



CONTACT INFORMATION

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Arizona Department of Mines and Mineral Resources Mining Collection

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Julio Peralta known to me to be the person named in and who executed the foregoing instrument, and he the said Julio Peralta acknowledged to me that he executed the same freely and voluntarily and for the uses and purposes therein mentioned. In Witness whereof I have hereunto set my hand and affixed my official Seal the day and year first above written.

Seal

W. G. Hill,
Commissioner for Arizona
in California.

Recorded at request of John Howard Sept 2^d
A.D. 1865 at 10 Min past 6, P.M. in Book Two
of Deeds, Records of Yavapai County, folios 126
127. 128. 129

P. McAteer

G. H. Vickroy

This Indenture made the 4th day of September A.D. 1865. Between P. McAteer of the County of Yavapai Territory of Arizona party of the first part and G. H. Vickroy, party of the second part. Witnesseth That the party of the first part, for and in Consideration of the placing of a steam quartz mill at or near the Mineral lode hereinafter mentioned, and for the further Consideration of the crushing and amalgamating One hundred and fifty tons of assay rock, and the ready yielding of the results thereof, to the parties of the first part, as per terms of articles of agreement between the parties hereto, bearing even date herewith do hereby remise, release, Sell and forever quit-claim to said party of the second part, and to his heirs and assigns forever, all the right, title and interest of said party of the first part in and to One hundred and fifty feet in the North End of Claim No 4 North of the "Bully Queens" Lode and 1/8 of the auxiliary land. Together with all the dips, spurs and angles and all the

A.D. 1865. Before me Charles W. Brinley County Recorder in and for said County and Territory duly qualified by law, personally appeared the within named Pablo de Perito, Adolfo Arvizu and Ambrosio Quintana by his marks whose names one each and severally subscribed to the annexed instrument as parties thereto, personally known to me to be the individuals described in and who each and severally executed the said annexed instrument and who each and severally acknowledged to me that they each and severally executed the same freely and voluntarily and for the uses and purposes therein mentioned. In witness whereof I have hereunto set my hand and affixed my private Seal, the day and year in this Certificate first above written.



C. W. Brinley County Recorder.
Yuma County.

Territory of Arizona, 3p. On this 14th day of August A.D. 1865, before me Charles W. Brinley County Recorder in and for said County and Territory, duly qualified by law, personally appeared the within named Miguel S. Peralta whose name is subscribed to the annexed instrument as a party thereto, personally known to me to be the individual described in and who executed the said annexed instrument and who acknowledged to me that he executed the same freely and voluntarily, and for the uses and purposes therein mentioned. In witness whereof I have hereunto set my hand and my private Seal the day and year in this Certificate first above written.



C. W. Brinley, County Recorder
of the County of Yuma.
By P. Dall Deputy.

State of California
City and County of Los Angeles 3p. On this 24th day of July A.D. 1865, personally appeared before me Wm. G. Still a Commissioner duly appointed by the Governor of the Territory of Arizona, for the State of California

feet of said lode, the property of Adolfo Arvizu and Five hundred (500) undivided feet of said lode, the property of Ambrosia Quintero. Making in the aggregate Fifteen hundred undivided feet in the mine, known as the "Valenciana", situated in the Bradshaw Mining District, in the County of Yuma, and Territory aforesaid, the notice of location of which being recorded in Book "A" of Mining claims of said district and dated September 15th A.D. 1864. at four O'clock P.M. to which reference for more particular description may be had. Together with all the dips, spurs and angles, and also all the metals, ores, gold and silver bearing quartz rocks and earth therein; and all the rights, privileges and franchises thereto incident, appurtenant and appurtenant or therewith usually had and enjoyed; and, also all and singular the tenements and hereditaments or appurtenances thereto belonging, and the rents, issues and profits thereof; and, also, all the Estate, right, title, interest, possession, claim and demand whatsoever, of the said parties of the first part, of, in or to the premises, and every part and parcel thereof. To have and to hold all and singular the premises, with the appurtenances and privileges thereto incident, unto the said party of the second part. And the parties of the first part, for themselves and their heirs do hereby agree to and with the party of the second part, that they have full right and power to sell and convey the said premises and that the said premises are now free and clear from all incumbrances, sales or mortgages made or suffered by the said parties of the first part. In Witness whereof said parties of the first part have hereunto set their hands and seals the day and year first above written

Sealed and Delivered
in the presence of
C. W. Brinkley
Gov of Nev
& Stamp

Pablo A. Peratta (SS)
Adolfo Arvizu (SS)
Ambrosia Quintero (SS)
Julio Peratta (SS)
Miguel S. Peratta (SS)

Territory of Arizona
County of Yuma
On this 26th day of May

September 3^d A.D. 1865 at 30 Minutes past
3 O'clock P.M. in Liber Two of Deeds, pages
124, 125, 126.

J. G. Christie
Co. Recorder
By J. H. Bouton
Deputy

Pablo Peralta et al
to
William F. Flower.

This Indenture made
the 22^d day of May A.D. 1865. Between Pablo
Peralta, Miguel Peralta, Julio Peralta Adolpho
Arigo and Ambrosia Dumters, all of the
Territory of Arizona, parties of the first part,
and William F. Flower, of La Paz, Territory
aforesaid, of the second part, Witnesseth:
That the said parties of the first part, for
and in consideration of the sum of Four hundred
Dollars in gold coin, lawful money of the
United States of America to us in hand paid
the receipt whereof is hereby acknowledged have
granted, bargained, sold, remised, released con-
veyed and quit-claimed, and by these presents
do grant, bargain, sell, remise, release, convey
and quit-claim unto the said party of the
second part, and to his heirs and assigns forever
all the right, title and interest, estate, claim and
demand, both in law and equity, as well in
possession as in expectancy, of the said parties
of the first part, of, in or to that certain portion
claim, and mining right, title or property, on a
certain vein or lode of rock containing precious
metals of gold silver and other mineral and
situated in the Bradshaw Mining District, County
of Yavapai and Territory aforesaid and described
as follows to wit: Two hundred (200) undivided
feet of said lode, the property of Pablo Peralta.
Three hundred (300) undivided feet of said lode
the property of Miguel Peralta, Three hundred
(300) feet undivided of said lode, the property
of Julio Peralta, Three hundred (300) undivided

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| 18. |
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Spanish claim as to include the ⁵line near from the
 said Guano Islands or near-adjacent - to a boundary rank-
 ical, and north unannounced, which said grant was
 made to Miguel Benito by the Spanish Government in
 the year 1758, and to his legal representatives, and which
 said grant by parcel has been passed from the heirs
 on account of the hostile Indians.

Do have and to have the premises all out assigned
 the lands, mines, water courses and other advantages that
 into belonging, with the party of the second part his heirs
 and assigns forever, and the party of the first part
 hereby for himself his heirs and assigns Guiblain and
 were in the party of the second part all the right, title
 interest, claim of the party of the first part in and to and
 for the said aforesaid described claims, and in case =

guerre of the non-existence of any legal authority, may
 create or judge of Court, the party of the first part also
 upon such evidence as are at law to take his affidavit =
 agreement of their sale of said grant, the testimony without
 the party of the first part has heretofore set his hand and
 seal the day and year first above written.

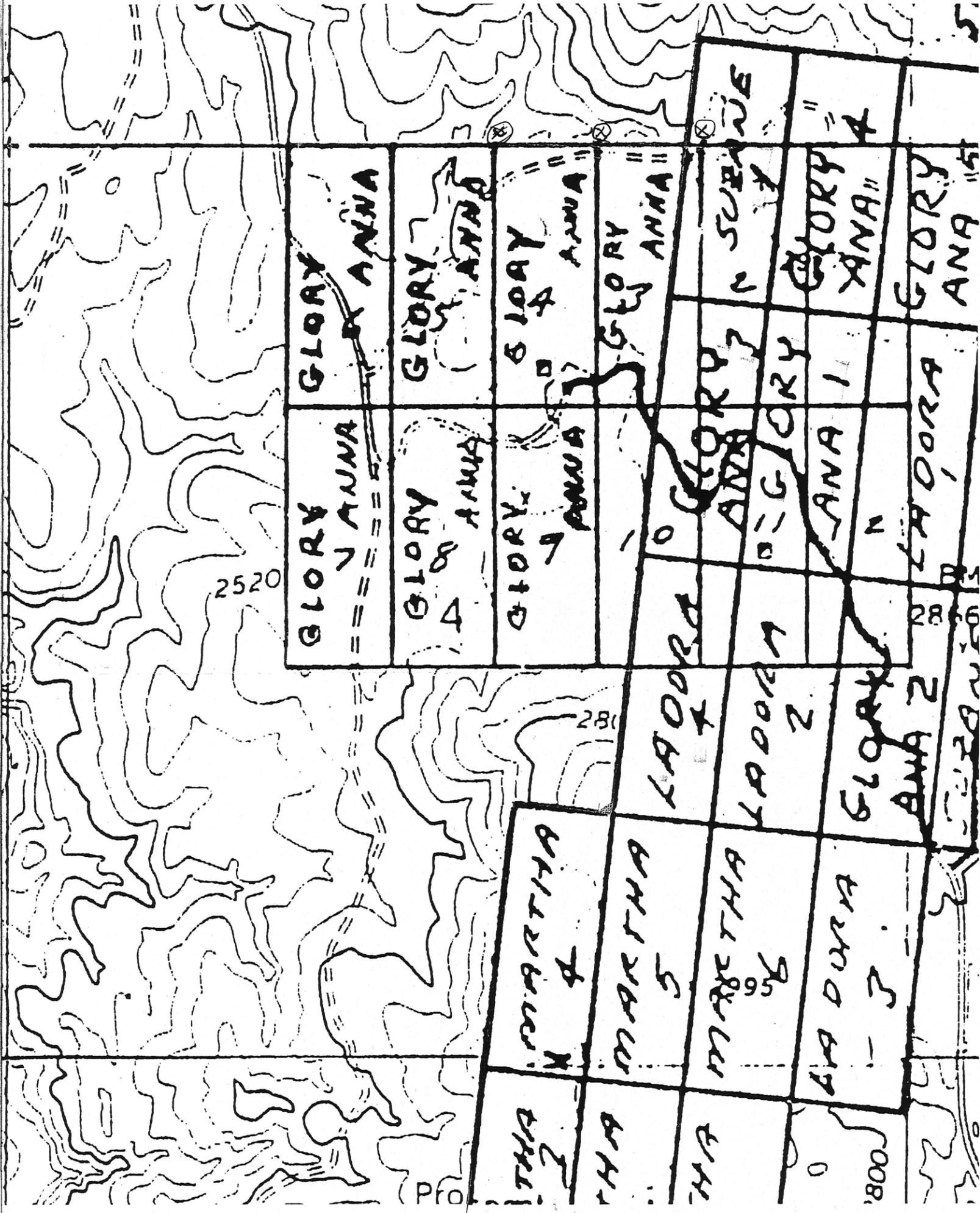
Miguel Benito (R)
 The the undersigned do hereby witness that the for-
 going instrument of writing was read in our hearing,
 by a certified translator in the Spanish language, and
 the said Miguel Benito whose signature is appended
 thereunto acknowledged the same to be his act and deed
 for the purpose therein mentioned,

Witness our hand
 Yoderques Antonio
 Juan Jose Segarra
 Bernabé Guice
 Received and filed for record March 12th A.D. 1874 at
 Clerk of Ill. at record of J. M. Williams, and duly recor-
 ded in Book One of Ordinances Records of Alameda County
 Arizona, at folio 9874

Plato Right
 Justice. do hereby give that of the undersigned
 claim as the water in Mark Bank for irrigation
 purposes.
 T. J. Bargmann
 Mark Bank Green March 12th 1874

T92 R2E Sec 4 copy to Glory Ana Site
Apr. 03 06

E, Section 4



ARIZONA STATE OFFICE

Map printed on August 9, 2005
Map produced by the BLM, Arizona State Office

1" = 0.91"

MAP 300' = 0.455"

1" = 660'
Scale 10788.7

- | | | | |
|--|--------------|--|--------------------------------|
| | State | | City, County, & State Wildlife |
| | BLM | | County Lands |
| | USFS | | BLM National |
| | Indian Lands | | National Con |
| | Military | | Wilderness |
| | NPS | | |
| | FWS | | |

Peralta.

Notice

VALENCIANNA Gold Mine
The original Miguel Peralta Claim
Since Sept. 15, 1864 Yavapai Co. Az.
BLM-AMC# 367049
Locator/owner ROBERT A. DAEM
Cell. (406)-672-1289
E-mail: sonorarey@hotmail.com

Note:
Placed to
Glomyana
File April 3, 06
R.A. Daem

Notice of the relocation of the Valencianna Mine. We the undersigned do this day locate and claim fifteen hundred feet on this gold bearing quartz mine, and three hundred feet on this gold bearing quartz mine, and three hundred feet on each side of the main vein, and all other privileges granted by the Mining laws of the United States.

Commencing at this Notice which is posted at the main shaft of the Old Peralta works - and running fifteen hundred feet in a northerly direction along the main vein and is located in Bradshaw Mining District Yavapai County Arizona Territory, and is described as follows.

Old Peralta works between one twenty five and two hundred feet deep - Ledge in old works between fifteen and twenty feet wide - Surface along the entire vein covered with crop - spring of Gold Quartz twenty and thirty feet wide.

Old Peralta Arastras two miles west of the mine on Black Canyon Creek, Prescott and Tip Top Stage road passes three hundred yards west of the mine.

Dated on the ground August the (15th) 1878. This Mine to be known as the Peralta Mine.

Henry R. Emalt. Seven hundred and fifty (750) feet
Miguel Lauro Peralta - Seven hundred and fifty (750) feet.

Filed for record at the request of M.L. Peralta August 27th A.D. 1878 - at One O'clock P.M. and duly recorded in Book # 6. of Mines Records of Yavapai County Arizona folio 633.

William Wilkerson
County Recorder
by N.C. Foster
Deputy

GENERAL INDEX MINES. LOCATORS.

| DA | LOCATORS | CLAIMS | DISTRICT | RECORDED | | WHEN LOCATED | | |
|----|-------------------------|---|--------------|----------|--------|--------------|-----|------|
| | | | | BOOK | PAGE | MONTH | DAY | YEAR |
| | Davis Cornelius. | Richmond | Turkey creek | 63 | 99 | Janij | 1 | 1875 |
| | Davis Cornelius. | Capitol | Turkey creek | 63 | 99-100 | Janij | 1 | 1875 |
| | Davis C. et al. | Dick O'Brien | | 63 | 100-1 | | | |
| | Davis M. V. et al. | Whipple | | 63 | 203 | Mich | 22 | 1875 |
| | Darvoche J. R. et al. | Whipple | Mariposa | 63 | 204 | Mich | 22 | 1875 |
| | Davis Cornelius et al. | Stonou Island | Stansay ampa | 63 | 306 | June | 23 | 1875 |
| | Davis Cornelius et al. | Orleans. | Stansay ampa | 63 | 307 | June | 23 | 1875 |
| | Davis J. W. et al. | Eureka. | | 63 | 439-40 | Oct. | 22 | 1875 |
| | Day, Warren E. et al. | Retta. | Tiger | D4 | 40-1 | Janij | 20 | 1876 |
| | Davis J. W. | Iowa. | Pick | D4 | 59 | Dec. | 16 | 1875 |
| | Darvoche Johnson et al. | Orphan Boy | Stansay ampa | E5 | 158-9 | Oct | 16 | 1876 |
| | Davidson R. M. et al. | Antelope | Weaver | E5 | 241 | Janij | 19 | 1877 |
| | Davidson R. M. et al. | Rob Roy | Weaver | E5 | 243-4 | Janij | 19 | 1877 |
| | Day, Warren E. et al. | Retta | Tiger | E5 | 280 | Janij | 20 | 1877 |
| | Day Warren E. | Kate | Humburg | E5 | 350-7 | Apr | 16 | 1877 |
| | Day, Warren E. et al. | Miriam | Rymx creek | E5 | 387-8 | Apr | 28 | 1877 |
| | Darvoche J. R. et al. | Jackson. | Stansay ampa | E5 | 411-12 | May | 10 | 1877 |
| | Darvoche J. R. | Oneida. | Humburg | E5 | 500. | May | 28 | 1877 |
| | Darvoche J. R. | Chenango. | | E5 | 502. | May | 28 | 1877 |
| | Darvoche J. R. | Merou (reloc. - Westport) | Humburg | E5 | 503. | May | 28 | 1877 |
| | Darvoche J. R. | Georgia (Reloc.) | Humburg | E5 | 557-8 | July | 12 | 1877 |
| | Darvoche J. R. | Valenciana. | Black Canyon | E5 | 559-60 | July | 28 | 1877 |
| | Darvoche J. R. | Jack Swilling. | Black Canyon | E5 | 560-1 | June | 28 | 1877 |
| | Darvoche J. R. | Maggie. | Humburg | E5 | 578 | July | 21 | 1877 |
| | Davis Wm. Henry et al. | Lafayette. | Pick | E5 | 625 | Aug | 21 | 1877 |
| | Davis A. J. et al. | Mulla Moore | Humburg | F6. | 109 | Nov. | 8 | 1877 |
| | Day, Warren E. | Day - (Placer) | | F6. | 129-30 | Nov. | 22 | 1877 |
| | Davis W. H. et al. | Dexter. | Pick | F6. | 221 | Nov. | 20 | 1877 |
| | Davis Jesse. et al. | Julia. | Humburg | F6. | 237-40 | Nov. | 27 | 1877 |
| | Davis Jesse. et al. | Little Corporal | Humburg | F6. | 240-1 | Dec. | 6 | 1877 |
| | Davidson S. A. | Henry Lelay | Walker | F6. | 420. | Febij | 28 | 1878 |
| | Davidson S. A. | Pine Mountain | Walker | F6. | 420. | Febij | 28 | 1878 |
| | Davidson S. A. | Pointer | Walker | F6. | 421 | Febij | 28 | 1878 |
| | Davidson S. A. | Joe Walker | Walker | F6. | 421 | Febij | 28 | 1878 |
| | Dames. A. D. | Oakley | | F6. | 432. | Mich. | 26 | 1878 |
| | Davis J. W. et al. | Little Corporal | Humburg | F6. | 434. | Mich | 7 | 1878 |
| | Daly James. | South Trinity ^{13. E. Trinity} | Turkey creek | F6. | 440 | Mich | 4 | 1878 |
| | Day Warren E. | Galida (Reloc) | Rymx creek | G7 | 31 | Oct | 21 | 1878 |

with all the dips spurs and angles and all valuable mineral deposits contained therein and all timber growing within the limits of said claim and all water and water privileges thereon or appurtenant thereto under and according to the provisions of An Act of Congress approved May 10th 1872, entitled "An act to promote the development of the Mining Resources of the United States."

