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CAMBIOR USA, INC. NO. 27416

ROCK: [X] Date: 4/3/92

SOIL: [ ] State: Arizona

SED.: [ ] County: Santa Cruz

Project: 304- Soldier BASIN

DRILL HOLE NO. _____ FROM _____ TO _____

Loc.: T 23 N; R 16 (E); SE ¼; S 18

Quad: (S) HARSHAW W Scale 7.5 (unsurveyed)

RX: 20' Dump/Tailings Outcrop/Float Fresh/Weathered

Outcrop Location: SAME as 5 all Rdcut samples

Rdcut Series ETow. 27412-27476 (with local breaks) NO. _____

Sample Description: _____ Rock Type: _____

Rock Mod: _____ Mineral: _____

Oxides: _____ Alteration: _____

Structure: _____ Spl. Width: _____

metatuff? / Hornfels felsic intrus.?; lt grey, sugary text., blocky frac, mostly sparse scatt. hem blebs, weak fn. gr. dissem pyrite, 1-4" oxid frac spacing (tight), local ¼" clay gouge seams ± 2" clayey Fe ox stains w/ elev lim-hem, patchy bleaching, weak to locally moderate silicif. ± fn gr sericite alt.

CAMBIOR USA, INC. NO. 27417

ROCK: ☒ Date: 4/3

SOIL: ☐ State: Ariz

SED.: ☐ County: _____

Project: Soldier Basin - 304

DRILL HOLE NO. _____ FROM _____ TO _____

Loc.: T _____ N/S; R _____ E/W; SE ¼; S 18

Quad: _____ Scale _____

RX: 20' | Dump/Tailings | Outcrop/Float | Fresh/Weathered

Outcrop Location: Same as 6

(Series) _____ NO. _____

Sample Description: _____ Rock Type: _____

Rock Mod: _____ Mineral: _____

Oxides: _____ Alteration: _____

Structure: _____ Spl. Width: _____

(Similar to "27416") well frac & oxid

several 1-2" clayey, highly frac, elev FeOx zones

CAMBIOR USA, INC. NO. 27418

ROCK: ☒ Date: 4/3

SOIL: ☐ State: Ariz

SED.: ☐ County: _____

Project: Soldier Basin - J04

DRILL HOLE NO. _____ FROM _____ TO _____

Loc.: T _____ N/S; R _____ E/W; SE ¼; S 18

Quad: _____ Scale 7.5

RX: 1" Select Dump/Tailings (Outcrop/Float) (Fresh/Weathered)

Outcrop Location: Same as 6 select

Select from Samp # 27417 NO. _____

Sample Description: _____ Rock Type: _____

Rock Mod: _____ Mineral: _____

Oxides: _____ Alteration: _____

Structure: _____ Spl. Width: _____

sheared, hem clay matrix, pyritic fu text clast fault Bx, conspic. hem, frac MnOx

CAMBIOR USA, INC. NO. 27419

ROCK: ☒ Date: _____

SOIL: ☐ State: Ariz

SED.: ☐ County: _____

Project: Soldier Basin - 304

DRILL HOLE NO. _____ FROM _____ TO _____

Loc.: T _____ N/S; R _____ E/W; SE ¼; S 18

Quad: _____ Scale _____

RX: Dump/Tailings Outcrop/Float Fresh/Weathered

20'

Outcrop Location: ~~80~~ Samples 7

_____ NO. _____

Sample Description: _____ Rock Type: _____

Rock Mod: _____ Mineral: _____

Oxides: _____ Alteration: _____

Structure: _____ Spl. Width: _____

Similar to 417, 416 . ft white, sugary text., local weak frac silicif. & hem clay local hem blebs

CAMBIOR USA, INC. NO. 27420

ROCK: ☒ Date: 4/3

SOIL: ☐ State:

SED.: ☐ County:

Project: Soldier Basin

DRILL HOLE NO. _____ FROM _____ TO _____

Loc.: T _____ N/S; R _____ E/W; SE ¼; S 18

Quad: _____ Scale _____

RX: Dump/Tailings (Outcrop/Float) (Fresh/Weathered)

20'

Outcrop Location: SAME ASS

_____ NO. _____

Sample Description: _____ Rock Type:

Rock Mod: Mineral:

Oxides: Alteration:

Structure: Spl. Width:

Similar, bleached, oxid frac, mod sil cut. local 1-4" clayey-gossan gouge seams, same aplite comp texture, minor fn-gr disem/frac pyrite

CAMBIOR USA, INC. NO. 27421

ROCK: [X] Date: _____

SOIL: [ ] State: _____

SED.: [ ] County: _____

Project: Soldier Basin

DRILL HOLE NO. _____ FROM _____ TO _____

Loc.: T _____ N/S; R _____ E/W; SE ¼; S 19

Quad: _____ Scale _____

RX: Dump/Tailings Outcrop/Float Fresh/Weathered

20'

Outcrop Location: Same as 9

_____ NO. _____

Sample Description: _____ Rock Type: _____

Rock Mod: _____ Mineral: _____

Oxides: _____ Alteration: _____

Structure: _____ Spl. Width: _____

Similar, strong schist, hornfels texture with local irreg, bleached rind chlorite seams, sparse hem blebs, tr pyrite, tr remnant felsic porph texture?

CAMBIOR USA, INC. NO. 27422

ROCK: [X] Date: _____

SOIL: [ ] State: _____

SED.: [ ] County: _____

Project: Soldier Basin

DRILL HOLE NO. _____ FROM _____ TO _____

Loc.: T _____ N/S; R _____ E/W; SE ¼; S 18

Quad: _____ Scale _____

RX: Dump/Tailings ~~Outcrop/Float~~ ~~Fresh/Weathered~~

20'

Outcrop Location: SAME AS #10

_____ NO. _____

Sample Description: _____ Rock Type: _____

Rock Mod: _____ Mineral: _____

Oxides: _____ Alteration: _____

Structure: _____ Spl. Width: _____

(Similar to "421")

CAMBIOR USA, INC. NO. 27423

ROCK: [x] Date: _____

SOIL: [ ] State: _____

SED.: [ ] County: _____

Project: Soldier Basin

DRILL HOLE NO. _____ FROM _____ TO _____

Loc.: T _____ N/S; R _____ E/W; SE ¼; S 18

Quad: _____ Scale _____

RX: Dump/Tailings (Outcrop/Float) (Fresh/Weathered)

20'

Outcrop Location: SAME AS #11

_____ NO. _____

Sample Description: _____ Rock Type: _____

Rock Mod: _____ Mineral: _____

Oxides: _____ Alteration: _____

Structure: _____ Spl. Width: _____

very similar, rare 1-2" lem clay shear seams, mostly mod-well silicif w/ lim-lem sol frac staining

CAMBIOR USA, INC. NO. 27424

ROCK: [X] Date: _____

SOIL: [ ] State: _____

SED.: [ ] County: _____

Project: Soldier Basin

DRILL HOLE NO. _____ FROM _____ TO _____

Loc.: T _____ N/S; R _____ E/W; SE ¼; S 18

Quad: _____ Scale _____

RX: Dump/Tailings (Outcrop/Float) (Fresh/Weathered)

18'

Outcrop Location: SAMPLES #17

(Series 27412 → 27424 90' W to start at # 27425

NO. _____

Sample Description: _____ Rock Type: _____

Rock Mod: _____ Mineral: _____

Oxides: _____ Alteration: _____

Structure: _____ Spl. Width: _____

same rx type, weak-mod silicif, bleached, mod frac lim-lem, local arg alt.

CAMBIOR USA, INC. NO. 27431

ROCK: ☒ Date: 4/3

SOIL: ☐ State:

SED.: ☐ County:

Project: Soldier Basin

DRILL HOLE NO. _____ FROM _____ TO _____

Loc.: T _____ N/S; R _____ E/W; SE ¼; S 18

Quad: _____ Scale _____

RX: Dump/Tailings Outcrop/Float Fresh/Weathered

20'

Outcrop Location: Same as #10

E. W Rd cut Series starts with # 27425 NO. _____

Sample Description: _____ Rock Type:

Rock Mod: Mineral:

Oxides: Alteration:

Structure: Spl. Width:

Similar host rx: bleached, weak-mod FeOx mottled well fractured, mild clay alt., sparse spec hem blebs tr qtz phenocrysts (xl tuff?)

CAMBIOR USA, INC. NO. 27432

ROCK: ☒ Date: _____

SOIL: ☐ State: _____

SED.: ☐ County: _____

Project: Soldier Basin

DRILL HOLE NO. _____ FROM _____ TO _____

Loc.: T _____ N/S; R _____ E/W; SE ¼; S 18

Quad: _____ Scale _____

RX: Dump/Tailings Outcrop/Float Fresh/Weathered

20'

Outcrop Location: Same as #19

Rd cut NO. _____

Sample Description: _____ Rock Type: _____

Rock Mod: _____ Mineral: _____

Oxides: _____ Alteration: _____

Structure: _____ Spl. Width: _____

Similar to #431, punky - weathered, mostly md frac FeOx, some MnOx

CAMBIOR USA, INC. NO. 27433

ROCK: [X] Date: _____

SOIL: [ ] State: _____

SED.: [ ] County: _____

Project: Soldier Basin

DRILL HOLE NO. _____ FROM _____ TO _____

Loc.: T _____ N/S; R _____ E/W; SE ¼; S 18

Quad: _____ Scale _____

RX: Dump/Tailings Outcrop/Float Fresh/Weathered

20'

Outcrop Location: Same as #20

_____ NO. _____

Sample Description: _____ Rock Type: _____

Rock Mod: _____ Mineral: _____

Oxides: _____ Alteration: _____

Structure: _____ Spl. Width: _____

(Same as # 432)

CAMBIOR USA, INC. NO. 27434

ROCK: ☒ Date: _____

SOIL: ☐ State: _____

SED.: ☐ County: _____

Project: Soldier Basin

DRILL HOLE NO. _____ FROM _____ TO _____

Loc.: T _____ N/S; R _____ E/W; SE ¼; S 18

Quad: _____ Scale _____

RX: | Dump/ Tailings | Outcrop/ Float | Fresh/ Weathered

20'

Outcrop Location: Same as 21

_____ NO. _____

Sample Description: _____ Rock Type: _____

Rock Mod: _____ Mineral: _____

Oxides: _____ Alteration: _____

Structure: _____ Spl. Width: _____

(Same as # 433)

CAMBIOR USA, INC. NO. 27435

ROCK: ☒ Date: _____

SOIL: ☐ State: _____

SED.: ☐ County: _____

Project: Soldier Basin

DRILL HOLE NO. _____ FROM _____ TO _____

Loc.: T _____ N/S; R _____ E/W; SE ¼; S 18

Quad: _____ Scale _____

RX: Dump/Tailings Outcrop/Float Fresh/Weathered

Outcrop Location: 20' TAMRAS ~~27~~ 22

_____ NO. _____

Sample Description: _____ Rock Type: _____

Rock Mod: _____ Mineral: _____

Oxides: _____ Alteration: _____

Structure: _____ Spl. Width: _____

Similar; local 1' shear showing elev hem

CAMBIOR USA, INC. NO. 27442

ROCK: [X] Date: _____

SOIL: [ ] State: _____

SED.: [ ] County: _____

Project: Soldier Basin

DRILL HOLE NO. _____ FROM _____ TO _____

Loc.: T _____ N/S; R _____ E/W; SE ¼; S 18

Quad: _____ Scale _____

RX: Dump/Tailings (Outcrop/Float) (Fresh/Weathered)

20'

Outcrop Location: SAME AS 29

Road cut NO. _____

Sample Description: _____ Rock Type: _____

Rock Mod: _____ Mineral: _____

Oxides: _____ Alteration: _____

Structure: _____ Spl. Width: _____

Similar host

CAMBIOR USA, INC. NO. 27443

ROCK: ☑ Date: _____

SOIL: ☐ State: _____

SED.: ☐ County: _____

Project: Soldier Basin

DRILL HOLE NO. _____ FROM _____ TO _____

Loc.: T _____ N/S; R _____ E/W; SE ¼; S 18

Quad: _____ Scale _____

RX: Dump/Tailings ~~Outcrop/Float~~ Fresh/~~Weathered~~

20'

Outcrop Location: SAMPLES 20

_____ NO. _____

Sample Description: _____ Rock Type: _____

Rock Mod: _____ Mineral: _____

Oxides: _____ Alteration: _____

Structure: _____ Spl. Width: _____

(Similar host Rx)

