



CONTACT INFORMATION
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602-771-1601
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inquiries@azgs.az.gov

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To GAP

Date 2-8 Time _____

WHILE YOU WERE OUT
M George Mathews

of _____

Phone 801-533-8557

Area Code

Number

Extension

| | | | |
|--------------------|-------------------------------------|--------------------------|-------------------------------------|
| TELEPHONED | <input checked="" type="checkbox"/> | PLEASE CALL | <input checked="" type="checkbox"/> |
| CALLED TO SEE YOU | <input type="checkbox"/> | WILL CALL AGAIN | <input type="checkbox"/> |
| WANTS TO SEE YOU | <input type="checkbox"/> | URGENT | <input type="checkbox"/> |
| RETURNED YOUR CALL | | <input type="checkbox"/> | |

Message _____

Silver Bell

Operator



AMPAD
EFFICIENCY®

23-000 50 SHT. PAD
23-001 250 SHT. DISPENSER BOX

50K upon signing contract

50K, next year

- \$1,000/mo.

- \$1,000/mo

\$500/watchman

\$500/insurance

\$2500 /mo.

Very maybe 3 mo option
period. - work unit at ~ \$50K
drill holes - at end of option -
pay 50K!

7/11/83

Newmont - Magma - Buy smelter flux? - Tucson

→ Expl. (604) 297 - 7281

→ Services " " "

→ Mr. Nibbles - Nevils

→ John Mac Ivor - San Manuel - Shelter -

- Magma Copper -

- 385-2201

→ By Cash Flow -

- Old Tiger Mine - are mining this now -
has Au, Ag

- Superior Mine - has sue flux ore there

52,000 Tons ore

10,000 Tons flux / mo,

- Morenci - has mine at Duncan

- ASARCO - use Tiger tailings, ~~is~~ shut down now

Matthews - \$ payments of \$150,000 in Jan 84

" " " in Jan 85

monthly payments of \$4000 for 84, 85

Denver

Rick - ~~Computer~~

George - ~~Ang.~~, San Pedro,

Miller - Budget, Margenta, Matson, ~~Auriferity~~, San Pedro Cochiti

~~Marcia - Macho~~

Kenny - ~~How Riley Co. Mn~~ - Co of 12, 45, 23, 12 ppm
- Mn should be MnO

~~Hockley Dome~~

~~Fisher Wall?~~

Front: 12:56
Afternoon
United: 2:40

Front: 12:1
Unit 893

Front:
Morn. 7:17 8:19

Cont. 6:40

Front: 7:53

- Mrs. Wright -
(888 - 3147)

General Partner
Don Coleman (602) 840-6787

Custom Equip
Salt Lake City
metall. Engineers.

George Matthews
pump rem Phoenix

(801) 533-8557

8 mi dia W. of Ray Mtn

Silver Bell - Columbia
Martinez Mine

Surface to 200' below - present workings
400,000 Tons \approx 6.5 wt Ag

breccia extends down, no drill below 200'
Silica flooded brecc. zone
all oxides H₂O at ~ 400'

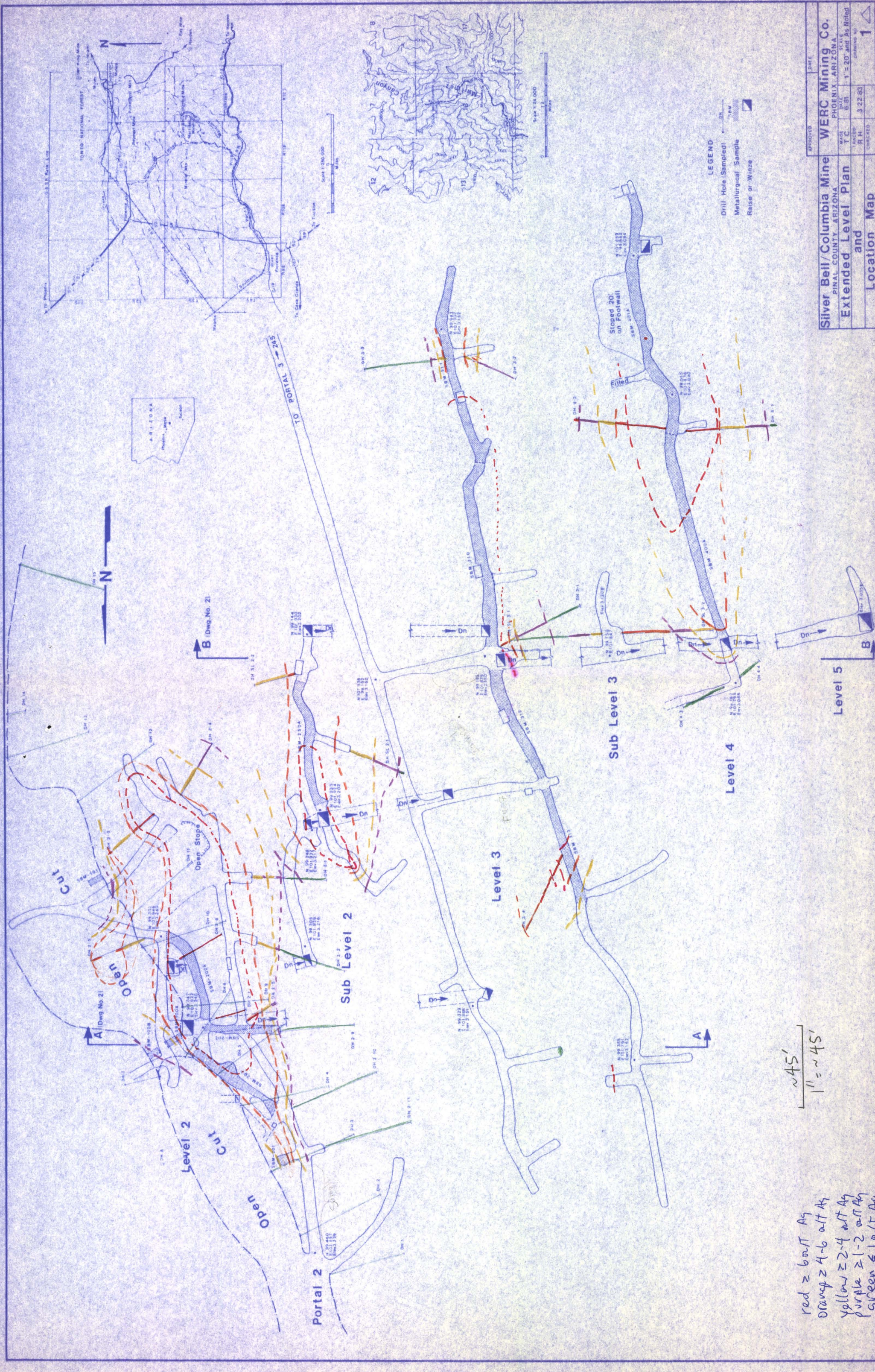
3 patented 66 unpatented
Subject to 1/2 to NSR
\$1,000 / mo payments

Consider buyout, Payment for
option, \$150K balloon.
Use for smelter flux
is open-pit.

Ended ~802 to South probable continuation
in that direction - Not tested to North

4th level widens out to plus 100' over 302

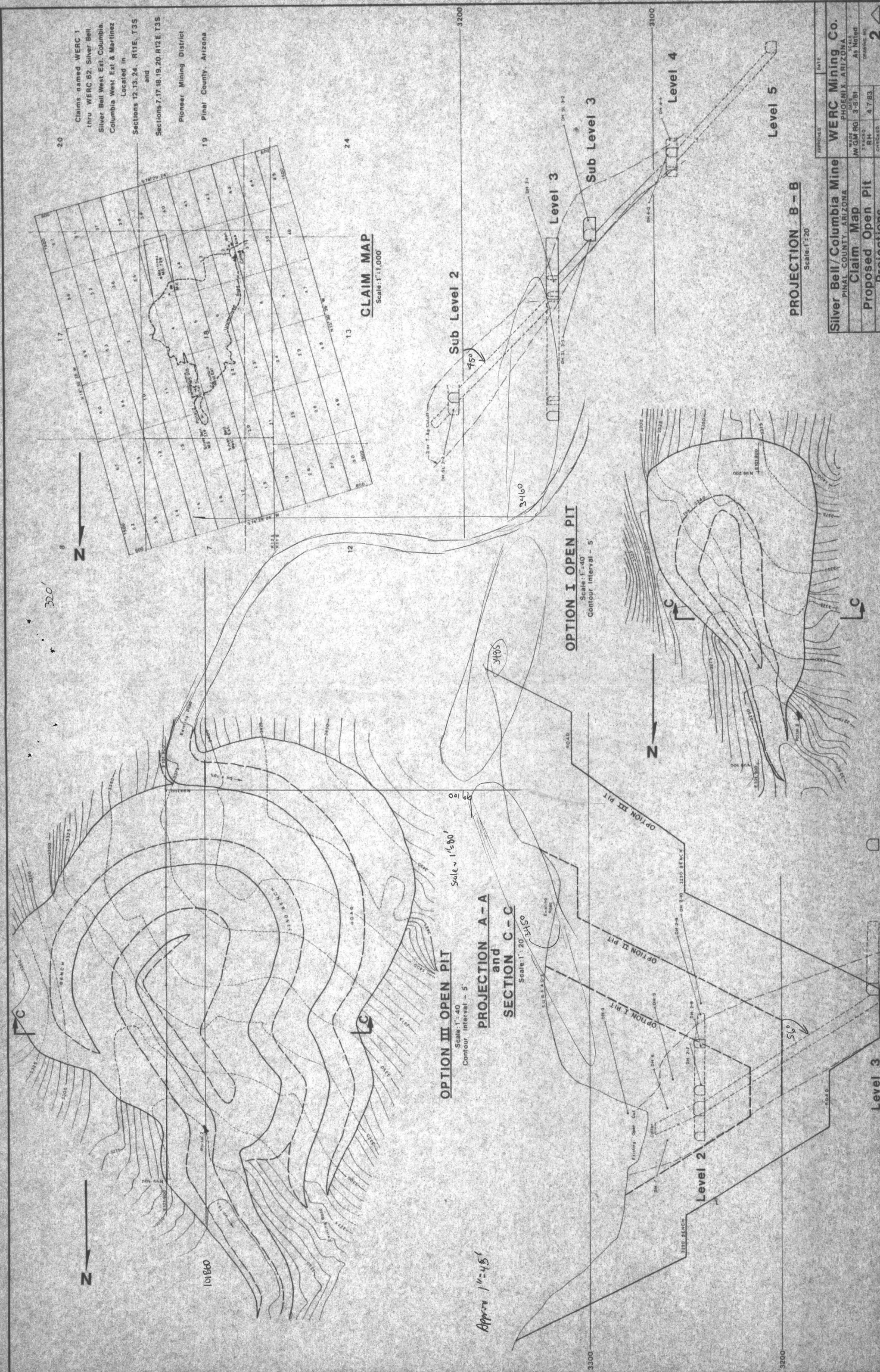
- 1 Kuhn MC et al. Anaconda's Arbiter Process
For Cu Canadian Inst of Min & Metallurgy Bull
Feb 1974 pp 62-73
- 2 Kruesi PR et al Cymet Process Hydrometallurgical
Conversion of ? Metal Sulphides to Pure Metals
Canadian Inst of Min & Metallurgy Bull
- ~~PA Dahlstrom, S.A. Bucze~~
- 4 J.C. Ararwal, D.S. Davies, U.K. Dataria & N.L.
Neser, Comparative Analysis of Hydrometallurgical
Processes Canadian Inst of Mining & Metallurgy
16th annual Conference & 7th annual Hydrometallurgy
Meeting, Vancouver BC
- 5 P.K. Everett "Single Step Conversion of Chpy to Cu
FeOx & Element Sulphur - Extractive Metallurgy Symposium
Univ of New South ~~Wales~~ Wales, 8th Nov 1971
- 6 PA Spencer & B Harris "The Electrolysis of Chpy
In concentrated Chloride Solutions - 5th Australian
Electrochem Conf Aug 1980
- 7 PA Spencer PhD Thesis Univ of New South Wales
Sydney Australia 1981
- 8 J Araamides D.M. Muir & A.J. Parker Cuprous
Hydrometallurgy Part VI Activation of Chpy by reduction
w/ Cu & Sol of Cu Salts - Mineral Research Unit
Murdoch Univ, West Australia



| | | |
|---------------------------|------------------|-----------------------|
| APPROVED | DATE | WERC Mining Co. |
| Silver Bell/Columbia Mine | PHOENIX, ARIZONA | |
| Extended Level Plan | MADE | SCALE |
| and | T.C. | 1" = 20' and As Noted |
| Location Map | TRACED | |
| | R.H. | 3/22/80 |
| | CHECKED | |
| | | 1 |

