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Arizona Department of Mines and Mineral Resources Mining Collection

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ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: GRAY METALS

ALTERNATE NAMES:

ANGEL
OWL GROUP
LARD BUCKET
OWL LODGE

MARICOPA COUNTY MILS NUMBER: 260

LOCATION: TOWNSHIP 6 N RANGE 6 W SECTION 5 QUARTER C
LATITUDE: N 33DEG 53MIN 34SEC LONGITUDE: W 112DEG 54MIN 16SEC
TOPO MAP NAME: VULTURE MOUNTAINS - 15 MIN

CURRENT STATUS: DEVEL DEPOSIT

COMMODITY:

COPPER SULFIDE
COPPER OXIDE
TUNGSTEN

BIBLIOGRAPHY:

ADMMR GRAY METALS MINE FILE
ADMMR LA MINE MINE FILE

05/07/90

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ADMMR GRAY METALS MINE FILE
ADMMR LA MINA MINE FILE

REFERENCES

MILS Sheet sequence number 0040130312

La Mina Mine (file) several reports refer to both mines

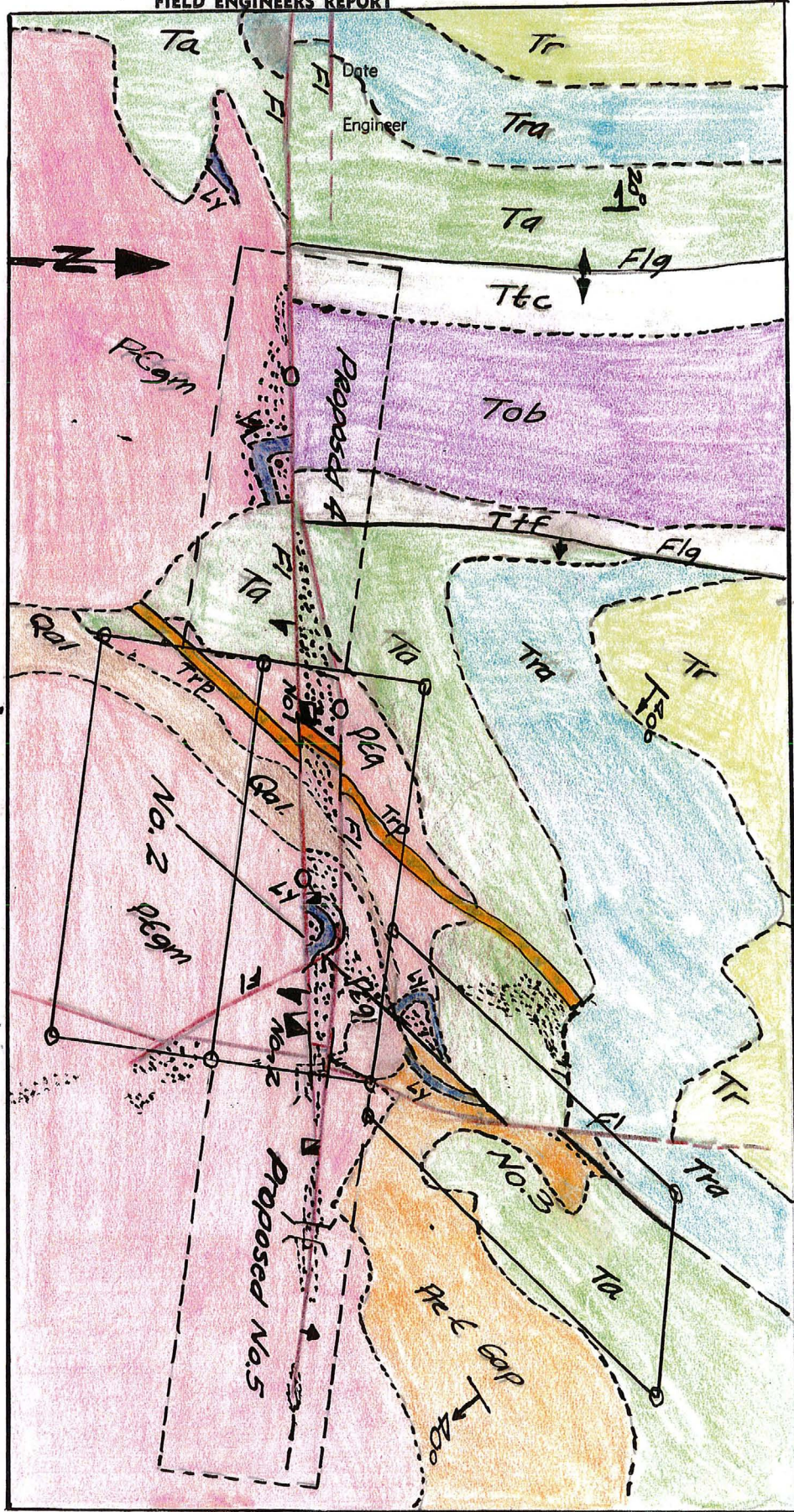
DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

KEY

- Mine
- District
- Subject:
- Dip
 - Vein
 - Fault
 - Pre-Cambrian Granite
 - Pre-Cambrian Aplite-Granite
 - Early Tertiary Andesite
 - Miocene (?) Rhyolite Agglom.
 - Miocene Rhyolite
 - Earlier Tuff Pleistocene (?)
 - Basalt (olivine) Pleistocene
 - Later Tuff Quaternary
 - Rhyolite Porphyry
 - Lamprophyre Dikes
 - Mineralized Areas



ANGEL MINE
GEOLOGICAL SKETCH MAP

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Angel Mine

Date December 23, 1957

District Vulture Dist. Maricopa Co.

Engineer Lewis A. Smith

Subject: Mine Examination

Location: Sec. 5, T 6 N, R 6 W, 5 miles north of the old Vulture Mine and 11 miles west of Wickenburg, in the northwest foothills of the Vulture Mountains.

