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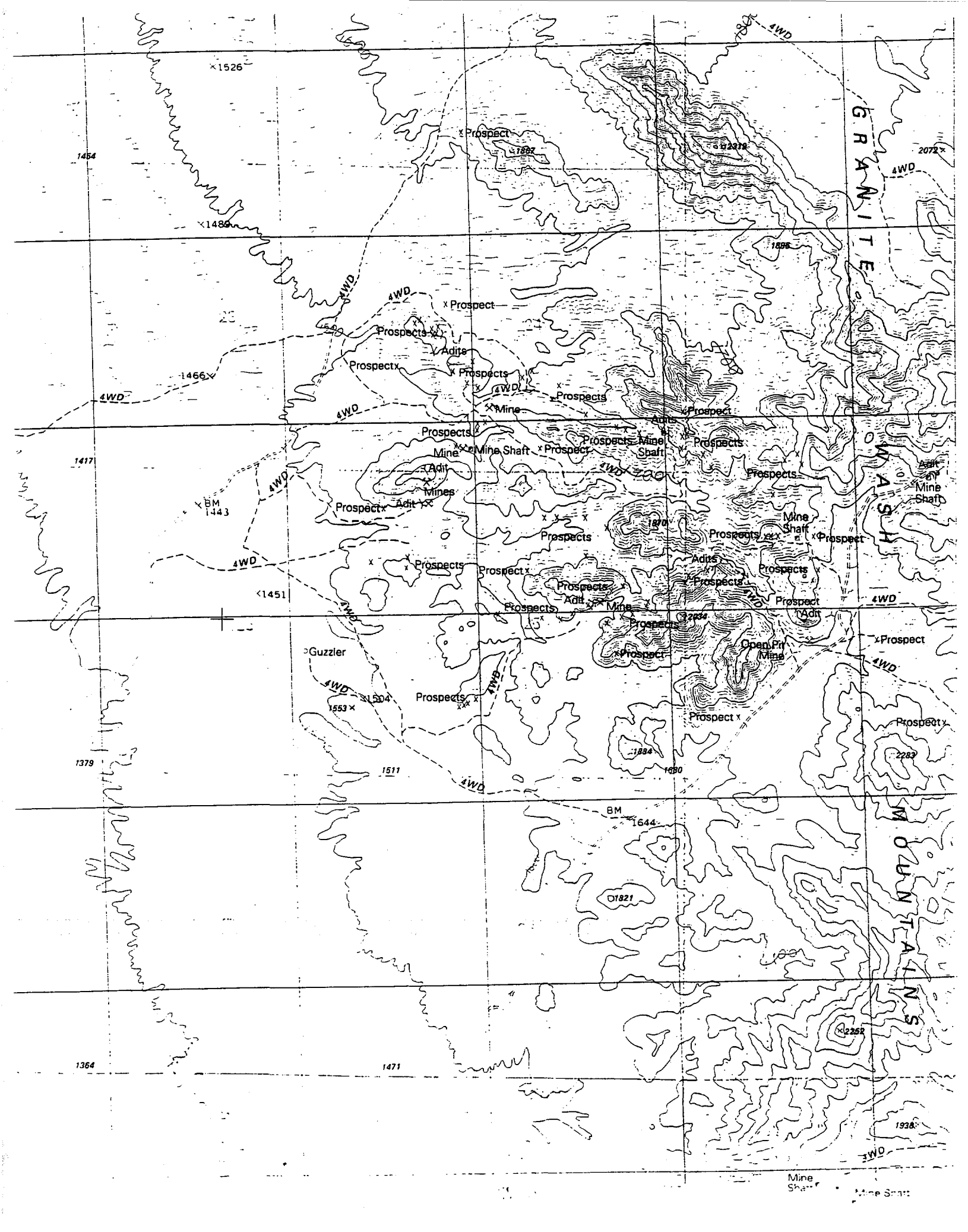
NORTHWESTERN GRANITE WASH MOUNTAINS PROSPECT
LA PAZ COUNTY, ARIZONA

Summary

The Northwestern Granite Wash Mountain Area of La Paz County, Arizona is submitted as a prospect favorable for skarn copper-gold and replacement-type gold mineralization. Reconnaissance geologic investigations throughout the Granite Wash Mountains have indicated that mineralization is closely associated with a major low-angle shear zone that separates larger lithotectonic units. The investigations also indicated that the non-vein, diffuse type of gold-copper mineralization, localized in and adjacent to sheared, competent, brittle and reactive rocks, could provide an exploration target with sufficient grade and size potential to be of interest. In the Northwestern Granite Wash Mountains, the major low-angle shear zone is superimposed on Paleozoic sedimentary rocks, including competent, thin-bedded quartzite, skarn and reactive carbonates and has localized extensive copper, iron and tungsten mineralization as well as the non-vein gold mineralization. This shear zone and potential associated gold and copper-gold mineralization is concealed beneath unmineralized rocks and pediment gravels.

General

Gold prospects in the Granite Wash Mountains were first discovered in the 1860's but there was little active mining until after completion of the railroad


GRANITE
WASH
MOUNTAINS
Prospect
Prospects
Adits
Mine
Mine Shaft
Mines
Adit
Open Pit Mine
Guzzler
BM 1644
BM 1443
4WD
1526
1454
1488
1466
1417
1451
1379
1511
1553
1504
1364
1471
1644
1821
1884
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2072
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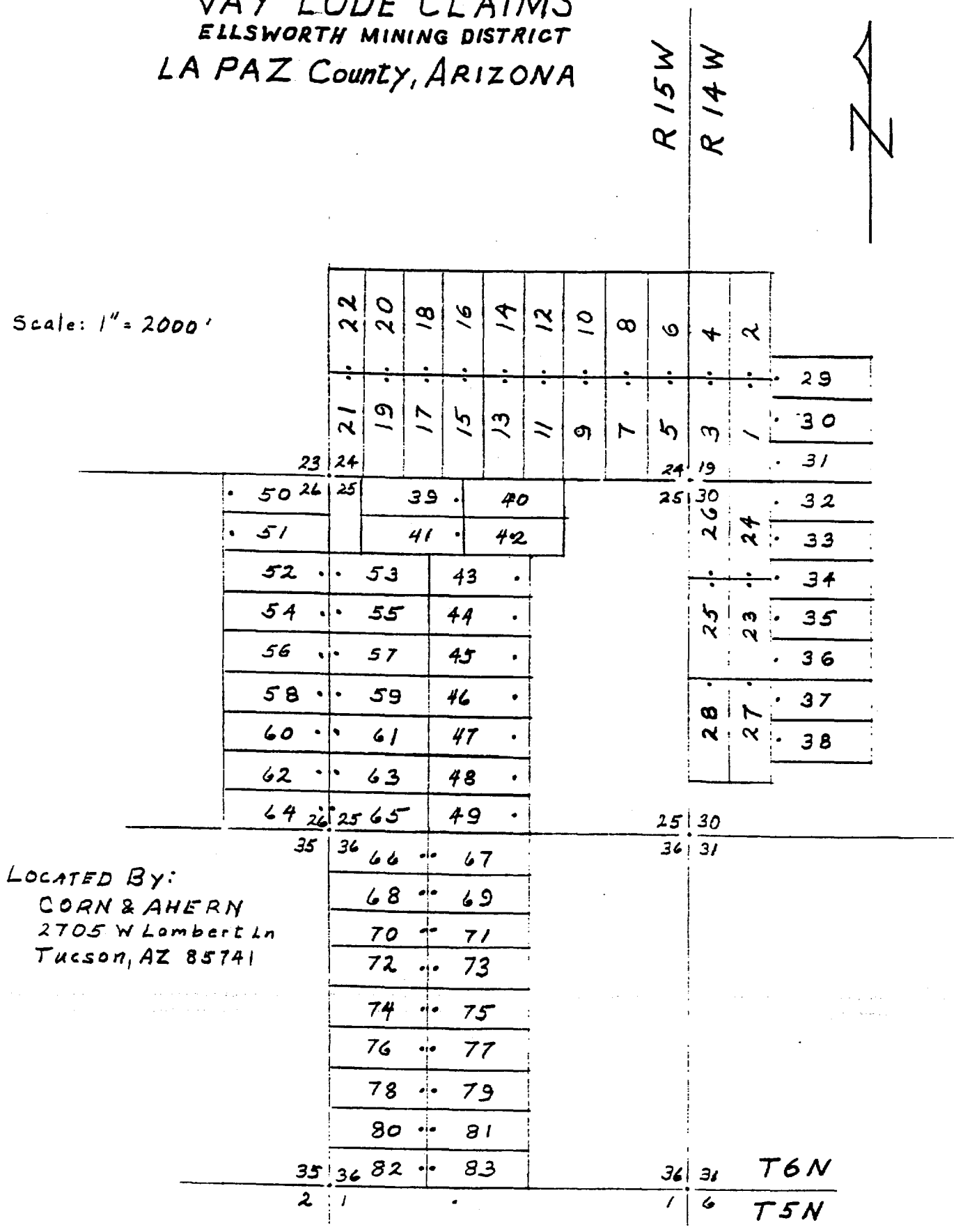
1938
2283

VAY LODE CLAIMS

ELLSWORTH MINING DISTRICT

LA PAZ County, ARIZONA



LOCATED BY:
CORN & AHERN
2705 W Lombert Ln
Tucson, AZ 85741

. VAY LODE CLAIM No. _____

in the early 1900's. Other periods of activity included the 1930's, 1940's and the 1950's when there was active exploration for the production of tungsten. the largest mine in the area is the Yuma Mine with recorded production of 8,600 tons @ 2.3% Cu, 0.3 oz Ag, and .03 oz Au/T. Recorded metal production from the entire Granite Wash Mountains includes several thousand units of tungsten and several hundred to one thousand tons of ore each from the Glory Hole, Dandy, Desert Queen and True Blue Mines, averaging .40 to .60 oz Au/T. During the copper boom of the 1960's and 1970's both Bear Creek and Tenneco reportedly examined the Yuma Copper Mine and may have drilled a hole or two in its vicinity. Oliver Kilroy has held a major land position in the area for almost 20 years, has carried out extensive geophysical surveys, and has drilled fifteen holes for copper mineralization with negative results. Exploration activity that presumably was directed toward gold mineralization during the 1980's has included dozing and trenching by Bill Baker at the True Blue Mine, and by Charles Willmore at the Pandora's Box and Dandy prospects in Secs 6 and 7, T5N, R14W. The Dona Kay prospect in Secs 12 and 13, T5N, R15W was drilled by Baroque Resources and Weaco in 1985 and five or six rotary holes were drilled on the major low-angle fault and associated veins at the Three Musketeers tungsten property in SW¼ of Sec 24, T7N, R15W. Most of the land in the area is Federal, administered by the BLM and old claim posts run rampant through the mountains and over the adjacent alluvial covered pediment. The only active mine in the District is the Yuma Mine where Donald Nelson is mining gem quality azurite and malachite. Individuals and small companies (?) that hold claims in the Northwestern Granite Wash Mountains include: Donald Nelson with claims in the vicinity of the Yuma Mine, Elmer Lewis with claims at the Yellow Breast, and Jack Darland, who staked the same area Nov. 14, 1988, O.B. Kilroy, Transverse Mines, and Inclination Mining Company.

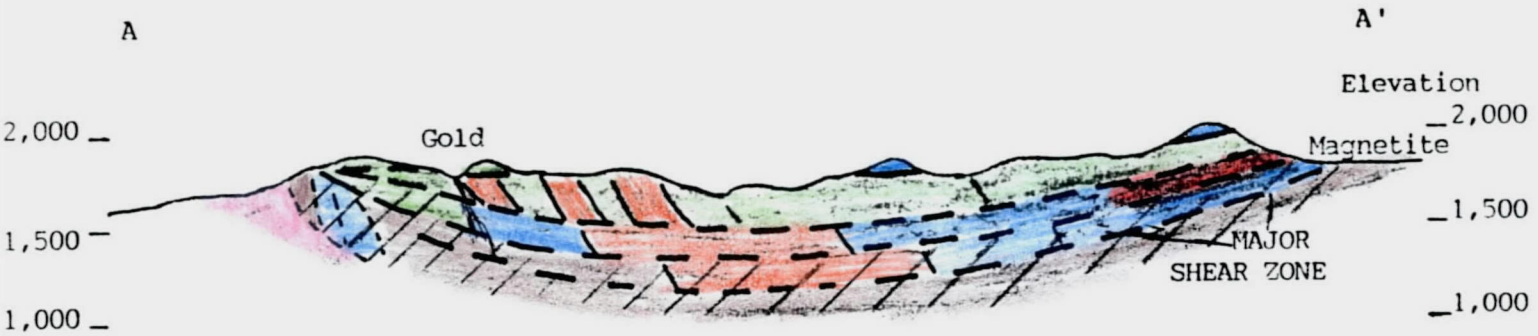
The data presented in this report was obtained during reconnaissance-type geologic examinations in the winter and early spring of 1988/1989. Accompanying this report are a sketch map showing the distribution of mineralization throughout the area, a generalized geologic map and section; a map illustrating the distribution of alteration and mineralization in the favorable area of disrupted Paleozoic quartzite and carbonate rocks, as well as sample logs, and a sample index map. Pertinent geologic references include: Bancroft, H., 1911, Reconnaissance-of the Ore Deposits in Northern Yuma County, Arizona, USGS Bull 451; Ciancanelli, E.V., 1965, Structural Geology of the Western Edge of the Granite Wash Mountains, Yuma Co., Arizona, University of Arizona MS Thesis; Dale, V.B. 1959, Tungsten Deposits of Yuma, Maricopa, Pinal and Graham Counties, Arizona, USBM RI 5516; Harrer,

C.M., 1964 Reconnaissance of Iron Resources in Arizona; USBM I.C. 8236; Keith, S.B.. 1978, Index of Mining Properties in Yuma County, Arizona, Ariz Bur of Geol and Mineral Tech, Bull 192; Laubach, S.E., Reynolds, S.J. and Spencer, J.E., 1987, Mesozoic Stratigraphy of the Granite Wash Mountains, West Central Arizona, the Granite Wash Mountains, West Central Arizona, AGS Digest Vol 18, pp 91-11; Reynolds and others, 1989, Geologic Map , Geologic Evolution, and Mineral Deposits of the Granite Wash Mountains, West-central Arizona; Ariz Bur Geol and Mineral Tech Open-File Report 89-4.

Geology and Mineralization

In the Northwestern Granite Wash Mountains a major low-angle shear zone is superimposed on varied rock types, including reactive carbonates and brittle, competent quartzites, and this favorable geologic setting has localized several different types of extensive and relatively intense mineralization, including copper, magnetite, tungsten, and gold-copper mineralization. The major low-angle shear zone is exposed at the margins of the area, but otherwise is concealed by structurally superimposed Paleozoic and Mesozoic rocks and by pediment gravels. The low-angle shear zone is the major structural feature in the area. Mineralization is closely associated with it, and may be related in time as well as space. The area offers a favorable exploration potential for gold replacement mineralization and for skarn copper mineralization similar to that at the Yuma Mine. Geologic and sample data and the exploration potential of the North-western Granite Wash Mountains is discussed in more detail in the following section and presented on the accompanying sample logs, maps and sections. Although not of economic interest, the magnetite deposit illustrates the intensity and possible extent of replacement mineralization localized in the favorable geologic setting resulting from the superimposition of the major low-angle shear zone on Paleozoic sedimentary rocks. Magnetite occurs as a subhorizontal 10 to 50 foot thick replacement zone exposed over a distance of more than 1500 feet on the west bank of Yuma Wash. Both the magnetite and nearby skarn copper mineralization are reported to contain some gold values, but the few samples of magnetite taken during this investigation contained only weakly anomalous amounts of gold. Harrer, in his description of the magnetite deposit, (USBM IC 8236 p. 136), stated that "underground exploration by King and Crawford had indicated a cupriferous pyrrhotite-magnetite deposit extimated to contain 50% Fe, .75 to 1.6% Cu and .04 oz Au/T." This underground work was probably in the area of skarn alteration at the north end of the mangetite zone, and these copper and gold values are comparable to values reported in production records

Generalized Section
Illustrating Structural Relationships
And Mineralization
Northwestern Granite Wash Mountains
La Paz County, Arizona



Scale: 1 inch = 1,000 feet
H = V

- Granite
- Quartzite
- Volcanic & Volcaniclastic rocks
- Limestone & Carbonate rocks
- Schist & Gneiss
- MAGNETITE

from the Yuma Mine. Garnet-epidote skarn that contains variable amounts of pyrite, chalcopyrite and magnetite occurs as a replacement of sheared Paleozoic carbonates at the Yuma Mine and at several other widely scattered mines and prospects. The ore at the Yuma Mine was 70 to 80 feet thick and recorded production was 8,600 tons @ 2.3% Cu, .03 oz Au/T. Private reports (ADMR Files) suggest potential reserves of 300,000 to 500,000 tons at 1.7% Cu and .03 oz Au/T, but there was little objective data to verify these figures.