$\frac{\sim 45'}{1" = \sim 45'}$

red ≥ 6 wt% Ag
 orange $\geq 4-6$ wt% Ag
 yellow $\geq 2-4$ wt% Ag
 purple $\geq 1-2$ wt% Ag
 green < 1 wt% Ag



Claims named WERC 1
thru WERC 62, Silver Bell,
Silver Bell West Ext., Columbia,
Columbia West Ext. & Martinez
Located in
Sections 12, 13, 24, R11E, T3S
and
Sections 7, 17, 18, 19, 20, R12E, T3S
Pioneer Mining District
Pinal County, Arizona

CLAIM MAP
Scale: 1" = 1,000'

PROJECTION B-B
Scale: 1" = 20'

| | | |
|---------------------------|-----------------------|-------------------|
| APPROVED | DATE | WERC Mining Co. |
| Silver Bell/Columbia Mine | PINAL COUNTY, ARIZONA | WERC Mining Co. |
| Claim Map | Proposed Open Pit | Projections |
| MADE BY JW GM RG | DATE 3-9-81 | SCALE AS NOTED |
| DRAWN BY RH | CHECKED BY 4/7/83 | DRAWING NO. 2 |

400,000 tons at 6.5 oz/ton

SiO₂ Ave 67.13 %


$$67.13 - (1.3)(4.83)$$

$$67.13 - 6.28 = 60.85$$

\$3.20 excess charge 9 unit deficiency

silica def. ~~\$3.15~~

silica deficiency \$ 3.20



| | | | |
|----|----|--|------|
| Al | OK | 5 units free (ave 2.5%) | — |
| Pb | — | .12 units free ^{.50/unit} (ave 1.04%) | .42 |
| Zn | — | .12 units free ^{.50/unit} (ave .52%) | .16 |
| As | | .5 over .2 charge all at 3.00/unit (^{Ave} .61) | 1.83 |
| Sb | | .1 units free 3.00/unit (^{Ave} .58) | 1.45 |
| Bi | OK | | |

\$ 7.05

(6.5 - 1) 95% Pay 5.23 oz ton at \$10/oz \$ 52.30

Smelter penalty — 7.05/ton

Shipping — 7.50/ton

Mining Pit 261,000 tons strip Stripping — 31.74

Mining — 1.33

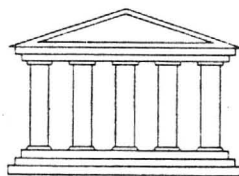
Crushing — 1.50

Administrative — 1.00

+ 2.18

LAB # **A 1523**Invoice# L-1414Date received 5-6-83Date released 5-17-83From: Nicor Minerals

Approved by

W B CharlesResults to: Gary ParkisonNicor Mineral Ventures2659-G Pan American FwyAlbuq., N.M. 87107
**ACADEMY
CORPORATION**

 6905 WASHINGTON NE
 ALBUQUERQUE, N.M. 87109
 (505) 345-1805
Description:

six pulp samples : fire assay Ag, & Au

(ND= no detectable, less than 0.001 oz/ton Au)

REPORT OF ANALYSIS

| | Ag | Au | Albq | Goodchem. | Academy | Corp |
|------|--------|--------|---------------|---------------|---------|------|
| | oz/ton | oz/ton | Ag ppm a/t | Au ppm a/t | Ag a/t | Au |
| 683 | 6.43 | ND | 154/4.50 | < | 3.85 | < |
| 687 | 15.0 | ND | 255/7.45 | < | 7.73 | < |
| 688 | 5.32 | ND | 132/3.85 | < | 4.23 | < |
| B+18 | 2.98 | 0.041 | 103/3.01 | .03/.024 | | |
| B+30 | 1.53 | 0.019 | 56/1.64 | .40/.012 | | |
| B+42 | 0.74 | 0.009 | 26/.76 | .22/.006 | | |
| 684 | 8.72 | ND | 57/1.66 | < | | |
| 686 | 3.16 | ND | 56/1.64 | < | | |
| 689 | 5.10 | ND | 58/1.69 | < | | |
| 690 | 3.71 | ND | 103/3.01 | < | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Silver

Silver

ALBUQUERQUE GEOCHEMICAL
1000 Grove St. N.E.
Albuquerque, N.M. 87110
(505) 266-6713

DATE April 19, 1983

FOR Nicor

SHEET

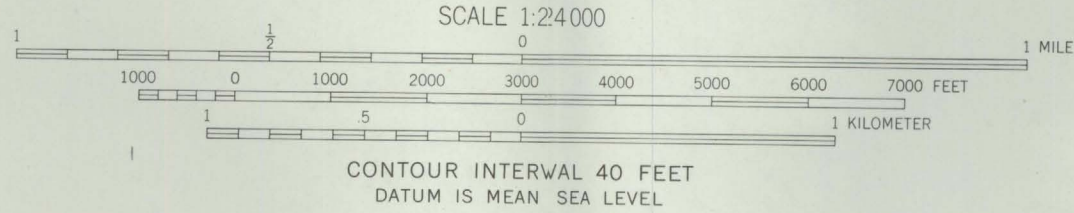
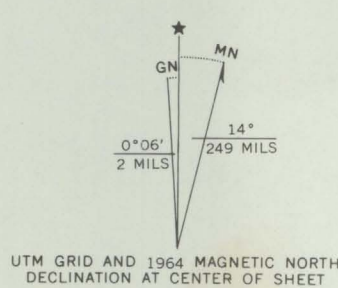
| SAMPLE NO. | PPM GOLD | PPM SILVER | PPM COPPER | PPM LEAD | PPM ZINC |
|------------|-------------|---------------|---------------|-------------|-------------|
| G-681 | * | 92 | | | |
| 682 | * | 77 | | | |
| 683 | * | 154 ✓ | | | |
| 684 | * | 57 | | | |
| 685 | * | 18 | | | |
| 686 | * | 56 | | | |
| 687 | * | 255 ✓ | | | |
| 688 | * | 132 ✓ | | | |
| 689 | * | 58 | | | |
| 690 | * | 103 | | | |
| 691 | * | .95 | | | |
| 692 | * | .25 | | | |
| 693 | * | 1.3 | 25 | 42 | 150 |
| 694 | * | 2.1 | 18 | 78 | 230 |
| 695 | * | 4.1 | 32 | 872 | 1080 |
| 696 | * | .25 | 70 | 65 | 45 |
| 697 | .03 | 2.7 | 48 | 196 | 55 |
| 698 | 8.4 | 159 | 1120 | 2730 | 300 |
| 699 | .26 | 7.0 | 90 | 542 | 260 |
| 700 | .09 | 5.7 | 71 | 70 | 330 |
| 701 | .11 | 2.2 | 48 | 40 | 70 |
| 702 | 2.1 | 103 | 265 | 6800 | 5200 |
| 703 | * | 2.0 | 18 | 197 | 500 |
| 704 | .02 | 1.4 | 14 | 22 | 220 |
| 705 | .03 | 1.6 | 175 | 93 | 170 |
| 706 | * | 3.1 | 18 | 592 | 450 |

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

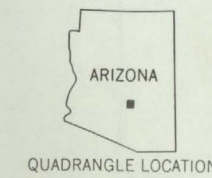
MINERAL MTN. QUADRANGLE
ARIZONA-PINAL CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



Mapped, edited, and published by the Geological Survey
Control by USGS and USC&GS
Topography by photogrammetric methods from aerial
photographs taken 1962. Field checked 1964
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



THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR WASHINGTON, D.C. 20242
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