This claim commences at this notice which is posted in a conspicuous place on a monument at the South East end of the claim running thence N. E. 300 ft to a monument of stones - thence S. W. 600 feet to monument of stones thence 300 ft North East to place of beginning.

This claim may be more generally described as being in Humburg District - Yavapai County A.S. and as being about one mile West of the Smilling Silver Mine and about 200 yds South and East of what is known as the "Rescue" and being a relocation of the "Donto Chief" and shall be known as the "Nide Queen" Ledge or Claim.

Dated on the ground this 12th day of July 1877

A. A. Carpenter

Filed for record at the request of J. R. Darrocha July 17th 1877 at 11th o'clock AM and duly recorded in Book E. S. of Mines - Records at Yavapai County at folios 558 & 559

William Wilkerson

County Recorder

Valenciana -

Notice of Location

of the Valenciana Ledge or Claim, containing 1500 ft and located as a Gold Mine - The undersigned claims for mining purposes fifteen hundred feet (1500) of this quartz ledge in length along the ledge or vein and three hundred (300) feet on each side of the surface together with all the dips spurs and angles and all valuable mineral deposits contained therein and all timber growing within the limits of said claim and all water and water privileges thereon or appurtenant thereto under and according to the

Provisions of an act of Congress approved May 10th 1872 entitled "An act to promote the development of the Mining Resources of the United States."

This claim commences at this notice which is posted in a conspicuous place on a monument at the centre of the claim on the edge of a deep shaft running thence East 300 feet to a monument of stones thence 750 feet North to a monument of stones marked N.E. Cor thence West 600 feet to a monument of stones marked N.W. Corner thence South 1500 ft to a monument marked S.W. Corner thence East 600 feet to a monument marked South east Corner thence 750 ft North to first side boundary monument.

Said claim is in Black Cañon District Yavapai County Ariz. and about 6 miles North of Smilling's Ranch and about 300 yds East of the Black Cañon wagon Road and about 4 miles South of Rumble Station and $\frac{3}{4}$ of one mile east of Black Cañon Creek and shall be known as the Tuluiciana Ledge or Claim.

Dated on the ground this 28th day of June 1877
 C. A. Carpenter
 Witness

J. R. Darroche

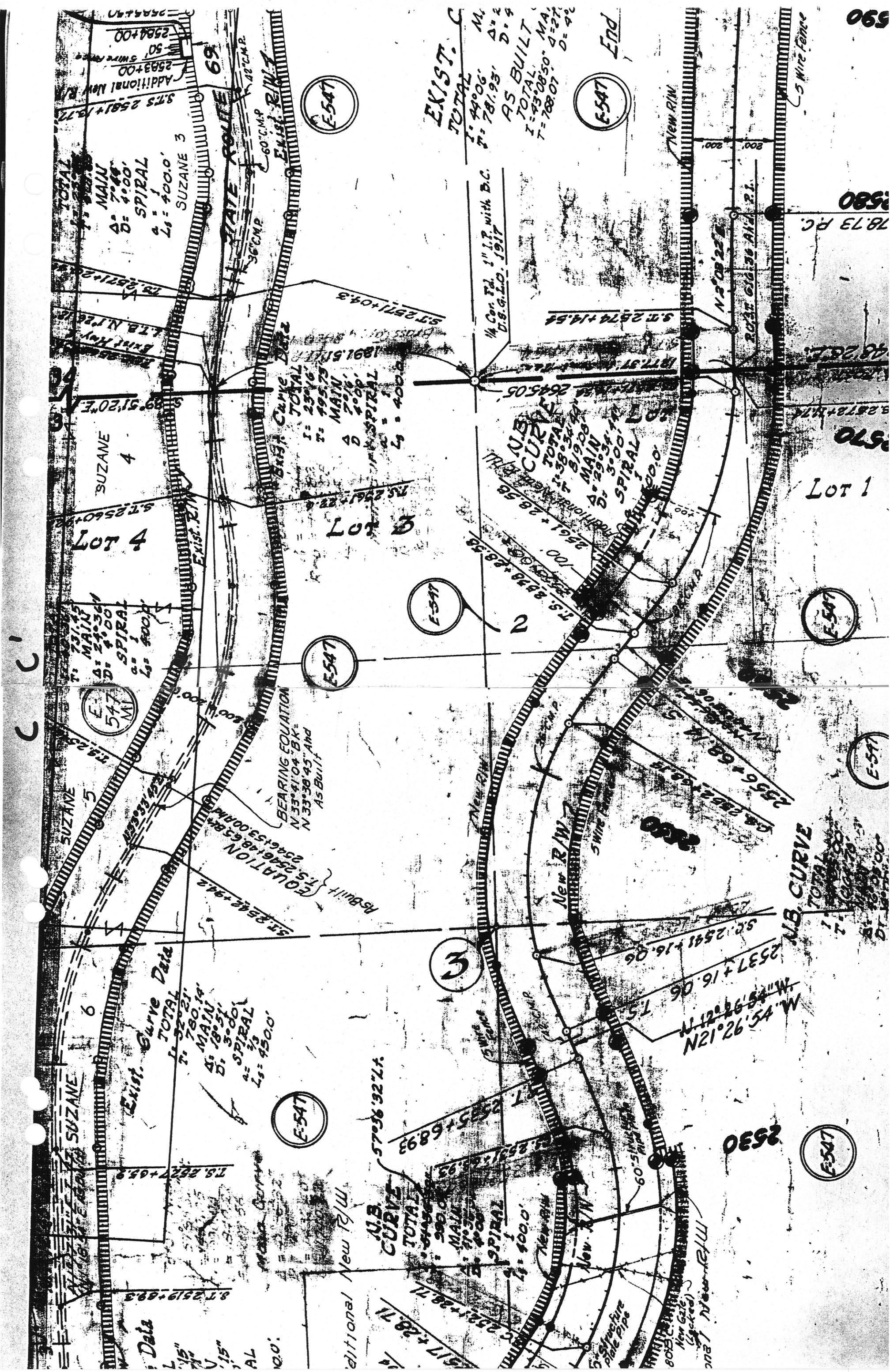
Filed for record at the request of J. R. Darroche July 17th 1877 at 11:50 o'clock AM. and duly recorded in Book E. 5. of Mines - Records of Yavapai County, Arizona at folio 559 & 560.

William Wilkerson
 County Recorder

Jack Smilling -

Notice of Location
 of the Jack Smilling Gold mine. Containing 1500 feet and located as a Gold mine.

The undersigned claims for mining purposes fifteen hundred (1500) feet at this Quartz Ledge in length along the ledge or vein and three hundred (300) feet on each side of the vein middle of the vein at the surface together with all the dips spurs and angles and all valuable mineral deposits contained therein and all timber growing within the limits of said claim and all water and water privileges thereon or appurtenant thereto now and



Additional New R/W
S.T.S 2581+19.72
2593+00
2584+00
50' SWIRE FENCE

SUZANE 3
Ls: 400.0'
D: 7.00'
D: 4.00'
SPIRAL

SUZANE 4
Ls: 400.0'
D: 7.00'
D: 4.00'
SPIRAL

SUZANE 5
Ls: 400.0'
D: 7.00'
D: 4.00'
SPIRAL

SUZANE 6
Ls: 450.0'
D: 3.00'
D: 1.50'
SPIRAL

EXIST. R/W
60' C.M.P.
42' C.M.P.

Curve Data
TOTAL
L: 230.16'
T: 195.75'
MAIN
D: 7.00'
SPIRAL
Ls: 400.0'

BEARING EQUATION
N 33° 41' 04" BK
N 33° 38' 45" BK
AS BUILT

Curve Data
TOTAL
L: 320.21'
T: 780.14'
MAIN
D: 18.51'
SPIRAL
Ls: 300.0'

Curve Data
TOTAL
L: 390.00'
T: 570.66'
MAIN
D: 7.00'
SPIRAL
Ls: 400.0'

EXIST. C
TOTAL
L: 490.0'
T: 781.93'
AS BUILT
TOTAL
L: 43' 08" 50'
T: 788.07'

Curve Data
TOTAL
L: 380.34'
T: 819.05'
MAIN
D: 29.34'
SPIRAL
Ls: 400.0'

Curve Data
TOTAL
L: 350.00'
T: 570.66'
MAIN
D: 7.00'
SPIRAL
Ls: 400.0'

Curve Data
TOTAL
L: 390.00'
T: 570.66'
MAIN
D: 7.00'
SPIRAL
Ls: 400.0'

Curve Data
TOTAL
L: 390.00'
T: 570.66'
MAIN
D: 7.00'
SPIRAL
Ls: 400.0'

1/4 Cor. Tol. 1" I.P. with D.C.
D.S.G.L.O. 1917

Curve Data
TOTAL
L: 380.34'
T: 819.05'
MAIN
D: 29.34'
SPIRAL
Ls: 400.0'

Curve Data
TOTAL
L: 350.00'
T: 570.66'
MAIN
D: 7.00'
SPIRAL
Ls: 400.0'

Curve Data
TOTAL
L: 390.00'
T: 570.66'
MAIN
D: 7.00'
SPIRAL
Ls: 400.0'

Curve Data
TOTAL
L: 390.00'
T: 570.66'
MAIN
D: 7.00'
SPIRAL
Ls: 400.0'

5 Wire Fence

Curve Data
TOTAL
L: 380.34'
T: 819.05'
MAIN
D: 29.34'
SPIRAL
Ls: 400.0'

Curve Data
TOTAL
L: 350.00'
T: 570.66'
MAIN
D: 7.00'
SPIRAL
Ls: 400.0'

Curve Data
TOTAL
L: 390.00'
T: 570.66'
MAIN
D: 7.00'
SPIRAL
Ls: 400.0'

Curve Data
TOTAL
L: 390.00'
T: 570.66'
MAIN
D: 7.00'
SPIRAL
Ls: 400.0'

C

C

0690

0580

0570

0560

0550

0540

0530

0520

0510

0500

LOT 4

LOT 5

LOT 1

3

E-547

E-547

E-547

E-547

E-547

E-547

E-547

E-547

E-547

Data

EXIST. CURVE DATA

EQUATION

BEARING EQUATION

Curve Data

Curve Data

Curve Data

Additional New R/W

50' SWIRE FENCE

60' C.M.P.

42' C.M.P.

1" I.P. with D.C.

D.S.G.L.O. 1917

5 Wire Fence

New R/W

A A'

22
23

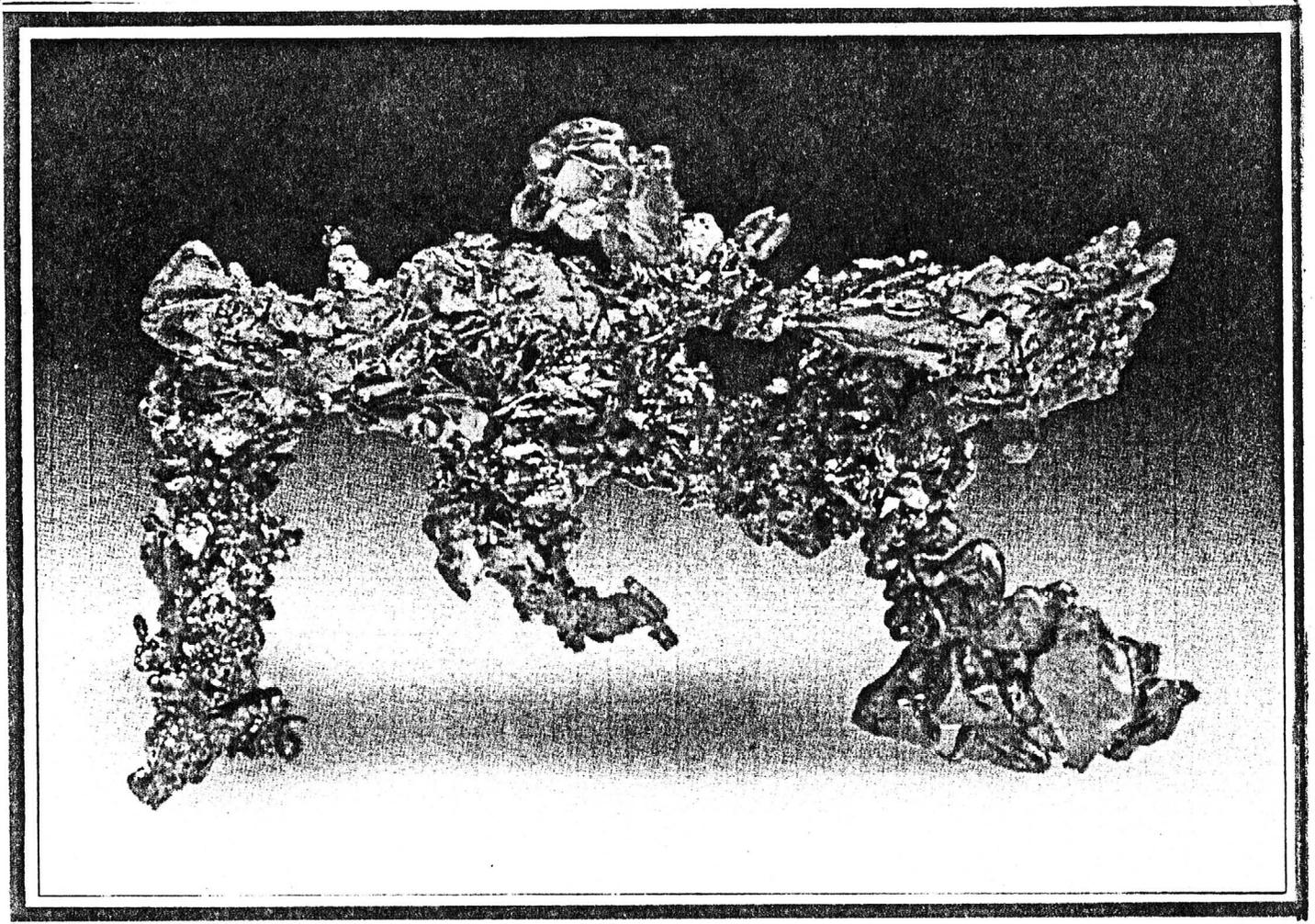
| ACQUISITION RECORD | | | | | OWNERSHIP RECORD | | | | | |
|--------------------|------------------------|----------|--------------|------------|------------------|--|---|-----------------------------------|-------------------|------------------------|
| COMMISSION | TYPE | DATE | BOOK | PAGE | ITEM | OWNER | DESCRIPTION | ACREAGE TAKEN | ACREAGE REMAINING | DATE PROPERTY ACQUIRED |
| 3-13-63 | R/W GRANT | 1-5-63 | Not Recorded | | E-546 | STATE OF ARIZONA | E ² Section 10 Except .92 Acre in NW ⁴ NE ⁴ SE ⁴ T9N-R2E | | | |
| 4-19-63 | R/W GRANT | 4-19-63 | 288 | 585 586 | E-547 | U.S. LAND | E ² & E ² NW ⁴ Section 27 T9N-R2E All Section 22 Except SW ⁴ SW ⁴ " " | 5.0 A. 61.5 A. | | |
| 3-20-64 | Supplemental R/W Grant | 3-31-64 | 319 | 123 124 | | | All Section 15 T9N-R2E W ² Section 10 " " | 37.5 A. 37.5 662A | | |
| 8-20-64 | Supplemental R/W Grant | 9-21-64 | 337 | 254 256 | | | All Section 3 T9N-R2E All Section 4 T9N-R2E | 84.4 A. 84.4 0.3 A. | | |
| | | | | | | | All Section 34 T9 ¹ / ₂ N-R2E S ² Section 27 " " | 48.5 A. 23.2 A. | | |
| | | | | | | | W ² Section 26 T9 ¹ / ₂ N-R2E Lots 1,2 & SW ⁴ Section 23 " " | 8.6 A. 49.0 A. | | |
| | | | | | | | W ² Section 35 T10N-R2E All Section 26 T10N-R2E | 20.9 A. 8.4 A. | | |
| | MAP | D-13-T- | | 363 | E-5462 | State of ARIZONA George A. POPE Jr. CR | SE ¹ / ₄ NE ¹ / ₄ Sec. 27 T9 ¹ / ₂ N R2E 8044 | | | |
| | see | | | | E-906 | George A. POPE, Jr. | E ¹ / ₂ SE ¹ / ₄ Sec 34 T10N R2E. | | | |
| 4-5-68 | R/W GRANT | 4-24-68 | Not Recorded | | E-5462 | State of ARIZONA George A. Pope Jr. C.P. 8043 | SE ¹ / ₄ SE ¹ / ₄ Sec. 22 T9 ¹ / ₂ N R2E | | | |
| 4-21-65 | Q.C.D. | 2-24-65 | 360 | 442 | E-546A | State of Arizona | E ¹ / ₂ Sec. 10 Ex. 0.92 ac. T9N. R. 2E | 1.1 ac. | | |
| 3-12-65 | Q.C.D. | 2-24-65 | 356 | 107 | E-547-1 | Carl J. Roestle | Government Trail Mining Claim | 20.7 Ac | | |
| 12-17-65 | F.O.C. | 4-20-67 | 443 | 408 412 | E-547-2 | Jerry J. Motten et ux. | Jer Bar Honeycomb Mining Claim | 20.7 Ac. | | |
| 12-13-66 | R/W GRANT | 10-26-66 | 424 | 428 431 | E-547- | Frank Melluzzo et al | Unpatented mining claims in secs. 9, 10, 34 & 4 T9 ¹ / ₂ R. 2 E & Sec. 34 T. 9 ¹ / ₂ N. R. 2 E. | 97.1 Ac. | | |
| 1-19-68 | R/W GRANT | 1-2-68 | 483 | 499 503 | E-547-A | U.S. Land | Pt. of Lots 1, 2, 5, 6 Sec. 23, T9 ¹ / ₂ N, R2E | 28.4 Ac. | | |
| 5-17-68 | R/W GRANT | 4-22-68 | 500 | 30-31 | E-547-B | U.S. LAND | PT. of LOTS 1, 2, 5, 6 SEC. 23, T9 ¹ / ₂ N, R2E | *1.98 Ac. | | |
| | see | Map | D-13-T- | 363 | E-547-C | U.S. Land | Pt. of W ¹ / ₂ Sec. 34 T. 9 ¹ / ₂ N. R. 2 E. | 1.0 Ac. *0.1 Ac. | | |
| | | | | | E-547-C | U.S. Land | Pt. of W ¹ / ₂ Sec. 21, T9 ¹ / ₂ N, R2E (Well site) | See Map | | D-13-T-363 |

