CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
1520 West Adams St.
Phoenix, AZ 85007
602-771-1601
http://www.azgs.az.gov
inquiries@azgs.az.gov

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Arizona Department of Mines and Mineral Resources Mining Collection

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08/24/92

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: SHEEP MOUNTAIN PROPERTY

ALTERNATE NAMES:
CASTLE COPPER

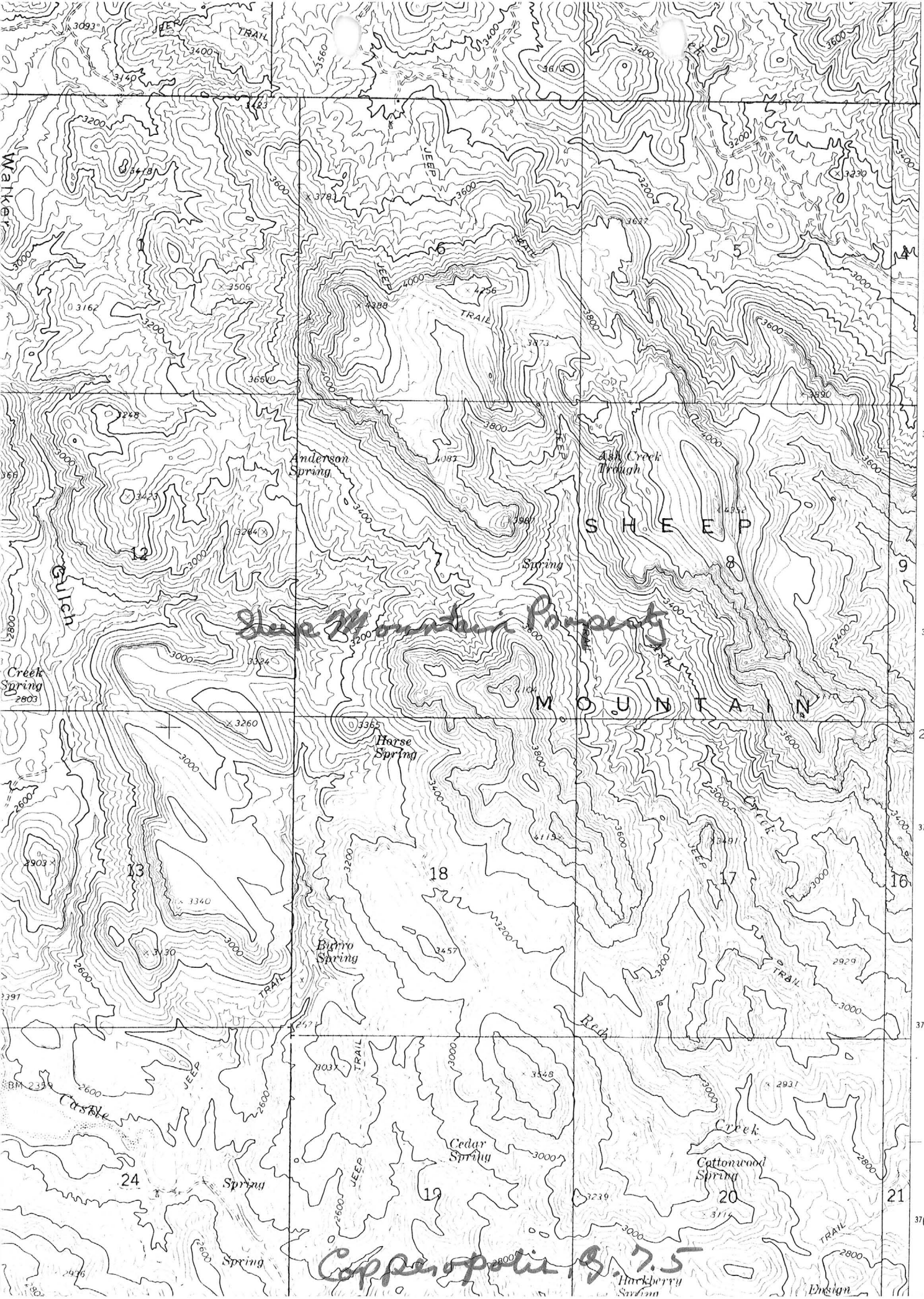
YAVAPAI COUNTY MILS NUMBER: 947

LOCATION: TOWNSHIP 8 N RANGE 1 W SECTION 15 QUARTER NE
LATITUDE: N 34DEG 02MIN 15SEC LONGITUDE: W 112DEG 20MIN 45SEC
TOPO MAP NAME: COLUMBIA - 7.5 MIN

CURRENT STATUS: EXP PROSPECT

COMMODITY:
COPPER

BIBLIOGRAPHY:
USGS COPPEROPOLIS QUAD
BLM AMC FILE 43042
CLAIMS EXTEND INTO SEC. 10,14,17,18,20,21,22,
AND 23. WEST PORTION EXTENDS TO S. 13 R2W
ADMMR SHEEP MOUNTAIN PROPERTY FILE
ADMMR MAPS - UPSTAIRS ROLLED BOX (PHX OFFICE)


Walker
Anderson Spring
Ash Creek Trough
SHEEP
MOUNTAIN
Sheep Mountain Property
Gulch
Creek Spring
Horse Spring
Bigro Spring
Creek
Cedar Spring
Cottonwood Spring
Spring
Castle
Creek
Hackberry Spring
Ensign
JEEP TRAIL
TRAIL
JEEP
T. 9 N
T. 8 N
(COLUMBIA) 3552 III SE
2'30"
Copperopolis 15' 7.5

03/07/94

ARIZONA COPPER RESERVES

COMPILED BY

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

PROPERTY:

SHEEP MOUNTAIN

OPERATOR\OWNER:

Orcana Resources
121 Richmond St West Suite 405
Toronto, Ontario Canada M5H 2K1
416-364-2015

LOCATION INFORMATION:

TOWNSHIP 8 N RANGE 1 W SECTION 15
COUNTY - Yavapai AZMILS - 947
DESCRIPTION - 50 miles NW of Phoenix

ORE TYPE AND RESERVE INFORMATION:

Sulfide - 350 MILLION TONS AT 1.0% Cu (a)
Sulide - 39 MILLION TONS AT 1.27% Cu (b)

RESERVE INFO. - (b) With 0.044% Mo2S. Supergene mineralization only.

SOURCES:

(a) ADMMR Sheep Mountain Property file. (b) "Preliminary economic evaluation ..." by Watts, Griffis and McOuat, 1992.

COMMENTS:

Contact Raymond Mongeau, President.

06/15/92

ARIZONA COPPER RESERVES

COMPILED BY

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

PROPERTY:

SHEEP MOUNTAIN PROPERTY

OPERATOR\OWNER:

Orcana Resources (Frmly Ungava Iron Ores
121 Richmond St West Suite 405
Toronto, Ontario Canada M5H 2K1
416-364-2015

LOCATION INFORMATION:

TOWNSHIP 8 N RANGE 2 W SECTION 13
COUNTY - Yavapai AZMILS - 947
DESCRIPTION - 50 miles NW of Phoenix

ORE TYPE AND RESERVE INFORMATION:

Sulfide - 350 MILLION TONS AT 1.0% Cu (a)

SOURCES:

Smith, Ken P., former owner, based on drilling done by Utah International and Phelps Dodge, ADMMR Sheep Mountain Property file.

SHEEP MOUNTAIN PROPERTY YAVAPAI COUNTY

FPK Memo 12/18/61: Kenneth Smith, 120 S. Ext. Rd., Mesa, Arizona said that his group's Sheep Mountain Property was the one recently drilled by Phelps Dodge. They put down 48 holes to as much as 2200 feet deep and developed a large tonnage of low grade copper molybdenum ore.

FTJ WR 10/18/68: It is reported that Utah Construction and Mining Company had pulled out of Sheep Mountains Prospect near the Champie Ranch.

KAP WR 7/29/83: Ken Smith inquired about the use of drilling as assessment work. He reported he has the group of claims known as the Sheep Mountain Copper Property in the Castle Hot Springs area; that it is a copper-molybdenum property and that is has just been returned to him by Utah International after 16 years. The claims consist of the Toro 1-32 in all or parts of Sections 14, and 23 T8N R1W; and Vaca 1-12 in Sections 10 & 11, T8N R1W and the SMW 1-50 in Sections 7,11, 17 & 18 T8N R1W and Sections 12, 13, & 24, T8N R2W. (AMC 42977 thru AMC 43071). The BLM microfiche still lists Utah International, 550 California Street, San Francisco, California 94104 as the holder of the claims.