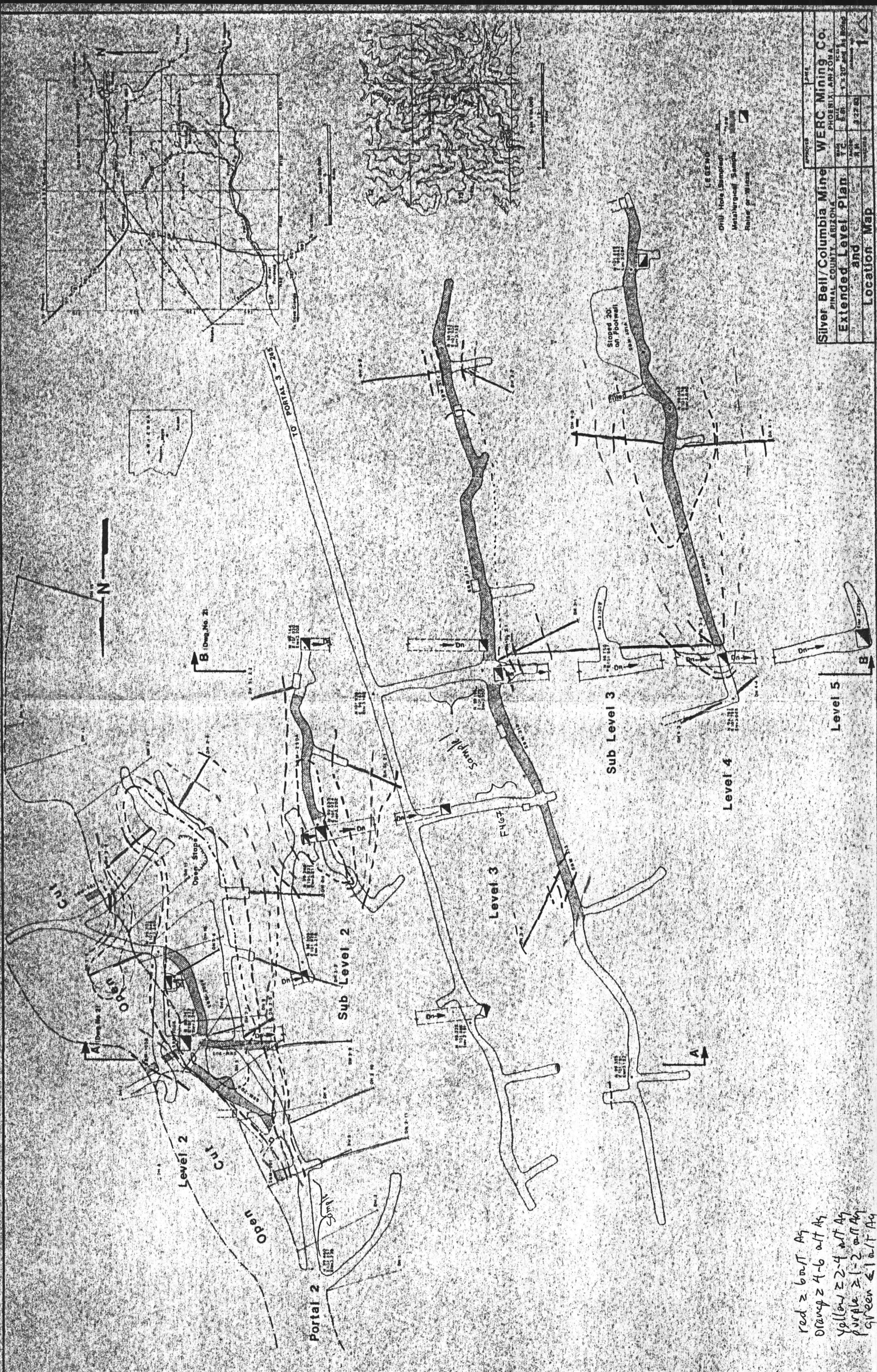


ROAD CLASSIFICATION
Unimproved dirt - - - - -

MINERAL MTN., ARIZ.
N3307.5-W11107.5/7.5

1964

AMS 3750 II NW-SERIES V898



Red $\geq 6\text{ wt } \text{Ag}$
 Orange $\geq 4-6 \text{ wt } \text{Ag}$
 Yellow $\geq 2-4 \text{ wt } \text{Ag}$
 Purple $\geq 1-2 \text{ wt } \text{Ag}$
 Green $< 1 \text{ wt } \text{Ag}$

| | | | |
|---------------------------|--|------------------|--|
| Silver Bell/Columbia Mine | | WERC Mining Co. | |
| PINAL COUNTY, ARIZONA | | PHOENIX, ARIZONA | |
| Extended Level Plan | | Scale | |
| 1" = 20' and As Noted | | 1" = 20' | |
| Location Map | | 1 | |

Silverbell

Custom Equipment
Suite 1725
Beneficial Life
towers

George Mathews
(801) 533-8557
Coleman uses ~ 300' by 400' strike length

cut off ≥ 387 deep side
 $338 \times 50 \times 315 = 489,000$
 $360' = 559,000$

$7.5' \times 45' = 338'$

150' deep
 $+ 50' \times 315$

7×45
 315
 $237 \times 315' \text{ long} = \text{above } 324 \times 189,000$
 $237 \times 360' \text{ long} = \text{above } 324 \times 216,000$



One of the NICOR
basic energy
companies

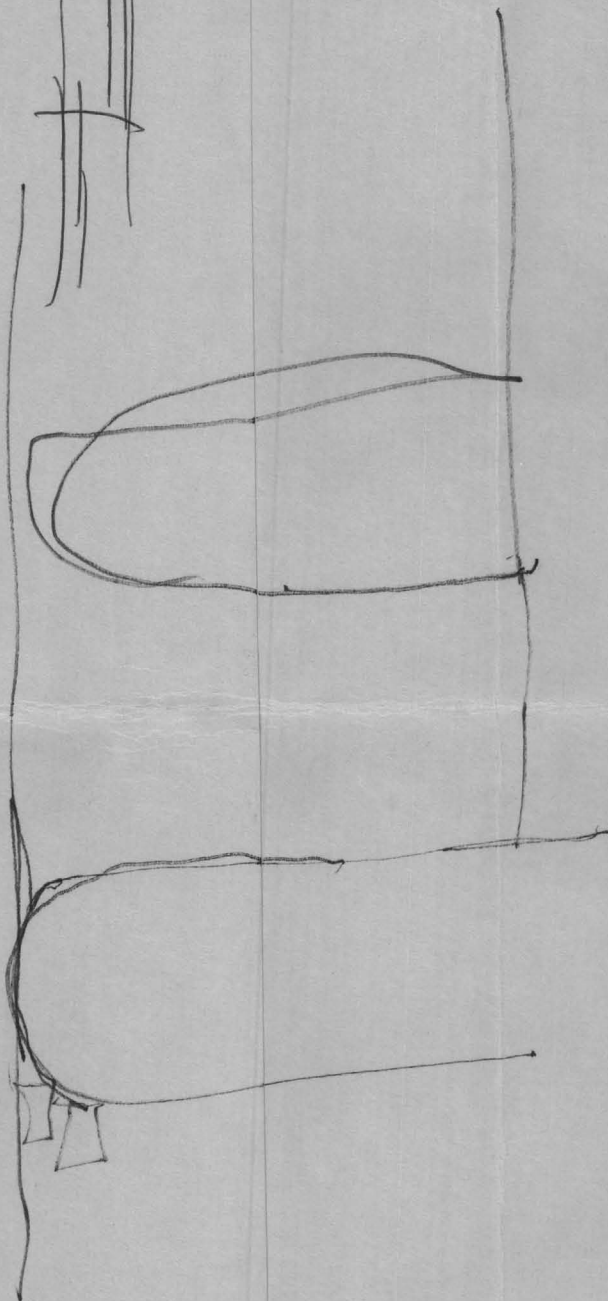
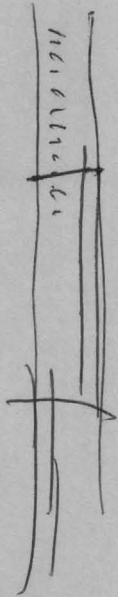
NICOR MINERAL VENTURES

Suite 4200 4949 South Syracuse Street Denver, Colorado 80237

To: **NICOR Mineral Ventures Inc**
Suite 4200
4949 S. Syracuse St.
DENVER, COLORADO 80237
(303) 694-4926

1-9897 8-82 First Class Mail Return Postage Guaranteed

ATTN:
MARCIA GENNETTE



Design

W. L. Moore
Design

The in points on level 293
Trucking distance to Smelter
Copies of material

LEVEL 2 - SILVER BELL
PD MAP & Samples

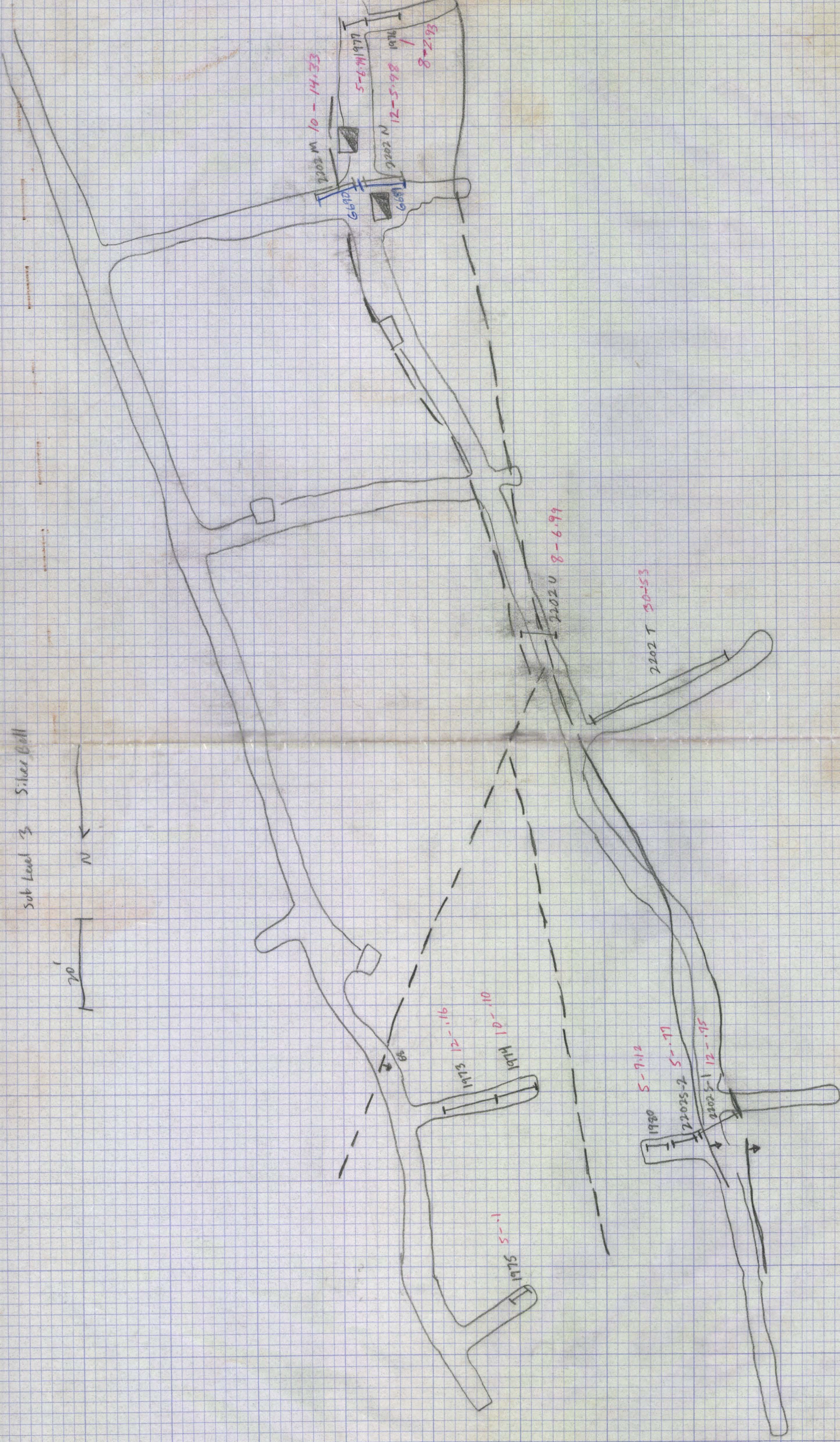
20'