| C.O. No. | DATE | BY |
|----------|---------|--------|
| 1711 | 9-11-67 | K.P.W. |
| 1899 | 2-29-68 | J. Ne |
| " | " | " |
| " | " | " |
| " | " | " |
| 1924 | 3-21-68 | J. Ne |
| " | " | " |
| " | " | " |
| 4172 | 2/19/74 | MILL |

NOTE
* Area for Draining Farm City

08.65

Glory Ana (f)



“GLORY

ANA

“GOLD”

PRELIMINARY GEOLOGICAL
REPORT ON THE
GLORY ANA GOLD PROPERTY
BLACK CANYON MINING DISTRICT,
YAVAPAI COUNTY, ARIZONA.

Prepared for the
NEW ERA MINING CORPORATION

by

L. Arden Miller
Chief Executive Officer

1988 - 1989

Geological data

collected by

James Sorrell - Geophysicist
Victor Livingston - Geologist
John Vuich - Geologist
L. Arden Miller - Geologist

Photographs

by

Lester A. Miller

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FOREWORD

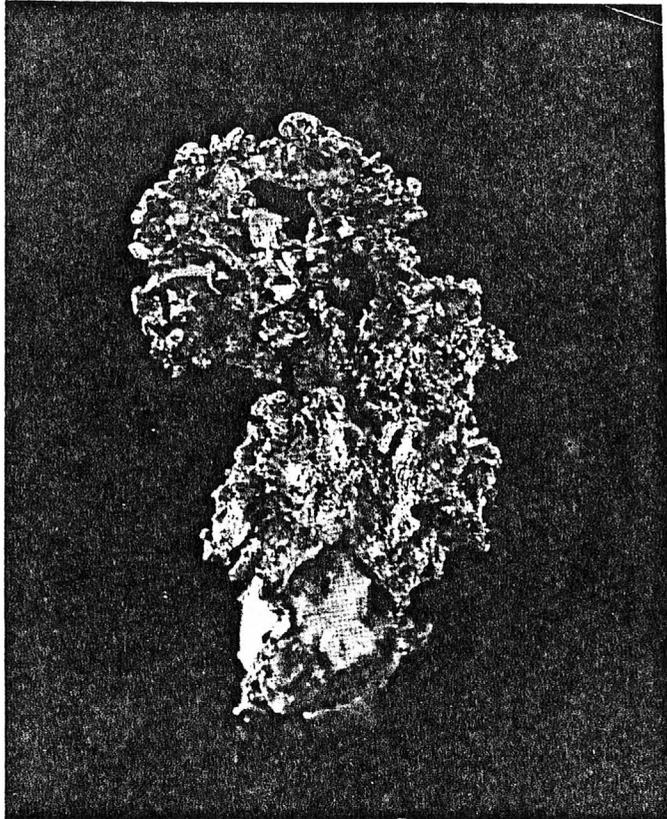
NEW ERA MINING CORPORATION was incorporated in the State of Arizona, with its current address at 34626 Whileaway, Carefree, Arizona. The corporation has acquired and leased federal mining claims containing gold and silver ore reserves. Currently, all properties are located in the **Black Canyon Mining District, Cherry Creek Mining District, Squaw Creek Mining District, and Amole Mining District of Arizona.**

The Directors of **NEW ERA MINING CORPORATION** are in the process of exploring, testing and developing their mineral properties into a commercial mining venture but, on the basis of information to date, have not yet determined whether these properties contain ore reserves which are economically recoverable. The underlying value of the mineral properties and related operating costs is entirely dependent on the existence of economically recoverable reserves, the ability of the corporation to obtain the necessary financing to complete development, and upon future profitable production.

This first report describes the **Glory Ana** claim group, leased from Frank and Wanita Melluzzo of Phoenix. (Appendix G)

SUMMARY

The **Glory Ana** property consists of the original 23 lode federal mining claims located in the **Black Canyon Mining District** of Yavapai County, Arizona. However, approximately 1300 acres cover the main area of interest with additional claims being located in 1988.



11mm x 24mm

FIGURE # 1. -- GOLD ON QUARTZ

LOOKING for Arizona Native Gold? Not an everyday find! Well, we are currently reopening the Historic "GLORY ANA MINE" located in the BLACK CANYON MINING DISTRICT, YAVAPAI COUNTY, ARIZONA, which was first operated in the 1870's. We will be mining for spectacular "POPCORN" gold on white quartz with associated copper oxide minerals. Let us know if you would like to be added to our priority list, to be contacted first when specimens are made available for sale.

NEW ERA MINING CORPORATION

P.O. BOX 2686

CAREFREE, ARIZONA 85377

Mineralization occurs as free gold, auriferous pyrite, and auriferous chalcopyrite in quartz veins and associated contact gossan shear zones. The shear zones and vein associations are located within the Precambrian Yavapai schist, Bradshaw granitic complex or the intruded northward-trending belt of diorite.

Exploration targets are expected to be small lenses of a few hundred to few thousand tons of material containing possible ore reserves averaging about 0.50 oz. to 1.00 oz. of gold per ton. In the oxidized zone, which is nearer the surface, it can be speculated that some high grade pockets or pods of quartz containing native gold could be located and assayed anywhere from 2 oz. of gold per ton up to an incredible 50 oz. of gold per ton; however, only 1 or 2 tons of this high grade ore would be anticipated per pocket. Past evidence indicates that the gold does occur in a form commonly referred to as bright yellow "kernal" or "popcorn" gold and ranges in size from 1/4 inch to 1 inch in diameter. The geophysical study indicates that several anomalous targets occur in the subject area described herein, and are associated with shear zones, structural trends, visible vein systems, oxide copper mineralization and auriferous sulfides found in the quartz.

Two old time prospectors have relayed by oral communication that they once worked in the **Glory Ana** shaft and reported that high grade pockets of free gold and lenses containing rich copper oxides with gold existed within 50 to 90 feet of the surface in the now inaccessible workings of the old shaft. There is no written data available to support the exact locations, potential ore reserves, or gold content removed from these old workings.

It is therefore conjectured that a few dozen of these gold deposits might lie at a shallow minable depth within the "Glory Ana Shear Zone".

INTRODUCTION

The objective of this field study was to collect scientific data that could be utilized in developing the property into a small gold mine operation employing modern selective mining techniques. Several geological studies by government agencies have been conducted in the region of the **Glory Ana** property and should assist in the research. The previous mining history of the district was reviewed, although documented evidence appeared to be somewhat sketchy.

An outline of this report included reconnaissance field work, a geophysical survey, and sampling of selected quartz outcrops for fire assay of their gold content. The geological data that was collected and assembled into this report delineates further exploration targets to be examined by drilling, but due to the report's limited nature, it did not designate the anomalies as to depth, width, or length; therefore, providing no projectable ore reserves.

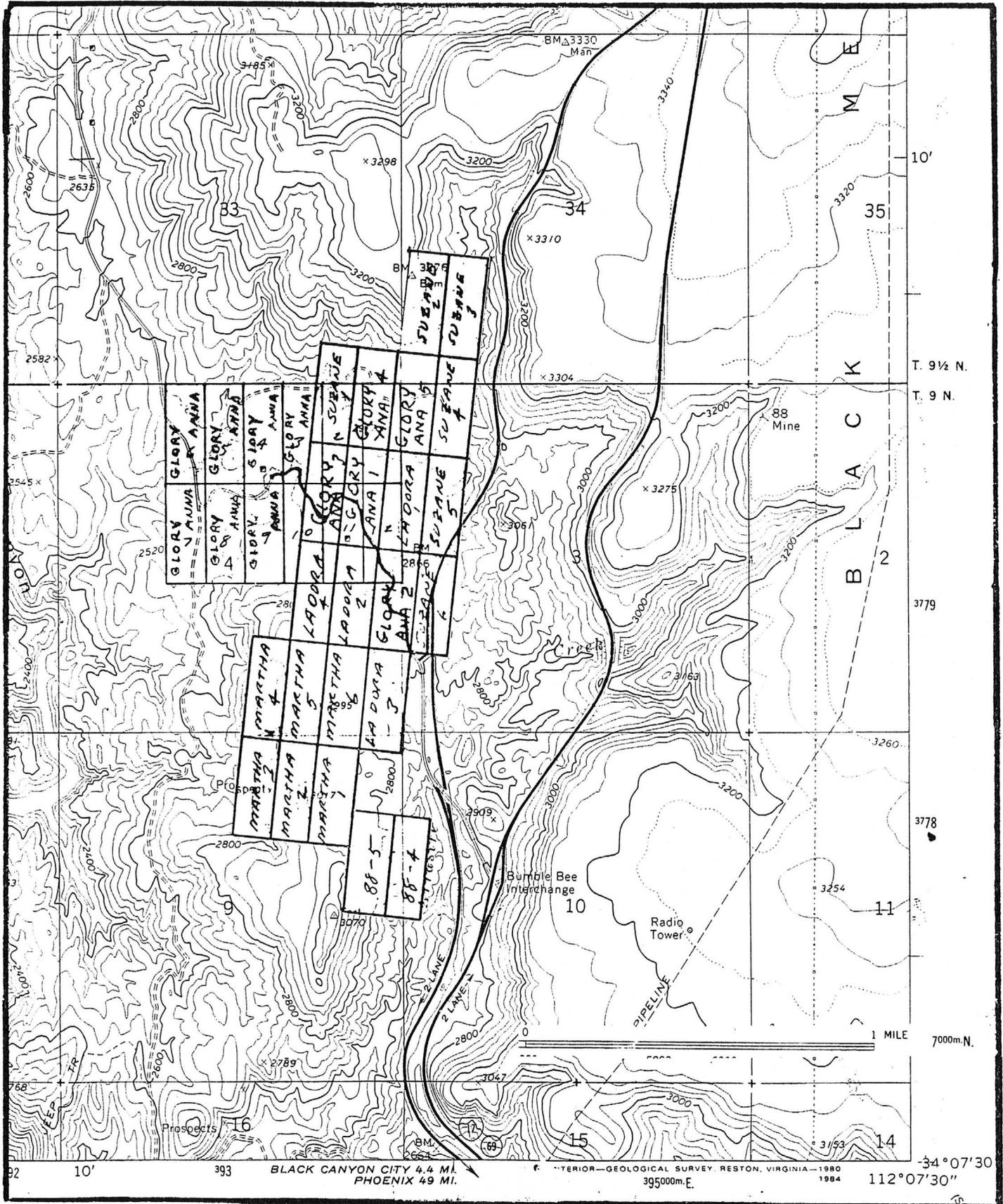
LOCATION

The **Glory Ana** property is located 50 miles north of Phoenix, Arizona, in the **Black Canyon Mining District, Yavapai County, Arizona** (Figure 2). It is situated in Sections 2, 4, and 5, T9N, R2E, and Sections 28, 29, 32, and 33, T9½N, R2E of the Gila and Salt River Base and Meridian. This area is described on the Bumblebee 7.5 minute U.S.G.S. topographic quadrangle (Figure 3).

FIGURE # 2 -- REGIONAL ROAD MAP & PROJECT AREA MAP:



FIGURE # 3 -- U.S.G.S., BUMBLE BEE QUAD., YAVAPAI CO., ARIZ.



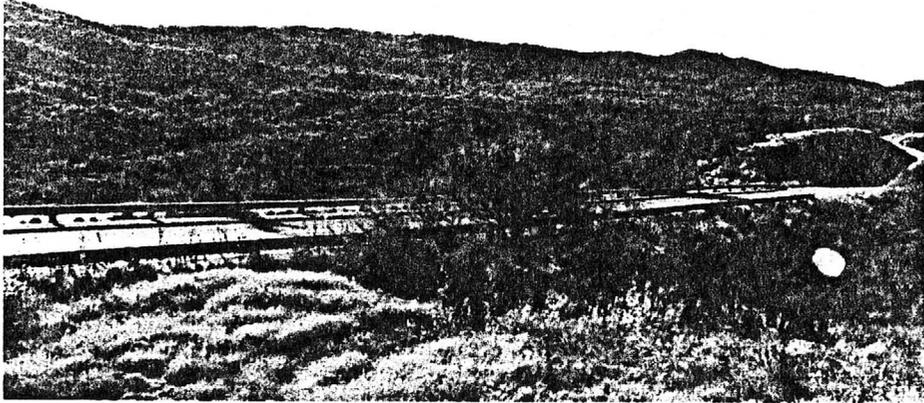


FIGURE # 4 -- SCENIC VIEW LOOKING WEST FROM BUMBLEBEE INTERCHANGE. ALL THE DARK GREEN AREA IS COVERED BY CLAIM GROUP.

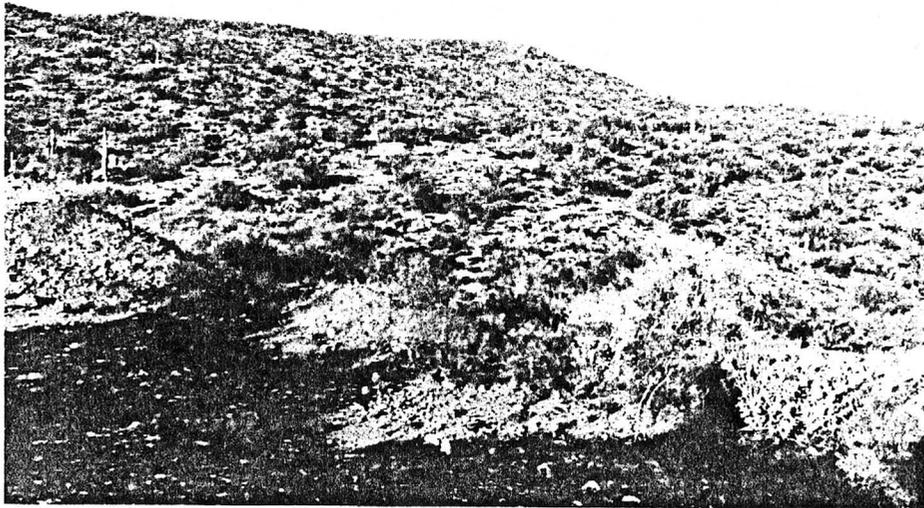


FIGURE # 5 -- ROAD CUT ON SHEAR ZONE EXPOSING QUARTZ. VIEW IS NORTHEAST.

ACCESSIBILITY

Travel to the project area from Phoenix is accomplished by driving north on Interstate 17 to the Bumblebee interchange, hence approximately 1.5 miles northwesterly to the property via the Bumblebee Road, which is an all weather county road.

PHYSICAL FEATURES

The **Glory Ana** claim group lies on a set of rolling hills eroded from the western slope of the overlying volcanic lava flows referred to as Black Mesa. The **Black Canyon Mining District** encompasses an area about 18 miles long from north to south and approximately 8 miles wide from east to west. The area extends between the eastern flank of the Bradshaw Mountains to the West and the Aqua Fria River to the East. From the vicinity of the town of Cordes to the North and the Maricopa County boundary line to the South.