NJN WR 8/26/83: Ken P. Smith, 137 E. 2nd Ave., Mesa, AZ 85202, Phone 834-5029, called and reported that he and Ralph Davis own the Jackpot #1-16 and Mule #1-194 claims located in T8N R2W Sec. 12, 13, and T8N R1W Sec, 7, 8, 10, 14, 15, 17, 18, 20, 21, 22, 23, Yavapai County (Champe ranch or someone controls the surface but mineral rights are federal). These claims cover the Sheep Mountain Prospect which he reports is a copper porphry deposit containing 300-400 million tons of approximately 1% copper. Part of the deposit is nearly 2000' below the surface. Utah International has leased this property for 18 years but recently has dropped it. Mr. Smith is currently seeking another major to pick it up. Anyone interested should contact Mr. Smith as he has Utah International's drilling data on the property.

NJN WR 5/10/85: Ernest Ahrens of Noranda reported he visited Mr. Smith owner of the Sheep Mountain Property (f) Yavapai County. Mr. Ahrens did not get to copy Utah International data. Apparently, Mr. Smith is worried that proliferation of the data may lead to claim jumping. A review of the drill logs indicated 150 million tons with the top of the main ore body 1500' below the surface.

SHEEP M.P. HAYNARDS Co.

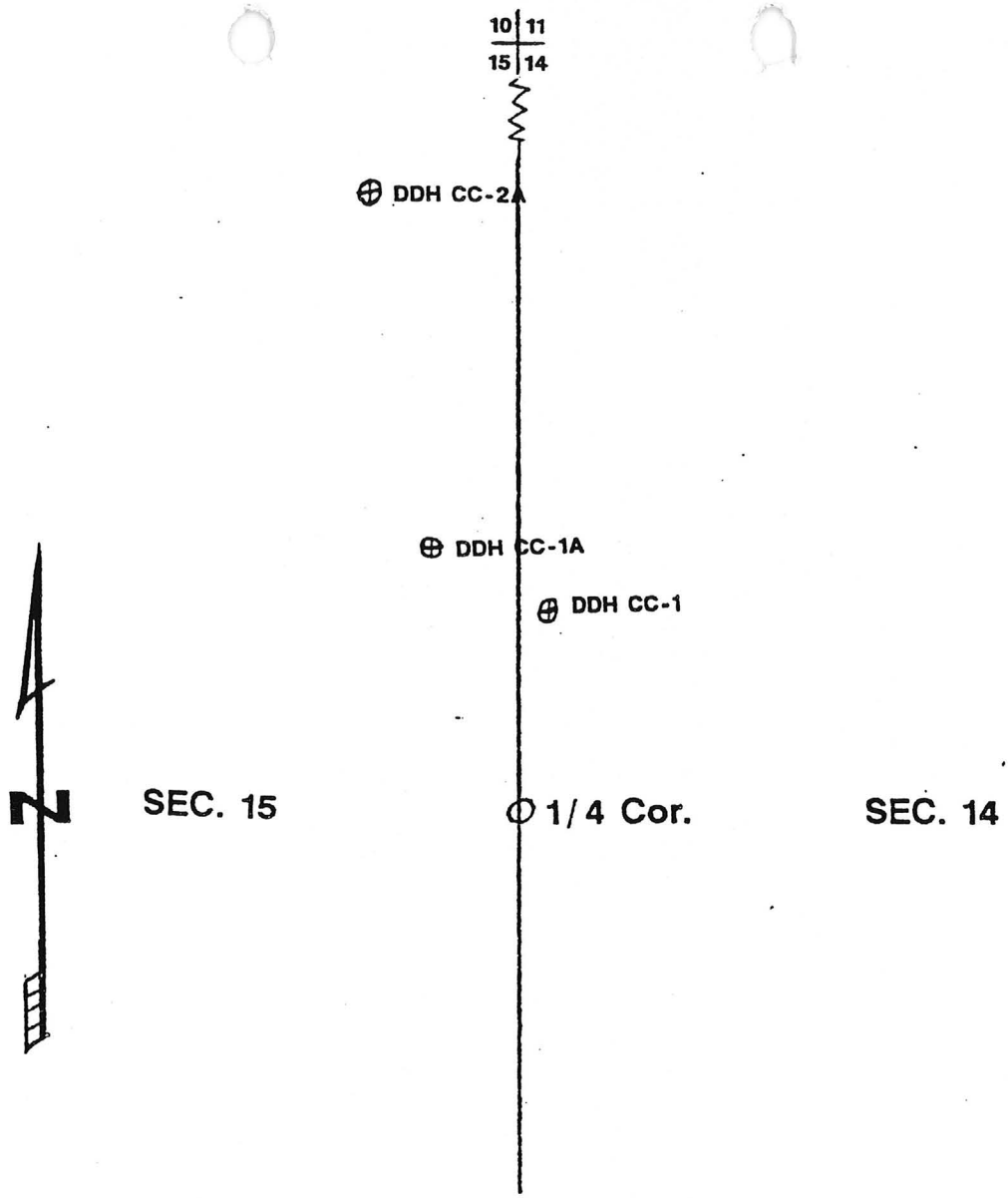
~ FEB. 95

Dear Nyal;

Thanks for your attention on the sheep & Squaw matter. The information has been very valuable. For your information, Jim Sullivan filed on half of the sheep property while I have obtained the other half. Jim filed on it for a Montreal(?) listed company named Lobex minerals. They are attempting to make a deal with me.

I'll probably drop in around the beginning of February.

Hank Ouen
DESERT PACIFIC EXPL



CASTLE COPPER COMPANY

DRILL HOLE LOCATIONS

situate in

Humbug Mining District
Secs. 14 & 15,
T.8 N., R.1 W., G.& S.R.M.

Yavapai County Arizona
Scale 1" = 300'

CORE FOR THESE HOLES IS AT THE ARIZONA GEOLOGICAL SURVEY IN TUCSON - NJN - 8-1995.