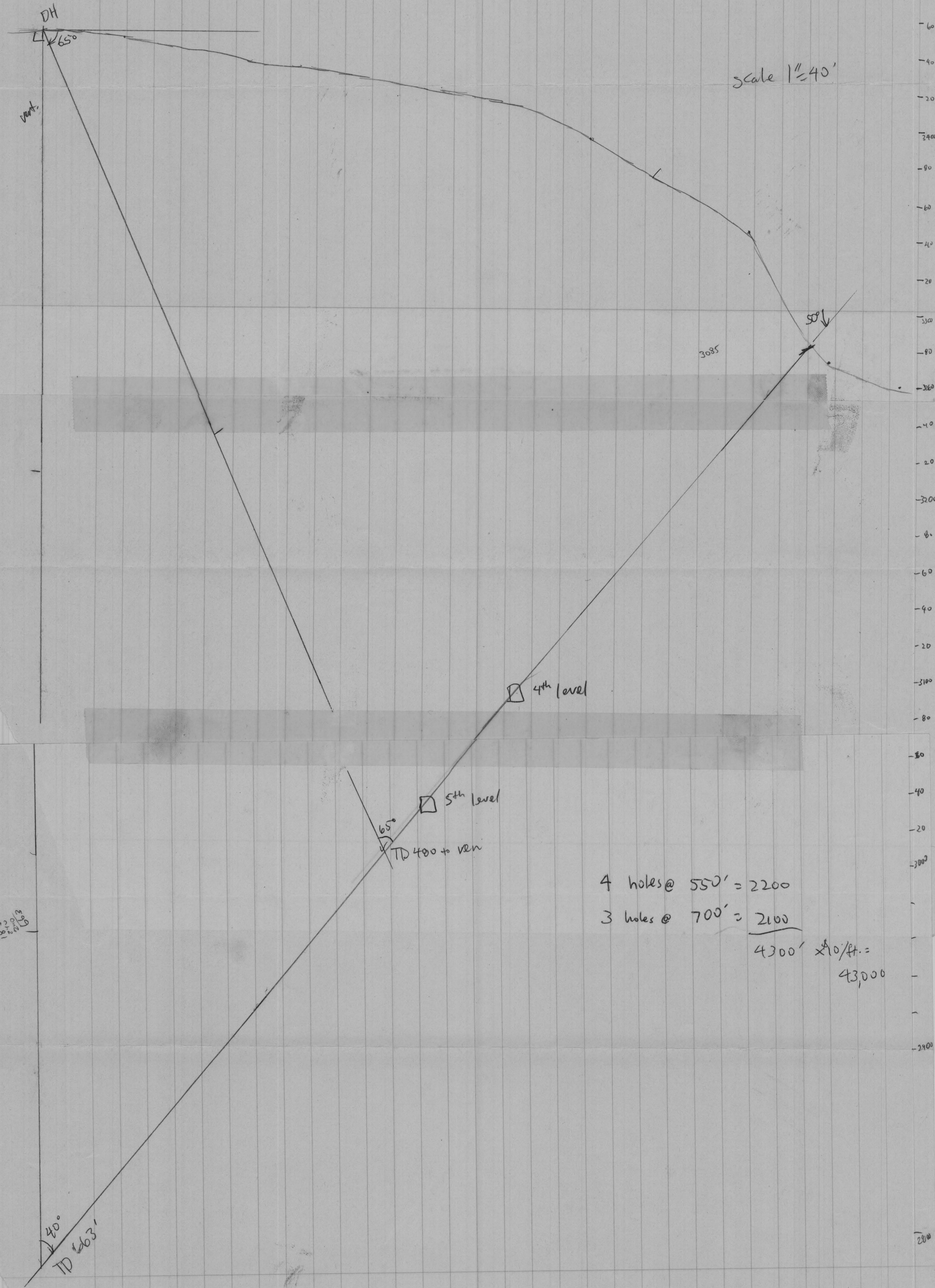
\downarrow



Sub Level 3 Silver Bell

20' N





4 holes @ 550' = 2200
3 holes @ 700' = 2100
4300' x 10/ft. =
43,000

183
184
185

June 21, 1983

Bob,

Karl and I visited this property last Wednesday and Thursday. The brecciated material which hosts the silver appears to be in a "blowout" along a north-south trending regional fault. No exploration along this structure away from mined area, as no real exploration below the 4th level. Metallurgical problems will probably restrict this ore to be used solely for smelter flux (Hayden can take ~ 100 TPD, treatment charge ~ \$5.00/T, trucking ~ \$7.50/T).

I have not critiqued the DCF/ROK - cash flow on the ore reserve numbers but they seem reasonable.

The deal requires balloon payments due annually of ~ \$152K (due in Jan 84) and monthly payments of \$1,000 / mo this year, \$4,000 / mo in 84. All payments apply at a 6% NSR (advance royalty payments) to a purchase price of \$3.2 MM. The property is in a trust and the lessor (Don Coleman) feels confident he can renegotiate the lease.

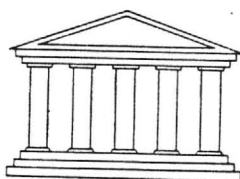
What WERC is looking for is someone to do exploration drilling below the 4th level to determine the down dip and lateral extension, if any, to the known mineralization. Whatever the outcome, WERC will probably open pit mine what it can before Dec. so it will be in a more favorable negotiating position.

For the money NICOX will spend on the property, ^{WERL} they will ^{grant} have a vested interest in the ~~the~~ ^{any} profits, etc. Approximately \$1.5 M has been spent to date. WERL does not want to spend any more on the property and are willing to be readily debited down to a minority net profits interest.

Additional potential for ore below the 4th level is quite good. Approximately 4300' of reverse circulation hammer drilling in about 7 holes would probably suffice for the first pass.

Say

From: Nicor Mineral Ventures



**ACADEMY
CORPORATION**
6905 WASHINGTON NE
ALBUQUERQUE, N.M. 87109
(505) 345-1805

Invoice# L-1460

Date released 6-21-83

Approved by WJ Charles

Results to: Gary Parkison

Nicor Mineral Ventures

2659-G Pan American Fwy. NE

Albuq., N.M. 87107

Description:

REPORT OF ANALYSIS

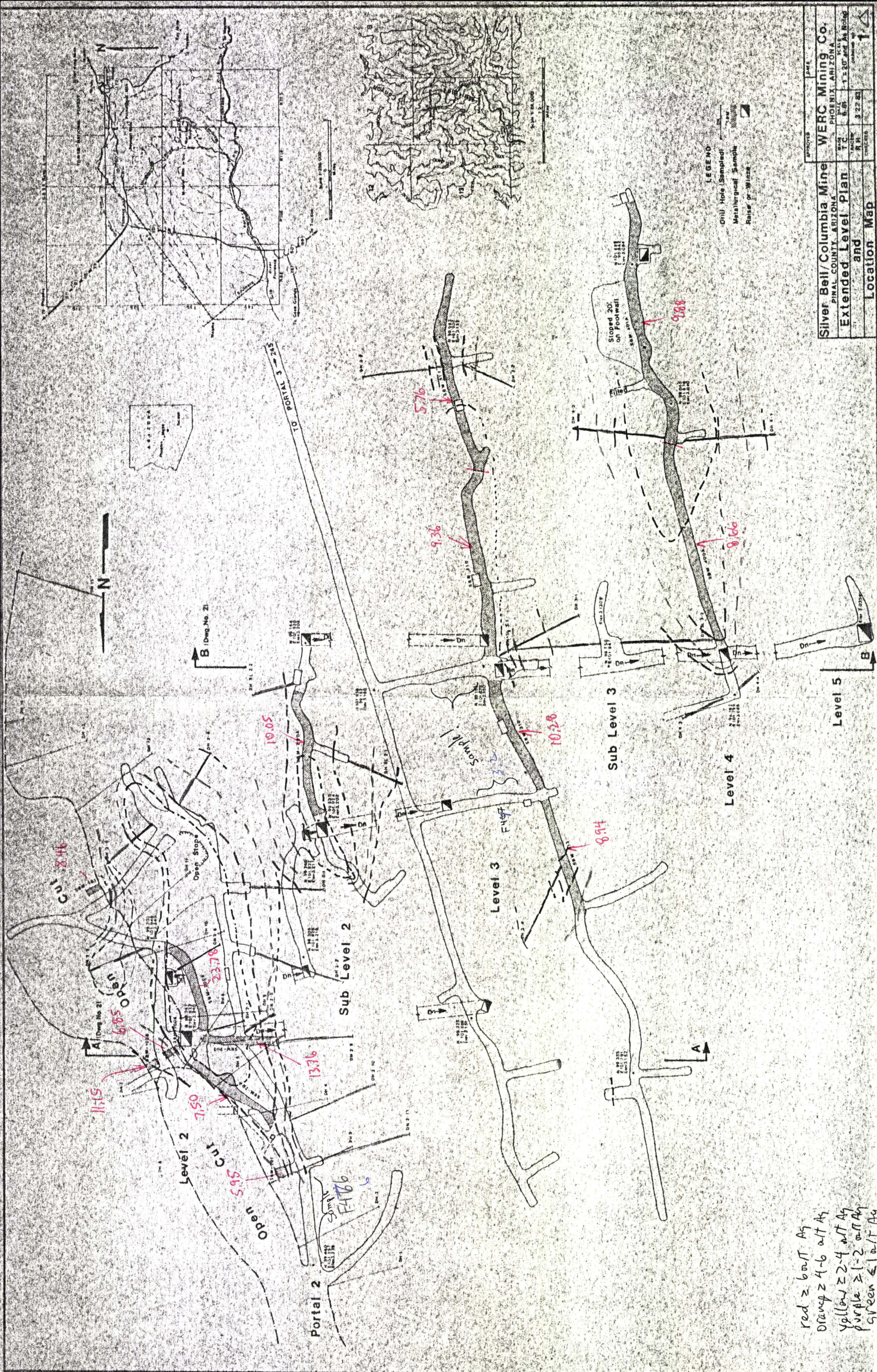
[illegible]

ALBUQUERQUE GEOCHEMICAL
1000 Grove St. N.E.
Albuquerque, N.M. 87110
(505) 266-6713

July 18, 1983

TO: KARL EMANUEL
FROM: JOHN HUSLER *JH*
SUBJECT: SILICA ANALYSIS

| <u>SAMPLE</u> | <u>%SiO₂</u> |
|---------------|-------------------------|
| G-684 | 73.42 |
| G-686 | 71.28 |
| G-689 | 64.83 |
| G-690 | 58.99 |



red ≥ 60% Ag
 Orange ≥ 4-6 alt Ag
 yellow ≥ 2-4 alt Ag
 purple ≥ 1-2 alt Ag
 green ≤ 1 alt Ag

Kennecott - Ray, AZ - not
(Newmont - ~~Piller~~ - Tucson)
Ore Buyer

Inspiration - Jack Eastlick
= small
Munich-Globe
(602) 473-2473

Call George

Letter to you

Hayden-ASARCO -
not buying now -
maybe in Nov.
no Al₂O₃ over
5 units

60×2
 120 days
 $\frac{8}{960}$

Rich

\$7.50/ft.
~750'

- Orbes

- Silver Belle

soonest is November
they use only 100TPD

Hayden - Asarco

7.50/Ton
75% we handle
\$100

18000 TPD
Diller??
Newmont at Magma

- Macho -

leave casing ~
hole?

next quarter
Tucson
\$150,000
\$4000/mo

\$10¹²/+40
Magma

50K - Jan

84

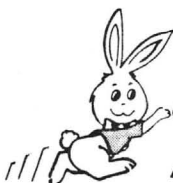
05

What after '84

ask
Smelter
arrangement

150 -
4,000/mo

1000TPD



**Quik
PRINT** PRINTING

881-2927
5103 Menaul Blvd. NE

Free Pick Up
And Delivery

not miners - but money
have equip - coal mine stuff
finance mining,

DONALD D. COLEMAN
PRESIDENT
Western Energy & Resources Corp.

4101 E. CAMELBACK RD. #13
PHOENIX, AZ 85018

840-
602-666-6787
602-952-0362

HOME 602-955-6651 - try first -

50/unit Phand Zn
allowed, 2 unit



One of the NICOR
basic energy companies

NICOR MINERAL VENTURES

2659-G Pan American Freeway, N.E.

Albuquerque, New Mexico 87107

Phone 505 344 7803

- pay \$1000/mo - this year
4000/mo - next year

Apache Junction - Alpha Beta Shop center, 152K pay in January balloon
season restaurant and thereafter
May 31, 1983 - pre-paid royalty -

Don Coleman
WERC Mining Inc. - park at W. side of
4101 E. Camelback, #13
Phoenix, Arizona 85018
red wagoner Royalty = 6% NSR
Seasons

Phone him (Coleman) on 6/13 when
in Phoenix

Dear Don,

Here are the assay results that I promised to send you. Sorry for the delay in return time. I've also enclosed copies of the PD? underground plan maps for levels two and three showing the location of NICOR samples G683-G690. The samples from Albuquerque Geochemical were analyzed using aqua regia digestion and those from Academy Corporation were done utilizing the fire assay method.