CAMBIOR USA, INC. NO. 27444

ROCK: ☑ Date: _____

SOIL: ☐ State: _____

SED.: ☐ County: _____

Project: Soldier Basin

DRILL HOLE NO. _____ FROM _____ TO _____

Loc.: T _____ N/S; R _____ E/W; SE ¼; S 18

Quad: _____ Scale _____

RX: Dump/Tailings (Outcrop/Float) (Fresh/Weathered)

20'

Outcrop Location: SAME AS 31

_____ NO. _____

Sample Description: _____ Rock Type: _____

Rock Mod: _____ Mineral: _____

Oxides: _____ Alteration: _____

Structure: _____ Spl. Width: _____

(Similar) off white - med grey mottled, fn gr sugary text, mod-locally strong silicif. pale hem oxide st. throughout

CAMBIOR USA, INC. NO. 27445

ROCK: [X] Date: _____

SOIL: [ ] State: _____

SED.: [ ] County: _____

Project: Soldier Basin

DRILL HOLE NO. _____ FROM _____ TO _____

Loc.: T _____ N/S; R _____ E/W; SE ¼; S 18

Quad: _____ Scale _____

RX: Dump/Tailings ~~Outcrop~~/Float ~~Fresh~~/Weathered

20'

Outcrop Location: SAME GS 32

_____ NO. _____

Sample Description: _____ Rock Type: _____

Rock Mod: _____ Mineral: _____

Oxides: _____ Alteration: _____

Structure: _____ Spl. Width: _____

(Similar) except 4' @ west end is hematitic clay gouge (total zone width 8')

CAMBIOR USA, INC. NO. 27446

ROCK: ☒ Date: _____

SOIL: ☐ State: _____

SED.: ☐ County: _____

Project: Soldier Basin

DRILL HOLE NO. _____ FROM _____ TO _____

Loc.: T _____ N/S; R _____ E/W; SE ¼; S 18

Quad: _____ Scale _____

RX: Dump/Tailings Outcrop/Float Fresh/Weathered

9' Select

Outcrop Location: Same as 32

Select from #445, 446 NO. _____

Sample Description: _____ Rock Type: _____

Rock Mod: _____ Mineral: _____

Oxides: _____ Alteration: _____

Structure: _____ Spl. Width: _____

(kem clay gouge zone)

CAMBIOR USA, INC. NO. 27447

ROCK: ☒ Date: _____

SOIL: ☐ State: _____

SED.: ☐ County: _____

Project: Soldier Basin

DRILL HOLE NO. _____ FROM _____ TO _____

Loc.: T _____ N/S; R _____ E/W; SE ¼; S 18

Quad: _____ Scale _____

RX: Dump/Tailings Outcrop/Float Fresh/Weathered

?

20'

Outcrop Location: 32 select

33' 9' ? (37) NO. _____

Sample Description: _____ Rock Type: _____

Rock Mod: _____ Mineral: _____

Oxides: _____ Alteration: _____

Structure: _____ Spl. Width: _____

85% of samp is clayey - strong hem fault gouge (low angle) includes clasts of lim-hem frac sol st. sugary text Rx

CAMBIOR USA, INC. NO. 27448

ROCK: [x] Date: _____

SOIL: [ ] State: _____

SED.: [ ] County: _____

Project: Soldier Basin

DRILL HOLE NO. _____ FROM _____ TO _____

Loc.: T _____ N/S; R _____ E/W; SE ¼; S 18

Quad: _____ Scale _____

RX: Dump/Tailings (Outcrop/Float) (Fresh/Weathered)

20'

Outcrop Location: E Samcas 34

_____ NO. _____

Sample Description: _____ Rock Type: _____

Rock Mod: _____ Mineral: _____

Oxides: _____ Alteration: _____

Structure: _____ Spl. Width: _____

(Similar host Rx) mostly well frac, mod-strong frac hem, scatt 1-2' irreg hem-clay shear zones, local strong horizontal frac/shear set

CAMBIOR USA, INC. NO. 27449

ROCK: [x] Date: 4/3

SOIL: [ ] State: Ariz

SED.: [ ] County: Santa Cruz

Project: Soldier Basin 304

DRILL HOLE NO. _____ FROM _____ TO _____

Loc.: T _____ N/S; R _____ E/W; SE ¼; S 18

Quad: _____ Scale _____

RX: Dump/Tailings (Outcrop/Float) (Fresh/Weathered)

20'

Outcrop Location: Same as 35

(W. ext of Series) NO. _____

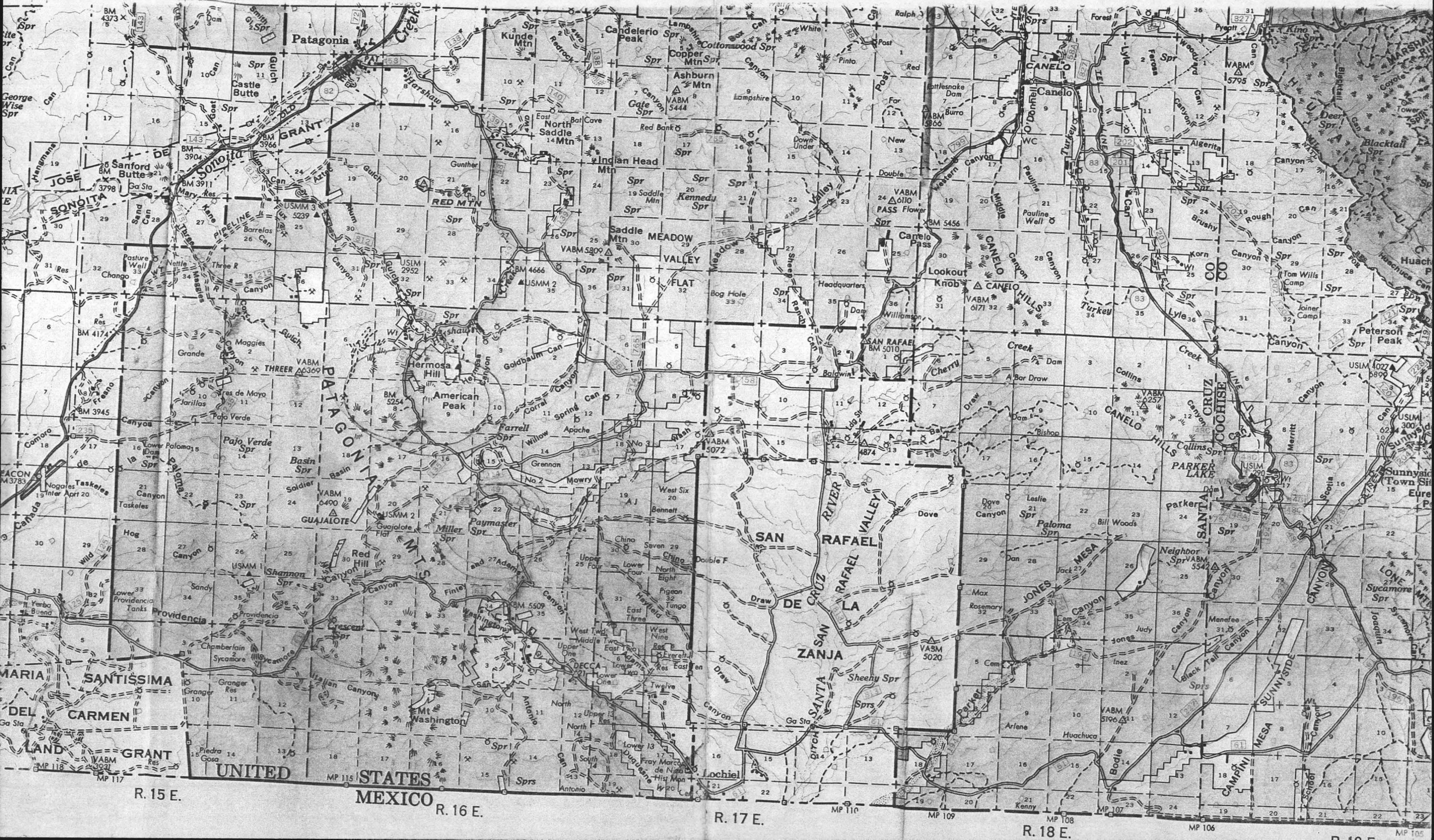
Sample Description: _____ Rock Type: _____

Rock Mod: _____ Mineral: _____

Oxides: _____ Alteration: _____

Structure: _____ Spl. Width: _____

Same but bleached, locally well silicified
tr fresh pyrite, mod-strong frac lim-hem
irreg 1-2' hem-clay shear zones, blocky frac.


Patagonia
Sonoita
Elgin
Canelo
Lochiel
UNITED STATES
MEXICO
PATAGONIA MTS
SAN RAFAEL VALLEY
SANTA CRUZ
CANELO HILLS
PARKER LAKE
SUNNYSIDE
MEADOW VALLEY
SAN RAFAEL DE LA ZANJA
SANTISSIMA
DEL CARMEN LAND GRANT
R. 15 E.
R. 16 E.
R. 17 E.
R. 18 E.
MP 115
MP 116
MP 109
MP 108
MP 107
MP 106

* Assays not located in files -- N.B.

NOGALES

Prepared by the U.S. Army Topographic Command (KCSX), Washington, D.C. Compiled in 1957 by photogrammetric methods and from United States quadrangles, 1:25,000, 1:50,000, and 1:62,500, 1922-51. Planimetry revised from aerial photographs taken 1955. Photographs field annotated 1956. Revised by the U.S. Geological Survey 1969.

100,000-foot grid based on Arizona coordinate system, central and east zones

Location of geodetic control established by government agencies is shown on corresponding 1:250,000-scale Geodetic Control Diagram

LEGEND

Figures in red denote approximate distances in miles between stars

POPULATED PLACES
- Over 500,000 — LOS ANGELES
- 100,000 to 500,000 — OMAHA
- 25,000 to 100,000 — GALVESTON
- 5,000 to 25,000 — Laramie
- 1,000 to 5,000 — Grand Coulee
- Less than 1,000 — Sun Valley

RAILROADS
- Standard gauge, Single track, Double or Multiple
- Narrow gauge

BOUNDARIES
- International
- State
- County
- Park or reservation

ROADS
- Primary, all-weather, hard surface
- Secondary, all-weather, hard surface
- Light-duty, all-weather, hard or improved surface
- Fair or dry weather, unimproved surface
- Trail
- Interchange
- Route markers: Interstate, U.S., State

- Landplane airport
- Landing area
- Seaplane airport
- Windmill; Mine
- Woods-brushwood
- Landmark: School; Church; Other,
- Spot elevation in feet
- Marsh or swamp
- Intermittent or dry stream
- Power line

Scale 1:250,000

5 0 5 10 15 20 Statute Miles

5 0 5 10 15 20 25 30 Kilometers

5 0 5 10 15 Nautical Miles

CONTOUR INTERVAL 200 FEET
WITH SUPPLEMENTARY CONTOURS AT 100 FOOT INTERVALS

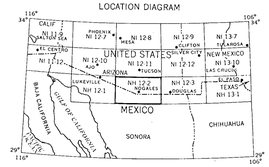
TRANSVERSE MERCATOR PROJECTION

BLACK NUMBERED LINES INDICATE THE 10,000 METER UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 12

1969 MAGNETIC DECLINATION FROM TRUE NORTH VARIES FROM 13° (230 MILS) EASTERLY FOR THE CENTER OF THE WEST EDGE TO 12½° (220 MILS) EASTERLY FOR THE CENTER OF THE EAST EDGE

FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092

LOCATION DIAGRAM



SECTIONIZED TOWNSHIP

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

TOWNSHIP OR RANGE LINE
LAND GRANT BOUNDARY

GRID ZONE DESIGNATION: 12R
100,000 M. SQUARE IDENTIFICATION: VL WL PQ VK WK YQ

IGNORE the SMALLER figures of any grid number; these are for finding the full coordinates. Use ONLY the LARGER figure of the grid number; example: 34 5000