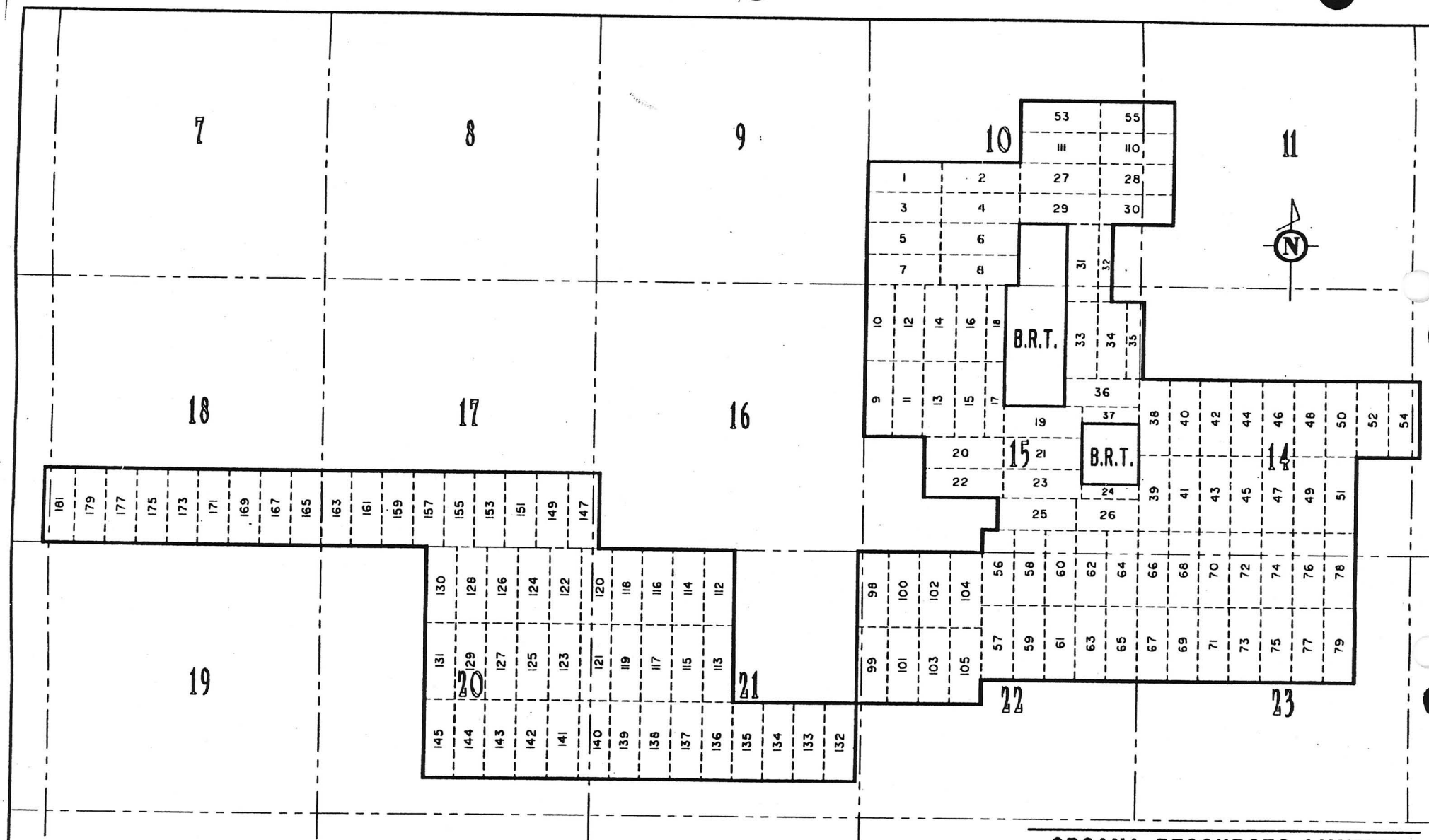
5. HISTORY

The original claims in the area were staked in the 1960s by two Arizona prospectors, Davis and Williams (see Bourne's report for additional detail and exploration results). During 1963 to 1966, **Phelps Dodge Corporation** (PD) explored the property. During this period PD drilled some 44,000 feet in rotary/core holes in an effort to delineate possible mineralization beneath a Tertiary volcanic cap overlying weakly mineralized Precambrian strata within the general area surrounding the Castle Copper property. Complete results of the drill program are not covered in Bourne's report, as his study and other studies commissioned by Orcana deal specifically with the supergene copper mineralization of the Castle property. WGM notes that three of the drill holes defining the mineral inventory of the Castle Copper supergene copper deposit were drilled by PD.

From 1966 to 1967 Bear Creek Mining Company, Kennecott's exploration subsidiary, leased the land and drilled 3,620 feet in two holes. Neither hole intersected ore grade mineralization and Bear Creek dropped the lease.

During the period 1968-1981, **Utah International Inc.** (Utah) entered into a lease agreement to explore the area. Utah conducted geological and geochemical surveys and drilled 21,241 feet in rotary/core holes before dropping the lease, prior to its merger with BHP Minerals. For the reasons noted above for the PD drill program, Bourne does not report detailed results of this exploration program. One of the drill holes used in Bourne's mineral inventory estimate was drilled by Utah. See Bourne's report for details on drill hole results and mineral inventory estimates.

Castle Copper Inc., a private Arizona company, acquired the ground by staking in June 1990.



ORCANA RESOURCES LIMITED

CASTLE COPPER PROPERTY

Tp.8 N., R1 W., HUMBUG MINING DIST.
YAVAPAI COUNTY, ARIZONA, U.S.A.

CLAIM MAP

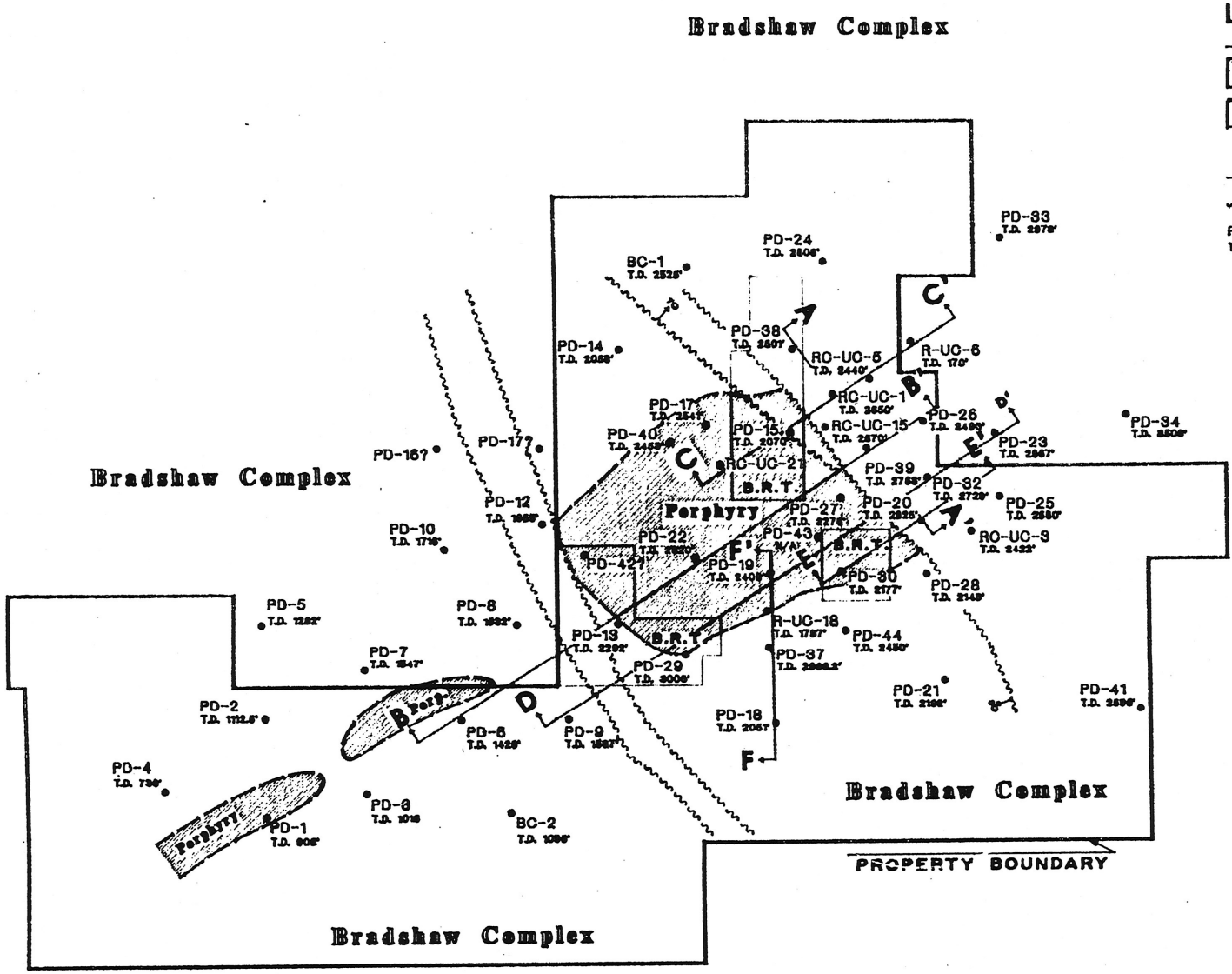
0 1000 2000 4000
FEET

NOTE.

CLAIM NUMBERS WITH
' RAY ' PREFIX NOT PLOTTED

Work by. TELICUM RESOURCES LTD May 1992
C.A.D. by. ROXEL E. ORTIZ May 1992

Figure 2



LEGEND:

Mineralization / Geology beneath Tertiary volcanic cover

- GRANITE PORPHYRY
- BRADSHAW COMPLEX, dominantly granite, pegma diorite, gneiss and minor schist
- Interpreted geologic contact
- Interpreted fault
- PD-41 T.D. 2596' — Drill hole location (showing total depth)
  - PD - Phelps Dodge drill hole
  - BC - Bear Creek drill hole
  - UC - Utah Const. and Mining

NOTE:

