CONTACT INFORMATION
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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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PRINTED: 06/10/2002

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: ROADSIDE

ALTERNATE NAMES:
ARIZONA RAND GOLD MINE INC.
MOTHER LODE

MOHAVE COUNTY MILS NUMBER: 83A

LOCATION: TOWNSHIP 21 N RANGE 21 W SECTION 12 QUARTER W2
LATITUDE: N 35DEG 13MIN 09SEC LONGITUDE: W 114DEG 28MIN 59SEC
TOPO MAP NAME: UNION PASS - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

ROADSIDE - 4/09
2 LARGE FENCE SECTIONS ARE IN ANNEX DRW - COMPASS MINERALS OATMAN PROJECT

COMMODITY:
GOLD LODE
SILVER

BIBLIOGRAPHY:

ADMMR ROADSIDE MINE FILE
WILSON, E.D. "AZ LODE GOLD MINES" AZBM BULL 137, P. 102, 104-105, MAP; 1967
ADMMR MOHAVE CUSTOM MILL PROJECT
ADMMR FRISCO MINE FILE
ADMMR HOUSEHOLDER MAPS
LAUSEN, "GEO. & ORE DPSTS OF OATMAN & KATHERINE DIST, AZ" AZBM BUL 131, P 21; 1931
WEED'S MINES HANDBOOK, VOL. XVI, P 243; 1925
ELSING, M.J. "AZ METAL PRODUCTION" AZBM BULL 140, P. 96; 1936
MCCUTCHAN, V.C.,65TH ANL RPT. AZ. STATE MINE INSPECTOR, P. 6
GARDNER, E.D. "GOLD MNG & MLNG IN BLCK MTNS, MOH CO. AZ" USBM IC 6901, P. 8 (MAP); 1936
SEE ADMMR GOLD STANDARD MINE CORP FILE P. 3
BOLIN, G.H., 5TH ANL RPT OF AZ. STATE MINE INSPECTOR, P. 19 & 30
GREAT BASIN GEM JT. VENTURE, "BLCK MTNS" VOL5
AZ GEOLOGICAL SOCIETY "1984 FALL FIELD TRIP, STRUCTURE & MINERALIZATION, KINGMAN AREA, AZ P. 70, 71

2 LARGE PLATES - FENCE DIAGRAM ARE IN COMPASS MINERALS FLAT DRW

07/07/97

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: ROADSIDE

ALTERNATE NAMES:
ARIZONA RAND GOLD MINE INC.
MOTHER LODE

MOHAVE COUNTY MILS NUMBER: 83A

LOCATION: TOWNSHIP 21 N RANGE 21 W SECTION 12 QUARTER W2
LATITUDE: N 35DEG 13MIN 09SEC LONGITUDE: W 114DEG 28MIN 59SEC
TOPO MAP NAME: UNION PASS - 7.5 MIN

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COMMODITY:
GOLD LODE
SILVER

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WILSON, E.D. "AZ LODE GOLD MINES" AZBM BULL 137, P. 102, 104-105, MAP; 1967
ADMMR MOHAVE CUSTOM MILL PROJECT
ADMMR FRISCO MINE FILE
ADMMR HOUSEHOLDER MAPS
LAUSEN, "GEO. & ORE DPSTS OF OATMAN & KATHERINE DIST, AZ" AZBM BUL 131, P 21; 1931
WEED'S MINES HANDBOOK, VOL. XVI, P 243; 1925
ELSING, M.J. "AZ METAL PRODUCTION" AZBM BULL 140, P. 96; 1936
MCCUTCHAN, V.C.,65TH ANL RPT. AZ. STATE MINE INSPECTOR, P. 6
GARDNER, E.D. "GOLD MNG & MLNG IN BLCK MTNS, MOH CO. AZ" USBM IC 6901, P. 8 (MAP); 1936
SEE ADMMR GOLD STANDARD MINE CORP FILE P. 3
BOLIN, G.H., 5TH ANL RPT OF AZ. STATE MINE INSPECTOR, P. 19 & 30
GREAT BASIN GEM JT. VENTURE, "BLCK MTNS" VOL5
AZ GEOLOGICAL SOCIETY "1984 FALL FIELD TRIP, STRUCTURE & MINERALIZATION, KINGMAN AREA, AZ P. 70, 71

MINE MAPS:
ADMMR #: 0007-001 STORAGE: 0465-02-03
DESCRIPTION: PROPERTY LAND STATUS MAP

CONTINUED ON NEXT PAGE

CONTINUATION OF ROADSIDE

ADMMR #: 0007-002 STORAGE: 0465-02-03
DESCRIPTION: GEOLOGY SHEET INDEX # 2
ADMMR #: 0007-003 STORAGE: 0465-02-03
DESCRIPTION: GEOLOGY SHEET INDEX # 1
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DESCRIPTION: GEOLOGY SHEET INDEX # 4
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ADMMR #: 0007-006 STORAGE: 0465-02-03
DESCRIPTION: GEOLOGY SHEET INDEX # 1, 2 COPIES
ADMMR #: 0007-007 STORAGE: 0465-02-03
DESCRIPTION: GEOLOGY SHEET INDEX # 3
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DESCRIPTION: GEOLOGY SHEET INDEX # 2
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DESCRIPTION: GEOLOGY SHEET INDEX # 3
ADMMR #: 0007-010 STORAGE: 0465-02-03
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DESCRIPTION: GEOLOGY SHEET INDEX #3, 2 COPIES
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ADMMR #: 0007-013 STORAGE: 0465-02-03
DESCRIPTION: GEOLOGY SHEET INDEX #4, 2 COPIES
ADMMR #: 0007-014 STORAGE: 0465-02-03
DESCRIPTION: SAMPLE GEOLOGY & DRILL PLAN
ADMMR #: 0007-015 STORAGE: 0465-02-03
DESCRIPTION: GEOLOGY GEOLOGICAL FENCE DIAGRAM, MAP 7
ADMMR #: 0007-016 STORAGE: 0465-02-03
DESCRIPTION: GEOLOGY MINERALIZATION FENCE DIAGRAM, MAP 8
ADMMR #: 0007-017 STORAGE: 0465-02-03
DESCRIPTION: SAMPLE CHURN DRILL HOLE LOCATION AND DEPTH
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DESCRIPTION: GEOLOGY SHEET INDEX #3
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ADMMR #: 0007-027 STORAGE: 0465-02-04
DESCRIPTION: GEOLOGY SHEET INDEX #4

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CONTINUATION OF ROADSIDE

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DESCRIPTION: GEOLOGY SHEET INDEX #4
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DESCRIPTION: GEOLOGY SHEET INDEX #1
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DESCRIPTION: GEOLOGY SHEET INDEX #3
ADMMR #: 0007-032 STORAGE: 0465-02-04
DESCRIPTION: GEOLOGY SHEET INDEX #4
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DESCRIPTION: GEOLOGY SHEET INDEX #4
ADMMR #: 0007-033 STORAGE: 0465-02-04
DESCRIPTION: GEOLOGY SHEET INDEX #1, MAP 5A
ADMMR #: 0007-034 STORAGE: 0465-02-04
DESCRIPTION: GEOLOGY SHEET INDEX #2, MAP 5B
ADMMR #: 0007-035 STORAGE: 0465-02-04
DESCRIPTION: GEOLOGY SHEET INDEX #3, MAP 5C
ADMMR #: 0007-036 STORAGE: 0465-02-04
DESCRIPTION: GEOLOGY SHEET INDEX #3, MAP 5D
ADMMR #: 0007-037 STORAGE: 0465-02-04
DESCRIPTION: GEOLOGY GEOLOGY, ROADSIDE MINE AREA, PLATE I
ADMMR #: 0007-038 STORAGE: 0465-02-04
DESCRIPTION: GEOLOGY COMPOSITE INDEX 1, 2, 3 & 4
ADMMR #: 0007-039 STORAGE: 0465-02-04
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ADMMR #: 0007-040 STORAGE: 0465-02-04
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ADMMR #: 0007-042 STORAGE: 0465-02-04
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ADMMR #: 0007-045 STORAGE: 0465-02-04
DESCRIPTION: GEOLOGY COMPOSITE INDEX 1,2,3 & 4
ADMMR #: 0007-046 STORAGE: 0465-02-05
DESCRIPTION: GEOLOGY PROSPECTS, COMPOSITE INDEX 1,2,3 & 4
ADMMR #: 0007-047 STORAGE: 0465-02-05
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ADMMR #: 0007-048 STORAGE: 0465-02-05
DESCRIPTION: GEOLOGY SHEET INDEX #2
ADMMR #: 0007-049 STORAGE: 0465-02-05
DESCRIPTION: GEOLOGY MAP OF FAULTS, FRACTURES, DIKES, ETC.
ADMMR #: 0007-050 STORAGE: 0465-02-05
DESCRIPTION: GEOLOGY MAP OF FAULTS, FRACTURES, DIKES, ETC.
ADMMR #: 0007-051 STORAGE: 0465-02-05
DESCRIPTION: GEOLOGY LAND STATUS, PROSPECTS & MINERALIZED OUTCROPS

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CONTINUATION OF ROADSIDE

ADMMR #: 0007-078 STORAGE: 0465-02-06
DESCRIPTION: GEOCHEMICAL VLF SURVEY
ADMMR #: 0007-079 STORAGE: 0465-02-06
DESCRIPTION: GEOCHEMICAL GEOCHEM SAMPLE, LOCATION - AU ASSAYS PPM
ADMMR #: 0007-080 STORAGE: 0465-02-06
DESCRIPTION: GEOLOGY LAND STATUS MAP
ADMMR #: 0007-081 STORAGE: 0465-02-06
DESCRIPTION: SAMPLE MAP 6, REV. CIRC. DRILL HOLE, 1 PAPER COPY
ADMMR #: 0007-082 STORAGE: 0465-02-06
DESCRIPTION: SAMPLE MAP 3, DRILL HOLES
ADMMR #: 0007-083 STORAGE: 0465-02-06
DESCRIPTION: SAMPLE DRILL HOLE
ADMMR #: 0007-084 STORAGE: 0465-02-06
DESCRIPTION: SECTION CROSS SECTION, A-A'
ADMMR #: 0007-085 STORAGE: 0465-02-06
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ADMMR #: 0007-086 STORAGE: 0465-02-06
DESCRIPTION: SECTION GEOLOGY & DRILL PLAN
ADMMR #: 0007-087 STORAGE: 0465-02-06
DESCRIPTION: PROPERTY LAND STATUS
ADMMR #: 0007-088 STORAGE: 0465-02-06
DESCRIPTION: SAMPLE GOLD CHAIN HILL DRILL ASSAYS
ADMMR #: 0007-089 STORAGE: 0465-02-06
DESCRIPTION: SAMPLE DRILL PLAN
ADMMR #: 0007-090 STORAGE: 0465-02-06
DESCRIPTION: SAMPLE GEOLOGY & DRILL PLAN
ADMMR #: 0007-091 STORAGE: 0465-03-01
DESCRIPTION: GEOLOGY PROSPECTS & MINERALIZED OUTCROPS
ADMMR #: 0007-093 STORAGE: 0465-03-01
DESCRIPTION: SAMPLE PLAN MAP
ADMMR #: 0007-094 STORAGE: 0465-03-01
DESCRIPTION: SAMPLE PLAN MAP, 2 COPIES
ADMMR #: 0007-095 STORAGE: 0465-03-01
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ADMMR #: 0007-096 STORAGE: 0465-03-01
DESCRIPTION: SITE PLAN MS 4863, SECS. 11 & 12
ADMMR #: 0007-097 STORAGE: 0465-03-01
DESCRIPTION: SAMPLE DRILL PLAN
ADMMR #: 0007-098 STORAGE: 0465-03-01
DESCRIPTION: SAMPLE EXPLORATION MAP #1 GOLD ZONE
ADMMR #: 0007-099 STORAGE: 0465-03-01
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ADMMR #: 0007-100 STORAGE: 0465-03-01
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ADMMR #: 0007-101 STORAGE: 0465-03-01
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ADMMR #: 0007-102 STORAGE: 0465-03-01
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ADMMR #: 0007-103 STORAGE: 0465-03-01
DESCRIPTION: SAMPLE 2 COPIES
ADMMR #: 0007-104 STORAGE: 0465-03-01
DESCRIPTION: SAMPLE GOLD CHAIN HILL DRILL ASSAYS

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CONTINUATION OF ROADSIDE

ADMMR #: 0007-052 STORAGE: 0465-02-05
DESCRIPTION: SAMPLE PRELIMINARY DRILL HOLE LOCATION
ADMMR #: 0007-053 STORAGE: 0465-02-05
DESCRIPTION: PROPERTY COMPOSITE INDEX 1,2,3 & 4
ADMMR #: 0007-054 STORAGE: 0465-02-05
DESCRIPTION: SAMPLE GOLD CHAIN HILL DRILL ASSAYS
ADMMR #: 0007-055 STORAGE: 0465-02-05
DESCRIPTION: GEOCHEMICAL GEOCHEM SAMPLE LOCATIONS MAP
ADMMR #: 0007-056 STORAGE: 0465-02-05
DESCRIPTION: GEOLOGY GEOLOGY AND DRILL PLAN
ADMMR #: 0007-057 STORAGE: 0465-02-05
DESCRIPTION: GEOCHEMICAL GEOCHEM SAMPLE LOCATION
ADMMR #: 0007-058 STORAGE: 0465-02-05
DESCRIPTION: GEOCHEMICAL TOTAL FIELD MAGNETIC SURVEY, GRID B
ADMMR #: 0007-059 STORAGE: 0465-02-05
DESCRIPTION: GEOCHEMICAL TOTAL FIELD MAGNETIC SURVEY, GRID D
ADMMR #: 0007-060 STORAGE: 0465-02-05
DESCRIPTION: PROPERTY TOPO BASE MAP
ADMMR #: 0007-061 STORAGE: 0465-02-05
DESCRIPTION: GEOCHEMICAL GRIDS A,B & D,CONTOURS OF FRASER FILTERED VLF
ADMMR #: 0007-062 STORAGE: 0465-02-05
DESCRIPTION: SAMPLE REVERSE CIRCULATION DRILL HOLE
ADMMR #: 0007-063 STORAGE: 0465-02-05
DESCRIPTION: SAMPLE LAND STATUS, MAP 1
ADMMR #: 0007-064 STORAGE: 0465-02-05
DESCRIPTION: GEOLOGY MAP OF PROSPECTS & MINERALIZED OUTCROPS, 2
ADMMR #: 0007-065 STORAGE: 0465-02-05
DESCRIPTION: GEOLOGY DRILL HOLES, MAP 3
ADMMR #: 0007-066 STORAGE: 0465-02-05
DESCRIPTION: GEOLOGY MAP 4, FAULTS, FRACTURES, DIKES, PHOTO LINEAR
ADMMR #: 0007-067 STORAGE: 0465-02-06
DESCRIPTION: GEOCHEMICAL BIOCHEMICAL SURVEY - AU IN VEG.
ADMMR #: 0007-068 STORAGE: 0465-02-06
DESCRIPTION: GEOCHEMICAL BIOCHEMICAL SURVEY - CU IN VEG.
ADMMR #: 0007-069 STORAGE: 0465-02-06
DESCRIPTION: GEOCHEMICAL GEOCHEM SAMPLE LOCATION MAP
ADMMR #: 0007-070 STORAGE: 0465-02-06
DESCRIPTION: GEOCHEMICAL GEOPHYSICAL LINE 8200 EAST
ADMMR #: 0007-071 STORAGE: 0465-02-06
DESCRIPTION: GEOCHEMICAL ROADSIDE GRIDS A,B & D, VLF DATA
ADMMR #: 0007-072 STORAGE: 0465-02-06
DESCRIPTION: GEOCHEMICAL ROADSIDE GRIDS A, B & D, CONTOURS
ADMMR #: 0007-073 STORAGE: 0465-02-06
DESCRIPTION: GEOCHEMICAL ROADSIDE GRIDS A, B & D
ADMMR #: 0007-074 STORAGE: 0465-02-06
DESCRIPTION: GEOCHEMICAL TOTAL FIELD MAGNETIC SURVEY - GRID C
ADMMR #: 0007-075 STORAGE: 0465-02-06
DESCRIPTION: GEOCHEMICAL TOTAL FIELD MAGNETIC SURVEY - GRID A
ADMMR #: 0007-076 STORAGE: 0465-02-06
DESCRIPTION: GEOLOGY GROUND MAGNETOMETER SURVEY
ADMMR #: 0007-077 STORAGE: 0465-02-06
DESCRIPTION: SAMPLE DRILL PLAN

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CONTINUATION OF ROADSIDE

ADMMR #: 0007-105 STORAGE: 0465-03-01
DESCRIPTION: SAMPLE SAMPLE LOCATION, ADAMS MINE AREA
ADMMR #: 0007-106 STORAGE: 0465-03-01
DESCRIPTION: SAMPLE CROSS SECTION FOR PROPOSED ACNC RVC
ADMMR #: 0007-107 STORAGE: 0465-03-01
DESCRIPTION: SECTION CROSS SECTION FOR PROPOSED ACNC RVC
ADMMR #: 0007-108 STORAGE: 0465-03-01
DESCRIPTION: SECTION UNSURVEYED DRILL HOLE, GOLD CHAIN HILL
ADMMR #: 0007-109 STORAGE: 0465-03-01
DESCRIPTION: SAMPLE UNSURVEYED DRILL HOLE, GOLD CHAIN HILL
ADMMR #: 0007-110 STORAGE: 0465-03-01
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ADMMR #: 0007-111 STORAGE: 0465-03-01
DESCRIPTION: SAMPLE PROPOSED RVC HOLE, GOLD CHAIN HILL TARGET
ADMMR #: 0007-112 STORAGE: 0465-03-01
DESCRIPTION: PROPERTY
ADMMR #: 0007-113 STORAGE: 0465-03-01
DESCRIPTION: SAMPLE
ADMMR #: 0007-114 STORAGE: 0465-03-01
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ADMMR #: 0007-115 STORAGE: 0465-03-01
DESCRIPTION: SAMPLE
ADMMR #: 0007-116 STORAGE: 0465-03-01
DESCRIPTION: PROPERTY
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DESCRIPTION: PROPERTY
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ADMMR #: 0007-128 STORAGE: 0465-03-01
DESCRIPTION: SAMPLE PROSPECTS & MINERALIZED OUTCROPS
ADMMR #: 0007-129 STORAGE: 0465-03-01
DESCRIPTION: SAMPLE SHEET INDEX #4
ADMMR #: 0007-130 STORAGE: 0465-03-01
DESCRIPTION: SAMPLE SHEET INDEX #3

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CONTINUATION OF ROADSIDE

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ADMMR #: 0007-132 STORAGE: 0465-03-01
DESCRIPTION: SAMPLE SHEET INDEX #1
ADMMR #: 0007-133 STORAGE: 0465-03-01
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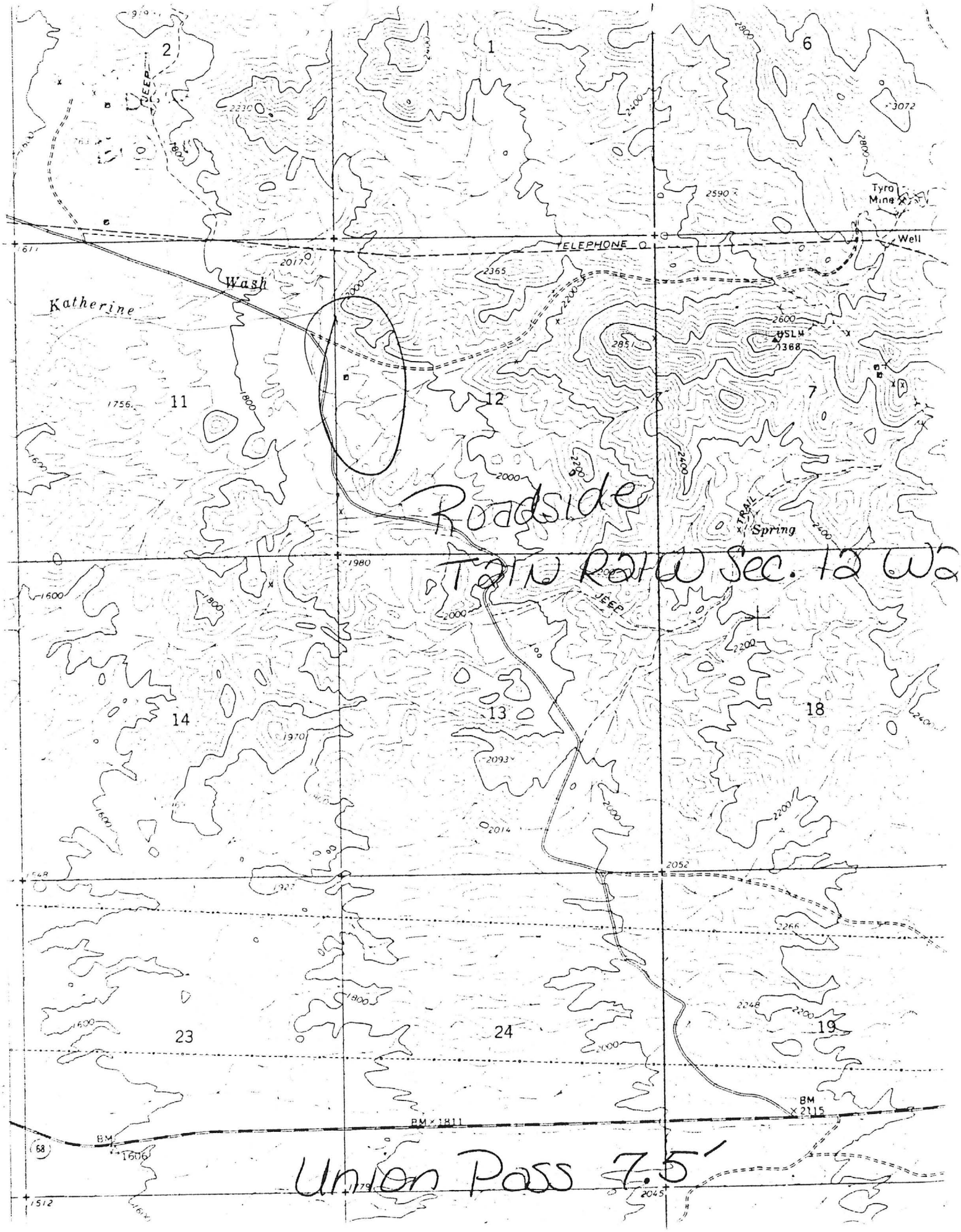

Roadside
T21N R21W Sec. 12 W2
Union Pass 7.5'
Katherine
Wash
TELEPHONE
Tyro Mine
Well
Spring
TRAIL
JEEP
USLM
1368
BM
1811
1606
2115
2045
2052
1980
1756
2017
2365
2590
3072
2851
2093
2014
1970
1923
2266
2248
68

from: W.H. Crutchfield Jr. Mohave County Prospect Assessment Compilation (post 1982)

Name of Mine or Pr ct:	Tow p	Range	Section	Priority
Roadside Mine	21N	21W	12 bcc	B

Principal Minerals:	1:250,000 Quad	7.5' - 15' Quad
Gold	Kingman	Union Pass
Associated Minerals:	**District**	**Principal Product**
Quartz, Calcite	San Francisco	Gold
Type of Operation:	**County / State**	**Type of Deposit**
Underground: Shaft, Adits	Mohave / Ar.	Vein

Ownership or Controlling Interest:
Consult current USBLM mining claim records

Access: From the intersection of Arizona 68 and Katherine Wash Road proceed north on Katherine Wash Road for 3 miles. Mine is shown (unnamed) on topographic quadrangle.