The main topographic feature in the property area consists of a 2-mile-wide, northward-trending belt of meta-sedimentary and meta-volcanic Yavapai schist extending from the **Golden Belt** and the **Golden Turkey** mines to the North and South to the **Kay Mine** area. The Yavapai schist is intruded on the West and far East by the Bradshaw granite and Crooks complex, and on the adjacent eastern flank by a northward-trending strip of intruded diorite. These geological formations floor a former valley and hilly pediment that is now covered on the East by Tertiary volcanic rocks which have been deeply dissected by the southward flowing, meandering drainage system of the Black Canyon. The elevation of the district ranges from 2,000 to 4,000 feet above sea level.



FIGURE # 6 -- OLD GLORY ANA SHAFT. EXCAVATED AS AN OPEN PIT BY WHITE MULE PROPERTIES IN 1980.



FIGURE # 7 -- LOOKING NORTHWEST ALONG "GLORY ANA SHEAR ZONE WITH QUARTZ VEIN TO THE EAST. THE HIGHLY SHEARED AND SHATTERED ROCK CAN BE SEEN IN THE CENTER OF VIEW.

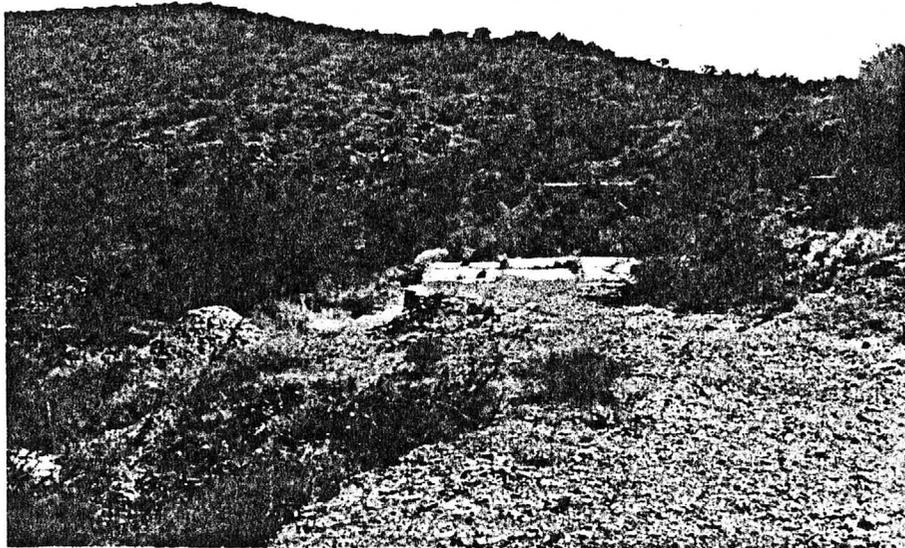


FIGURE # 8 --- LOOKING SOUTHEAST ACROSS OLD MILL
SITE FOUNDATION.

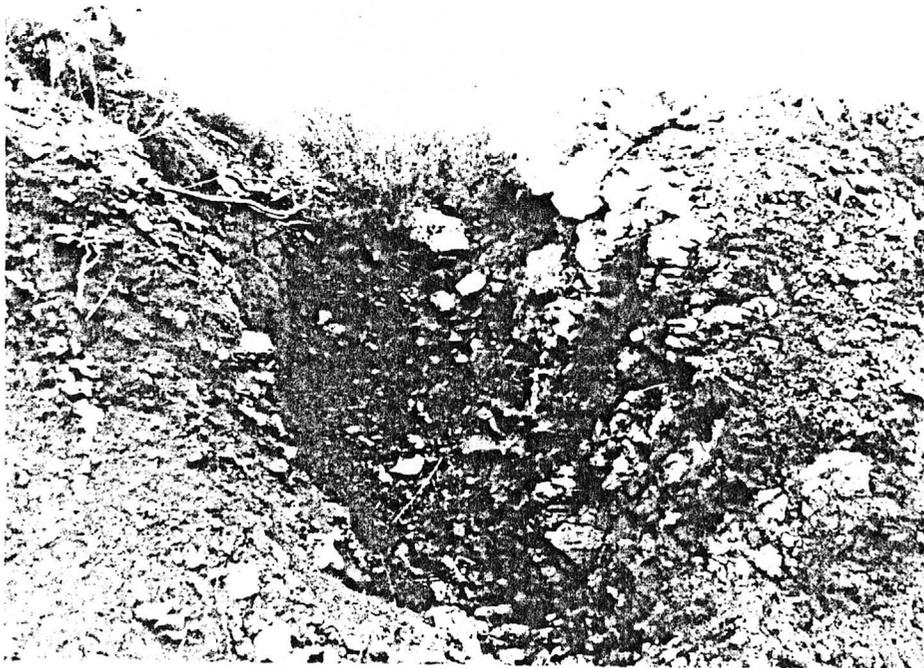


FIGURE # 9 --- VIEW OF EXCAVATION IN THE RED GOSSAN
ZONE LOCATED IN THE SHEAR ZONE.
QUARTZ PRESENT.

HISTORY OF THE CLAIMS

Earliest records (Lindgren, 1926 and Arizona Bureau of Geology and Mineral Technology 1921-1941) of work in the **Black Canyon Mining District** indicate most of the reported production occurred after the turn of the century through the 1920s with some properties operating sporadically into the early 1940s. A few tens of thousands of ore-tons were processed to recover gold, silver, copper, lead, and zinc. Purported reserves in 1926 were estimated to be of several hundred thousand tons. The district has not had much mining activity since World War II.

Table 1 shows the amount and values of the metal production of the **Black Canyon Mining District** from 1904 to 1933. Table 2 shows the production of the district by mines. Since some of the mines in the district are credited in Table 2 with production made prior to 1904, no attempt should be made to reconcile the totals in the two tables. The early production of the district from 1863 through 1904 is not really known because no one kept records at that time of the high grade pockets that were worked. These super high grade pockets were located by prospectors using visible quartz outcrops containing gold that could readily be detected by the naked eye. No other means of detection were known in the late 1800s or early 1900s. Not only was finding an important lode a serious problem, but tracing the location of the high grade pockets within the barren quartz veins or shear zones was generally by the "hit and miss" method, or in most cases, by pure miner's intuition.

TABLE 1. Production of the Black Canyon District,
Yavapai County - 1904-1933

| Year | Producers | | Tons | Gold Value | Silver, Ounces | Copper, Pounds | Lead Pounds | Total Value |
|--------------|-------------|--------------|---------------|----------------|-------------------|-------------------|----------------|----------------|
| | Lode | Placer | | | | | | |
| 1904 | .... | ..... | 667 | \$ 10,460 | 2 | ..... | ..... | \$ 10,461 |
| 1904 | .... | ..... | 4,016 | 20,672 | 162 | ..... | ..... | 20,770 |
| 1906 | .... | ..... | 2,157 | 22,908 | 508 | ..... | ..... | 23,275 |
| 1907 | .... | ..... | 1,548 | 3,350 | 112 | 29 | ..... | 3,430 |
| 1908 | 4 | ..... | 268 | 3,899 | 463 | ..... | 6,288 | 4,407 |
| 1909 | 1 | ..... | 26 | 35 | 2 | ..... | 3,120 | 170 |
| 1910 | 1 | ..... | 69 | 1,748 | 2,930 | 61 | 12,808 | 3,901 |
| 1911 | 2 | ..... | 191 | 2,606 | 7,448 | 319 | 33,667 | 8,108 |
| 1912 | 3 | ..... | 224 | 924 | 11,096 | 1,092 | 25,258 | 9,065 |
| 1913 | 3 | ..... | 61 | 184 | 5,700 | ..... | 8,258 | 3,990 |
| 1914 | 2 | ..... | 27 | 417 | 870 | ..... | ..... | 898 |
| 1915 | 1 | ..... | 2 | 103 | 2 | ..... | ..... | 104 |
| 1916 | .... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1917 | 2 | ..... | 10 | 68 | 91 | 918 | 295 | 420 |
| 1918 | 2 | ..... | 94 | 333 | 7,583 | ..... | 10,332 | 8,650 |
| 1919 | 2 | ..... | 142 | 124 | 5,496 | 609 | 3,979 | 6,603 |
| 1920 | 2 | ..... | 109 | 45 | 5,544 | 264 | ..... | 6,138 |
| 1921 | 4 | ..... | 93 | 703 | 9,074 | 139 | 12,273 | 10,347 |
| 1922 | 7 | ..... | 129 | 1,130 | 4,619 | 383 | ..... | 5,801 |
| 1923 | 4 | ..... | 71 | 879 | 937 | 2,936 | ..... | 2,079 |
| 1924 | 4 | ..... | 161 | 550 | 3,948 | 274 | ..... | 3,231 |
| 1925 | 4 | ..... | 208 | ..... | ..... | ..... | ..... | 9,202 |
| 1926 | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1927 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1928 | 3 | ..... | 200 | ..... | ..... | ..... | ..... | ..... |
| 1929 | 5 | ..... | 158 | 784 | 1,250 | 5,282 | 536 | 2,414 |
| 1930 | 6 | ..... | 114 | 1,383 | 1,420 | 1,217 | 5,485 | 2,362 |
| 1931 | 4 | 1 | 1,581 | 8,693 | 4,369 | 1,314 | 2,397 | 10,168 |
| 1932 | 12 | 2 | 3,718 | 26,094 | 10,298 | 5,206 | 47,467 | 30,750 |
| 1933 | 7 | 4 | 6,558 | 40,724 | 27,520 | 6,922 | 162,730 | 56,820 |
| Total | .... | ..... | 22,602 | 148,816 | 111,476 | 26,965 | 334,893 | 243,564 |

12.

1. Elsing, M.J., and Heineman, E.S., Arizona Metal Production: Arizona Bureau of Mines, Bull. 140, 1936, p. 82.

TABLE 2. Production of Black Canyon District, by mines¹

| | Copper, pounds | Lead, pounds | Gold, value | Silver, value | Total value |
|----------------------|-------------------|-----------------|----------------|------------------|----------------|
| Gillespie, early | | | \$80,000 | ..... | \$80,000 |
| Richinbar, 1905-8 | | | 50,000 | \$10,000 | 60,000 |
| Hidden Treasure | | | 20,000 | ..... | 20,000 |
| American Flag | | | 10,000 | 10,000 | 20,000 |
| Old Brooks | | | 10,000 | 10,000 | 20,000 |
| Golden Belt, 1931-33 | | 175,000 | 65,000 | 10,000 | 80,000 |
| Total | | 175,000 | 235,000 | 40,000 | 280,000 |

¹ Elsing, M.J., and Heineman, R.S., Arizona Metal Production: Arizona Bureau of Mines Bull. 140, 1936, p. 102.

Only a few records were kept as to the amount of gold that was extracted from these super high grade pockets found in the Precambrian quartz veins located in the vicinity of Bland Hill to the North and South to the Bumblebee interchange on Interstate 17. Only two written reports have discussed production from this type of structure. The quartz pockets at the "88" Mine were reported to have produced \$88,000 worth of gold. Based on the early gold value of \$20.67 per ounce, this would indicate that 4293 ounces of gold were extracted from the quartz. At today's price of approximately \$450 per ounce, this would equate to \$1,931,850. Not bad for a small mine operation in the late 1890s. The Gillespie was also reported to have produced about 4000 ounces of gold from its high grade pockets. With these types of numbers, one can only speculate what the Valencianna (Glory Anne), Blanchiana, Nigger Brown, Bland Mine, Cleator properties and others might have produced! The Richinbar from 1905 through 1908 produced from its upper working of high grade pockets approximately 2500 ounces of gold valued today at \$1,125,000. The nearby Golden Turkey and the Golden Belt, although not Precambrian quartz veins in this district, reopened in 1933 and operated until 1942. The mines at that time were out of the high grade ore and were reduced to mining low grade ore averaging .24 ounce of gold per ton. They mined 144,000 tons of ore containing 34,560 ounces of gold valued today at \$450 per ounce, which would equate to \$15,552,000.

The Glory Ana (Valencianna) area, in the southern portion of the mining district, was scouted by early prospectors in the late 1800s. Historic studies and county courthouse record searches (Coe and Van Loo, 1980 and Brown, F.O., 1981) document the recording of an adjacent, early group

of claims. The property has a history dating back to the 1870s when the first Notice of Location of the mines was filed in Prescott by a J.R. Dorruche on 29 June 1877. He named the properties the **Valancianna** mines which was registered in Book No. 5, Pages 559 and 560 in Yavapai County, Arizona. On 12 July 1879, a Mr. U.U. Hutchinson filed another Location Notice for these mines using the same name. Two years later, on 2 January 1891, a Mr. A.J. McPhee filed a Notice of Location on an old **Valenciana** mine that is assumed to be the same site as established by Mr. Dorruche because of similar positions in relation to towns, roads and streams. Mr. McPhee along with a Mr. Josh M. Dodson expanded their claims and filed a Notice of Location on a mine, the **Valencianne**. Mr. McPhee retained control of the mines for at least the next five years as he filed assessment certificates in January 1896 attesting to activity in the area. Records do not reveal any additional activity or change in ownership until 3 January 1907 when a James Morris filed a series of Notices of Mining Locations for the **Valencianne, Valencianne North, and Valencianne South**. In 1931, Mr. C.E. New filed on the series of mining claims, changing names to their current designations (Appendix E), the **Glory Ana**, numbering them one through five. He also filed on a series of mines he called the **La Dora**, numbering them one through four, and one called the **"88"** because it is supposed to have yielded \$88,000 to its owners. Mr. New also filed notices on another series of mines he called the **La Mesa 1, 2, and 3**. Coe and Van Loo (1980) document that these very same claims were further sold four times, eventually becoming the property of Mr. Frank Melluzzo and collectively called the **Glory Ana** (Appendix F) group. Newspaper files (Ariz.

Bur. Geol. 1921-1941) suggest that as many as 35 claims may have covered the area at one time. U.S. Geological Survey Maps (U.S.G.S., 1969 and Jagger, T.A. 1905) show several shafts, adits and prospect pits in the project region, all of which may have been covered at one time by these various claim groups. In January, 1980, Walter W. McDonald restaked an area of lode mining claims that covered one of the larger mine shafts and old adits. He called the ten-claim group the **Glory Anna** claims (see claim map, Figure 3). Mr. McDonald's **Glory Anna** claim group was acquired by White Mule Gold Properties, Inc. on February 7, 1981, by a Quit Claim Deed. The **Glory Anna** claim group was again Quit Claim deeded over to Metal and Mineral Recovery, Inc. on June 14, 1985. The corporation ceased operations in June, 1987 after having their charter revoked, but they did perform their assessment work on the claims for the assessment year September 1, 1986 through September 1, 1987, and filed an Affidavit of Performance of Annual Assessment Work on December 28, 1987, with the BLM and County Recorders Office. On June 22, 1988, Fred Brown of Metal and Mineral Recovery, Inc. re-established the corporation as a legal entity. Of interest, Stan Pellow filed an Affidavit of Performance of Annual Assessment Work on December 30, 1987, under the name of Glory Anna Mining, Inc. The assessment work for 1987-1988 year, was performed by the Melluzzo Stone Co. on August 25, 1988 (Appendix F).

HISTORY OF THE GLORY ANNA

Early production records have vague legal descriptions of claim locations from which ore was removed. To complicate matters further, these vague reports, including newspaper files, list many spellings of the **Glory Anna** mine. They include: **Gloriana**, **Gloryana**, or **Glory Ana**. These reports

are obviously describing the same area but are not consistent as to which shaft the ore was removed from. It is suspected that a single mill (foundation sites on the **Glory Anna** claim group) accepted ore from excavation material of all claim groups in the area. Since the **Glory Anna** mining (McDonald's) claim group contains a shaft with dump material and adjacent mill foundations, some of the purported ore tonnages were probably mined here. The size of the waste dumps would suggest at least 1000 tons of rock were removed from the **Glory Ana** shaft, underground "room" and old adits as waste and/or low grade ore. Precise tonnages are not stated but newspaper quotes of ". . . large tonnage of gold ore already has been blocked out . . ." and "A new 8-ton mill is in process of erection . . ." (1921) are common reports. A 60-ton mill was also reported to be in operation in 1939. Other reports state that plans are to sink a 500 foot shaft (1926) but in 1939 a ". . . 175-foot shaft and drifts." existed on the property with plans to add a 50-foot sump and extend the drifts.

GEOLOGY - BLACK CANYON DISTRICT

Early reports describe the district as a two-mile wide strip of Precambrian Yavapai schist, mostly of sedimentary origin. On either side lies an intrusive granitic complex, commonly referred to as the Precambrian Bradshaw granite, capped by Tertiary lava flows in part on the east side. Wide, dike-like masses of diorite are regarded to be metamorphic contact phases of the granite. Later petrologic studies have differentiated the granite complex in the district into a quartz diorite porphyry, locally foliated in part and intruded regionally by a granodiorite. Additionally, a later pluton of quartz monzonite has invaded this complex.