B.R.T. - Bard River Trust Lands

ORCANA RESOURCES LIMITED

CASTLE COPPER PROPERTY

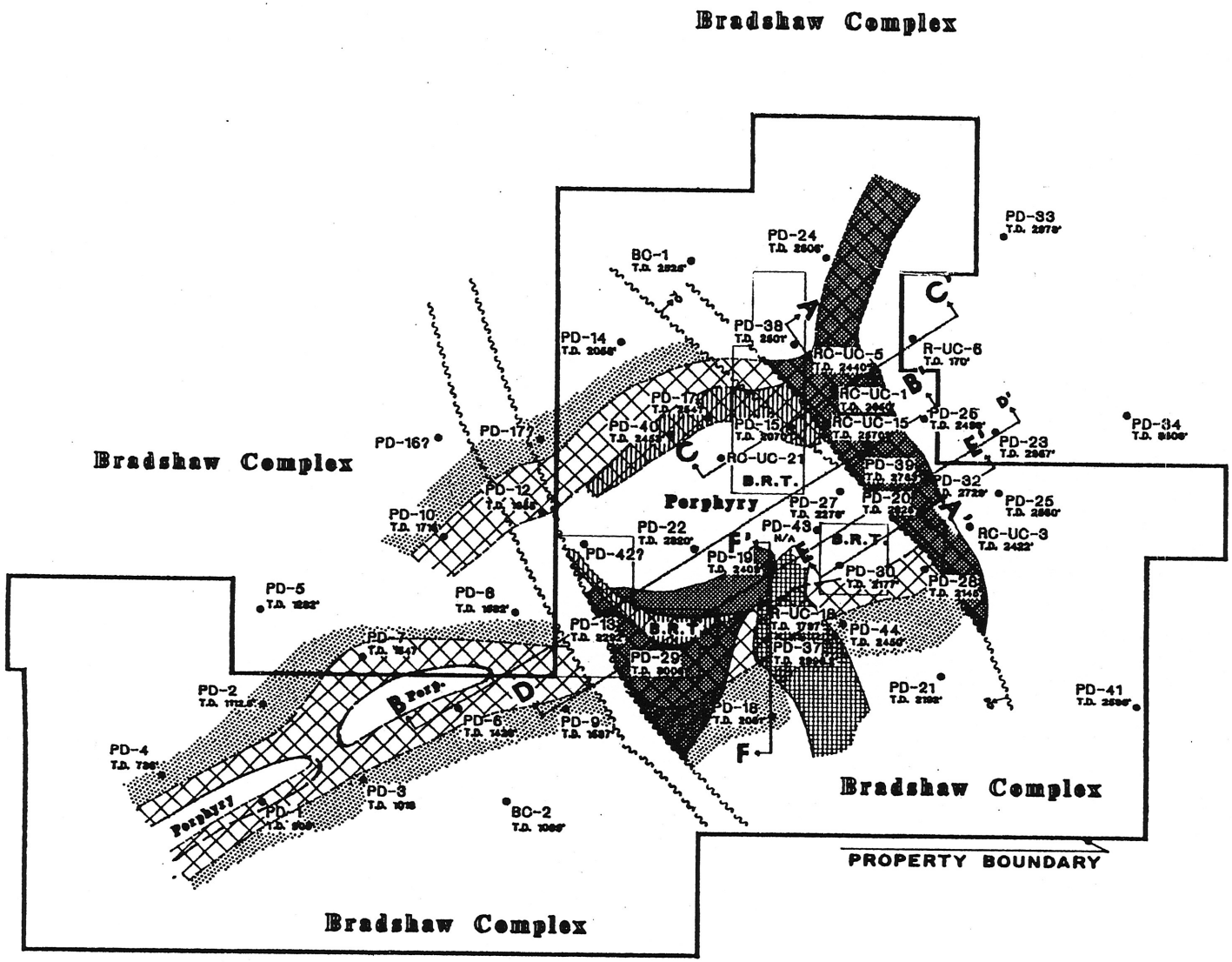
HUMBUG MINING DISTRICT
YAVAPAI COUNTY, ARIZONA, U.S.A.

GEOLOGY MAP

0 1000 2000 3000 4000
FEET

Work by: TILLICUM RESOURCES LTD. May, 1992

Figure



LEGEND:

Mineralization / Geology beneath Tertiary volcanic cover

- GRANITE PORPHYRY
- BRADSHAW COMPLEX, dominantly granite, pegmatite, diorite, gneiss and minor schist
- Limits of zones with supergene copper blanket
- Limits of hypogene copper mineralization
- Limits of hypogene copper zone with enriched MoS2
- Limits of zones devoid of oxide Cu; no supergene "blanket"-disseminated chalcopyrite and chalcocite
- Presently defined limit of pyrite halo

——— Interpreted geologic contact

~~~ Interpreted fault

PD-41 T.D. 2595' ● Drill hole location (showing total depth)

PD - Phelps Dodge drill hole
BC - Bear Creek drill hole
UC - Utah Const. and Mining

NOTE:
B.R.T. - Bard River Trust Lands

N

ORCANA RESOURCES LIMITED

CASTLE COPPER PROPERTY

HUMBUG MINING DISTRICT
YAVAPAI COUNTY, ARIZONA, U.S.A.

ZONES OF MINERALIZATION

0 1000 2000 3000 4000
FEET

Work by: TILLICUM RESOURCES LTD. May, 1992
C.A.D. by: RODEL E. ORTIZ May 1992

Figure 4
~~~

Castle Copper Property

Drillhole PD 20 Mineralization

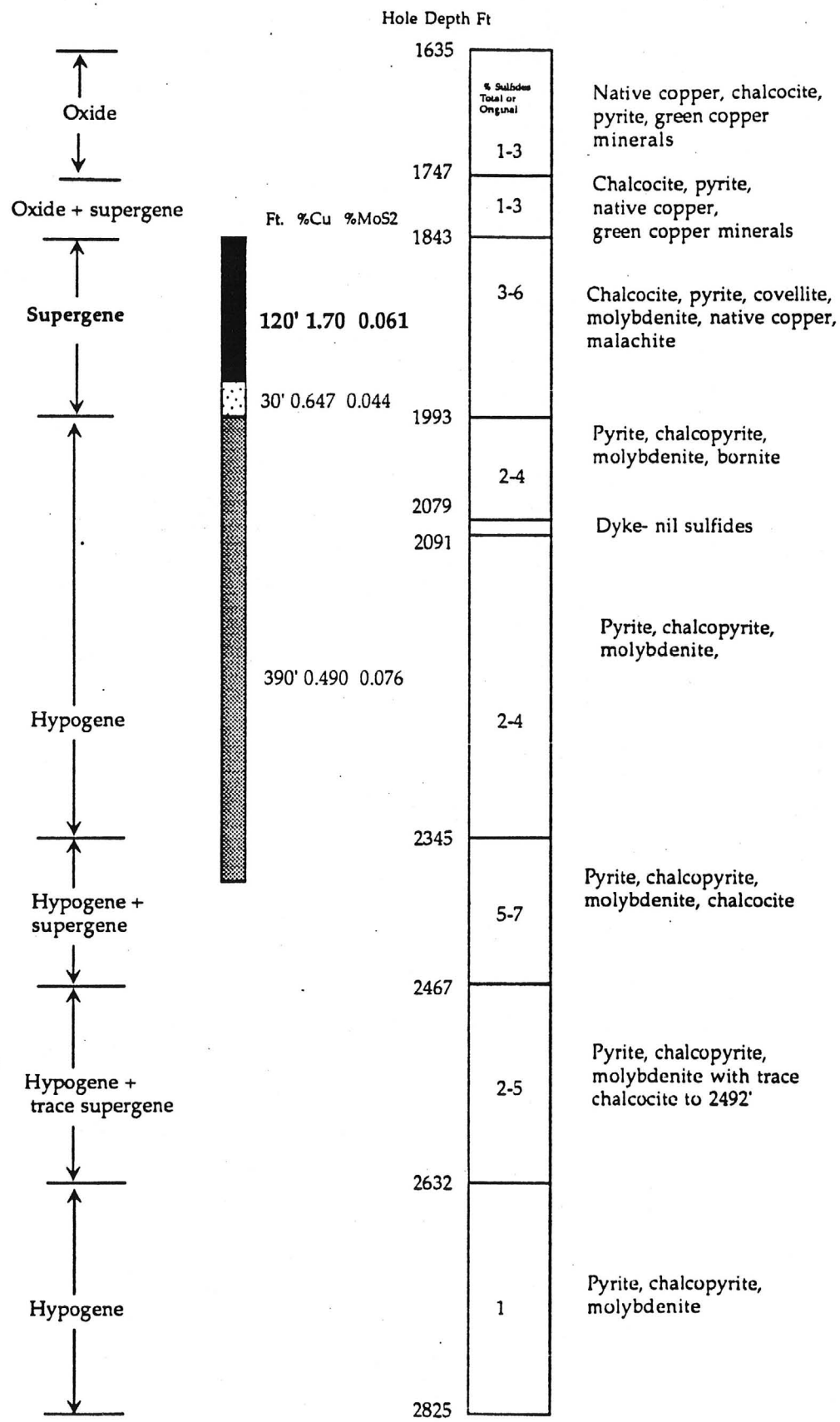
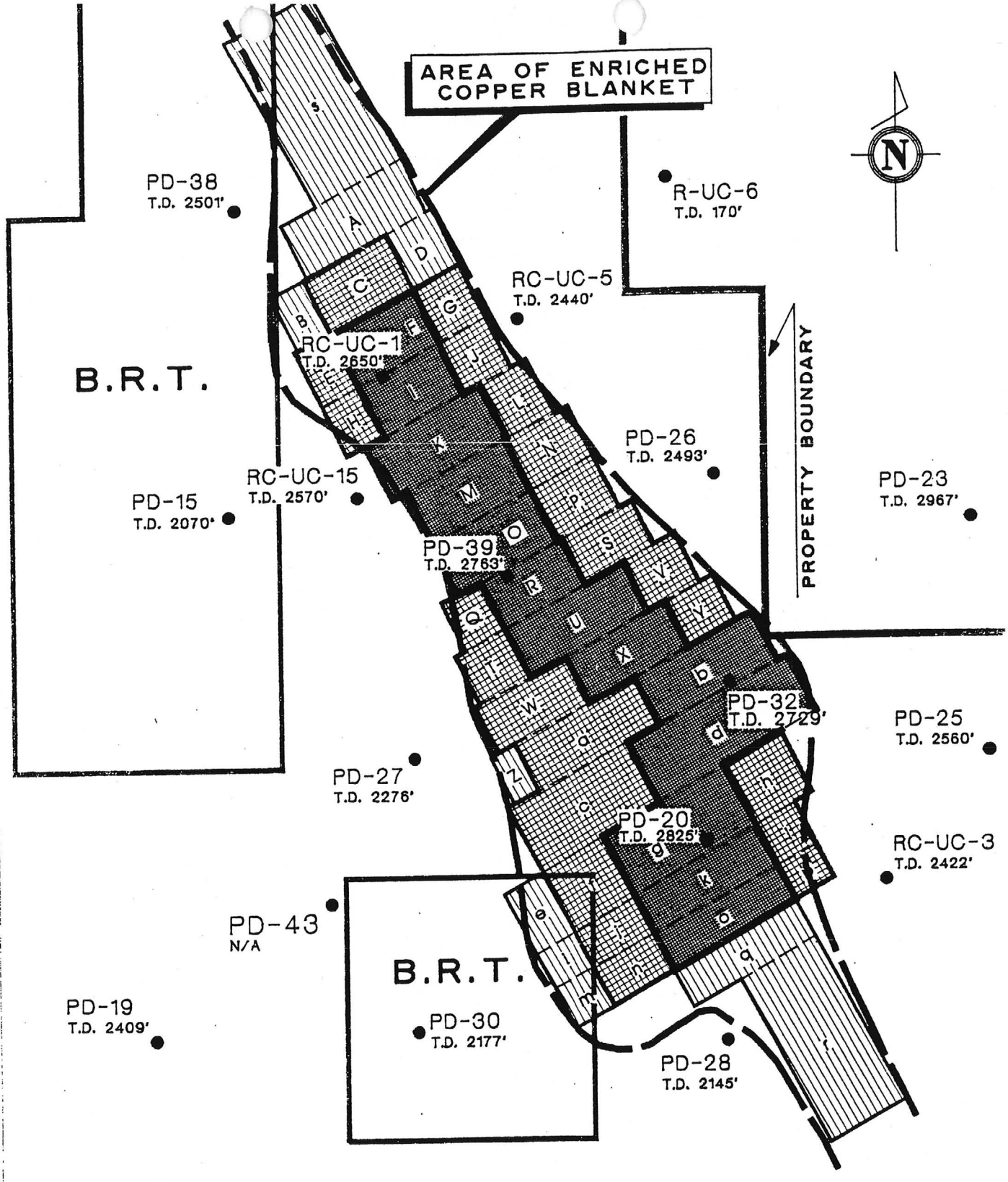