The exploration potential of interest in the Northwestern Granite Wash Mountains is that of potential bulk-tonnage and higher-grade gold and gold-copper skarn and replacement mineralization localized where the the major low-angle shear zone is superimposed on competent, brittle, and reactive rocks. This geologic setting is concealed by overlying unmineralized rocks and pediment gravels and has not been thoroughly explored previously. Previous drilling in the area includes one or two possible drill holes (ADMR Files) in the Yuma Mine vicinity, two old holes drilled by O.B. Kilroy, and several old drill holes, and five or six relatively recent 1985(?) holes drilled in the vicinity of the Three Musketeers tungsten mine. Old roads west of the Yuma Mine and in the vicinity of the gold prospect at the SE corner of Section 24 were repaired in the late 1970's(?), but there was no evidence of drilling.

Non-vein gold mineralization occurs in a series of prospects near the faulted base of the quartzite in the SE¼ of Sec 24, T6N, R15W. The larger mine in the area was referred to by Don Nelson as the Yellow Breast, but no background data was available on the property. Gold occurs in pyrite in sheared, clay-altered chloritic siltstone (?) within thin-bedded, tightly-folded quartzite; with fine-grained pyrite and chalcopyrite in fractured zones in the thin-bedded quartzite, and is superimposed on variable epidote-garnet skarn and copper mineralization in and near the fault contact between the thin-bedded quartzite and underlying carbonate rocks. The gold mineralization does not exhibit any associated quartz or quartz veining; lead minerals were not noted in the area; the gold-silver ratio is relatively high, and gold values, although associated with copper, are independent of indicated copper values. Samples that illustrate this mineralization include:

Sample No.	ppm Au	ppm Ag	Description
4963-A	12.5	2.4	Dump sample - Yellow Breast pit: select from pile of pyritic, chloritic schist with 10-20% former pyrite.
4963-B	4.67	9.5	Dump sample - weakly pyritized quartzite; shaft above copper-skarn mineralization and approximately 750 ft. west of sample 63-A.

4989-I	12.7	24.7	Same shaft as 4963-B - near vert. 2 ft. wide zone of disseminated pyrite & chalcopyrite in quartzite adjacent to band of schistose siltstone

Copper-skarn mineralization at and near the faulted base of the thin-bedded quartzite also exhibits prominent gold values as indicated by the following samples. Throughout the area, the faulted contact of quartzite and carbonate rocks is covered by talus and was observed only in the pit sampled as Sample No. 4989-B.

Sample No.	ppm Au	ppm Ag	Description
4963	6.70	69.5	Dump - inclined shaft at contact of quartzite & carbonate. Gossan-like material derived from high sulfide garnet-chalcopyrite-magnetite-skarn replacement zone.
4989-A	.587	13.5	Same dump as above - general dump sample of low-sulfide garnet-epidote skarn.
4989-B	2.53	32.7	5 ft. sample of garnet with limonite and CuOx adjacent to sheared quartzite in pit 25 ft. east of shaft above.
4985-B	1.94	1.8	Dump of prospect pit 300 ft. northeast of 4989-B; quartzite with epidote, minor limonite, and minor copper oxides.

The quartzite unit hosting the mineralization is thin bedded, tightly folded and sheared; includes thin beds of marble; grades into a white argillaceous quartzite, and contains variable amounts of fine-grained disseminated pyrite. Some exposures suggest that the pyritization and argillic alteration occured prior to folding and metamorphism. However, shear zones in the same area exhibit intense pyritization, some tourmaline and abundant gypsum indicating that pyritization and mineralization also post-date the metamorphism. The Mesozoic (?) volcanic and volcaniclastic rocks in fault contact above and adjacent to the quartzite exhibit pyritic alteration that is most extensive at lower elevations and appears semi-continuous with the pyritic alteration associated with and above the magnetite deposit one mile to the southeast. Virtually every sample from the lower part of the thin-bedded quartzite and near the fault contact contained prominently anomalous gold values (.10 to over .30 ppm Au) and samples of the pyritized quartzite and Mesozoic volcanic and volcaniclastic rocks at lower elevations to the south and east were also commonly anomalous in gold (.05 to .10 ppm Au). Oliver Kilroy's drill hole OBK #1, located three thousand feet southeast of the magnetite replacement deposit, encountered a 20 foot interval at a depth of 85 feet that averaged approximately 1 ppm gold, and the intercept was described as shale and quartzite with moderate pyrite. The extent of this gold mineralization and its relationship to

that to the west is not known. The accompanying generalized sketch maps illustrate the distribution of both higher-grade and anomalous gold values in pyritic altered rock with respect to the faulted base of the quartzite and the pyritic alteration. The fault zone along the base of the quartzite is concealed by both talus and overlying fault slices of Mesozoic (?) volcanic and volcaniclastic rocks. It is believed to be a high-angle splay leading upward from the underlying major low-angle shear zone and the larger area of anomalous gold values in pyritic quartzite and volcaniclastic rocks may reflect extensive gold mineralization associated with the low-angle shear zone at depth.

The alluvial covered pediment in Secs 26, 27, 34, 35 and 36, T6N, R15W, has potential for similar mineralization concealed by alluvium and fault-bounded low-angle slices of unmineralized rocks. Low-angle faults were noted at several points at the edge of alluvial cover in the SE¼ of Sec 26 and the NE¼ of Sec 35. Limited exposures indicate that steeply-dipping quartzite occurs beneath the surface exposure of brecciated limestones and the major, low-angle shear zone can be projected into the area from exposures to the northeast and south. Samples taken from pyritic-altered, sheared, Mesozoic (?) volcaniclastic rocks at the edge of alluvial cover; from sheared quartzite and limestone, and from garnet-epidote skarn at the edge of cover in the SE¼ of Sec 26 exhibited weakly anomalous gold values. As illustrated by the tabulation below, the sample results are ambiguous but do indicate that there is a possibility of concealed gold mineralization in this area.

Sample No.	ppm Au	ppm Ag	Description
4976-A	.225	.2	Validation cut - 3 ft. sample of limestone Bx in low-angle fault - a few thin dk gray qtz vlts, minor limonite and CuOx stain.
4977-B	.038	.2	50 ft. sample of sheared pyritic schist; hematitic limonite after pyrite.
70556-D	.004	.2	(same location as 77-B) 10 ft. sample of highly pyritic schist.
4978-A	.018	0.5	Garnet-epidote skarn with minor limonite, exposed in bottom of wash.

Conclusions

The Northwestern Granite Wash Mountain Area of La Paz County, Arizona is submitted as a prospect with favorable exploration potential for replacement-type gold mineralization. The favorable exploration potential for gold deposits in this area is based on (1) the controlling influence of the major low-angle shear zone and its function as a favorable site for extensive mineralization where it is superimposed on brittle and reactive sedimentary rocks, and (2) the widespread occurrence of non-vein gold and gold-copper mineralization throughout the Granite Wash Mountains. The major exploration target envisioned is that of one or more elongate zones of gold mineralization localized in and adjacent to the major zone of low-angle shearing where it intersects quartzite, skarn, and/or reactive carbonate rocks. The limited geologic and geochemical data indicate that the zone of variable pyritic alteration extending from the gold prospects in the SE¼ of Sec 24, southeast to the magnetite replacement deposit should reflect the area most favorable for this type of mineralization. A secondary area potentially favorable for similar mineralization is the alluvial covered pediment in sections 26, 27, 34, 35 and 36, T6N, R15N where the major low-angle shear zone and units receptive to mineralization are concealed by structurally-displaced, unmineralized rocks and thin alluvial cover.

Respectfully Submitted,

By 

Corn & Ahern

EXPLORATION POTENTIAL OF THE

NORTHWESTERN GRANITE WASH MOUNTAINS

ELLSWORTH MINING DISTRICT

LA PAZ COUNTY, ARIZONA

RUSSELL M. CORN
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8425 DESERT STEPPES DR.
TUCSON, ARIZONA 85710
PHONE 602 - 298-1770

May 24, 1989

EXPLORATION POTENTIAL OF THE NORTHWESTERN GRANITE WASH MOUNTAINS, LA PAZ COUNTY, ARIZONA

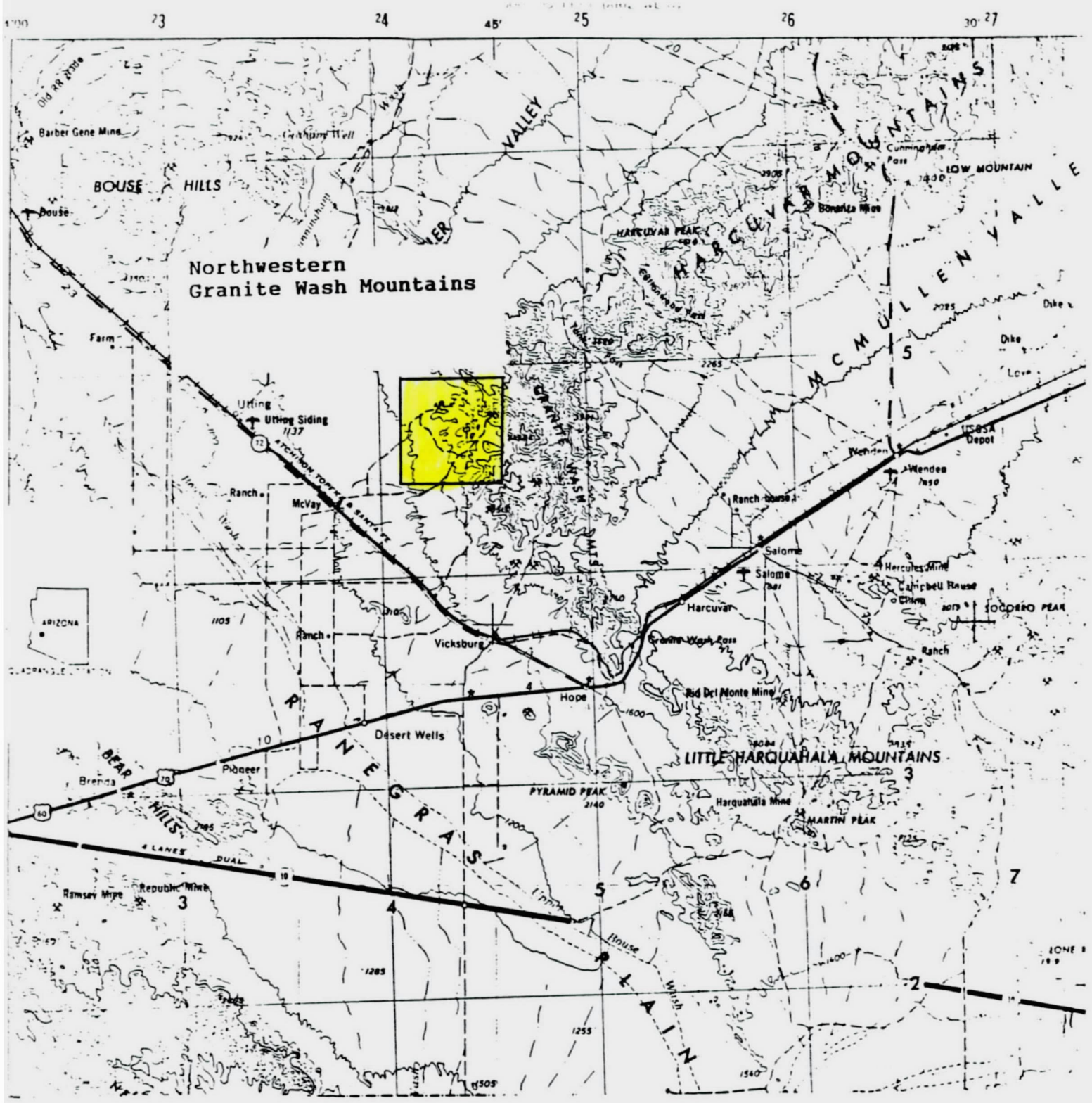
Summary

The Northwestern Granite Wash Mountain Area of La Paz County, Arizona is recommended as a specific area of exploration interest for replacement-type gold mineralization. Reconnaissance geologic investigations throughout the Granite Wash Mountains indicated that mineralization is spatially related to major low-angle shear zones that separate larger lithotectonic units. The investigations also indicated that the non-vein, diffuse type of gold-copper mineralization localized in and adjacent to sheared competent, brittle and reactive rocks could provide an exploration target with sufficient grade and size potential to be of interest. In the Northwestern Granite Wash Mountains, the major low-angle shear zone is superimposed on Paleozoic sedimentary rocks, including competent, thin-bedded quartzite, skarn and reactive carbonates and has localized extensive copper, iron and tungsten mineralization as well as the non-vein gold mineralization. This geologic setting and its potential for non-vein replacement-type gold mineralization is recommended as an exploration target of interest to Freeport-McMoran Gold Company.

General

The Northwestern Granite Mountain Area of La Paz County, Arizona is recommended to Freeport-McMoran Gold Company as an area of specific exploration interest under the consulting agreement dated August 1, 1988. As outlined on the attached index map, the general area comprises the SE¼ of T6N,R15W and the adjacent sections in T6N,R14W. The specific area of exploration potential is that area underlain by major low-angle faults and structurally deformed Paleozoic and Mesozoic sedimentary rocks in the west ½ of Sec 30 and the SW¼ of Sec 19, T6N,R14W; the S½ of Sec 24 and all of Secs 25, 26, 27, 34, 35, and 36, T6N,R15W, La Paz County, Arizona. The area outlined has a favorable exploration potential for replacement-type gold mineralization hosted by low-angle sheared and brecciated zones in quartzite, skarn, and reactive carbonate rocks. The known copper, iron and tungsten mineralization in this area are not of economic interest at the present time.

Gold prospects in the Granite Wash Mountains were first discovered in the 1860's but there was little active mining until after completion of the railroad in the early 1900's. Other periods of activity included the 1930's, 1940's and the 1950's when there was active exploration for and production of tungsten. The largest mine in the area is the Yuma Mine with recorded production of 8,600 tons @ 2.3% Cu, and 0.3 oz Ag, and .03 oz Au/T. Recorded metal production from the entire Granite



Scale 1:250,000

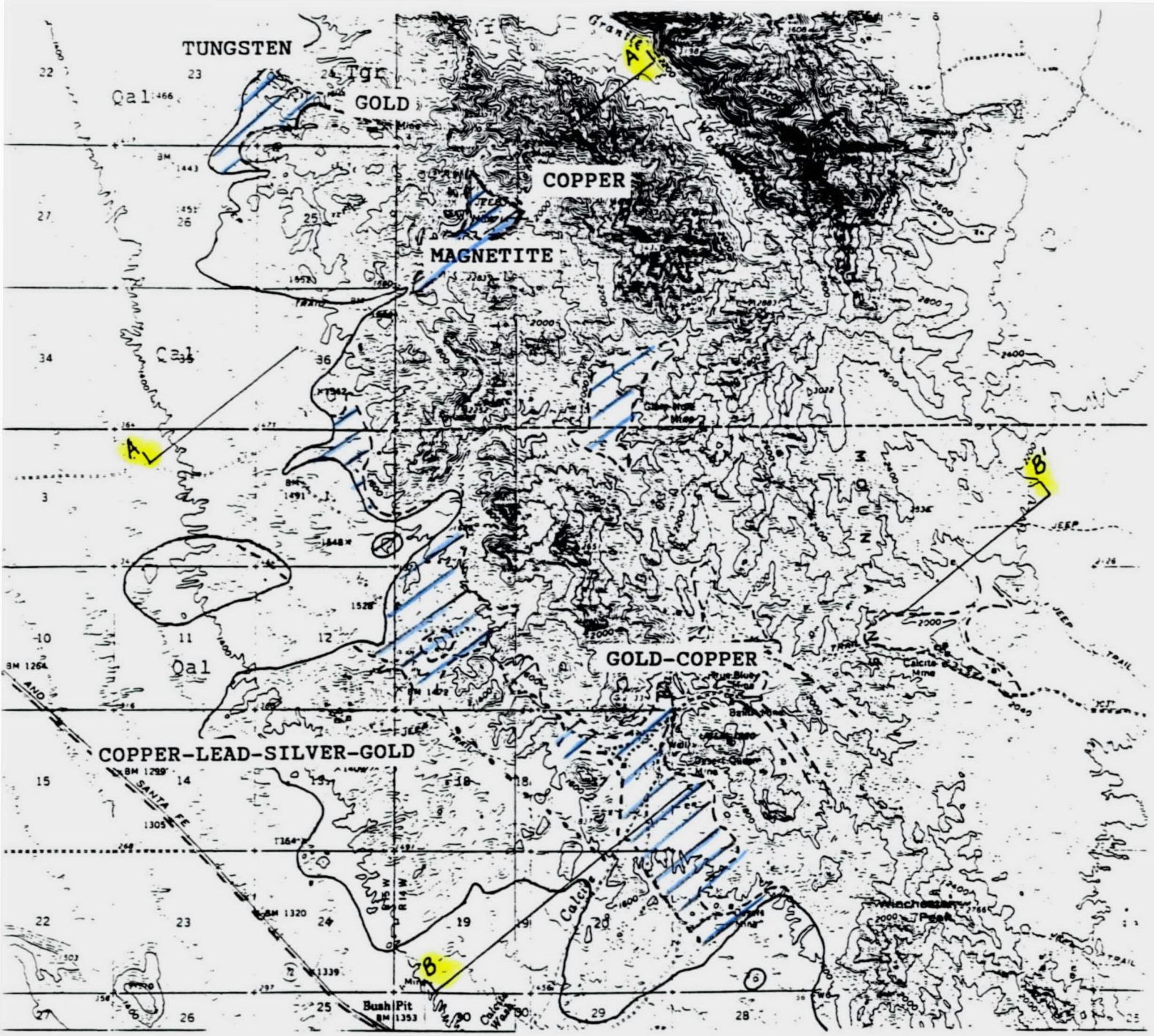
INDEX MAP

Showing the Location of the
Northwestern Granite Wash Mountains
La Paz County, Arizona