FIGURE # 10a -- GEOLOGICAL MAP GLORY ANA PROJECT AREA:

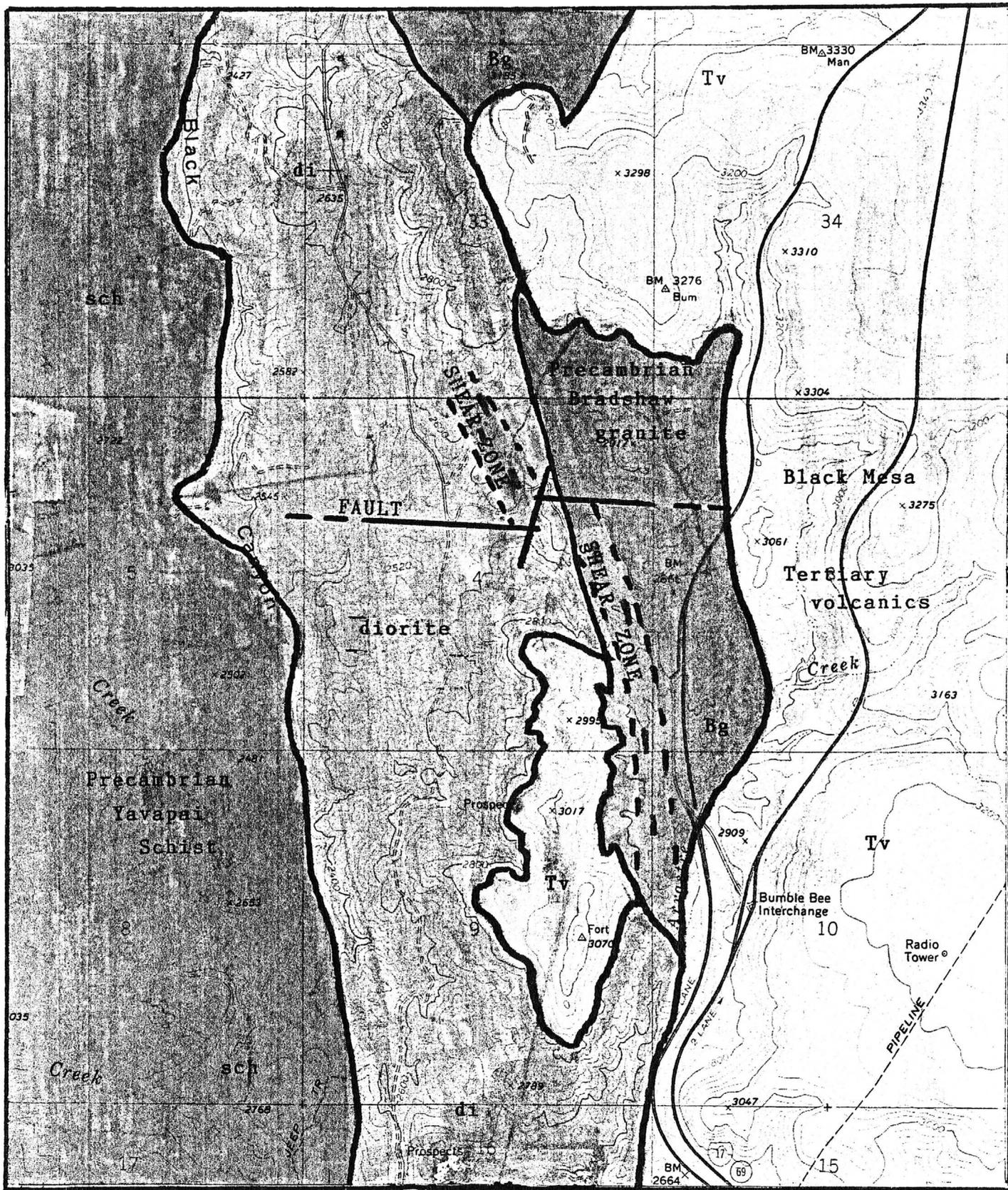


FIGURE # 10B -- GEOLOGICAL CROSS-SECTION OF THE GLORY ANA SHEAR ZONE AREA

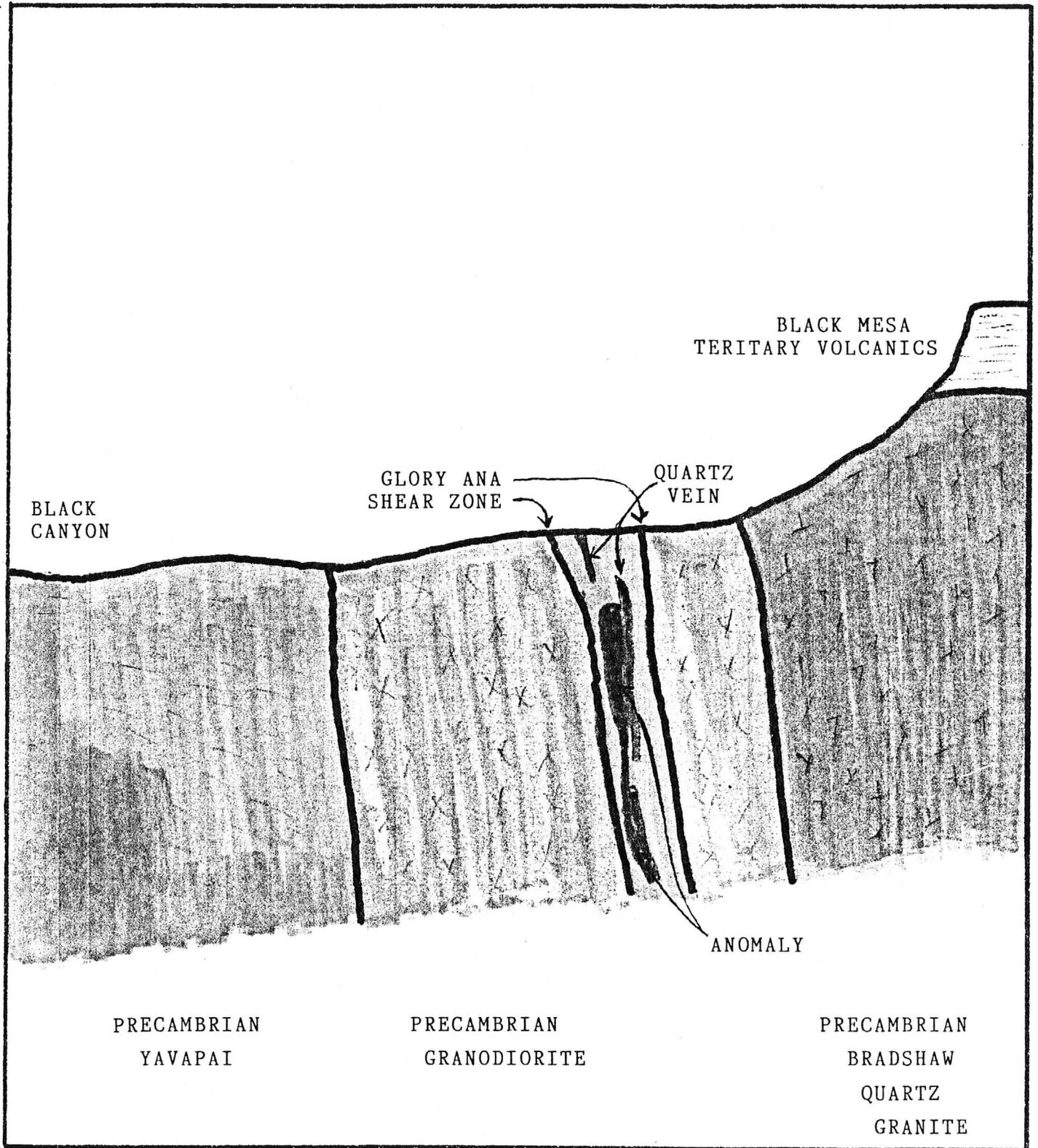




FIGURE # 11 -- LOOKING NORTHWEST. GRANITE-DIORITE
IN FOREGROUND, QUARTZ DIORITE IN
MIDDLE OF PICTURE. SCHIST IN BACK
GROUND. GLORY ANA IN THE CENTER.

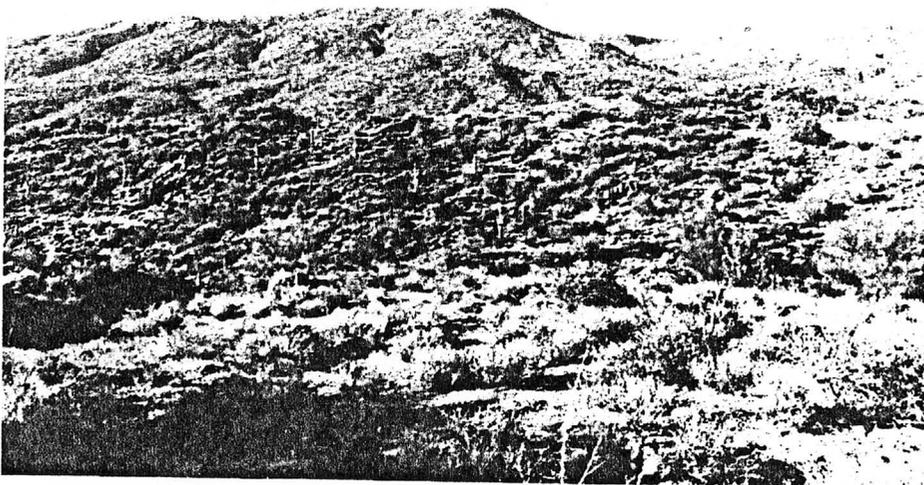


FIGURE # 12 -- LOOKING NORTH. GRANITE-DIORITE IN
CENTER. TERTIARY VOLCANICS IN
BACKGROUND.

Tertiary sedimentary and volcanic rocks have covered the region in part (Figure 10)

The more common mineral deposits consist of discontinuous pyritic lenses in schist and Precambrian quartz veins and lens-shaped pods. These quartz lodes contain free gold and small amounts of sulfide minerals, typically pyrite, chalcopyrite, and galena; that are reported to contain gold values. Genetically, the quartz-gold lodes are associated with the Precambrian granitic complex but later, intrusive-metamorphic activity could certainly have remobilized these mineral occurrences.

These quartz lodes are not generally contained in any particular rock and do not form continuous belts. Although the strike and dip of the quartz veins tend to be irregular, the most common attitude is a north-south trend and steep dips. Maximum widths of the veins or pods are of 10-15 feet. Stringer veins of a few inches in width to veins less than 5 feet in width are more common. Free gold occurs in small shoots, commonly as coarse gold in bunches or pockets. Some sulfides contain gold as finely disseminated particles. Except for high-grade pockets, most areas averaged below one ounce of gold per ton. Silver in variable amounts is associated with the gold.

The water and oxidation levels in most mines situated above valley floors range between 80 to 400 feet below the surface. Mining depths of Precambrian quartz veins have generally been less than 500 feet in depth. The better stopes have been mined at depths of 150 feet or less.

GEOLOGY - GLORY ANA PROJECT AREA

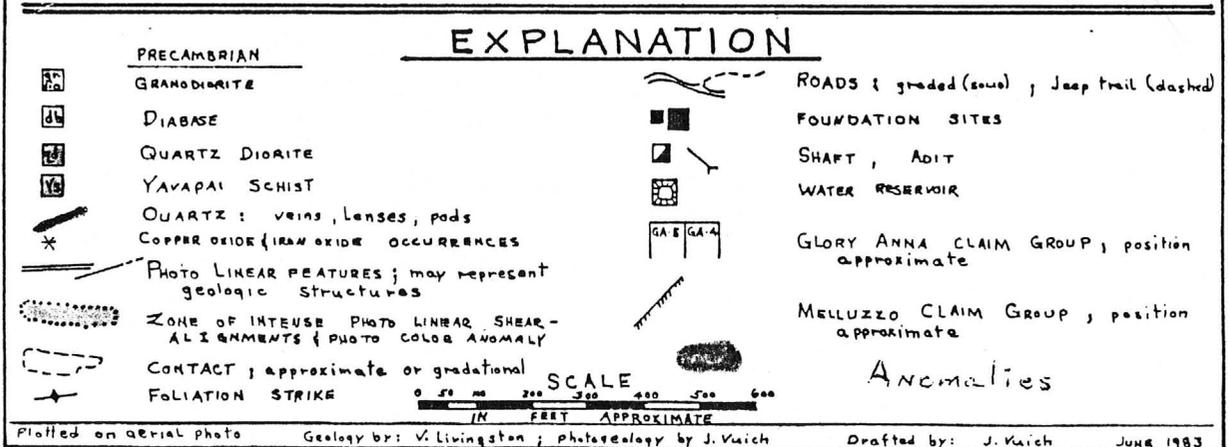
In 1981, Bert E. Griffin, prepared a preliminary report on the **Glory Ana** mine. He describes underground mineral occurrences as quartz veins in schist. Iron and copper oxide minerals stain the mineralized areas and free gold is visible in small pockets. It is suspected that the high-grade assays of drill cuttings were taken from those areas where visible gold occurred, since other assay averages were considerably lower.

A surface reconnaissance of the area was conducted by Victor Livingston and John Vuich in 1983. Photo geologic interpretations were also considered in the preparation of the project area map (Figure 13). The most dominant features seen are a northwest trending zone of shear alignment, foliation strike, vein strike and rock-color anomaly. The main production area lies in this zone. Precambrian rocks in the map area appear to be granodiorite with quartz diorite dikes, a diabase mass and elongated zones of schist. Most of the schist occurrences are contained in the zone of shear alignments.

Rock type associations were not considered important for the objectives of this study. Other structural trends include a minor north-south strike marked by quartz veins, foliation strike, and photolinear features in **Glory Anna** claims #4 and #7. A single, but strong photo linear features cuts east-west across the claims south of the main road. (Figures 13 and 16)



FIGURE # 13. GLORY ANNA PROJECT Yavapai Co., Arizona



The quartz veins and lenses are abundant in the project area. Some are iron-stained and braided with schist. A few contain copper oxide stains. Most of the excavation activity was conducted on these occurrences. These stained areas, of what once probably represented oxidized sulfide mineralization, cannot be traced more than a few tens of feet. The zones are generally less than ten feet in width, most under five feet.

EXPLORATION TARGETS

Field observations and literature descriptions suggest that the gold occurrences would be the only mineral deposits worth development. These gold deposits would be expected to occur as small lodes of a few hundred to a few thousand tons each with high-grade pockets. Their distribution along or within any vein system is not expected to be consistent over a few tens of feet. The free gold is also likely to occur in association with auriferous pyrite and chalcopyrite. Because of the spotty nature and size of the exploration targets, mining depths below 500 feet are not expected to be economical unless an unusually high-grade shoot is persistent in vertical extent.

GEOPHYSICAL STUDY

Due to the anticipated gold-sulfide association an induced polarization, resistivity geophysical survey was conducted as a possible method to locate the position of the suspected targets. Eleven lines of about 1000 feet in length each were surveyed in an east-west direction across the main vein and structural trends (Figure 13). Array separation

averaged 100 feet between stations. In areas of anomalous instrument recordings, the arrays were reduced to 40 and 20 feet for more sensitive determinations at shallow depths. We feel confident that this survey would have detected anomalous conductive phenomena in rock to depths of 100 to 150 feet. Low background for the I.P. readings averaged 1-2 mv.s/v. Contrast readings of about 5:1 ratio or greater (high to background) coincident with a resistivity anomaly (see geophysical line profiles, Appendix C) were considered to represent significant below surface features. Since these anomalies may reflect a sulfide-gold mineralization association they were plotted on Figure 14 as potential targets to be further evaluated.

Eleven anomalous zones were plotted. Nine of the eleven lie within the area outlines as the northwest trending shear alignment (**Glory Ana Shear Zone**). Most of the I.P. contour lines are also elongated along this alignment. Additionally, most of these I.P. anomalies have readings of 6 or greater and are adjacent to contoured I.P. lows or troughs. The most significantly contrasted I.P. anomaly occurs on line 3 at the cross-juncture of the major, east-west trending photo linear features (fault) shown in Figures 13 and 16, and coincident with an area exhibiting abundant copper-oxide mineralization (Figure 13).

SAMPLING

Rock chip samples were collected from 29 locations. These were primarily taken from quartz vein material on the surface. Table 3 describes the samples and lists the assay results. All assays were performed in the laboratory as fire assays.

FIGURE 14.

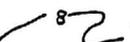
GLORY ANNA PROJECT

YAVAPAI COUNTY, ARIZ.

