acting as a drainage tunnel from which it is indicated ample water will be supplied for all milling."

DEEP SEATED "It is deep seated and eventually the deposits will be surprisingly large."

"For more than 100 assays principally of the surface showing, values have been persistent and indicate that all of these veins carry pay ore as soon as depth is obtained, depth being necessary to avoid the area where the values are lost, near the surface. The geology is such that you cannot expect to find other than small enriched areas near the surface."

SURFACE VALUES "Don't underestimate your values from the surface showing. The values that were once there are not there now--they're practically all leached away."

"It is estimated that five thousand tons of ore remain to be stoped out of the tunnel on the Lady Franklin Vein. Samples taken in this tunnel indicate that the value of this ore will be \$30. a ton. More wealth will be encountered in the Russian Bear Vein than is indicated in outcrop samples. From other evidence encountered on the property \$20. a ton would be a conservative estimate on the value of this ore body. Four million tons of ore will be developed by each thousand feet of depth on this deposit. Only a drilling program can prove actual depth and values to be found here."

"Sample assays from the Black Prince and Lady Franklin Veins indicate that \$30. a ton will be a conservative estimate for the value of ore contained in these deposits. A shaft sunk near the intersection of these two veins can be used to exploit them both. Such a shaft, sunk to five hundred feet, will develop in excess of one million tons of ore."

FORMERLY ORE USELESS "The old Polaris Company had no alternative than to try to locate the pockets of rich ore. The large bodies of milling ore were entirely useless to them; because of their complex condition, they could be milled by no known method in those days."

WELL MINERALIZED "An unusual number of strong, persistent veins are found on the Polaris."--"I have seldom seen a large group that would average as many lineal feet of well mineralized veins per claim."

PLACER AREA "A 6 mile placer area extending along the San Francisco River implicitly indicates that the eroded area of the Polaris and vicinity contained a very substantial amount of gold."

6 MILLION TONS ORE "The Lady Franklin and Russian Bear Veins, which extend across the property for 6,500 ft. and which will average more than 15 ft. in width, will undoubtedly develop 6 to 7 million tons of ore above the 500 ft. level, while the great thickness of these formations in this district assures a continuance of veins far below the limit of profitable extraction."

DEPTH NECESSARY "It is difficult to understand that with so many excellent sites to gain depth and that there exist on this property more than 3,000 lineal feet of workings and only a maximum depth of under 200 feet. The most important thing on this property was to reach the ore where it would be more stable. This does not appear to be far from the present deepest workings."

CONCLUSION "The property is of sufficient size and the ore bodies adequately extensive to permit large scale operations. The mineralization is of such a character that there is a large amount of actual ore available with great potential possibilities and a number of areas of the property have not yet been prospected. A property with \$100,000, invested in connections therewith though not entirely a practical expenditure, nevertheless, such an amount has been sufficient to permit the conclusion that the property is to be a producer on a substantial scale."

EVANS POINT PLACER Owners question value of placer gravel. It is, however, an indicator of gold deposits once existing on the Polaris. Geologists conclude this placer area, extending for several miles, is eroded from the Polaris and surrounding property.

ENGINEERING, GEOLOGICAL U.S. GEOLOGICAL SURVEY DATA, BUREAU OF MINES, VEIN MAPS, TOPOGRAPHICAL MAPS, PHOTOGRAPHS, ASSAYS, HISTORY, ETC., AVAILABLE ON REQUEST.

## THE POLARIS MINE

THE DATA COVERS A PERIOD OF APPROXIMATELY FORTY YEARS OBTAINED FROM COMPANY RECORDS, U.S. GOVERNMENT SOURCES, GEOLOGISTS, ENGINEERS AND MINING MEN, ETC.

**AREA** - Southeastern Arizona and Eastern Greenlee County

**PROPERTY** - Forty-one claims of gold, silver and copper development \$100,000.00. Three thousand feet of working (tunnels) over five miles extensive mineralized traceable veins reaching fifteen to twenty feet wide extending across property. Continuous good assays. Year-around excellent climate, water plentiful. Now ready for Mill.