Figure 5

Tillicum Resources Ltd, June 1992



DRILL INDICATED MINERAL INVENTORY

- Proven
- Probable
- Possible
- Area of enriched copper blanket
- PD-44 T.D. 2450' ● Drill hole location & number

ORCANA RESOURCES LIMITED

CASTLE COPPER PROPERTY

HUMBUG MINING DISTRICT
YAVAPAI COUNTY, ARIZONA, U.S.A.

DRILL PLAN & SUPERGENE COPPER ZONE

0 500 1000
FEET

Work by: TILLICUM RESOURCES LTD. May, 1992
C.A.D. by: ROGEL E. ORTIZ May 1992

Figure

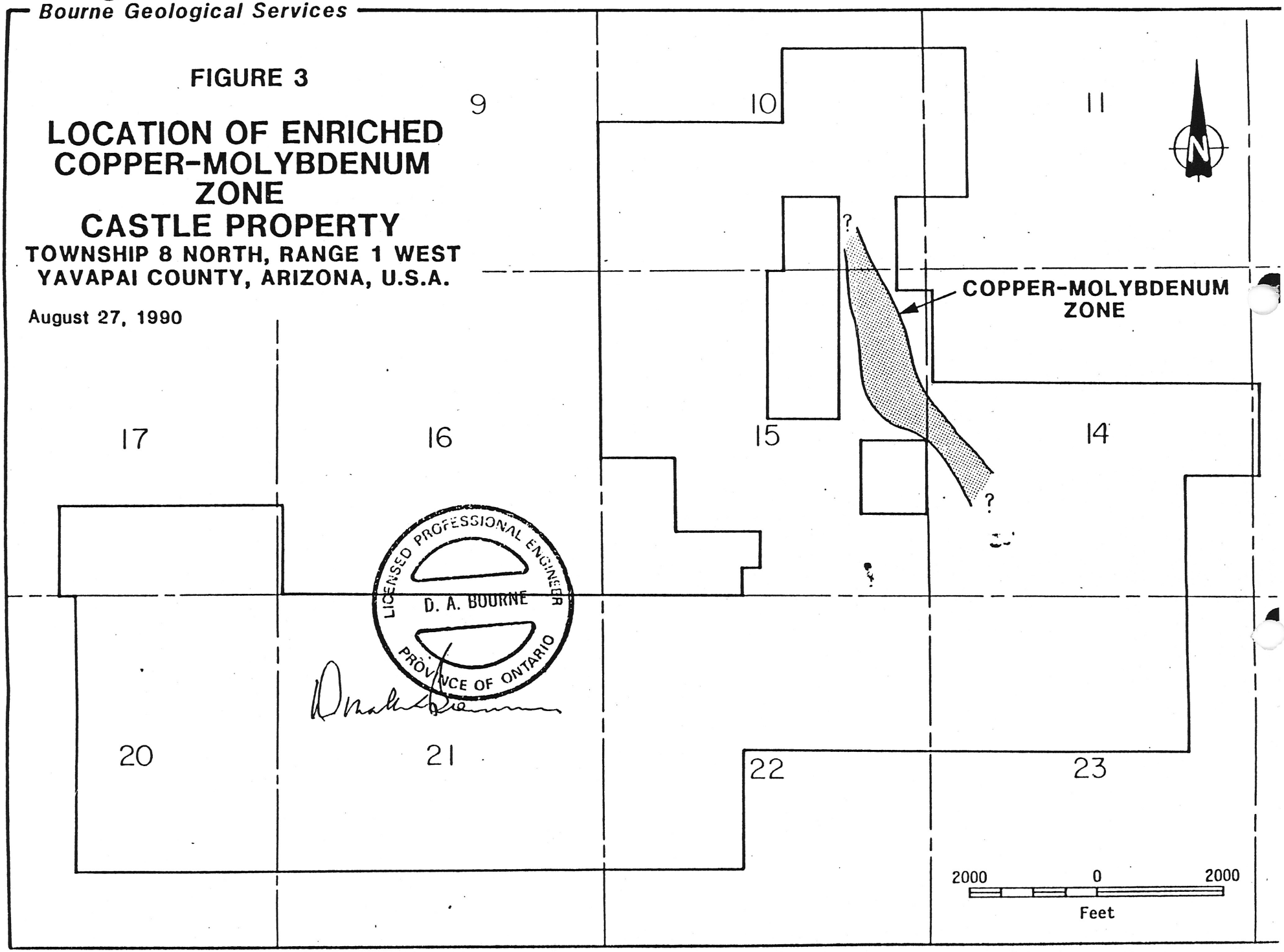
Bourne Geological Services

FIGURE 3

LOCATION OF ENRICHED COPPER-MOLYBDENUM ZONE CASTLE PROPERTY

TOWNSHIP 8 NORTH, RANGE 1 WEST
YAVAPAI COUNTY, ARIZONA, U.S.A.

August 27, 1990



SHEEP MT. (FLAMADA Co.