Structural Control or Geological Association:

"The country rock is granitic gneiss. The vein dips 53° to 38° and is in a fault zone in a block of rhyolite against a fault. The vein material is irregular stringers and bunches of quartz and calcite in shattered silicified rhyolite. A chimney-shaped ore is 20 to 35 feet wide and 75 feet long on the strike. The ore averaged 0.28 oz. gold to the ton."[3]

Age of Mineralization: Miocene(?)

Production History	Geochemical Analyses
(1934)[3] 10,000 tons had been produced.	(1934)[3] Assay 0.28 oz. gold/ton

References

1) CETA map file, Rack #3, claim map.
2) Lausen (1931) Geologic map, p. 21.
3) Gardner (1936) p. 44-45.
4) Exploration Research Associates Incorporated (1981) Reconnaissance Geologic Map of the Union Pass 7.5' Quadrangle, Mohave County, Arizona.

COMPLETE AND MAIL TO:

STATE MINE INSPECTOR
1616 WEST ADAMS, SUITE 411
PHOENIX, ARIZONA 85007-2627

FOR OFFICE USE ONLY
START-UP NUMBER 92504234
STATE NUMBER 091185
DEPUTY NUMBER GCL ✓
NEW ✓ MOVE

NOTICE TO ARIZONA STATE MINE INSPECTOR

In compliance with the Arizona Revised Statutes, we are submitting this written notice to the Arizona State Mine Inspector of our intent to start 1982, stop ____, move ____ an operation.

Please check the appropiate boxes: Contractor ☐, Owner ☑, Operator ☐, Open Pit Mine ☑, Underground Mine ☐, Mill ☐, Quarry ☐, Aggregate Plant ☐, Hot Plant ☐, Batch Plant ☐, Smelter ☐, Leach Plant ☑.

If this is a move, please show last location: ~~[illegible]~~

If you have not operated a previously in Arizona, please check: ____ If you want the Education and Training Division to assist with your mine safety training, please check: ✓

If this operation will use any hazardous material; ie. cyanide, please check: ✓

COMPANY NAME: ON AN ON INC

MINE OR PLANT NAME: ROADSIDE MINE

DIVISION: ____

CHIEF OFFICER: ERNEST HOLESTIEN TELEPHONE: 754-2170 mine 758-6381 Hm

COMPANY ADDRESS: P.O. BOX ~~[illegible]~~ 1305

CITY: BULLHEAD CITY STATE: ARIZONA ZIP CODE: 86430

MINE OR PLANT LOCATION: (include county and nearest town, as well as directions or locating property by vehicle): 7 MILES EAST OF CATHERINE MINE ON THE OLD CATHERINE ROAD

TYPE OF OPERATION: LEACH PLANT PRINCIPAL PRODUCT: GOLD

STARTING DATE: 1982 CLOSING DATE: ____

PERSON COMPLETING NOTICE: Elizabeth L Swann TITLE: CHIEF OF MAINTENANCE

DATE OF REPORT TO STATE MINE INSPECTOR: 10/12/89

Project	Land holdings (acres) Located	Leased	Current FWM Interest	J.V. Partner	Commitment required by J.V. to earn interest	Diluted FWM Interest after commitment	Ore Reserve Type of Deposit	Tonnage	o/T Au	o/T Ag	Project Status
Hayden Hill Lassen Co. California	950	2800	50% working	Pecos Resources Vancouver B.C. Canada	Already earned $1.6x 10^6$ expended in 1984	50% working subject to 3% Net Profits Finders Fee	Open pit- Heap leach Drill Indic Add pot.	7,900,000T +12,000,000T	0.042 +0.05	0.40	Active J.V., ore reserves defined, ready for production 825 oz Au produced in 1984
Dexter Elko Co Nevada	1,100	300	25% Net Profits Carried	Pecos Resources Goldbelt Res Vancouver B. C. Canada	Already earned $1.8x 10^6$ expended in 1984	25% Net Profits Carried	Open pit- Heap Leach Drill prov. Add pot.	2,000,000T +2,000,000T	0.039 as above	1.90	Active J.V., ore reserves defined, ready for production. Minor production in 1984
Democrat Lemhi Co Idaho	-0-	550	50% Net Profits Carried	Democrat Resources Vancouver B.C. Canada	$1.3x 10^6$ already expend $2.0x 10^6$ must be expend to earn 50% interest	50% working or be diluted to 6% Net Profits Carried	Underground Milling drill & spl Potential	~50,000T Could be large	0.09 15% Pb	9.00 5%Zn	Active J.V., further exploration required prior to production
Buffalo Valley Lander Co Nevada	-0-	2800+	5% Net Profits	Consolidated Mining Denver Colorado	None	5% Net Profits Carried	Open Pit- Heap leach drill ind. Add pot	750,000T unknown	0.07		Inactive J.V., ore reserves defined, ready for production
Roadside Mohave Co Arizona	-0-	5820	50% Net Profits Carried	Pecos Resources Anaconda Mineral Denver Colorado	±$200,000 expended must expend $1.5x 10^6$ by 6/87 to earn interest	20% working 7.5% Net Profits carried Subject to 3% Net Profits finders fee	Open pit- Heap leach Drill ind. Add pot	300,000T Could be large	0.03		Active J.V., further exploration in progress
Golden Syncline San Bern California	1,760	1,800	100%				Open pit- heap leach potential	Could be very large	speculate ±0.05		Geology, geochem completed drill targets defined
Pancake Nye Co Nevada	1,540	-0-	100%				Open pit- Heap leach Potential	Could be very large	speculate 0.05-0.10		Limited geology and geochem completed. Further work required to define drill targets
Little Butte La Paz Co Arizona	-0-	800	100%				Open pit Heap leach Potential	2,000,000T	0.03-0.07		Geology and geochem completed, drill targets defined
Van Deeman Mohave Co Arizona	-0-	500	100%				Open pit- Heap Leach Potential	1,000,000- 2,000,000 T	0.04-0.07		Geology and geochem completed, drill targets defined
Comstock Storey Co Nevada	55	175	100%	Westley Mines Vancouver B.C. Canada	Expend $500,000 to earn 80% interest	20% working interest Subject to dilution	Underground Milling Potential	+1,000,000T	+0.50	+20.0	Geology and geochem completed, drill targets defined
Bovard-Rand Mineral Co Nevada	40	550	100%				Open pit- Heap leach Potential Underground Milling Potential	+500,000T +500,000T	0.05-0.10 0.20-0.40	±10.00	Preliminary geology and geochem completed drill targets defined for open pit reserve. Further work required for underground drill target
Kemble Camp Mohave Co Arizona	700	-0-	100%				Open pit- Heap leach Potential	+2,000,000T	0.03-0.07		Geology and geochem completed, drill targets defined
Border Mine Pima Co Arizona	400	-0-	100%				Open pit- Heap leach Potential	+1,000,000T	0.03-0.06		Initial geology and geochem completed. Further work required to define drill target
Mineral Springs San Bern California	320	-0-	100%				Open pit- Heap leach Potential	+2,000,000T	0.04-0.07		Initial geology and geochem completed. Further work required prior to drilling
Gemfield Esmeralda Co Nevada	-0-	140	1% Net Smelter Royalty	Santa Fe Minerals Reno Nevada	Take over terms of FWM lease	1% Net Smelter Royalty	Open pit- Heap leach Potential	+1,000,000T	unknown		Actively being explored by partner

ROADSIDE MOHAVE COUNTY

NJN WR 4/29/88: Pat O'Hara (card) reported that Ivy Minerals has finished their drilling and geological evaluation project at the Roadside Mine (file) Mohave County. Mr. O'Hara reported that the property has additional untested areas which could add significantly to the few hundred thousand ton resource. Ivy plans to use this data to seek a joint venture partner.

NJN WR 4/29/88: Pat O'Hara reported that Ivy Minerals has finished their drilling and geological evaluation project at the Roadside Mine (file) Mohave County. Mr. O'Hara reported that the property has additional untested areas which could add significantly to the few hundred thousand ton resource. Ivy plans to use this data to seek a joint venture partner.

ROADSIDE MINE MOHAVE COUNTY

NJN WR 10/12/84: Perry Dunning of Fischer-Watt Mining confirmed that Anaconda has optioned the Roadside Mine (file) Mohave County.

NJN WR 8/12/85: Pete Drobeck reported that Fischer Watt Mining Co (c) and Anaconda Mining Co (c) exploration efforts at the Roadside Mine (f) have indicated 300,000 tons of material grading .03 oz/ton au and lots of .01 material.

NJN WR 10/3/86: Perry Durning (c) reports that Fischer-Watt Mining Company's exploration at the Roadside Mine (f) Mohave County is finished. Their drilling hit the targeted hydrothermal systems which included calite, succulent quartz and brecciated areas, but little gold. Fifteen holes were drilled for that project.

NJN WR 11/28/86: Jim Woods, geologist with Western States Minerals (c), reported that they are evaluating the Frisco (f), Arabian (f), Roadside (f) and other properties in the Union Pass area of Mohave County for possible acquisition and/or production.

NJN WR 3/13/87: Bill Vanderwall (c) reported that Ivy Minerals (c) is picking up the Roadside (file) and the Gold Chain, Mohave County from Ernie Holinstein. They plan an air track drilling exploration program to try to prove a small reserve there.

NJN WR 1/22/88: Bill VanDerWall (card) reported that Ivy Minerals (card) will begin a drilling program at the Roadside Mine (file) Mohave county on February 1, 1988.

NJN WR 2/26/88: Pat O'Hara (card) reported that Ivy Minerals (card) has been drilling at the Roadside (file) Mohave County.

ROADSIDE MINE MOHAVE COUNTY

NJN WR 10/9/81: Drove past the Roadside Mine, Mohave County, we didn't stop but the camp appeared in disarray with a collection of junk and evidence of a past leach attempt.

NJN WR 6/4/82: At the Roadside Mine, Mohave County a well is being drilled.

RRB WR 10/15/82 Visited the Roadside Mine in Mohave County. Although it appears that someone is living on the property no one was there when I visited.

NJN WR 7/15/83: Perry Durning, Exploration Manager for Fischer Watt reported that they were drilling at the Roadside Mine, Mohave County.

MG WR 12/9/83: Drilling done by Fischer-Watt on the Roadside Property reportedly showed interesting gold assays.

NJN WR 2/3/84: Perry Durning (c) with Fischer Watt Mining (c) called and reported that Fischer Watt continues to work on the Roadside Mine, Mohave Co., drilling has turned up some interesting shows and they have lined up a tentative joint venture partner (who is publicy shy).

RRB WR 1/27/84: Ernest Hollenstien and S. L. Huth of Onamon Inc., P.O. Box 1305, Bullhead City, visited. They report that they are doing some leaching at the Roadside Mine, Mohave County, and they are using one of Stutenroth's impact mills and HBS electrowinning equipment. Part of their property is under lease to Fischer-Watt.

NJN WR 8/17/84: It was reported that Fischer Watt has gotten Anaconda to take a lease/option agreement on the Roadside Mine (f) Mohave Co.

NOTE DATE OUT OF SEQUENCE
NJN WR 8/26/83: Bill Vanderwall reported that drilling continues by Fischer-Watt at the Roadside Mine, Mohave County. They have put down 6 holes on dilatent openings created druing extensional faulting and downslip movement.

KERR-McGEE CORPORATION
980 GREG STREET • SPARKS, NEVADA 89431

Nyal —
Additional info on
Roadside — Also
Deputy Insp. Hamm
say Echo Bay is
Active in Area.

January 23, 1989

Mr. Bill Vanderwall
Ivy Minerals, Inc.
P.O. Box 9125 Katherine's Landing
Bullhead City, AZ 86430

Dear Bill:

Enclosed please find the following data pertaining to the Roadside property:

1) Bottle roll cyanide test results for the two bulk samples we collected from the glory hole.

2) Assays from our last round of outcrop sampling.

Also enclosed are some blueline maps which I did not use.

Thank you once again for the opportunity to evaluate the Roadside property. If the lease terms should change or if another company acquires the lease, would you please notify me?

Sincerely,

Jeffrey D. Phinisey
Senior Geologist
KERR-McGEE CORPORATION
Minerals Exploration Division

RECEIVED
APR 14 1989
DEPT. OF MINES &
MINERAL RESOURCES

JDP/clb
enclosures

Legend METALLURGICAL Laboratory
125 Manuel St.
Reno, Nevada 89502
Phone: (702) 786-3003

Kerr McGee
255 Glendale Ave.
Sparks, NV 89431

November 28, 1988

Attn: J. Phinisey

Laboratory # 10607

CONCLUSION

Bottle cyanide tests were run on 2 samples delivered on Nov. 1, 1988. 1000 gram bottle agitation tests were run with periodic solution samples taken after 2, 4, 6, 29, hours as well as at the conclusion of the test. These solutions were analyzed for gold, pH, and free cyanide. These solution assays are listed in the following table (CN consumption in lb/ton ore):

Sample # CR-6209-6210

Hours	Gold oz/t	Gold % Ext.	pH	CN- consumption
2	0.030	55.6	10.4	6.0
4	0.031	57.4	10.3	*
6	0.036	66.7	10.4	*
29	0.037	68.5	10.3	6.8
96	0.046	85.2	10.4	7.9

Sample # R-6211-6212

Hours	Gold oz/t	Gold % Ext.	pH	CN- consumption
2	0.024	58.5	10.2	6.6
4	0.025	61.0	10.1	*
6	0.028	68.3	10.2	*
29	0.032	78.0	10.2	7.2
96	0.035	85.4	10.2	8.2

* insufficient sample

BOTTLE CYANIDE AGITATION TEST

Bottle cyanidation tests were run on 2 samples delivered on Nov. 1, 1988. These samples were crushed to nominal 3/4" and submitted for fire assay prior to the cyanide agitation testing. 1000 Grams of sample was used in the agitation test with 2000 grams of Reno tap water, and 6 grams of sodium cyanide. Sodium hydroxide was added to bring the pH to approximately 10.0. These tests were agitated continuously for 96 hours. Solution samples were taken through out the test. At the end of the agitation period, the tests were vacuum filtered and washed with tap water to remove any soluble losses. Solutions were analyzed by atomic absorption spectroscopy and the tails analyzed by fire assay. Cyanide consumption was calculated by titration. Details of each test are summarized in the following table:

Sample #:	CR-6209-6210	CR-6211-6212
Starting weight, grams:	1000	1000
Grind or size fraction:	3/4"	3/4"
Vol of H2O, ml	2000	2000
NaCN added, grams:	6.0	6.0
NaCN added, lbs./ton:	12	12
NaCN consumption, lbs. per ton ore:	7.9	8.2
pH ending:	10.4	10.2
Final % gold extraction:	85.2	85.4
Silver extraction, oz/ton:	0.05	0.08
Tail assay oz Au/ton:	0.008	0.006
oz Ag/ton:	0.06	0.15
Calculated head oz Au/ton:	0.054	0.041
oz Ag/ton:	0.11	0.23
Head assay oz Au/ton:	0.050	0.024
oz Ag/ton:	0.25	0.30

If we can answer any questions, please feel free to call on us.

Sincerely,

Mark F. Lewis
Manager/Metallurgist

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM.
- SAMPLE TYPE: ROCK AU** ANALYSIS BY FA+AA FROM 10 GM SAMPLE. HG ANALYSIS BY FLAMELESS AA.

DATE RECEIVED: NOV 16 1988 DATE REPORT MAILED: Nov 21/88 SIGNED BY. C. Leong .D.TOYE, C.LEONG, B.CHAN, J.WANG; CERTIFIED B.C. ASSAYERS

KERR McGEE CORPORATION File # 88-5871

Union Pass District
Mohave Co. AZ
Roadside Mine

SAMPLE#	Mo PPM	Cu PPM	Pb PPM	Zn PPM	Ag PPM	Ni PPM	Co PPM	Mn PPM	Fe %	As PPM	U PPM	Au PPM	Th PPM	Sr PPM	Cd PPM	Sb PPM	Bi PPM	V PPM	Ca %	P %	La PPM	Cr PPM	Mg %	Ba PPM	Ti %	B PPM	Al %	Na %	K %	W PPM	Au** PPB	Hg PPB	
R 6271	3	692	807	115	.8	5	6	619	2.53	19	5	ND	9	24	1	2	2	69	.68	.065	37	9	.57	20	.04	2	1.14	.01	.06	1	14	20	qtz-epidvns in lomeplate pegr. possibl. qtz stkwork Zone; "Ernies diggings."
R 6272	1	29	131	171	.1	7	8	544	3.45	19	5	ND	4	37	1	2	2	32	.97	.153	43	24	.70	26	.07	9	1.09	.02	.03	1	1	20	
R 6273	1	36	104	175	.1	4	9	731	3.93	52	5	ND	3	32	1	6	2	47	1.24	.173	55	7	.72	67	.07	9	1.25	.02	.13	1	1	30	
R 6274	1	520	653	1326	.1	3	11	899	4.57	29	5	ND	4	40	2	2	2	74	1.31	.195	55	27	.86	74	.10	8	1.70	.01	.15	3	1	10	
R 6275	2	31	131	229	.2	7	9	632	3.12	12	5	ND	3	44	1	5	2	27	1.13	.111	54	9	.63	36	.04	7	1.13	.01	.07	1	1	20	
R 6276	3	149	14	129	.4	5	11	619	4.53	17	5	ND	3	33	1	2	2	34	.91	.121	41	26	.65	78	.06	11	1.26	.01	.13	1	1	30	
R 6277	2	84	338	369	.1	10	7	541	2.69	8	5	ND	2	47	1	5	2	30	1.14	.110	26	11	.60	42	.09	9	1.17	.01	.12	1	2	20	
R 6278	2	6	46	37	.1	3	1	173	.63	28	5	ND	20	7	1	2	3	2	.23	.003	32	25	.03	14	.01	8	.25	.03	.03	3	1	10	- Tert felsic dike
R 6279	3	5	19	33	2.1	5	1	275	.50	2	5	ND	3	4	1	2	2	1	.07	.001	17	9	.06	1	.01	2	.13	.01	.05	1	280	80	Glory hole - prevalent
R 6280	3	15	20	51	.2	7	12	520	5.61	2	5	ND	7	40	1	2	2	43	1.44	.214	76	23	1.04	21	.08	13	1.95	.03	.09	1	5	70	" - chlor epid brx
R 6281	7	2	14	19	.1	5	1	108	1.13	2	5	ND	18	14	1	2	2	5	.63	.009	16	8	.06	108	.01	7	.44	.01	.01	1	2	2500	Silicous Tert. volc.
R 6282	56	23	37	113	1.1	8	8	497	3.70	14	5	ND	13	12	1	2	2	17	.74	.106	54	34	.35	47	.01	7	.51	.01	.11	1	680	40	Gold Chain - pegr brx
R 6283	40	9	12	59	.1	7	7	423	2.70	4	5	ND	5	15	1	2	2	15	.47	.068	36	6	.58	52	.01	4	.86	.01	.14	1	10	50	"
R 6284	1	10	16	75	.1	8	7	384	3.21	2	5	ND	12	42	1	2	2	26	1.34	.128	41	21	.56	38	.16	2	1.18	.02	.11	1	1	30	qtz epidvn - E of G