**MILL SITE INCLUDES** Evans Point Dam and Mill Site fifty-five acres which project recently passed Senate contemplating construction of \$1,000,000 dam.

**ACCESSIBILITY** - Three miles of good county road. Three miles of fair mountain road.

**HISTORY** dates back prior to this century when rasters were used in obtaining surface gold value.

**TITLE** by location and deed from the United States executed by Theodore Roosevelt.

**MINERALIZATION** - Fissure veins in granite. Inclusive dikes of rhyolite and phonolites. Surface ores, malachite and other oxidized minerals. In depth replaced by secondary chalcocite, coating and replacing pyrite. The ore is fine-grain, siliceous pyrite, calcopyrite, and calcocrytite.

**GEOLOGY** - The oldest rocks are pre-cambrian granite and quartzite schists separated from the covering paleozoic strata. The base is cambrian, quartzite, sandstone, succeeded by ordovician limestone, devonian shale and argillaceous limestone cover of the ordovician beds and the upper part of the paleozoic sediments consist of heavy bedded limestone of carboniferous age. A quartz monzonite porphyry occupies a semi-circular area in the basin of the Polaris property and contains as inclusive masses fragments of quartzite, limestone and shale. The contact metamorphic action of this porphyry included in the porphyry development of magnetite and epivote. Dikes of light colored white or pink lithoidal rhyolite cut the granite.

**TOPOGRAPHY** - The area is composed of high ridges and complex rugged hills. The geographical structure explains this condition of affairs very clearly. A core of older rocks, granite, limestones and sandstones was deeply and irregularly eroded, as a result of these conditions the area is an extremely irregular topography.

**GENERAL INFORMATION** - Elevation from 3,500 feet at Evans Point to 6,500 feet at crest of Polaris. San Francisco River passing through Evans Point, a sizable stream. Property extends East and West one mile, approximately the same North and South. The terrain is very irregular and probably the surface area is twice the survey area.

**ASSAYS** from engineers report May, 1947. Total samples 129. Group One - 67 samples. Extent 5,620 feet. Outcroppings and surface workings. Value from 38¢ to \$57.88. Group Two - Samples 22. Extending 1,950 feet. Lowest value 35¢. Highest value \$198.00. Average value \$33.00. Group Three - 14 samples, extending 4,000 feet. Lowest value \$9.00. Highest value \$72.00. Average value \$34.08 (from workings) Group Four - 17 samples. Lowest value \$3.33. Highest value \$155.37. Average value \$12.79. Extent of sampling 4,000 feet. Group Five - 9 samples. Lowest sample \$5.86. Highest sample \$96.02. Average \$28.09.

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By Engineers and Geologists Weldeman, Lindgreen, Ferrish, James, Winchel, Calhoun, Reid, etc.

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"Sample assays from the Black Prince and Lady Franklin Veins indicate that \$30. a ton will be a conservative estimate for the value of ore contained in these deposits. A shaft sunk near the intersection of these two veins can be used to exploit them both. Such a shaft, sunk to five hundred feet, will develop in excess of one million tons of ore."

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**CONCLUSION** "The property is of sufficient size and the ore bodies adequately extensive to permit large scale operations. The mineralization is of such a character that there is a large amount of actual ore available with great potential possibilities and a number of areas of the property have not yet been prospected. A property with \$100,000, invested in connections therewith though not entirely a practical expenditure, nevertheless, such an amount has been sufficient to permit the conclusion that the property is to be a producer on a substantial scale."

**EVANS POINT PLACER** Owners question value of placer gravel. It is, however, an indicator of gold deposits once existing on the Polaris. Geologists conclude this placer area, extending for several miles, is eroded from the Polaris and surrounding property.