TO GIVE A STANDARD REFERENCE ON THIS SHEET TO NEAREST 1000 METERS

SAMPLE POINT: CARMEN

1. Read letters identifying 100,000 meter square in which the point lies: VK
2. Locate first VERTICAL grid line to LEFT of point and read LARGE figure labeling the line either in the top or bottom margin, or on the line itself: 34
   Estimate tenths from grid line to point: 5
3. Locate first HORIZONTAL grid line BELOW point and read LARGE figure labeling the line either in the left or right margin, or on the line itself: 93
   Estimate tenths from grid line to point: 5

SAMPLE REFERENCE: VK5595
If reporting beyond 10^6 in any direction, prefix Grid Zone Designation, as: 12VK5595

• INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1969

NOGALES, ARIZONA
1956
REVISED 1969

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

UNITED STATES
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

HARSHAW QUADRANGLE

ARIZONA–SANTA CRUZ CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
NW/4 LOCHIEL 15' QUADRANGLE

(MT. WRIGHTSON) 1:62 500
110°45'
31°30'
524000m. E.
42'30"
PATAGONIA 5.6 MI.
(MT. HUGHES)
40'
R. 16 E.
R. 17 E.
900 000 FEET
110°37'30"
31°30'
(O'DONNELL CANYON)
3484000m. N.
3.3 MI. TO ARIZ. 82
Exposed Reef Mine
Hampson Mine
Alum Gulch
Flux Canyon
Worlds Fair Mine
Chief Mine
Lead Queen Mine
Basin Mine
Great Silver Mine
Creek
USMM 2
Saddle Mountain
VABM 5809
180 000 FEET
Meadow Valley Flat
Meadow Valley
T. 22 S.
T. 23 S.
Humboldt Mine
Harshaw
Trench Camp
Water Tank
Alta Mine
Hardshell Mine
Hermosa Mine
Hermosa Hill
Hermosa Canyon
Goldbaum Canyon
American Mine
Black Eagle Mine
Bender Mine
American Peak
Blue Nose Mine
Thunder Mine
Augusta Mine
Endless Chain Mine
Morning Glory Mine
CORONADO NATIONAL FOREST
PATAGONIA MOUNTAINS
Corral Canyon
Willow Spring Canyon
Farrell Spring
Mowry Mine
Mowry Wash
Soldier Basin
Homestake Mine
Haist Mine
Olive Mine
Flying R Ranch
Bagby Ranch
Prospects
Paymaster Spring
Paymaster Mine
Guajolote Flat
Jackalo Mine
Red Hill
Four Metals Mine
Winifred Mine
Providencia Canyon
Sycamore Canyon
Finley and Adams Canyon
Shaffer Ranch
Adams Canyon
Kansas Mine
BM 5509
Maine Mine
New York Mine
Washington Camp
Pride Mine
Prospect
Washington Gulch
Duquesne Sch
Chino Draw
Hayfield Draw
NATIONAL FOREST BOUNDARY
SAN RAFAEL DE LA ZANJA
CANELO PASS 7 MI.
(CANELO PASS)
VABM 5072
27'30"
25'
(NOGALES 1:62 500)
NOGALES 15 MI.
140 000 FEET
3472000m. N.
T 23 S
T 24 S
31°22'30"
110°45'
870 000 FEET
42'30"
(DUQUESNE)
LOCHIEL 4.3 MI.
40'
R. 17 E.
533000m. E.
110°37'30"
31°22'30"
(LOCHIEL)
Soldier Basin Sampling (Adent) SE¼ Sec 18
Soldier Basin Rd cut sample series #27412 – 27476
4/3, 4/4/92
N. BARR
E. Pedaca
K475
K476
K477
K478
Golden Gate
Pocahontas?

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C.—1963
MR 6357

(NOGALES 1:62 500)

Mapped by the Army Map Service
Edited and published by the Geological Survey

Control by USGS, USC&GS, and USCE

Topography from aerial photographs by stereoplanigraph methods
Aerial photographs taken 1946. Field check 1948
Revised by the Geological Survey 1958

Polyconic projection. 1927 North American datum
10,000-foot grid based on Arizona coordinate system, central zone
1000-meter Universal Transverse Mercator grid ticks,
zone 12, shown in blue

Unchecked elevations are shown in brown

TRUE NORTH
MAGNETIC NORTH
13°
APPROXIMATE MEAN DECLINATION, 1958

SCALE 1:24 000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 25 FEET
DATUM IS MEAN SEA LEVEL

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER 25, COLORADO OR WASHINGTON 25, D. C.
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ARIZONA
QUADRANGLE LOCATION

ROAD CLASSIFICATION
Light-duty
Unimproved dirt

HARSHAW, ARIZ.
NW/4 LOCHIEL 15' QUADRANGLE
N3122.5—W11037.5/7.5

1958

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

UNITED STATES
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

HARSHAW QUADRANGLE
ARIZONA—SANTA CRUZ CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
NW/4 LOCHIEL 15' QUADRANGLE

(MT. WRIGHTSON) 1:62 500

(O'DONNELL CANYON)

110°45' 524 000m E. 42'30" PATAGONIA 5.6 MI. (MT. HUGHES) 40' R. 16 E. R. 17 E. 900 000 FEET 110°37'30"

31°30' 3484 000m N. 31°30'

3.3 MI. TO ARIZ. 82

180 000 FEET

T. 22 S. T. 23 S.

27'30"

CANELO PASS 7 MI.

(NOGALES 1:62 500)

25'

140 000 FEET

31°22'30" 870 000 FEET 42'30" (DUQUESNE) LOCHIEL 4.3 MI. 40' R. 17 E. 533 000m E. 31°22'30" 110°37'30"

(LOCHIEL)

(NOGALES 1:62 500)

NOGALES 15 MI.

Soldier Basin
NE¼ sec 18

Soldier Basin
Ridcut sample series
#27412 — 2747
4/2, 4/4/92
N. CHAR
E. Peduca

Mapped by the Army Map Service
Edited and published by the Geological Survey

Control by USGS, USC&GS, and USCE

Topography from aerial photographs by stereoplanigraph methods
Aerial photographs taken 1946. Field check 1948
Revised by the Geological Survey 1958

Polyconic projection. 1927 North American datum
10,000-foot grid based on Arizona coordinate system, central zone
1000-meter Universal Transverse Mercator grid ticks,
zone 12, shown in blue

Unchecked elevations are shown in brown

13°
TRUE NORTH
MAGNETIC NORTH
APPROXIMATE MEAN DECLINATION, 1958

SCALE 1:24000
1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 KILOMETER
CONTOUR INTERVAL 25 FEET
DATUM IS MEAN SEA LEVEL

ROAD CLASSIFICATION
Light-duty ——— Unimproved dirt - - - - -

ARIZONA
QUADRANGLE LOCATION

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER 25, COLORADO OR WASHINGTON 25, D. C.
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C.—1958
MH 6357

HARSHAW, ARIZ.
NW/4 LOCHIEL 15' QUADRANGLE
N3122.5—W11037.5/7.5

1958

Road cut Sampling Soldier Basin Area (Patagonia Mtns) Arizona

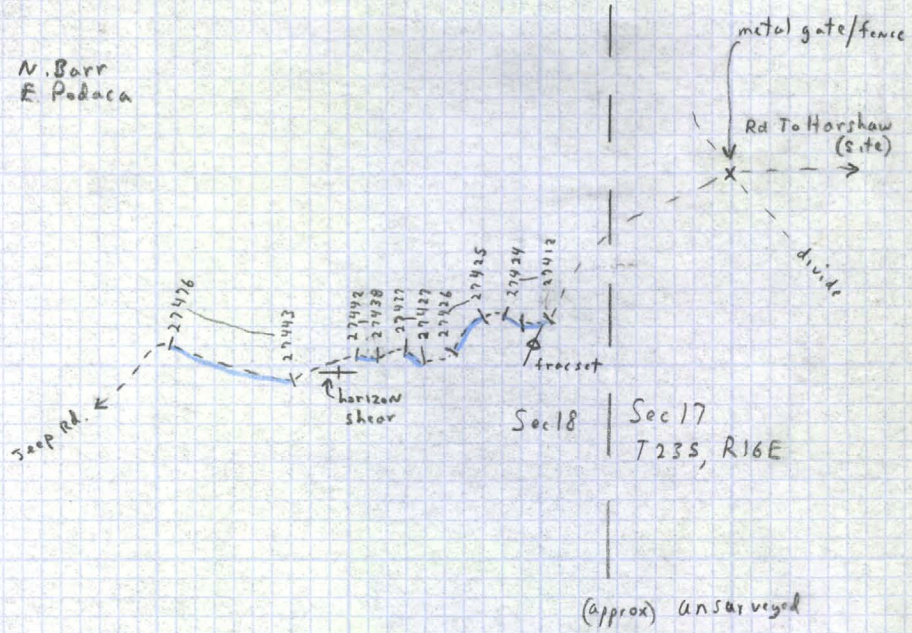
Sec 18, T 23S, R 16 E. Harshaw 7.5 Quad

Santa Cruz Co.

N 1" = 1000 ft

4/3, 4/4/92 N. Barr
E Podaca

20' sample intervals



CHKD. BY _____ DATE _____

BY _____ DATE _____

SUBJECT _____

JOB NO. _____

SHEET NO. _____ OF _____

SOLDIER BASIN

MANZANITA HILLS INC

JULY 12, 1991

SOLDIER BASIN

LOCATION

The Soldier Basin Project area is located approximately 60 miles southeast of Tucson, Arizona and 20 miles northeast of Nogales, Arizona. Soldier Basin is located just to the north of MHI's 4 Metals Project. MHI controls the mineral rights for portions of Sections 11,12,13,14,23 and 24 in Township 23 South and Range 15 East, and Sections 7,8,17,18,19,20,29 and 30 in Township 23 South and Range 16 East.

OWNERSHIP

MHI controls the mineral rights through lease/purchase agreements and staking. MHI is required to pay all holding fees to federal, state and local governments. In addition, MHI must pay annual advance royalty payments and once production commences a 3% net smelter royalty.

TOPOGRAPHY & CLIMATE

The topography of Soldier Basin Project area ranges from a elevation of 5000 feet on the west boundary to over 6200 feet on the east boundary. MHI will be able to maintain access throughout the year with minimal effort.

The temperature in the soldier basin area averages approximately 60°F.,but varies from 100°F. in the summer to 0°F. in the winter with diurnal temperature range averaging greater than 30°F.

Precipitation around Soldier Basin ranges from 15 to 20 inches per year and flash floods can occur in the monsoon season of July and August. All drainage in the project is intermittent and there is no major drainage in the project area. Light snowfall may occur in the higher elevations from November to April.

The vegetation overlying the project area is pine, scrub oak,

juniper, manzanita, mesquite and various cactus species. Wildlife in the area include skunk, bobcat, coyote, rabbit,javelina and white tail deer. The area contains no known endangered specie.

HISTORY

The Soldier Basin area has been active in the past as there are two underground mines in Soldier Basin and one just to the northeast of the basin which are within MHI's claim group.

The first of these mines is the O'Mara mine (formally the Old Soldier Mine). This mine is located in the northwest side of Canada de la Paloma in Soldier Basin at an elevation of 5,500 feet. The Mine was first worked in 1888. The Mine consists of 2,000 feet of development work and is opened to a depth of 188 by two shafts, 200 feet of drifts on the 80 and 180 foot levels, a 187 foot crosscut on the 180 foot level, and several winzes. The main shaft is 250 feet south of the vein on its hangingwall side. The second shaft, 140 feet deep is sunk on an incline of 70°SE, following the vein. The latest work is an 50 foot shaft sunk in the gulch to the east of and 300 feet lower than the mine. This shaft is said to expose a 5 foot vein which parallels the main vein and contains similar pyrite-chalcopyrite ore, which assays 10 percent in copper, 21 ounces in silver and about a .10 ounce per gold per ton (Santa Rita and Patagonia Mountains, Arizona (P308-309).

The second mine in the Soldier Basin claim block is the Homestake Mine. This mine sits on the southern end of Soldier Basin. The dates that the mine was initially worked is unknown but is thought to be before the turn of the century. The Mine consists of three shafts, 60 feet, 200 feet, and 150 feet. The 150 foot shaft is inclined 30°. Sulfides are encountered at the 50 foot level in the shaft, and the shaft is presently full of water. The vein is 6 feet wide at the bottom of the shaft. There are two drifts off the bottom of the shaft for a total of about 300 feet and the vein still exists in both faces. The vein can be traced for about 3000 feet to the south but not into the basin to the north. The vein trends N35°E and dips 70°SE which is the same as the O'Mara Mine further to the north. Due to the topography there could be well over 600 feet of back as the vein proceeds to the south. According to the reports at the University of Arizona the vein ran 9% Lead,

3% Copper, 14% Zinc and 10 Ounces of Silver.