Owner: W. C. Kinnon, 28 E. Catalina, Phoenix, Ariz. (Tel 5-2323)

Workings: There are two main shafts, one on the East end of the main claim, and one near the west end line. The west shaft is 150 feet deep and the east shaft is 100 plus feet. Neither is now accessible to the bottom. The local water table was not reached in either shaft. There are several cuts and shallow shafts, as well as several hundred feet of drifts.

Geology: The deposit occupies a pair of parallel faults which are about 60 to 90 feet apart and which strike nearly east-west. The country rock is mainly a granitic rock which probably is monzonite. However, this granitic rock differentiates into an aplitic-ribbed quartz-mica granite to the north of the vein faults. The ore is localized by transverse granite-porphry dikes, or by faults and shears. The vein matter is partly quartz and partly monzonitic fragments. However, locally, the dikes may be impregnated by chrysocolla, cuprite or brochantite as is the quartz near the surface. According to the owner the veins vary from a few inches up to several feet in width. The quartz veins narrow some, in depth, but change to brecciated chalcocite and gangue. The chalcocite, 50 feet below the surface at the 100 foot shaft, shows a thin coating of cuprite. The two shafts are roughly 1200 feet apart and have at least 700-800 feet of undeveloped area between the worked areas. This area lies under a cap of 20-25 feet of augite andesite, which in turn is overlain by a considerable thickness of rhyolite and rhyolitic agglomerate to the north and west. The granitic rocks occupy a large low-relief area south and east of the veins, extending at least 3 miles east of the claim. This same group doubtless, also underlies the flows to the north and west, outcropping in small areas in the deeper washes. The vein fractures extend well to the east from the claims but have been little prospected.

Since the chalcocite in the veins does not bottom in the shafts, and since the local water table has not yet been encountered, it would seem plausible that the enriched material should have greater vertical depth than has yet been attained. Unprospected cross structures were found, between the two shafts, which probably would bear further prospecting.

Scheelite bearing quartz was encountered in a cut east of the 100-foot shaft but this occurrence has, thus far, not been developed.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Angel Mine

Date

District

Engineer

Subject:

Page 2

A branch, or intersecting Vein meets the main vein at the 100-foot shaft. This vein is narrow and erratic in width. It trends N 40°E and dips steeply to the east. 800' from the main vein it appears to horsetail into narrow stringer lodes, which are not of commercial grade.

The accompanying sketch map shows the major features of the property.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

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DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

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Engineer

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DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

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District

Subject:



Dip



Vein



Fault



Pre-Cambrian Granite



Pre-Cambrian Aplite-Granite



Early Tertiary Andesite



Miocene (?) Rhyolite Agglom.



Miocene Rhyolite



Earlier Tuff Pleistocene (?)