R.M. Corn

Wash Mountains includes several thousand units of tungsten and several hundred to one thousand tons of ore each from the Glory Hole, Dandy, Desert Queen and True Blue Mines, averaging .40 to .60 oz Au/T. During the copper boom of the 1960's and 1970's both Bear Creek and Tenneco reportedly examined the Yuma Copper Mine and may have drilled a hole or two in its vicinity. Oliver Kilroy has held a major land position in the area for almost 20 years, and has carried out extensive geophysical surveys, and has drilled fifteen holes for copper mineralization with negative results. Exploration activity that presumably was directed toward gold mineralization during the 1980's has included dozing and trenching by Bill Baker at the True Blue Mine, and by Charles Willmore at the Pandoras Box and Dandy prospects in Secs 6 and 7, T5N,R14W. The Dona Kay prospect in Secs 12 and 13, T5N,R15W was drilled by Baroque Resources and Weaco in 1985 and five or six rotary holes were drilled on the major low-angle fault and associated veins at the Three Musketeers tungsten property in the SW¼ of Sec 24, T7N,R15W. Most of the land in the area is Federal, administered by the BLM and old claim posts run rampant through the mountains and over the adjacent alluvial covered pediment. The only active mine in the District is the Yuma Mine where Donald Nelson is mining gem quality azurite and malachite. Early in April he stated that he had obtained a lucrative contract to supply azurite to China. A brief glance at the BLM geographic index indicated that a number of individuals and small companies(?) hold claims in the Northwestern Granite Wash Mountains. These individuals are: Donald Nelson with claims in the vicinity of the Yuma Mine, Elmer Lewis with claims at the Yellow Breast, and Jack Darland, who staked the same area Nov. 14, 1988, O.B. Kilroy, Transverse Mines, and Inclination Mining Company. Detailed claim maps were not available and the detailed BLM records were not reviewed.

This report is intended to provide a brief description of the geologic setting and general characteristics of mineralization in the entire area as well as the detailed data and recommendations on the exploration potential of the Northwestern Granite Wash Mountains. The data presented in this report was obtained during reconnaissance-type geologic examinations in the winter and early spring of 1988/1989. Accompanying this report are a sketch map showing the distribution of mineralization throughout the area, a generalized geologic map and section; a map illustrating the distribution of alteration and mineralization in the favorable area of disrupted Paleozoic quartzite and carbonate rocks, as well as sample logs, and a sample index map. Pertinent geologic references include: Bancroft, H., 1911, Reconnaissance of the Ore Deposits in Northern Yuma County, Arizona, USGS Bull 451; Ciancanelli, E.V., 1965, Structural Geology of the Western Edge of the Granite Wash Mountains, Yuma Co., Arizona, University of Arizona MS Thesis; Dale, V.B. 1959, Tungsten Deposits of Yuma, Maricopa, Pinal and Graham Counties, Arizona, USBM RI 5516; Harrer, C.M., 1964, Reconnaissance of Iron Resources in Arizona; USBM I.C. 8236; Keith, S.B., 1978, Index of Mining Properties in Yuma County, Arizona, Ariz Bur of Geol and Mineral Tech, Bull 192; Laubach, S.E., Reynolds, S.J. and Spencer, J.E., 1987, Mesozoic Stratigraphy of the Granite Wash Mountains, West Central Arizona, AGS Digest Vol 18, pp 91-11; Reynolds and others, 1987, Geologic map of the Granite Wash and Western Harcuvar Mountains, West-central Arizona; Ariz Bur Geol and Mineral Tech Open-File Report. The Arizona Geologic Survey plans publication of a geologic map of the Granite Wash Mountains in May or June of 1989.



INDEX MAP

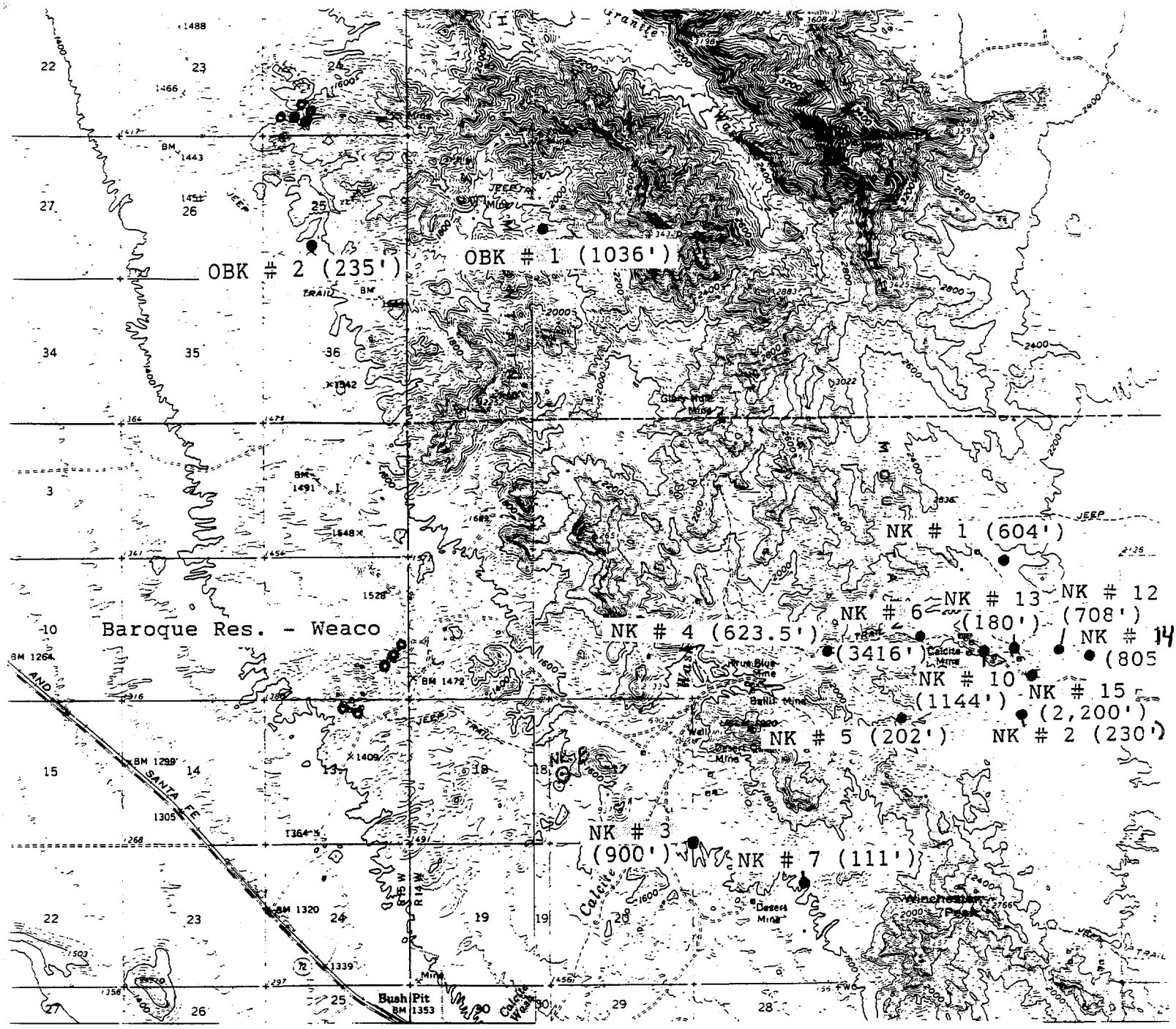
Showing the Distribution of Mineralization

Granite Wash Mountains

La Paz County, Arizona

Qal	Quaternary Alluvium
Tgr	Tertiary Granite
	Indicated Major Low-Angle Shear Zone

Northwestern Granite Wash Mountains Prospect



Drill Holes in the Western Granite Mountains
La Paz County, Arizona

● NK — Holes drilled by Oliver B. Kilroy
● OBK — Kilroy Investments
Tucson, Arizona

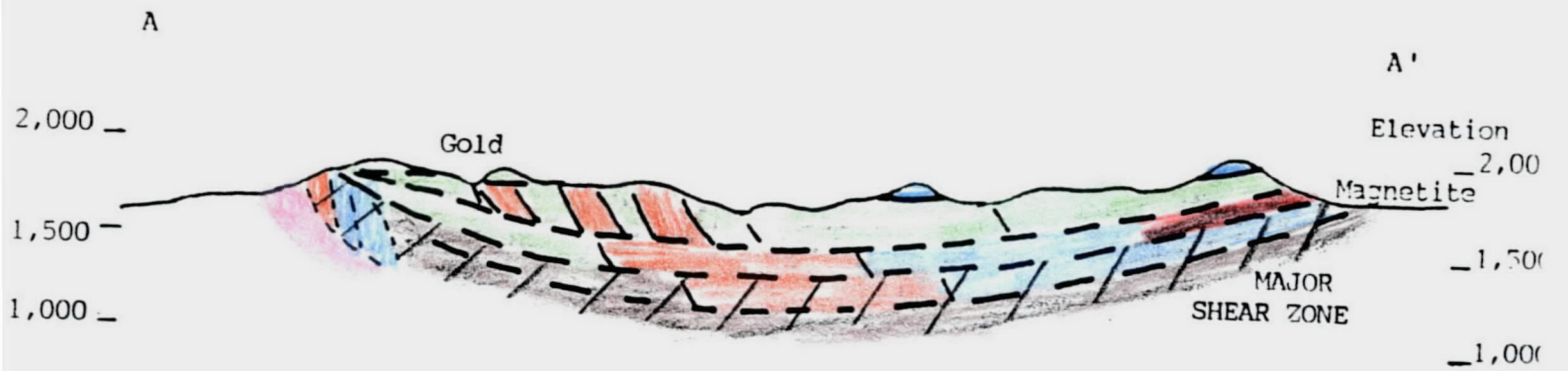
o — Holes drilled by other companies or individuals

Geologic Relationships

The Granite Wash Mountains, like many of the mountain ranges of western Arizona, consist of a complex series of stacked, low-angle fault slices of varied rock units. The geologic relationships are shown and described in detail in recent Arizona Geologic Survey maps and publications on the area. Rock units in the various fault slices include Mesozoic granitic rocks, and variably metamorphosed Mesozoic mafic volcanic and volcaniclastic rocks, various clastic sedimentary rocks and carbonaceous siltstones, Paleozoic sedimentary rocks, including quartzite, shale and limestones and probable Precambrian sedimentary and igneous rocks. Although the massive volcanic and igneous rocks do not appear to be intensely deformed, the thin-bedded sedimentary units commonly exhibit steep dips and tight isoclinal folds. The juxtaposition of various rock types of different metamorphic grade indicates intense Mesozoic deformation and metamorphism followed by low-angle faulting. Varied intrusive rocks are known in the area including Jurassic(?) diorite and granite, Laramide and Tertiary(?) granite, Tertiary quartz-feldspar porphyry, rhyolite, lamprophyre, basalt and hornblende-bearing microdiorite or andesite. The biotite granite intrusive at the northwest corner of the mountains is believed to be Laramide or Tertiary and is not metamorphosed or severely disrupted. It is older than, and cut by the numerous northwest trending basic dikes. Mineralization and variable hydrothermal alteration effects are commonly associated with the granite, quartz-feldspar porphyry, and lamprophyre while the late Tertiary andesite and basalt are only weakly altered if at all.

The reconnaissance examinations and a review of past drilling in the area indicated that the complexly faulted rock units occur in separate "packages" or lithotectonic units several hundred to several thousand feet thick separated by major low-angle zones of shearing. Rocks within each lithotectonic unit exhibit similar intensities of deformation and metamorphic characteristics suggesting low-angle displacement after metamorphism. The major zones of low-angle shearing commonly exhibit prominent metamorphic-metasomatic effects such as variable alteration and numerous veins, veinlets and erratic lenses of metamorphic white quartz. Mineralization throughout the area is commonly "elevation controlled" and appears to be localized within or in close proximity to a major subhorizontal shear zone. These relationships are illustrated on the attached 1 inch to 1 mile scale sketch map and sections. The reflection of the low-angle shear zones by parallel, linear, broad basins of low relief suggests warping or some dislocation along west-north-west trending structures. In summary, the Granite Wash Mountains are a deeply-eroded, complex of variably metamorphosed Mesozoic thrust sheets intruded by Laramide(?) and/or Tertiary granite and a varied suite of smaller-scale Tertiary intrusives. Tertiary deformation and low-angle faulting is undoubtedly present, particularly in view of the large Tertiary granitic intrusive and the structurally-rotated, disrupted Tertiary volcanics in the Bouse Hills only a few miles to the northwest. The Tertiary faulting is believed to be superimposed on the earlier Mesozoic zones of weakness.

Generalized Section
Illustrating Structural Relationships
And Mineralization
Northwestern Granite Wash Mountains
La Paz County, Arizona



Scale: 1 inch = 1,000 feet
H = V

- Granite
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- Volcanic & Volcaniclastic rocks
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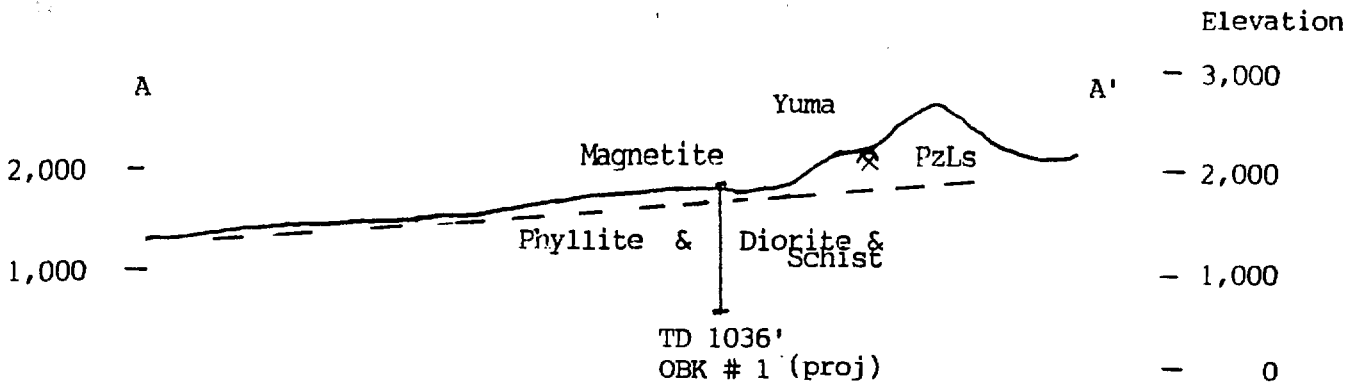
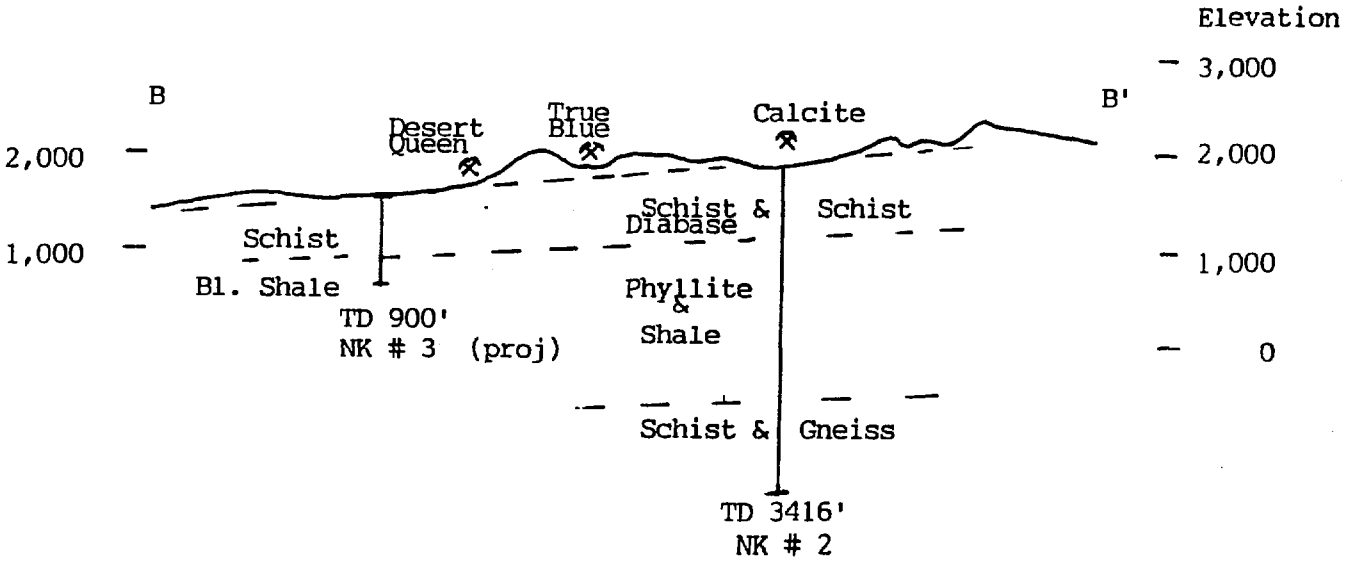
- MAGNETITE