The last mine in the claim block is the Thunder Mine which is at the northeast edge of our claim block. The granite porphyry is silicified and altered and contains widely disseminated pyrite and chalcopyrite. The Shear zones trend northwest-southeast but the faults trend east-northeast with a flat southerly dip along which the ore minerals are concentrated. There is an 82 foot tunnel with all but the first twenty feet in the westward zone of mineralization which was regarded as low grade ore and said to average .6 per cent in copper and 2 ounces in silver and .02 in gold (40 cents per ton in 1915 when report was written) per ton. The metallic minerals are pyrite, chalcopyrite, with a little tetrahedrite and molybdenite.

Soldier Basin was held by the Bekins family from the early 1950's until 1988. The claims lapsed in the first part of 1989 and were subsequently staked by John Prochnau. Rio Algom leased the property from John Prochnau and drilled two holes for a total of 560 feet (285'& 275'). Rio Algom also did some initial sampling on the claims. The results of the drilling and sampling are included at the end of the text. Manzanita Hills leased the property from John Prochnau on the 29th day of April, 1991 and staked some additional claims to further incorporate additional breccia pipes that were found in the area.

GEOLOGY

Soldier Basin is located in a major mineral system within a northwesterly striking liniment that strikes for over 200 miles from Nacozari, Mexico to Silver Bell, Arizona. Soldier Basin is surrounded by the Mowry, Hardshell, and Trench Camp mines to the east; by the Flux, and 3R mines to the north; the Ventura mine to the west and 4 Metals to the south.

The geologic maps that show the Soldier Basin area show it as predominately Mesozoic Sediments and Volcanics, however the detailed geology shows the area as primarily Laramide Granodiorites with Quartz Monzonite intrusives. The east side of our claim group has a major fault which tends to dissect the range with the volcanics on the east side of the fault and the granodiorites on the west side of the fault. The Thunder prospect is barely on the

west side and does have Quartz Monzonite in the shear zones which seems to make up one of the ore hosts. The host rock is granodiorite. There are over ten breccia pipes located within the boundaries of our claim group which have the same consistencies as 4 Metals although they don't have the same magnitude, at least not at the surface. There are several quartz veins which also cut through the basin of which some were mined at the turn of the century. The majority of these veins trend northeast. Detailed mapping of this area may prove up additional features which may lead to further targets.

The Homestake property consists of a Quartz Monzonite porphyry with the quartz veins carrying the higher grade ore zones. The Old Soldier (O'Mara) Mine has several veins which occur near the middle of a lentil of quartz monzonite 1 mile wide that occupies the basin like head of the valley on the east and the mountains to the northwest. The intrusive is a fine grained granitoid rock composed of orthoclase and andesine labradorite in about equal amounts with quartz, biotite, hornblende, a little magnetite, and secondary chlorite, hematite, and epidote.

DATA

The current data package contains approximately 125 samples with assays, field notes in some cases, and maps showing the location of the samples. There is a map showing the location of the two drill holes drilled by Rio Algom with the logs and assays. The data follows this section.

SOLDIER BASIN DATA

Location	Sample Number	PPM AU	PPM CU	PPM MO	PPM PB	PPM ZN	PPM AG
PAT	296	0.129	168		3.70%	2900	137
Claims	297	0.002	15		68	7	0.7
	298	0.003	178		31	32	0.6
	299	0.001	250		108	68	2.1
	300	0.002	47		26	22	0.9
	301	0.005	59		36	71	0.9
	302	<.001	40		12	37	<.2
	303	0.002	117		28	35	<.2
	304	0.003	50		41	28	0.3
	305	0.002	30		40	17	<.2
	306	0.004	60		73	47	0.5
	307	<.001	86		31	100	<.2
	308	0.001	75		9	53	<.2
	309	<.001	38		15	23	<.2
	310	<.001	107		11	46	<.2
	311	0.096	55		80	55	1.3
Thunder	166	0.005	470		33	47	<.2
Mine	167	0.003	810		30	230	<.2
	168	<.001	2400		11	51	<.2
	169	<.001	860		4	17	<.2
V	200	<.001	30		75	13	0.4
Claims	201	0.209	78		2000	77	10.2
	202	0.055	28		330	64	1.8
	203	<.001	33		30	81	0.5
	204	<.001	49		210	280	1.2
	205	<.001	92		19	13	0.8
V	9941	0.09	11	29	38	25	2.4
Claims	9942	0.015	9	23	45	21	<.2
	9943	0.026	3	13	63	42	<.2
	9944	0.051	8	37	43	17	<.2
	9945	0.033	13	86	65	33	0.4
	9946	0.009	5	7	30	18	0.6
	9947	0.084	15	110	68	50	2.1
	9948	0.092	4	7	15	26	<.2
	9949	0.155	6	100	40	28	0.5
	9950	0.025	4	39	39	29	<.2
	9951	5.96	2	39	11	17	0.2
	9952	2.19	29	7	65	14	3.4
	9953	0.154	25	101	173	7	5.5
PAT	9954	3.61	173	39	3400	124	55.6
Claims	9955	18.6	800	7	4200	57	100.7
	9956	0.442	3100	1	1.41%	1.01%	105.2
	9957	0.429	7100	2	1220	2700	85.3
	9958	5.87	540	1	1180	177	32.8
	9959	2.12	124	4	8080	3100	13.4
	9960	1.86	8950	4	3150	2020	74.6
	9961	0.307	5700	1	152	290	28.8
	9962	2.01	4400	4	2300	1320	59.4
	9963	1.24	2100	12	1370	320	51.9
	9964	0.049	168	95	280	37	3.8

SOLDIER BASIN DATA

Location	Sample Number	PPM AU	PPM CU	PPM MO	PPM PB	PPM ZN	PPM AG
	9965	0.018	14	17	131	9	3.1
	9966	0.025	127	1100	146	71	1.2
PAT	9971	0.013	52	6	208	13	1.9
Claims	9972	0.008	66	130	139	11	2.8
	9973	2.14	60	1	370	9	7.1
	9974	0.839	101	1	2030	7	6.6
	9975	0.021	90	5	160	19	<.2
	9976	0.014	67	1	30	9	<.2
	9977	0.017	230	57	18	29	<.2
	9978	0.005	12	35	95	13	<.2
	9979	0.012	19	3	70	28	<.2
	9980	0.099	172	93	42	19	0.9
	9981	0.01	180	1	49	18	<.2
	9982	0.004	54	10	450	14	1.5
	9983	0.013	56	1	390	14	0.5
	9984	0.019	63	31	1980	13	1.6
	9985	0.015	5	35	91	6	<.2
	9986	0.032	82	200	1000	30	8.8
	9987	0.012	31	1100	260	44	0.2
	9988	0.018	7	4	21	12	<.2
	9989	0.012	82	18	44	12	<.2
	9990	0.015	21	1	12	10	<.2
	9991	0.012	28	6	20	7	<.2
	9992	0.018	53	7	10	13	<.2
	9993	0.014	54	8	84	12	1
	9994	0.021	79	5	60	12	0.3
	9995	0.138	42	5	2000	16	6.7
	9996	0.01	36	12	2100	12	1
	9997	1.53	96	1	5.50%	24	37.8
	9998	0.689	1410	160	2900	135	28.4
	9999	0.031	162	5	910	31	3.5
PAT	10016	0.009	58	110	240	15	1.8
Claims	10017	0.006	26	11	44	8	<.2
	10018	0.007	39	9	20	8	0.3
	10019	0.006	34	1	16	24	<.2
	10020	0.004	70	1	61	33	<.2
	PAT 1	0.003					<.2
	PAT 2	<.001					<.2
	PAT 3	<.001					<.2
	PAT 4	<.001					<.2
	PAT 5	<.001					<.2
	PAT 6	0.011					0.6
	PAT 7	0.009					<.2
	PAT 8	<.001					<.2
	PAT 9	<.001					0.2
	PAT 10	<.001					2.1
	PAT 11	0.002					<.2
	PAT 12	<.001					<.2
	PAT 13	<.001					<.2
	PAT 14	0.002					1.4

SOLDIER BASIN DATA

Location Sample Number	PPM AU	PPM CU	PPM MO	PPM PB	PPM ZN	PPM AG
PAT 15	0.005					<.2
PAT 16	0.001					0.3
PAT 17	<.001					<.2
PAT 18	<.001					<.2
PAT 19	<.001					0.8
PAT 20	0.002					0.4
PAT 21	<.001					1.1
PAT 22	0.012					0.6
PAT 23	<.001					0.3
PAT 24	0.003					<.2
PAT 25	<.001					<.2
PAT 26	0.078					1.3
PAT 27	0.029					<.2
PAT 28	<.001					<.2
PAT 29	<.001					<.2
PAT 30	<.001					<.2
PAT 31	<.001					<.2
PAT 32	<.001					<.2
PAT 33	<.001					<.2
PAT 34	0.749					13.4
PAT 35	0.001					<.2
PAT 36	0.006					0.7
PAT 37	<.001					<.2

12-10

Sampled 9936- in the Pajarito Mtns west of Nogales

9936	highly sil vole w/ fcox + Pb, Zn	shaft dump	
9937	" " " congl w/ Pb + Zn-Sz	adit wall 10'	
9938	qtz veined " w/ fcox vuggy	pit dump	
9939	" " vole w/ " + cuox	adit "	
9940	bx vuggy sil rhy w/ druzy qtz	float	
9941	" " " " w/ " "	outcrop	
9942	" " " " w/ " "	"	Soldier Basin
9943	" " " " w/ " "	"	Pat. Cl.
9944	" " " " w/ " "	"	
9945	" " " " w/ " "	"	
9946	bx zone w/ vol frags, fcox + druz	pit wall	
9947	" " w/ " " " + "	" dump	
9948	bx vuggy vole w/ fcox + qtz xtals	outcrop	
9949	" " " w/ " + qtz vning	"	
9950	" " " w/ " + " "	"	1
9951	" " " w/ " + " "	"	

12-11

Sampled 9952-9959 in the Patagonia Mtns.

9952	arg + sericitized granite w/ Sz	outcrop

9953 vuggy banded qtz vning w/fcox float
9954 " " " + gossan shaft dump
9955 " " " w/abun S_2 " "
9956 " " " w/ " " " "
9957 " " " w/ " " " "
9958 " qtz vning w/ " " " "
9959 frac + " vned granite w/S_2 " "

12-12

Located RH #14-16, 19-21 on Red Hill bx pipe. Located PAT 94-101, 73, 75, 77, 79 (54-57) in Soldier Basin. Sampled 9960-66. ✓ JTJ #2 TL Sheehan 4-1-89

9960 banded qtz + S_2 in arg + sil gr. adit dump
9961 " " + " " " + " " shaft "
9962 " " + " " " + " " " "
9963 " " + " + bx gr w/fcox " "
9964 qtz-ser gr bx w/fcox + gossan outcrop
9965 " " " " w/ " + " "
9966 " " S_2 " after granite adit dump

12-13

JFP + I visited S. Wick area + sampled 9967-

vmap
113 | 102
112 | 196

9967	highly sil vuggy chalcedonic volc w/fcox	shaft dump
9968	bx vuggy sil + arg volc w/fcox	outcrop
9969	" " sil volc w/fault slicks	"
9970	" " qtz-ca fault zone w/fcox	pit dump

12-15

— Sampled 9971 - in the Patagonia Range.