FIELD VISIT

Mine: Roadside

Engineer: Nyal Niemuth

County: Mohave

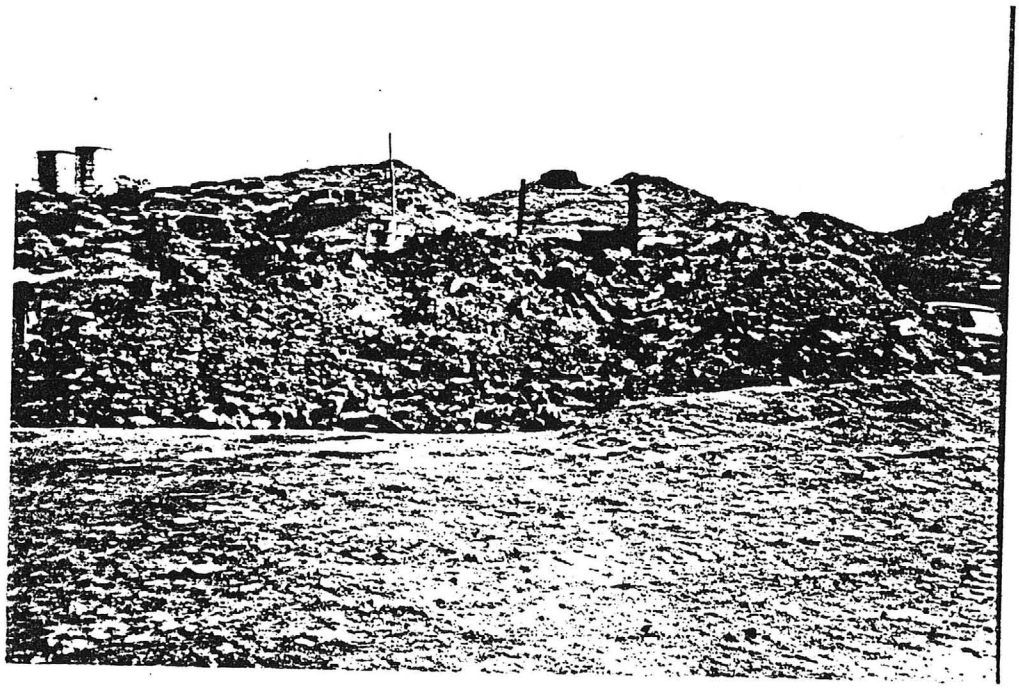
Date: 6/16/88

Information from: Ernie Hollenstein

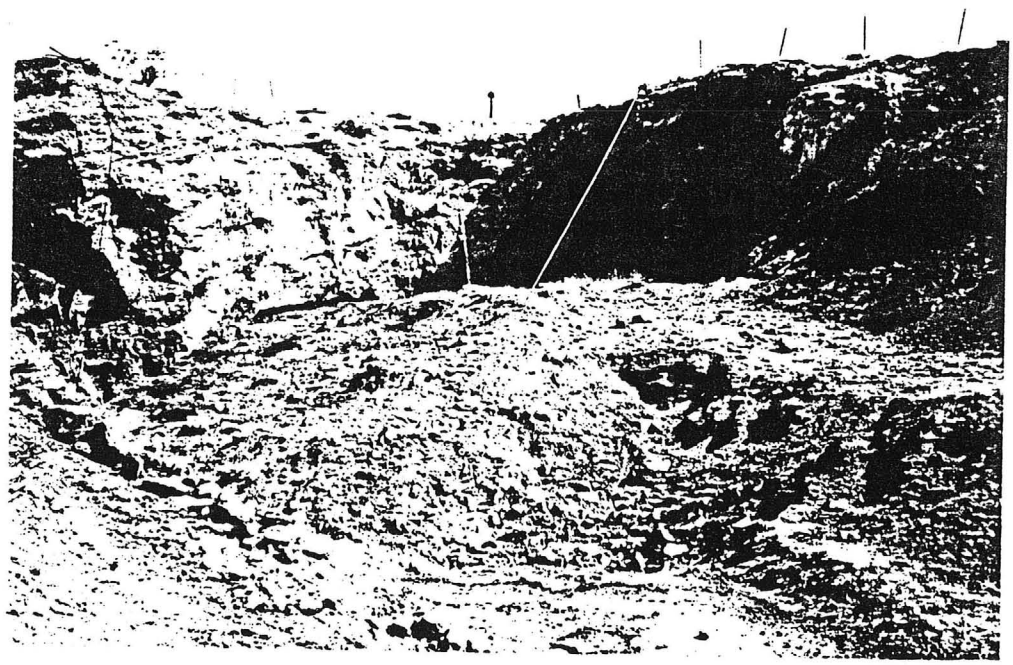
Ernie Hollenstein (card) dba On and On Mining, reports he has been leaching about 120 tons of ore at the Roadside (file) Mohave County. As part of his lease agreement with Ivy Minerals he is allowed to maintain his camp at the mine and produce up to 25 tons per day. Ore on the current leach pad has come from an open cut coincident with the Roadside shaft. Recovery to date has been about 40 oz of dore, mostly gold. Ivy Minerals drilling at the Roadside has been in the area surrounding the shaft, stepping out about 300 x 600′. Deepest drilling has been 250′. Three zones of a listric nature have been identified and occur at depths of 40′ - 80′, 120′ - 160′, and 200′ - 240′. These structures strike north, dip to the west and have a rake to the south. An estimated reserve for this drilling, including drilling by Anaconda and Fischer Watt, total about 450,000 tons of .03 oz ton gold. They have not drilled the targets west of the road where clay alteration and siliceous sinters outcrop. Additional drilling is planned for these targets this fall. The company is interested in a joint-venture partner for this work.

ROADSIDE
6/88

~ 100 TON
HEAP LEACH



OPEN CUT
ON LISTRIC VEIN



DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine: Roadside (?), Mohave County

Date: September 20, 1978

District: Katherine

Engineer: Glenn Miller - Cliff Hicks

Subject: Cursory examination of property

T21N R20W Section 12 or Section 2 - not certain which one. See Davis Dam, AZ, NV 7.5' quad. and Union Pass, 7.5' quad.

Roadside Mine-Gold-Katherine District. Owner lessee: 1932, Neumann, E. F. NIEMAN? Location 4 miles east of Gold Standard Hill on the Kingman-Katherine Road about 4 miles east of the Katherine Mill. Data source: Kingman Mine Study office.

The property was in deplorable condition. The main dump is 60'X20'X15' high with broken PVC lines laying on the side. The pad was topped by sheet PVC with no provision for run-off control. Residual solutions were observed in the bottom of the collecting sump. No attempt at protection (warning signs, fence etc.) was seen. Northeast of the main dump a major stope came to surface. Again, inadequate protection or warning of danger. Adjacent to the stope holing was a shaft carrying an airline.

To the east of the main leaching pad and across the road were several small ore stockpiles and bulldozer cuts lined with disintegrated sheet PVC and padded with ore. Empty (?) cyanide drums adjoined the leach areas.

Three concrete tanks (approx. 4'X6'X3' high) in echelon were observed to be containing liquid. No safety precautions.

Mr. Miller visited the property February 24, 1978. Solution was being applied to the main dump. As on the visit herein reported no employees were on the property. Little or no change was observed except for the deterioration of equipment&PVC liners.

GM:CH:gg

cc: Tucson office

Kaaterskill Exploration *Geochemistry • Petrology • Structural Analysis*

691 ROBINSON DRIVE • PRESCOTT, ARIZONA 86303 • 602/778-5321

DRAFT

DUPLICATE

PROPERTY EXAMINATION REPORT December 12, 1990

PROPERTY NAME: Roadside Mine Lease		
PRIORITY: high	**COMMODITY:** gold	
EXAMINED BY: P. O'Hara		
REPORT REQUESTED BY: Ivy Minerals Inc.		
AMS SHEET: Kingman	**TOPOGRAPHIC MAP:** Davis Dam 7.5' (AZ-NEV) Union Pass 7.5', Burns Spring 7.5' and Spirit Mountain 7.5' (AZ-NEV) (figure 1)	
DISTRICT: Katherine	**COUNTY:** Mohave	**STATE:** Arizona
TOWNSHIP,RANGE,SECTION: T21N/R21W/S 1, 2, 3, 10, 11, 12, 13, 14, 24 T22N/R21W/S 25, 26, 27, 34, 35, 36 T21N/R20W/S 4, 6, 7, 18		

6/2002 J.M.

this report continues threw the next continuing 9 files

RH

Kaaterskill Exploration

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DRAFT

DUPLICATE

PROPERTY EXAMINATION REPORT December 12, 1990

PROPERTY NAME: Roadside Mine Lease

PRIORITY: high **COMMODITY:** gold

EXAMINED BY: P. O'Hara

REPORT REQUESTED BY: Ivy Minerals Inc.

AMS SHEET: Kingman **TOPOGRAPHIC MAP:** Davis Dam 7.5' (AZ–NEV)
Union Pass 7.5', Burns Spring 7.5' and Spirit Mountain 7.5' (AZ–NEV) (figure 1)

DISTRICT: Katherine **COUNTY:** Mohave **STATE:** Arizona

TOWNSHIP,RANGE,SECTION: T21N/R21W/S 1, 2, 3, 10, 11, 12, 13, 14, 24
T22N/R21W/S 25, 26, 27, 34, 35, 36
T21N/R20W/S 4, 6, 7, 18

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS:

1. Mineralization exists at Gold Chain Hill (0.016 oz/ton, 1.4million tons, 23116 ozs. at 0.01 oz/ton cut–off); Roadside Mine (0.027oz/ton, 358,000 tons, at 0.01 oz/ton cut–off); and Western States' Black Dyke property (0.03 oz/ton, 1.3 million tons).

DRAFT

2. Mineralization potential exists under pediment gravels north, northwest and northeast of Gold Chain Hill and on the Roadside lease west of the Black Dyke property.

3. Reconnaissance exploration of mineralized and altered areas at Adams Hill (Lake Mead Recreation Area), Lucky, North Ridge, north and west of Burt Hill (parts in Recreation Area), Abner Hill, under pediment gravels near biogeochemisty anomalies, magnetic lows and VLF–EM cross–overs, and within listric and antithetic structures in the upper plate volcanic section is required.

4. Drilling is required to test all targets mentioned above. However, detailed mapping of lithology, alteration and structures as well as associated geochemical sampling must be completed within the volcanic section before drilling this target.

ACCESSIBILITY:

The Roadside property is approximately seventy–five miles southeast of Las Vegas, Nevada and twenty five miles west–northwest of Kingman, Arizona (Figure 1). It is reached from either Laughlin, Nevada, Bullhead City, Arizona or Kingman, Arizona using Arizona State Route 68 (Kirwin, 1990). Ivy Minerals Inc.'s lease holdings at the Roadside Mine are accessible from Bullhead City, Arizona. The property is located six miles northeast of the Laughlin Bridge north of Bullhead City. From Bullhead City the property is accessible by paved road to Lake Mohave Resort and then by gravel road past the Katherine Mine to the Roadside Mine. Most of the property is accessible by two wheel drive high ground clearance vehicles. Travel in some of the washes may require four wheel drive locally. Most targets on the property are accessible using old mine roads (Figure 2). Commercial air service is available to Bullhead City Airport.

PROPERTY SIZE:

The main claim block composed of 419 unpatented lode and association placer claims encompasses approximately eight square miles including the Roadside Mine area (Figure 3, Appendix 1). Several unleased patented and unpatented claim groups lie within this block. The most notable of these is the Black Dike property which contains eight claims. Western States Minerals Inc. controls the mineral rights on this property through a lease from a local prospector. Several outlying small claim groups leased to Ivy Minerals Inc. by ONANON Inc., are located locally near the main claim group (Figures 4 a,b,c,d,e).

Northeast of the Roadside Mine lies a group of claims separate from the main block (figure 4f). These claims include the Mexican Hat, Golden Gate, etc. They are mislocated on the ONANON land map by approximately 2000'. They lie further east than indicated.

American Copper and Nickel staked fifteen fractions in critical areas within the claim block.

Perry Durning informed me that he had applied for an explorationlease in the National Recreation Area (Bureau of Reclamation Land) when Fischer–Watt controlled the property. The lease application included the altered volcanic outcrop (Adams Hill) and the western part of Burt Hill which lie west of the property boundary. This application is still active. American Copper and Nickel Inc. acquired the right to pursue the lease from Fischer–Watt in 1990 and as of November 14, 1990 are still attempting to obtain this lease.

LEGAL STATUS:

All unpatented claims included in the lease are legal. Appendix 7 contains the list of claims that are assessed each year. Several claims including the Gold Slab #1 at the Roadside Mine site were submitted to BLM for patent by ONANON Inc.

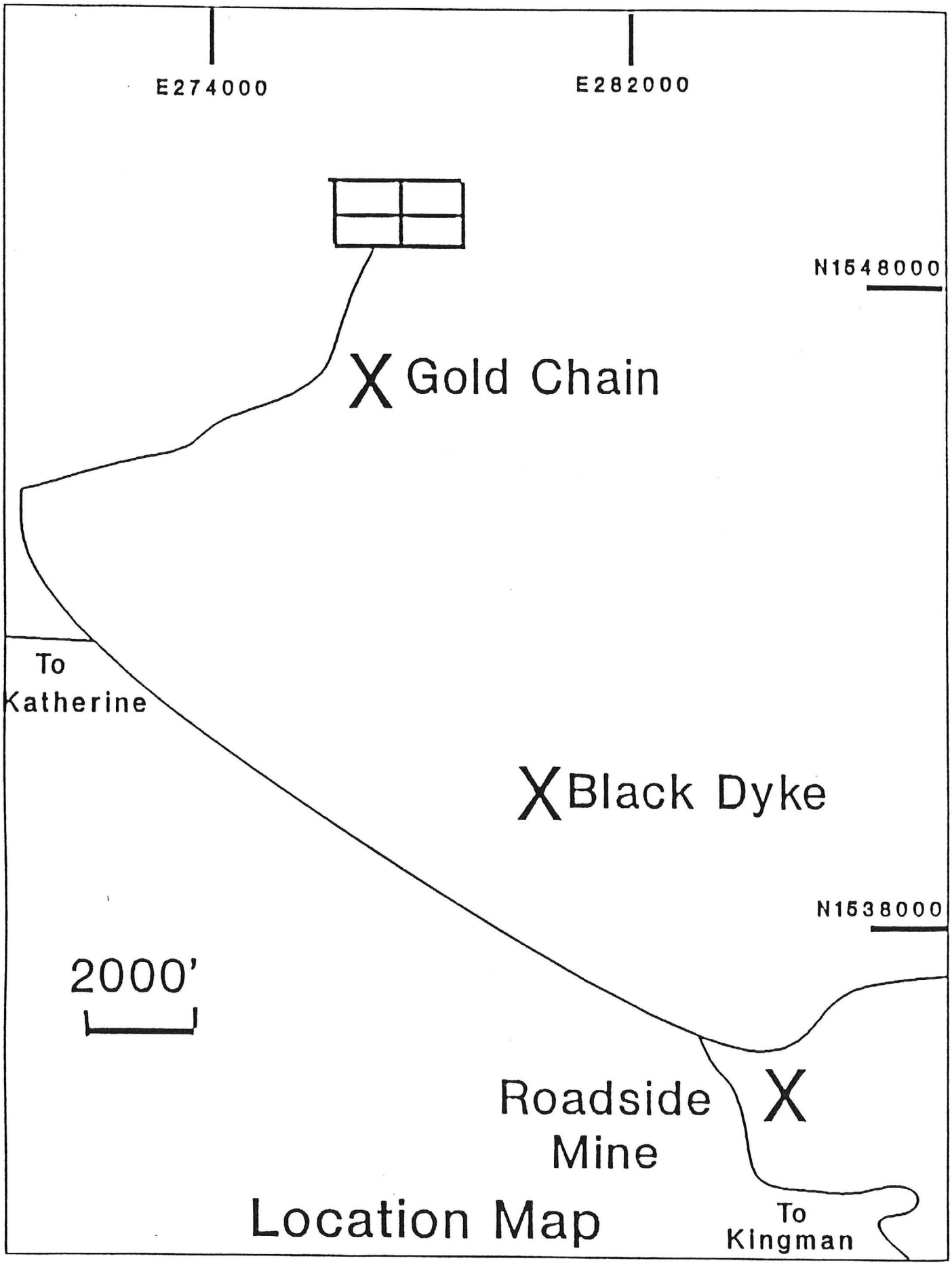


Figure 2. Location of major prospects on or in the vicinity of the Roadside lease

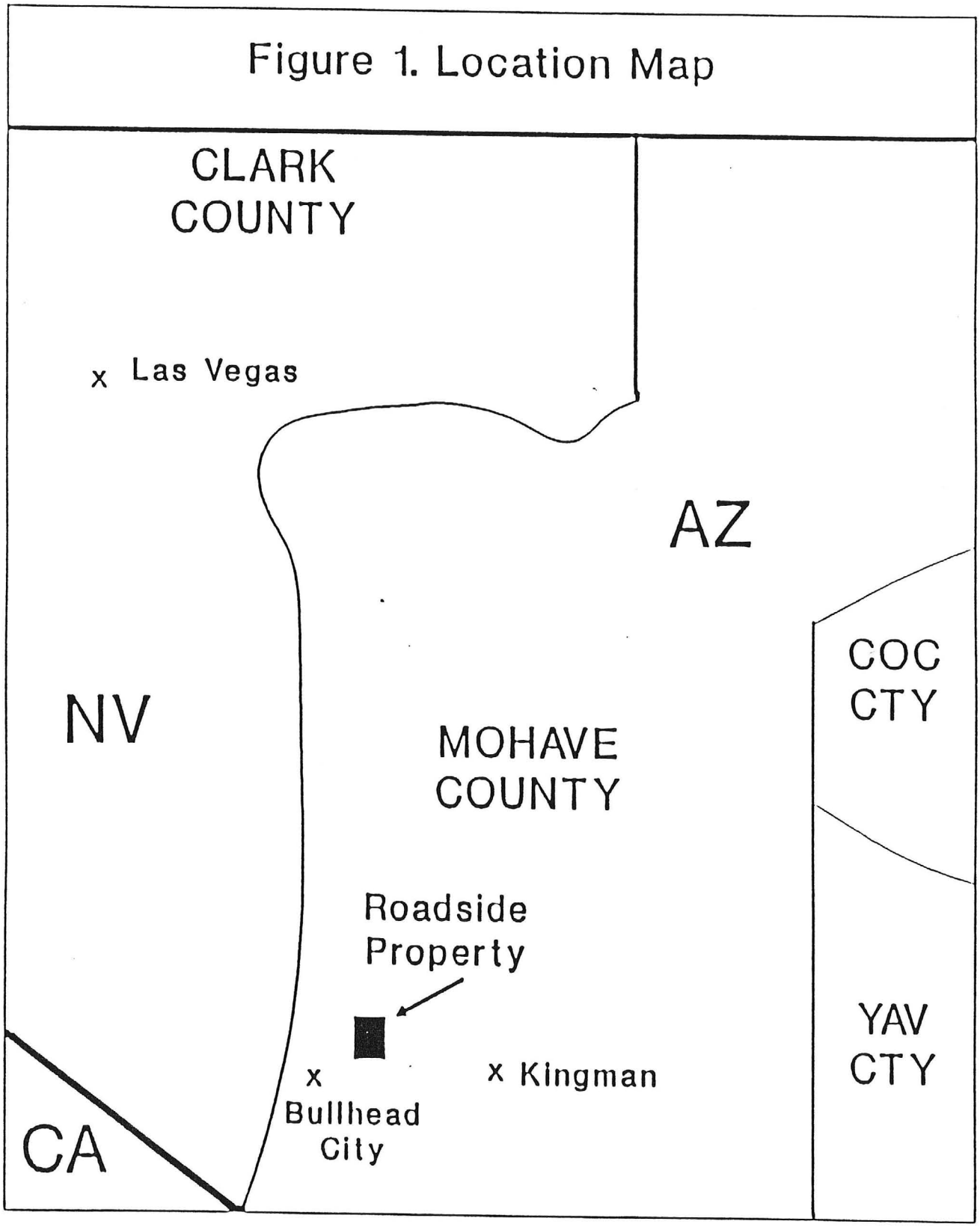
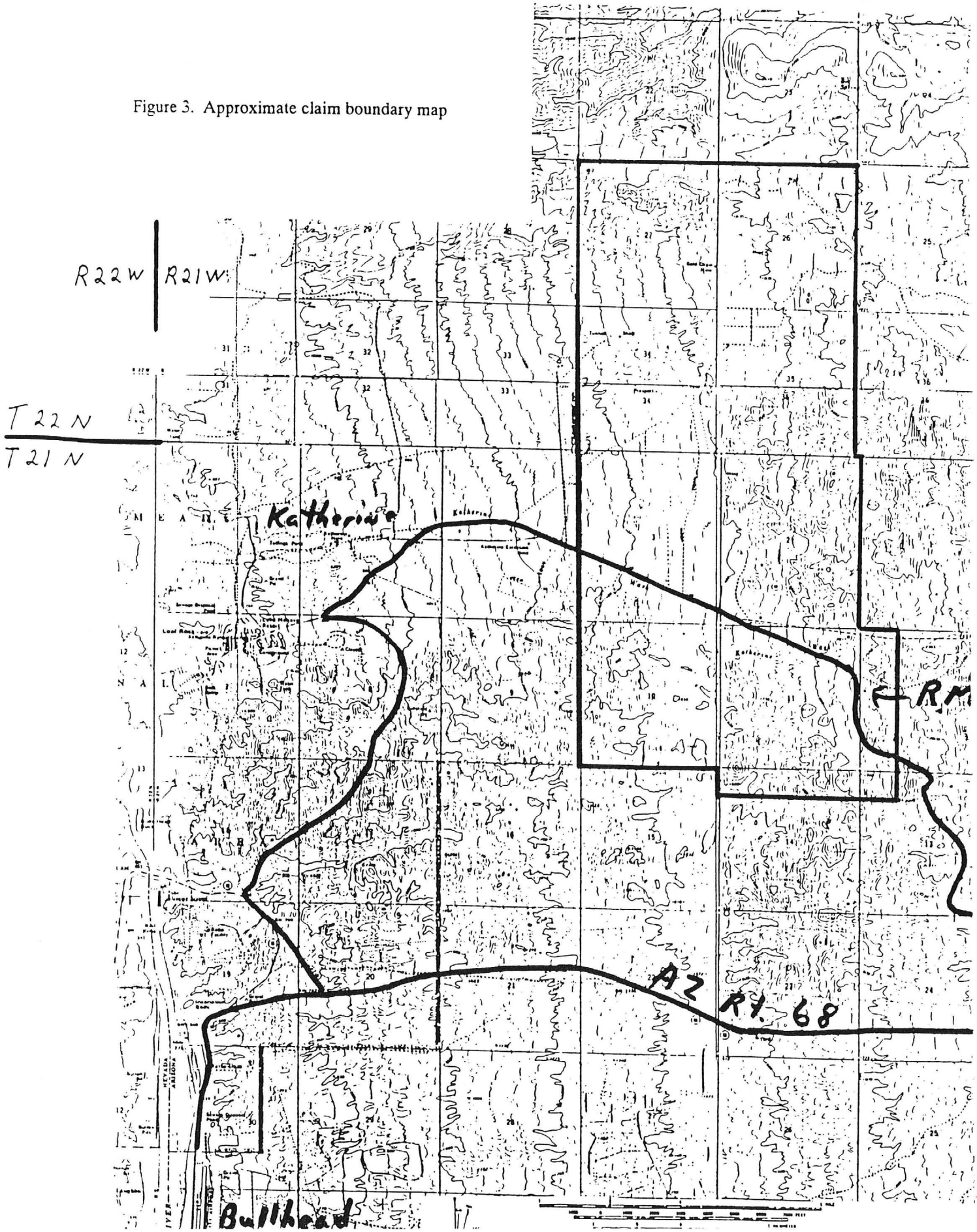