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A SYNOPSIS ON THE  
POLARIS MINING AND MILLING PROPERTY  
41 CLAIMS  
and  
EVANS POINT DAM SITE  
55 acres

The short excerpts herein are taken from the extensive data concerning the Polaris Property. The mining information dating from the early 20th Century is taken largely from the records of the then operating company, the United States Geological Survey, Bureau of Mines and other agencies and sources of information. There is also available recent engineering and geological reports and other data on this property. Since 1908 or 1910 the property has not been operated or developed.

**PROPERTY** Polaris 41 claims (Parrot) recorded in Mining Location Notices, of Greenlee County, Book 3, Pages 56 to 83 inclusive in Book Number 2, of Mining Deeds, at Pages 388-390 of the Records of Greenlee County, Arizona.  
EVANS POINT May 27, 1903  
Selection No. 2745

THE UNITED STATES OF AMERICA

Now know ye, that the United States of America by these presents, do give and grant unto the said William F. Hagan, and to his heirs, the lands as follows:

**Evans Point**

In testimony whereof, I, Theodore Roosevelt, President of the United States of America, have caused these letters to be made patent, and the seal of the General Land Office to be hereunto affixed,  
Given under my hand, at the City of Washington the twenty seventh day of May in the year of our Lord One Thousand Nine Hundred and Three, and of the independence of the United States the One Hundred and Twenty Seventh.

By the President: T. Roosevelt.

Recorded, Miscellaneous Vol. 452 Page 426,  
Filed and Recorded July 6th, 1903 at 9 A.M.

**NOTE:** The father of the present owners acquired Evans Point in 1903. At that early date the U.S. Government failed to reserve dam site rights as is now customary.

**AREA** The Polaris lies between meridians 100 15' and 100 30' West Longitude and parallels 33 and 33 15' North Latitude. The area falls within the Eastern part of Greenlee County, in the Southeastern part of Arizona, and the dividing line between Arizona and New Mexico is 11 miles distant from its Eastern boundary and the Mexican frontier lies 115 miles South of its Southern boundary.

**LOCATION** The Polaris (Goldenbird) Mining Property, also known as the Parrot Group, is located 6 miles North of Clifton. (Refer to any government topographical map of that area). Sycamore Canyon heads into it on the North and Dorsey Gulch from the East, Colorado Gulch from the South and Flacer Gulch from the West. Elevation from 3,500 ft. at Evans Point (designated on all government topographical maps) on the river, to 6,500 ft. at the highest elevation on the Polaris. Evans Point is located 3 miles North of Clifton, on the San Francisco River, at the river's narrowest point.

**CLIFTON, ARIZONA** Reached from Highway 70, 23 miles North from Selmonsville, 30 Miles N.W. of Duncan and from Highway 60, 120 miles South of Springerville. Also 50 miles S.E. on highway from Silver City, New Mexico. Railroad terminus (wide gauge) from Lordsburg, New Mexico, 70 miles.

**ACCESSIBILITY** A county road from Clifton extending up the San Francisco River to Evans Point and from there the Polaris Road climbs up 800 ft. to the S.E. corner of the Polaris Property.

**HISTORY** The Polaris is in an area of Arizona said to be the location of the first discovery of gold in this state. The copper production dates back to the 70's.

**GENERAL INFORMATION** The Polaris road terminates about 500 yards into the property. At 6,000 ft. there is an excellent potential airfield, and at Evans Point, another 2,500 ft. below.

Water is available on the property and the San Francisco River, at Evans Point, is a sizeable stream. Property extends East and West about one mile and North and South the same distance. The terrain is very irregular and probably the surface area is twice that of the survey.

**MINERALIZATION** The widest vein yet encountered is a cross-cut near the surface of 40 ft. Outcroppings of 10 to 20 ft. are scattered over the property. Fissure veins in granite with a strike of a N.E., S.W. slight dip to the West. The vein walls are sedimentary rock and contacts between sedimentaries and granite. After the veins were formed, inclusive dikes of syenite and phonolite were flushed up from below. The ores near the surface consist of melachite and other oxidized minerals, which at a depth are replaced by secondary chalcocite, coating and replacing pyrite. In depth the primary ores will doubtless be found to consist of pyrite and calcopyrite. The ores are replacement of granite or porphyry and are accompanied by a schist quartz gangue. The ore bodies occur in chutes of variable form and attain to 20 ft. or more in thickness. The ore is fine grain, siliceous, pyrite, calcopyrite and chalcocite.