9971	vuggy sil + arg bx zone w/fcox	adit wall
9972	" " + " " " w/qtz	outcrop
9973	" qtz vein + sil gr w/fcox	pit dump
9974	" bx qtz + gr w/fcox + Sz	shaft dump
9975	highly sil bx vuggy volc w/Sz	outcrop
9976	" " " " " w/fcox	"

12-15

— Prospected PHT claims + Vic. sampled 9977 -

9977	qtz tourmaline bx pipe in granite	outcrop
9978	sil + seric vuggy bx w/fcox	"
9979	" + " " " w/ " + tour.	"
9980	" + " frac granite w/Sz	"
9981	" + " vuggy bx w/fcox + tour.	"

9982	sil + ser vuggy bx w/ feox + S_2	outcrop
9983	" + " " " w/ qtz + mod S_2	"
9984	" + " " " w/ feox + tour	"
9985	" + " " " w/ " + qtz	pit wall
9986	" + " " " w/ " + S_2	float
9987	" + " S_2 rich int. w/ stockworks qtz mos.?	"
9988	" + " vuggy bx w/ feox	"
9989	tourmaline rich gouge zone w/ qtz	pit wall
9990	sil + ser vuggy bx w/ feox? + qtz	outcrop
9991	" + " " " w/ druzy qtz	"
9992	" + " " " w/ qtz veins	" fault?
9993	S_2 rich vuggy sil + ser bx	float
9994	" " " " + " " w/ qtz	adit dump
9995	bx w/ qtz + sil gn, feox + qtz feox veins	outcrop
9996	sil + ser vuggy bx w/ qtz veins + feox	"
9997	" + " " " w/ MoS_2? veins	float
9998	" + " " " w/ tour + feox	outcrop
9999	" + " " " w/ feox + qtz	shaft dump

12-16

--- located EC 45-48 + 69-72.

Sampled 10000 -

10000	sil + arg vuggy bx w/ qtz + feox veins	roadcut
10001	" + " " " w/ " + " "	outcrop

F[illegible] igonia Range – Santa Cruz Co.

SOLDIER BASIN AREA

Jan 22, 1990 Pat claims 1/4

Santa Cruz Co, Ariz

Some clouds, 50°F

Claims 111, 110:

Country Rock – lt gry, equigranular fg, biotite granite

Altered fH – orge-reddish, wk sericite, relict py, wk argillization, lim, loc "sanding",
– some vugs, loc it/wide vuggy qtz veins

(Biotite altered)

~~fH~~ ~~four~~ ~~ser~~ ~~dk~~ ~~sil~~ ~~vugs~~ ~~stwk~~ ~~lim~~ ~~hem~~ ~~gos~~ stwk ✓

PAT-1 float – altered granite fH described above.

(Ti) Tertiary intrusive – vfg gry-beige, biotite dacite(?).
– loc qtz veined, w/ lim.
– some biot → chl.

PAT-2 outcrop – alt gr, lim, arg, ser, some vugs; lim on fracs.

-3 " – "lim sponge" (sanded) granite, also argillized & ser.

-4 " – white vuggy qtz (1"-2"), lim, ser, arg granite

-5 " – lesser stwk, some silica flooding along fracs, abd lim or hem.

-6 " – orange, lim, arg. Select narrow vu qtz (sx).

-7 " – bxa – steel gry silicif, sanded matrix, vuggy, arg-sil frags – vuggy.

-8 " – bxa, dk matrix, lt. gry frags. Lim-poor here; ser, arg.

-9 " – lt gry, rhy intrusive?? – orge-red lim, dk veinlets, vuggy

-10 " – lt gry – silicif, lim.

PAT cl. 2/4

Jan 23 '90

(Red Hills Mining Dist) Cloudy, 55°F, Rain last night

PAT-11 outcrop, tourmaline impreg granite; vugs, d.q., lim.

-12 " , orange granite, vugs, d.q., lim, ser.

-13 " , tourmaline in vugs, alt granite (arg, sil).

-14 " , mixed arg-sil-ser-lim granite; poss bxa, vugs, some d.q.

(Bxa in places appears to be a weak gneissic texture)

9979 – bxa – matrix – vuggy, orge ser-sil frags – lt gry, ser, sil

PAT-15 outcrop – dk gry silic granite, hem weath. surf.

-16 " – orge, vuggy granite; ser-sil.-arg

-17 " – hem red, vuggy, sil (iron from mafics??)

-18 float – alt. granite w/ galena – qtz along frac

-19 outcrop, orge, ser-sil granite w/ qtz-veining

-20 " , vuggy bxa (look like solution cavities), tourmaline

-21 outcrop, vugs, bxa, lim – granite

-22 " , orge bxa, vug localized in-part by vuggy qtz fracturing

-23 " , vugs, wk bxa, lim, skarved

-24 " , well frac – developed into bxa, vugs

-25 " , hem gr bxa, vugs, lim.

Pat claims 3/4

Clear, Warm 65°F

Jan 24'90

PAT-26 Outcrop gos vuggy qtz vnt 1"-3' (hi-grade)

-27 pit wall? - 10' oxidized shear (10' cliff) - town on fw side.

-28 outcrop, ser granite, (sill - lim), some vugs; wk boxa?

-29 float (from outcrop), boxa granite

-30 outcrop, boxa granite - appears to be along N50-60E fracs.

-31 outcrop - boxa granite

-32 float (from outcrop) - Hgry f.g. granite, ser, sil, sect microvnlts (lim).

-33 float, granite boxa boulders, ser (sill), scarded.

-34 roadcut, hi-grade, 1"-2" qtz (vuggy) vnlt, lim.

OLD CLAIMS: loc 1-15-87 W. G. McClurg
"Paloma #4 thru #79" 1060 Calle San Salvador
Sahuarita, Az 85629

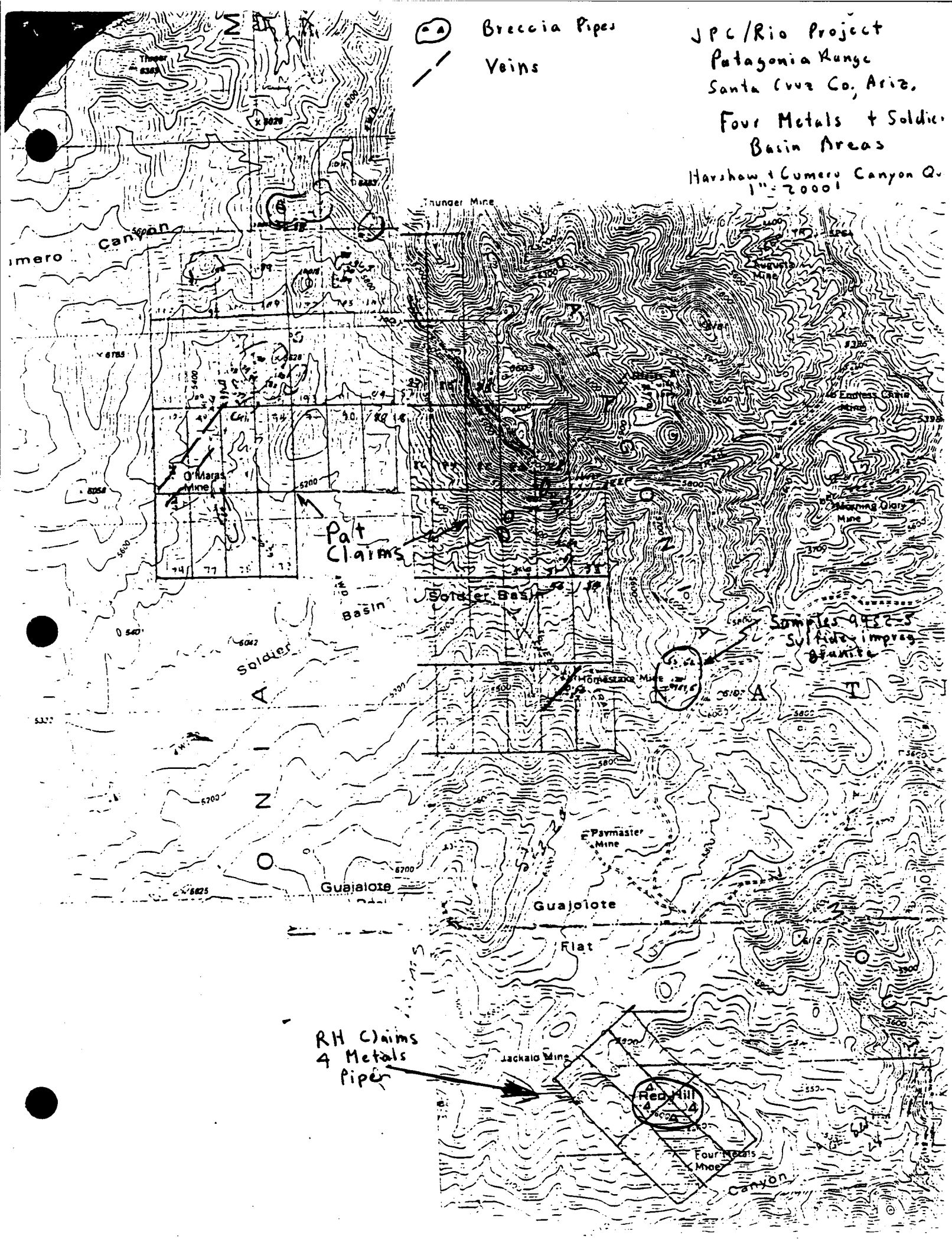
PAT-35 outcrop, random grab - tour. boxa - lt gry-beige granite along O'Mags structure.
Rep sample #9977.