Figure 1. Location map

Figure 3. Approximate claim boundary map



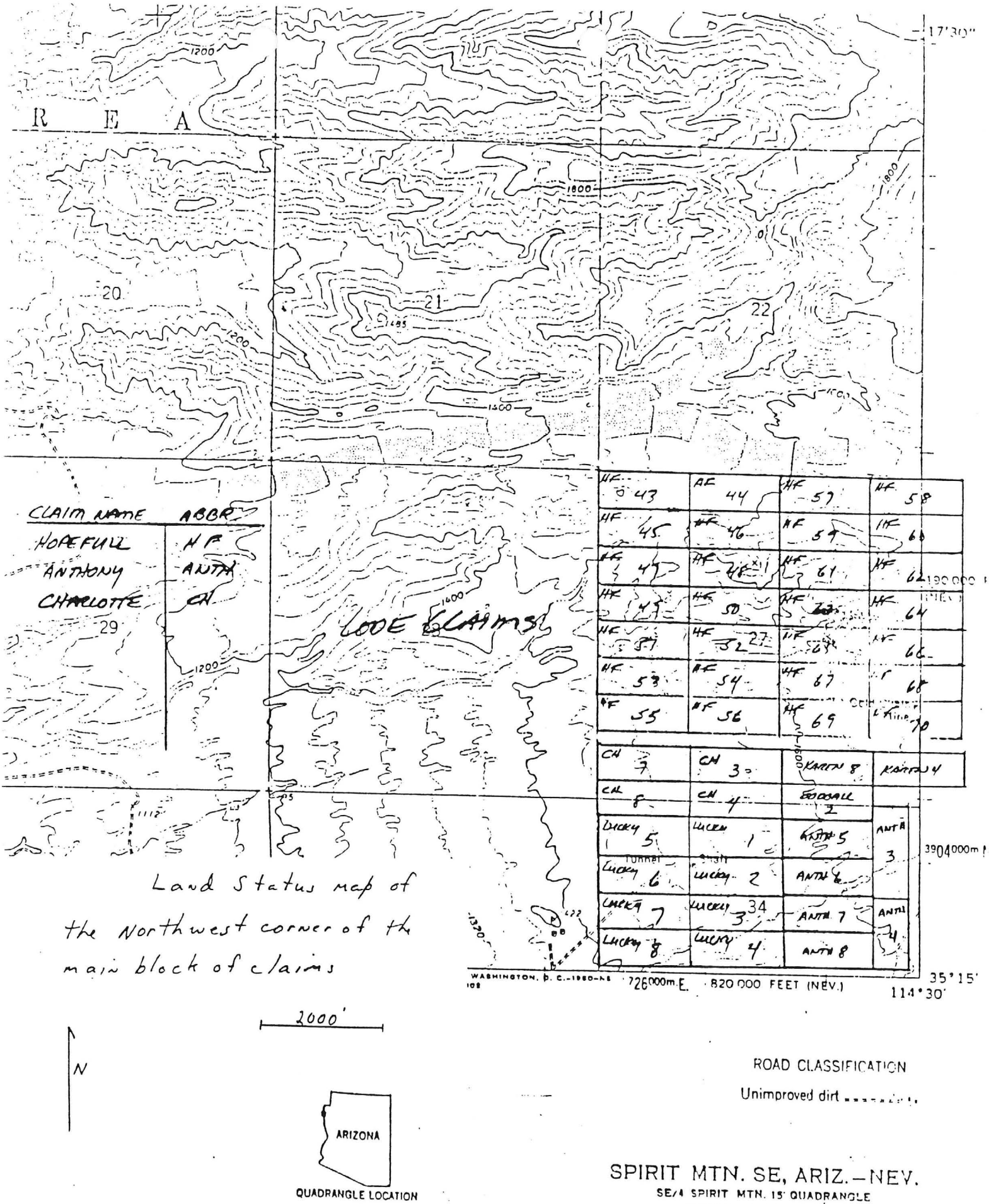
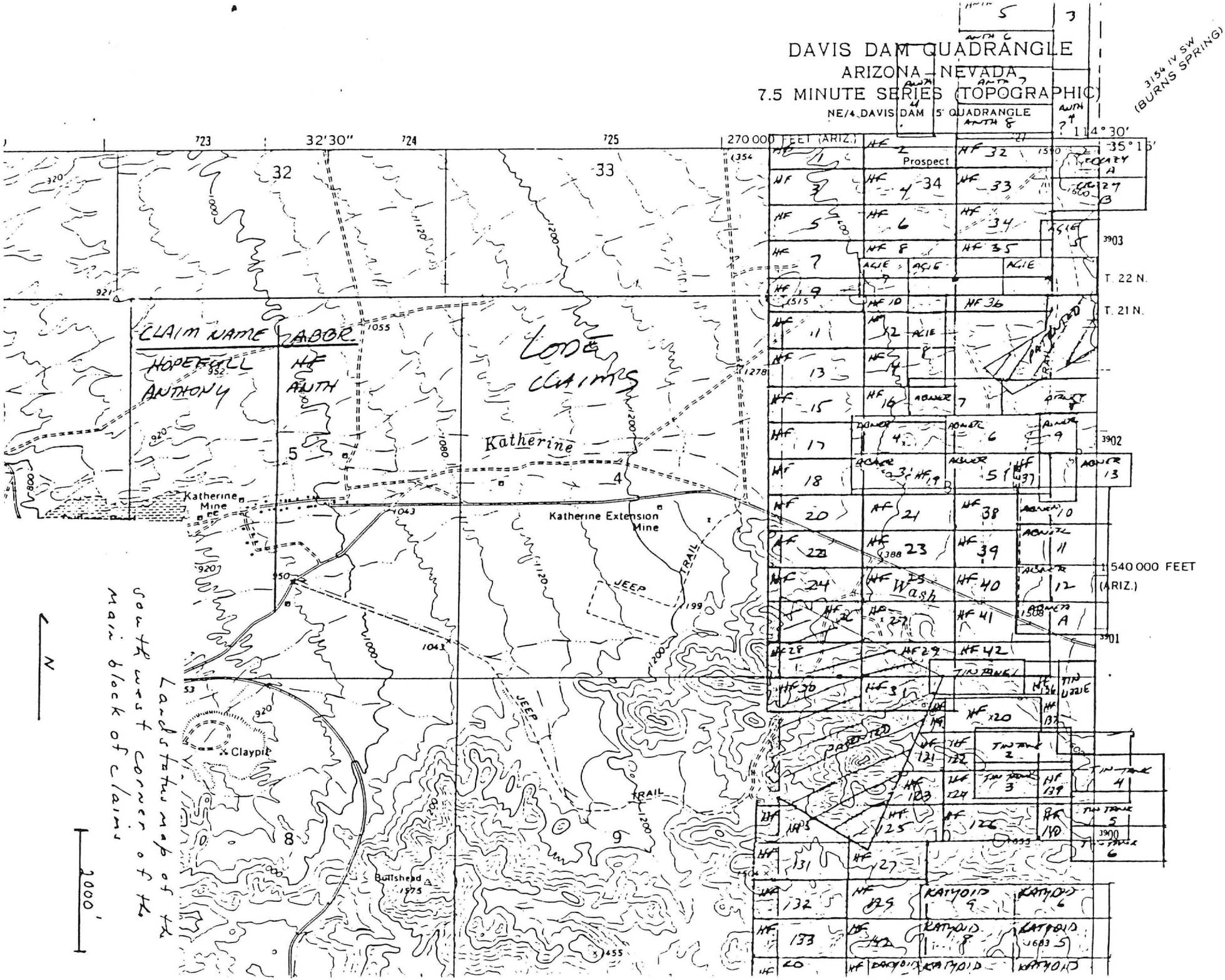
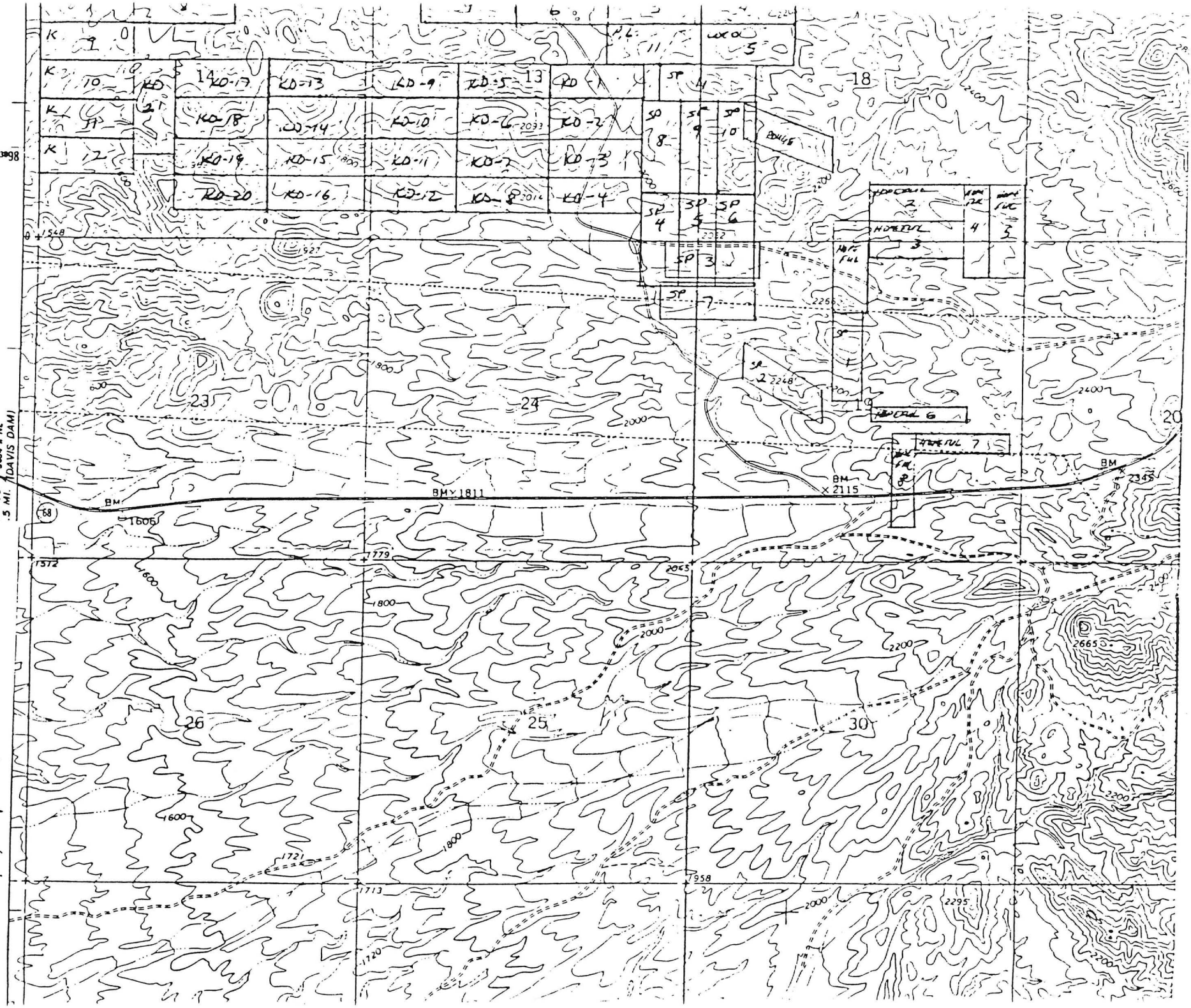


Figure 4. Land status map


DAVIS DAM QUADRANGLE
ARIZONA - NEVADA
7.5 MINUTE SERIES (TOPOGRAPHIC)
NE/4 DAVIS DAM 15' QUADRANGLE
3154 IV SW (BURNS SPRING)
114°30'
35°15'
270 000 FEET (ARIZ.)
1 540 000 FEET (ARIZ.)
T. 22 N.
T. 21 N.
CLAIM NAME
LABOR
HOPEFULL
ANTHONY
Lode Claims
Katherine
Katherine Mine
Katherine Extension Mine
Claypit
Bullshed
JEEP TRAIL
Wash
Prospect
Landsat map of the south west corner of the main block of claims
N
2000'



Land status map of the southeast corner of the main block of claims

N

3000'

Land status map of the northeast corner of the main block of claims

2000'

N

Tyro

Box Spring

SW CORNER BURNS SPRING QUAD

LODE CLAIMS

CLAIM NAME

HOPE HILL

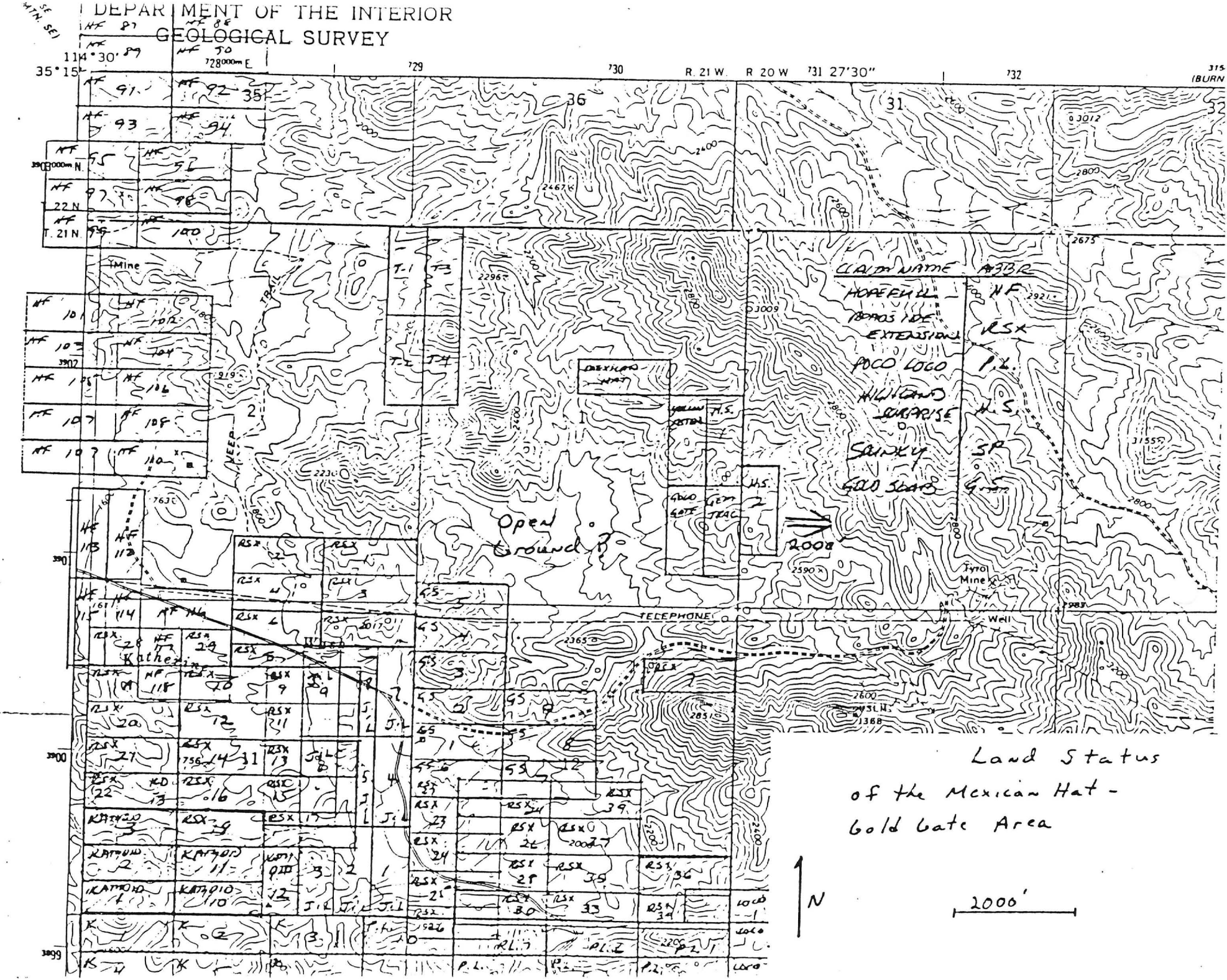
DEBTE MINE

CRAZYSTICK

Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Topography by photogrammetric methods from aerial



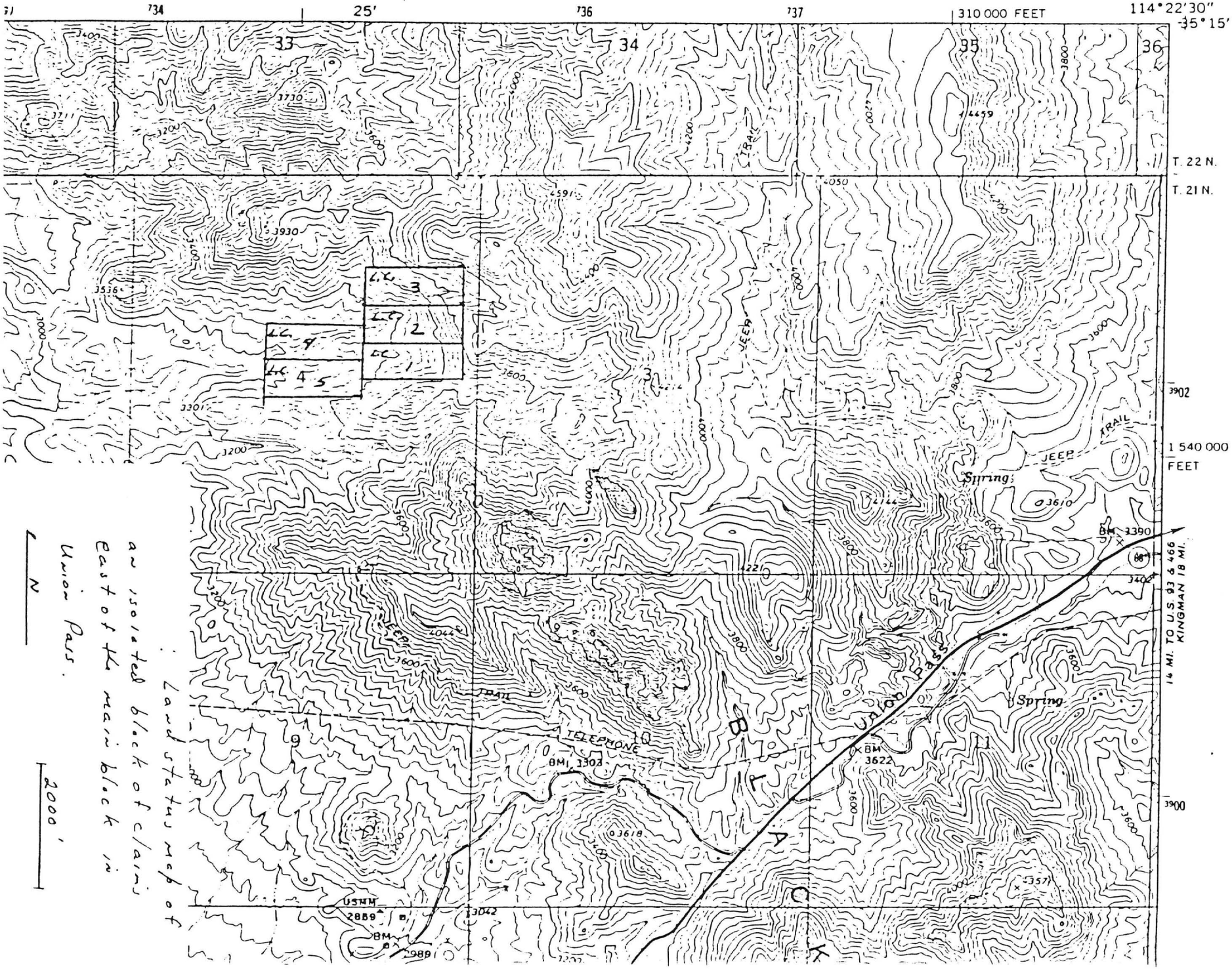
Land Status of the Mexican Hat - Gold Gate Area

UNION PASS QUADRANGLE

ARIZONA – MOHAVE CO.

7.5 MINUTE SERIES (TOPOGRAPHIC)

(GRASSHOPPER SE)



an isolated block of claims East of the main block in Union Pass.

N

2000'

OWNERSHIP:

ONANON Inc. owns the mineral rights to the unpatented claims included within the claim block. Ivy Minerals Inc. leased the claims from ONANON Inc. on June 1, 1987. Ivy minerals Inc. arranged a letter of intent for potential joint venture with American Copper and Nickel Inc. beginning July 27, 1989. American Copper and Nickel Inc. terminated the joint venture agreement with Ivy Minerals Inc. during July, 1990.

OWNERS PROPOSED TERMS:

Conway Ivy, president of Ivy Minerals Inc., will conduct all discussions concerning potential joint venture or lease option agreements.

Conway Ivy
Ivy Minerals Inc.
P.O. Box 2532
Boise, ID 83701
(216) 566-2102 (office)

GEOGRAPHIC SETTING:

The property lies within the Colorado River Valley along the western flank of the north trending Black Range. Areas underlain by Precambrian granodiorite within the Black Range are fairly rugged with locally steep slopes. The southwestern part of the main claim group is underlain by Tertiary volcanic rocks. This area is of moderate relief. Precambrian granodiorite on the pediment is overlain by gravels which are slightly dissected by streams. Approximately half the claim block overlies the pediment, above which rise numerous inselbergs (Kirwin, 1990). Tertiary intrusive rhyolite, silicified calcareous breccia, and volcanic outliers form local hills on the pediment. The pediment slopes gently to the Colorado River five miles to the west.

DEVELOPMENT:

The Roadside Mine contains a small open pit which serves as access to the underground workings. Throughout the property there are many small adits and shallow shafts as well as trenches and prospect pits (Map 1).

Several periods of drilling activity occurred on the property. Initial churn drilling referenced in Fisher–Watt reports was completed at the Roadside Mine site before Fishcer–Watt's lease. Data from this period of drilling was not collected in a scientific manner nor was it systematically recorded. Therefore, very little knowledge exists about the results.

Fischer–Watt drilled thirteen RVC holes at the Roadside Mine site as well as several holes locally near the Roadside Mine and at the Gold Chain Hill prospect for a total of 28 holes (Appendices 2,3). Anaconda drilled ten core holes at various geologic targets throughout the main claim block Appendix 4). Fischer–Watt drilled 15 holes for 4,230 feet in August, 1986 to fulfill assessment requirements (Appendices 5,6).

Ivy Minerals Inc. drilled at least thirty–three shallow air track holes at the Roadside Mine site during 1987 (Appendix 7). A flash flood wiped out many of the drill sites before they were surveyed, therefore, only 23 of these holes were located in December, 1987.

Reverse circulation drill holes (RSM–#), drilled by Fischer–Watt Inc., were located in the field between December 1 and December 4. Airtrack drill holes (AT–#), drilled by Ivy Minerals Inc. were also located in the field during this time. Each drill hole was surveyed by brunton and chain and plotted on a 1" = 40' scale map (Figure 5).