Sincerely yours,

David Wronkiewicz

David Wronkiewicz
Geologist

George Matthews - Salt Lake City
(801) 533-8557

Custon Equip. Co.

Unfavorable results from test - oxides are tough -
pretty much write off the oxide zone for anything but smelter flux
PP did some work → their results same as Dawson
- need very fine grind. -

Smelter uses ~500 TPD
for flux

~78% of ~~GMV~~ from smelter
- not include transport.

open pit for first 265,000 tons

- bma option -

Drill to test 1. structure & mineralization

2.

4101 E Camelback #13
Pleonex 85018

~~602~~ (602) 840-6787
952-0367

- 4 4th Joint Meeting MM15 - AIME 1980, Tokyo
Paper entitled "The Electrolurry Process - Hydro
metallurgical Processing of Chalcoppyrite to Electrowon
Copper" by Dahlstrom, Baczek, Wojcik & Emmett
- 5 Mining Congress Journal
Environmental overkill - "The Nature Resource Impact."
- 6 Engineering Mining Journal
Part 1 - The Environmental Confrontation in Copper
Part 2 - Copper Smelting Today: The State of the Art
Part 3 - Tomorrow's Copper Technology
- 7 World Mining - June 1974
"Kivcet Process for Complex Ores"
- 8 "Minerals for the Chemical & Allied Industries" by Sydney
J. Johnstone & Margery G. Johnstone published by
Chapman & Hall 1968

52 total miles to dump at Hudson Smelter
14.3 miles to highway
Shipping (Nov 1982) \$7 / ton shipping

Couldnt be concentrated

Flotation recovery 22%

Cyanidation recovery 48 hrs 30% recovery

Smelter Flux

Hazen study

Flotation in acetylene tri-bromide (den 2.96
70-75% Ag in float

400,000 tons 3 oz cut off 6.5 oz aul

660,000 tons 1 oz cut off 4.25 oz aul

PacLantic Enterprises Pty Limited breaks down 5 coatings
Dexter Process - currently running test lot
Ref

1 Journal of Metals - July 1979 pp 41

Panel Discussion on Cu Hydrometallurgical Economics
108th AIME Meeting New Orleans Feb 20, 1979

2 Proceedings Australasian Inst Min Metall No 261

March 1977 Paper entitled the Evaluation of 4

Potential Hydrometallurgical Processes for Cu Production

Oto Sitnai & Paul K Peeler of CSIRO's Chem Eng div

3 Extractive Metallurgy of Cu Hydrometallurgy & Electrowinning
by Yannopoulos & Agarwal, International Symposium of
Cu Extracting & Refining, Las Vegas 1976

Silverbell - Martinez WERC Mining
 Early History operation by Pinal Mining Co. Dr Tibbatts 11/1/01
 Discovered 1880's

290 Ton shipment from open cut 10.32 oz/ton Ag
 vein reported 20'-30' wide at this point

Collins report (1934) 7 veins on ~~his~~ property

~~to Pb & Ag Pb rarely over 2%~~
 Martinez high Pb lower Ag ~ 2 oz on dump
 Silver Bell colubaria Pb rarely over 2% high Ag

- Report on Silverbell by John D Chataron May 1974

Along Fault intrusive zone strikes N15E dip 52° w
 Breccia-gorge zone tapers & becomes a crackled, Fe
 stained zone w/in 300' N & south of the
 Glory Hole

- Ag encapsuled in silica both leaching Cu &
 Sloaton showed poor recovery

minus 10 mesh? Ag occurs as native silver, silver halides, & argentide
 In addition silver is associated w/ MnOx, FeOx &
 an unidentified Zn silicate (lattice substitution?)

Ag occurs mostly as native Ag mostly < 5 microns

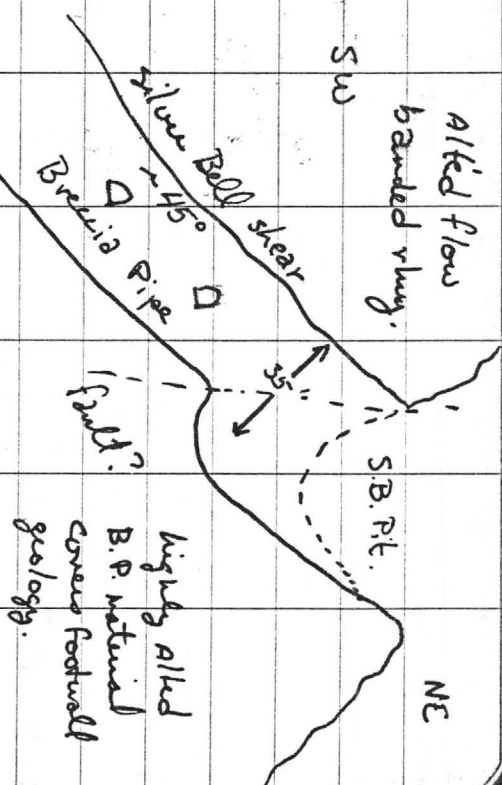
| | | |
|----|-----------------------------|-------------|
| Ag | Fire Assay | 8.3 oz/ton |
| Ag | Aqua Regia Digestion | 9.25 oz/ton |
| Ag | Hydrofluoric Acid Digestion | 3.59 oz/ton |

Silver Bell prop, Dineen Co, AZ
 Approx tonnage outlined by

drilling:

Considered to be an elongate breccia pipe which has interpreted + remobilized Pb-Zn-Ag at depth and may have been mineralized at a later stage w/ Fe-Ag-Cl-Ag. Mineralization occurs as included breccia frag up to "house-sized" → That have been more or less oxidized.

Structural control may be due to replacement of elongate pipe on R.E. zone of carbon where intersected by E-W normal faulting.



workings concentrate on high-grade shear zones of remobilized mineral. Mineralization is apparently restricted to breccia, tho galena frag.

hanging wall runs ~102/ton Ag locally.

Drilling thro for indicates roughly 600,000 tons minable > 34% natural above the 4th level. 400,000 > 60% 10 or 11 - Ave ≥ 7021T oxidized - smaller flux - cyanide problems

IP survey has been performed w/
mixed results. IP cannot define
upper B.P. As sulfides are oxidized.
Anomaly at 1000' lies on down dip
extent of B.P. - may be sulfide
concentration or clay zone.

Genesis of ore probably
related to volcanism, As ~~the~~ the
mineral. zone occupies lg. frac.
zone in this-plio. vol. pile.
Udmanos are well indurated +
some Ash flows appear to be
very highly welded. Ashmore
rocks are present w/in the
min. zone and cut them.
Dip of S.B. struc. Away from
proposed caldera is not
typical of caldera setting.

Western Energy and Resource Corp.

Although presence of B.P. is
typical.

Pete Galli of Reno looked at
the deposit and considered it
high level porphyry mineralization,
similar to Cananea.

Bob Gordon of Reno suggests
two or three stages mineralization
in pipe - Pb-Zn-Ag due to
volcanic late stage epithermal
fluids.

Don Bryant of Denver, sez it is
remobilized min. from lower
Pb-Zn-Ag deposit.

From Open cut of Silver Bell

G 681 & G 682 are contiguous
rough channel / samples taken ~ 1'
intervals G 682 lies ~ 4'
from long wall side & ~ 7' sample
width G 681 lies E of G 682
material is a coarse to fine
breccia zone in Tertiary rhyolite
ventured surfaces are FeOx stained
minor $\frac{1}{16}$ chrysocolla - clasts
range from 1 mm to $1\frac{1}{2}$ silicified
mostly with clay like or altered
zones w/in - clasts also show
greenish phases glassy - Breccia
zone continues at least 30' to
E (not exposed)

Location S N of old shaft
Location Hole # 6017

G 683 Sem reg w/ chip
of soft red earthy matrix
in high grade stope area
PD total SB-2 level 2 Silver Bell

G 679 6' Chip Car Canyon
vertical across gently dipping
qtz seam with glassy w/
a few crusts after Sd side,
fault at base

G 680 $3\frac{1}{2}$ ' chip appeared
stratigraphically below G 679
similar to G 679 w/ ~ 1'
seam of FeOx spongy
material lin ext py or
schelite clots of galena crust
in one fragment

~~vertical~~
vertical

C-684 Semi rep w/ chip
 same loc as C-683 of
 clast fragments suspended in
 matrix of C-683 sil & or ser
 to look ahead relict clasts
 visible some jarosite

W 15' 15' 15'
 specin } - fract rhy int

C-685 C-686 C-687 C-688

4 consecutive 15' chips

C-685 through breccia zone
 hanging wall - through fault &
 into hanging wall of vein hanging
 FeOx sink in places ~ 1350
 clasts 65% early matrix

C-686 (USD) same to intrusive contact
 intrusive rhy phy highly fractured

C-687 Intrusive rhy phy fractured
 C-688 w/ breccia zones

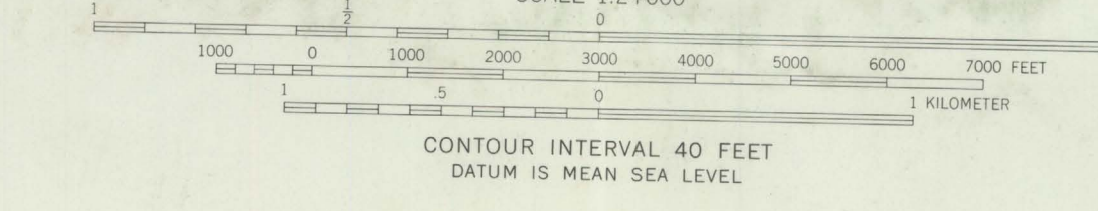
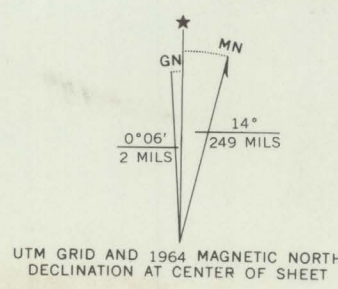
E C-689 8' C-690 8' W
 breccia intrusive

Sample taken
 450 to ~~stone~~ chip
 Same as previous level 3

C-691 30' chip (~20 true thick)
 brecciated rhyolite ram of sil & clasts
 in at matrix, some sil, some
 clays - heavily fract lined by
 & replaced partially by FeOx
 MnOx - clasts are ahead
 to varying degrees
 C-692 Rep dump from heavily
 FeOx stained breccia fragments
 from train area S of
 Silverbell workings



Mapped, edited, and published by the Geological Survey
Control by USGS and USC&GS
Topography by photogrammetric methods from aerial
photographs taken 1962. Field checked 1964
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



THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR WASHINGTON, D.C. 20242
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MINERAL MTN., ARIZ.
N3307.5-W11107.5/7.5

1964
AMS 3750 II NW-SERIES V898

per Doc Coleman - Smelter pays for ~
80% of b.m.v. as
delivered.