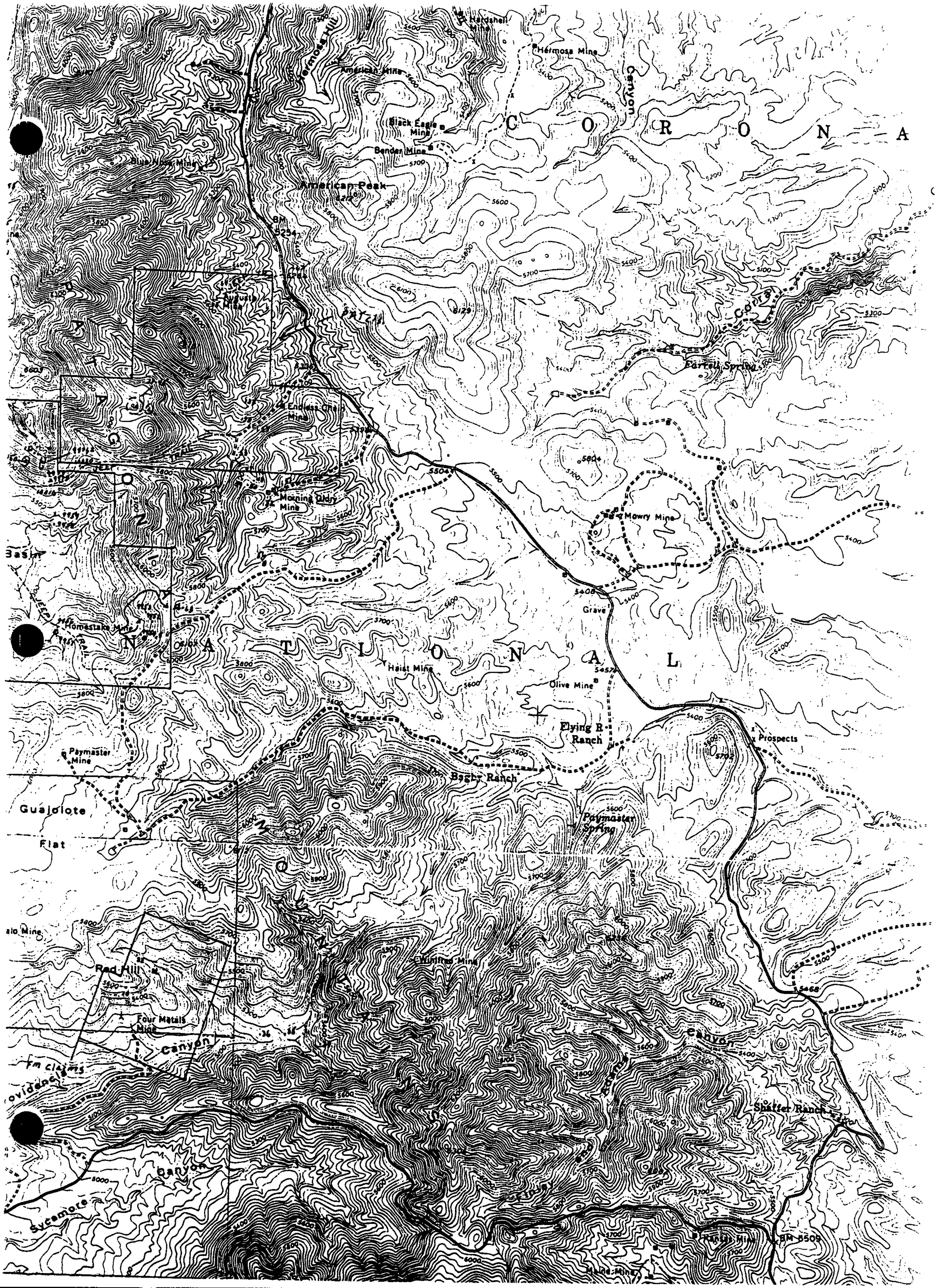
Pat claims 4/4

Jan 25'90

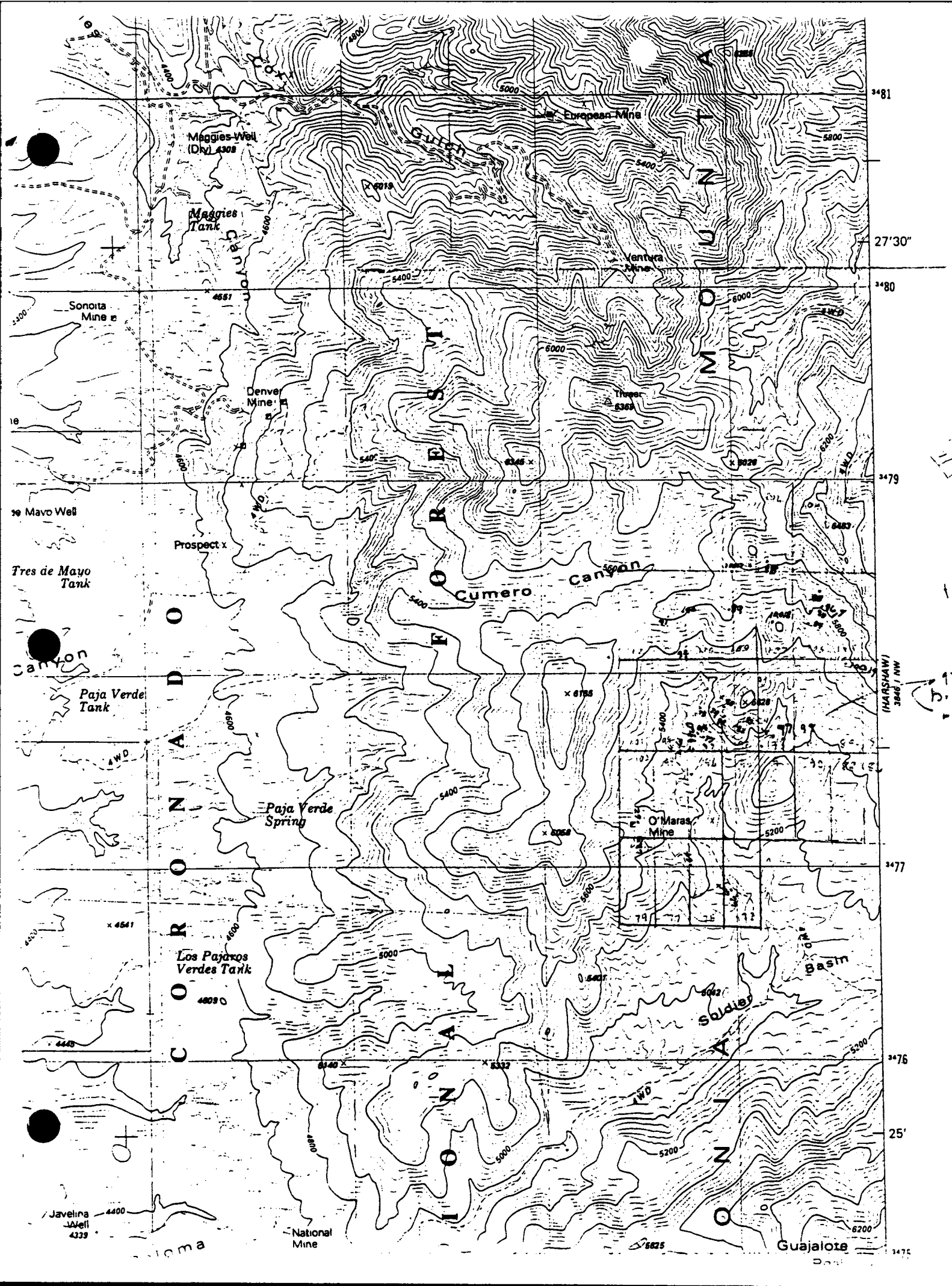
Clear, breezy, 50°F

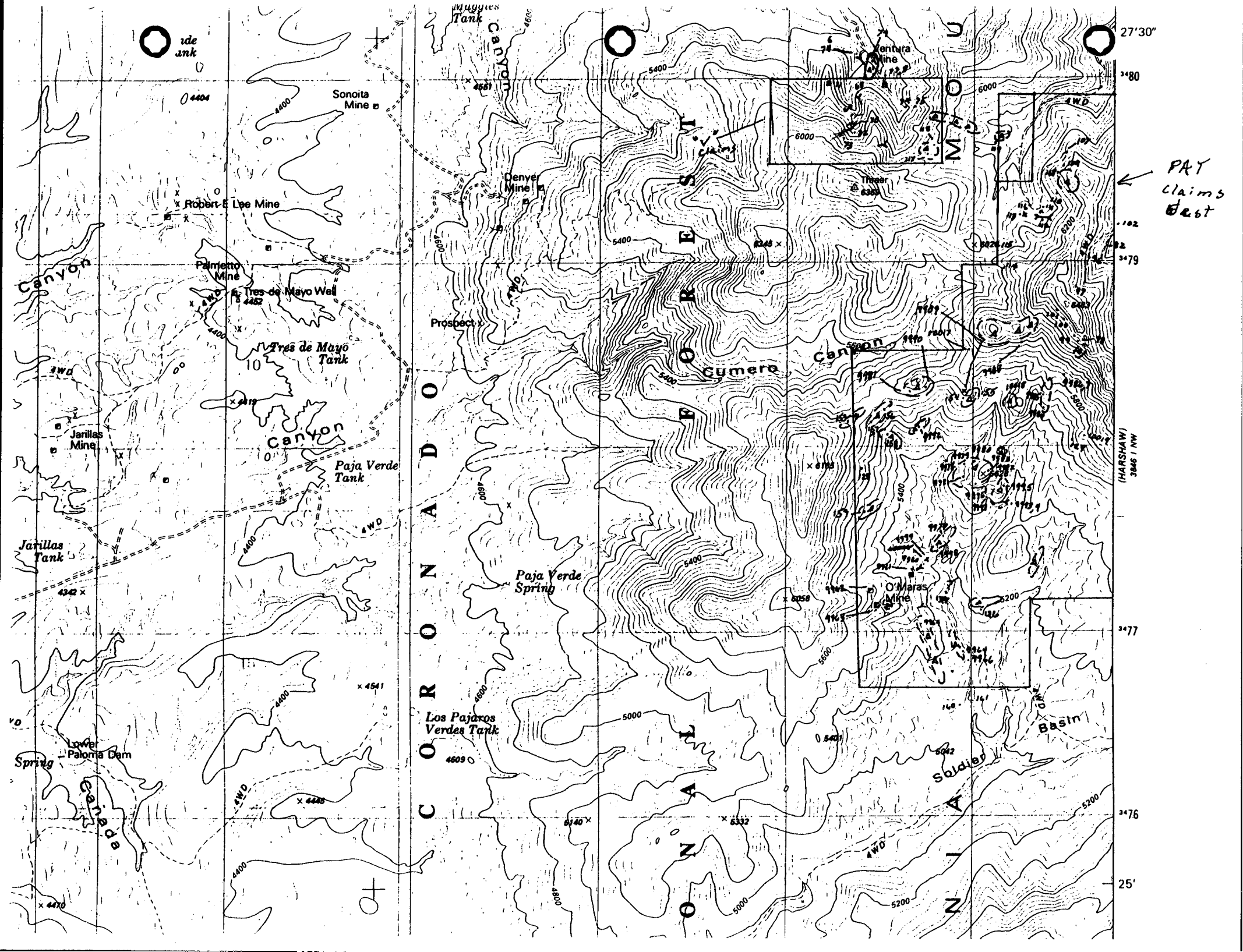
PAT-36 outcrop & float, hem stain gr, ser, sil, boxa w/ dk gy.

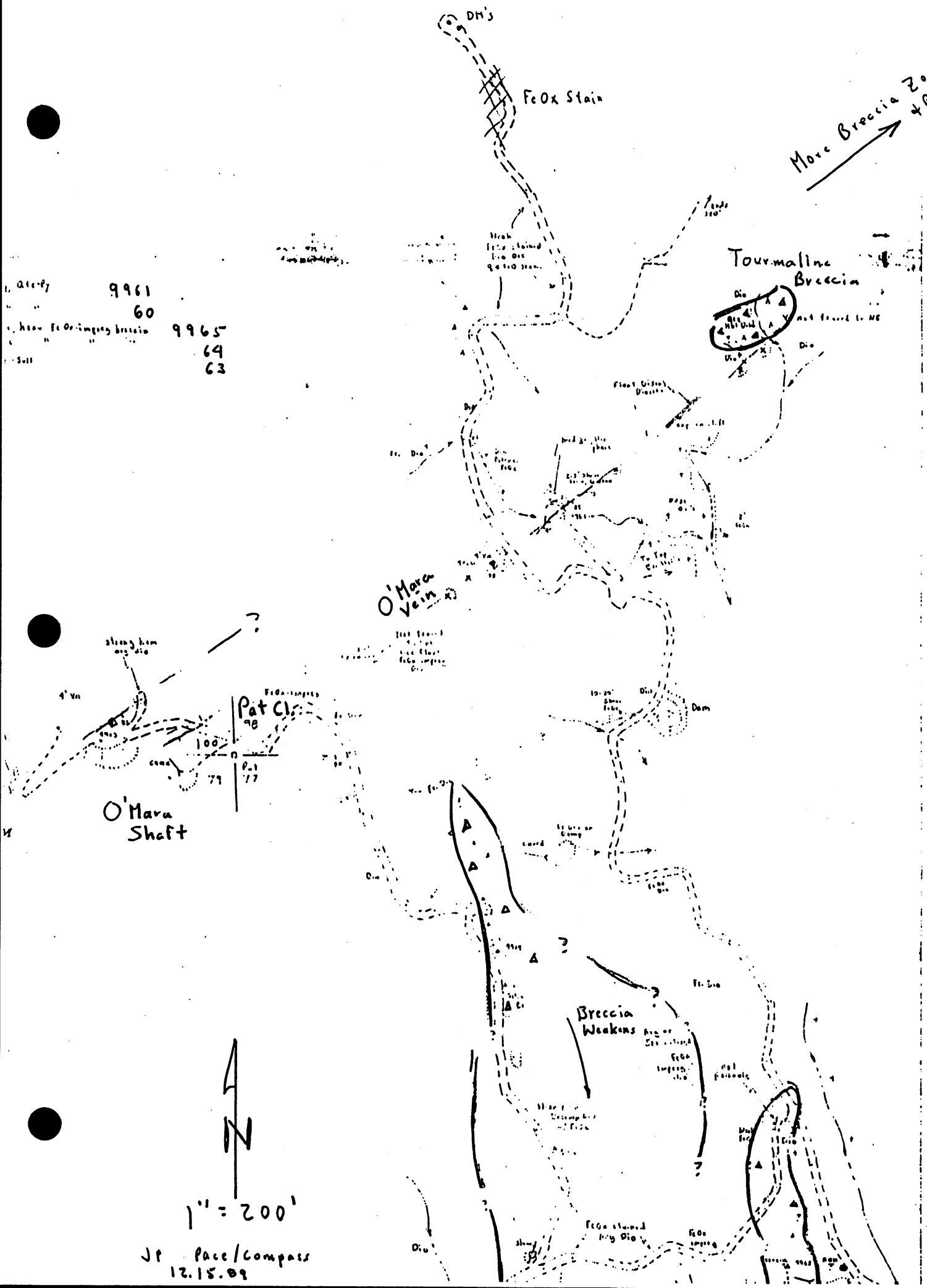

Breccia Pipes
Veins
JPC/Rio Project
Patagonia Range
Santa Cruz Co, Ariz.
Four Metals + Soldier Basin Areas
Harshaw + Cumero Canyon Qs
1" = 2000'
Thunder Mine
Canyon
O'Marias Mine
Pat Claims
Soldier Basin
Samples 9952-5
Sulfide-impreg Granite
Hermosa Mine
Paymaster Mine
Guajolote
Flat
RH Claims
4 Metals
Piper
Jackalo Mine
Red Hill
Four Metals Mine
Canyon