Basalt (olivine) Pleistocene



Later Tuff Quaternary



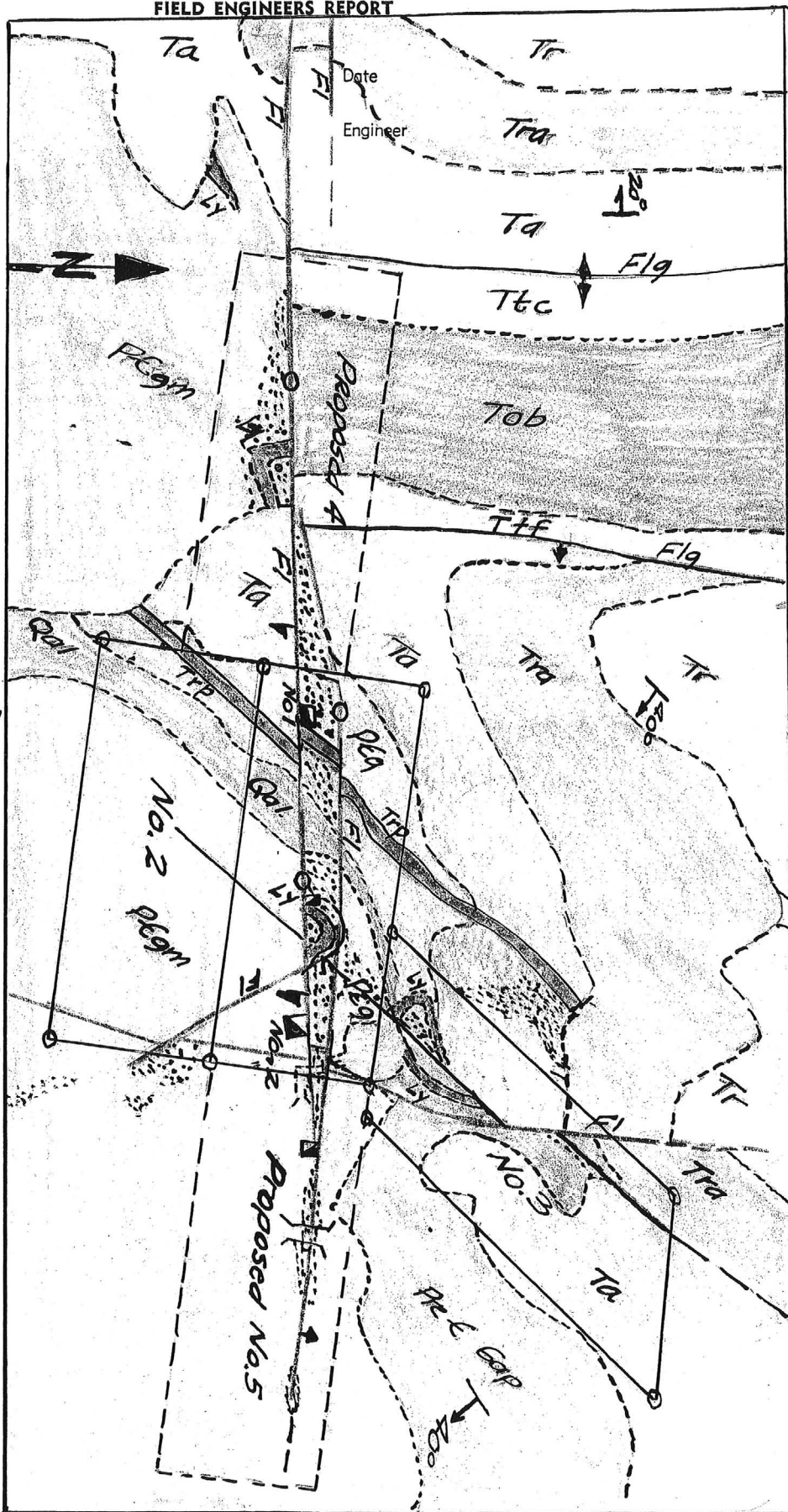
Rhyolite Porphyry



Lamprophyre Dikes



Mineralized Areas



ANGEL MINE
GEOLOGICAL SKETCH MAP

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine GRAY METALS GROUP Date May 4, 1957
District Vulture, Maricopa County Engineer B. J. Squire
Subject:

LOCATION: The Gray Metals Group consists of two unpatented lode mining claims probably in Sec. 2 or 3 of T6N,R6W, about 5 miles north of the Vulture Mine. Access is west from Wickenburg on main highway about $7\frac{1}{2}$ miles to a portion of the main highway by-passed in relocation. West on old highway 3 miles, then south $5\frac{1}{2}$ miles to mine.

HISTORY: Operated 1900 to 1913-1915 as Angel Mining Co. Shipped some tonnage of high grade copper ore running up to 20% Cu. Known as Owl Group - held by Mr. Wright in 1932.

Purchased in 1930's by Bill Kinmon of Phoenix, and others, and since held by them.

WORK DONE: Old caved shaft 150 feet deep, bulkhead at 80 feet, (according to old timers who worked at mine there is 9 feet of ore in bottom of shaft and it made a little water).

28 foot shaft, open.

40 foot shaft from which leasors mined some ore.

Trench dug in fall of 1955 by Bill Kinmon - 24' long N-S direction and 5 to 6 feet deep - intended to cross cut end of vein. Old shafts and drifts on east end of claim. Location hole and assessment pits near crest of ridge, middle of claim.

GEOLOGY AND MINERALIZATION:

Vein is from 1 foot to several feet wide, seeming to horse tail on east end of claim. Dip is 85° N, strike NE by E. It is cut into several segments by N-S post mineral faults. Country rock is granite - ore is silicious. Minerals close to surface are malachite, azurite, some chrysocolla and bronchantite. Tenor is high in the narrow part of the vein.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

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July 30, 1943

2. The stoped area visible at the surface.
3. The persistence and apparent strength of the vein as described where visible.
4. Ore fragments in the dump.

(D) It is not considered that the composite of the above favorable aspects are sufficient to induce recommendation of this loan.

ARIZONA DEPARTMENT OF MINERAL RESOURCES

Earl F. Hastings, Projects Engineer



ACTLABS - SKYLINE

JOB NUMBER XYB001
February 10, 2004

MR. GARY H UETSON
P.O. Box 21006
Wickenburg, AZ 85358

CERTIFICATE OF ANALYSIS

Analysis of 1 Rock Chip Sample

The following analytical packages were requested. Please see our current fee schedule for elements and detection limits.

ANALYSIS BY ACTIVATION LABS/CANADA

REPORT A04-0173
REPORT A03-0173B

CODE 1EP1 - INAA
CODE 1EP1 - AQUA REGIA ICP

PAGE 1
PAGE 2

ANALYSIS BY ACTLABS/SKYLINE-TUCSON

Au, Ag (oz/t), Cu(%)

PAGE 3

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Bernie J. Dunn
Manager

Quality Analysis...



Innovative Technologies

ACTLABS - SKYLINE

INVOICE
NET 15 DAYS

Job No. XYB 001
February 10, 2004

MR. GARY HUETSON
P.O. Box 21006
Wickenburg, AZ 85358

Analysis of 1 Rock Chip Sample

1 Au&Ag(oz/t) @ \$18.00.....	\$18.00
1 Cu(%) @ \$8.00.....	\$8.00
1 1EP1 PACKAGE @ \$18.00.....	\$18.00
1 Sample Crushed, Split and Pulverized @ \$6.00	\$6.00
Total	\$50.00

PAID
Cash

1775 W. Sahuaro Dr., P.O. Box 85670, Tucson, Arizona USA 85754 TELEPHONE 520.622.4836 FAX 520.622.6065
E-MAIL tucson@actlabs.com WEBSITE <http://www.actlabs.com>

William L. Lehbeck
Arizona Registered Assayer No. 9425

Bernard J. Dunn
Arizona Registered Assayer No. 36447

James A. Martin
Arizona Registered Assayer No. 11122

MR. GARY HUETSON P.O. Box 21006 Wickenburg, AZ 85358								JOB NUMBER XYB001 February 10, 2004 PAGE 1 OF 3 PAGES
REPORT A04-0173 - CODE 1EP1-INAA								
SAMPLE NUMBER	Au ppb	As ppm	Ba ppm	Hg ppm	Sb ppm	W ppm	Mass g	
ORE	837	23	420	-1	5.9	42	28.26	
STANDARDS:								
DMMAS-5	577	3210	480	-1	8.3	16	19.78	
Accepted DMMAS-5	552±146	3280±200	520±180		8.9±4.0	14±3.1		