SCALE: Horizontal - 1inch = 1 mile
Vertical - 1 inch = 2,000 ft

GENERALIZED SECTIONS ILLUSTRATING

MAJOR LOW - ANGLE SHEAR ZONES AND MINERALIZATION

GRANITE WASH MOUNTAINS, LA PAZ COUNTY, ARIZONA

Mineralization

There are several different types of mineralization and introduced metals in the Granite Wash Mountains, including gold, copper, tungsten, iron as magnetite, and complex copper-lead-zinc-gold-silver veins. Separate centers of mineralization, marked by clusters of mines and prospects, include the Calcite Mine area with very weak tungsten, copper and zinc mineralization associated with widespread intense pyritic alteration of schistose metavolcanic and volcaniclastic rocks; the True Blue - Desert Queen area of gold-copper mineralization in sheared and tightly folded carbonaceous phyllites; the Dona Kay area of copper-lead-gold-silver mineralization in quartz veins and low-angle shear zones, and the northwestern Granite Wash Mountains where copper, gold, tungsten and magnetite mineralization occur as replacement mineralization in sheared, competent and reactive Paleozoic sedimentary rocks. The relatively intense copper mineralization at the Yuma Mine and several other prospects contains variable gold values, .02 to .04 oz Au/T, and occurs as a garnet-epidote skarn replacement of Paleozoic limestone. Other types of less intense copper mineralization include chalcopyrite, weakly disseminated in quartzite and limestone, associated with pryite in quartz-siderite veins and as primary chalcopyrite and chalcocite in carbonate veins in the True Blue area. The tungsten mineralization at the northwestern corner of the mountains occurs as scheelite localized in irregular disseminations and low-angle quartz veins in and near the major shear zone at the base of the weakly metamorphosed Paleozoic sedimentary rocks and along the contact of the adjacent Tertiary granite. The magnetite replacement mineralization that is exposed on the west side of Yuma wash represents the most intense and extensive hydrothermal mineralization in the area. Magnetite, associated with minor pyrite, pyrrhotite, and chalcopyrite is exposed over a distance of more than 1500 feet and occurs as a 10 to 50 foot thick replacement of Paleozoic carbonates and siltstone in the major low-angle shear zone separating weakly metamorphosed Paleozoic and Mesozoic rocks from underlying higher-rank metamorphic rocks. The general structural position of the magnetite replacement zone appears identical to that of the tungsten mineralization one to two miles to the northwest.

Hydrothermal alteration effects include the widespread pyritic-argillic alteration in the vicinity of the Calcite and Glory Hole Mines and pyritic alteration in the northwestern corner of the mountains where pyritic altered rocks overlie and are spatially related to the magnetite replacement zone. The disseminated pyrite in the metavolcanic rocks near the Calcite Mine and in tightly folded Paleozoic quartzites appears strataform and may in part reflect Mesozoic pyritization that is not associated with metallization. Variable pyritization is associated with the tungsten mineralization and is common in low-angle shear zones along the west edge of the mountain. Siderite and chlorite are prominent in the zones of low-angle shearing, and siderite also occurs as discrete veins and massive replacement bodies. Silicification is not common. Quartz occurs as syn- and post-metamorphic white quartz veins, lenses and innumerable small veinlets localized in major shear zones;as larger, northwest-trending veins that flatten with depth, and as parallel, sub-horizontal veins within the larger low-angle shear zones.

All of the mineralization observed is localized in structural features that post-date the period of Mesozoic metamorphism. Tungsten mineralization is spatially related to, but post-dates the Laramide or Tertiary granite. The gold mineralization appears to be separate from the other metals, later, and is believed to be of Tertiary age and related to the lamprophyre dikes and sills.

Two types of gold mineralization are evident in the Granite Wash Mountains:

1. Gold-Silver-Base Metal: This type of mineralization occurs in distinct northwest-trending quartz veins and low-angle shear zones. Lead and silver values are relatively high and the gold/silver ratio is less than one to ten. Veins at the Dona Kay property and the nearby mineralized low-angle shear zone are examples of this type of mineralization.

2. Gold-Copper (Gold-Telluride): This type of mineralization is characterized by higher gold values associated with low but variable amounts of fine-grained chalcopyrite and pyrite, and occurs as an indistinct replacement of sheared and fractured zones, particularly where shearing is adjacent to or has been superimposed on competent rocks, such as earlier quartz veins, lamprophyre dikes and sills or massive lenses of metamorphic quartz. Siderite and chlorite are common associates of the mineralization. Siderite veins in the True Blue Area contain pyrite, chalcopyrite and 1 to 2 ppm gold values. There is a high gold to silver ratio, there are no associated lead minerals, and prospects commonly exhibit values of .20 to 1.0 oz Au/T over widths of several feet. Gold tellurides, specifically sylvanite (Au, Ag telluride) and nagyagite (Au, Pb sulpho-telluride), have been reported from this type of mineralization at the True Blue Mine, (ADMR files). The True Blue, Desert Queen, Pandoras Box, and Yellow Breast prospects contain this type of mineralization as illustrated by the samples below:

Sample No.	ppm Au	ppm Ag	Description
4969	13.3	0.6	True Blue (East) 5 ft. sample of sheared carbonate and quartz at old shaft site.
4970-C	4.30	8.1	True Blue (East) dump sample-- siderite altered rock; quartz-minor pyrite and chalcopyrite.
4964	5.39	18.0	Desert Queen area - 5 ft. sample across sheared pyritic synclinal fold beneath flat fault - minor CuOx, quartz and carbonate.
4962	1.33	2.4	True Blue dump - quartz carbonate (siderite-ankerite) vein material with minor tenorite and copper pitch. No evidence of pyrite.
4968-F	2.81	10.0	True Blue (East) 3 ft. NW-trending shear zone in black (carbonaceous) phyllite, minor qtz (none in fault) and some limonite.

Sample No.	ppm Au	ppm Ag	Description
4989-I	12.7	24.7	Shaft in quartzite SW of Yellow Breast Prospect - 2 ft. wide near vert. zone of higher sulfides - fine-grained pyrite and chalcopyrite.

Reconnaissance Examination Results and Exploration Potential

Sample data for samples taken throughout the western Granite Wash Mountains has been previously submitted and the observations on the intensity of mineralization and exploration potential of the various types and centers of mineralization are briefly summarized below. A feature of interest is the numerous samples with weakly anomalous gold values, .05 to .10 ppm Au, indicative of widespread, pervasive gold mineralization. The reconnaissance examinations indicated that the type of mineralization that is of major exploration interest is the diffuse gold-copper mineralization. Tactite copper replacement mineralization, similar to that at the Yuma Mine, was not investigated in detail, but could provide exploration targets of sufficient size and value to also be of interest.

1. Calcite Mine Area: The intense pyritic alteration near the Calcite Mine was tested by 5 or 6 holes drilled by O.B Kilroy with negative results. Gold values in the intermittent intervals assayed were uniformly low, less than .02 ppm Au; base metal values were very low; surface samples from the pyritic altered area did not contain anomalous gold, and it is unlikely that the area contains any mineralization of interest.

2. Dona Kay Mine Area: Production records and sample data suggest that the quartz veins and the stronger mineralization in the low-angle shear zone along the west edge of the mountains may contain .05 to .10 oz Au/T and 1.0 oz Ag together with 1.0 to 2.0 percent each of copper and lead, over widths and thicknesses of three to ten feet. The higher-grade mineralization is discontinuous, limited in extent, and was tested by the Barouque Resources - Weaco drilling. The low-angle shear zone that hosts mineralization continues to the north and west along the mountain front pediment and is obscurred and concealed by both structural and alluvial cover. Widely scattered exposures along the pediment one to two miles to the north and west are variably altered and mineralized and contain anomalous precious metals. The altered and mineralized shear zone,where it is exposed near the Dona Kay Mine,is in relatively imcompetent siltstones and volcaniclastic rocks, but could contain significant mineralization if it were superimposed on competent, brittle rock units.

3. True Blue - Desert Queen Area: The gold-copper mineralization in this area has appreciable grade, but the size potential of the observed mineralization is limited. Production records include:

   Desert Queen - 700 tons + @ .30 oz Au/T, 5 oz/Ag/T and 2.0% Cu.

   True Blue - 200 tons @ .70 oz Au/T, .60 oz Ag/T and 1.0% Cu.

   Dandy Group - 190 tons @ .60 oz Au/T, 4 oz Ag/T and 3.0% Cu.

Detailed sampling of these properties was not attempted. Sample data and field observations indicate that the higher-grade mineralization, similar to that produced prior to 1940, is limited in extent and continuity; that larger, more continuous ore shoots, three to ten feet wide, would probably average .10 to .25 oz Au/T, but this mineralization is sharply constrained without adjacent lower grade values or similar vein mineralization in close proximity. The size potential of the exposed, known mineralization in this area is not sufficient to justify exploration at this time. Although the sheared, black carbonaceous phyllites in the area are a favorable host for lower-grade diffuse gold mineralization, sample data indicates that there is little potential for near-surface bulk-tonnage mineralization of interest in the exposed shear zones. The gold-copper mineralization is commonly localized below sheared subhorizontal quartz veins, metamorphic quartz lenses or competent intrusive rocks. The reconnaissance examinations did not indicate the presence of any extensive, competent and brittle rock units that would provide this type of exploration target at reasonable depths in the True Blue - Desert Queen vicinity. However, the area does contain substantial, widespread gold mineralization, and the exploration potential should be re-evaluated if additional geologic data is obtained.

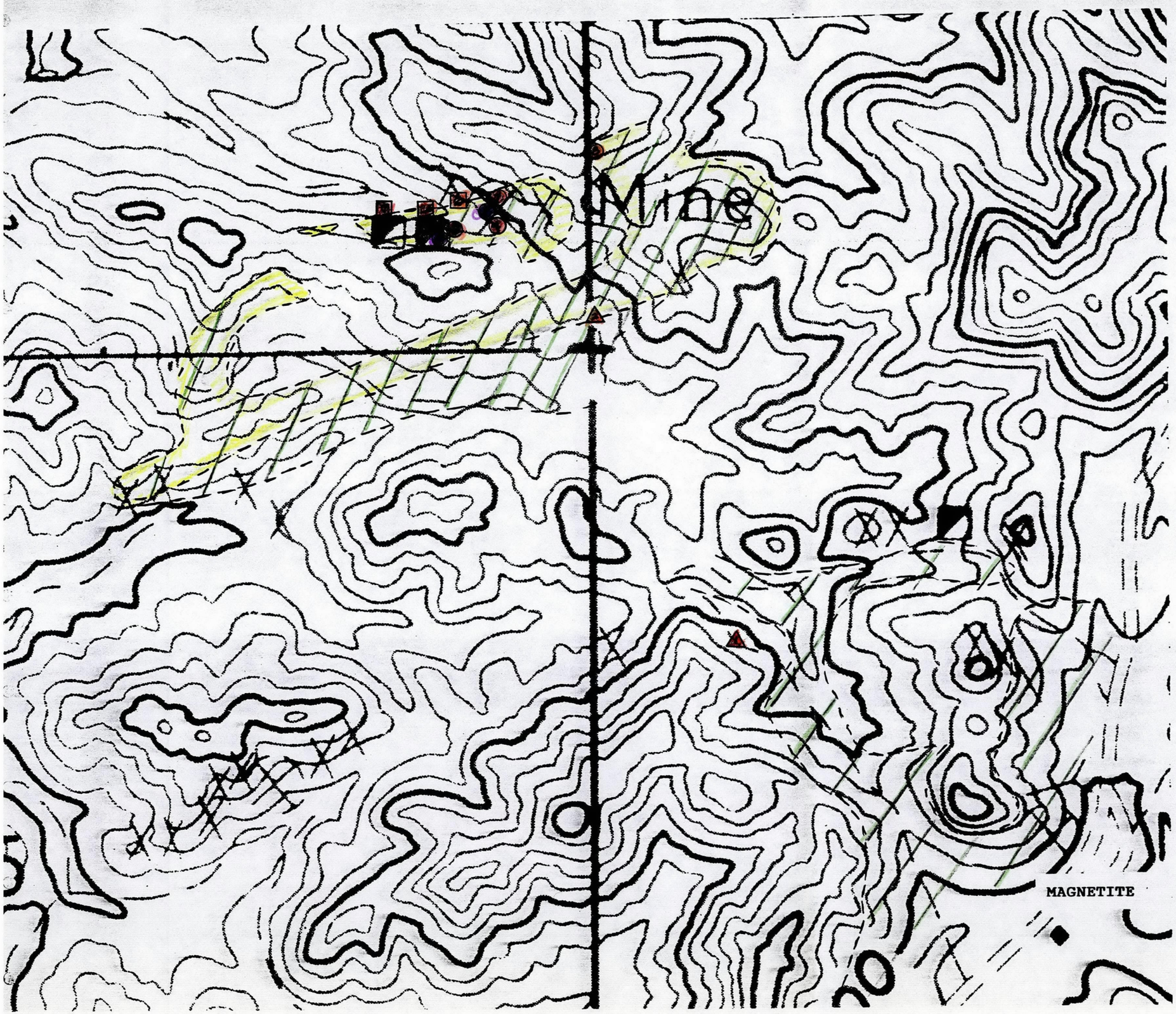
4. Northwestern Granite Wash Mountains: In this area, the major low-angle shear zone is superimposed on varied rock types, including reactive carbonates and brittle, competent quartzites, and this favorable geologic setting has localized several different types of extensive and relatively intense mineralization, including copper, magnetite, tungsten, and gold-copper mineralization. The major low-angle shear zone is exposed at the margins of the area, but otherwise is concealed by structurally superimposed Paleozoic and Mesozoic rocks and by pediment gravels. The area offers a favorable exploration potential for gold replacement mineralization and for tactite copper mineralization similar to that at the Yuma Mine. Geologic and sample data and the exploration potential of the Northwestern Granite Wash Mountains is discussed in more detail in the following section and presented on the accompanying sample logs, maps and sections. Although not of economic interest, the magnetite deposit illustrates the intensity and possible extent of replacement mineralization localized in the favorable geologic setting resulting from the superposition of the major low-angle shear zone on Paleozoic sedimentary rocks. Magnetite occurs as a subhorizontal 10 to 50 foot thick replacement zone exposed over a distance of more than 1500 feet on the west bank of Yuma Wash. Both the magnetite and nearby tactite copper mineralization are reported to contain some gold values, but the few samples of magnetite taken during this investigation contained only weakly anomalous amounts of gold, suggesting that if there are higher gold values associated with the magnetite, they are limited in extent. Harrer, in his description of the magnetite deposit, (USBM IC 8236 p. 136), stated that "underground exploration by King and Crawford had indicated a cupriferous pyrrhotite-magnetite deposit estimated to contain 50% Fe, .75 to 1.6% Cu and .04 oz Au/T." This underground work was probably in the area of skarn alteration at the north end of the magnetite zone, and these copper and gold values are comparable to values reported in production records from the Yuma

Mine. Garnet-epidote skarn that contains variable amounts of pyrite, chalcopyrite and magnetite occurs as a replacement of sheared Paleozoic carbonates at the Yuma Mine and at several other widely scattered mines and prospects. The ore at the Yuma Mine was 70 to 80 feet thick and recorded production was 8,600 tons @ 2.3% Cu, .03 oz Au/T. Private reports (ADMR Files) suggest potential reserves of 300,000 to 500,000 tons at 1.7% Cu and .03 oz Au/T, but there was little objective data to verify these figures.

The exploration potential of interest in the Northwestern Granite Wash Mountains is that of the potential for higher-grade gold and gold-copper replacement mineralization localized where the major low-angle shear zone is superimposed on competent, brittle, and reactive rocks. This geologic setting is concealed by overlying unmineralized rocks and pediment gravels and has not been thoroughly explored previously. Previous drilling in the area includes one or two possible drill holes (ADMR Files) in the Yuma Mine vicinity, two old holes drilled by O.B. Kilroy, several old drill holes, and five or six relatively recent 1985(?) holes drilled in the vicinity of the Three Musketeers tungsten mine. Copies of logs for Kilroy's holes are attached to this report, but information was not available on the drill holes near the tungsten mine. Old roads west of the Yuma Mine and in the vicinity of the gold prospect at the SE corner of Section 24 were repaired in the late 1970's(?), but there was no evidence of drilling.