**GENERAL GEOLOGY** The oldest rocks are pre-Cambrian granite and quartzite schists separated from the covering paleozoic strata. The base is cambrian, quartzite sandstone, succeeded by ordovician limestone, devonian shale and argillaceous limestones cover the ordovician beds and the uppermost part of the paleozoic sediments consist of heavy bedded limestone of carboniferous age. The limestones are present with their usual characteristics. In places they are covered by small areas of shales. A quartz monzonite porphyry occupies a semi-circular area in the basin of the Polaris Property and contains as included masses fragments of quartzite, limestone and shale. The contact metamorphic action of this porphyry is as a rule slight and close by and contents of the smaller masses included in the porphyry development of magnetite, epivote and occasionally copper stains noted. Dikes of light colored white or pink lithoidal rhyolite cut the granite and Colorado and Dorsey Gulches, generally with a Northwesterly trend.

**TOPOGRAPHY** The area is composed of high ridges and complexes of rugged hills. The geographical structure explains this condition of affairs very clearly. A core of older rocks - granite, limestones and sandstones - was deeply and irregularly eroded, as a result of these conditions the area is an extremely irregular topography. The granite "masses" rising on the West Side of the San Francisco River is composed of a series of imposing buttresses towering above the River, exceedingly rough and precipitous amphitheatre leading down from the summit to the slopes of Colorado and Dorsey Gulches. The buttresses, limited by Sycamore Canyon on the North and Silver Creek on the South, has an elevation of 6,500 ft., and rises boldly with dark red crypts 2,000 ft. above the basalts filling the bottom of San Francisco Canyon.

**EXCERPTS AND STATEMENTS FROM THE AVAILABLE DATA ON THE POLARIS PROPERTY**  
By Engineers and Geologists: Welders, Lindgren, Ferrish, James,  
Winchel, Calhoun, Reid, etc.

"There are ten perpendicular or nearly perpendicular veins on the property which can be traced from the surface. The veins are fissure type filled with quartz and porphyry with granite foot and hanging walls. Examination of existing workings indicate that a continuous lens formation predominates." There is every reason to believe that these lenses will become larger in size and contain better values as depth is attained. "Much more material was removed from the workings than appears on the dump. The fact that all of the ore encountered in these lenses was removed from wall to wall indicates that it was of economic value." "It is estimated that five thousand tons of ore remain to be stoped out of the tunnel on the Lady Franklin vein. Samples taken in this tunnel indicate that the value of this ore will be \$30. a ton." "More wealth will be encountered in the Russian Bear Vein than is indicated by outcrop samples. From other evidence encountered on the property \$20. a ton would be a conservative estimate on the value of this ore body. Four million tons of ore will be developed by each thousand feet of depth on this deposit. Only a drilling program can prove actual depth and values to be found here."

"Sample assays from the Black Prince and Lady Franklin Veins indicate that \$30. a ton will be a conservative estimate for the value of ore contained in these deposits. A shaft sunk near the intersection of these two veins can be used to exploit them both. Such a shaft, sunk to five hundred feet, will develop in excess of one million tons of ore."

"A mill with modern flotation plant must be set up to treat the ore from this property. This mill should have a minimum capacity of two hundred and fifty tons a day. The mill should be constructed with the idea of increasing capacity as more ore is developed on the property."

**"CONCLUSIONS"** The mineral already in sight is sufficient to make this property a successful producer. Care has been taken to make conservative estimates for the purpose of this report. There is definite grounds for assuming that the ore bodies will increase in value and possibly in size as depth is attained. There is also a good possibility of encountering other veins, not traceable on the surface, at depth."