GEOPHYSICAL SURVEY
INDUCED POLARIZATION
OVERLAY



EXPLANATION

-  SURVEY LINE
-  STATIONS ON 100 foot centers (APPROXIMATE)
-  I. P. Contour interval in millivolt Seconds per Volt (mv·s/v)
-  Significant IP anomaly coincident with resistivity anomaly

GEOPHYSICAL SURVEY BY: JAMES SORRELL, TUCSON,
MARCH - APRIL, 1983

INTERPRETATION & DRAFTING BY: JOHN VUICH
GEOMINEX

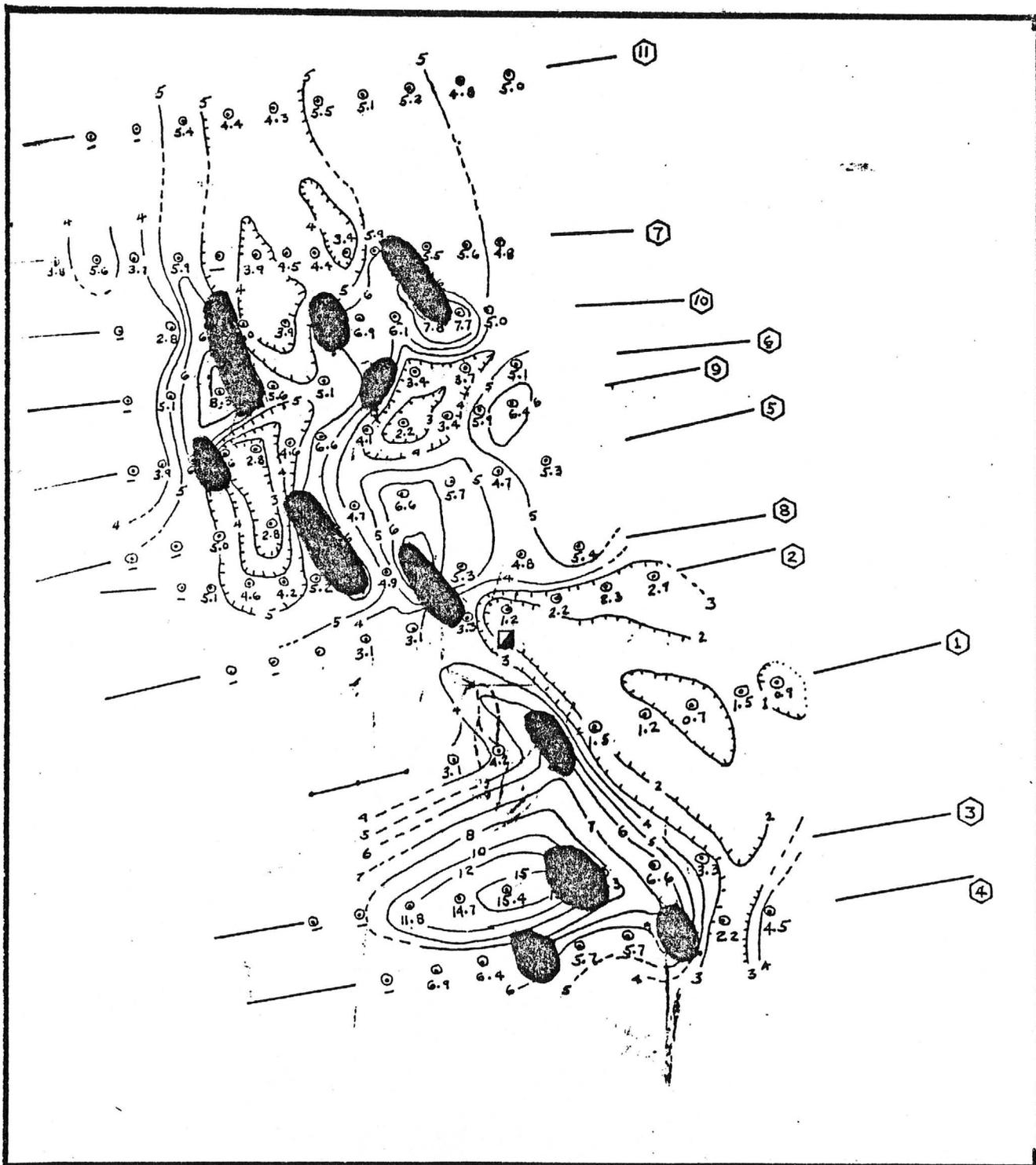


FIGURE 15. GLORY ANNA PROJECT YAVAPAI COUNTY, ARIZ.

ASSAY & SAMPLE LOCATION OVERLAY
(ROCK CHIP SAMPLES)

EXPLANATION

Sample no. 5
 Sample Location 
 0.012 Au assay in oz. per ton
 0.060 Ag assay in oz. per ton

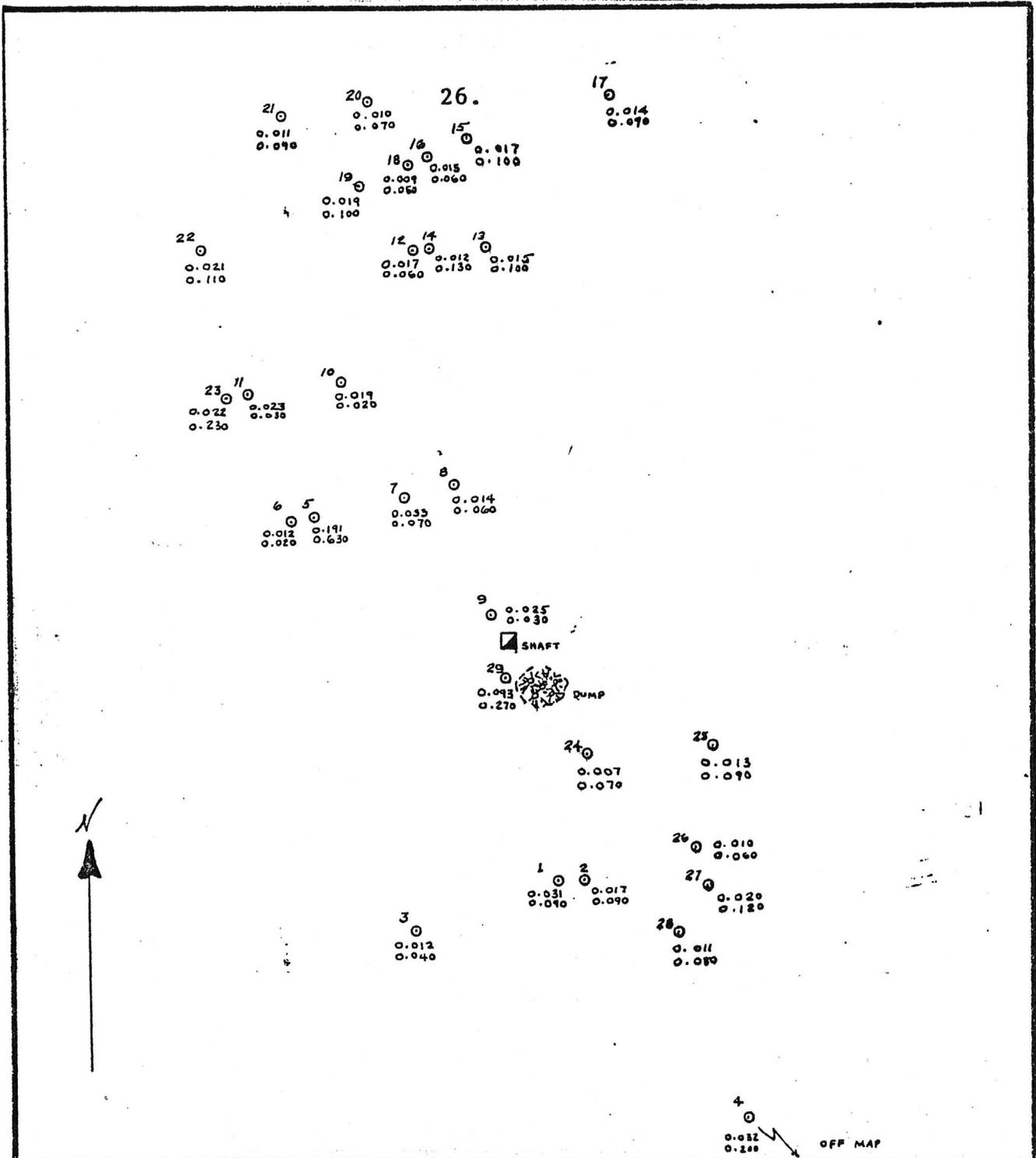
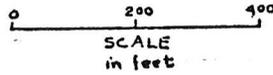


FIGURE # 16. -- STRUCTURAL TRENDS AND PROJECTED SHEAR ZONE

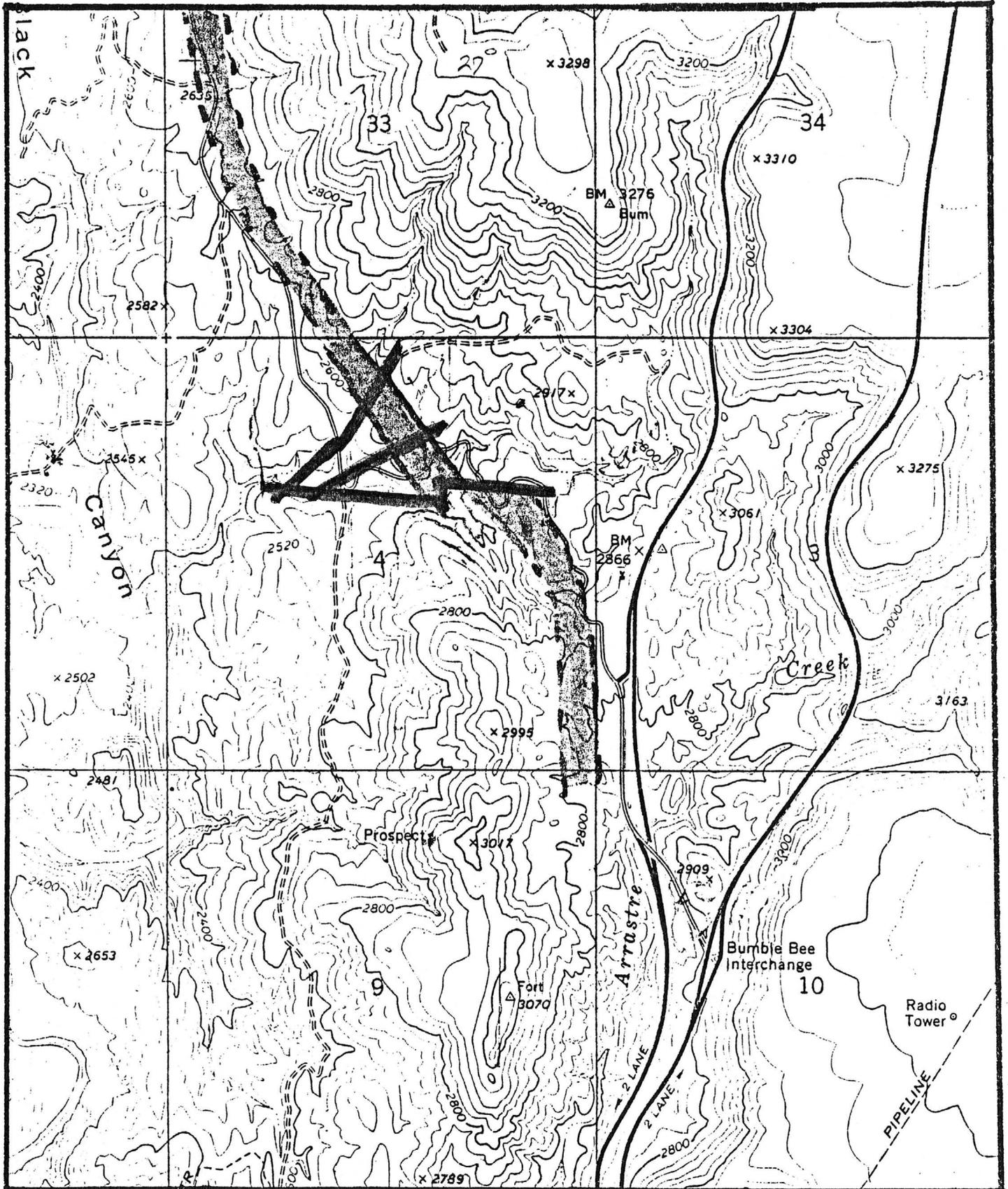


TABLE 3. Assay data from rock chip samples of outcrops and vein materials

| Sample No. | Lab No. | Gold oz./ton | Silver oz./ton | Description |
|------------|---------|--------------|----------------|--|
| 1 | 10601 | 0.031 | 0.09 | Porphyritic rock with minor oxides and magnetite. |
| 2 | 602 | 0.017 | 0.09 | Quartz vein less than 1' wide with secondary copper and iron oxide minerals. |
| 3 | 603 | 0.012 | 0.04 | Quartz outcrop with secondary iron oxide minerals. |
| 4 | 605 | 0.032 | 0.20 | Quartz vein in 4' wide prospect pit with copper oxide minerals. |
| 5 | 605 | 0.191 | 0.63 | Quartz vein less than 1' wide in schist. |
| 6 | 606 | 0.012 | 0.02 | Quartz vein less than 1' wide in schist. |
| 7 | 607 | 0.033 | 0.07 | Narrow quartz veins over 10' wide zone in schist. |
| 8 | 608 | 0.014 | 0.06 | Quartz stringers over a 10'-12' wide zone. |
| 9 | 609 | 0.025 | 0.03 | Quartz veins several feet in thickness exposed in short adit. |
| 10 | 610 | 0.019 | 0.02 | Quartz vein 2' wide in schist. |
| 11 | 611 | 0.023 | 0.03 | Quartz float over several feet in strike length. |
| 12 | 612 | 0.017 | 0.06 | Quartz lens; sample composited over several foot radius. |
| 13 | 613 | 0.015 | 0.10 | Quartz lens; sample composited over several foot radius. |
| 14 | 614 | 0.012 | 0.13 | Altered Diorite. |
| 15 | SV1 | 0.017 | 0.10 | Quartz vein 1½' wide. |
| 16 | SV2 | 0.015 | 0.06 | Quartz vein 10' wide; sample composited over several feet in strike length. |
| 17 | SV3 | 0.014 | 0.09 | Quartz vein 4' wide. |
| 18 | SV4 | 0.009 | 0.05 | Quartz vein 1' wide. |
| 19 | SV5 | 0.019 | 0.10 | Narrow quartz veins composited over 20' wide zone in schist. |

- continued

Table 3. Continued . . .

| Sample No. | Lab No. | Gold oz./ ton | Silver oz./ ton | Description |
|------------|---------|---------------|-----------------|--|
| 20 | SV6 | 0.010 | 0.07 | Quartz vein 4' wide. |
| 21 | SV7 | 0.011 | 0.09 | Quartz vein 2' wide. |
| 22 | SV8 | 0.021 | 0.11 | Quartz lens; sample composited over 5' radius. |
| 23 | SV9 | 0.022 | 0.23 | Quartz vein less than 2' wide. |
| 24 | SV10 | 0.007 | 0.07 | Quartz stringers composited from a 4' width in a shallow pit. |
| 25 | SV11 | 0.013 | 0.09 | Quartz vein 2' wide. |
| 26 | SV12 | 0.010 | 0.06 | Quartz float in shear zone along 20' strike length. |
| 27 | SV13 | 0.020 | 0.12 | Quartz vein 2'-3' in width. |
| 28 | SV14 | 0.011 | 0.08 | Dump grab of quartz materials from shallow pit that exhibits a 1'-3' wide quartz vein. |
| 29 | SV15 | 0.093 | 0.27 | Composite dump grab from main dump. |

Generally these assays represent the average metal content of a few square inches to a few square feet of surface area. Figure 15 is a plot of the sample site locations.

Although the assay results were geochemically high above what would normally be expected as background values for the regional rock types, they were all, except one, not encouraging for use in delineating exploration targets. The single high gold assay (0.191 oz./ton) was collected from a small quartz vein coincident with a significant geophysical anomaly on Line 5.

MINERALOGY OF THE ORE DEPOSIT

The nearly vertical Precambrian quartz veins are characteristically lenticular in form. Their gangue material is a shiny milky to glassy clear quartz (SiO_2) with black schorl tourmaline $[\text{Na}(\text{Fe},\text{Mn})_3\text{Al}_6\text{B}_3\text{Si}_6\text{O}_{27}(\text{OH},\text{F})_4]$ and occasionally minor amounts of ankeritic carbonates (iron-rich CO_3). These two minerals indicate some type of boron metasomatism and recrystallization of iron-rich detrital grains from the original sediments.

In the zone of oxidation, gold will occur as large, coarse, free particles described as bright yellow "kernals" and as sub-microscopic intergrowths with unaltered chalcopyrite (CuFeS_2) or any one of the oxide copper minerals such as: malachite $[\text{Cu}_2(\text{OH})_2(\text{CO}_3)]$; azurite $[\text{Cu}(\text{OH})_2(\text{CO}_3)_2]$; chrysocolla (CuSiO_2); brochantite $[\text{Cu}_4(\text{SO}_4)(\text{OH})_6]$; antlerite $[\text{Cu}_3(\text{SO}_4)(\text{OH})_4]$; or diopside $[\text{Cu}_6(\text{Si}_6\text{O}_{18})] \cdot 6\text{H}_2\text{O}$.

These attractive gold specimens occur in contact with the footwall along fractures, joints, cracks, vugs, cavities,

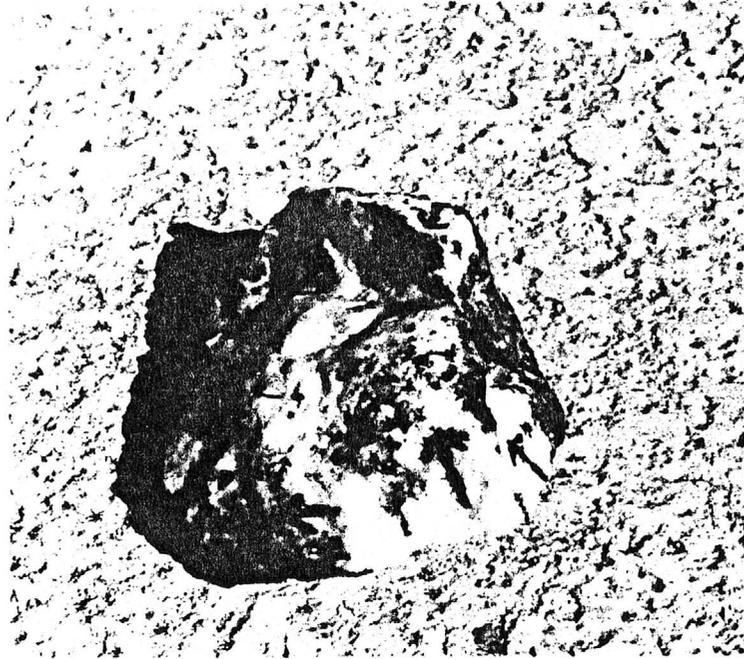


FIGURE # 17 -- TYPICAL RICH ORE BEARING ROCK. RED HEMATITE AND YELLOW LIMONITE IN THE WHITE QUARTZ.