~ FEB. 95

Dear Nyal;

Thanks for your attention on the sheep & Squaw matter. The information has been very valuable. For your information, Jim Sullivan filed on half of the sheep property while I have obtained the other half. Jim filed on it for a Montreal(?) listed company named Lobex Minerals. They are attempting to make a deal with me.

I'll probably drop in around the beginning of February.

Hank Drum
DESERT PACIFIC EXPL

Approx. Outline of Drill
Indicated Reserves:
91 mill. tons @ 0.74% Cu, 0.0

N CONTACT

CENTRAL CONTACT

W CONTACT

S CONTACT

GOWER FAULT

19,000 N

15000 E

MAIN ORE ZONE in Sec 14, 1S, T8N R1W

Explanation:

- Mid Tertiary - Post mineral volcanic flow and pyroclastics
- Post mineral andesite dike
- Precambrian Complex
- Quartz monzanite porphyry
- Quartz latite porphyry
- Younger quartz latite porphyry
- Fault, shear zones
- Inferred Moly-Copper Mineralization
- Copper mineralization (> 0.25% Cu)
- 310' Fluid Inclusion temperature
- A — A' Cross-Section
- Bord Ranch Trust

Fig. 41

UTAH INTERNATIONAL INC.
RENO EXPLORATION DEPARTMENT

MAP TITLE Sub-Tertiary Volcanic Topograph
Geology Map

PROJECT or PROPERTY Sheep Mtn. E. Area

DISTRICT
COUNTY Yavapai STATE Az

Contour Interval: 40'

Scale 0' 400' Contour interval

Data by A. Ascencios - J. Hoyt Plotting by

Reference

Map No.

EXTRA COPY

SHEEP MTN.

A PRELIMINARY ECONOMIC EVALUATION OF THE CASTLE COPPER PROPERTY HUMBUG MINING DISTRICT YAVAPAI COUNTY, ARIZONA

FOR
ORCANA RESOURCES LIMITED
TORONTO, ONTARIO
CANADA

Toronto, Ontario
May 29, 1992

Watts, Griffis and McOuat Limited
Consulting Geologists and Engineers

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(Continued)

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APPENDICES
Volume II

1. SUMMARY

Watts, Griffis and McOuat Limited (WGM) was requested by **Orcana Resources Limited** (Orcana) to carry out a preliminary economic evaluation of a project to explore the supergene copper mineralization of the Castle Copper property in Arizona owned by Orcana.

WGM has relied on the discussion of the geology and the development of a mineral inventory supplied by an independent geological consultant (Bourne, 1992) in addition to processing cost models developed by **EHA Engineering Ltd** (EHA). WGM has developed mining costs, based on Bourne's report, and incorporated these along with the processing models to estimate the economic viability of the deposit to determine if additional exploration expenditures are warranted.

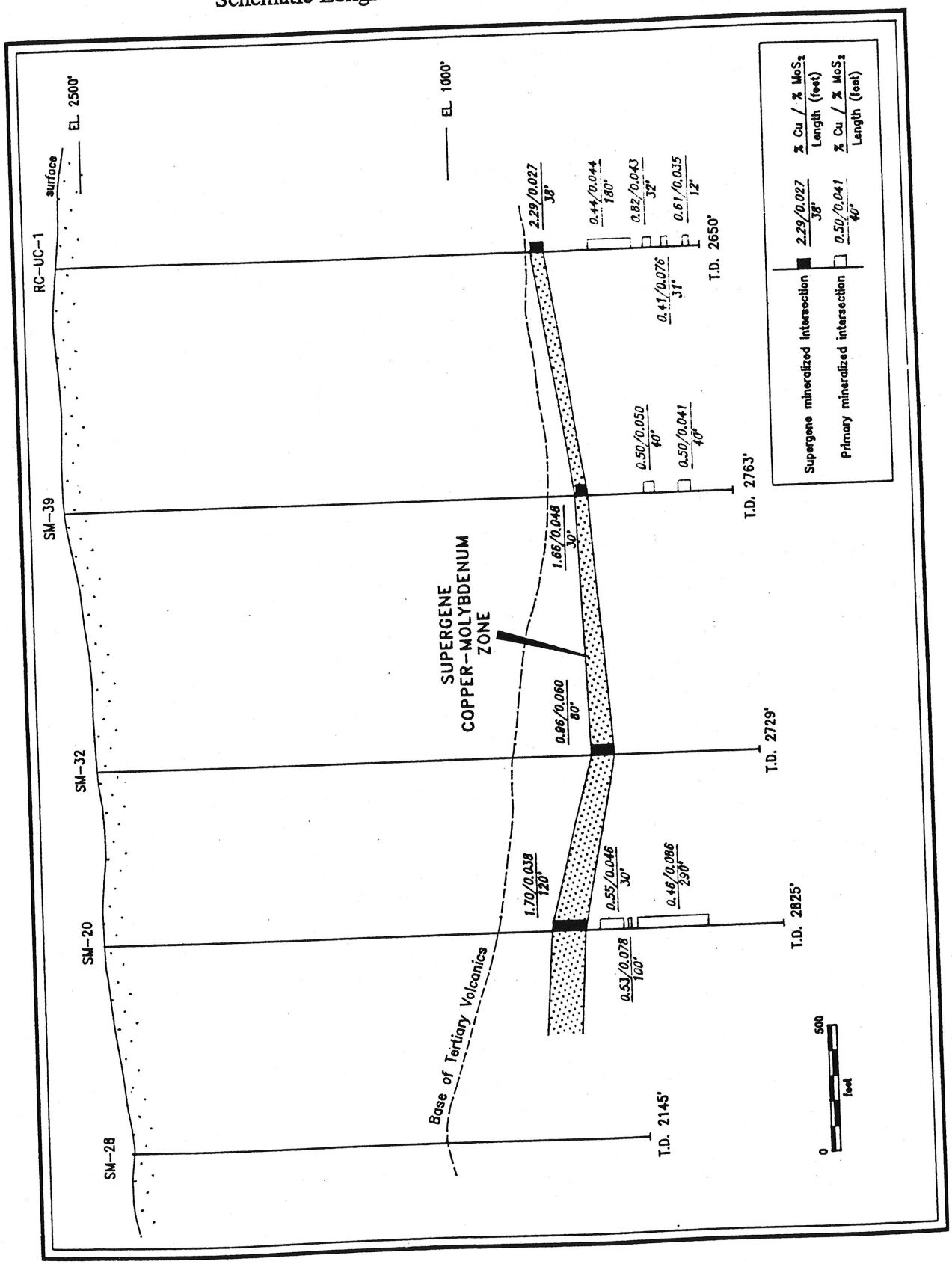
Several mining and processing alternatives were investigated and it appears that the most economically attractive combination is that of ramp (decline) access with production using a conveyor system, and conventional flotation processing. This mine/processing model indicates that, from a potential of 30-40 million tons of ore grading 1.6% Cu contained in supergene copper minerals, the deposit has an estimated after tax, net present value in the range of $25 million to $44 million. This supergene copper zone also contains 0.04% MoS_2 and precious metals. No provision has been made for precious metal credits in this evaluation.