**FOLLOWING SAMPLES RECENTLY TAKEN BY ENGINEERS ARE EXAMPLES OF 129 SAMPLES TAKEN**

**SAMPLES TAKEN MAY, 1947 FROM THE OUTCROPS ON RUSSIAN BEAR VEIN, BEGINNING AT EAST END** Total samples 67. Maximum width from which sample was taken 39.2 ft., A.U. \$0.35, A.G. tr., C.U.% 1.04, Value \$5.34. Highest value in wide outcrops 19.4', A.U. \$21.30, A.G. \$0.82, C.U.% tr., Value \$22.12. Highest value picked sample, 3.2', A.U. \$10.15, A.G. 3.80, C.U.% 9.1, Value \$57.55. Outcrops from which the foregoing samples were taken extend 5,620'

**SAMPLES FROM OUTCROPS OF BLACK PRINCE VEIN BEGINNING AT EASTERLY END OF VEIN** Total samples 22. Highest sample taken open cut 4.9', A.U. 14.35, A.G. 8.38, C.U.% tr., Total Value \$32.73. Picked sample width 3.1', A.U. 35.20, A.G. 12.92, C.U.% tr., Total Value \$49.12.

**SAMPLES TAKEN FROM BLACK PRINCE VEIN WORKINGS** Highest value (picked samples from bottom of Black Prince Shaft), A.U. \$130.40, A.G. 1.51, C.U.% 13.00, Total Value \$198.31. Sample sorted from Black Prince Dump, A.U. \$77.35, A.G. 14.88, C.U.% 11.00, Total Value \$145.03. Average Value 22 samples, \$33.69. Outcrops and working from which foregoing samples were taken extend 1,950'.

**SAMPLES FROM LADY FRANKLIN VEIN TAKEN FROM BOTH OUTCROPS AND PRESENT OPEN CUT WORKINGS** Highest sample taken 2.9' bottom of 22' shaft where vein contacts Russian Bear. A.U. \$65.45, A.G. 13.22, C.U.% 16.00, Total Value \$155.37. Outcrop 1.7' taken 73' West of sample 29 (outcrop). Total Value \$93.03. Sample sorted from tunnel dump, Value \$54.86. Highest Value taken in tunnel \$44.08. Sample taken from ore stores in tunnel 185' from face - Total Value \$72.37. Extent of vein in workings from which foregoing samples were taken, 4,000'. All samples taken were tramped across the vein unless otherwise noted in both outcrop and underground sampling.

**OWNERS NOTE:** I am informed that the foregoing compilation, recently prepared among some additional, was at an expense of \$4,000.

**MISCELLANEOUS INFORMATION ON POLARIS WHICH HAS BEEN EXTRACTED AND CONDENSED AS MUCH AS POSSIBLE FROM THE SOMEWHAT EXTENSIVE INFORMATION ON THE POLARIS HOLDINGS**

**MINERALIZATION** "The mineralization of this property is not given sufficient credit in the old reports (40 years ago). Possibly the examining engineers in those days realized the great difficulties to be encountered by the impossibility of milling, distance to smelter and low value of metal."

**SUPERVISION** "The early operation of this property was conducted under gross mismanagement. Engineers' and geologists' advice evidently was not obtained and it is presumed that the owners were not mining men."

**OPERATION** "Incompetency, mismanagement and neglect are clearly indicated. Under proper supervision and finances, this property should have been a big producer long ago."

**SCARES** "An extensively mineralized area of a showing of this character is difficult to locate that is not already in operation. The ore deposits cover an exceptionally large area. Indications are that it is deep-seated and some surprising showings are possibly evident in the sulphides."

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**DEVELOPMENT** "The eventual large scale mining of this property should be from a 4,000 ft. tunnel from Dorsey Gulch, cutting all of the immense veins. This tunnel should be a haulage tunnel, acting as a drainage tunnel from which it is indicated ample water will be supplied for all necessary milling operation." (Water is plentiful in the San Francisco River).