Gold mineralization similar in character to that noted in the True Blue - Desert Queen area, five miles southeast, occurs in a series of prospects near the faulted base of quartzite in the SE¼ of Sec 24, T6N,R15W. The larger mine in the area was referred to by Don Nelson as the Yellow Breast, but no background data was available on the property. Gold occurs in pyrite in sheared, clay-altered chloritic siltstone (?) within thin-bedded, tightly-folded quartzite; with fine-grained pyrite and chalcopyrite in fractured zones in the thin-bedded quartzite, and superimposed on variable epidote-garnet skarn and copper mineralization in and near the fault contact between the thin-bedded quartzite and underlying carbonate rocks. The gold mineralization does not exhibit any associated quartz or quartz veining; lead minerals were not noted in the area; the gold-silver ratio is relatively high, and gold values, although associated with copper, are independent of indicated copper values. Samples that illustrate this mineralization include:

Sample No.	ppm Au	ppm Ag	Description
4963-A	12.5	2.4	Dump sample - Yellow Breast pit: select from pile of pyrite, chloritic schist with 10 - 20% former pyrite.
4963-B	4.67	9.5	Dump sample - weakly pyritized quartzite; shaft above copper-skarn mineralization and approximately 750 ft. west of sample 63-A.



Distribution of
Higher-Grade Gold Values
Northwestern Granite Wash Mountains
La Paz County, Arizona

Quartzite

Pyritic Alteration

PPM Gold

1 - 3 3 - 10 +10

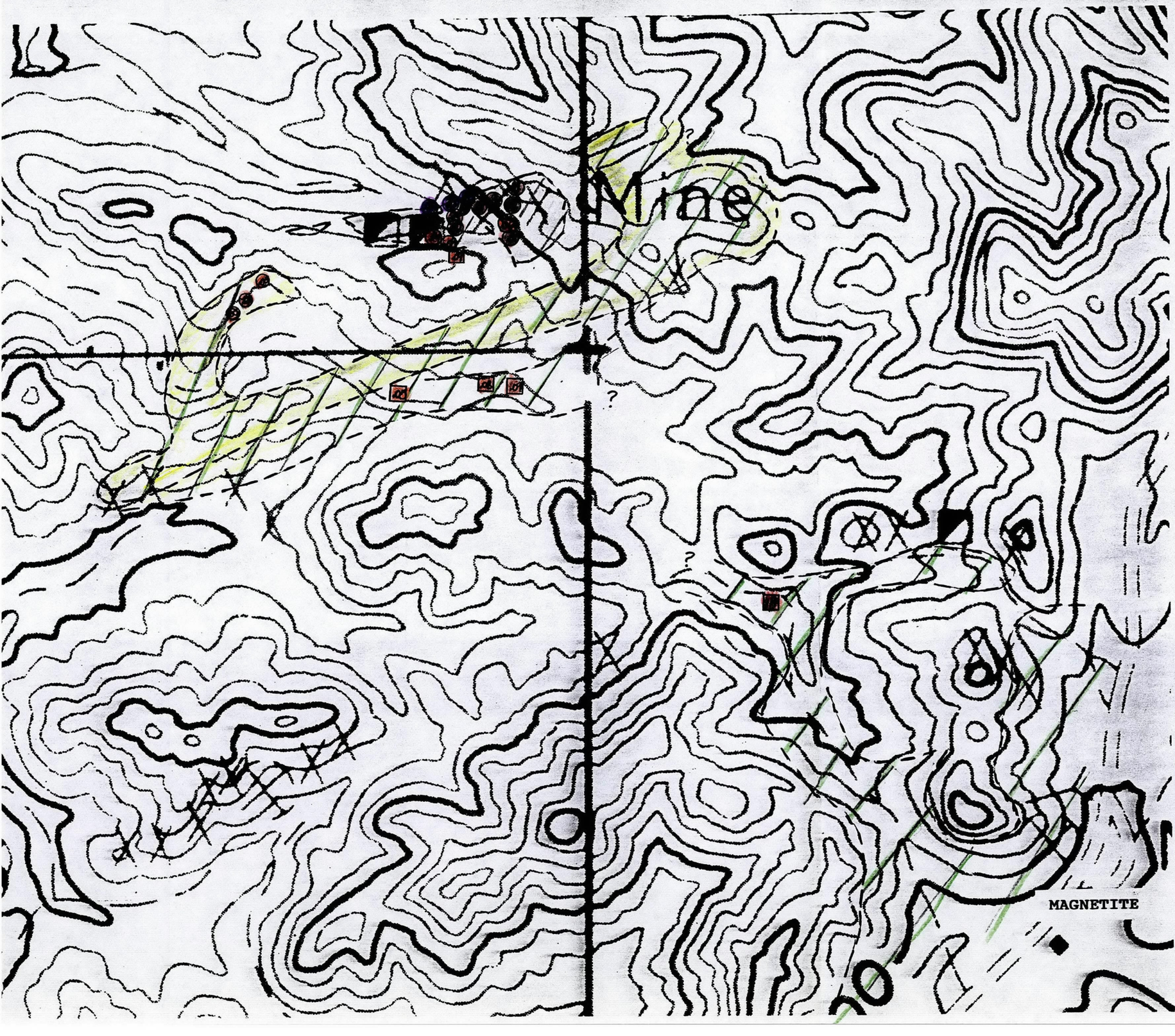
Type of Sample

quartzite

skarn

vein

Scale: 1 inch = 500 feet



Distribution of Gold in Altered Rocks
Northwestern Granite Wash Mountains
La Paz County, Arizona

Quartzite

Pyritic Alteration

PPM Gold

.05 - .10 .10 - .30 +.30

Type of Sample

○ quartzite

□ volcanic or volcaniclastic

Scale: 1 inch = 500 feet

Sample No.	ppm Au	ppm Ag	Description
4989-I	12.7	24.7	Same shaft as 4963-B - near vert. 2 ft. wide zone of dissem. pyrite & chalcopyrite in quartzite adjacent to band of schistose siltstone.

Copper-skarn mineralization at and near the faulted base of the thin-bedded quartzite also exhibits prominent gold values as indicated by the following samples. Throughout the area, the faulted contact of quartzite and carbonate rocks is covered by talus and was observed only in the pit sampled as Sample No. 4989-B

Sample No.	ppm Au	ppm Ag	Description
4963	6.70	69.5	Dump - inclined shaft at contact of quartzite & carbonate. Gossan-like material derived from high sulfide garnet-chalcopyrite-magnetite-skarn replacement zone.
4989-A	.587	13.5	Same dump as above - general dump sample of low-sulfide garnet-epidote skarn.
4989-B	2.53	32.7	5 ft. sample of garnet with limonite and CuOx adjacent to sheared quartzite in pit 25 ft. east of shaft above.
4985-B	1.94	1.8	Dump of prospect pit 300 ft. northeast of 4989-B; quartzite with epidote, minor limonite, and minor copper oxides.

The quartzite unit hosting the mineralization is thin bedded, tightly folded and sheared, includes thin beds of marble; grades into a white argillaceous quartzite, and contains variable amounts of fine-grained disseminated pyrite. Some exposures suggest that the pyritization and argillic alteration occurred prior to folding and metamorphism. However, shear zones in the same area exhibit intense pyritization, some tourmaline and abundant gypsum indicating that pyritization and mineralization also post-date the metamorphism. The Mesozoic (?) volcanic and volcaniclastic rocks in fault contact above and adjacent to the quartzite exhibit pyritic alteration that is most extensive at lower elevations and appears semi-continuous with the pyritic alteration associated with and above the magnetite deposit one mile to the southeast. Virtually every sample from the lower part of the thin-bedded quartzite and near the fault contact contained prominently anomalous gold values (.10 to over .30 ppm Au) and samples of the pyritized quartzite and Mesozoic volcanic and volcaniclastic rocks at lower elevations to the south and east were also commonly anomalous in gold (.05 to .10 ppm Au). Oliver Kilroy's drill hole OBK #1, located three thousand feet southeast of the magnetite replacement deposit, encountered a 20 foot interval at a depth of 85 feet that averaged approximately 1 ppm gold, and the intercept was described as shale and quartzite with moderate pyrite. The extent of this gold mineralization and its relationship to that to the west is not known. The accompanying generalized sketch maps illustrate the distribution of both higher-grade and anomalous gold values in pyritic altered rock with re-

spect to the faulted base of the quartzite and the pyritic alteration. The fault zone along the base of the quartzite is concealed by both talus and overlying fault slices of Mesozoic (?) volcanic and volcaniclastic rocks. It is believed to be a high-angle splay leading upward from the underlying major low-angle shear zone and the larger area of anomalous gold values in pyritic quartzite and volcaniclastic rocks may reflect extensive gold mineralization at depth associated with the low-angle shear zone.

The alluvial covered pediment in Secs 26, 27, 34, 35 and 36 has potential for similar mineralization concealed by alluvium and fault-bounded low-angle slices of unmineralized rocks. Low-angle faults were noted at several points at the edge of alluvial cover in the SE¼ of Sec 26 and the NE¼ of Sec 35. Limited exposures indicate that steeply-dipping quartzite occurs beneath the surface exposure of brecciated limestones and the major, low-angle shear zone can be projected into the area from exposures to the northeast and south. Samples taken from pyritic-altered, sheared, Mesozoic (?) volcaniclastic rocks at the edge of alluvial cover: from sheared quartzite and limestone and from garnet-epidote skarn at the edge of cover in the SE¼ of Sec 26 exhibited weakly anomalous gold values. As illustrated by the tabulation below, the sample results are ambiguous but do indicate that the possibility of concealed gold mineralization in this area should receive additional consideration.

Sample No.	ppm Au	ppm Ag	Description
4976-A	.225	<.2	Validation cut - 3 ft sample of limestone Bx in low-angle fault - a few thin dk gray qtz vlts, minor limonite and CuOx stain.
4977-B	.038	<.2	50 ft sample of sheared pyritic schist; hematitic limonite after pyrite.
70556-D	.004	<.2	(same location as 77-B) 10 ft sample of highly pyritic schist.
4978-A	.018	0.5	Garnet-epidote skarn with minor limonite, exposed in bottom of wash.

Recommendations

The Northwestern Granite Wash Mountain Area of La Paz County, Arizona is recommended as an area of favorable exploration potential for replacement-type gold mineralization. The favorable exploration potential for gold deposits in this area is based on (1) the controlling influence of the major low-angle shear zone and its function as a favorable site for extensive mineralization where it is superimposed on brittle and reactive sedimentary rocks, and (2) the widespread occurrence of non-vein gold and gold-copper mineralization throughout the Granite Wash Mountains. The major exploration target envisioned is that of one or more elongate zones of gold mineralization localized in and adjacent to the major zone of low-angle shearing where it intersects quartzite, skarn, and/or reactive carbonate rocks. The limited geologic and geochemical data indicate that the zone of variable pyritic alteration extending from the gold prospects in the SE¼ of Sec 24, southeast to the magnetite replacement deposit should reflect the area most favorable for this type of mineralization. A secondary area potentially favorable for similar mineralization is the alluvial covered pediment in sections 26, 27, 34, 35 and 36, T6N, R15N where the major low-angle shear zone and units receptive to mineralization are concealed by structurally-displaced, unmineralized rocks and thin alluvial cover.

Respectfully Submitted,

Russell M. Corn

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SAMPLE LOGS

Northwestern Granite Wash Mountains

La Paz County, Arizona

PROSPECT Granite Wash Mts - Ellsworth District

COUNTY La Paz STATE Arizona

SAMPLE LOG

SAMPLE NUMBER	LOCATION		DESCRIPTION	RADIOACTIVE ELEMENTS			PATHFINDER ELEMENTS							BASE METALS				SULFO-SALTS		PRECIOUS METALS	
	LEGAL	GEOGRAPHIC	LITHOLOGY AND MINERALIZATION	U_3O_8	eU	eTh			W	Acid Sol Ba	Total Ba %	F	Hg	Cu	Mo	Pb	Zn	As	Sb	Au	Ag
4893	SE/NW Sec 30 T6N, R14W	W bank Wash below Yuma Mine	Qtz-rich magnetite replacement; some py & chpy in low $\angle$ shear zone.																	.011	<.2
4893-A	"	"	Sheared, schistose pyritized rhyolite or qtzite above mag. zone.																	.02	<.2
4893-B	"	Saddle - road on ridge W of wash	Select of qtz vlts in pyritic meta rhyolite.																	.011	<.2
4893-C	"	"	Weakly pyritized meta rhyolite.																	.031	<.2
4893-D	"	W bank wash SW end Mag zone	Poor repl. by magnetite - SW end of zone																	.018	<.2
4893-E	"	"	4-6" pyritic Bx adj to lamp. dike & above magnetite - N-S trend.																	.005	<.2
4894	Cent SW¼ Sec 25 T6N, R15W	Short Adit.	Pyritic & hematitic schist - Flt zone beneath limestone.																	.039	<.2
4894-A	SE/NE/25 T6N, R15W	W side of wash	2-15 ft zone of dissem py & chpy on low angle flt in limestone																	.090	3.4
4894-B	SW/NW/30 T6N, R15W	Adit Dump	Tactite - limey silts w/abt CuOx near mouth of adit.																	.388	1.6
4894-C	"	"	Tactite - limey shale-qtz-minor Cu from back of adit.																	.174	0.9
4895	Cent SW Sec 24 T6N, R15W	Adit & shaft - N side of Wash-on hill Tungsten Prosp.	Select sample white qtz-minor chl. & CO_3 from 20' thick shear zone at base of upper plate																	.061	0.6
4895-A	"	" Top of Hill	Red sheared carbonate lense in cut adj to lamp. dike.																	.001	<.2
4895-B	"	"	Weakly altd lamprophyre dike.																	.019	0.9

1. VALUES IN PPM EXCEPT "TOTAL BARIUM" WHICH IS IN %.

PROSPECT Granite Wash Mts - Ellsworth Dist.

COUNTY La Paz STATE Arizona

SAMPLE LOG

SAMPLE NUMBER	LOCATION		DESCRIPTION	RADIOACTIVE ELEMENTS			PATHFINDER ELEMENTS							BASE METALS				SULFO-SALTS		PRECIOUS METALS	
	LEGAL	GEOGRAPHIC	LITHOLOGY AND MINERALIZATION	U_3O_8	eU	eTh			W	Acid Sol Ba	Total Ba %	F	Hg	Cu	Mo	Pb	Zn	As	Sb	Au	Ag
4895-C	Cent SW¼ Sec 24 T6N, R15W	Cut, shaft, & adit on top of hill	3 ft sample of upper part of low angle crush & flt Bx. Dip E @ 20°																	.005	<.2
4895-D	"	Dump of Adit Top of Hill	Select sample of white qtz - carbonate vein.																	.059	3.0
4895-E	"	Cut NE of shaft.	Pyritized, potassic altd gneiss & schist.																	.003	0.2
4895-F	"	East DH on roads of shaft	Cuttings - hanging wall of low angle fault.																	.003	<.2
4895-G	"	West DH " 200 ft W of above	Cuttings Ft wall of flt.																	.007	<.2
4895-H	"	West of prospects S side wash	Sheared hematitic gneiss																	.001	<.2
4896	NW/SW/ 24 T6N, R15W	Alaskite Hill Dump adit on S side Hill	Pyritic altd Qtzite? Above gypsum.																	<.001	<.2
4896-A	"	"	Pyritic-alaskitic altd granite w/some qtz veins.																	.015	0.3
4896-B	"	W side Alaskite Hill	Select of qtz veins. Alaskite is 10-15% qtz veins.																	.104	1.0
4896-C	"	West end Hill prospects & adits on N slope Hill.	Select of qtz vein assoc. w/potassic alt.; S vein - NW trend, vert.																	.003	0.3
4896-D	"	"	Potassic or episyenite altd granite adj to vein.																	.005	0.9
4896-E	"	" " Dump N end of W prospect	Select of ½ in. crushed qtz.																	<.001	<.2
4896-F	SE/SE/24 T6N, R15W	E of old road Dump prospect	Select Cu-mineralization - tactite replacement in limestone.																	.64	24.6