WERC MINING COMPANY
4101 East Camelback Road, #13
Phoenix, Arizona 85018

June 1, 1983

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HIGHLIGHTS

THE COMPANY

WERC Mining Company (WERC) is an Arizona Limited Partnership which began operations in February of 1980. Since that date it has raised \$949,000 and has spent approximately \$640,000 in exploring and developing an Arizona mining property located in the Pioneer Mining District, the "home" of two major producers of mineral wealth - the Ray and Magma Mines. There are twenty-four limited partners and the general partner is Western Energy & Resources Corporation (Western Energy) who owns 37.5 percent of the capital. Western Energy is a family owned corporation controlled by Donald D. Coleman.

THE PROPERTY

WERC is acquiring mining claims under a purchase contract for \$3,200,000 with a balance due of \$2,870,000 on December 31, 1982. The property is located in northeastern Pinal County, Arizona, approximately sixty-five miles southeast of Phoenix and is accessible by county-maintained roads from both Florence and Florence Junction (see Location Map - Drawing No. 1).

The property consists of three patented and sixty-four unpatented claims covering 1360 contiguous acres, more or less (see Claim Map - Drawing No. 2). The required assessment work on the unpatented claims is up to date and titles to the patented claims are free from encumbrances. Mine development and production has been from the patented claims.

Two mines are located on the property - the Martinez and Silver Bell/Columbia Mines. The Company's exploration and development work has centered around the Silver Bell/Columbia Mine; however, mineralization is present at the Martinez and other locations on the property.

STATUS OF EXPLORATION AND DEVELOPMENT

WERC has concentrated its activities at the Silver Bell/Columbia Mine since previous geologic work indicated higher silver values there than elsewhere on the property and a greater potential for developing an economic ore body. The Company has performed the following items of work so that future exploration and development can proceed in an efficient and timely manner:

- Rehabilitated the Silver Bell/Columbia Mine workings and open cut;

- Completed construction of roads to the property now maintained by Pinal County and on-site access roads;

- Established a camp suitable for supporting future exploration and development activities in a remote area;

- Performed surface and underground drilling and sampling programs (see Extended Level Map - Drawing No. 1 and Assay Logs);

Surveyed the Silver Bell/Columbia Mine workings and mapped the adjacent surface topography (see Drawing No's 1 and 2);

Undertook geological, mineralogical and metallurgical studies;

Developed preliminary plans for a proposed open pit mining operation (see Proposed Open Pit - Drawing No. 2); and

Tested a source of water for future operations.

The primary results of the work have been the delineation of an estimated 660,000 tons of mineralized breccia having a probable grade of 4 ounces of silver per ton with a cut-off grade of 1 ounce per ton; using a 3 ounce cut-off, a lesser tonnage of much higher grade is achievable; a reasonable assurance that more than 150,000 tons can be mined and sold as a fluxing ore at a profit; and, most importantly, positive indications that the mineralized zone continues at depth below the present Silver Bell/Columbia Mine. The Company believes that additional geological work and deep hole drilling will confirm additional mineralized breccia in excess of one million tons which could, in fact, mark the beginning of a new major silver mine.

PLAN FOR FUTURE WORK

WERC has developed a plan for future exploration and development work that will be implemented concurrently with an open pit mining operation producing fluxing ore to ASARCO's Hayden Smelter. The sequential elements of the plan are as follows:

Perform drilling and sampling required to confirm the volume and grade of estimated mineable reserves above the lowest workings of the Silver Bell/Columbia Mine;

Optimize the design of the open pit for the most economic operation concurrently with starting geologic studies and mapping directed toward planning a deep hole drilling program to test the potential of mineralization at depth;

Commence open pit mining operations to provide a cash flow to offset the costs of the deep hole drilling program;

Drill reconnaissance holes near known mineralization and then incrementally down dip toward the potential sulfide zone suggested by previous geophysical work. These reconnaissance holes will assess downward mineralization, including its tenor, level of oxidation and the existence of secondary enrichment;

Core drill, once the extension of the mineralization is confirmed, to develop geologic and mineralogic data to establish the mode of occurrence of the deposit, the limits and value of the mineralization, feasible mining methods and plans and optimum metallurgical processes; and

Prepare technical and economic feasibility studies to evaluate the property's economic potential.

The Company feels that the possibilities of primary sulfide mineralization and a zone of secondary enrichment offer a far greater economic return than the limited potential above the existing Silver Bell/Columbia Mine and, therefore, considers the open pit operation as a "means" to finance the exploration of the greater economic possibilities. However, should the deep hole drilling program prove either no mineralization at depth or insufficient economic possibilities, the exploration effort would be abandoned at that point and the profits from the open pit mining operation would then be applied to the return of capital.

PROJECTED ECONOMICS OF THE OPEN PIT

See the following:

1. Open Pit Mining Costs (Most Likely and Conservative) for Options I - IV
2. Price Matrix for Ore (Grade vs. NSR)
Calculation of Net Smelter Return using smelter charges statistically derived from Coleman, Houston sampling for Fe, SiO₂, Al₂O₃, etc.
3. Pro Forma Cash Flow - Operating margin calculated for 6.5 oz/Ton, \$12.00/oz.

MANAGEMENT

Mr. Donald D. Coleman, president of the general partner, has over twenty-five years of experience in the mining and industrial construction industries. He is a graduate of the University of Colorado with a masters degree in electrical engineering and a bachelors degree in business administration. In addition, he took courses in geology and metallurgy at the Colorado School of Mines. A significant number of the limited partners have experience within the mining industry. Several have been or are currently serving in managerial positions with such firms as AMAX, Newpark Mining, Custom Equipment Corporation, Molycorp, Utah International, The Galigher Company and Homestake Mining Company.

HISTORY OF THE PROPERTY

The property is located in a rugged and remote mountainous area with vertical, colorful canyon walls and crags of high relief. The Silver Bell/Columbia Mine is located at an elevation of 3300 feet above sea level as contrasted to the camp site at 2600 feet, less than a mile distant.

RECENT WORK

WERC took an option on the property in October 1979, and commenced operations in February 1980, by cleaning the Silver Bell/Columbia mine workings, constructing access roads, and developing camp facilities adequate to support exploration and development work in a remote area. The camp facilities are fully modern and consist of an existing two-bedroom house and adjoining work shop, a new change house, three mobile bunkhouse trailers and a tool crib. Pinal County has accepted responsibility for maintenance of the company constructed access roads to the property.

OPEN PIT MINING COSTS

| <u>Pit Option</u> | <u>Total Volume Cy</u> | <u>Total Stripping Cy</u> | <u>Total Ore Ton</u> | <u>Overall Stripping Ratio</u> | <u>Incr. Volume Cy</u> | <u>Incr. Stripping Cy</u> | <u>Incr. Ore Ton</u> | <u>Deduction For Ore Mined Ton</u> | <u>Incr. Ore in Place Ton</u> | <u>Incr. S.R. Ore in Place</u> |
|---|------------------------|---------------------------|----------------------|--------------------------------|------------------------|---------------------------|----------------------|------------------------------------|-------------------------------|--------------------------------|
| 1. Option I - Mine to 3240' & Gouge | 70,028 | 36,793 | 74,779 | 0.5 cy/ton | 70,028 | 36,793 | 74,779 | 4,779 | 70,000 | 0.53 cy/T |
| 2. Option II - Mine to Level 2 - 3200' | 167,249 | 121,696 | 102,496 | 1.2 cy/ton | 97,221 | 84,903 | 27,717 | 2,717 | 25,000 | 3.40 cy/T |
| 3. Option III - Mine to Level 3 - 3150' | 420,723 | 347,430 | 164,912 | 2.1 cy/ton | 253,474 | 225,734 | 62,416 | 2,416 | 60,000 | 3.76 cy/T |
| 4. Option IV - Mine to Level 4 - 3090' | 1,415,444 | 1,299,461 | 260,889 | 4.5 cy/ton | 994,721 | 952,031 | 95,977 | 5,977 | 90,000 | 10.58 cy/T |
| | | | | | | 1,299,461 | 260,889 | 15,889 | 245,000 | 5.30 Average |

MINING COSTS PER TON OF ORE

| <u>Work Item</u> | <u>Option I</u> | | <u>Option II</u> | | <u>Option III</u> | | <u>Option IV</u> | |
|------------------|---------------------|--------------------|---------------------|--------------------|---------------------|--------------------|---------------------|--------------------|
| | <u>Conservative</u> | <u>Most Likely</u> | <u>Conservative</u> | <u>Most Likely</u> | <u>Conservative</u> | <u>Most Likely</u> | <u>Conservative</u> | <u>Most Likely</u> |
| Stripping | 0.53 = 4.00 | 0.53 x 2.00 | 3.4 x 5.00 | 3.4 x 3.00 | 3.76 x 5.00 | 3.76 x 3.00 | 10.58 x 5.00 | 10.58 x 3.00 |
| Mining | \$ 2.12 | \$ 1.06 | \$17.00 | \$10.20 | \$18.80 | \$11.28 | \$52.90 | \$31.74 |
| Crushing | 2.22 | 1.33 | 2.22 | 1.33 | 2.22 | 1.33 | 2.22 | 1.33 |
| Hauling | 2.00 | 1.50 | 2.00 | 1.50 | 2.00 | 1.50 | 2.00 | 1.50 |
| Administrative | 8.00 | 6.38 | 8.00 | 6.38 | 8.00 | 6.38 | 8.00 | 6.38 |
| Total | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| | \$15.34 | \$11.27 | \$30.22 | \$20.41 | \$32.02 | \$21.49 | \$66.12 | \$41.95 |

PRICE MATRIX

**Net Smelter Return/Ton
(Various H&H Ag Prices)**

| Ore Grade | \$10/oz | \$11/oz | \$12/oz | \$13/oz | \$14/oz | \$15/oz | \$16/oz | \$17/oz | \$18/oz | \$19/oz | \$20/oz |
|-------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 3.0 oz/ton | 16.87 | 19.24 | 21.62 | 23.99 | 26.37 | 28.74 | 31.12 | 33.49 | 35.87 | 38.24 | 40.62 |
| 3.5 oz/ton | 21.50 | 24.35 | 27.20 | 30.05 | 32.90 | 35.75 | 38.60 | 41.45 | 44.30 | 47.15 | 50.00 |
| 4.0 oz/ton | 26.13 | 29.45 | 32.78 | 36.10 | 39.43 | 42.75 | 46.08 | 49.40 | 52.73 | 56.05 | 59.38 |
| 4.5 oz/ton | 30.76 | 34.56 | 38.36 | 42.16 | 45.96 | 49.76 | 53.56 | 57.36 | 61.16 | 64.96 | 68.76 |
| 5.0 oz/ton | 35.39 | 39.67 | 43.94 | 48.22 | 52.49 | 56.77 | 61.04 | 65.32 | 69.59 | 73.87 | 78.14 |
| 5.5 oz/ton | 40.02 | 44.77 | 49.52 | 54.27 | 59.02 | 63.77 | 68.52 | 73.27 | 78.02 | 82.77 | 87.52 |
| 6.0 oz/ton | 44.65 | 49.88 | 55.10 | 60.33 | 65.55 | 70.78 | 76.00 | 81.23 | 86.45 | 91.68 | 96.90 |
| 6.5 oz/ton | 49.29 | 54.99 | 60.69 | 66.39 | 72.09 | 77.79 | 83.49 | 89.19 | 94.89 | 100.59 | 106.29 |
| 7.0 oz/ton | 53.92 | 60.09 | 66.27 | 72.44 | 78.62 | 84.79 | 90.97 | 97.14 | 103.32 | 109.49 | 115.67 |
| 7.5 oz/ton | 58.55 | 65.20 | 71.85 | 78.50 | 85.15 | 91.80 | 98.45 | 105.10 | 111.75 | 118.40 | 125.05 |
| 8.0 oz/ton | 63.18 | 70.30 | 77.43 | 84.55 | 91.68 | 98.80 | 105.93 | 113.05 | 120.18 | 127.30 | 134.43 |
| 8.5 oz/ton | 67.81 | 75.41 | 83.01 | 90.61 | 98.21 | 105.81 | 113.41 | 121.01 | 128.61 | 136.21 | 143.81 |
| 9.0 oz/ton | 72.44 | 80.52 | 88.59 | 96.67 | 104.74 | 112.82 | 120.89 | 128.97 | 137.04 | 145.12 | 153.19 |
| 9.5 oz/ton | 77.07 | 85.62 | 94.17 | 102.72 | 111.27 | 119.82 | 128.37 | 136.92 | 145.47 | 154.02 | 162.57 |
| 10.0 oz/ton | 81.70 | 90.73 | 99.75 | 108.78 | 117.80 | 126.83 | 135.85 | 144.88 | 153.90 | 162.93 | 171.95 |

Basis of Net Smelter Return:

1. Payment for Ag: Deduct 1/2 oz Ag, pay for 95% of balance at H&H price less \$0.25 per oz.

2. Base Treatment Charge: \$5.00 per dry ton.

3. Deductions:

(a) \$0.35/unit under 70% available SiO₂ (Fe/unit required 1.3 units of SiO₂, tons reducing available SiO₂)

(b) 5%Al₂O₃ free, \$0.20/unit Al₂O₃ above 5%.