**AIRFIELD** "Substantial convenience could be added and a saving in time by the procuring of a small plane, as there are two potential landing fields, one on the river at Evans Point, and the other at 6,000 ft., would in ten minutes accomplish what 3 hours heavy, mule-back transportation would, over very rough terrain. Also, near the cabin there is another location where a landing field could be constructed, thereby having three, one at 3,600, another at 4,500, and the other at 6,000 ft."

**DEPTH OF ORE BODIES** "These three immense veins on this property will in depth probably merge into one great body of ore. This may appear at 500, 1,000 or 2,000 ft, at what depth can only be proved by exploration."

**RUSSIAN BEAR VEIN** "One of the most valuable veins on this property. There is no development and no exploration. Most interesting possibilities should develop from the sinking of a 400 ft. shaft some 500 ft. South of the present old shallow shaft."

**REDEPOSITS** "Much can be said of this property as to its merits for developing a great mine. The values extend from the grass roots into all the workings, definitely increasing as depth is obtained. Possibilities are excellent for redeposit values, along with what the sulphide will carry. Gold, under these conditions, here may have redeposited, along with other metals."

**LARGE AND DEEP SEATED** "The ore covers an exceptionally large area. It is deep seated and eventually the deposits will be surprisingly large."

**ASSAYS** "For more than 100 assays principally of the surface showing, values have been persistent and indicate that all of these veins carry pay ore as soon as depth is obtained, depth being necessary to avoid the area where the values are lost, near the surface. The geology is such that you cannot expect to find other than small enriched areas near the surface."

**40 YEARS AGO SHIPPING ONLY** "The management has shown neither knowledge of mining or of geology. Evidently no practical engineer was in charge, nor the advice of a geologist secured. Though 40 years ago at the time of this mining activity, little was to be accomplished for the company, for to have succeeded \$40 or \$50 ore in quantity would have had to be available, today such ore would be a bonanza as now we have available methods of concentration of these ores, where in the early period of this property they could not resort to anything but shipping under most unpractical conditions."

**SURFACE VALUES** "Don't underestimate your values from the surface showing. The values that were once there are not there now--they're practically all leached away."

**DAILY RETURNS** "Assuming that the average value of the ores are as shown in the assays in the reports, which is approximately \$18.00 on today's market, engineers estimate that with a 100 ton mill, mining and milling operations would be about \$4.50 per ton. This would leave about \$13.50 per ton or \$1350, net per day, or on a 250 day work year, over \$300,000. Based on this, the property should have a capital value of \$5,000,000, or if this property would be sold after one year's operation only, approximately \$1,800,000 in profits would be subject to income tax, and over \$3,500,000 would be tax-free. It is envisioned that anyone operating as large a property as this would not continue on a scale of 100 tons per day, which can be increased."

**SHIPPING ORE** "Shipping ore is a quick way of getting returns. Nevertheless, it is also a quick way to waste a large percentage of the profits which would have been derived from the milling of the ore. What they were able to accomplish in the 80's, 90's and the first decade of the 20th Century, cannot be compared with what modern equipment will do today. In former days they used water wheels and burros for operating their machinery on the Polaris. Their capacity was probably not more than 500 pounds per day, whereas with modern mining machinery a thousand times this would probably be operating capacity. To make expenses from the original operation an average of \$100, ore would be necessary if they retained all their value. But as they lost about 75%, consequently even with such ore they would be operating at a loss."

**OLD DAYS** The gold miners, the water-wheel mills used on the Polaris 50 years ago, were no more practical than the attempt to lay 8 miles of pipeline for hydraulicizing the placer gold eroded from the Polaris, without considering the destruction by the San Francisco River. The fact that the Polaris failed fifty years ago has very definitely proven reason. They failed to dig the Panama Canal on their first attempt, but with proper equipment it was finally accomplished.

**FORMERLY ORE USELESS** The old Polaris Company had no alternative than to try to locate the pockets of rich ore. The large bodies of milling ore were entirely useless to them; because of their complex condition, they could be milled by no known method in those days.