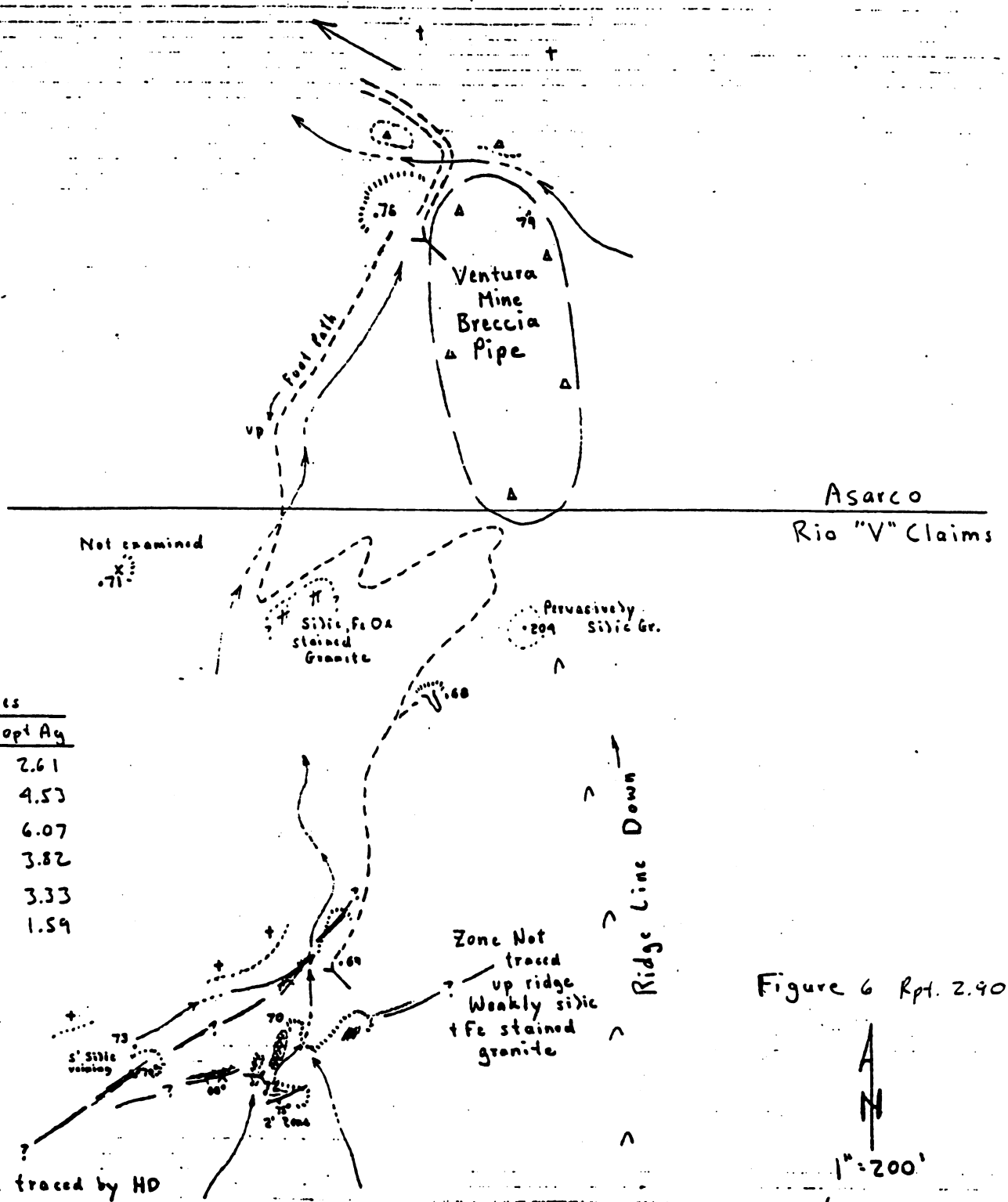
Hardshell Mine
Hermosa Mine
Hermosa Hill
American Mine
Canyon
Black Eagle Mine
Bender Mine
C O R O N A
Blue Nose Mine
American Peak
BM 5254
Augusta Mine
Parker Spring
Endless Chain Mine
Morning Glory Mine
Mowry Mine
Grave
Homestake Mine
N A T I O N A L
Hoist Mine
Olive Mine
Flying R Ranch
Prospects
Paymaster Mine
Bagby Ranch
Guajolote
Flat
Paymaster Spring
Winifred Mine
Red Hill
Four Metals Mine
Canyon
Canyon
Shaffer Ranch
Providencia
Sycamore
Canyon
BM 5509


Maggies Well (Dry) 4308
Maggies Tank
Sonoita Mine
Denver Mine
Mayo Well
Prospect
Tres de Mayo Tank
Paja Verde Tank
Paja Verde Spring
Los Pajaros Verdes Tank
Javelina Well 4339
National Mine
European Mine
Ventura Mine
Tower 6363
Cumero Canyon
O'Maras Mine
Soldier Basin
Guajalote
SIERRA DE LA CONCHA
SIERRA DE LOS CONEJOS
3481
3480
3479
3477
3476
3475
27'30"
25'


Sonoita Mine
Robert E Lee Mine
Palmetto Mine
Tres de Mayo Well
Tres de Mayo Tank
Prospect
Denyer Mine
Ventura Mine
Thrasher
Jarillas Mine
Jarillas Tank
Paja Verde Tank
Paja Verde Spring
Los Pajaros Verdes Tank
O'Maras Mine
Lower Paloma Dam
Spring
Canada
Soldier
Basin
CORONADO FOREST MONUMENT
27'30"
3480
3479
3477
3476
25'
PAT claims East



Qtz-fy 9961
" " 60
hem Fe Ox-impreg breccia 9965
" " 69
Sill 63



Anom. Samples

#	Opt Au	opt Ag
68	0.050	2.61
69	0.018	4.53
70	0.057	6.07
71	0.016	3.82
72	0.072	3.33
73	0.050	1.59

Figure 6 Rpt. 2.90

N

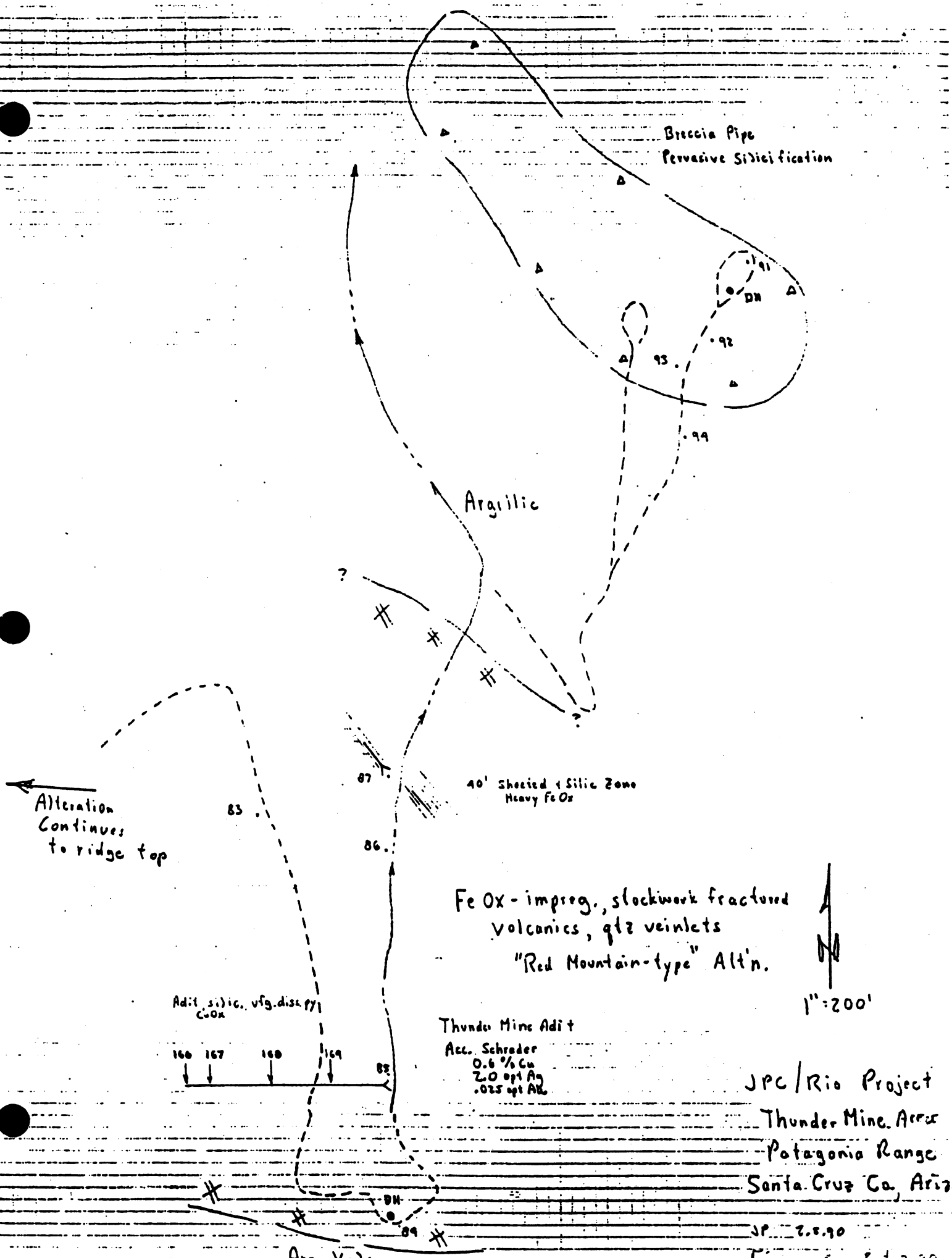
1"=200'

JPC/Rio Project

"V" Claims

Geologic Sketch

JP 2.19.90


Breccia Pipe
Pervasive Silicification
91
DH
92
93
99
Argillic
?
87
40' Sheeted + Silic Zone
Heavy Fe Ox
Alteration
Continues
to ridge top
83
86
Fe Ox - impreg., stockwork fractured
volcanics, qtz veinlets
"Red Mountain-type" Alt'n.
1" = 200'
Adit silic., vfg. disc. py
CuOx
160
167
168
169
82
Thunder Mine Adit
Acc. Schroder
0.6 % Cu
2.0 opt Ag
.025 opt Au
JPC/Rio Project
Thunder Mine Area
Potagonia Range
Santa Cruz Co, Ariz.
DH
89
Arg. Volc.
JP 2.5.90
Figure 5 Rpt 2.90

SOLDIER BASIN EXPLORATION

DRILL HOLE SB - 90 - 1

LOCATION:
Area _____
Coords. N. _____
E. _____

DATE:
Collared 12-16-90
Completed 12-16-90

LITHOLOGY
Granodiorite

ALTERATION
SILICIFICATION
CLAY

Total Depth 285'
Collar Elev. _____
Angle -45°
Bearing S73°W
Logged by GE

-10' sample intervals-

	LITH.	ALT.	% Lim/Hm T	% Lim/Hm M	% Lim/Hm A	% VEIN QUARTZ T	% VEIN QUARTZ M	% VEIN QUARTZ A	COLOR	% Pyrite W	% Pyrite M	% Pyrite S	W	M	S	COMMENTS	ppb Au	ppm Cu	Pb	Zn
05																start 8 AM overburden 0-15'	<	52		
10																10				
15																	5	65		
20	+ + +	(x)							orange-gry							20				
25	+ +																3	60		
30	+ +															30				
40	+ +	(x) ~							beige wrge gry							abd quartz (clear) (clayey) 40	42	71	75	107
45	+ + +	~														quartz absent	31	111	59	137
50	+ +	~														50	—	—		
55	+	x							med-gry		± 1%					-dence - more mafic rock (granodiorite?)	12	(104		
60	+ +	x														- siliceous w/ locally no-texture - diss, vfg pyrite 60				
65	+	x														as above	7	112		
70	+ +	x														70		—		
75	+ +															(py), biot. granodiorite	8	67		
80	+															80				
85	+ +															Hydraulics went out - stop 9 AM± Start 1 PM	4	71		
90	+															90				
95	+ +															50-100' slick whitish clay (<1%) present	4	57		
100	+															100				

SOLDIER BASIN EXPLORATION

DRILL HOLE SB - 90 - 1

LITHOLOGY

ALTERATION

LOCATION:
Area
Coords. N.
E.