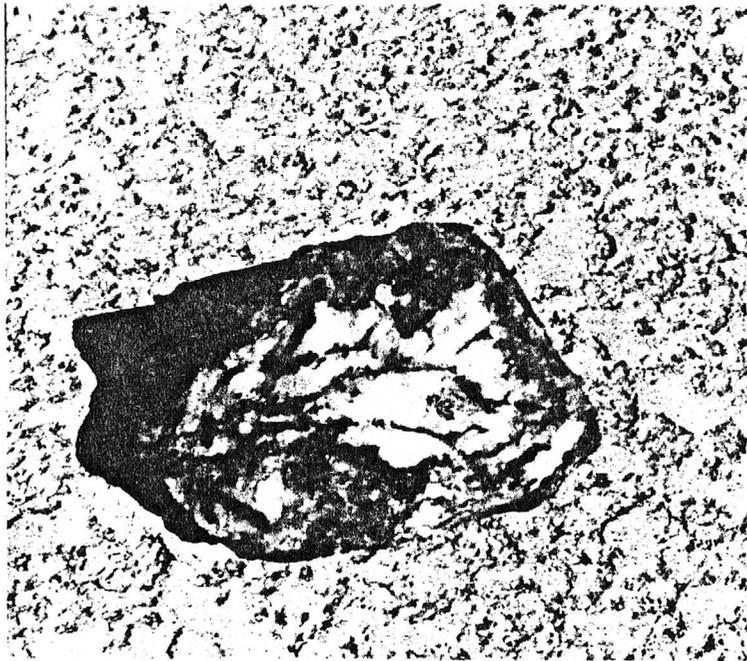


FIGURE # 18 -- ARROWS ARE POINTING AT NATIVE GOLD. GREEN IS OXIDIZED COPPER MINERALS FORMED FROM LEACHING THE COPPER SULFIDES.

or any highly altered gossan zone in the footwall. When the clear or white quartz begins to take on a reddish to yellowish hue or stained appearance, the mineralized leached zone is being encountered. The intense leaching action has allowed the pyrite and chalcopyrite to alter to red hematite (Fe_2O_3), yellow limonite [$\text{FeO}(\text{OH}) \cdot n\text{H}_2\text{O}$] and associated copper oxide minerals.

In the vicinity of the **Black Canyon Mining District**, it is believed that the gold placers have been derived from the Precambrian quartz veins. Gold placers and outcrops rich in gold would generally be found in connection with non-manganiferous deposits; and this inference is confirmed by field observation of the Precambrian veins in the areas which contain no appreciable manganiferous minerals. These types of deposits are generally richer at the outcrops and in the oxidized zones than in depth, the enrichment being due in the main structure, to a removal of the material associated with gold. The rate of the transfer of gold from the surface downward depends on many factors, such as the fracturing of the deposit and its mineral composition. As erosion occurs along these veins over eons of time, many enriched lodes should have been exposed to mechanical weathering producing the placers in the area.

The concentration of gold in the oxidized zones in this area is approximately limited to the upper 150' or less of the veins and previous mining of the better stopes supports this evidence. These rich values in the ore are much more common in the oxidized zones than would be located in the primary sulfide zones. These residual pockets are probably the product of ferric sulfate being the principal agent in the enrichment of the gold deposit.

Although gold belongs to the same chemical family as copper and silver, its activities differ in many respects from both these metals. It forms no insoluble compounds in the oxidized zone and its sulfide is not precipitated by mineral waters. Unlike copper and silver, it is insoluble in sulfuric acid. Henry Wurtz, in 1858, discovered that ferric sulfate dissolves gold at a slow rate. In sulfide ore deposits, acid is generated by the oxidation of sulfides, particularly by the oxidation of iron sulfides, pyrite (FeS_2) or chalcopyrite (CuFeS_2). The solution of gold is most important in the upper parts of the oxidized zones, where, in the presence of gold, pyrite is oxidized to ferric sulfate. The sulfuric acid which, under these conditions, is necessary for the reactions could easily be supplied, even above the zone where pyrite persists, by the leaching of basic iron sulfates, the formation of which tends to delay the downward migration of a part of the sulfuric acid that is released where ferric sulfate alters to limonite. It is evident that the presence of an iron sulfide is an essential condition for the solution of gold.

However, it has been shown that chloride is the only natural solvent for gold in reactions causing superficial enrichment of gold deposits. The sources and distribution of chlorine are of special interest here. Chlorine has been found in all waters of gold mines; that a very small amount of chlorine is sufficient to dissolve gold, if in the presence of a small amount of manganese. This theory is supported by laboratory experiments in which the following formula would readily dissolve gold into solution, but without the addition of small amounts of chlorine or manganese, this reaction would progress very slowly:



The chief source of chlorine is from finely divided salt or salt water from the sea and from other bodies of salt water. The salt is carried by the wind and precipitated with rain. But chlorine is an efficient solvent of gold only when in the "nascent" state, and under natural conditions nascent chlorine is released principally by manganese oxides. The commonest sources of manganese, since it does not occur in the vein, are probably the rock-forming silicates of iron and manganese, a little manganese being very commonly isomorphous with other elements.

The downward transportation of gold in the chloride-ferric-sulfate solutions obviously depends on the rate at which the solutions move downward, and the rate at which they react with ores, the wall rock, or with the reduced and neutralized solutions that have been shown to prevail in the deeper zones. The gold will precipitate from the solutions when it encounters areas in the vein with vugs or open cavities generally associated with the wall rock.

The solutions can start to react with other minerals like copper or silver. Copper readily will precipitate gold as it precedes gold in the electromotive series and therefore displaces gold from the solution. Evidence of copper being involved in the reactions can be supported by the fact that most of the free gold that is formed in the shear zone is associated with copper oxide minerals. The copper oxide minerals have not been identified as to date, but it is believed that they are either brochantite or antlerite which are formed from ferric copper sulfate solutions after the gold is deposited.

Other ore minerals or gangue minerals that precipitate gold include practically all the natural sulfides as well as the carbonates, many silicates, and organic matter. Among the minerals of importance in the **Glory Ana** veins would be chalcopyrite, chalcocite, ankeritic carbonates, and the iron-manganese minerals found in the wall rocks. With this association, gold is precipitated very rapidly in zones of superficial alteration. In the same zones, the sulfuric acid would be changing the ferric sulfate to limonite and ferrous sulfate along with the other factors listed above would cause immediate precipitation of gold.

Below the zone of oxidation or in some cases, still in the upper levels of the vein where descending waters have not oxidized the sulfide minerals, primary auriferous pyrite (gold FeS_2) and auriferous chalcopyrite (gold CuFeS_2) will be found associated with small amounts of argentiferous galena (silver PbS_2) and argentiferous sphalerite (silver ZnS_2).

Secondary enrichment of copper may occur in these veins below the water table and allow the chalcopyrite (CuFeS_2) to be altered to supergene minerals like covellite (CuS), chalcocite (Cu_2O), or bornite (Cu_5FeS_4). The water table could occur anywhere from 50' to 150' below the present topographic surface in the "**Glory Ana Shear Zone**". The gold values should decrease in depth to just below the water table and then level off with assays averaging about 0.25 to 0.50 ounce of gold per ton if, in fact, an ore shoot extends vertically downward.

CONCLUSION

Some small high grade gold pockets may be exploitable from the existing underground workings, but the anomalous targets should be given the greatest attention. From the information gathered in this report, it is not possible to estimate or project ore reserves in grade, tonnage, or depth without additional data being obtained by vertical and angle drilling of the anomalous zones. A few hundred to several thousand tons of ore containing 0.50 to 1.00 ounce of gold per ton is offered as a reasonable conjecture to be obtainable from these anomalous zones. This projection seems reasonable based on data collected by other mining activities in the project area. There is a reasonable probability to expect that several high grade pockets containing 2 ounces up to 20 ounces of gold per ton could be located. It can also be conjectured from the conversations relayed by the old timers, that a few of those miraculous super high grade pockets of 20 ounces or more of gold per ton may be encountered near the surface in the open quartz vugs next to the highly leached footwall; therefore allowing for precipitation of beautiful "kernals of bright yellow specimen gold".

An overall statement can be made concerning the entire length of the, "Glory Ana Shear Zone" which includes the quartz structures. That from evidence gathered and past mining history, the possibility of discovering a continuous ore vein with a probable large lode of tens or hundreds of thousands of tons of ore is purely speculative and should not be held with great anticipation to be present. However, if a high grade shoot was persistent in a vertical extent, it may be possible to mine considerable reserves at least to 500 feet in depth.

Of interest are the gold and silver values assayed in the core samples removed from west of the **Glory Ana** shaft, and the rich ore samples that were left in the workings and encountered by White Mule Gold Properties, Inc. during their excavation operation they had in 1980. These assays (Appendix B) are certainly encouraging to support the proposed targets that are believed to be on the property.

A final conclusion can be drawn from evidence available, that in fact, the old time miners were very lucky to find any free, high grade gold pockets at all, since luck was their major guiding force to locate the next pocket. It can be assumed that frustration and low gold prices led the miners to abandon their claims and to look elsewhere. It is more than reasonable to conjecture that 99% of all the gold in the Precambrian quartz veins is still being held by mother earth and has never been located or mined. Only today have we developed the technology, electronic instruments, and mechanical means of core and rotary drilling to delineate out these high grade pockets and analyze them before ever turning a shovel or swinging a pick.

It would be hard to close this report without mentioning a brief discussion of bulk minable precious metal ore reserves. These low grade classes of mineralization were known in old time gold-silver camps, but, being uneconomic, mineralization relative to those times so very little attention was given them.

Bulk minable gold-silver deposits are those large tonnage, low grade precious metals ore bodies enjoying circumstances of genesis and location which render them commercially exploitable by large scale mining and metallurgical operations.

Since precious metals are readily marketable and yield high cash flow and are commodities whose development readily attracts venture capital, these metals are important in the planning and operations both of established, major corporations and of smaller operators. This is particularly important to some of the latter, who may be new entrants to mineral development and who may be functioning on low budgets and requiring early returns on investment.

Bulk minable gold-silver mining particularly fulfills the goal of the large and small precious metals developers because such deposits are readily discovered, readily and economically exploitable, and more available than other precious metals resources.

Geologically, these deposits are relatively easy to discover; because new, low grade, genetic types of deposits are being recognized, and because new genetic and economic significance are being attached to properties hosting existing low grade reserves as well as smaller, high grade reserves. Economically, gold-silver price increases relative to operating costs over the past decade have caused low grade resources to become commercially exploitable and are causing revitalization of properties with existing reserves.

Ideally speaking, bulk minable deposits are readily exploitable under certain circumstances of mining configuration (open pitable) and metallurgy (heap leachable). Developmental economics are favored additionally by the economics of scale to which bulk mining is amenable. The smaller and less complex of these deposits can be exploited within short time frames. This is in keeping with a shift in the early 1970s of exploration philosophy toward favoring quickly

mined deposits with relatively high unit values as a hedge against the upsetting of economic projections by unpredictable inflation rates.

Mineral development enterprises increasingly must turn to lower grade, available resources (within economic constraints) because - as a group - higher grade, lower tonnage deposits cost considerably more to explore, evaluate, and mine.

The reason for including the above discussion lies in the fact that many of the claims in the **Glory Ana** group have diggings on them that are not located in the quartz veins, but have been excavated in the shattered, hematitic stained rock. Some pits are up to 30' in depth. It is possible that they were excavated in the '30s, '40s, or '50s and probably represent an indication that some type of assaying for precious metals was undertaken. The material that was being dug is actually the gossan zone which is situated in the "**Glory Ana Shear Zone**". The coloration in the shear zone is due to leaching of the iron sulfides, which are pyrite and chalcopyrite. As explained in the section under Mineralogy, the pyrite and chalcopyrite are both auriferous (containing gold). It can be then theorized that gold could be found disseminated to some degree across the shear zone and possible to some depth, but no current data has been collected to support this theory.

From a regional standpoint, the overall mineralization that is present in the Bradshaw Mountain Region certainly fulfills the six necessary criteria for locating a **Precambrian Volcanogenic Gold Deposit**:

1. Disseminated and contact metasomatic mineralization.

2. Hydrothermal quartz veins.
3. Volcanogenic massive sulfide deposits.
4. Exhalative deposits with iron formations.
5. Metamorphogenic deposits in shear zones.
6. Statistically, these deposits contain in the low millions of tons of ore grading around 0.30 ounce of gold per ton with silver credits. Portions of some orebodies contain veins averaging up to 0.97 ounce of gold per ton and contain beautiful specimens of gold ore.

The "Glory Ana Shear Zone" most certainly contains at least three of the criteria listed: (1) Hydrothermal quartz veins; (2) Metamorphogenic deposits in a shear zone; and (3) 0.30 ounce gold per ton; the average grade 0.97 ounce gold per ton for the high grade pockets, and specimen gold.

It can be concluded that any exploration program should incorporate a plan to determine if any low-grade minable gold deposit is present. If such a deposit exists, the high-grade gold pockets would become secondary in concern, since a low-grade minable deposit would produce considerably more capital for the dollars invested.

The following exploration expenditure includes techniques for locating both high-grade or low-grade mineralization. Included are three examples of mining costs and net profit.

EXPLORATION EXPENDITURES

An exploration expenditure of approximately \$300,000 would allow a further evaluation of the project area. The following exploration program is highly recommended:

1. A complete set of aerial photographs (black and white) and photogeology (color) should be taken at 1500 feet above the surrounding topography covering all of Section 33 and the $W\frac{1}{2}$ of Section 34 of T9 $\frac{1}{2}$ N, R2E and all of Sections 4 & 9 and the $W\frac{1}{2}$ of Section 9 of T9N, R2E, G & SRB & M.
2. A topographic survey should be undertaken covering the same sections listed above and tied to the $\frac{1}{4}$ intersection of Sections 32, 33, 4, and 5 to be utilized as a future control point.
3. A topographic map should be generated from the data collected in (2) and reproduced to a scale that forms a perfect overlay of the aerial photographs.
4. The topographic map and aerial photos are then given to an experienced field geologist to assist him or her in drawing and developing a geological map of the area.
5. After the geological map is completed and reviewed to determine the exact location of the shear zone, a grid survey should be designed with points set at 25' intervals over the shear zone and at 50' intervals to each side of the structure.
6. A new Induced Polarization (I.P.) study should be employed over the entire shear zone (Figure 20) that

was delineated from the geological map. All new I.P. readings would then be tied to the grid system for future identification. Additional I.P. readings would be taken where higher or lower anomalous values indicate such a need.

7. Geological field samples would be collected from all quartz outcrops and all other rock units at 25' intervals inside the shear zone and 50' intervals to each side. Samples to be fire assayed.

8. The rock assays would be also plotted on the grid pattern and overlaid on the geological map. All this information should delineate the location of the old and newly found drill targets.

9. Rotary percussion track drilling would be employed to minimize cost. The holes would be drilled directly over the center of the anomalous targets (Figure 19) to a minimum depth of at least 200'. The new MAPP machine probe would be lowered into the hole with readings taken at 5' intervals and at 2½' intervals if the gold values exceed .02 ounce per ton (Appendix A).

10. *Angle rotary drilling should be undertaken into the anomalous targets proven out by the percussion drilling. This particular drilling should assist in calculating width and thickness of the potential ore reserves.

11. At this time a complete evaluation of all collected data should be implemented to ascertain if further exploration expenditures are warranted, mining development should commence, or the project be dropped.

*Note: Core drilling should be employed under certain conditions but additional funding would be required.