1. VALUES IN PPM EXCEPT "TOTAL BARIUM" WHICH IS IN %.

PROSPECT Granite Wash Mts. - Ellsworth District

COUNTY La Paz STATE Arizona

SAMPLE LOG

SAMPLE NUMBER	LOCATION		DESCRIPTION	RADIOACTIVE ELEMENTS			PATHFINDER ELEMENTS							BASE METALS				SULFO-SALTS		PRECIOUS METALS	
	LEGAL	GEOGRAPHIC	LITHOLOGY AND MINERALIZATION	U_3O_8	eU	eTh			W	Acid Sol Ba	Total Ba %	F	Hg	Cu	Mo	Pb	Zn	As	Sb	Au	Ag
4896-G	NW/SW Sec 24 T6N, R15W	NW end of NW Hill W of prospects	Marble at edge of alluvial cover.																	<.001	<.2
4976	Cent SW ¼ Sec 26 T6N, R15W	Shaft - S bank wash NW cor Ls Hill	Select of chalced. qtz & black calcite vlts & 1 inch limonite-qtz vlt & adj limonitic rock. Vlts trend E-W & are in lower Plate w/ steep dipping beds.																	.102	<.2
4976-A	"	Prospect Cut "	3 ft sample of brecciated Ls - few dark gray thin qtz vlts; minor lim after py, minor MnOx & Cu stain.																	.225	<.2
4976-B	Cent SW¼ Sec 26 T6N, R15W	Val cut on S side wash - NW cor of Ls Hill.	3.5 ft. sample adj to face. Limonitic-clayey schistose limestone																	.020	<.2
4976-C	SW/SE Sec 26 T6N, R15W	Exposure in wash.	Brecciated Ls w/few thin qtz vlts & minor MnOx.																	<.001	0.4
4977	NE/NE Sec 35 T6N, R15W	SW edge Ls Hill	Brittle silic, siltst w/num white qtz vlts-lower part of flat seq & above pyritized schist.																	.003	0.2
4977-A	"	" Val cut	1 ft pyritic sheared qtzite or siltst. (base of Ls)																	.003	<.2
4977-B	"	Wash below Val cut	50 ft. sample of pyritic schist																	.038	<.2
4977-C	"	Wash ~ 300 ft. South of Ls Hill	50 ft. sample of pyritic schist.																	<.001	0.4
4977-D	"	"	10 ft sample of variably Bx chloritic meta SS(?) Numerous meta qtz vlts, hem lim & MnOx.																	<.001	<.2
4978	SW/NE Sec 26 T6N, R15W	S bank Wash. N of Game tank	Ls-Qtzite Bx w/MnOx																	.003	<.2
4978-A	"	Wash bottom	Poor exposure - garnet-epidote skarn w/minor limonite																	.018	0.5

1. VALUES IN PPM EXCEPT "TOTAL BARIUM" WHICH IS IN %.

PROSPECT Granite Wash Mts - Ellsworth District

COUNTY La Paz STATE Arizona

SAMPLE LOG

SAMPLE NUMBER	LOCATION		DESCRIPTION	RADIOACTIVE ELEMENTS			PATHFINDER ELEMENTS							BASE METALS				SULFO-SALTS		PRECIOUS METALS	
	LEGAL	GEOGRAPHIC	LITHOLOGY AND MINERALIZATION	U_3O_8	eU	eTh			W	Acid Sol Ba	Total Ba %	F	Hg	Cu	Mo	Pb	Zn	As	Sb	Au	Ag
4978-B	SW/NE Sec 26 T6N, R15W	Val cut - top of Ls Hill NE of game tank	Silic. siltst cut by 1 inch sub. hor. white qtz vlts, minor lim. & Cu stain.																	.003	.2
4985	SE/SE Sec 24 T6N, R15W	Lower Dump Adit - Yellow Br. End of road	Select of unox. chlorite(?) Schist w/20% ? pyrite - no qtz.																	4.25	2.0
4985-A	"	Dump Prospect N slope valley below adit.	Limonitic qtzite, garnet & CuOx.																	.308	0.9
4985-B	"	" Dump adj. pit	Qtzitite w/epidote & CuOx.																	1.94	1.8
4985-C	"	Mouth of adit at end of road.	15 ft. sample of qtzite w/some limonite & a wkly altd basic sill.																	.032	<.2
4985-D	"	" E side of ore chute.	50 ft. sample of pasty white qtzite includes some dissem. pyrite.																	.066	<.2
4986	"	Upper Dump Yellow Br-Pit	Genl. sample-Dump Green schist that does not have pyrite or lim.reflecting pyrite.																	.107	<.2
4986-A	"	"	Select - schist w/mag & CuOx No pyrite																	.210	<.2
4986-B	"	"	Select - Cse chlorite schist w/qtz seams, pink feldspar? & no pyrite.																	.020	<.2
4986-C	"	"	Select - oxidized chloritic schist w/former pyrite - cse.																	7.25	1.3
4986-D	"	Qtzite Unit 20 ft. N & E of pit.	Vfg thin-bedded flat qtzite.																	.213	<.2
4986-E	"	Pit below & west of upper dump.	Sheared marble with minor dissem. py & chpy.																	.298	0.3
4986-F	"	Cut on ridge E of upper dump	Poorly exp. metaseds. - some qtz-py-ritic--brown limonite.																	.028	1.5

1. VALUES IN PPM EXCEPT "TOTAL BARIUM" WHICH IS IN %.

PROSPECT Granite Wash Mts - Ellsworth District

COUNTY La Paz STATE Arizona

SAMPLE LOG

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	LEGAL	GEOGRAPHIC	LITHOLOGY AND MINERALIZATION	U_3O_8	eU	eTh			W	Acid Sol Ba	Total Ba %	F	Hg	Cu	Mo	Pb	Zn	As	Sb	Au	Ag
4986-G	SE/SE Sec 24 T6N, R15W	100-200 ft N of upper dump	Sheared qtzite - no limonite or sulfides ind. - but some thin qtz vlts.																	.126	.2
4987	East edge SE/SE/24 T6N, R15W	South slope of ridge	Gneissic metaseds. on N side of qtzite Wk hem. limonite, minor qtz-chlorite vlts.																	.006	<.2
4987-A	"	Ridge top val. pit.	Pyritic schist - abdt gyp & hematitic limonite.																	.022	0.8
4987-B	"	Caved adit on saddle of ridge.	2-10 ft. wide zone of sheared metaseds. & bright red hematitic limonite & gypsum - pyr. repl. Ls																	3.01	1.5
4988	SE/SE Sec 24 T6N, R15W	Old road cut west of dump.	Pyritic qtzite w/brown limonite.																	.060	0.5
4988-A	"	Road cut S of Yellow Br.	Sample over 60 ft. from end of road south - qtzite w/little or no limonite																	.012	<.2
4988-B	"	"	15 ft. of limonitic qtzite adj to Ls & 88-A.																	.176	0.2
4988-C	"	"	5 ft. of tourmaline & adj. pyritic schist.																	.048	<.2
4988-D	"	" val cut at bend in road	Limonitic schist w/fair former pyrite - area of abdt gypsum.																	.019	<.2
4988-E	"	Road cut.	140 ft. - qtzite w/red hematitic limonite & bright red stain.																	<.001	<.2
4989	"	N slope of Hill. 50' s of qtzite & 300' E qtzite shaft.	Chloritic meta volc(?) or metased. w/~ 1% dissem. py.																	.088	0.8
4989-A	"	Dump of tactite copper incline.	Genl.dump sample of garnet-epidote tactite.																	.587	13.5
4989-B	"	Snake pit E of incline.	5 ft. sample of garnet tactite w/OxCu mineralization.																	2.53	32.7

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PROSPECT Granite Wash Mts - Ellsworth District

SAMPLE LOG

COUNTY La Paz STATE Arizona

SAMPLE NUMBER	LOCATION		DESCRIPTION	RADIOACTIVE ELEMENTS			PATHFINDER ELEMENTS							BASE METALS				SULFO-SALTS		PRECIOUS METALS	
	LEGAL	GEOGRAPHIC	LITHOLOGY AND MINERALIZATION	U_3O_8	eU	eTh			W	Acid Sol Ba	Total Ba %	F	Hg	Cu	Mo	Pb	Zn	As	Sb	Au	Ag
4989-C	SE/SE Sec 24 T6N, R15W	Cut near top ridge 200-300 ft. W of shaft.	5 ft. sample of thin-bedded qtzite with dissem.py - goethite adj to gyp & flt?																	.025	0.2
4989-D	"	Cut near ridge top 200-300 ft. W of shaft.	Gypsum-tourmaline & red hematitic limonite.																	.316	0.2
4989-E	"	Road cut on point 200 ft. E of shaft.	General thin bedded qtzite.																	.100	<.2
4989-F	"	"	1-2 ft. thick tightly folded thin-bedded qtzite w/ dissem. py - 1-2%?																	.163	<.2
4989-G	"	Knob near upper part qtzite-200 ft. above shaft.	Thin bedded qtzite w/dissem py & chpy.																	.084	0.5
4989-H	"	Dump at qtzite shaft.	Schist & qtzite w/little or no pyrite. Prob. 2 ft. from higher sulfide structure.																	.166	0.2
4989-I	"	"	2ft. near vert. zone of higher sulfides py & chpy.																	12.7	24.7
4990	NE/NE Sec 25 T6N, R15W	N bank wash E of old camp.	20 ft. sample of pyritic metased? or vol.(low angle flt & gyp) goethite																	.089	0.5
4990-A	NE/NE Sec 25 T6N, R15W	" across from camp.	Low angle zone of pyritized metased - gray wacke (?)																	.075	<.2
4990-B	"	" 500 ft. west of camp.	Pyritized metaseds - some met qtz vlts.																	.022	<.2
4990-C	"	Wash - south side south Qtzite.	100 ft sample of rhyor QF porph. w/dissem pyrite - no sericite.																	.051	<.2
4990-D	"	"	20 ft. of pyritic SS on S side of qtzite.																	.034	<.2
4990-E	"	Qtzite at wash NE bank	100 ft. of sheared qtzite Minor pyrite & met qtz vlts.																	.006	<.2

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PROSPECT Granite Wash Mts - Ellsworth District

COUNTY La Paz STATE Arizona

SAMPLE LOG

SAMPLE NUMBER	LOCATION		DESCRIPTION	RADIOACTIVE ELEMENTS			PATHFINDER ELEMENTS							BASE METALS				SULFO-SALTS		PRECIOUS METALS	
	LEGAL	GEOGRAPHIC	LITHOLOGY AND MINERALIZATION	U_3O_8	eU	eTh			W[3]	Acid Sol Ba[4]	Total Ba %[1]	F[3]	Hg[2]	Cu[3]	Mo[3]	Pb[3]	Zn[3]	As[3]	Sb[3]	Au[3]	Ag[3]
4990-F	NE/NE Sec 25 T6N, R15W	N bank wash N side qtzite	Pyritic-propylitic altd SS-wacke? 100 ft. zone																	.016	<.2
4990-G	"	" 100-150 ft. N of qtzite.	Pyritic altd metased Unit-thin qtz vlts - 50 ft. sample																	.042	<.2
4991	SW/SE Sec 24 T6N, R15W	Cliff exposure above wash. Upper thin bd & pasty white qtzite	E side cliff-thin bedded & pasty white qtzite w/dissem py - minor.																	.010	<.2
4991-A	"	"	Pasty white & blue green qtzite w/minor py - some thin, pink qtz, alunite vlts 25-30' above high pyrite zone.																	.047	<.2
4991-B	"	Base of cliff	20 ft. thick zone of high-pyrite qtzite																	.068	0.7
4991-C	"	" & southern part of exposure.	5 ft. of crenulated schist w/limonite & some tenorite below high-pyrite qtzite.																	.047	2.0
4991-D	"	"	35 ft. of pasty white, schistose qtzite w/minor limonite.																	.011	0.2
4991-E	SW/SE Sec 24 T6N, R15W	Prospect cuts N side wash.	Garnet-epidote tactite w/minor oxide Cu in Mbl.																	.411	1.7
4991-F	SE/SW Sec 24 T6N, R15W	2nd DH on road E of Tungsten Camp	Cuttings of marble & gneiss. 2nd hole to south on E side wash.																	.001	<.2

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PROSPECT Granite Wash Mts - Ellsworth District

COUNTY La Paz STATE Arizona

SAMPLE LOG

SAMPLE NUMBER	LOCATION		DESCRIPTION	RADIOACTIVE ELEMENTS			PATHFINDER ELEMENTS							BASE METALS				SULFO-SALTS		PRECIOUS METALS	
	LEGAL	GEOGRAPHIC	LITHOLOGY AND MINERALIZATION	U_3O_8	eU	eTh			W	Acid Sol Ba	Total Ba %	F	Hg	Cu	Mo	Pb	Zn	As	Sb	Au	Ag
4999	SW/SW Sec 19 T6N, R14W	Top or ridge	Shattered, thin bedded qtzite adj to carbonate-sericite & minor limonite																	<.001	<.2
4999-A	Cent SE Sec 24 T6N, R15W	N slope - N ridge N of prospects	Epidote-garnet skarn w/qtz veinlets - adj to qtzite schist																	<.001	<.2
4999-B	NE/SW Sec 24 T6N, R15W	Wash - N of Three Musketeer shaft	Epidote-garnet skarn adj & parallel to qtzite schist																	.002	<.2
4999-C	"	"	Schistose metaqtzite - with metqtz vlts & minor limonite																	.003	<.2
4999-D	Cent SW¼ Sec 24 T6N, R15W	Road cut - E of & above Three Musketeer shaft & cut	Poorly developed epidote skarn Minor limonite																	<.001	<.2
5000	SE/SE Sec 24 T6N, R15W	S side of gich below road & prospect	Weakly altered - hematite - stained lamp? or basalt																	<.001	<.2
5000-A	"	"	10 ft. sample of gyp. shear w/metqtz & lim. adjacent to basalt																	.006	<.2
5000-B	"	Prospect pits N side gulch - East pit	3 ft sample - garnet-qtz-epidote in East pit. E-W dip 60° N																	.69	1.0
5000-C	"	" East Pit	5 ft. sample of pasty white qtzite - below skarn - fair hematitic limonite & some OxCu																	.56	0.5
5000-D	"	" Central Pit	6 ft of thin bedded qtzite on N side of skarn above; some limonite but no Cu																	.009	<.2
5000-E	"	" West Pit	4 ft sample of thin bedded qtzite on S side of skarn. Some garnet & epidote, CuOx, +1% Cu																	.369	1.3
5000-F	"	Cut adj to gully SW of pits	6 ft sample of qtzite with thin epidote skarn, hematitic limonite & some CuOx																	.395	0.3

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PROSPECT Granite Wash Mts – Ellsworth District

COUNTY La Paz STATE Arizona

SAMPLE LOG

SAMPLE NUMBER	LOCATION		DESCRIPTION	RADIOACTIVE ELEMENTS			PATHFINDER ELEMENTS							BASE METALS				SULFO-SALTS		PRECIOUS METALS	
	LEGAL	GEOGRAPHIC	LITHOLOGY AND MINERALIZATION	U_3O_8	eU	eTh			W[3]	AcidSol Ba[2]	Total Ba %[3]	F[2]	Hg[2]	Cu[3]	Mo[3]	Pb[3]	Zn[3]	As[3]	Sb[3]	Au[3]	Ag[3]
70551	SE/SE Sec 24 T6N, R15W	Old dump in wash at pit	Shattered white qtzite																	.321	0.9
70551-A	"	Wash N & W of copper prosp. dump	Chloritic gneiss with thin pyritic altered zones																	.018	<.2
70551-B	"	Above west incline 300 ft W of shaft	Sheared carbonate-siderite with qtz vlts																	.005	<.2
70551-C	"	Val cut in wash	Tite folded rexllized yellow sandy carbonate w/sheared & chloritic metaseds. No limonite or CuOx																	.001	<.2
70551-D	"	1,000 ft below copper prospect	10 ft sample of pyritic gneissic metavolcanic																	.001	<.2
70552	NW/NE Sec 25 T6N, R15W	First prospect S of road	Pyritic qtzite-rhyolite adj to carbonate																	.032	0.9
70552-A	"	Wash at bend S of cliff	20 ft. sample of qtzite w/dissem limonite																	.010	<.2
70552-B	"	"	3 to 5 ft of qtzite w/dark limonite on S edge exposure																	<.001	<.2
70552-C	"	Bluff south of wash at bend	Sheared qtzite w/minor limonite																	<.001	<.2
70552-D	SW/SE Sec 24 T6N, R15W	N bank of wash W expos of ser. schist & qtzite	Sericitic qtzite w/minor limonite																	<.001	<.2
70552-E	SE/SW Sec 24 T6N, R15W	Skarn exp. on N bank wash	10 ft sample of qtzite-epidote skarn E side exposure. Minor limonite & CuOx																	.135	<.2
70552-F	"	"	20 ft sample of epidote-garnet skarn below prospect - minor limonite																	.029	<.2