MR. GARY HUETSON										JOB NUMBER XYB001
P.O. Box 21006										February 10, 2004
Wickenburg, AZ 85358										PAGE 2 OF 3 PAGES
REPORT A04-0173B - CODE 1EP1-AQUA REGIA ICP										
SAMPLE	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	S	
NUMBER	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	
ORE	125	-0.5	90790	42	188	8	-2	17	0.704	
STANDARDS:										
GXR-6 cert	1.3	(1	66	1008	2.4	27	101	118	0.016	
GXR-6	0.3	0.9	78	1023	3	27	94	122	0.014	
GXR-2 cert	17	4.1	76	1008	(2.1	21	690	530	0.031	
GXR-2	17.0	5.2	76	975	-2	19	618	503	0.028	
GXR-1 cert	31	3.3	1110	853	18	41	730	760	0.257	
GXR-1	28.9	3.7	1160	849	17	39	513	658	0.186	
GXR-4 cert	4	(.86	6520	155	310	42	52	73	1.77	
GXR-4	3.6	0.6	6221	139	333	45	43	73	1.729	
Note: Certificate data underlined are recommended values; other values are proposed except those preceded by a "(" which are information values.										
Barite, gahnite, chromite, cassiterite, zircon, sphene, and magnetite may not be totally dissolved.										
Note: Negative values indicate less than the detection limit.										
Note: 99999 indicates greater than 10%.										
Clients are advised to obtain assays for Ag>100 ppm and Pb>5000 ppm due to potential solubility problems.										
Values for Cu, Ni, Zn, Mo greater than 1% should be assayed if accuracy better than +/-10-15% is required.										
Values above 1% are for informational purposes only and should not be relied upon for promotional or ore										
reserve calculations. Assays are recommended for this purpose.										
Sulphur will precipitate in samples containing massive sulphides.										

original Name
Angel Mine

(AKA Gray Metals)
our records

Now
Reserve Bank

Joyce & Gary Huettner
623-695-6312.

P.O. Box 718

Wickenburg, AZ. 85358.

VIS6.41

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

VERBAL INFORMATION SUMMARY

1. Information from: **Doug Deckner**
Company:
Address:
2. Phone:
3. Mine: **Gray Metals aka Lard Bucket**
4. ADMMR Mine File: **Gray Metals**
5. County: **Maricopa** MILS Number: **260**
6. Summary of information received, comments, etc.:

Doug Deckner was in with some sample data on his Lard Bucket Claims in Sec. 5, T 6 N, R 6 W. (Gray Metals Mine file, Maricopa County). He has done some surface sampling of copper stained outcrops and hopes the claims have some potential for development into a copper leaching operation. Doug needs to map the outcrops and any disseminated areas of copper mineralization. He provided copies of some sample results and a map showing the sample locations for our file.

Date: _____

June 1992

Engineer: _____

Ken A. Phillips



STATE OF ARIZONA
DEPARTMENT OF MINERAL RESOURCES
MINERAL BUILDING, FAIRGROUNDS
PHOENIX, ARIZONA 85007

March 20, 1975

To: John H. Jett, Director

From: V. B. Dale, Mining Engineer

Subject: Reconnaissance report on the Gray Metals Group of three unpatented Lode Claims in the Vulture Mining District, Maricopa, Arizona and on the La Mina Group of 26 claims.

On March 6, 1975 we also examined the La Mina group of 26 unpatented lode mining claims in Secs. 11 and 12, T6N, R6W, G&SRB&M, also owned by W. C. Kinnon and associates. These claims are relocations in part of the Flying Saucer group of lode claims described in report of Investigations 5516, Tungsten Deposits of Yuma, Maricopa, Pinal and Graham Counties, Arizona, by V. B. Dale, at page 37.

Essentially the same geologic horizon exists here as on the Gray Metals claims. A large mineralized shear zone trending northeast contains copper minerals and powellite.

Workings consist of several shallow surface openings and one shallow shaft. A number (9) of diamond drill holes have been put down to depths of over 500 feet. Assays to 1.9% MoO₃ have been reported. Three channel samples cut on the surface in 1967 yielded the following results.

- #1 - 12' channel - 0.6% MoO₃
- #2 - 14' channel - 0.98% Cu
- #3 - 12' channel - 1.12% Cu

The oxide ore (powellite) extends to about 400 feet below the surface according to Mr. Kinnon. Some disseminated chalcopyrite with minor barnite. Based on spectrographic analysis, the powellite contains minor copper. Minor tungsten also occurs with the powellite. The powellite is widespread and occurs in all formations of the area, but to very minor extent in the altered lamprophyre dikes. The extent of the copper mineralization has not been determined.

A very small part of the cores have been assayed for MoO₃. I recommend that all core be split and assayed for both copper and molybdenum as a starter to a copper exploration program, after which a surface sampling program be carried out. Then if warranted, more core drilling should be planned to determine the extent and quality of the copper-molybdenum deposit.



STATE OF ARIZONA
DEPARTMENT OF MINERAL RESOURCES
MINERAL BUILDING, FAIRGROUNDS
PHOENIX, ARIZONA 85007

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Subject: Reconnaissance report on the Gray Metals Group of three unpatented Lode Claims in the Vulture Mining District, Maricopa, Arizona and on the La Mina Group of 26 claims.

On March 5, 1975 in company with Ken Phillips of the Department and William C. Kinnon, one of the owners, I examined the Gray Metals, Gray Metals No. 1 and Gray Metals No. 2, unpatented lode mining claims situated in Sec. 11, T6N, R6W, G&SRB&M.. The claims are owned by Kinnon and associates. Mr. Kinnon's address is Saguaro Drive, P.O. Box P-2, Wickenburg, Arizona, 85358.

Workings consist of a shaft said to be 200 feet deep with a bulkhead at 50 feet, a shaft probably 50 feet deep, and numerous small open cuts and shallow adits and shafts.

A fault zone trending nearly E-W and dipping steeply north is exposed for approximately 1000 feet and varies in width up to possibly 60 feet (not measured). There are three well mineralized, essentially parallel structures within the fault zone that carry enriched oxide and sulphide copper mineralization. According to Mr. Kinnon, chalcocite was determined to be of primary origin by Lamar Evans, former mineralogist with the U.S. Bureau of Mines. Most of the ore production has come from the middle structure. Two settlement sheets for shipments in 1930 and in 1936 are attached along with two assay certificates.