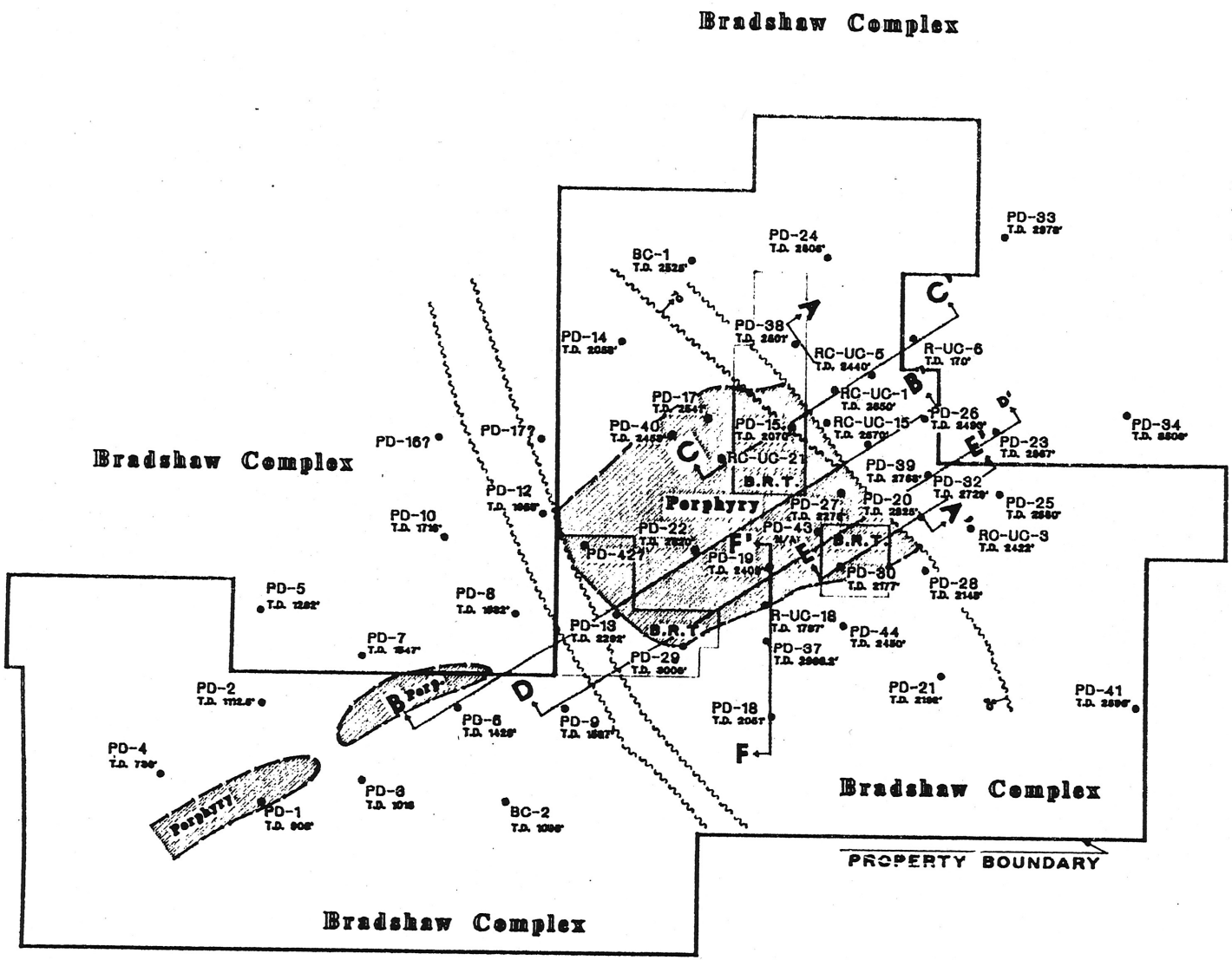
This economic model indicates that a reasonable rate of return will be achieved at a copper price of $0.94/lb but that revenues from the deposit will support the operation at a copper price of $0.68/lb. The possibility of decreasing estimated capital costs, by partial substitution of refurbished equipment, may further enhance the project economics. Capital and operating costs should be investigated in greater detail.

Our analysis also indicates a positive net present value of $11 million if the mineralization were to be processed using a solvent extraction-electrowining (SX-EW) recovery method with the 2.5 million tons of ore per year treated on heap leach pads. With this method, no precious metal or MoS_2 credits would be realized.

WGM concurs with Bourne's recommendation for a Phase I drill program and considers that, based on this preliminary economic analysis, the property has a significant economic potential which merits additional exploration expenditures.

Figure 7
Schematic Longitudinal Section - Supergene Zone





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Mineralization / Geology beneath Tertiary volcanic cover

- GRANITE PORPHYRY
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NOTE:
B.R.T. - Bard River Trust Lands

N

ORCANA RESOURCES LIMITED

CASTLE COPPER PROPERTY

HUMBUG MINING DISTRICT
YAVAPAI COUNTY, ARIZONA, U.S.A.

GEOLOGY MAP

0 1000 2000 3000 4000
FEET

Castle Copper Property

Drillhole PD 20 Mineralization

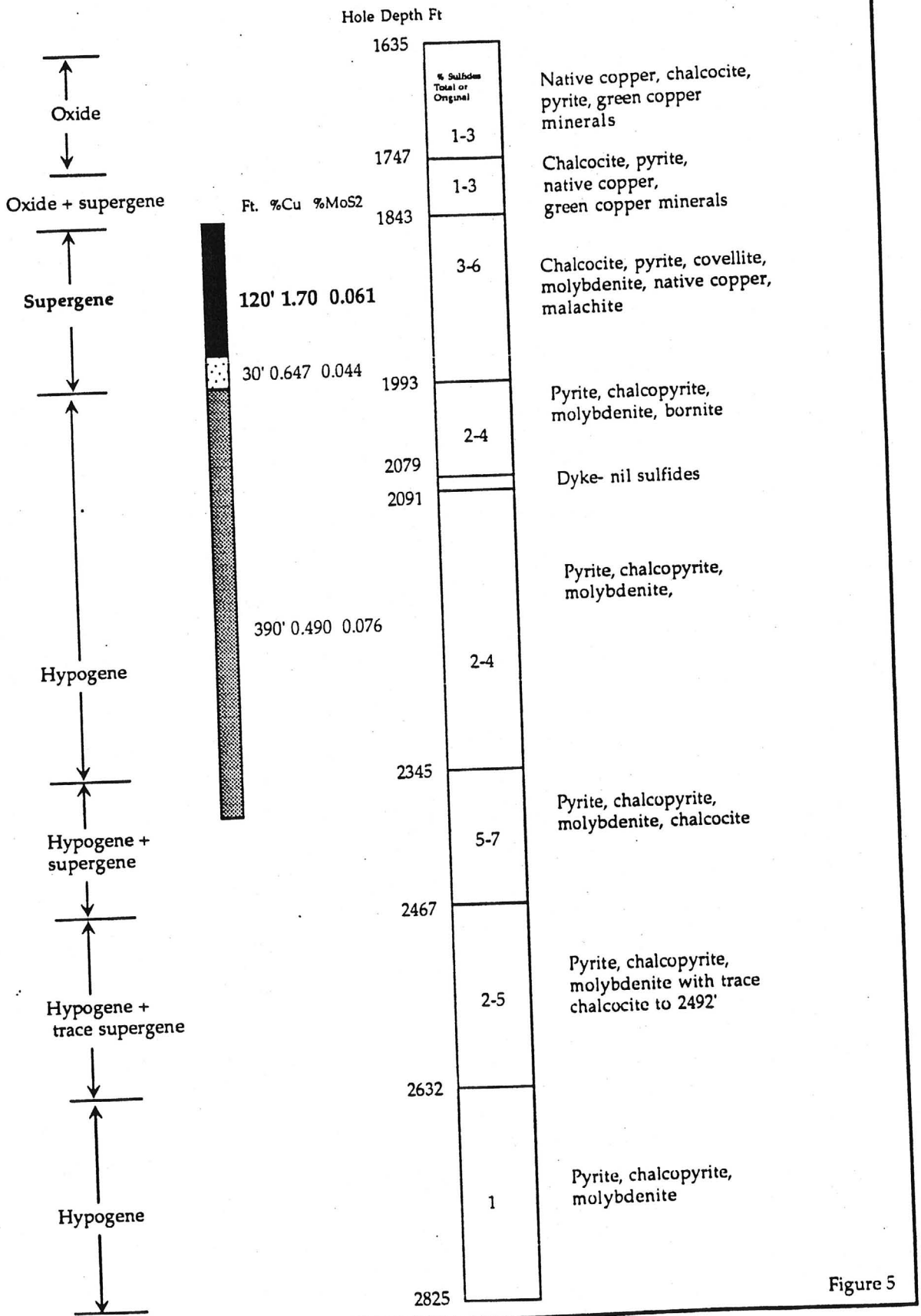


Figure 5

Tillicum Resources Ltd, June 1992

7. MINERAL INVENTORY

Four widely spaced drill holes intersected enriched (chalcocite, minor bornite) mineralization along a 5,500 foot by 1,100 foot wide northwest trending zone (Castle Copper supergene "blanket"), at an average depth of 1,975 feet, which appears to follow the Cow Creek fault. The average thickness of this zone is approximately 90 feet and is underlain by primary copper/molybdenum mineralization in a zone up to 390 feet thick grading 0.49% Cu (Figure 5).

Below the latter zone, the mineralization continues to an indeterminate depth but the grade drops off to 0.10% to 0.15% Cu. Better molybdenum values appear to correlate with better copper grades. The sulphide distribution appears to be spatially related to the Sheep Mountain Stock. Although the core of the stock contains less than 1% sulphides, an additional 1% to 3% sulphides has been introduced along the margins of the stock.