During February, 1988, drilling at the Roadside Property was completed in two stages. The first stage of drilling commenced on 2/3 and was completed on 2/20 with four days off between 2/11 and 2/14. The second stage of drilling was completed between 2/29 and 3/2 (Appendices 8, 9, 10).

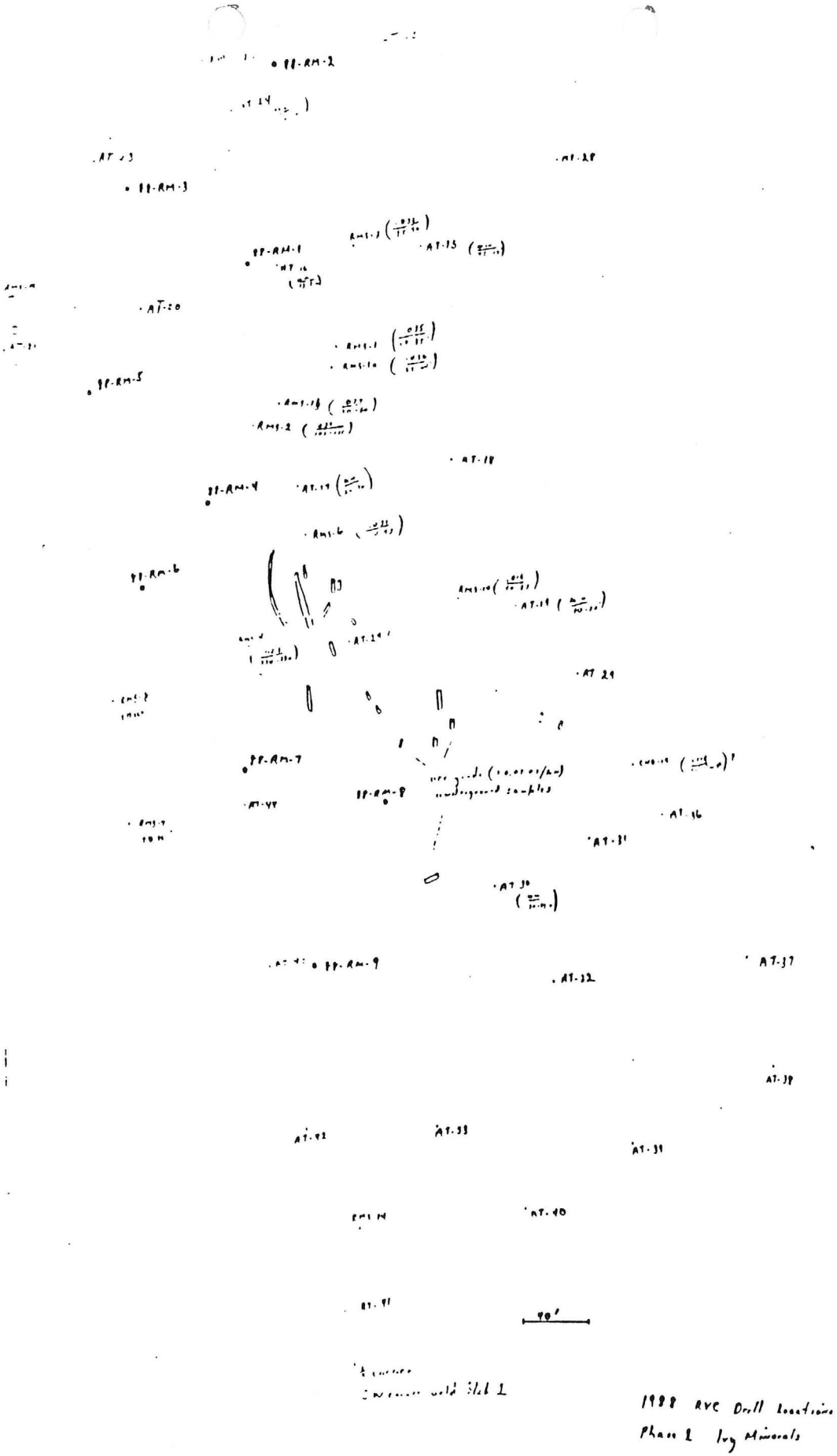


Figure 5. Drill hole locations at the Roadside mine

2054.5 feet of reverse circulation drilling was drilled during the above mentioned time. During the first phase, 1542 feet of drilling was completed through 170' of hole 88–RM–7. The second phase of drilling accounted for 512.5 feet of drilling through 88–RM–9. Hole 9 was terminated at a t.d. of 196.5 feet because of a broken hammer.

Hole #	Date started	Date finished	Footage
RM–88–1	2/5	2/9	250'
2	2/10	2/10	150'
3	2/10	2/11	243'
4	2/16	2/17	243'
5	2/17	2/18	243'
6	2/18	2/19	243'
7	2/19 (170')	2/29	243'
8	2/29	3/1	243'
9	3/1	3/2	196'
		TOTAL	2054.5'

During August, 1989 ACNC drilled 53 RVC holes to depths of 100 feet each to fulfill assessment requirements and to explore beneath alluvial cover on the pediments (Table 1, Table 2 and Figure 6). All holes reached bedrock, but most did not intersect altered rocks (Kirwin, 1990). These holes aided in mapping lithology, structure and alteration, as well as supplying geochemical samples which otherwise were not attainable (Appendices 11,12)(Kirwin and O'Hara, 1990). A contour map of depth to bedrock (Figure7) was constructed and this same data was analyzed using a third order polynomial trend surface (Figure 8) and a sixth order polynomial trend surface (Figure9). Edge effects are severe. Future analyses will use the elevation of the surrounding bedrock and the elevation of bedrock in the hole for better results.

Following preliminary mapping and sampling those portions of Gold Chain Hill which crop out, ACNC drilled fourteen RVC holes in February and March of 1990 (Map2; Tables 3,4; Appendices 13, 14, 15, 16). A total of 4685 feet was drilled. A small mineralized zone, open in two directions, of approximately two million tons of 0.019 ounces per ton gold was partially outlined. Three holes on the southeastern edge of the

drill pattern contained 35 feet of 0.064 ounces per ton gold, 30 feet of 0.019 ounces per ton gold , within longer lower grade intervals. Two holes at the northwestern corner of the drill pattern contained 25 feet of 0.017 ounces per ton gold (with 5 feet of 0.05 ounces per ton gold) and 40 feet of 0.017 ounces per ton gold within 195 feet of 0.01 ounces per ton gold (Maps 2, 8). The holes with best gold mineralization are within a zone of lower magnetic intensity and low amplitude magnetic response, possibly reflecting alteration of primary magnetite to hematite (Kirwin and O'Hara, 1990).

A second 1990 drill program consisting of 4155 feet of RVC drilling in eleven holes was completed in May and June, 1990 (Table 5; Appendices 17, 18, 19, 20). Three holes each were drilled on the southeastern and northwestern extensions of the Gold Chain mineralization trend, within the trend of lower magnetic response. Three holes were drilled on a geochemical anomaly contained within float boulders of carbonate cemented breccia which may represent the extension of Black Dyke mineralization (40,000 ounces of gold) onto ACNC controlled claims. Two holes were drilled into biochemical gold anomalies above upper plate rocks on the pediment. Strong hematite–carbonate alteration is present in approximately half of the holes. Assay results are disappointing in all but the three holes drilled into upper plate rocks north of the southeastern terminus of Gold Chain Hill type alteration.

Drill holes 80272, 73 and 74 were designed to intercept the down dip extension of mineralized silica–carbonate–hematite alteration in the Gold Chain Hill breccia east of the February–March drill holes. These holes are located north of the southeastern most outcrops of altered breccia. The three holes intercepted anomalous gold mineralization namely:

80272	20 feet of 0.010 oz/ton gold
	55 feet of 0.018 oz/ton gold
80273	35 feet of 0.007 oz/ton gold
	80 feet of 0.008 oz/ton gold
80274	40 feet of 0.014 oz/ton gold

Table 1. ACNC 1989 drill summary

AMERICAN COPPER AND NICKEL CO., INC.
EXPLORATION DRILLING SUMMARY

DISTRICT: KATHERINE MONTH ENDING: AUGUST, 1989
PROPERTY: ROADSIDE

HOLE	LOCATION	COL. ELEV.	DIP	FRM	FT	REMARKS
802001	SEE ATTACHED MAP	1805	-90	0	100	Tv to 95, gd 95-100
802002	SEE ATTACHED MAP	1840	-90	0	100	Tv grades to gd at 95
802003	SEE ATTACHED MAP	1785	-90	0	100	gd to 35, clay 40 - td
802004	SEE ATTACHED MAP	1810	-90	0	100	clay 30 -45, gd 45 - 90
802005	SEE ATTACHED MAP	1847	-90	0	100	gd, wk FeOx
802006	SEE ATTACHED MAP	1847	-90	0	100	gd, wk - mod FeOx
802007	SEE ATTACHED MAP	1851	-90	0	100	gd, wk - mod FeOx
802008	SEE ATTACHED MAP	1833	-90	0	100	gd, wk FeOx
802009	SEE ATTACHED MAP	1832	-90	0	100	rhy
802010	SEE ATTACHED MAP	1975	-90	0	100	gd,mod FeOx at top
802011	SEE ATTACHED MAP	1791	-90	0	100	gd, wk - mod FeOx
802012	SEE ATTACHED MAP	1847	-90	0	100	gd, wk FeOx
802013	SEE ATTACHED MAP	1863	-90	0	100	gd, wk FeOx
802014	SEE ATTACHED MAP	1815	-90	0	100	gd, wk - mod FeOx
802015	SEE ATTACHED MAP	1755	-90	0	100	gd, wk FeOx
802016	SEE ATTACHED MAP	1791	-90	0	100	gd, wk - mod FeOx
802017	SEE ATTACHED MAP	1740	-90	0	100	gd, wk FeOx
802018	SEE ATTACHED MAP	1691	-90	0	100	gd, mod FeOx
802019	SEE ATTACHED MAP	1690	-90	0	100	gd, wk - mod FeOx
802020	SEE ATTACHED MAP	1695	-90	0	100	db?, mod FeOx
802021	SEE ATTACHED MAP	1715	-90	0	100	gd + rhy, clay 70 - 90
802022	SEE ATTACHED MAP	1742	-90	0	100	gd to 70, clay to td
802023	SEE ATTACHED MAP	1764	-90	0	100	gd, wk FeOx
802024	SEE ATTACHED MAP	1797	-90	0	100	rhy, mod FeOx
802025	SEE ATTACHED MAP	1773	-90	0	100	gd, clay 25 - 50, mod FeOx
802026	SEE ATTACHED MAP	1797	-90	0	100	rhy
802027	SEE ATTACHED MAP	1783	-90	0	100	gd
802028	SEE ATTACHED MAP	1767	-90	0	100	gd, mod FeOx
802029	SEE ATTACHED MAP	1495	-90	0	100	gd, mod - int FeOx
802030	SEE ATTACHED MAP	1470	-90	0	100	rhy, faults, mod FeOx
802031	SEE ATTACHED MAP	1454	-90	0	100	gd, wk to mod FeOx
802032	SEE ATTACHED MAP	1483	-90	0	100	gd, mod - int FeOx
802033	SEE ATTACHED MAP	1542	-90	0	100	gd, mod FeOx
802034	SEE ATTACHED MAP	1438	-90	0	100	rhy
802035	SEE ATTACHED MAP	1418	-90	0	100	rhy
802036	SEE ATTACHED MAP	1342	-90	0	100	gd, mod FeOx
802037	SEE ATTACHED MAP	1308	-90	0	100	rhy, wk - mod FeOx
802038	SEE ATTACHED MAP	1538	-90	0	100	gd
802039	SEE ATTACHED MAP	1582	-90	0	100	gd
802040	SEE ATTACHED MAP	1458	-90	0	100	gd, wk FeOx
802041	SEE ATTACHED MAP	1479	-90	0	100	gd, wk - mod FeOx
802042	SEE ATTACHED MAP	1501	-90	0	100	gd, wk FeOx
802043	SEE ATTACHED MAP	1462	-90	0	100	gd, wk FeOx
802044	SEE ATTACHED MAP	1573	-90	0	100	gd + fault gouge, mod FeOx
802045	SEE ATTACHED MAP	1589	-90	0	100	gd
802046	SEE ATTACHED MAP	1593	-90	0	100	gd, wk FeOx
802047	SEE ATTACHED MAP	1685	-90	0	100	gd, wk FeOx

HOLE	LOCATION	COL. ELEV.	DIP	FRM	FT	REMARKS
802048	SEE ATTACHED MAP	1673	-90	0	100	gd
802049	SEE ATTACHED MAP	1602	-90	0	100	gd, wk FeOx
802050	SEE ATTACHED MAP	1540	-90	0	100	gd, wkFeOx
802051	SEE ATTACHED MAP	1451	-90	0	100	gd, wK FeOx
802052	SEE ATTACHED MAP	1408	-90	0	100	gd, mod FeOx
802053	SEE ATTACHED MAP	1666	-90	0	100	rhy, int clay, mod - int FeOx

0.02 cutoff

HOLE	SQ FOOT	THICK.	CU FOOT	GRADE	T*G	TONNAGE
54	6200	90	558000	0.02	1.8	83700
56	7000	5	35000	0.032	0.16	5250
58	5500	55	302500	0.027	1.485	45375
60	7300	20	146000	0.021	0.42	21900
66	7000	13	91000	0.04	0.52	13650
67	7900	35	276500	0.064	2.24	41475
72	10000	40	400000	0.025	1	60000
74	7300	10	73000	0.043	0.43	10950
84-6	8100	4	32400	0.02	0.08	4860
RSM-20	6200	160	992000	0.024	3.84	148800
RSM-16	1400	20	28000	0.026	0.52	4200
	TOTALS	452			12.495	440160
		GRADE =	0.027643	OZS =	12167.69	

0.024 cutoff

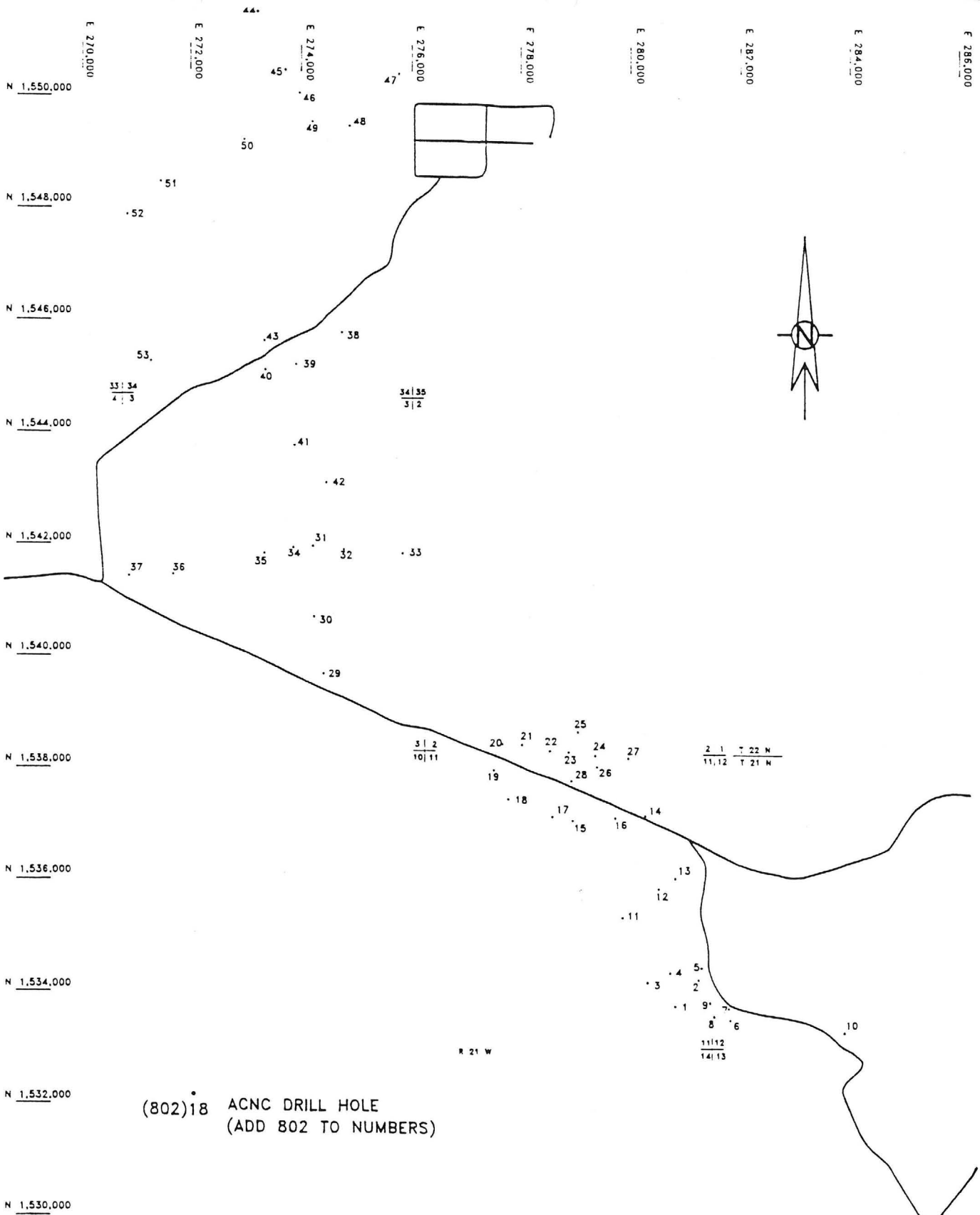
HOLE	SQ FOOT	THICK.	CU FOOT	GRADE	T*G	TONNAGE
56	7000	5	35000	0.032	0.16	5250
58	5500	55	302500	0.027	1.485	45375
66	7000	13	91000	0.04	0.52	13650
67	7900	35	276500	0.064	2.24	41475
68	7800	20	156000	0.036	0.72	23400
72	10000	40	400000	0.025	1	60000
74	7300	10	73000	0.043	0.43	10950
RSM-20	6200	160	992000	0.024	3.84	148800
RSM-16	1400	20	28000	0.026	0.52	4200
	TOTALS	358			10.915	353100
		GRADE =	0.030488	OZS =	10765.60	

Table 2. ACNC 1989 drill summary of gold concentrations

TABLE OF ANOMALOUS GOLD INTERCEPTS - AUGUST, 1989 DRILL PROGRAM
ROADSIDE PROJECT

DRILL HOLE	INTERCEPT
80201	5' OF 11 ppb
80202	-
80203	-
80204	-
80205	d 20' of 11 ppb
80206	d 15' of 25 ppb
80207	d 10' of 6 ppb
80208	d 10' of 13 ppb
80209	5' of 6 ppb
80210	60' of 9 ppb
80211	80' of 9 ppb
80212	70' 0f 9 ppb
80213	30' of 11 ppb
80214	100' of 16 ppb (55' of 24 ppb)
80215	d 25' of 12 ppb (5' of 35 ppb)
80216	5' of 6 ppb
80217	5' of 9 ppb
80218	-
80219	-
80220	5' of 6 ppb
80221	5' of 422 ppb + d 10' of 15 ppb
80222	30' of 16 ppb
80223	-
80224	5' of 11 ppb
80225	-
80226	25' of 7 ppb + 20' of 11 ppb
80227	-
80228	20' of 17 ppb + 5' of 7 ppb
80229	5' of 11 ppb?
80230	5' of 11 ppb
80231	d 30' of 8 ppb (10' of 8 ppb)
80232	50' of 8 ppb (10' of 17 ppb)
80233	10' of 20 ppb
80234	d 10' of 10 ppb
80235	-
80236	10' of 10 ppb
80237	-
80238	10' of 7 ppb
80239	d 10' of 11 ppb
80240	5' of 6 ppb
80241	10' of 8 ppb
80242	90' of 10 ppb (40' of 18 ppb)
80243	90' of 7 ppb (15' of 14 ppb)
80244	5' of 22 ppb
80245	-
80246	-
80247	10' of 15 ppb
80248	-
80249	-
80250	-
80251	-
80252	5' of 9 ppb
80253	d 15' of 13 ppb

A "d" prefix = a discontinuous average (several anomalous samples)



(802)18 ACNC DRILL HOLE
(ADD 802 TO NUMBERS)

0 2000
FEET

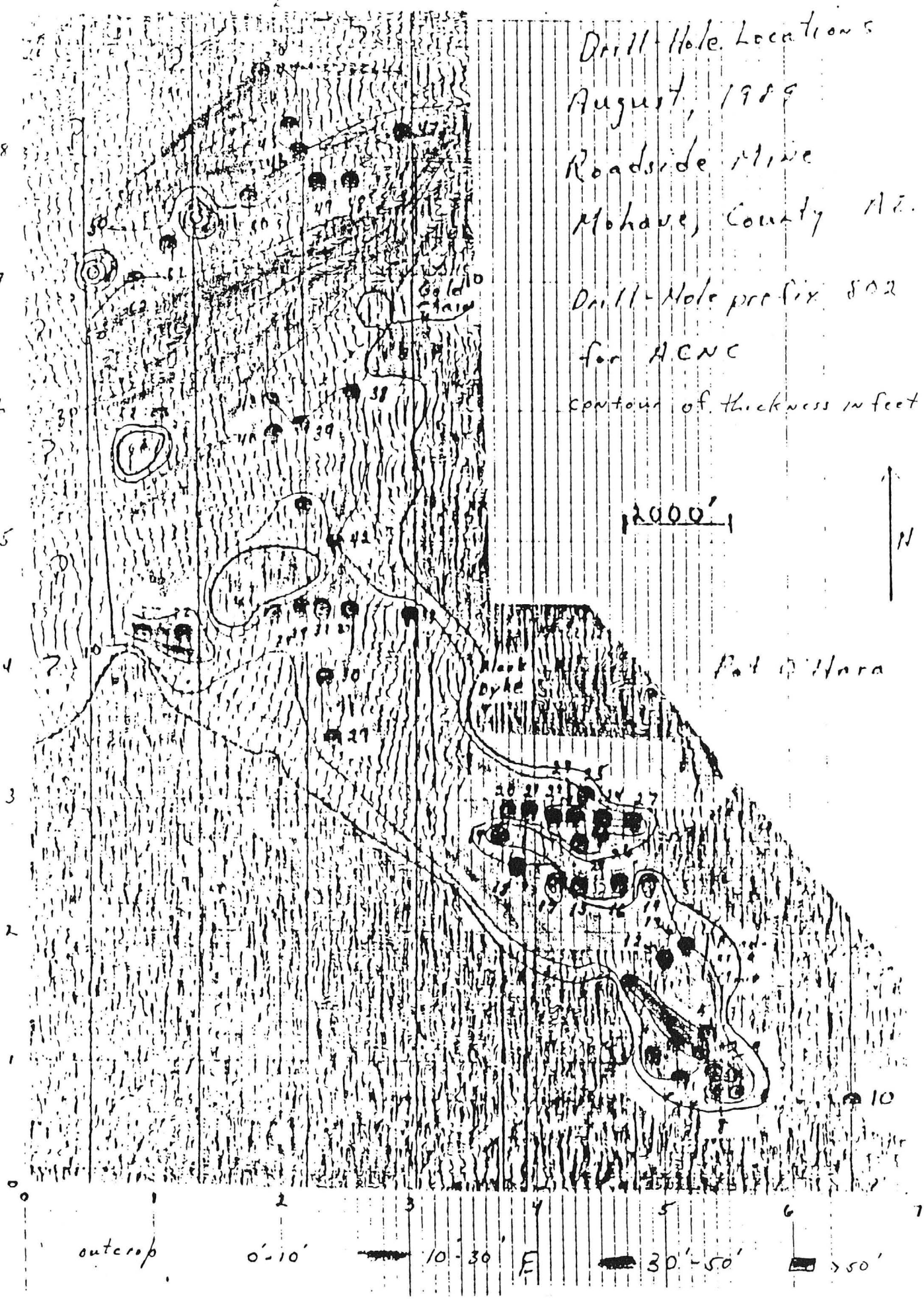
AMERICAN COPPER & NICKEL COMAPNY, INC.