The Arizona Geological map shows the basement rock of the area to be Precambrian granite. I saw only one small exposure of what I felt was Precambrian granite. The fault zone cuts what I believe is a younger granite, along with probable Tertiary rhyolite and andesite and some probable monzonite. Highly altered basic dikes, probably lamprophyre are evident in all formations. Mr. Kinnon showed me the first drill site location, and I believe it will reveal anticipated data. Based on dips at surface, the hole will be slanted to cut the mineralized fault zone at 150 to 200 feet below the surface. This will test sulphide mineralization and thinning or widening of the zone. There are indications that at least two of the enriched structures may come together at depth, in which case enrichment probably will occur. A squeezing of the entire fault zone would cause the same effect. The second hole will be drilled after cores from the first hole are analyzed.

June 12, 1967

Mr. Irving F. Moore
Western Ventures
Reno, Nevada

Subject: Reconnaissance Report, La Mina Group,
Vulture Mining District, Maricopa County,
Arizona

The La Mina property was visited on June 10th and 11th in company with Mr. William Kinnon, one of the property owners. The visit was made at the request of Mr. Steve Congdon, Geologist.

Location

The La Mina Group of 20 claims is located in sections 11 and 12, Twp. 6N, Range 6W, Maricopa County. The property, in the Vulture Mountains, is 4 miles north of the Vulture Gold Mine. The Claim Group is 10 miles from the center of Wickenburg by good county road; about one-third of the road is paved. All of the claim area is accessible by primitive interior development roads. Access to the property is indicated on the U.S.G.S. Vulture Mtns., Arizona Quadrangle topographic map. Figure 1, attached to this report, shows the claims, basic topography and basic geology.

Property

The claims were acquired in the 1950's by Mr. W.C. Kinnon, 1301 E. Lawrence Lane, Phoenix, 85020. Mr. Kinnon began with a few claims and has staked peripheral claims during recent years. The claims have been surveyed by acceptable reconnaissance methods, although not to the precision required for patent. Mr. Kinnon has transferred 51% interest in the claims to a Mr. Hobbs, an affiliate of Mines Exploration Company.

Title to the claims is apparently valid. All are unpatented. Annual labor affidavits have been recorded each year.

Areas adjacent to the LaMina Group were staked by Mr. W.D. Roper of Safford during 1963-64. Mr. Roper's 300 claims are reported to have become invalid due to non-performance of assessment work. Mr. Kinnon stated that Mr. Roper might possibly be still interested in the district -- as a copper possibility -- but that Mr. Roper has many stronger interests in other districts.

Other claims nearby are held by the Renegade Mining Company. These are not immediately adjacent to the LaMina Group.

There has been no production from the immediate property. Some copper ore, several hundred tons of 40% Cu ore, are reported to have been shipped by the Bright Angel Mining Company from a mine one mile to the West.

Facilities

Rail, Santa Fe, R.R., is at Wickenburg. Supplies, housing and power are also at Wickenburg. Water is available at Wickenburg and has been sold to drillers at \$0.50 per thousand gallons. Water could probably be developed on the flats 3 miles to the southeast of the mine -- as it has been at the nearby Vulture Mine.

Geology

The local area is composed of Precambrian granite plus a variety of fine-grained tertiary intrusives and volcanics. The tertiary rocks range in composition from rhyolite to andesite and are part of the generally andesitic volcanic area of the Vulture Mountains.

As shown on Figure 1, the fine-grained porphyry exposures (dark blue) trend generally to the NE. This is also the trend of the major fracture zones containing copper mineralization (copper in green, powellite in red). Minor fracture zones trend ENE and E -- these contain major powellite and minor copper mineralization. A north-trending zone of powellite-filled fractures occurs at the best surface exposure of powellite; this trend is very localized and not reflected, as apparent at the time, in the rest of the property. The area has a well-developed northwesterly fracture and jointing trend -- not mineralized, but possibly important in offsetting the mineralized zones.

Mineralization

The major mineral of interest is powellite, calcium molybdate. There are minor amounts of scheelite and there is an overall association of oxidized copper mineralization with fracture zones in the claim group.

Powellite occurs on fracture surface and as disseminated flakes. Most of the powellite is apparently associated with the contact zones between granite and andesite porphyry. Mineralized fracture surfaces are closely spaced -- down to fractions of an inch; the disseminated powellite is undoubtedly fracture controlled as well.

It is significant that there are two modes of powellite occurrence:

1. In both granite and andesite near contacts -- generally with very minor copper mineralization
2. In granite away from the andesite contacts and with more copper mineralization. In these occurrences, there is noticeable limonite staining and also some limonite casts after pyrite.

The suggestion and the interpretation at this time is that the second, or granitic occurrence is a direct remnant of copper sulfide-molybdenite mineralization. The granite-andesite mineralization is likely to be of secondary origin -- richer in grade within 1,000 feet of the surface but not associated with sulfides at depth.

Molybdenum minerals other than powellite are not widespread; in fact only a small amount of molybdenite was noted (in the granite) and a doubtful identification of ferrimolybdenite was made at several places in both granite and andesite.

In an alkaline environment and with minor copper, as in this area, molybdenum complexes are very soluble. As a result, the surface exposures of powellite have been leached -- and there is considerably more powellite at depths of a few feet in dozer cuts than at the surface. The drill-hole intercepts, discussed later, are also richer than the surface exposures.

Sampling and Grade

The grade of the mineralization is difficult to determine because of leaching at the surface, which tends to diminish the assay values in surface channel cuts. Values are in molybdenum, tungsten and copper -- with each metal behaving differently during weathering.

The localization of mineralization is quite readily seen with short-wave ultra-violet light at night -- but the determination of grade by this method is only relative.

The grade of ore in drill holes is much more reliable -- beneath the zone of shallow leaching.

Sampling at the surface from three channel samples, shown on Figure 1, assayed as follows:

- # 1 - 12' channel - 0.6% MoO₃
- # 2 - 14' channel - .98% Cu
- # 3 - 12' channel - 1.12% Cu

Six core drill holes have been drilled on the property.