Bourne estimates, based on the four drill holes (see Figures 6 and 7), that there is a mineral inventory of approximately 39,434,000 tons grading 1.27% Cu and 0.044% MoS_2. The mineral inventory is divided into drill indicated "proven", "probable" and "possible" categories (Figure 6). Bourne assumes that the supergene mineralization in drill intersections represents a tabular body continuous between drill holes (a "blanket" deposit) rather than discrete shear zones or channels. He recommends that, for a Phase I exploration program, two additional rotary/core holes be drilled to further define the mineralization.

After reviewing the drill logs and noting the visual estimates of the type of copper bearing minerals, WGM recalculated the mineral inventory using Bourne's block parameters. Assayed intervals were reduced to minimize the inclusion of primary sulphide mineralization in the mineral inventory. WGM estimates that the Castle Copper deposit contains a drill indicated mineral inventory of approximately 28,110,000 tons grading 1.6% Cu and 0.04% MoS_2. The mineral inventory estimated by WGM, based on the area of the blocks defined by Bourne, is shown in Appendix 2.

WGM prefers to use the term "drill indicated" for our estimate, without reference to categories. However, based on the available data and Bourne's deposit model, WGM believes that the Castle Copper deposit represents a significant body of flat lying supergene copper.

Russell Powers
9037 South Yosemite #2106
Lone Tree, CO 80124
(720) 873-6636
russpowers@earthlink.net

February 10, 2008

Nyal Niemuth
Arizona Department of Mines and Mineral Resources
1502 West Washington St.
Phoenix, AZ 85007

Re: Sheep Mountain

Dear Nyal,

Enclosed herewith for the Department's file, please find color xerox copies of a regional geologic map and a schematic cross section of the Sheep Mountain property. These are modifications of the Power Point presentation I gave to a geology class at the Florida Institute of Technology in Melbourne last November, so there is nothing "secret" in any of this. Unfortunately, the colors I used on the original map and cross-section are not suited to color xerox machines so these are of poor quality, but I think the reader can get the point.

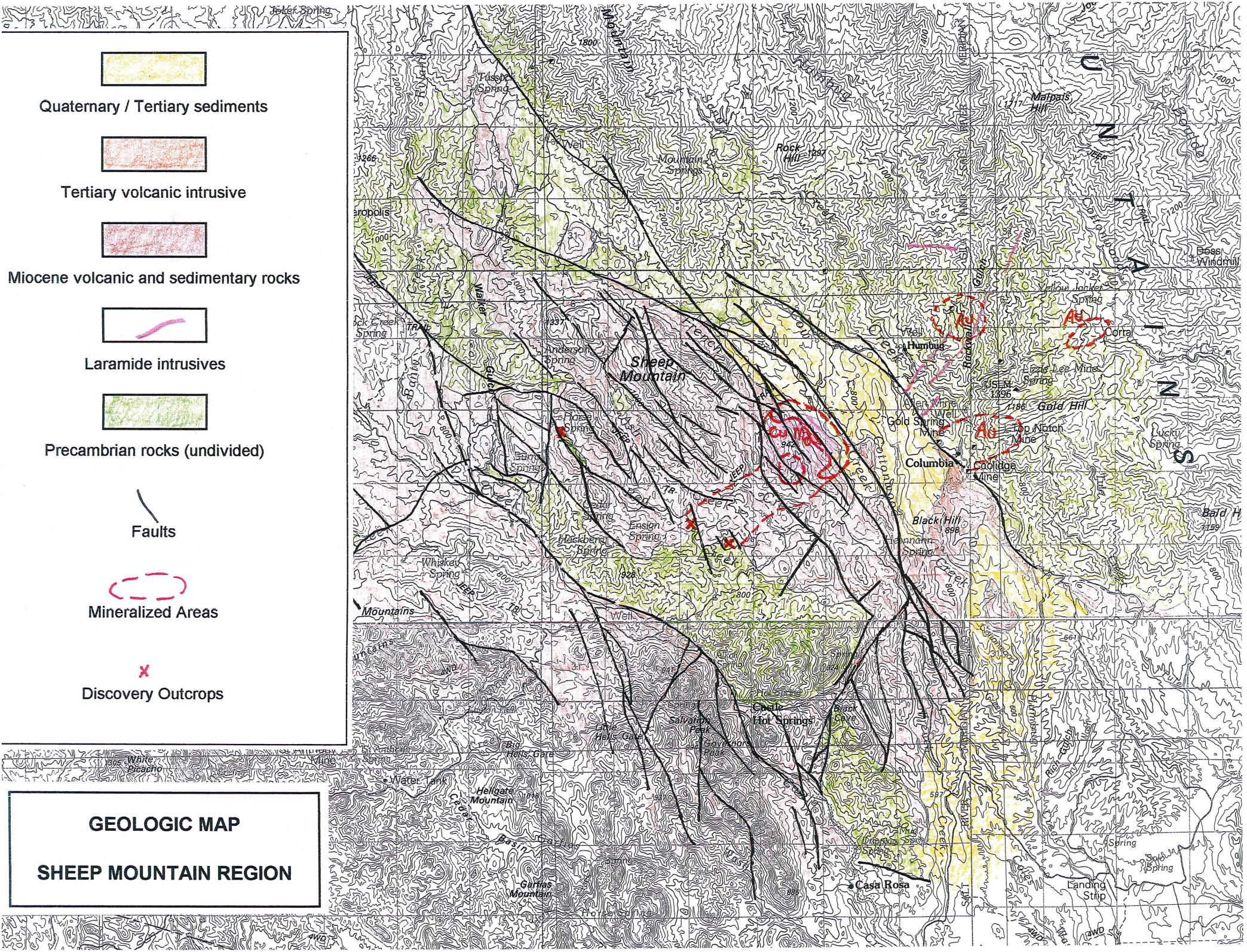
The geology map is a compilation made from: 1) the AZGS open file geology maps to the south of Sheep Mountain done by Steve Reynolds et al. years ago; 2) air photo interpretation by myself; 3) PD's maps; and 4) data collected by Ed De Witt. I have made a much more detailed map based upon the Columbia and Copperopolis 7.5 minute topo quads that you will get someday. I have omitted the Cu mineralization that Minquest is exploring because I do not know its extent. We can speculate that what they have might be a right-lateral and more highly oxidized offset segment of the western extent of the Sheep Mountain system.

You will note that my cross section is radically different than the one published several years ago by the AZ Geologic Society. In sum, neither I nor Ed De Witt have seen any evidence of low angle listric faulting at Sheep Mountain. The Castle Creek Fault appears to be the eastern limit of this type of fault. The block containing the mineralization has been tilted about 20-30 degrees to the east and subsequently modified by normal and reverse faults. Contrast this against the main massif at Sheep Mountain where the volcanic pile, in many places, has gentle westerly dips. I suspect that an as yet unmapped northeast striking fault may lie between the mineralized zone and Sheep Mountain. In places, the Humbug Fault may have a down-to-the-west displacement in excess of 3200 ft. South of Humbug, it also exhibits evidence of being potentially "active" (Quaternary sediments dropped against Precambrian). To be sure, the structural setting of the Sheep Mountain / Humbug region is still not clear. PD did not spend much time unraveling the post-mineral volcanic geology, which I think hurt us.

At a future time, I will give you a write up on my thoughts (and PD experience) regarding Sheep Mountain...as Paul Harvey would say...."And now the rest of the story."

Regards,

Russ Powers


Quaternary / Tertiary sediments
Tertiary volcanic intrusive
Miocene volcanic and sedimentary rocks
Laramide intrusives
Precambrian rocks (undivided)
Faults
Mineralized Areas
Discovery Outcrops
GEOLOGIC MAP
SHEEP MOUNTAIN REGION
Sheep Mountain
Columbia
Gold Hill
Black Hill
Castle Hot Springs
Casa Rosa
Humbug
Top Notch Mine
Coolidge Mine
Gold Spring Mine
Lizzie Lee Mine
Boss Windmill
Corral
Landing Strip
Malpais Hill
Rock Hill
Hellgate Mountain
Salvation Peak
Gerrias Mountain
Cottonwood Creek
Walker Creek
Ensign Spring
Hackberry Spring
Whiskey Spring
Mountain Springs
Tussock Spring
Anderson Spring
Horse Spring
Cow Spring
Lucky Spring
Yellow Jacket Spring
Mud Spring
Water Tank
Well
Mine
Au
Cu
Mo
4WD
2WD
JEEP
TRAIL
CENTRAL NEVADA

SCHEMATIC CROSS-SECTION SHEEP MOUNTAIN
(no scale)

Sheep Mountain
13 MICROFICHE

MICROFICHE HAS BEEN PRINTED AND SCANNED. 12/06

by