ROADSIDE PROPERTY

MOHAVE COUNTY, ARIZONA

DRILL HOLE LOCATIONS

1/90


Drill Hole Locations
August, 1989
Roadside Mine
Mohave County Az.
Drill Hole prefix 802
for ACNC
contour of thickness in feet
2000'
N
Fort O'Hara
outcrop
0'-10'
10-30
30'-50'
>50'

X - left = 0.0
X - right = 7.0
Y - bottom = 0.0
Y - top = 9.0

Figure 8. Third order trend surface map of depth to bedrock on the pediment

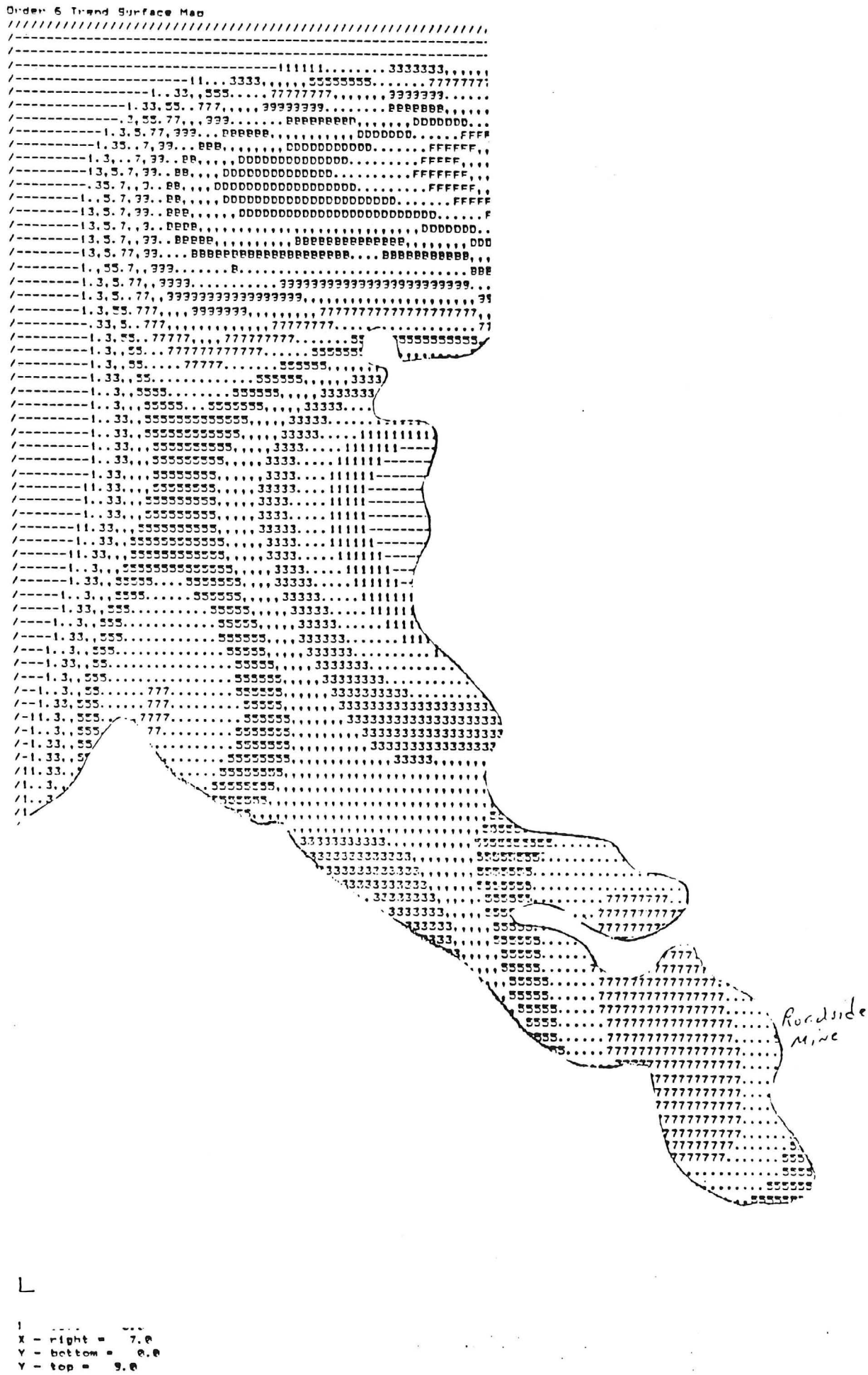


Figure 9. Sixth order trend surface map of depth to bedrock on the pediment

AMERICAN COPPER AND NICKEL INC.

PROJECT: ROADSIDE STATE: AZ COUNTY: MOHAVE

HOLE #	80254	80255	80256	80257	80258	80259	80260	80261	80262
QUADRANGLE	DAVIS DAM 7.5	DAVIS DAM 7.5	DAVIS DAM 7.5	DAVIS DAM 7.5	DAVIS DAM 7.5	SPIRIT MT. SE 7.5	SPIRIT MT. SE 7.5	SPIRIT MT. SE 7.5	SPIRIT MT. SE 7.5
T,R,S	T22N,R21W,S34	T22N,R21W,S34	T22N,R21W,S34	T22N,R21W,S34	T22N,R21W,S34	T22N,R21W,S34	T22N,R21W,S34	T22N,R21W,S34	T22N,R21W,S34
COORDS.	1547005N 275875E	1547015N 276025E	1547120N 275675E	1547120N 275210E	1546870N 275875E	1547110N 216125E	1547310N 276125E	1547440N 275630E	1547360N 275330E
COL. ELEV.	1605	1605	1595	1575	1610	1635	1630	1650	1585
CLAIM #	CRAZY A	CRAZY A	CRAZY A	CRAZY A	CRAZY A	HF-89	HF-89	ANTH-4	ANTH-4
START/FIN	2/7-2/7	2/8-2/8	2/8-2/9	2/9-2/11	2/11-2/12	2/12-2/13	2/13-2/16	2/21-2/22	2/23-2/24
BEAR/DIP	-/-90	-/-90	-/-90	-/-90	-/-90	180/-45	180/-45	0/-60	0/-60
TD	255	215	200	500	215	320	330	500	500
DEPTH OF CASING	-	-	-	-	-	-	-	-	-
DEPTH OF OVERBURD.	10	30	15	45	0	35	0	15	15
TYPE DRIL.	RVC	RVC	RVC	RVC	RVC	RVC	RVC	RVC	RVC
CONTRACT.	BROWN	BROWN	BROWN	BROWN	BROWN	BROWN	BROWN	BROWN	BROWN
GEOLOGIST	P O'HARA	P O'HARA	P O'HARA	P O'HARA	P O'HARA	P O'HARA	P O'HARA	P O'HARA	P O'HARA
FX #S									
START	560401	560453	560498	564881	564984	565030	565096	565164	565268
FINISH	560452	560497	560500	564983	565029	565095	565163	565267	565370
			564842						
			464880						

HOLE #	80263	80264	80265	80266	80267	80268
QUADRANGLE	SPIRIT MT. SE 7.5	SPIRIT MT. SE 7.5	UNION PASS 7.5	SPIRIT MT. SE 7.5	DAVIS DAM 7.5	DAVIS DAM 7.5
T,R,S	T22N,R21W,S34	T22N,R21W,S34	T21N,R21W,S11	T22N,R21W,S34	T22N,R21W,S34	T22N,R21W,S34
COORDS.	1547860N 275375E	1547875N 275490E	1536000N 281400E	1547400N 275475E	1546780N 276025E	1546780N 275875E
COL. ELEV.	1595	1600	1892	1590	1640	1645
CLAIM #	ANTH-4	ANTH-4	GS-1	ANTH-4	CRAZY A	CRAZY A
START/FIN	2/24-2/26	2/27-3/1	2/26-2/27	3/1-3/2	3/2-3/3	3/3-3/3
BEAR/DIP	180/-60	180/-60	-/-90	0/-45	180/-45	180/-45
TD	475	500	560	300	150	215
DEPTH OF CASING	-	10' ?	-	-	-	-
DEPTH OF OVERBURD.	10	5	5	10	0	0
TYPE DRIL.	RVC	RVC	RVC	RVC	RVC	RVC
CONTRACT.	BROWN	BROWN	BROWN	BROWN	BROWN	BROWN
GEOLOGIST	P O'HARA	P O'HARA	P O'HARA	P O'HARA	P O'HARA	P O'HARA
FX #S						
START	565371	565469	565572	565683	565745	565776
FINISH	565468	565571	565682	565744	565775	565818

Kaaterskill Exploration

Geochemistry • Petrology • Structural Analysis

691 ROBINSON DRIVE • PRESCOTT, ARIZONA 86303 • 602/778-5321

AMERICAN COPPER AND NICKEL INC.
EXPLORATION DRILLING SUMMARY

DISTRICT: KATHERINE

PROPERTY: ROADSIDE

WEEK ENDING: MARCH 9,1990

HOLE	LOCATION	AZIMUTH	DIP	DRILLING FROM	DRILLING TO	FEET	ALTERATION FROM	ALTERATION TO	TYPE	LITHOLOGY	DATE	TIME
80254	GOLD CHN	-	-90	0	255	255	10	100	LT. FEOX+QTZ VN	pCgd	2/7	5PM TD
							100	105	LT. FEOX	"		
							105	205	", CARB+QTZ VN	"		
							205	245	MOD FEOX, " +LT CLAY	"		
							245	255	FRESH	"		
80255	GOLD CHN	-	-90	0	215	215	30	65	LT FEOX+QTZ VN +/-CLAY	"	2/8	2PM TD
							65	135	LT FEOX+QTX VN	"		
							135	200	LT FEOX CARB+ QTZ VN	"		
							205	210	LT FEOX+QTZ VN +LT CLAY	"		
80256	GOLD CHN	-	-90	0	60		15	40	LT FEOX+QTZ VN	pCgd+Try	2/8	5PM
				60	200	200	40	200	"	pCgd	2/9	2PM TD
80257	GOLD CHN	-	-90	0	40		45	115	MOD FEOX+QTZ VN	"	2/9	5PM
				40	380		100	375	" + FRESH	"	2/10	5PM
				380	500	500	375	500	FRESH	"	2/11	NOON TD
80258	GOLD CHN	-	-90	0	165		0	75	LT - MOD FEOX +QTZ VN	"	2/11	5PM
				165	215	215					2/12	10:30 AM TD
							75	130	LT - MOD FEOX	"		
							130	175	" + QTZ VN	"		
							175	210	LT - MOD FEOX	"		
							210	225	FRESH	"		
80259	GOLD CHN	180	-45	0	185		35	70	LT - MOD FEOX +QTZ VN	Tr2	2/12	5PM
				185	320	320					2/13	5PM TD
							70	165	FRESH	Tr2?		
							165	240	MOD FEOX +QTZ + CARB VN	pCgd		
							240	265	LT FEOX +QTZ +CARB VN	"		
							265	295	LT FEOX +QTZ + CARB VN	Tr2		
							295	315	MOD FEOX +QTZ + CARB VN	pCgd		
							315	320	FRESH?	Tr2?		
80260	GOLD CHN	180	-45	0	100		0	125	RHY, LT FEOX MINOR CARB VN	Tr2?	2/15	6:15PM
				100	330	330					2/16	4PM TD
							125	175	MOD FEOX-QTZ+ CARB VN	pCgd		
							175	195	RHY, MOD FEOX MINOR QTZ VN	Tr2		
							195	300	MOD-INT FEOX QTZ+CARB VN	pCgd		
							300	330	RHY, LT FEOX LT QTZ+CARB VN	Tr?		

DISTRICT: KATHERINE

PROPERTY: ROADSIDE

WEEK ENDING: MARCH 9,1990

HOLE	LOCATION	AZIMUTH	DIP	DRILLING FROM	DRILLING TO	FEET	ALTERATION FROM	ALTERATION TO	TYPE	LITHOLOGY	DATE	TIME
80261	L. GOLD CHAIN	0	-60	0	140		15	120	MOD-INT FEOX	pCgd	2/21	6PM
				140	500	500			QTZ+CARB VN		2/22	6:45PM
							120	285	LT-MOD FEOX QTZ+CARB VN			
							285	500	FRESH, LOCAL FEOXVN QTZ+CARB			
80262	L. GOLD CHAIN	0	-60	0	340		15	105	MOD-INT FEOX	pCgd	2/23	6:30PM
				340	500	500	105	185	LT FEOX + MINOR CARB VN	+RHY+AND	2/24	1:35PM
							185	500	FRESH, LT FEOX MINOR VN QTZ+ CARB	pCgd		
80263	L. GOLD CHAIN	180	-60	0	220		10	325	MOD-INT FEOX+	pCgd	2/24	5:30PM
				220	420				QTZ+CARB VNS		2/25	5:30PM
				420	475	475	325	475	FRESH+LT FEOX+ QTZ-CARB VN+ CLAY NEAR TD		2/26	5:00PM
80264	L. GOLD CHAIN	180	-60	0	235		5	325	MOD-INT FEOX+	pCgd+	2/27	4:15PM
				235	360				QTZ+CARB VNS	MINR AND	2/28	5:00PM
				360	500	500	325	500	LT FEOX+ QTZ+CARB VNS		3/1	2:00PM T
80265	ROADSIDE	-	-90	0	500		5	45	MOD-INT FEOX	pCgd	2/26	6:00PM
				500	560	560	45	265	FRESH, LT-MOD FEOX, LOCAL QTZ CARB VN	Trhy +	2/27	11:00AM
							265	360	MOD FEOX+ QTZ+CARB VNS	pCgd		
							360	560	LT FEOX+ LOCAL VNS	pCgd+ Trhy		
80266	L. GOLD CHAIN	0	-45	0	40		10	260	MOD-INT FEOX+	pCgd	3/1	6:00PM
				40	300	300			QTZ+CARB VNS		3/2	2:00PM T
							260	300	FRESH-MOD FEOX			
80267	GOLD CHN	180	-45	0	20		0	90	MOD-INT FEOX+	pCgd	3/2	5:00PM
				20	150	150			QTZ+CARB VNS		3/3	11:30AM
							90	150	FRESH-LT FEOX+ QTZ+CARB VNS			
80268	GOLD CHN	180	-45	0	215	215	0	65	LT-INT FEOX+ QTZ+CARB VNS	pCgd	3/3	5:30PM TD
							65	140	LT FEOX	Trhy		
							140	215	LT-MOD FEOX+ QTZ+CARB VNS	pCgd		

Pat O'H

AMERICAN COPPER AND NICKEL CO., INC.
EXPLORATION DRILLING SUMMARY

DISTRICT Katherine
PROPERTY Roadside

WEEK-MONTH ENDING May 28, 1990 (June 16, 90)

HOLE	LOCATION	COLLAR ELEVATION	AZ, DIP	DRILLING FROM	DRILLING TO	DRILLING FEET	ESTIMATED MINERAL CONTENT FROM	FEET	MIN.	GRADE	REMARKS
0268	Black Dyke Ext		N 15 E -60°	0	40	40					Qal
							40	80	40	clay	
				40	50	10					Trhy
				50	95	45	80	255	170	FeOx alt	Trhy + Tand ± pEgd
							270	325	55	qtz-carb alt.	
				95	500						pEgd ± Trhy
270	"		"	0	20	20	35	55	20	clay	Qal
							40	195	155	FeOx alt	
				20	210	190					pEgd ± Trhy ± Tand
				210	255	45					Trhy ± pEgd
							250	275	25	FeOx alt	
				255	500	245					
271	"		"	0	20	20					Qal
				20	220	200					pEgd ± Trhy
							50	220	170	FeOx alt	
				220	285	65					Trhy
				285	400	115					pEgd
272	Gold Chain		-90	0	15	15					Qal
				15	60	45					Tand
					as of 5/28						
											Tand
				60	80	20					
				80	95	15	80	95	15	FeOx + vn qtz + calc	pEgd
				95	120	25	130	135	5	clay (fault?)	Trhy
				120	260	140	155	245	90	FeOx + vn qtz + calc	pEgd

Table 5. May – June, 1990 summary log

AMERICAN COPPER AND NICKEL CO., INC.
EXPLORATION DRILLING SUMMARY

DISTRICT Katherine

PROPERTY Roadside

WEEK-MONTH ENDING June 16, 1990

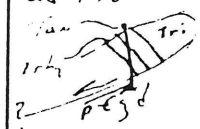
HOLE	LOCATION	COLLAR ELEVATION	AZ, DIP	DRILLING FROM	DRILLING TO	DRILLING FEET	ESTIMATED MINERAL CONTENT FROM	FEET	MIN.	GRADE	REMARKS
0273	Gold Chain		-90	0	15	15					Qal
				15	140	125					Tand
				140	155	15					Trhy
				155	340	185	155	295	1.40	FeOx + vngtz ± vncalc.	pEgd
274	Gold Chain		-90	0	25	25					Trhy
				25	40	15					pEgd
				40	65	25					Trhy
				65	75	10					pEgd
				75	105	30					Trhy
				105	115	10					pEgd
				110	135	25	140	215		FeOx + vngtz+calc.	Trhy
				135	300	165					pEgd
275	Little Gold Chain		-90	0	80	80	80	100	20	FeOx + vn gtz ± calc variable clay Structural 190?	Qal
				80	300	-20	155	190	45		pEgd
							190	255	65	wk FeOx + vngtz	
76	Little Gold Chain NW		-90	0	70	70					Qal
				70	300	230	80	120	40	wk FeOx w vngtz+ calc	pEgd
							160	190	30	variable clay Slt at 190?	

AMERICAN COPPER AND NICKEL CO., INC.
EXPLORATION DRILLING SUMMARY

DISTRICT Katherine

PROPERTY Roadside

WEEK-MONTH ENDING June 16, 1990

HOLE	LOCATION	COLLAR ELEVATION	AZ, DIP	DRILLING FROM	DRILLING TO	DRILLING FEET	ESTIMATED MINERAL CONTENT FROM	FEET	MIN.	GRADE	REMARKS
92 77	Little Gold Chain NW (mag low)		325°, -60°	0	60	60					Qal
				60	185	125	85	170	85	FeOx + vn qtz carb	pEgd
				185	195	10					Tahy
				195	454	259	195	245	50	FeOx + vn qtz ± calc.	pEgd
278	W. Gold Chain - veg anom		315° -60°	0	15	15					Qal
				15	305	290	15	305	290	± wk FeOx ± qtz vn ± carb vn	pEgd
				305	340	35					Tahy
				340	400	60	340	400	60	"	pEgd
279	Katherine Rd veg. anom.		-90	0	10	10					Qal
				10	400	390	10	400	390	variable lt FeOx ± qtz vn ± carb vn mixed with fresh gd	pEgd
80	W of Roadside Ferris hole		-90	0	120	120					Tan
				120	175	55					Tahy
				175	200	25				is low & structure at 175 	pEgd

Within the anomalous zone in 80272 is a 10 foot zone of 0.045 oz/ton gold which is contained within a 30 foot zone of 0.026 oz/ton gold. Two separate 5 foot zones of 0.02x oz/ton gold are also present in 80272. In 80273, a 20 foot zone and two 5 foot zones of 0.01x oz/ton gold are present. Hole 80274 contains a 5 foot interval of 0.057 oz/ton gold within the 40 foot anomalous zone.

The remaining drill holes contained local intercepts of 0.0x ppm gold. However, it is possible that angle holes 80269, 70, 71 and 72 passed through the altered upper plate before intersecting the projected mineralized target. Therefore, only barren lower plate rocks were intercepted below the geological/geophysical/geochemical anomaly. The presence of altered rocks higher in the hole may indicate that lateralzonation occurs and that the upper parts of these holes may have passed through peripheral alteration zones surrounding mineralized targets.

The two biochemical anomalies tested by holes 80278 and 79 do not contain large concentrations of gold, although they contain variably altered rocks. A secondary dispersion halo of gold may cause these surface anomalies. Sedimentary transport processes active during the emplacement of the fanglomerates may generate this dispersion. We may have drilled in the outer periphery of alteration zones associated with gold mineralization. The area associated with the upslope boundary of the anomaly may be the target. Sedimentary processes or differential partitioning of gold into plants may generate variance within the anomaly.

HISTORY AND PRODUCTION: (Pre–1935 data modified after Gardner, 1936)

At the Roadside Mine the shaft was sunk to the 100–foot level in 1915 and 1916 and later extended to the 300–foot level. It had two compartments and was at an incline of 70 degrees. Up to January 1934 the Gold Standards had done about 1,000 feet of development work on the 100–foot level and produced 890 ounces of gold and 1,734 ounces of

silver. In May 1935 the last of the ore from a shrinkage stope was being drawn; in January 1936 the mine was closed.