Five of the holes have cut ore mineralization. The logs

Mining and Processing

The best ore intercept is at a depth of 340 feet. This intercept undoubtedly ties in with one of the surface exposures dipping about 50 degrees. In all, the readily available ore would be amenable to underground mining with stoping widths of 6 feet to nine feet, depending upon actual dip. Depth to the shallowest level would be on the order of 100 feet.

The processing of the ore is a large question which should be among one of the first things verified.

Three possibilities exist:

1. Concentrate by flotation (apparently feasible) and ship concentrates to Pine Creek, Calif. for processing.
2. Ship flotation concentrate directly to steel companies, following a market survey.
3. Leach flotation concentrates after calcining. A flow-sheet on this could be worked up with one of several organizations.

The proper disposition of the ore would depend very largely upon the reserves and grade to be determined in the high-grade zone. This, therefore, is the prime target.

Recommendations

While the geologic relationships of the petrology, structure, and ore mineralization are important, the major objective should be more direct -- namely to answer the two questions:

1. Is there enough ore-grade mineralization in the major underground mining zone intersected by drilling to make a profitable operation?
2. Is there a firm market for this amount of product at a reasonable rate of shipment and at the specifications attainable? What is the value?

The first question cannot be answered by surface mapping and sampling. It can be answered only by penetrating the ore zone and obtaining an ore reserve and grade picture. One drill hole, to about 800 feet can establish the continuity. Two additional drill holes to about 600 feet can give enough of an estimate of tonnage to permit investment in beneficiation and marketing investigations. Mr. Kinnon has a good picture of the geometry of the ore zone and can be depended upon to spot the best drill holes.

The second question will be answered by mill-testing and by negotiations with ore buyers.

The property may have a much larger potential in sulfide ore with molybdenum-copper values than in the secondary powellite mineralization. This investigation would, however, require a very large capital outlay -- on the order of 100 thousand dollars or more, and could be carried on later. The risks in this phase would be high.

I suggest that the following steps be taken in the sequence indicated:

1. Drill hole to 800 feet near the high grade zone to cut the zone.

800' @ \$9/ft.	-	\$7,200
Mobilization		200
Assaying		100
Total		<u>\$7,500</u>

2. Two drill holes to 600 feet each

1200' @ \$9/ft.		\$10,800
Assaying		200
		<u>\$11,000</u>

3. Mill-testing on core and on selected surface samples \$800.

4. Completion of ore reserve drilling and engineering studies.

In my opinion, it will be best to consider the property as a small high-grade proposition requiring a few tens of thousands of dollars to put in operation rather than a large low-grade sulfide property with high risk and requiring hundreds of thousands of dollars for pre-engineering and geology.

W. C. PETERS
(signed)

March 28, 1969

Dear Mr. Kinnon.

Enclosed are the rock reports for the #3 and # 6 D. D. cores and the billing for the work. I am sending by parcel post the sections and rock chips.

It is my opinion that the powellite has been derived from altered molybdenite. The presences of calcite suggest an environment of high pH and low Eh, which are required for the formation of MoO_4^{2-} from MoS_2 . However, the occurrence of the majority of the powellite in fractured regions (slide 1c) and in calcite veinlets or carbonated plagioclase crystals (slide 1b) suggests that the powellite was mobil and has been transported. Concerning the distance and source area (whether above or below the present location) one can only speculate.

The formation of powellite in place from molybdenite cannot be shown in thin section. No replacement of molybdenite by powellite was observed. Also the disseminated powellite appears to be more disseminated and finer grained than the molybdenite observed. This latter is not very strong evidence as not enough molybdenite in granodiorite was seen.

I would recommend that the D.D. core containing the molybdenite be looked at more closely, especially near the upper portions, for evidence of powellite after molybdenite. It may be that the powellite in the shear or fractured area is due to oxidation and that there may be molybdenite at depth.

If I can be of further assistance feel free to call.

Sincerely



James O. Guthrie
2323 Cameron Vista
Tucson, Arizona 85713

Slide 1b.

- Alteration is primarily calcite replacing the plagioclase. Feldspar (mostly the plagioclase) altered to calcite with some minor clay. Biotite appears fresh, there is some recrystallization with the formation of secondary biotite. Spene is relatively unaltered.

Z Opaques.
magnetite minor hematite alteration, fine grained, interstitial.

powellite (semi opaque and is white under the reflected light) It occurs primarily in the calcite veylets as acicular to irregular, somewhat botuoidal to radial appearing masses. Occassional fine grains of irregular, radial appearing masses occur in the groundmass associated with the carbonated plagioclase crystals.

Slide 1c.

Hand specimen.

The rock is a moderately altered, medium grained, hypidiomorphic granodiorite. One portion of the sample exhibits a fractured region which contains Hematite and powellite. This area displays fairly abundant powellite. Small, disseminated flakes of powellite throughout the rest of the rock is very apparent under the black light,

Microscopic.

The rock is a well altered, medium grained, locally modified hypidiomorphic-granular granodiorite. Portion of the slide exhibits a brecciated fabric. In this area the rock exhibits recrystallization texture, primarily of quartz, and more alteration than in the unfractured rock. The fractures are filled with hematite and powellite.

Alteration is argillic.

Feldspar is altered to clay.

Biotite appears to be fresh, but exhibits ragged flakes and there is some fine grained, secondary biotite present. Leucoxene occurs associated with it also. Some minor sericitization of biotite occurs in the brecciated region.

The powellite occurs as white to yellowish white, irregular to somewhat prismatic grains under reflected light. They are generally concentrated in the brecciated region. They do occur disseminated as fine, irregular flake-like grains throughout the rock.

Rock Reports.

#6 D.D. Core.

Slide 2a.

Hand specimen.