Silver Bell Ore

| | Mean | Std. Dev (n-1) | 2 Std Dev Max/Min. |
|--------------------------------|-------|----------------|--------------------|
| Fe | 2.9% | 0.7% | 4.3% Max. |
| SiO ₂ | 82.5% | 4.6% | 73.3% Min. |
| Al ₂ O ₃ | 5.4% | 1.0% | 7.4% Max. |

**Calculation of Smelter
Changes of SB Ore w/95% Conf. Int.**

| | |
|---|--------|
| Base Treatment | \$5.00 |
| SiO ₂ [73.3-(4.3)(1.3)]=67.7 | 0.81 |
| (70.0-67.7) (0.35) | 0.48 |
| Al ₂ O ₃ (7.4-5.0) (0.20) | \$6.29 |

PRO FORMA CASH FLOW YEAR 1 - YEAR 6
SILVER BELL OPEN PIT OPTIONS I-III

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|--|---|----------------------------------|---|----------------------------------|---|----------------------------------|
| Sale of Flux Ore (Net Smelter Return) (6.5 oz/T Ave.) (\$1200/oz.) | 30,000T x 61.00 = \$1,830,000 | 30,000T x 61.00 = \$1,830,000 | 30,000T x 61.00 = \$1,830,000 | 30,000T x 61.00 = \$1,830,000 | 30,000T x 61.00 = \$1,830,000 | 30,000T x 61.00 = \$1,830,000 |
| Pit Development Crushing Site Ore Haul Road Stockpile Area Sampling & Assaying | (75,000) | (60,000) | (60,000) | (60,000) | (60,000) | (10,000) |
| Pre Production Stripping | Option I 36,793 cy x 2.00 = (74,000) | | Option II 84,903 cy x 3.00 = (254,700) | | Option III 225,734 cy x 3.00 = (677,200) | |
| Ore Production Mining Crushing Hauling Administrative | 30,000T x 10.21 (\$ 306,300) | (\$ 306,300) | (\$ 306,300) | (\$ 306,300) | (\$ 306,300) | 5,000T x 10.21 (\$ 51,100) |
| Total Operating Expense | (\$ 455,300) | (\$ 621,000) | (\$1,043,500) | (\$ 366,300) | (\$ 366,300) | (\$ 61,100) |
| Operating Margin \$12.00/oz (Per Ton Ore) | \$1,374,700 45.82 | \$1,209,000 20.30 | \$ 786,500 26.22 | \$1,463,700 48.79 | \$1,463,700 48.79 | \$243,900 48.78 |
| Sale of Flux Ore | 1,830,000 | 1,830,000 | 1,830,000 | 1,830,000 | 1,830,000 | 305,000 |
| Pit Development | (75,000) | (60,000) | (60,000) | (60,000) | (60,000) | |
| Pre Production Stripping | 36,793 cy x 4.00 (147,300) | 84,903 cy x 5.00 (424,500) | 225,734 cy x 5.00 (1,128,700) | | | |
| Ore Production | 30,000 x 13.22 (396,600) | (396,600) | (396,600) | (396,600) | (396,000) | 5,000 cy x 3.21 (66,100) |
| Total Operating Expense | (\$ 618,800) | (\$ 881,100) | (\$1,585,300) | (\$ 451,600) | (\$ 451,600) | (\$ 66,100) |
| Operating Margin (Per Ton Ore) \$12/oz | \$1,211,200 40.37 | \$ 948,900 31.63 | \$ 244,700 8.16 | \$1,378,400 45.95 | \$1,378,400 45.95 | \$238,900 47.78 |
| Year O Work Drilling & Sampling Pit Design & Layout | 15,000 15,000 | | | | | |

Most Likely

Conservative

Surface mapping, underground surveying, the staking of additional claims and the search for a source of water for operations were completed in 1981. A sampling program was started in 1980 and continued into 1981. WERC commissioned Donald G. Bryant to make a geologic study of the Silver Bell/Columbia mineralization in February, 1981. Under Mr. Bryant's direction, a series of percussion drill holes were drilled from the open cut and selected underground locations. The holes were generally 48 feet deep and were sampled in three-foot increments (see Drill Hole Assay Log and Extended Level Plan - Drawing No. 1). A geophysical study using induced polarization and resistivity was completed in 1981.

PRIOR HISTORY

The Silver Bell/Columbia Mine was discovered about 1880 and was famous as an early day silver bonanza. High grade oxidized lead-silver ore was mined and hauled to a charcoal smelter on the Gila River near Cochrane. The ore was reduced to a lead-silver bullion and transported to the closest rail head at Case Grande, some 60 miles distant. Old reports suggest that ore worth \$1,000,000 was taken from the Silver Bell/Columbia workings between 1880 and 1883. The Martinez Mine was opened several years after the Silver Bell/Columbia. When silver was demonitized in 1893, both mines were shut down and have been operated by lessors at intermittent periods through the intervening years. The lessors mined scattered pockets of high-grade ore and did no development work of any importance. A small gravity and flotation mill was erected at the Martinez in 1937 and was used to concentrate ore from the Martinez Mine. The Silver Bell/Columbia open cut was mined from 1968 into 1972 for siliceous silver ore shipped to area smelters as a flux in the smelting process.

PRODUCTION RECORDS

No records are available for production prior to 1926. Known production records are summarized as follows:

Martinez Mine, 1926-28, 2,400 tons of ore averaging 11.7 ounces silver per ton and 25 percent lead;

Martinez Mine, 1937-38, 2,000 tons of ore averaging 4.5 ounces silver per ton and 6 percent lead;

Silver Bell/Columbia Mine, 1937-40, 1,637 tons of ore averaging 18 ounces silver per ton and 7.5 percent lead;

Martinez Mine, 1943-48, 1,122 tons of ore containing 0.4 to 19.8 ounces silver per ton and 8 to 26.8 percent lead;

Martinez Mine, 1951-53, 285 tons of ore containing 2 to 2.5 ounces silver per ton and 19.3 to 26.8 percent lead; and

Silver Bell/Columbia Mine, 1968-72, an estimated 30,000 tons of ore from the open cut containing 8 to 11 ounces silver per ton. There is no record of the lead content.

SUMMARY OF REPORTS

Reports made on the property prior to WERC's involvement are: Starbird, 1920; Collins, 1934, Boyer, 1943; Mieritz, 1957; and Chakarun, 1974-75 (two reports). Reports prepared for the Company are: Mieritz, 1980 (two reports); Wargo, 1981; Bryant, 1981; and Gordon, 1982.

E. M. Starbird, 1920, recognized that the Silver Bell/Columbia mineralized zones were of greater width than had been mined by previous miners. Starbird did extensive sampling and spot checks of his results yield reasonable confirmation. He cited the potential for ore along the strike to the south and trending downward. He encouraged further development, but this recommendation was not followed.

Glenville A. Collins, 1934, mentioned high grade ore mined by lessors of the Silver Bell/Columbia ranging from 2000 to 3000 ounces silver per ton. His report presents much the same view as Starbird did in 1920.

Anatol Glas, 1937, repeated the same general optimism regarding the Silver Bell/Columbia Mine. Glas urged a systematic mining method rather than "gophering" for high-grade ore pockets.

L. Lee Boyer, 1943, reported primarily on the Martinez Mine since he was involved in the mill constructed in 1937. He provides historical background that is oriented towards operations.

R. E. Mieritz, 1957 and 1980, was a "rehash" of previous reports. His underground maps were not accurate.

John Chakarun, 1974 and 1975, felt the breccia was associated with a vein and fault gouge in contrast to the present view that the breccia is intrusive/

Joseph Wargo, 1981, recommended longhole drilling to determine the width, grade and trend of the mineralization and suggested the possibility of primary mineralization and secondary enrichment below the oxidized zone. He proposed deep drilling from the surface to explore the potential of mineralization at depth.

Donald C. Bryant, 1981, supervised the percussion drill hole sampling program and evaluated the exploration potential of the property. He was the first geologist to recognize that the Silver Bell deposit is an intrusive breccia related to a major fault that is mineralized at the Ray Mine. Mr. Bryant sees enough potential in the property to warrant an exploration program directed toward the discovery of a major commercial ore body. He prepared an estimate of the volume and grade of mineralization developed by the Silver Bell/Columbia Mine workings.

Robert E. Gordon, 1982, visited the property and reviewed data on the property. He recommended exploration by deep drilling and feels that a downward projection of mineralization can be made with a reasonable expectation of success. He prepared geological cross sections as an aid to understanding the mineralization and to locating surface deep drill holes.

GEOLOGY AND RESERVES

The Silver Bell/Columbia Mine consisted of 4,300 linear feet of adit, drifts, crosscuts, inclines and winzes in 1920. The Company's underground surveys confirmed that the workings are essentially unchanged since then except the open cut destroyed Level 1 and Sub Level 1. Most of the workings are in the mineralized zone except the Level 3 adit to Portal 3, which is parallel to and connects to the Level 3 drift by crosscuts.

Reports made prior to 1981 consider the Silver Bell/Columbia deposit a vein(s) within a simple brecciated shear zone striking north-northwesterly cutting a series of strongly faulted rhyolitic Tertiary volcanics. Donald G. Bryant was the first geologist to recognize the Silver Bell/Columbia structure as an intrusive elongated breccia pipe or dike.

Geologic analysis of colored aerial photographs and Landsat imagery shows that the property is on an intersection of east-west faults that are mineralized at the Ray porphyry copper deposit and a well-defined circular structure that may be indicative of deep-seated disturbances usually involving an upward force such as an intrusive igneous body.