A chimney shaped ore shoot with a flat rake to the north extended from the surface to the 100-foot level. It was 20 to 35 feet wide and 75 feet long on the strike. The ore averaged 0.28 ounce of gold to the ton.

Despite the flat dip of the vein, the ore was mined by a shrinkage method. In March 1934 about 10,000 tons had been broken, but only the swell had been pulled. Plans called for using a scraper for emptying the stope.

Chutes were 25 feet apart with pillars left between them. Although only a few pillars were left in the stope, no caving of the back occurred.

In the spring of 1935 the ore was being mined by one machine miner, two men with hammers in the stope, two trammers on the 50-foot level, one bucket loader, and one topman. Hoisting was done in a 1,000-pound bucket and tramming in 16-cubic-foot cars running on 18-gage track. The water was kept down in the shaft by pumping two shifts each day with a boiler feed pump.

Note! The shaft mentioned above is now caved and filled with alluvium and is no longer accessible.

The following review of the property history is excerpted from Kirwin (1990). The individuals who comprise ONANON Inc. began acquiring claims in the district during the late 1960's. An unknown group drilled 19 or 20 churn drill holes before Fischer-Watt leased the property from ONANON Inc, in 1984. The records from that period are fragmentary and do not aid measurably in understanding the deposit. Fischer-Watt drilled 28 reverse circulation holes in 1984 most of which were drilled at the Roadside mine. Anaconda sublet the property from Fischer-Watt and drilled ten diamond drill holes for 2,780 feet in a reconnaissance fashion throughout the claim block. The reboxed core is now stored on the property in a recently completed core shed. Anaconda released their lease in 1985. Fischer-Watt drilled 15 RVC holes for 4,230 feet in August, 1986 to fulfill assessment requirements. Most of the holes

were drilled in a reconnaissance fashion although a few were drilled at the Roadside mine. It was observed in the field that many of the 1986 Fischer–Watt holes were drilled into the footwall of mineralized structures parallel or subparallel to the dip of the structure, rather than crossing the structure from hangingwall to footwall. Nevertheless, several of the holes contain anomalous gold values (up to 40 feet of 0.013 opt gold). Fischer– Watt relinquished their option on the property in 1986. Ivy Minerals leased the property from ONANON in 1987, and carried out several drill programs on the Roadside Mine. Although some of the holes were drilled with a reverse circulation rig, many of them were drilled with a company owned track mounted percussion rig with a depth capacity of 100 feet. Most of the air track holes did not reach the mineralized zone at the Roadside mine. Ivy Minerals sublet the property to ACNC in July, 1989. During August, 1989 ACNC drilled 53 RVC holes to depths of 100 feet each to fulfill assessment requirements and to explore beneath the alluvial cover on the pediment. All holes reached bedrock but most did not intersect altered rocks. Preliminary mapping and sampling, during the Fall of 1989 indicated that the Gold Chain – Little Gold Chain Hill prospect should be drilled in 1990. Two more phases of drilling were completed during 1990 evaluating the Gold Chain area as well as several reconnaissance targets on the pediment. In July, 1990 ACNC canceled the lease agreement with Ivy minerals. The property is now controlled by Ivy Minerals.

REGIONAL GEOLOGY: (note; parts of this section of the report are excerpted from Hillemeyer, 1983.)

UPPER PLATE LITHOLOGIC UNITS (Hillemeyer, 1983)

Crystalline Basement Rocks:

The upper plate crystalline rocks of the Roadside Mine area consist of coarse to medium grained Precambrian rapakivi granites and granite gneisses. The dark, reddish brown granite (sometimes green due to chlorite/epidote alteration) contains abundant quartz and is usually porphyritic with grey to pink microcline phenocrysts mantled by albitic

plagioclase. The granites are often gneissic with a steeply dipping, north–south striking foliation. Where this Precambrian granite is adjacent to the main Roadside structure it is often extremely fractured, sometimes brecciated, and has a characteristic reddish brown hue. These rapakivi granites are probably equivalent to the 1.4–1.5 Ga. granitic suite that extends from Wisconsin to California.

Dikes that resemble the pre–Cretaceous diabase in the Whipple Mountains intrude upper plate and lower plate crystalline basement rocks. These dikes are usually steeply dipping and strike north–northwest to northwest. They range in thickness from about two feet to over one hundred feet. Exposures often have negative relief and exhibit a characteristic olive brown color.

Tertiary Sedimentary Rocks:

Tertiary sedimentary rocks as well as volcanic rocks nonconformably overlie the upper plate granitic rocks. The sedimentary units are primarily well lithified (locally poorly lithified) reddish, arkosic sandstones and boulder conglomerates almost entirely derived from crystalline basement rocks, especially rapakivi granite. The sandstone is usually crudely bedded and is either massive, graded, or inversely graded. These Tertiary sedimentary units were deposited in an alluvial fan environment with the provenance probably located to the east. They are interbedded with a variety of Tertiary volcanic units and both have been rotated to the east. These units strike north–northwest and dip as much as fifty degrees to the east. Studies in other detached ranges have shown that tilted alluvial fan deposits such as these are deposited coevally with detachment faulting and record the uplift of the domal highs produced during middle Tertiary crustal extension.

Tertiary Volcanic Rocks:

Tertiary volcanic rocks of the upper plate nonconformably overly Precambrian crystalline rocks, are in fault contact with lower plate crystalline rocks, or are deposited conformably on Tertiary sedimentary units. The rocks range in composition from rhyolite to andesite and

consist of a variety of flows, lithic tuffs, agglomerates, breccias and intrusives (irregular intrusive bodies as well as dikes and sills). These volcanics are interpreted to be part of the Black Mountains caldera complex that is dissected along the western flank of the Black Mountains.

LOWER PLATE LITHOLOGIC UNITS (Hillemeyer, 1983)

Crystalline Basement Rocks:

The lower plate of the Roadside Mine area, like all other known detached ranges, is completely devoid of sedimentary and volcanic extrusive rocks. The bulk of the lower plate rocks are composed of granitoids and granitoid gneisses that appear to belong to the same suite of Precambrian granite seen in the upper plate. However, the lower plate granites often have a very different character. These granites resist brecciation, exhibit very little iron oxide staining, and occasionaly contain chlorite alteration.

Lower Plate Dikes:

Northwest trending and rare northeast trending dikes of rhyolitic to andesitic (sometimes exhibiting trachytic textures) composition intrude lower plate crystalline rocks. Dikes such as these were probably feeders for the volcanic intrusive and extrusive rocks seen in the upper plate. Many ranges throughout the detachment terrain containabundant dikes, especially within the lower plate. The orientations of the dikes in the Roadside area indicate northeast–southwest directed extension. This is somewhat different from the extension direction indicated by the orientation of upper plate normal faults and volcanic/sedimentary units that predominantly strike north–northeast, indicating extension directed to the east–northeast. The dikes may have been emplaced in the early stages of extension, which may change through time. Postmineralization dikes may have a different predominant orientation than premineralization dikes.

Older diabase dikes identical to those seen in the upper plate are also present within the lower plate, but are subordinate to Tertiary rhyolitic to andesitic dikes.

STRUCTURAL GEOLOGY (Hillemeyer, 1983)

The Main Roadside Mine Structure:

The most impressive structural feature exposed in the Roadside Mine is a shallow dipping, north–northwest striking fault that extends one mile north and two miles south of the mine. The fault was projected almost three miles north of the mine based on separation of upper plate and lower plate structural and lithologic characteristics. The following geological features indicate that the main structure at the Roadside may be a detachment fault or a subparallel structure.

1. Extreme rotation of volcanic and sedimentary units in the hanging wall.
2. Lack of Tertiary sediments and extrusive volcanics within the footwall.
3. Multiple rotational faults appear to merge with the main structure (not offsetting it).
4. Continuity of the main structure.
5. Presence of detachment faults to the north (Eldorado and northern Black Mountain), to the northeast (Cyclopic Mine area), and west (Newberry Mountains).
6. Development of chlorite microbreccias along the low angle fault.
7. Emplacement of northwest trending Tertiary dikes of various compositions.
8. Spatial association with caldera related volcanics.
9. North–northwest striking, west dipping normal faults are abundant within the upper plate (accommodating rotation of stratigraphic units to the east.

Upper Plate Normal and Strike Slip Faults:

Normal faults are extremely abundant within the upper plate rocks in this area. The vast majority of normal faults strike north–northeast to northwest. Most of the upper plate normal faults do not appear to offset the main detachment fault. However, basin and range type faults are also common and have similar orientations. These faults offset the detachment fault (usually only small amounts of offset) and are indistinguishable from detachment related normal faults except where they offset the detachment fault. Pervasive upper plate normal faulting combined with low angle shearing adjacent to the detachment fault are the major factors contributing to the extremely fractured and brecciated nature of upper plate rocks in many areas.

The upper plate is cut by approximately east–west trending, high angle faults that are interpreted to have predominantly lateral offset. Poor exposures and lack of marker beds make these faults difficult to find and their offsets impossible to determine. The faults are, however, restricted to the upper plate and are interpreted as tear faults related to detachment faulting. Rhyolite dikes locally intrude some of these strike–slip faults

PROSPECT GEOLOGY:

Map 3 summarizes the distribution of major structures using the model proposed by Hillemeyer. Lower plate rocks are separated from upper plate rocks in the vicinity of the main claim group.

Maps 4a, b, c, and d were generated by Anaconda geologists and adequately show the distribution of rock units on the main claim group. These maps are used as a base for more detailed studies on local sections of the main claim group. The rock units are defined as per the above descriptions by Hillemeyer. Figure 10 describes the rock units used by Anaconda geologists to generate these geologic maps.

Detailed mapping in key parts of the claim group using the Anaconda geologic maps as base maps indicates that the project area is

Qa	Quat. Alluvium
Qg	Quaternary Gravels
Tl	Intrusive Latite
Tri ø	Intrusive Rhyolite w/ 5% Qtz Eyes
Tri	Intrusive Rhyolite
Ts	Conglomerates
Tgrt	Glassy rhyolite tuff w/ basal vitrophyre
Tyt	Yellow tuff
Tlt	Lithic Tuff
Tulf	Upper Latite
Tyct	Yellow Crystal Tuff
Tob	Olivine Basalt
Tbt	Biotite tuff
Tpl	Porphyritic latite
Tblt	Biotite lithic tuff (ash flow)
Tlrf	Rhyolite flow (first)
Tan	Andesite
Tfg	Fanglomerate, dominant pEgr clasts
pEgr	Coarsely porphyritic granite

Rock units used on Anaconda Maps

more complexly deformed than previously thought. The project area is underlain by Precambrian anorogenic(?) granodiorite and Tertiary volcanic and sedimentary rocks. Semiconsolidated sands and grits commonly mark the base of the Tertiary section. Irregular rhyolite bodies, which may predate and post date the gold mineralization intrude both rock units. Intrusive rhyolite is commonly spatially associated with gold mineralization, and locally is cut by gold bearing breccias and veins. A "detachment" fault is apparently present on the east side of the Roadside claim block (Figure 11). The fault strikes generally northward and dips moderately to the west. Tertiary volcanic rocks as well as the unconformity between the Tertiary and Precambrian rocks dip eastward, toward the detachment fault and the main mass of Precambrian granodiorite. The detachment fault is within the Precambrian rocks, as the unconformity between the Precambrian basement and the Tertiary section in the upper plate of the structure has been rotated approximately 30 to 40 degrees to the east (Figure 12).

The detachment fault is a sole fault below a series of imbricate structures (listric faults). Locally breccias are present associated with the sole fault and with potential listric or antithetic faults of the upper plate. The two most prominent occurrences of moderately dipping breccia, at Black Dyke and Gold Chain Hill, locally strike westerly and dip southerly and northerly, respectively. The breccias contain both coarse breccia clasts and finely comminuted rock. They commonly are cemented with calcite, and locally contain quartz replacement and veining as well as earthy hematite flooding. Calcite cemented breccia extends northward from Black Dyke toward Gold Chain Hill, but two other trains of calcite breccia float extend N70W across the pediment from Black Dyke towards Abner Hill. Mineralization at the Roadside mine rakes gently to the northwest and may be partly controlled by the detachment structure. Many of the small inselbergs on the roadside pediment contain intrusive rhyolite and associated northwest and northeast striking zones of silicification and quartz veining.

The Roadside area is cut by a younger set of east–west to N70W striking, steeply dipping faults. These structures progressively drop their south sides down, increasing the amount of Tertiary rocks exposed in that direction (Figure 13).

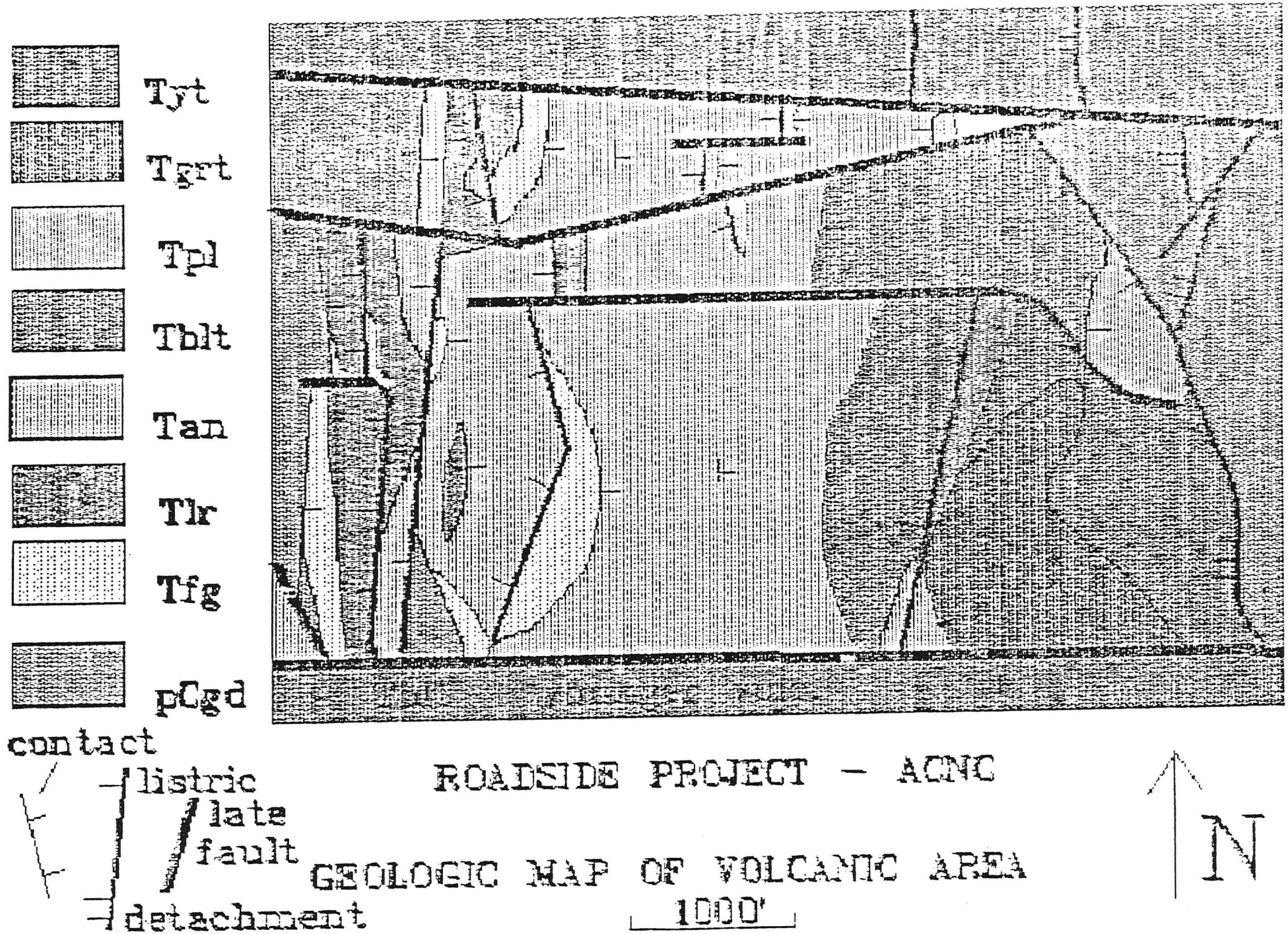

Tyt
Tgrt
Tpl
Tblt
Tan
Tlr
Tfg
pCgd
contact
listric
late
fault
detachment
ROADSIDE PROJECT - ACNC
GEOLOGIC MAP OF VOLCANIC AREA
1000'
N

Figure 1.

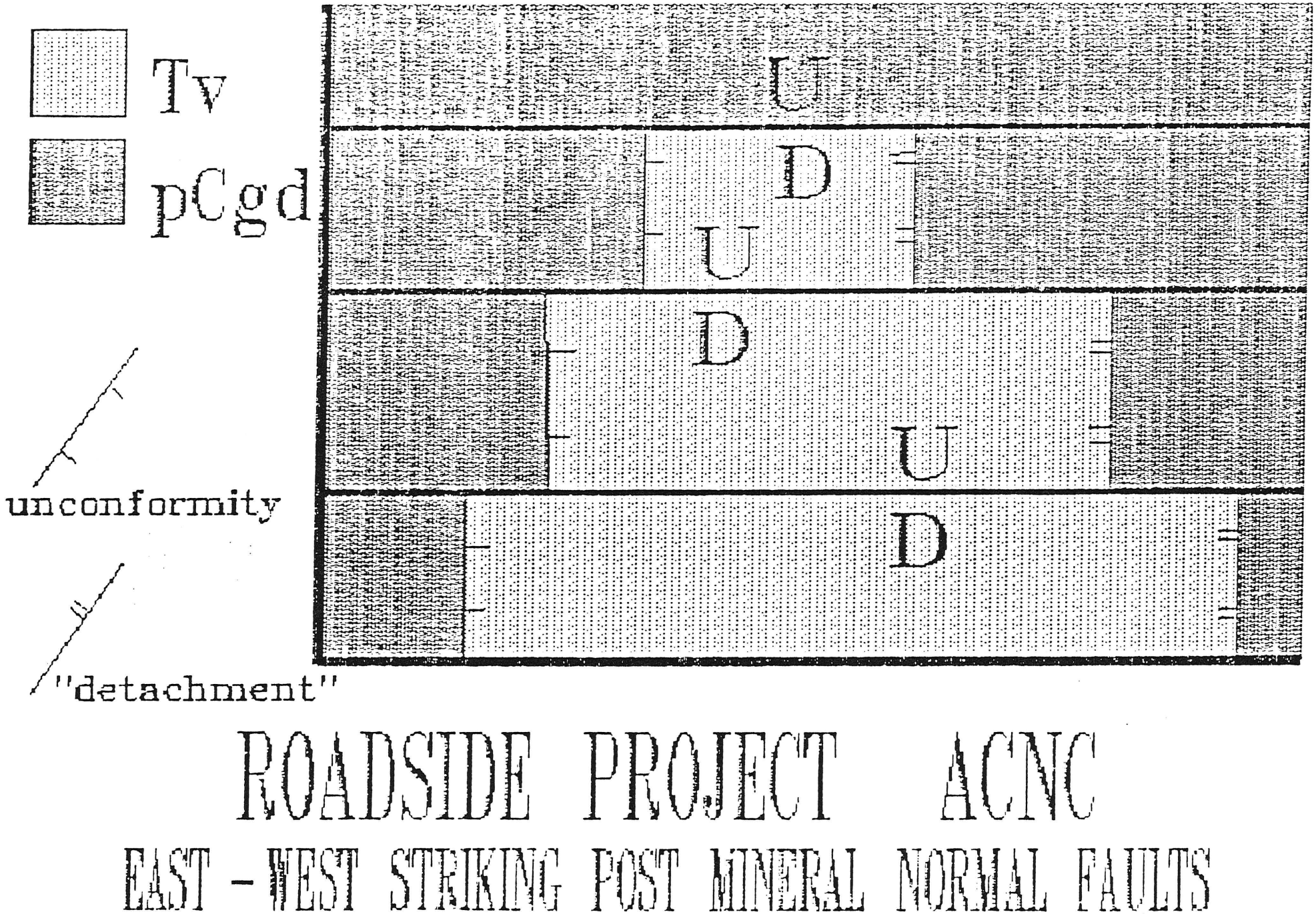
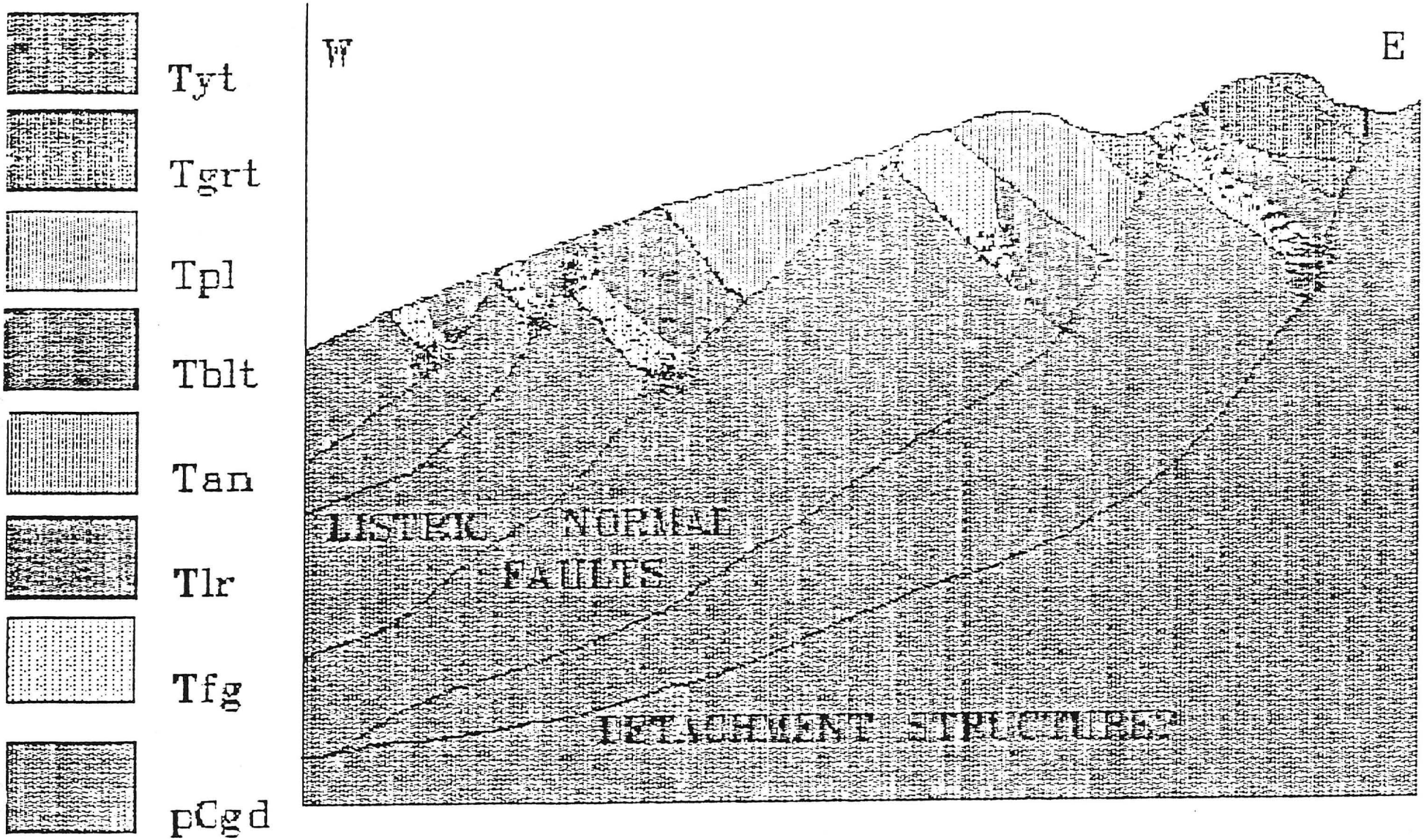


Figure 3.