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SAMPLE NUMBER	LOCATION		DESCRIPTION	RADIOACTIVE ELEMENTS			PATHFINDER ELEMENTS							BASE METALS				SULFO-SALTS		PRECIOUS METALS	
	LEGAL	GEOGRAPHIC	LITHOLOGY AND MINERALIZATION	U_3O_8	eU	eTh			W[3]	AcidSol Ba[4]	Total Ba %[2]	F[4]	Hg[2]	Cu[3]	Mo[3]	Pb[3]	Zn[3]	As[3]	Sb[3]	Au[3]	Ag[3]
70553	SE Cor Sec 24 T6N, R15E	Gulch at Sec corner	Intensely pyritized schist in Flt Bx adj to basalt																	.020	<.2
70553-A	"	Dump prospect in gulch above Cor	6 inch-2 ft lens of pyritic schist - strataform-chloritic schist adj to carb Abt gyp & some CuOx																	1.71	4.3
70554	SE/SW Sec 24 T6N, R15E	Wash at road Xing E of DH	20 ft sample of py alt.schistose meta-volcanic-chlorite-variable wk pyritic alteration																	.003	<.2
70554-A	"	"	4 ft sample of pyritic alt. Basic metavolcanic																	.005	0.3
70554-B	"	"	Thin-bedded gneissic metased above meta volc.- wk pyritic alteration																	.001	<.2
70555	SW/SW Sec 24 T6N, R15E	Three Musketeer cut & shaft	Dump - select of white metamorphic qtz vn w/chlorite & some hematitic limonite																	.018	1.7
70555-A	SE/SE Sec 23 T6N, R15E	Tungsten Prospect dump	Pyritized schist adj to low angle white qtz vein																	.004	<.2
70555-B	NE/NE Sec 26 T6N, R15E	Hill west of Paleozoic	Bx gneissic qtzite and gneissic por. granite																	<.001	<.2
70555-C	NW/SW Sec 25 T6N, R15E	Dump shaft at W end hill - E of road	Shattered qtzite w/minor limonite after pyrite																	<.001	<.2
70555-D	"	"	2 ft NW trend near vert Bx zone in qtzite - abdt hem. limonite																	.026	<.2
70556	SW/SE Sec 26 T 6N, R15E	Isolated exposure pediment W of lime-stone hill	Black, sanded Ls Bx with some gypsum																	.001	<.2
70556-A	"	"	Limestone Bx at edge of cover																	.003	<.2

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	LEGAL	GEOGRAPHIC	LITHOLOGY AND MINERALIZATION	U_3O_8	eU	eTh			W[3]	Acid Sol Ba[2]	Total Ba %[1]	F[2]	Hg[2]	Cu[3]	Mo[3]	Pb[3]	Zn[3]	As[3]	Sb[3]	Au[3]	Ag[3]
70556-B	SE/SE Sec 26 T6N, R15W	NW corner of lime-stone hill - wash	Variably Bx quartzite N of snake pit Some limonite																	.005	<.2
70556-C	"	Validation cut	3 ft sample of clay alt. Schistose Ls w/variable limonite																	.020	<.2
70556-D	"	Wash at SW corner Ls hill	10 ft sample of pyritic schist-hem.lim-onite S of contact Bx																	.004	<.2
70556-E	"	"	Pyritic schist Bx w/met qtz vlts - 100 ft S of contact																	.004	<.2
70556-F	SW/NE Sec 26 T6N, R15W	N side wash NE of game tank	10 ft sample of low angle epidote skarn w/minor limonite																	.006	<.2
70556-G	"	" 50-100' E of above	10-15 ft sample of epidote skarn cut by num thin NW trend qtz veinlets																	.004	<.2
70557	SW/SW Sec 30 T6N, R14W	West bank Yuma Wash	Intense pyritic-argillic alt. of schistose metavolcanic																	<.001	<.2
70557-A	"	" N of 57	Chloritic brecciated metavolc. in major low angle shear																	.015	<.2
70557-B	"	" Shaft dump	Sheared, pyritic altered metased																	.002	<.2
70558	SW/NW Sec 30 T6N, R14W	Dump of adit at road fork	Limonitic recemented qtzite																	.120	6.4
70558-A	"	Prospect above road to tactite Cu	Ft wall of shear dipping 30° S 3 ft zone qtz-lim & CuOx																	1.08	14.7
70558-B	"	"	Adjacent 10 ft of siderite alt carb; chlorite - some limonite & CuOx stain - below 3 ft sample 58-A																	<.001	<.2

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	LEGAL	GEOGRAPHIC	LITHOLOGY AND MINERALIZATION	U_3O_8	eU	eTh			W	Acid Sol Ba	Total Ba %	F	Hg	Cu	Mo	Pb	Zn	As	Sb	Au	Ag
70558-C	SW/NW Sec 30 T6N, R14W	Road cut below tactite Cu prospect	Chloritic altered vesicular basalt																	.004	<.2
70558-D	NW/NW Sec 30 T6N, R14W	S bank wash at road crossing	Pyritic-argillic altered schist																	.143	0.6
70558-E	"	Dump at val. pit	Pyritic schistose qtzite hematitic limonite stain																	.002	<.2
70558-F	NE/NW Sec 30 T6N, R14W	Dump of shaft on ridge	Pyritic altered metarhyolite abdt gyp - no ore on dump																	.007	<.2

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	LEGAL	GEOGRAPHIC	LITHOLOGY AND MINERALIZATION	U_3O_8	eU	eTh			W	Acid Sol Ba	Total Ba %	F	Hg	Cu	Mo	Pb	Zn	As	Sb	Au	Ag
4963	SE/SE Sec 24 T6N, R15W	Copper prospect Tactite in bottom wash	Dump sample - gossan-like-high sulfide - garnet-chpy & mag.																	6.70	69.5
4963-A	"	Adit & pit at end road - saddle	Dump - chloritic? schist w/high pyrite - no Cu																	12.5	2.4
4963-B	"	Shaft in qtzite above tatite in shaft at bottom of gulch	Dump sample of weakly pyritized qtzite																	4.67	9.5

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DRILL LOGS

OBK No. 1	
Drill Log	0 - 550
Assays	0 - 1036 TD
Petrographic Descriptions of Selected Intervals	540 - 1036
OBK No. 2	
Drill Log	0 - 235 TD

[redacted]

OBK #1

DEPTH	DRILLING METHOD AND COMMENTS	FORMATION & COLOR	ASSAYS - PPM				COMMENTS - MINERALIZATION
			Depth	Au	Ag	Cu	
0-15	Rotary & Hammer set surface	Metamorphosed Volcanic					Iron Oxides; traces Pyrite
15-60	Hammer	Same as above Color/Gray	20-25	.02	1.5		Same as above
			30-35	.02	1.5		
			45-50	<.02	1.2		
60-85	Hammer	Quartzite & Lime mixed Color/Gray to White	65-70	<.02	1.6		Traces of Pyrite
			70-75	<.02	1.6		
			75-80	<.02	2.5		
			80-85	<.02	8.7		
85-345	Hammer Went to Foam at 115'	Shale, Quartz, Biotite(?), Thin Quartzite zones. Green Mineral from 125-135 and 250-345. Color(Foam)/ Black	85-90	1.06	10.6		Moderate Pyrite 85-100? Traces of Pyrite 100-345?
			90-95	1.55	1.8		
			95-100	<.02	3.3		
			100-105	1.02	12.2		
			105-110	<.01	1.8		
			125-130	<.01	1.7		
			145-150	<.01	1.6		
			165-170	<.01	1.5		
			185-190	<.01	1.6		
			200-210	<.01	1.6		
			225-230	<.01	1.5		
			245-250	<.01	1.8		
			265-270	<.01	1.7		
			285-290	<.01	1.7		
			300-310	<.01	1.9		
			325-330	<.01	2.4		
345-550	Hammer Large cuttings increasing problem with foam, major problem at T. D.	Break at 345 Quartzite, Garnet (Brown & Black); Biotite? and/or Chlorite? with Associated Pyrite Green Mineral 500-550 Color (Foam)/ Brownish Red & Brownish Gray	No Assays				Traces to nil of Pyrite 345-540 At bottom, Quartzite fractured, with green and black mineral in fractures with Pyrite.

OBK #1

OBK #1

DEPTH	DRILLING METHOD AND COMMENTS	FORMATION & COLOR	ASSAYS - PPM				COMMENTS - MINERALIZATION
			Depth	Au	Ag	Cu	
0-10	Rotary - Soft Drilling	Intrusive? Red					Hematite staining and minor crystallization
15-45	Hammer - Soft Drilling	Intrusive? Red	25-30	<.02	.09	98	Same
45-165	Hammer - Soft Drilling	Lime, White Green Mineral at 155'.	145-150 155-160	<.02 <.02	1.0 .4	137 56	No mineralization
165-235	Hammer - Foam at 165'. Large cuttings a problem; shut-down at 235'.	Quartzite, Red to White	180-185	<.02	1.1	14	One small particle of Pyrite at 235'. some Hematite Crystals

OBK #2

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OVER 50 YEARS

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IDENTIFICATION	Gold >.005K	Silver >.005K	Lead %	Copper %	Zinc %	Mo. %			
OBK-1	ppm	ppm							
85 - 90	1.06	10.6							
105 - 110	< 0.01	1.8							
125 - 130	< 0.01	1.7							
145 - 150	< 0.01	1.6							
165 - 170	< 0.01	1.5							
180 - 190	< 0.01	1.6							
205 - 210	< 0.01	1.6							
225 - 230	< 0.01	1.5							
245 - 250	< 0.01	1.8							
265 - 270	< 0.01	1.7							
285 - 290	< 0.01	1.7							
305 - 310	< 0.01	1.9							
325 - 330	< 0.01	2.4							

OBK-1

REGISTERED ASSAYER
CERTIFICATE NO. 5784
H. E. HAWLEY
Signed
Arizona U. S. A.

CC: Mr. Oliver B. Kilroy
ADD: 212 Tucson Title Building
CITY: 45 West Pennington
ADD: Tucson, Arizona 85701
CITY:

REMARKS: Trace analysis (Pulverized & Dried)

Analysis Cert. By

Preparation $ 11.70
Analysis $ 48.75

ACC: MR OLIVER B KILROY

Date Spl. Received 10/6/72 | Date Compl. 10/11/72 | TUC 346581 | $ 60.45

HAWLEY & HAWLEY

ASSAYERS AND CHEMISTS, INC.
BOX 50106 — 1700 W. GRANT RD.,
TUCSON, ARIZONA 85703 — (602) 622-4836

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IDENTIFICATION	Gold ~~XXX~~	Silver ~~XXX~~	Lead %	Copper ~~XX~~	Zinc %	Mo. %			
	ppm	ppm		ppm					
OBK # 2									
25 - 30	< 0.02	0.9		98					
145 - 150	< 0.02	1.0		137					
155 - 160	< 0.02	0.4		56					
180 - 185	< 0.02	1.1		14					
OBK # 1									
20 - 25	0.02	1.5							
30 - 35	0.02	1.5							
45 - 50	< 0.02	1.2							
65 - 70	< 0.02	1.6							
70 - 75	< 0.02	1.6							
75 - 80	< 0.02	2.5							
80 - 85	< 0.02	8.7							
90 - 95	1.55	1.8							
95 - 100	< 0.02	3.3							
100 - 105	1.02	12.2							

REGISTERED ASSAYER
CERTIFICATE NO. 3784
H. E. RICHARD

CC: Mr. Oliver B. Kilroy
ADD: 212 Tucson Title Building
CITY: 45 West Pennington
ADD: Tucson, Arizona 85701
CITY:

REMARKS:

Trace analysis
(Pulverized & dried only)

Analysis Cert. By

Preparation $ 12.60
Analysis $ 58.50

ACC:	Date Spl. Received	Date Compl.		$
MR OLIVER B KILROY	10/17/72	10/19/72	TUC 346597	71.10

ARIZONA TESTING LABORATORIES

A DIVISION OF CLAUDE E. McLEAN & SON LABORATORIES, INC.
817 WEST MADISON ST. PHOENIX, ARIZONA 85007 PHONE 254-6181

For: Kilroy Enterprises
Tucson Title Bldg., Suite 212
45 West Pennington
Tucson, Arizona 85701

Date: August 21, 1974

Lab. No.: 7547

Sample: Ore

Marked: See Below

Received: 8-19-74

Submitted by: same

REPORT OF LABORATORY TESTS

GEOCHEMICAL REPORT

Sample No.	Gold ppm	Silver ppm	Copper ppm
OBK#1			
553-569	lt* 0.1	1	110
569-579	"	lt* 1	110
578-588	"	"	65
588-597	"	"	80
597-611	"	"	50
611-623	"	"	170
623-632	"	"	50
632-641	"	"	40
641-654	"	"	35
654-662	"	"	75
662-670	"	"	50
670-680	"	"	70
680-689	"	1	70
689-699	"	lt* 1	70
699-708	"	"	60
708-718	"	"	70
718-727	"	"	100
727-737	"	"	120
749-750	--	--	130

OBK#1

lt* = less than

Respectfully submitted,

ARIZONA TESTING LABORATORIES

Claude E. McLean, Jr.

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
1700 W. Grant Rd., P.O. Box 50106, Tucson, Arizona 85703
(602) 622-4836

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION		Au ppm	Ag ppm	Cu ppm
1	OBK #1	553-569			155
2		569-579			140
3		579-588			65
4		588-597			95
5		597-611			55
6		611-623			250
7		623-632			50
8		632-641			45
9		641-654			45
10		654-662			100
11		662-670			50
12		670-680			75
13		680-689			80
14		689-699			145
15		699-708			60
16		708-718			85
17		718-727			150
18		727-737			190
19		749-750			140
20		750-755	<0.02	<0.2	70
21		755-765	<0.02	<0.2	65
22		765-775	<0.02	<0.2	70
23		775-785	<0.02	<0.2	60
24		785-793	<0.02	<0.2	70
25		793-803	<0.02	<0.2	70
26		803-813	<0.02	<0.2	70
27		813-834	<0.02	<0.2	40
28		834-832	<0.02	<0.2	35
29		832-840	<0.02	<0.2	20
30		840-850	<0.02	<0.2	40
31	OBK #1	850-861	<0.02	<0.2	5

TO:
Mr. O. B. Kilroy
212 Tucson Title Bldg., Suite 212
45 West Pennington
Tucson, Arizona 85701

REMARKS:
Trace analysis

CERTIFIED BY:
William L. Lehmbeck
8/29/74

DATE REC'D:	DATE COMPL.:	JOB NUMBER:
8/26/74	8/29/74	741689

SKYLINE LABS, INC.
Hawley & Hawley, Assayers and Chemists Division
1700 W. Grant Rd., P.O. Box 50106, Tucson, Arizona 85703
(602) 622-4836

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION		Au ppm	Ag ppm	Cu ppm
1	OBK #1	862-872	<0.02	<0.2	5
2		872-889	<0.02	<0.2	5
3		889-900	<0.02	<0.2	5
4		900-922	<0.02	<0.2	5
5		922-932	<0.02	<0.2	60
6		932-945	<0.02	<0.2	40
7		945-955	<0.02	<0.2	5
8		955-964	<0.02	<0.2	5
9		964-974	<0.02	<0.2	5
10		974-983	<0.02	0.2	5
11		983-993	<0.02	<0.2	5
12		993-1003	<0.02	<0.2	5
13		1003-1013	<0.02	<0.2	5
14		1013-1023	<0.02	<0.2	5
15	OBK #1	1023-1036	<0.02	<0.2	5

TO:
Mr. O. B. Kilroy
212 Tucson Title Bldg
45 West Pennington
Tucson, Arizona 85701

REMARKS:
Trace analysis

CERTIFIED BY:

DATE RECD: 9. /74
DATE COMPL.: 9/18/74
JOB NUMBER: 741310

DRILL HOLE #3
±4400 FT. S. OF.
YUMA MINE

O.B.K. #1
N.W. SALOME PROSPECT

#1 - 540-545

The specimen is a biotite phyllite, probably derived from a reworked volcanic originally. Crude sedimentary layering is obeyed by the foliation imposed by later mesozonal synkinematic metamorphism.

Only a few larger detrital grains of quartz and feldspars occur in laminae of very fine-grained quartz; these laminae tend to pinch and swell laterally. Clusters of biotite flakes occur in these laminae and tend to be strung out along the foliation and wrap around larger detrital grains. Seams of calcite parallel the foliation; the calcite is rather coarsely crystalline but tends to fill interstices among other grains. Small grains of pyrite occur sparingly in clusters of biotite flakes.

Minerals appear in the following estimated amounts: sericite 2%, quartz 49%, orthoclase 0.5%, plagioclase 12%, biotite 16%, calcite 20%, pyrite 0.5%, apatite tr., zircon tr..

#2 - 540-545

The specimen is a sericite phyllite probably derived from a reworked volcanic. Detrital plagioclase (and less quartz) occur as augen in a well-foliated sericite-rich matrix. Epi-mesozonal metamorphism has been synkinematic.

Many augen are cracked or strained, some show rotation. The matrix is fine-grained granular quartz interlarded with sericite. Some biotite (retrogressively altered to prochlore) occurs with the sericite. The foliation of these minerals does not wrap around larger grains but ends abruptly at the grain boundary. Some laminae of coarser quartz occur and are relatively devoid of sericite; calcite is likely to fill interstices here.

Minerals are present in the following estimated amounts: quartz 34%, orthoclase 1%, plagioclase 19%, prochlore 5%, calcite 3%, sericite 38%, apatite tr., zircon tr..

OBK-1 614

The original rock was a siltstone, probably representing, for the most part, reworked dacitic material. Relicts of β quartz and plagioclase catacrysts may be seen but textural details have been obliterated by upper epizonal synkinematic metamorphism.

Larger strained quartz and plagioclase eyes survive in a foliated matrix of alternating sericite and quartz laminae. Quartz grains here are elongate parallel to the foliation and pennine flakes tend to be interspersed in the interstices. Sericite flakes occur in thick bunches showing crossfolding and other distortions. Tiny corroded epidote prisms occur sparingly in the sericite. Pyrite grains lie in quartz-rich laminae and may be partly mantled with biotite.