Extensive sampling of the mine workings by Starbird in 1920 showed the breccia zone to be mineralized up to 75 feet wide; however, extraction of ore has been confined to widths of six to eight feet. One reserve calculations made prior to 1981 were based on the Starbird sampling with little check sampling and a consensus thereof is 60,000 tons averaging 8 ounces of silver per ton between the surface and Level 5. It is believed that the width of mineable ore was assumed in the calculations to be the width of the mineralization exposed in the mine workings and not the full breccia width.

WERC's percussion drill hole sampling program was designed to cut the full width of the breccia zone to determine the true limits of both the breccia and mineralization. A total of 36 holes were drilled, sampled and assayed in three-foot increments. The program proved that the mineralized breccia is much wider and more extensive than previously thought, and that mineralization is restricted to the intrusive breccia. Fragments of quartz porphyries and granitic rocks not related to the volcanics enclosing the structure were found in drill hole cuttings of the breccia.

A statistical study of the assay results of the sampling program indicates that an estimated 660,000 tons of mineralized breccia having a probable grade of 4 ounces silver per ton with a cutoff grade of 1 ounce per ton is in place between the surface and Level 5. At a cutoff grade of 3 ounces per ton, an estimated 400,000 tons having a probable average grade of 6.5 ounces of silver per ton can be developed between the surface and Level 5. The grade, width and continuity of the mineralization as determined from WERC's drilling and sampling program strongly indicates that a downward projection of mineralization can be made with a reasonable expectation of correctness.

The nearly complete oxidation of the exposed portion of the deposit suggests that downward percolating waters may have leached silver values and carried them to be concentrated near the present or an old water table. This potential of secondary enrichment of silver is an important positive aspect of the Silver Bell/Columbia deposit.

A geophysical study using induced polarization and resistivity indicated the possibility of sulfide primary mineralization at a depth of 1,000 feet or more roughly along the project of the breccia. Interpretation of the data is not conclusive, however.

MINING METHODS

The drilling and sampling program proved the existence of mineralized widths suitable for low-cost open pit and underground mining methods as compared to the high-cost, labor-intensive extraction of ore from the narrow widths presumed by pre-1981 reports on the property. The plan for future exploration and development has been developed around mining the upper reaches of the deposit by open pit methods. The open pit would be continued to the depth where the ratio of overburden required to mine the ore makes the operation uneconomical. At that point mining would be done by underground methods.

UNDERGROUND MINING METHODS

The high relief and rugged topography of the property lends itself to a horizontal tunnel or adit as the access for mining the deposit rather than a vertical or inclined shaft. The strength and drillability of the rock suggests that development would be simple and several options for bulk mining methods requiring little support would be satisfactory - sublevel stoping, blasthole fan drilling or vertical crater retreat. The competence of the rock will allow the construction of mine openings of sufficient size for rubber-tired loaders and haulage units.

OPEN PIT OPERATIONS

An open pit has been designed for mining the Silver Bell/Columbia deposit to Level 4 in four phases (Options). A preliminary design has been predicated on relatively steep pit walls since the overlying rock is competent and the life of the pit is short. A drilling and sampling program prior to the start of mining operations will provide data for determining ore reserves and final pit design. The ultimate depth of the pit will most likely be determined at that point where the value of the ore is equal to the cost of stripping and mining and not by any physical limitations.

The first mining phase (Option I) is designed to produce maximum ore tonnage between the existing open cut and elevation 3218 feet with a minimum of stripping and preparation work, thus reducing preproduction costs to a minimum while maximizing cash flow from the initial pit operations. Options II, III and IV incrementally increase the depth of the pit to Mine Levels 2, 3 and 4 sequentially. As mining progresses, actual cost and pit wall stability data will be used to modify the pit design if required.

Estimated incremental cubic yards of stripping and tons of ore averaging 6.5 ounces of silver per ton with a 3 ounce cutoff grade for each of the Options is as follows:

| Option | Stripping Cubic Yards | Ore Tons | Stripping Ratio Cy per Ton Ore |
|-----------------------|--------------------------|-------------|-----------------------------------|
| I - mine to 3218 | 36,800 | 70,000 | 0.53 |
| II - mine to Level 2 | 84,900 | 25,000 | 3.40 |
| III - mine to Level 3 | 225,700 | 60,000 | 3.76 |
| IV - mine to Level 4 | 952,000 | 90,000 | 10.58 |
| Totals | 1,299,400 | 245,000 | 5.3 |

METALLURGY

Preliminary metallurgical work has been completed by Dawson Metallurgical Laboratories and Hazen Research. All tests were based on samples taken in the oxidized zone of the Silver Bell/Columbia Mine and open cut. Gravity concentration, flotation and cyanide leaching were tried. The reports by both Dawson and Hazen indicate recoveries are low for conventional processing because of silver particles locked into the silica. Therefore, the Company has made the decision to sell the oxidized ore as a fluxing ore to the local copper smelters. Metallurgical testing has been discontinued until such time as the tenor of mineralization at depth is known.

COPPER STATE ANALYTICAL LAB., INC.

DNYANENDRA A. SHAH
ARIZONA REG. NO. 8888

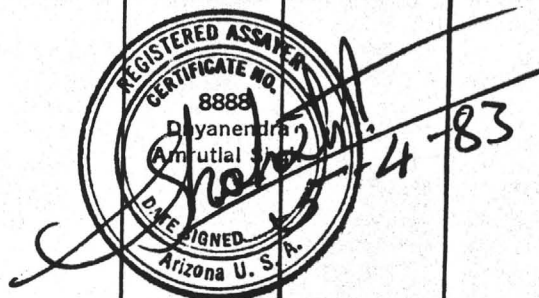
REGISTERED ASSAYER
P. O. BOX 7517
TUCSON, ARIZONA 85725

710 E. EVANS BLVD.
PHONE 602-884-5811
884-5812

WERC Mining Co.
Attn: R.C. Huston

JOB# 002171
RECEIVED 4/28/83
REPORTED 5/4/83
INVOICE# C 2490

| SAMPLE NUMBER | Au opt | Ag opt | Cu % | Pb % | Zn % | Fe% | SiO ₂ % | Al ₂ O ₃ |
|------------------|--------|--------|------|------|------|------|--------------------|--------------------------------|
| SBM - | | | | | | | | |
| 100 A | 0.002 | 6.85 | 0.15 | 1.30 | 1.76 | 3.11 | 85.4 | 4.53 |
| 100 B | 0.002 | 11.15 | 0.16 | 0.52 | 1.30 | 3.04 | 87.4 | 4.38 |
| 101 | 0.002 | 6.46 | 0.06 | 0.80 | 0.72 | 2.92 | 80.2 | 4.53 |
| 200 A | 0.001 | 23.78 | 0.02 | 1.06 | 1.93 | 1.92 | 83.2 | 4.23 |
| 201 | 0.002 | 5.95 | <.01 | 0.18 | 0.92 | 2.68 | 86.4 | 4.21 |
| 202 | 0.001 | 13.76 | 0.01 | 0.51 | 1.60 | 3.16 | 85.8 | 4.65 |
| 203 | 0.003 | 7.50 | 0.06 | 2.18 | 2.28 | 4.02 | 79.8 | 5.90 |
| 250 A | 0.002 | 10.05 | <.01 | 0.17 | 1.44 | 4.42 | 69.9 | 5.44 |
| 310 | 0.002 | 9.36 | <.01 | 0.52 | 0.31 | 3.41 | 81.8 | 6.65 |
| 311 | 0.003 | 5.76 | <.01 | 0.70 | 0.25 | 2.71 | 85.6 | 6.35 |
| 312 | 0.002 | 10.28 | <.01 | 0.40 | 0.60 | 2.38 | 78.7 | 6.35 |
| 313 | 0.002 | 8.94 | <.01 | 0.35 | 0.75 | 2.02 | 86.3 | 7.40 |
| 400 A | 0.002 | 8.66 | 0.02 | 1.02 | 0.30 | 2.32 | 81.9 | 5.29 |
| 401 A | 0.003 | 9.88 | 0.03 | 0.60 | 0.30 | 2.38 | 83.2 | 6.05 |



1 ppm = 0.0001%

1 troy oz./ton = 34.286 ppm

1 ppm = 0.0292 troy oz./ton

* Gold and Silver reported in troy oz. per 2,000 lb. ton.

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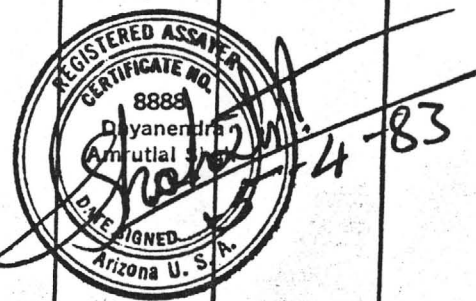
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| SAMPLE NUMBER | Au opt | Ag opt | Cu % | Pb % | Zn % | Fe% | SiO ₂ % | Al ₂ O ₃ |
|------------------|--------|--------|------|------|------|------|--------------------|--------------------------------|
| SBM - | | | | | | | | |
| 100 A | 0.002 | 6.85 | 0.15 | 1.32 | 1.76 | 3.11 | 85.4 | 4.53 |
| 100 B | 0.002 | 11.15 | 0.16 | 0.52 | 1.30 | 3.04 | 87.4 | 4.38 |
| 101 | 0.002 | 6.46 | 0.06 | 0.80 | 0.72 | 2.92 | 80.2 | 4.53 |
| 200 A | 0.001 | 23.78 | 0.02 | 1.06 | 1.93 | 1.92 | 83.2 | 4.23 |
| 201 | 0.002 | 5.95 | <.01 | 0.18 | 0.92 | 2.68 | 86.4 | 4.21 |
| 202 | 0.001 | 13.76 | 0.01 | 0.51 | 1.60 | 3.16 | 85.8 | 4.65 |
| 203 | 0.003 | 7.50 | 0.06 | 2.18 | 2.28 | 4.02 | 79.8 | 5.90 |
| 250 A | 0.002 | 10.05 | <.01 | 0.17 | 1.44 | 4.42 | 69.9 | 5.44 |
| 310 | 0.002 | 9.36 | <.01 | 0.52 | 0.31 | 3.41 | 81.8 | 6.65 |
| 311 | 0.003 | 5.76 | <.01 | 0.70 | 0.25 | 2.71 | 85.6 | 6.35 |
| 312 | 0.002 | 10.28 | <.01 | 0.40 | 0.60 | 2.38 | 78.7 | 6.35 |
| 313 | 0.002 | 8.94 | <.01 | 0.35 | 0.75 | 2.02 | 86.3 | 7.40 |
| 400 A | 0.002 | 8.66 | 0.02 | 1.02 | 0.30 | 2.32 | 81.9 | 5.29 |
| 401 A | 0.003 | 9.88 | 0.03 | 0.60 | 0.30 | 2.38 | 83.2 | 6.05 |

| | | | | |
|--------------------|--------------------|--------------------|---------------------|--------------------|
| $\frac{10.39}{14}$ | $\frac{14.46}{14}$ | $\frac{40.49}{14}$ | $\frac{1155.6}{14}$ | $\frac{76.11}{14}$ |
| = .74 | = 1.03 | = 2.89 | = 82.5 | = 5.44 |

Fe deduct $1.3 \times 2.89 = 3.76$
 Avail. SiO₂ = $82.5 - 3.76 = 78.74$
 Avail SiO₂



1 ppm = 0.0001%

1 troy oz./ton = 34.286 ppm

1 ppm = 0.0292 troy oz./ton

* Gold and Silver reported in troy oz. per 2,000 lb. ton.