Medium grained, hypidiomorphic-granular, moderately altered granodiorite. Rock contains interstitial pyrite, chalcopyrite and molybdenite. The pyrite and chalcopyrite occur as medium to fine, irregular to oblong grains and appear to be interstitial to the silicates. The molybdenite occurs as fine, tabular to irregular grains; it is both disseminated in the silicate matrix and with some of the chalcopyrite.

Microscopic.

Medium grained, modified hypidiomorphic-granular, moderately altered granodiorite. There is minor recrystallization and brecciation which has modified the original igneous texture.

Alteration is primarily argillic.

Feldspar (mostly the plagioclase) - clay (montmorillonite and halloysite)

Biotite - mostly fresh, minor chlorite. In the area of brecciation fine, secondary biotite has been formed.

Sphene - some leucoxene alteration

Chalcopyrite and pyrite - some minor formation of iron oxide alteration

Opaques.

1. Chalcopyrite and pyrite. fine to medium, euhedral to anhedral, irregular grains. Occur interstitially and in apparent shear areas. (Find elongate or several grains aligned; associated healed zones in the silicate matrix). The grains are generally rimmed by hematite.

2. Magnetite. fine, anhedral, interstitial grains.

3. Molybdenite. none apparent in thin section under reflected light.

Rock Reports.

#6 D. D. Core.

Slide 2b.

Hand specimen.

Quartz vein containing chalcopyrite, pyrite and molybdenite. Calcite veinlets criss-cross the quartz matrix. Minor hematite alteration is present.

The pyrite and chalcopyrite occur as medium, irregular grains and appear to be in areas of fracturing. The grains appear to be fractured and are generally being altered to hematite.

The molybdenite occurs as small clusters of fine flakes in areas of fracturing and as small flakes rarely with the chalcopyrite.

Microscopic.

Fractured and trained, fine to medium grained, sutured textured quartz rock criss-crossed by small veins of calcite.

Opagues.

1. pyrite and chalcopyrite. irregular, medium to fine grained, partly altered to iron oxide (limonite-hematite). Some of the iron oxide occurs with the calcite veining.

2. molybdenite. very fine flakes occurring in irregular, shredded clusters and as rare, fine grained flakes. The calcite veinlets cut and disrupted the larger clusters of molybdenite.

NOTICE OF MINING LOCATION

LODE CLAIM

TO ALL WHOM IT MAY CONCERN: This Mining Claim, the name of which is the Owl Hole Mining Claim, situate on lands belonging to the United States of America, and in which there are valuable mineral deposits, was entered upon and located for the purpose of exploration and purchase by Frank Wright the undersigned, on the _____ day of July, 1923

The length of this claim is 1500 feet, and I claim 750 feet in a North easterly direction and 750 feet in a South westerly direction from the center of the discovery shaft, at which this notice is posted, lengthwise of the claim, together with 300 feet in width of the surface grounds, on each side of the center of said claim. The general course of the lode deposit and premises is from the north east to the South west.

The claim is situated and located in the Vulture Mining District, in Maricopa County, in the State of Arizona, about three miles in a northerly direction from Vulture Peak.

The surface boundaries of the claim are marked upon the ground as follows: Beginning at a point in a North westerly direction 150 feet from the discovery shaft (at which this notice is posted), being in the center of the N. E. end line of said claim, thence 300 feet to a monument, being the North west corner of said claim, thence 1500 feet to a monument, being at the South west corner of said claim, thence 300 feet to a monument at the center of the South westerly end of said claim, thence 300 feet to a monument, being at the South East corner of said claim, thence 1500 feet to a monument at the North East corner of said claim, thence 300 feet to the place of beginning.

Dated and posted on the grounds this _____ day of July, 1923

Witness

Frank Wright

John Z. Cull (X)

Filed and Recorded at Request of Frank Wright AUG 28 1923 at 9:01 A. M.

RECORDED
#17366
MAY 10 1924

W. H. Linyville County Recorder
By Walter W. Smith Deputy Recorder

=====

Relocation of abandoned Mining Claim

NOTICE OF MINING LOCATION

LODE CLAIM

TO ALL WHOM IT MAY CONCERN: This Mining Claim, the name of which is the Apache Mining Claim, situate on lands belonging to the United States of America, and in which there are valuable mineral deposits, was entered upon and located for the purpose of exploration and purchase by The Hickey Copper Company, citizens of the United States the undersigned on the 11 day of June, 1923

The length of this claim is 1500 feet, and we claim 1000 feet in a northeast direction and 500 feet in a ----- direction from the center of the discovery shaft, at which this notice is posted, lengthwise of the claim, together with 300 feet in width of the surface grounds on each side of the center of said claim. The general course of the lode deposit and premises is from the northeast to the southwest.

The claim is situated and located in the New River Mining District, in Maricopa County, in the State of Arizona, about 4 miles in a westerly direction from Sentinel Peak.

The surface boundaries of the claim are marked upon the ground as follows: Beginning at monument of ----- at a point in a northeast direction 1000 feet from the discovery shaft (at which this notice is posted) being in the center of the Northeast end line of said claim, thence 300 feet to a monument of stone, being the northwest corner of said claim, thence 1500 feet to a monument of stone, being at the southwest corner of said claim, thence 300 feet to a monument of stone at the center of the southern end of said claim.

Filed and recorded at request of SENA T. LEWIS, AUG 28 at 3:00 PM 1933



#17915

W. H. LEVILLIE, County Recorder
By K. P. MAURY, Deputy

AFFIDAVIT OF LABOR PERFORMED AND IMPROVEMENTS MADE.

STATE OF ARIZONA
COUNTY OF MARICOPA ss.