The white mineral you ask about is not clay but sericite.

Minerals appear in the following estimated amounts: quartz 39%, sericite 52%, pennine 3%, magnetite 1%, pyrite 0.5%, plagioclase 3%, zircon tr., apatite 0.5%, biotite 0.5%, tourmaline tr., epidote tr..

OBK-1 619

The original rock was probably a reworked dacite similar to 614'. Despite epi-mesozonal synkinematic metamorphism, catacrysts of plagioclase may be clearly observed, although broken or strained.

The rock is crudely foliated with thin discontinuous stringers of sericite layered with streams of quartz and plagioclase. These wrap around larger catacrysts. By contrast, one laminae consists of recrystallized silty material (quartz and plagioclase) set in large post-kinematic calcite crystalloblasts. One patch consisting of coarse, randomly oriented pennine and calcite may represent a basic xenolith. Pyrite euhedra scattered in quartz-rich laminae may be mantled with pennine.

In answer to your question, calcite is associated with the chlorite.

Mineral percentages are estimated as: quartz 18%, plagioclase 44%, pennine 12%, sericite 14%, calcite 10%, pyrite 0.5%, magnetite 0.5%, biotite tr., epidote tr., leucoxene tr..

OBK-1 660

The rock is a spessartite composed of numerous stubby prisms of basaltic hornblende and clusters of coarser subhedral augite. These are scattered in a matrix of randomly oriented plagioclase laths. Irregular magnetite grains are uniformly disseminated and are a common accessory. Quartz occurs sparingly as an accessory as rather large grains in the matrix as if by contamination. There are a few amygdules filled with quartz, pennine, calcite, and rare pyrite euhedra. Cognate xenoliths are uncommon. The rock has only experienced deuteric alteration.

As a result of this, plagioclase is mildly sericitized. Basaltic hornblende shows a slight tendency to alter to actinolite, then pennine and calcite.

In answer to your question, this rock is a younger dike, wholly unrelated to 662'.

An estimate of mineral percentages is: plagioclase 31%, augite 7%, basaltic hornblende 35%, actinolite 2%, pennine 10%, sericite 4%, calcite 4%, magnetite 5%, quartz 2%, apatite tr..

OBK-1 662

The rock is a phyllite derived from a sediment (possibly reworked dacitic material) by epizonal synkinematic metamorphism.

There are numerous large subangular grains of quartz and plagioclase. These are set in a well-laminated matrix of fine detrital quartz and plagioclase. Thick and thin, wispy anastamosing seams of well-foliated sericite parallel the banding and wrap around larger clasts. These are punctuated by calcite crystalloblasts that often are surrounded by dense matted patches of pennine. Where calcite growth is strong, orthoclase shows partial or complete replacement of adjacent plagioclase grains.

Mineral percentages are approximately as follows: quartz 33%, plagioclase 24%, sericite 25%, calcite 14%, magnetite 0.5%, pennine 2%, epidote tr., orthoclase 1%, apatite tr., leucoxene tr..

OBK-1 685

The original rock was probably a reworked dacitic volcanic. There are numerous catacrysts of β quartz and plagioclase set in a crudely layered matrix of granular quartz and minor plagioclase. The rock has experienced upper epizonal synkinematic metamorphism.

Some clasts are strained or broken; a few quartz eyes are surrounded by envelopes of granular quartz due to incipient crushing. Shreddy laminae of sericite wind though the fabric, giving a good foliation. Pennine flakes and interstitial calcite grains are interstitial to other minerals. Traces of pyrite were noted with calcite, pennine, and magnetite (this is also an affirmative answer to your question). These veinlets lie along synmetamorphic quartz veins or cut the fabric.

Minerals are present in the following estimated amounts: quartz 43%, plagioclase 18%, sericite 37%, pennine 6%, pyrite tr., calcite 4%, magnetite 0.5%, hisingerite 0.5%, leucoxene tr., apatite tr..

OBK-1 743

The rock is a quartz latite granophyre. Originally it carried sharply euhedral phenocrysts of β quartz, orthoclase, plagioclase, and biotite. These were scattered in a spherulitic matrix with small included orthoclase laths. Epizonal alteration has been late magmatic/deuteric.

Glass is devitrified to radial bursts of quartz stained with colloidal hematite (the pink mineral you questioned). Biotite is altered to sericite and crystalloblastic calcite with accessory anatase and montmorillonite. Plagioclase is only weakly sericitized.

Mineral percentages appear as follows: quartz 47%, orthoclase 24%, plagioclase 15%, magnetite tr., sericite 9%, anatase tr., montmorillonite tr., apatite tr., calcite 4%.

OBK-1 748

The specimen represents the contact between two rock types. The host (older) rock is a diorite with a diabasic texture. It consisted originally of randomly oriented plagioclase laths and interstitial basaltic hornblende. Accessory biotite and coarse granular magnetite cluster with the hornblende. Minor quartz and orthoclase occur as graphic intergrowths in the matrix. The rock has been moderately altered in the epizone. Although biotite is mostly fresh, basaltic hornblende is heavily altered to calcite and pennine. Plagioclase is moderately altered to calcite and sericite.

This diorite is cut by a quartz latite with scattered phenocrysts of β quartz and plagioclase in an originally glassy matrix. The contact is marked by a thin mylonitized zone of dioritic debris against a banded glassy phase of the quartz latite. This rock has been strongly silicified with sericite replacing both feldspars and biotite. Close to the diorite it is heavily impregnated with lacy calcite crystalloblasts. Rare disseminated pyrite was observed in both rock types.

OBK-1 783

The specimen is a diorite, a rock undoubtedly related to 748 and 660. It consists of randomly oriented plagioclase laths and abundant interstitial basaltic hornblende (mantled with uralite). Accessory ilmenite clusters with the hornblende. Interstitial areas are filled with coarse quartz and minor orthoclase. The rock has been deuterically altered.

Plagioclase cores are heavily occluded with spongy aggregates of anhedral epidote. Hornblende is only mildly altered to pennine and minor calcite. Ilmenite has altered to leucoxene. A fracture surface carries heulandite stained pink by colloidal hematite (the "shiny iron oxide" questioned).

An estimate of mineral percentages is: quartz 5%, orthoclase 1%, plagioclase 20%, amphiboles 32%, pennine 10%, epidote 26%, calcite 1%, leucoxene 3%, magnetite 1%, apatite 0.5%.

OBK-1 816

The rock is a diorite composed initially of randomly oriented laths of plagioclase with interstitial subhedra of augite. Small basaltic hornblende prisms may be attached to the augite. There are a few larger phenocrysts of augite and hornblende. Small interstitial patches of quartz and orthoclase occur sparingly. Cognate xenoliths are few and usually of coarser grain size than the host. The rock has been strongly altered in the epizone.

Plagioclase is only slightly clouded with sericite and epidote. The hornblende phenocrysts are wholly altered to fibrous epidote and pennine but matrix basaltic hornblende only partially so. Traces of pyrite are associated with this alteration. Late veins of heulandite and calcite cut the fabric.

Mineral percentages appear as follows: plagioclase 51%, quartz 2%, orthoclase 0.5%, epidote 3%, pennine 10%, augite 19%, basaltic hornblande 6%, magnetite 4%, calcite 2%, sphene 0.5%, heulandite 1%, sericite 0.5%.

OBK-1 855

The rock is a sericite schist derived from a pelitic sediment by mesozonal synkinematic metamorphism. It initially consisted of alternating silty and shaly laminae.

Silty laminae consist of granular quartz that is only slightly flattened on the plane of foliation. Slender flakes of sericite are crudely aligned along planes that weave through the quartz. Shaly laminae consist almost wholly of subparallel sericite scales and thin stringers of minute rutile grains. A few pale biotite books are scattered here but not aligned with the foliation. Veins of coarse strained quartz (of metamorphic age) roughly parallel the foliation and may enclose stringers of sericite and biotite.

Calcite occurs in interstices of the fabric throughout the specimen, and it seems aligned along ill-defined planes normal to the foliation.

OBK-1 925

The rock is a sericite schist much like 855 but in this sample only shaly laminae were noted. These consist exclusively of curved foliae of sericite plates, minor interstitial quartz, and strings of minute rutile beads parallel to the foliation. Coarse synmetamorphic quartz veins parallel the foliation and enclose small discontinuous laminae of sericite.

Very coarse calcite penetrates and replaces the fabric, invading quartz veins along grain boundaries. Where calcite is in contact with sericite there is apt to be an intervening patch of coarse clinochlore. Both the calcite and clinochlore show evidence of deformation. Small patches of hematite are scattered within the calcite.

OBK-1 954

The section has been cut from one of the quartz veins as described in the previous two samples. These veins may derive from very sandy laminae in the original sediment.

OBK-1 954 (con't.)

The rock consists almost exclusively of coarse strained quartz grains that are elongate in parallel and interlock along frilly boundaries. A few wispy foliae of sericite wind along grain boundaries and may be accompanied by granular quartz. Calcite occurs sparingly through the rock, filling interstitial voids.

An estimate of mineral percentages is: quartz 95%, sericite 3%, calcite 2%.

OBK-1 995

The original rock was a layered pelitic sediment. It has been synkinematically metamorphosed with some brecciation.

The rock consists essentially of slender, foliated scales of sericite. Pennine may be laminated with sericite or occur as small crystals oriented at variance with the foliation. The matrix consists of granular quartz showing very little flattening on the plane of foliation.

Fragments of this shist are isolated in patches of coarse strained "vein" quartz and separated by crushed zones within the schist. Coarse calcite invades grain boundaries in the quartz veins and occurs as crystalloblasts in the schist.

Minerals appear in the following estimated amounts: quartz 43%, sericite 20%, pennine 8%, calcite 29%, rutile tr., tourmaline tr..

OBK-1 974

The specimen is a sericite schist derived from a pelitic sediment by synkinematic metamorphism. It consists of sheaves of parallel sericite scales that define a plane of foliation that is severely crumpled. Small books of clinochlore may be interlayered with the sericite. The intervening laminae consist largely of granular quartz but wisps of sericite parallel to the foliation cut across grain boundaries in these areas. Thin hematite tablets lie along sericite cleavages or in rock cleavage planes cutting the foliation.

Veins and patches of coarse crystalloblastic calcite cut or replace the fabric.

Mineral percentages are estimated as: quartz 33%, calcite 38%, sericite 22%, clinochlore 5%, hematite 2%, epidote tr..

OBK-1 1023

The rock is a quartzite derived from a slightly argillaceous sandstone by synkinematic metamorphism.

The rock consists of ragged interlocking quartz grains that vary erratically in size. In some cases the size differences appear to owe to synmetamorphic crushing. Thin flakes of sericite may either lie along grain bounderies or be locked in the quartz. They are slightly concentrated in certain laminae that meander through the fabric, showing some degree of folding. Minute flakes of clinochlore occur in these laminae.

Small calcite crystalloblasts have formed in the interstices throughout the fabric.

Mineral percentages are approximately as follows: quartz 86%, calcite 5%, sericite 6%, clinochlore 2%, zircon tr., rutile tr., apatite tr., tourmaline tr..

OBK-1 1036

The specimen is a sericite schist derived from a shaly sandstone by epizonal synkinematic metamorphsim.

Wispy laminae of well foliated sericite are rather evenly spaced in a matrix of granular quartz. These laminae are curved and anastamosing. Small clinochlore flakes parallel the sericite. There also may be stringers of tiny subhedral epidote prisms in sericite-rich bands. Hematite tablets occur as an accessory, sometimes interlayered with sericite crystals.

Irregular patches or isolated crystalloblasts of calcite tend to be concentrated in, and replace, certain laminae.

Minerals are present in the following estimated amounts: quartz 52%, sericite 17%, calcite 24%, hematite 2%, clinochlore 3%, epidote 1%, zircon tr., tourmaline tr..

SAMPLE INDEX MAP

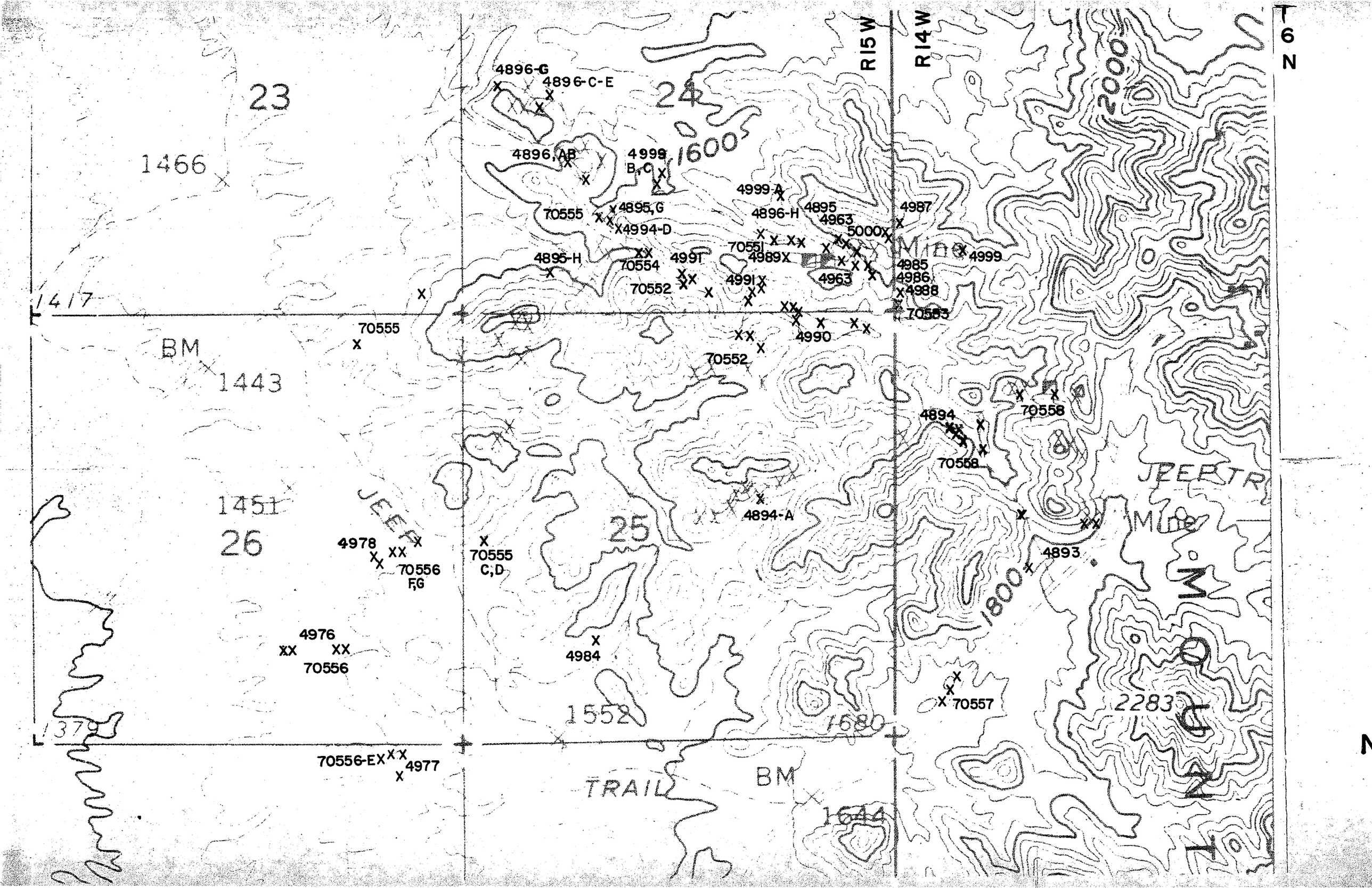
Northwestern Granite Wash Mountains

La Paz County, Arizona

X 4985 SAMPLE

SCALE: 1 inch equals 1000 feet

R.M. CORN JUNE 1989


R15W
R14W
T6N
23
24
25
26
1466
1417
1443
1451
1552
1680
1644
1600
2000
1800
2283
BM
BM
TRAIL
JEEP TR
Mine
4896-G
4896-C-E
4896,AB
4999 B,C
4999-A
4895,G
4896-H
4895
4987
4963
5000
4994-D
4895-H
70554
4991
70552
4989
4985
4986
4988
70553
4999
4990
70555
4894
70558
4894-A
4893
4978
70555 C,D
70556 F,G
4976
70556
4984
70557
70556-E
4977
N

EXPLANATION

Qal Quaternary alluvium

Tgr Tertiary granite

Weakly Metamorphosed Paleozoic and Mesozoic rocks

PMvs volcanic and volcaniclastic rocks

Pzq quartzite

Pzc carbonates

Major Shear Zone

Intensely Metamorphosed Paleozoic and Mesozoic rocks

schist and gneiss

quartzite

skarn

carbonates

Fault

Magnetite zone

GENERALIZED GEOLOGIC MAP OF THE NORTHWESTERN GRANITEWASH MOUNTAINS

LA PAZ COUNTY, ARIZONA

R.M.CORN

JUNE 1989

Scale 1 inch= 1000 feet