**PRESENT ADVANTAGES**

"Investigation might involve the following: 1. Workings as scattered over the property to the extent of 3,000 ft, offer an idea as to what will be encountered with safe development. 2. Forty years ago, when the property was operated, the methods of today had not yet been invented, which are necessary to make success on the Polaris practical. In milling operations then, up to 75% of the values were lost. 3. Since 1908, the values of metals have increased 67% in gold, silver and copper. Adding this increase of 67% to the former loss of 75% the advantage becomes approximately 269%. Old-time mining was done by hand. Now machinery is used greatly reducing the cost per ton of ore mined and modern methods decrease the cost of milling. All this increases the profits."

**MERIT** "The property has definite merit. The requirements to start operation constitute only the proper equipment to obtain the metals or the concentrates from the available ores that are fully established, with \$100,000. in development. Although this development is not of the proper character, it does constitute a foundation to proceed further on, reducing much of the future exploration work."

**ADJOINING COMPANY**

"Gold is vital--always has been. The Polaris Group adjoins the holdings of a company which is said to have invested \$38,000,000 during the war to uncover copper ore for shovel operations. Also included in the property is the Evans Point Placer and dam site on which the U.S. Government or their assigns contemplated spending over \$1,000,000. during the war on a power and storage dam construction, about \$50,000. having been expended in the preliminary investigation."

**WELL MINERALIZED**

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**PLACER AREA**

"A 6 mile placer area extending along the San Francisco River implicitly indicates that the eroded area of the Polaris and vicinity contained a very substantial amount of gold."

**6 MILLION TONS ORE**

"The Lady Franklin and Russian Bear Veins, which extend across the property for 6,500 ft. and which will average more than 15 ft. in width, will undoubtedly develop 6 to 7 million tons of ore above the 500 ft. level, while the great thickness of these formations in this district assures a continuance of veins far below the limit of profitable extraction."

**2 WEEKS TO EXAMINE**

"The extent of the mineralization on the Polaris is such that it would require a minimum of 2 to 3 weeks to come to any conclusion of the great ore deposits. A preliminary examination shows that there are available substantial amounts of good milling ore with an excellent possibility of these becoming very extensive in several areas of the property."

**25 ASSAYS AVERAGE**

"25 assays Total Average including copper - - - - - \$10.11  
25 assays Total Average excluding copper - - - - - 7.79

Above assays based on gold at \$20.67, silver at 50¢, per oz., and copper at 12¢, per pound.  
NOTE: Values today would be about 68% higher with copper at 18¢ instead of 12¢, gold at \$35. instead of \$20.67, and silver at 92¢ instead of 50¢, continuing the report of mining opinion.

**DISPLACEMENT**

"The displacements on the Polaris Property stand out with exceptional clearness. When sufficient depth is obtained to get below the breakup, on the Southwestern portion of the property, indications are that bodies of ore may be found in comparison with a rich float running into thousands of dollars that is said to have been picked up in that area."

**GREAT ORE DEPOSITS**

"When the great ore faults or deposits on the Polaris Property have been fully calculated, it is likely that they will lead you to great ore bodies on this property."

**INSUFFICIENT DEVELOPMENT**

"It is doubtful if any other area in the United States with such an extensive mineralization as available upon the Polaris Property is to be found without a sufficient development to determine the extent in the values of the ores in the sulphide zone. Good gold and silver values can be found upon the surface throughout the property. These surface showings indicate that when the property is investigated below the oxide zone, exceptionally good milling ore will be encountered."

**FAULTS**

"Evidently a great vertical fault of about 500 ft. has been entirely overlooked by the examining geologists and also a slip to the Southeast of about 1,400 ft. This would have a material bearing on the location of your ore body in this vicinity."

**DEPTH NECESSARY**

"It is difficult to understand that with so many excellent sites to gain depth and that there exist on this property more than 3,000 lineal feet of workings and only a maximum depth of under 200 feet. The most important thing on this property was to reach the ore where it would be more stable. This does not appear to be far from the present deepest workings."