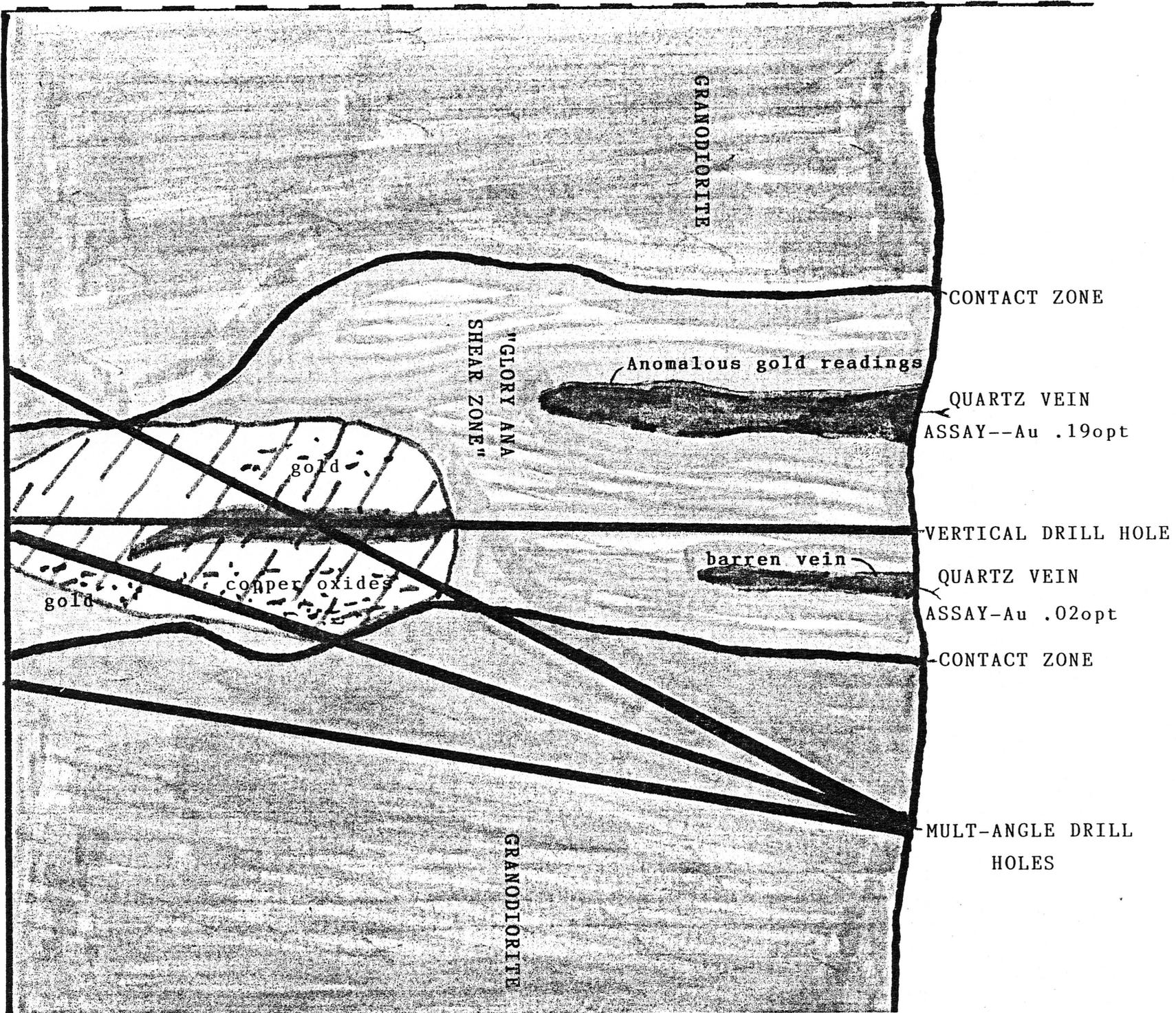
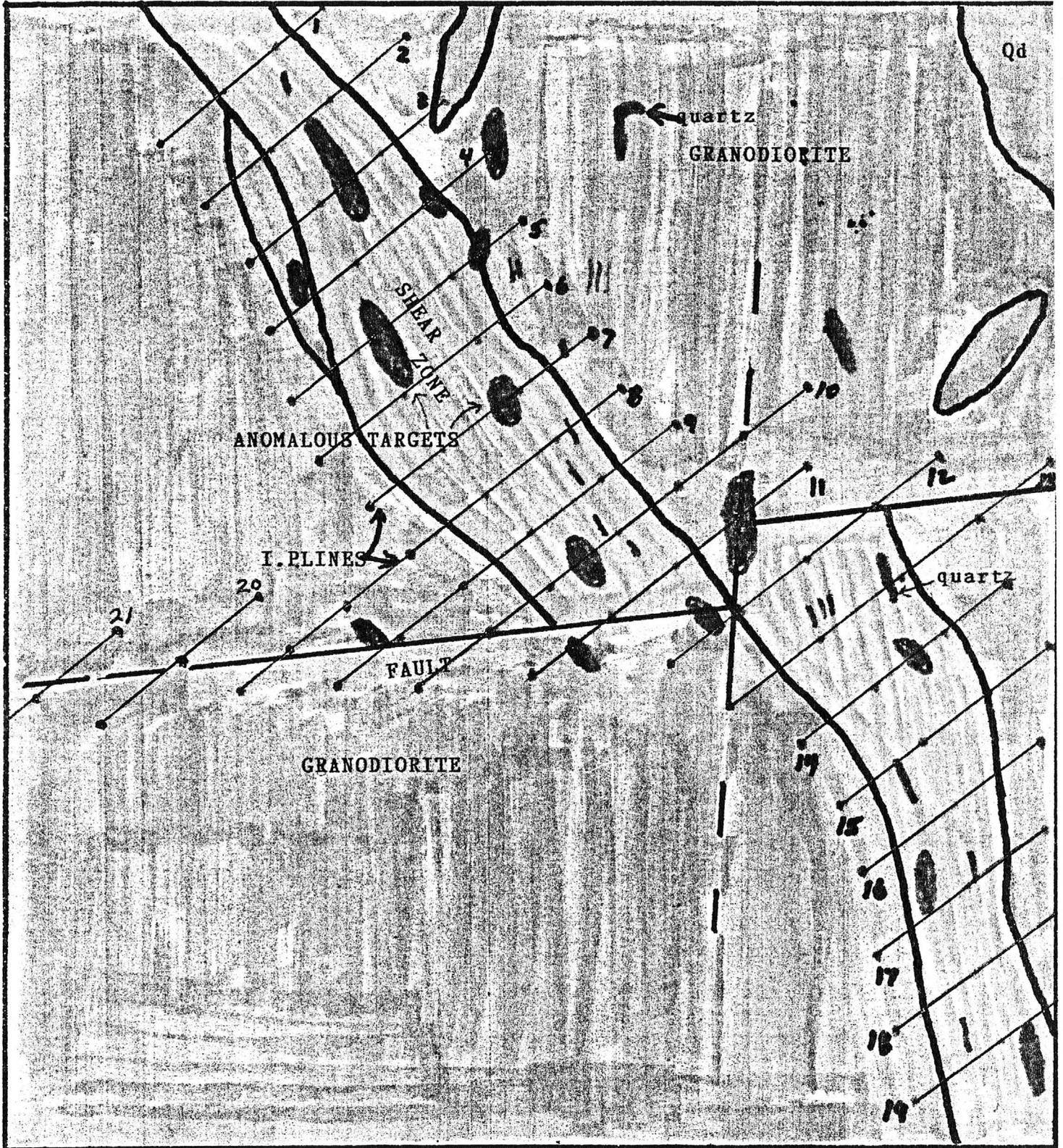


FIGURE #19 -- PROPOSED DRILLING OF THE ANOMALOUS TARGETS:

FIGURE # 20 -- NEW INDUCED POLARIZATION LINES COVERING THE "GLORY ANA SHEAR ZONE":



EXPLORATION BUDGET FOR PHASE I OF
THE GLORY ANA GOLD PROPERTY

PHASE I - Six Months

| | |
|----------------------------------|------------------|
| Office expenses | \$ 6,000 |
| Office Staff & Officers | 42,000 |
| Technical labor | 30,000 |
| Reports | 10,000 |
| Transportation | 9,000 |
| Aerial Photography | 4,000 |
| Topographic Survey | 3,500 |
| Geological Map | 3,500 |
| Grid Survey | 2,500 |
| Induced Polarization Study | 10,000 |
| Trenching and Pad Prep. | 10,000 |
| Percussion Drilling | 20,000 |
| MAPP Assaying | 7,000 |
| Rotary Drilling | 95,000 |
| 1000 Fire Assays | 12,000 |
| Lease Payments | 7,000 |
| | \$271,500 |
| Contingency & Insurance | 28,500 |
| | \$300,000 |
| TOTAL - PHASE I | \$300,000 |

MINING COSTS AND NET PROFIT

EXAMPLE #1 - SMALL MINE OPERATION

One anomalous target is located and produces an ore shoot 25' in diameter by 250' deep with an average gold grade of 0.50 ounce per ton (opt) with the minable material having a specific gravity of 2.60 S.G.; therefore, the tonnage factor is:

$$T.F. = \frac{2000}{2.60 \times 62.4} = 12.33 \text{ cu.ft./ton}$$

Shoot size: 25' x 25' x 250' = 156,250 cu. ft.

$$\frac{156,250 \text{ cu.ft.}}{12.33 \text{ cu.ft./ton}} = 12,672 \text{ tons of ore}$$

12,672 tons x 0.50 opt = 6336 ounces of gold

6336 ounces x \$450 per ounce = \$2,851,276 in gold bullion

| | | |
|--|---|------------------|
| Cost of mining and milling (\$250 per ounce) | = | \$1,584,000 |
| Cost of exploration | = | 500,000 |
| Cost of Construction | = | 1,000,000 |
| Inside administrative costs | = | 200,000 |
| Six percent (6%) smelter return to lessor (est.) | = | <u>171,000</u> |
| Gross Costs | = | (\$3,455,076) |
| Gold Sales | = | <u>2,851,276</u> |
| Net Loss | = | (\$ 603,800) |

RECOMMENDATION: Drop this project. One shoot won't make minable gold ore.

EXAMPLE #2 - SMALL MINE OPERATION

Thirty (30) anomalous targets are located and they produce ore shoots 25' in diameter by 250' deep with an average gold grade of 0.50 ounce per ton (opt) with the minable material having a special gravity of 2.70 S.G.; therefore, the tonnage factor is:

$$\text{T.F.} = \frac{2000}{2.70 \times 62.4} = 11.87 \text{ cu. ft./ton}$$

Shoot sizes: 25' x 25' x 250' = 156,250 cu. ft.
 30 targets x 156,250 = 4,687,500 cu. ft.
 $\frac{4,687,500 \text{ cu. ft.}}{11.87 \text{ cu.ft./ton}} = 394,903 \text{ tons}$

394,900 x .50 opt = 197,451 ounces of gold

197,451 x \$450 = \$88,853,202 in gold bullion

| | | |
|--|---|----------------|
| Cost of mining and milling (\$250 per ounce) | = | \$49,362,750 |
| Cost of exploration | = | 1,000,000 |
| Cost of construction | = | 5,000,000 |
| Inside administrative costs | = | 1,000,000 |
| Acquisition of claims outright | = | 2,000,000 |
| | | <hr/> |
| Gross Costs | = | (\$58,362,750) |
| Gold Sales | = | 86,853,202 |
| | | <hr/> |
| Net Profit before taxes | | \$30,490,452 |

RECOMMENDATION: Take a look at this project and refine the numbers, because it would be a winner.

EXAMPLE #3 - MEDIUM SIZE OPEN PIT OPERATION

Type of Precambrian Volcanogenic-Heap-Leach Gold deposit located in the shear zone. 200' wide by 100' deep by 1000' with an average gold grade of 0.15 ounce per ton (opt) with the minable material having a special gravity of 2.60 S.G.; therefore, the tonnage factor is:

$$\text{T.F.} = \frac{2000}{2.60 \times 62.4} = 12.33 \text{ cu.ft./ton}$$

Pit size: 200' x 100' x 1000' = 20,000,000 cu. ft.

$$\frac{20,000,000 \text{ cu. ft.}}{12.33 \text{ cu. ft./ton}} = 1,558,846 \text{ tons of ore}$$

1,558,846 tons x 0.15 opt = 233,827 ounces of gold
 233,827 ounces x 90% recovery = 210,444 ounces of
 gold

210,444 ounces x \$450 = 94,699,995 in gold bullion

| | | |
|---|---|-------------------|
| Cost of mining and milling (\$150 per ounce) | = | \$31,566,600 |
| Cost of exploration | = | 2,000,000 |
| Cost of construction | = | 5,000,000 |
| Inside administrative costs | = | 2,000,000 |
| Six percent (6%) smelter return to lessor (est.) | = | <u>1,893,996</u> |
| Gross Costs | = | (\$42,400,596) |
| Gold Sales | = | <u>94,699,895</u> |
| Net Profit before taxes | = | \$52,239,299 |

RECOMMENDATION: This would be a winner if the values can be shown to exist!

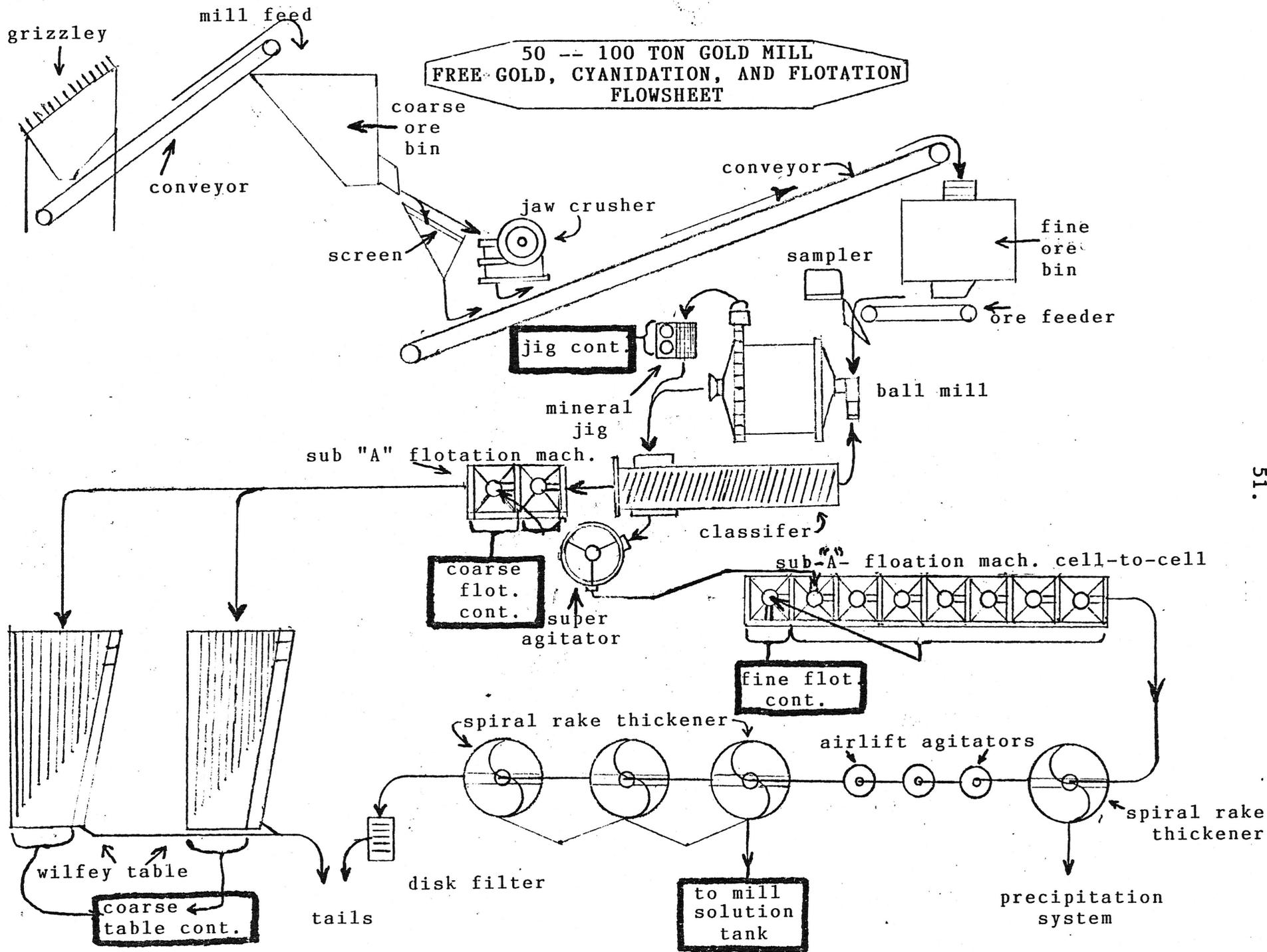
MILL CIRCUIT DESIGN

The following chart and flow sheet is a circuit design for constructing a mill that would be capable of processing all ores encountered in an underground mining operation at the **Glory Ana Mine** and including any other Precambrian quartz vein system of the surrounding mining districts.

This basic design incorporates a free milling gold circuit process, a cyanidation circuit to process any finely disseminated gold, and a flotation circuit to process the auriferous sulfide ores. However, before this circuit is chosen, the ore should be put through a complete pilot plant test program, with the final mill design to be engineered by a competent metallurgist.

50 -- 100 TON GOLD MILL
FREE GOLD, CYANIDATION, AND FLOTATION

1. (1) 10" x 20" Jaw Crusher Type "H"
2. (1) 16" Conveyor Belt
3. (1) 16" x 16" Fine Ore Bin
4. (1) 2' x 3' Vibrating Screen
5. (1) 18" Diameter Cone Crusher
6. (1) 20" x 10" Adjustable Stroke Ore Feeder
7. (1) 16" Automatic Sampler
8. (1) 4' x 5' Steel Head Rod Mill (50 ton capacity)
(1) Additional for 100 ton capacity
9. (1) 36" x 17'2" Spiral Classifier
10. (1) 16" Automatic Sampler
11. (3) 2" Vertical Pumps
12. (1) 5' x 5' Super Agitator (50 ton capacity)
(1) Additional for 100 ton capacity
13. (2) Wet Reagent Feeders (50 ton capacity)
(2) Additional set for 100 ton capacity
14. 1 set of (10) Cell "Sub A" Flotation Machine (50 ton capacity)
(1) Additional set for 100 ton capacity
15. (1) Wilfley Pilot Table
16. (1) Disc Filter
17. (1) Blower and Vacuum Pump
18. (1) 30' x 10' Spiral Rake Thickener Step 1
19. (3) 16' x 16' Airlift Agitators
20. (3) 30' x 10' Spiral Rack Thickener Step 2
21. (1) Electro Winning Recovery for Cyanide Gold Solution
22. Small Assay Testing Lab



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