JESUS RODRIGUEZ being duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one years of age, and resides at Phoenix in Maricopa County, State of Arizona, and is personally acquainted with the mining claim known as El Hilagro 1 to 10 Inc., El Hilagro 2 to 5 Inc., La Esperanza 1 to 5 Inc. mining claims, situate in the Pinalte Mining District, County of Maricopa, State of Arizona, the location notice of which is recorded in the office of the County Recorder of said County, in Book 32 of Records of Mines, at pages 406-7 501-2 424-5; that between the first day of July, A. D. 1929, and the first day of July, A. D. 1933, at least two thousand dollars worth of work and improvements were done and performed upon said claims not including the location work of said claims. Such work and improvements were made by and at the expense of Rayco Sales, Jesus Rodriguez owners of said claim for the purpose of complying with the laws of the United States pertaining to assessment of annual work, and Eugenio Jimenez, Luis Penia, Soterino Penia, Trinidad Halcido, Ramon Quintero, Maria Villa, Maria Penia, Jesus Rodriguez, Isidor Vasquez, Juan Vasquez were the men employed by said owners, and who labored upon said claim, did said work and improvements, the same being as follows, to-wit:

Shafts, tunnels and building roads leading to said mining claim.

JESUS RODRIGUEZ

Subscribed and sworn to before me this 29th day of August, A. D. 1933.

(SEAL)

H. C. ARNOLD, Notary Public

(My commission expires Jan. 22nd, 1934.)

Filed and recorded at request of CARL W. HEAMAN, AUG 31 at 1:54 PM 1933.



#18178

W. H. LEVILLIE, County Recorder
By K. P. MAURY, Deputy

AFFIDAVIT OF LABOR PERFORMED AND IMPROVEMENTS MADE.

STATE OF COLORADO
County of El Paso ss.

D. L. Miller being duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one years of age, and resides at Manitou, El Paso County, State of Colorado, and is personally acquainted with the mining claim known as Woodrow Wilson Number One, situate in the Leadville Mining District, County of Lead, State of Colorado, the location notice of which is recorded in the office of the County Recorder of said County, in Book 10 of Records of Mines, at page 130; that between the 10th day of April, A. D. 1931, and the 1st day of June, A. D. 1933, at least two thousand dollars worth of work and improvements were done and performed upon said claim, not including the location work of said claim, such work and improvements were made by and at the expense of D. L. Miller owner of said claim for the purpose of complying with the laws of the United States pertaining to assessment of annual work, and the said work was done by employees of D. L. Miller, the men employed by said owner and who labored upon said claim, did said work and improvements, the same being as follows, to-wit: Survey for ditches to convey water to said claim from Gunn's Run River for use in prospecting, and prospecting for lead rock and ore location and setting of trap line on these claims.

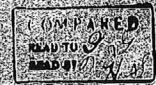
D. L. Miller

Subscribed and sworn to before me this 10th day of August, A. D. 1933.

(Seal) My commission expires Jan 1, 1935.

H. Mark Hanna, Notary Public

Filed and recorded at request of D. L. Miller, Aug 10 1933 at 10:27 A. M.



#18281

W. H. LEVILLIE, County Recorder
By K. P. MAURY, Deputy

**NOTICE OF MINING LOCATION
Place claim**

TO ALL WHOM IT MAY CONCERN: This place mining claim, the name of which in the west is Water Place, situate on lands belonging to the United States of America, and being a portion of the same, was discovered and located for the purpose of exploration and discovery by D. Eugene Dewey, the undersigned, on the 1st day of September, 1933. The claim is located in the 1st Range, 1st Meridian, and has been located on the ground as follows: Beginning at a point in Section 36, T. 11 N., R. 10 E., S. 12 W., about 6 miles south of the Black Canyon Highway, near a monument (one) south of the monument, and about 2 miles west of the Black Canyon Highway, near a monument (one) south of the monument, there this notice is posted three north 80 feet to 80 feet, thence east 150 feet to a second monument, thence south 100 feet to a stone monument, thence west 100 feet to the place of beginning, containing 40 acres, all in the Mining District, in the County of Lead, in the State of Colorado, and you are hereby notified that you may object to this claim within the time provided by law.

All done under the provisions of the several acts of Congress, and the laws of the State of Colorado.

NOTICE OF MINING LOCATION

LODE CLAIM

TO ALL WHOM IT MAY CONCERN:

This Mining Claim, the name of which is the W. H. Linville Mining Claim, situate on lands belonging to the United States of America, and in which there are valuable mineral deposits was entered upon and located for the purpose of exploration and purchase by

Wm. H. Linville an citizen of the United States

(Locator must insert either "a citizen of the United States" or "who has declared his intention of becoming a citizen of the United States")

the undersigned, on the 2nd day of January 1923

The length of this claim is 200 feet

and 100 claim 100 feet

in a North West by direction and N 40° W

feet in a North West by East direction from

the center of the discovery shaft, at which this notice is posted, lengthwise of the claim, together with

100 feet in width of the surface grounds, on each side of the center of said claim. The general course

of the lode deposit and premises is from the North West by East to the South West by East

The claim is situated and located in the Linville Mining District

in Linville County, in the State of Arizona, about 1/2

in a South West by East direction from the center of the discovery shaft

100 feet to a North West by East corner of said claim

thence 100 feet to a South West by East corner of said claim, being

at the North West by East corner of said claim, thence 100 feet

to a South West by East corner of said claim, thence 100 feet

thence 100 feet to a North West by East corner of said claim, being at the

North West by East corner of said claim, thence 100 feet

to a South West by East corner of said claim, thence 100 feet

claim, thence 100 feet to the place of beginning

at a point in a North West by East direction 100 feet from the

discovery shaft (at which this notice is posted), being in the center of the

end line of said claim, thence 100 feet to a North West by East corner of said claim

being the North West by East corner of said claim, thence 100 feet

thence 100 feet to a South West by East corner of said claim, being

at the North West by East corner of said claim, thence 100 feet

to a South West by East corner of said claim, thence 100 feet

thence 100 feet to a North West by East corner of said claim, being at the

North West by East corner of said claim, thence 100 feet

to a South West by East corner of said claim, thence 100 feet

claim, thence 100 feet to the place of beginning

Dated and posted on the grounds this 2nd day of January 1923

Wm. H. Linville

W. H. Linville

Filed and recorded at the request of W. H. Linville

W. H. Linville

W. H. Linville

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