DATE:
Collared
Completed

+ + + Granodiorite

Silicification

CLAY

Total Depth 285
Collar Elev.
Angle -45°
Bearing S73W
Logged by

	LITH.	ALT.	% Lim/Hm T	% Lim/Hm M	% Lim/Hm A	% T	% M	% A	COLOR	% Pyrite W	% Pyrite M	% Pyrite S	W	M	S	COMMENTS	ppb Au	ppm Cu	CHECK
105	+								lt gry		± 1%					rare mafics – fine grained intrusive	3	84	
	+ +															(aplite dike?) 110			
110	+								med gry							country rock	6	74	
15	+															120			
120	+										1-2%					- coarser py - abd coarser biotite	4	60	
25	+ +								lt-med gry							- aplite (lt gry material) 130			
130	+								med gy								3	74	
35	+ +															140			
140	+																5	106	
45	+ +															150			
150	+ +															tr – slick, whitish clay (<1%)	2	45	
55	+															160			
160	+															py decrease	1	50	
65	+ +															170			
170	+																<	61	
75	+															180			
180	+																<	59	
85	+ +															190			
190	+																3	56	
95	+ +															200			
200																			

SOLDIER
SASIN EXPLORATION

DRILL HOLE SB - 90 - 1

LOCATION:
Area _____
Coords. N. _____
E. _____

DATE:
Collared _____
Completed _____

LITHOLOGY
Granodiorite
Quartzite
Felsic intrusive

ALTERATION
SILICIFICATION
CLAY

Total Depth 285'
Collar Elev. _____
Angle -45°
Bearing S73W
Logged by _____

Page 3 of 3

	LITH.	ALT.	% Lim/Hm T	% Lim/Hm M	% Lim/Hm A	% T	% M	% A	COLOR	% Pyrite W	% Pyrite M	% Pyrite S	W	M	S	COMMENTS	ppb Au	ppm Cu	CHECK
205	+								med gry							(Rain stopped) Hole making water from structure @	4	61	
	+								↓							30'; water starting to catch up during redrillings 210			
210	+								lt-med gry							lt gry = aplite ? (can't tell)	6	63	
15	+															220			
220	+								lt gry							hint of pink color = K-spars	6	65	
25	+								(pink phenos)							230			
230	+								lt gry							cloudy whitish rock - resembles a quartzite (?)	<	52	
	+								(beige)							240			
240	+								lt gry							wet samples intrusive (with brown biotite) rock -	<	51	
45	+								beige							qtz-rich. 250			
250	+								lt gry								3	39	
55	+															260			
260	+								lt gry med gry								5	77	
65	+															biot gel 270			
270	+								lt gry		py 1½%					brown biot flakes present	<	50	
75	+															280			
280	+								gry							Hammer plugged up - decided not to fight it --- tripped out 285	<	76	
285																TD = 285' 4:20 PM			
290																			
95																			
300																			

SOLDIER BASIN EXPLORATION

DRILL HOLE SB - 90 - 2

LITHOLOGY

ALTERATION

LOCATION:
Area
Coords. N.
E.

DATE:
Collared 12-16-90
Completed 12-17-90

+ + + Granodiorite

XxX SILICIFICATION

~ CLAY

— 10' SAMPLE INTERVALS —

Total Depth 275'
Collar Elev.
Angle -90°
Bearing
Logged by GE

Page 1 of 3

	LITH.	ALT.	% Limonite/Hm T	% Limonite/Hm M	% Limonite/Hm A	% Vein Qtz T	% Vein Qtz M	% Vein Qtz A	COLOR	% pyrite W	% pyrite M	% pyrite S	W	M	S	COMMENTS start 5 PM	ppb Au	ppm Cu	Pb ppm	Zn ppm
05																0-15' overburden	8	65		
10																10				
15																stop 5'15 PM	6	70		
20									orange maroon gry							12-17-90 start 7 50 AM - set 5" casing 20				
25		x							H gry orange		±1%					• possibly additional sulfides • some silicification	10	89	95	93
30		x							whitish							30				
35																	4	97	112	118
40																40				
45									H-med gry							Pg, biot granodiorite	<	70		
50																50				
55																K-spar present; Qtz-monzonitic	<	84		
60																60				
65																	3	85		
70																70				
75																	2	66		
80																80				
85																	2	67		
90																90				
95																	5	67		
100																100				

SOLDIER BASIN EXPLORATION

DRILL HOLE SB - 90 - 2

LOCATION:
Area
Coords. N.
E.

DATE:
Collared
Completed

LITHOLOGY
Granodiorite

ALTERATION
SILICIFICATION
CLAY
chl chlorite

Total Depth 275'
Collar Elev.
Angle -90°
Bearing
Logged by

Page 2 of 3

	LITH.	ALT.	% Limm/Hm T	M	A	% Vein Quartz T	M	A	COLOR	% Pyrite W	M	S	W	M	S	COMMENTS	ppb Au	ppm Cu	ppm Pb	Zn
05	+ +								H-med gry		±1%					Compositionally - qtz monzonite	2	57		
	+															110				
110	+								med gry							py decrease	<	64		
15	+															abd blk biot.				
	+															120				
120	+ +															abd pink K-spar	<	63		
25	+															130				
130	+																3	81		
	+															140				
140	+ +																1	57		
45	+															150				
150	+ +																3	106		
55	+															160				
160	+																<	73		
65	+ +															170				
170	+ +								↓ H to med gry								8	68		
75	+															180				
180	+	(chl)									±3%					Quartz-py veins. tr greenish alteration	12	1100	83	144
85		QTZ-PY														190				
190	+	(chl)															10	220	320	230
95	+															200				
200																				

SOLDIER BASIN EXPLORATION — DRILL HOLE SB-90-2

LOCATION: Area ____ Coords. N. ____ E. ____

DATE: Collared ____ Completed ____

LITHOLOGY: Granodiorite; Felsic dike(?)

ALTERATION: SILICIFICATION; CLAY

Total Depth 275' | Collar Elev. ____ | Angle -90° | Bearing ____ | Logged by ____

Page 3 of 3

	LITH.	ALT.	% Lim/Hm T	M	A	% Qtz vein T	M	A	COLOR	% PYRITE W	M	S	SULFIDES W	M	S	COMMENTS	ppb Au	ppm Cu	ppm Pb	ppm Zn
205	+	(chl)	(trace)						med gry		±1%					Hole is wet (qtz vein → trace oxidation)	6	117	104	720
210	Qtz vein - py															210				
	+		(tr)						dk gry						about	Hole making water (uphole) - ¼ gal/min.	6		73	260
215	+																			
220	+															220 - drillerable to blow hole dry				
	+	Qtz-py	(tr)													Mave mafic	4	62		
225	+	vein																		
230	+	qtz-py (chl) veinlet														230	2	48		
	+																			
240	+															240	5	80		
245	+																			
250	◇								↓							250				
	◇								lt gry whitish				MoS_2 ? Ag_2S ?			• qtz vein or felsic rock (dike?) -	<	54	86	153
255	◇												(<1%)							
260	◇															260				
	◇																9	64	114	174
265	◇																			
270	◇								↓							270				
	+								med - dk gry							hammer plugged up again; tried to free-up. Tripped out.	4	87		
275	TD= 275'															275' stopped about 12:15				
280																280				
285																				
290																				
295																				
300																				

CONE GEOCHEMICAL INC.
10 Quail Street, Suite 1
Lakewood, Colorado 80215
(303) 232-8371

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Job 90-2498
7-Jan-91
Page 1

EXPLORATION INC.

ANALYTICAL REPORT

George J. Eliopulos
Rio Algom Exploration
245 E. Liberty, #200
Reno, NV 89501

PO #
PROJECT
PAT

SAMPLE NUMBER		PPM AU	PPM CU	PPM MO	PPM AG
SB-90-1	0- 10	<.001	52		
SB-90-1	10- 20	0.005	65		
SB-90-1	20- 30	0.003	60		
SB-90-1	30- 40	0.042	71		
SB-90-1	40- 50	0.031	111		
SB-90-1	50- 60	0.012	104		
SB-90-1	60- 70	0.007	112		
SB-90-1	70- 80	0.008	67		
SB-90-1	80- 90	0.004	71		
SB-90-1	90-100	0.004	57		
SB-90-1	100-110	0.003	84		
SB-90-1	110-120	0.006	74		
SB-90-1	120-130	0.004	60		
SB-90-1	130-140	0.003	74		
SB-90-1	140-150	0.005	106		
SB-90-1	150-160	0.002	45		
SB-90-1	160-170	0.001	50		
SB-90-1	170-180	<.001	61		
SB-90-1	180-190	<.001	59		
SB-90-1	190-200	0.003	56		
SB-90-1	200-210	0.004	61		
SB-90-1	210-220	0.006	63		
SB-90-1	220-230	0.006	65		
SB-90-1	230-240	<.001	52	7	<.2
SB-90-1	240-250	<.001	51	23	<.2
SB-90-1	250-260	0.003	39	13	<.2
SB-90-1	260-270	0.005	77	12	<.2
SB-90-1	270-280	<.001	50	8	<.2
SB-90-1	280-285	<.001	76	5	<.2
SB-90-2	0- 10	0.008	65		
SB-90-2	10- 20	0.006	70		
SB-90-2	20- 30	0.010	89		
SB-90-2	30- 40	0.004	97		
SB-90-2	40- 50	<.001	70		
SB-90-2	50- 60	<.001	84		

METHOD	A.A.	A.A.	A.A.	AA/BC
DIGESTION	FA/20G	4Acid	4Acid	4Acid

CONE GEOCHEMICAL INC.
810 Quail Street, Suite I
Lakewood, Colorado 80215
(303) 232-8371

ANALYTICAL REPORT

George J. Eliopulos
Rio Algom Exploration
245 E. Liberty, #200
Reno, NV 89501

PO #
PROJECT
PAT

SAMPLE NUMBER	PPM AU	PPM CU	PPM MO	PPM AG
SB-90-2 60- 70	0.003	85		
SB-90-2 70- 80	0.002	66		
SB-90-2 80- 90	0.002	67		
SB-90-2 90-100	0.005	67		
SB-90-2 100-110	0.002	57		
SB-90-2 110-120	<.001	64		
SB-90-2 120-130	<.001	63		
SB-90-2 130-140	0.003	81		
SB-90-2 140-150	0.001	57		
SB-90-2 150-160	0.003	106		
SB-90-2 160-170	<.001	73		
SB-90-2 170-180	0.008	68		
SB-90-2 180-190	0.012	1100		
SB-90-2 190-200	0.010	220		
SB-90-2 200-210	0.006	117		
210-220	.006			
SB-90-2 220-230	0.004	62		
SB-90-2 230-240	0.002	48		
SB-90-2 240-250	0.005	80		
SB-90-2 250-260	<.001	54	7	<.2
SB-90-2 260-270	0.009	64	10	<.2
SB-90-2 270-275	0.004	87	11	<.2
PAT-90	0.025 ✓	59		
PAT-91	0.014 ✓	27		
PAT-92	0.250 ✓	380		

METHOD	A.A.	A.A.	A.A.	AA/BC
DIGESTION	FA/20G	4Acid	4Acid	4Acid
PRECISION	7%	5%	8%	5%

CONE GEOCHEMICAL INC.
110 Quail Street, Suite I
Lakewood, Colorado 80215
(303) 232-8371

Job 91-0026
15-Jan-91

ANALYTICAL REPORT

George J. Eliopulos
Rio Algom Exploration
245 E. Liberty, #200
Reno, NV 89501

PO #
PROJECT
PAT

SAMPLE NUMBER	PPM PB	PPM ZN
SB-90-1 30- 40'	75	107
SB-90-1 40- 50'	59	117
SB-90-2 20- 30'	95	93
SB-90-2 30- 40'	112	118
SB-90-2 180-190'	83	144
SB-90-2 190-200'	320	1230
SB-90-2 200-210'	104	720
SB-90-2 210-220'	73	260
SB-90-2 250-260	86	153
SB-90-2 260-270	114	174
METHOD	A.A.	A.A.
DIGESTION	4Acid	4Acid