**COPPER IN DEPTH**

"The examination of this property on the surface and from the shallow workings would indicate that the principal values apparently exist in the gold but consideration must be given to the fact that the copper and other metals have leached from the surface and the shallow workings to such an extent that it is practically non-existent. If the mineralization is carefully examined, it will be noted that an extensive leaching condition exists, and there is considerable evidence that copper is the principal metal that has been carried away. Therefore, as soon as a sufficient depth is attained to eliminate this condition, extensive copper deposits must be expected."

**MANY SHOWINGS**

"To open up all the mineralized areas of this property would entail a large outlay of cash. By selecting some of the best showings the returns from this can be used to further the development of the property in other areas, making only necessary a nominal investment to proceed with the undertakings."

**ERODED VALUES**

"There is conclusive proof that there existed on this property as some time in the past great quantities of gold in these veins. Geology indicates that the erosion is not more than 1,000 feet at the maximum. The proof of these former existing gold values are in the extensive gravel deposits. It is further indicated that much greater values existed in this eroded mineralization in the past than exists there today, which can possibly be classified as a barren zone, and it would further be possible that as soon as this area has been passed, much enriched deposits will be encountered in addition to the excellent possibility of redeposits."

**EXAMINING**

"In order that the extent of this mineralization can be appreciated, one must spend some days on the property. Upon entering the property the veins are immediately encountered; then continuing across the property for a mile and a half (this distance due to the changes in elevation) a continuous mineralized network is encountered, occasionally crossing veins of many feet in width. Outcroppings of quartz 10 ft. in height and more in width and other indications of extensive ore deposits are noted, and many excellent showings that have no development whatsoever."

**HYDROELECTRIC POWER**

"It is quite evident that at no far distant date hydroelectric power will be available at Evans Point Dam. This construction has been under consideration for a number of years, on occasions preparations for commencement was under way. Such an installation will add very materially to the value of the Polaris holdings."

**NOTE:**

Boulder Dam power is now in the District.

**CONCLUSION**

Among the several advantages that this property has, the following can be mentioned. The property is of sufficient size and the ore bodies adequately extensive to permit large scale operations. The mineralization is of such a character that there is a large amount of actual ore available with great potential possibilities and a number of areas of the property have not yet been prospected. Though the property is difficult of access, it can be made easily accessible, has a good mill site, excellent dam site, an unlimited water supply, and is in an area that was the original producer of Arizona and has been continuously ever since. A property with \$100,000. invested in connections therewith though not entirely a practical expenditure, nevertheless, such an amount has been sufficient to permit the conclusion that the property is to be a producer on a substantial scale.

**EVANS POINT DAM SITE**

**GENERAL INFORMATION**

This is a mesa some few hundred ft. above the River, which drops off in almost a perpendicular precipice into a narrow gorge of the San Francisco River. The Phelps Dodge Corporation had in the past attempted to obtain this dam site from ut. They were assisted by the War Department during the war. Our title to the property is based upon a deed from the U.S. Government by President Theodore Roosevelt in 1903, granting title to the father of the present owners.

**CONTEMPLATED DAM**

Prior to and during the war the location was under consideration by Congress for a dam costing \$1,000,000 to \$3,000,000, depending on height. A recent newspaper article states re-establishment of construction of Central Arizona Water Project passed Senate, bringing construction of dam at Evans Point up for consideration again. Power facilities will add greatly to value of property and amount derived from sale of dam site should be substantial.

**EVANS POINT PLACER**

Owners question value of placer gravel. It is, however, an indicator of gold deposits once existing on the Polaris. Geologists conclude this placer area, extending for several miles, is eroded from the Polaris and surrounding property.

ENGINEERING, GEOLOGICAL U.S. GEOLOGICAL SURVEY DATA, BUREAU OF MINES, VEIN MAPS, TOPOGRAPHICAL MAPS, PHOTOGRAPHS, ASSAYS, HISTORY, ETC., AVAILABLE ON REQUEST.