Figure 13. Schematic map of east-west fault relationships



POTENTIAL TARGETS

ROADSIDE PROJECT - ACNC

LISTRIC FAULTING AND ROTATATION OF TERTIARY ROCKS

Figure 2.

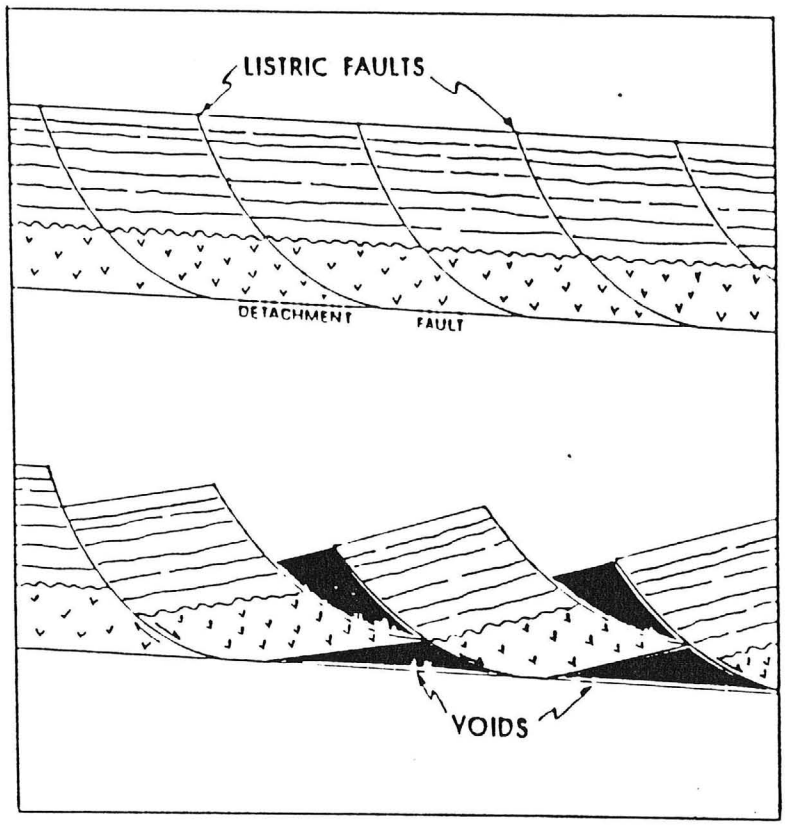
Figure 12. Schematic cross section of [illegible]

SUMMARY OF GEOLOGIC HISTORY:

1. Deposition of Proterozoic metasediments (garnet gneiss)
2. Proterozoic deformation and metamorphism
3. Intrusion of 1.4Ga granodiorite
4. Uplift and erosion
5. Potential deposition of Paleozoic and/or Mesozoic sediments and later erosion.
6. East–west fracturing and faulting of Proterozoic crystalline rocks.
7. Intrusion of pre "detachment" tectonic rhyolite
8. deposition of older Tertiary volcanics and sediments
9. Listric normal faulting and detachment
10. Northwest trending high angle normal faulting
11. Northeast trending high angle normal faulting
12. East west trending block faults (down dropping stratigraphy to the south)
13. Deposit later Tertiary volcanic rocks (Union Pass – Oatman)
14. Intrusion of rhyolite, rhyodacite and mafic dikes
15. Mineralizing fluids associated in time with some rhyolite and rhyodacite dikes in 14
16. Post mineralization intrusive rhyolite
17. Youngest extensional faulting with slight rotation of younger volcanic section to the west on listric structures dipping east.

MINERALIZATION:

Mineralization at the Roadside project is associated with Tertiary structures. These structures are probably formed in an extensional environment. During extension, a low angle normal fault forms on the flank of crystalline highs. The upper plate undergoes complex deformation to fill the volume caused by extension. Listric normal faults are required to explain deformation of the upper plate. More closely spaced listric normal faults and antithetic faulting may further reduce the volume (Figure 14). Using fault models to explain the geometry of the



Schematic cross section illustrating problems associated with extension along widely spaced listric faults. In addition to the volume problems, unreasonably shaped fault blocks are produced.

Figure 14. Space for hydrothermal fluid migration along intersections between listric faults and the detachment surface

upper plate, there will always be a volume problem along the planes of the listric faults and at the intersection of the listric faults with the sole fault ("detachment").

This unoccupied volume can be a good source of rock preparation (intense fracturing and/or brecciation), which can control the flow of hydrothermal fluids. These fluids may be either derived from younger magmatic rocks or from basinal brines. The areas of intense rock preparation may also control the intrusion of younger magmatic rocks. These magmas may in turn generate hydrothermal fluids which may deposit mineralization.

The emplacement of intrusive rhyolite within the upper plate is controlled by these fault and fracture intersections. These intrusive rhyolites may be the source of mineralizing fluids in the area. Therefore, the location of intersecting faults and the presence of intrusive rhyolite may be used as an empirical exploration tool on the property.

Later, normal and strike skip faults (Basin and Range?) breakup and offset mineralized zones. Therefore, detailed structural mapping is needed to determine the potential for offset mineralization present in the area.

Alteration and gold mineralization occur in two settings at the Roadside property, namely; fault related breccias and in country rocks. Calcite dominates in the portions of breccias that crop out, but several forms of silicification are also present. Outcrops of breccia at the Black Dyke are cemented and veined with calcite. However in one mineralized hole drilled by Fischer–Watt (RSM–15, 25 feet of 0.036 opt gold), silicified and probably veined Precambrian brecciated granodiorite contain gold mineralization. Based on the data currently in existence, calcite dominated breccia may occur higher in the hydrothermal system, and that the more gold enriched portions of the system may be present at depth in a zone dominated by silicification.

Breccia at Gold Chain Hill contains calcite veining and replacement, as well as thin quartz veining and local filling of breccia voids. Samples collected from the Gold Chain breccia contain more

than1.0 ppm gold at the present surface and in shallow adits. Higher grade gold (up to 0.4opt) mineralization at the Roadside mine may be controlled by the intersection of steeply dipping, north to northwest striking structure with the sole fault. Lower grade gold mineralization surrounds the high grade zone and is controlled by both structures.

ROADSIDE MINE TARGET:

Map 5 shows a preliminary interpretation of the geology at the Roadside Mine. Tertiary rhyolite intrudes Precambrian granodiorite, which is cut by many faults. The dominant structure is a low angle fault dipping 30 degrees to the west which is exposed in the pit. High angle faults cut through the intrusive rocks at several orientations. A north–northeast trending fault runs through the pit and locally is intruded by rhyolite. This fault appears to cut off the southeast extension of ore. Northwest to west trending high angle structures appear to displace the ore zone locally and truncate the ore zone to the north (Map 5).

Fischer–Watts' reverse circulation drilling discovered ore grade mineralization at the Roadside Mine. Drill holes RSM–1, 1a, 1b, 2, 3 and 6 contained significant intercepts greater than 0.03 oz/ton Au.

Ivy Minerals Inc. drilled a series of shallow air track holes during 1987. Gold assays from these holes show that appreciable mineralization exists in near the Fischer–Watt discovery holes (Appendix 7 and Map 5). During February, 1988, Ivy Minerals drilled nine reverse circulation holes in order to determine the extent of mineralization. Chips from these holes were logged (Appendix 8) and chip boards were created. Variables which were logged included Precambrian granodiorite %, Tertiary rhyolite %, white vein quartz %, chlorite bearing vein quartz % and FeOx %. This data was graphically summarized for each hole with gold assays included (Appendix 9). Assay results for each five foot intercept are summarized in Appendix 10.

Map 5 shows the outline on the surface of the boundaries of anomalous intercepts and ore grade intercepts at the Roadside Mine. The

mineralized zone is open to the northwest, east–southeast and potentially to the southwest because Fischer–Watt RVC holes number RSM–7 and 8 are probably too shallow to intercept mineralization. Map 6 is a fence diagram illustrating the relationships between the Precambrian granodiorite and the Tertiary rhyolite. The model is constrained by the assumptions that all intrusions are sills and that faulting is ignored. Map 7 is a fence diagram illustrating the distribution of mineralization (gold intercepts >0.01 oz/ton) at the Roadside Mine site. Figure 16 summarizes the major structures and Figure 17 illustrates the ACNC sample sites at the Roadside Mine site.

GOLD CHAIN HILL TARGET:

Previous lease holders intensely sampled and later drilled the Gold Chain Hill prospect. Samples collected within workings on the north flank of the hill contain ore grade mineralization (Figure 15). Based upon surface samples, underground samples and intercepts within four drill holes, (figures 18 and 19) Anaconda(?) postulated that 3.2 million tons of 0.015 oz/ton Au may be present. This is equivalent to 50,000 oz. Figures 20 and 21 illustrate the ACNC sample locations on Gold Chain Hill and Little Gold Chain Hill respectively. Figure 22 is a typical geological cross–section through Gold Chain Hill Figure 23 illustrates a smoothed area of mineralization in the cross–section (appendix 21).

ALTERED TERTIARY VOLCANIC TARGET:

Tertiary volcanics crop out in the southern part of the claim group. These rocks are faulted in place above the Precambrian intrusive rocks by "detachment" style tectonics. The low angle structure mentioned above and the rotated fault blocks within the Tertiary volcanics give credence to the detachment hypothesis.

Preliminary mapping suggests an empirical relationship between intrusive rhyolite and alteration. The alteration varies in intensity over a wide area. (Figure 24) Locally near prospects, alteration can be fairly

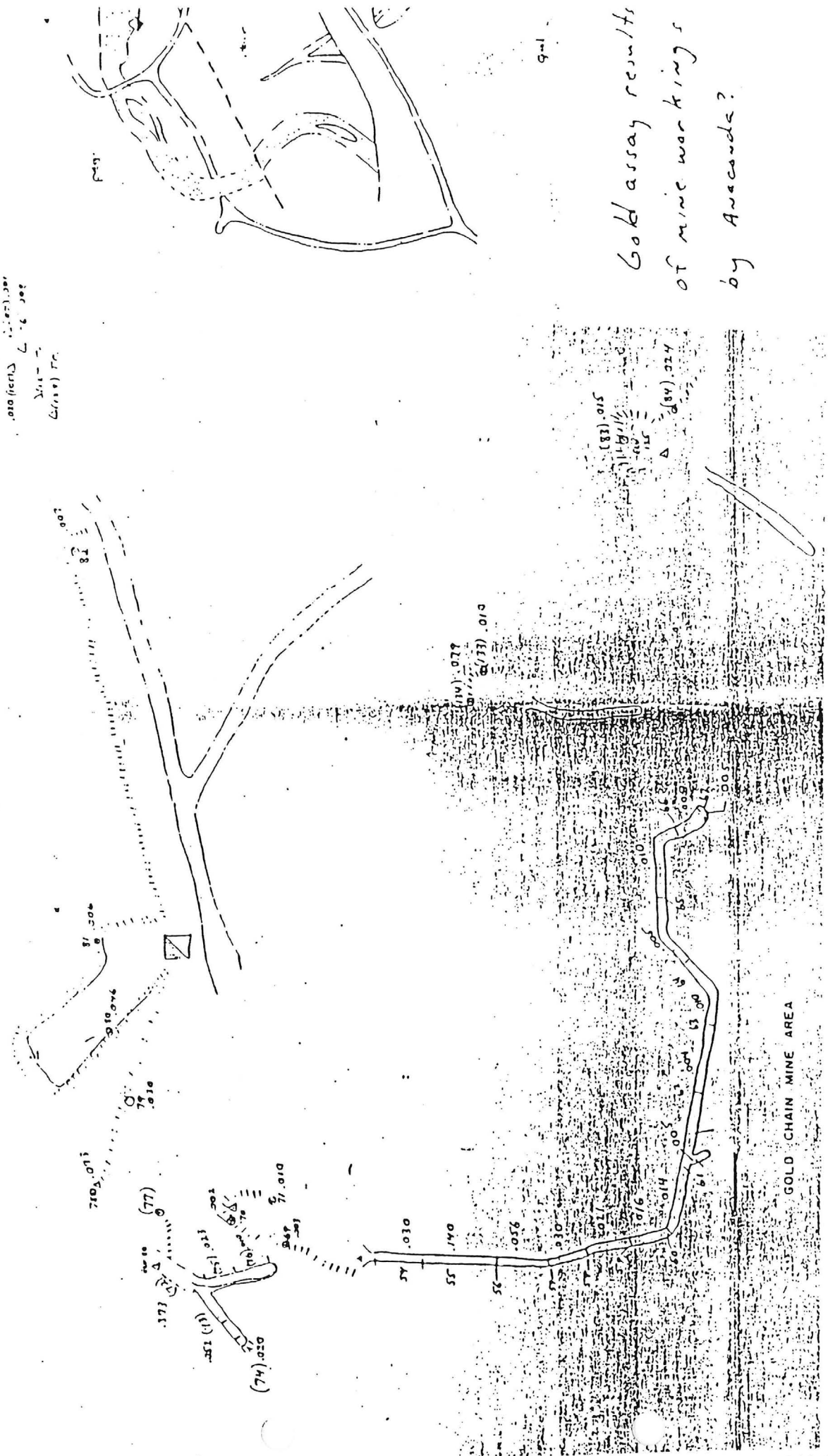


Figure 15. Gold assays from underground workings at the Roadside Mine site

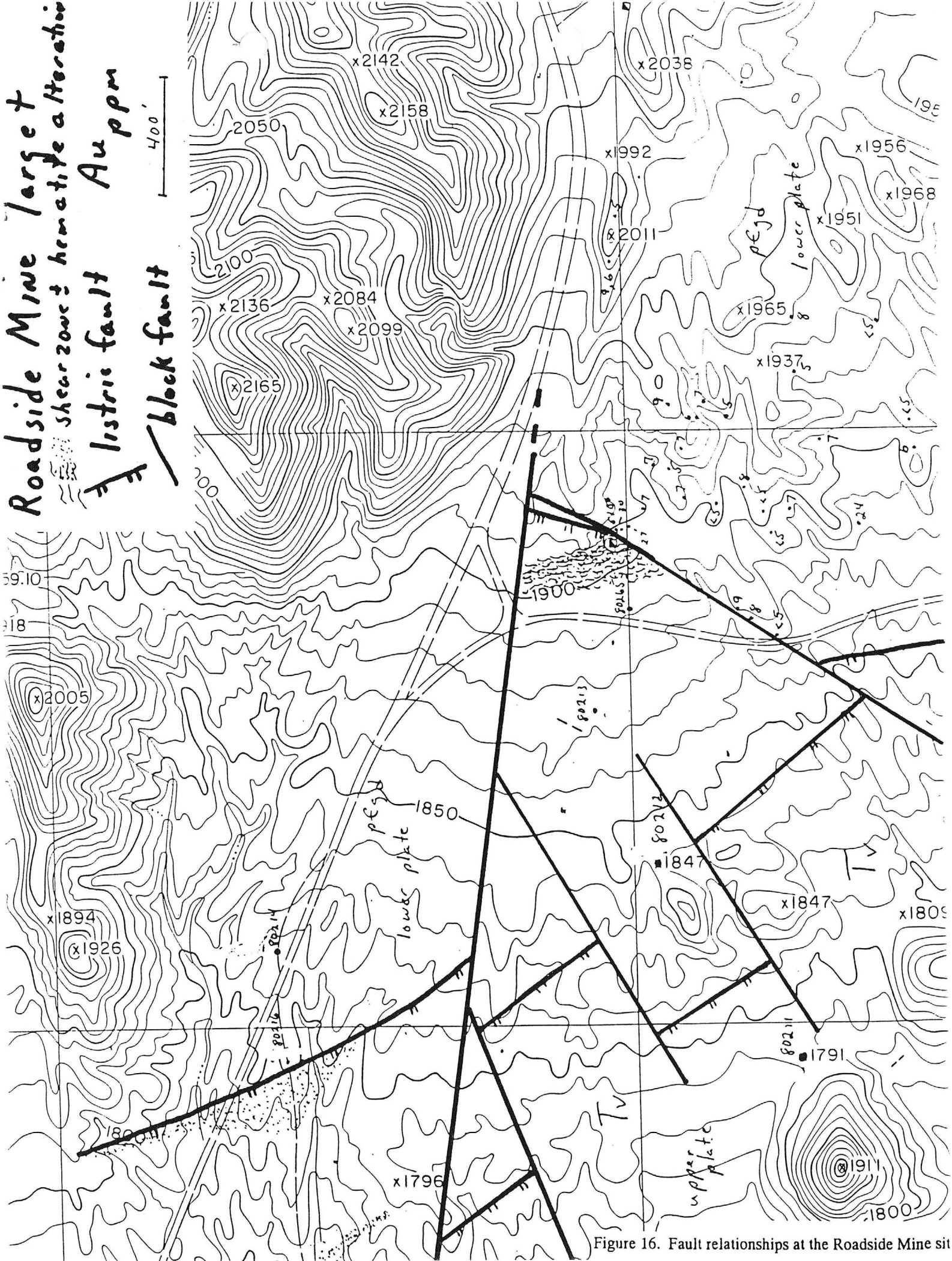


Figure 16. Fault relationships at the Roadside Mine sit

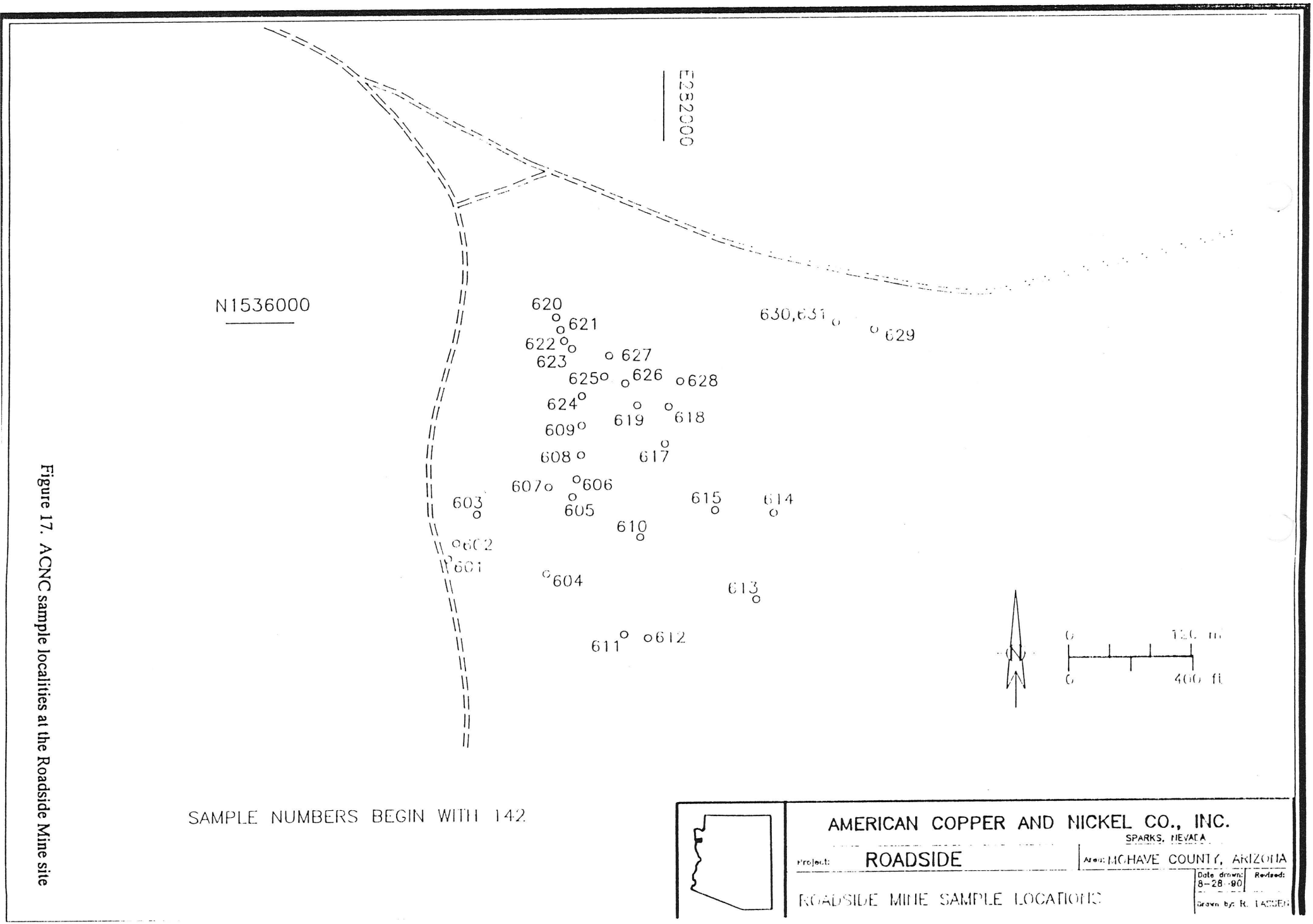


Figure 17. ACNC sample localities at the Roadside Mine site

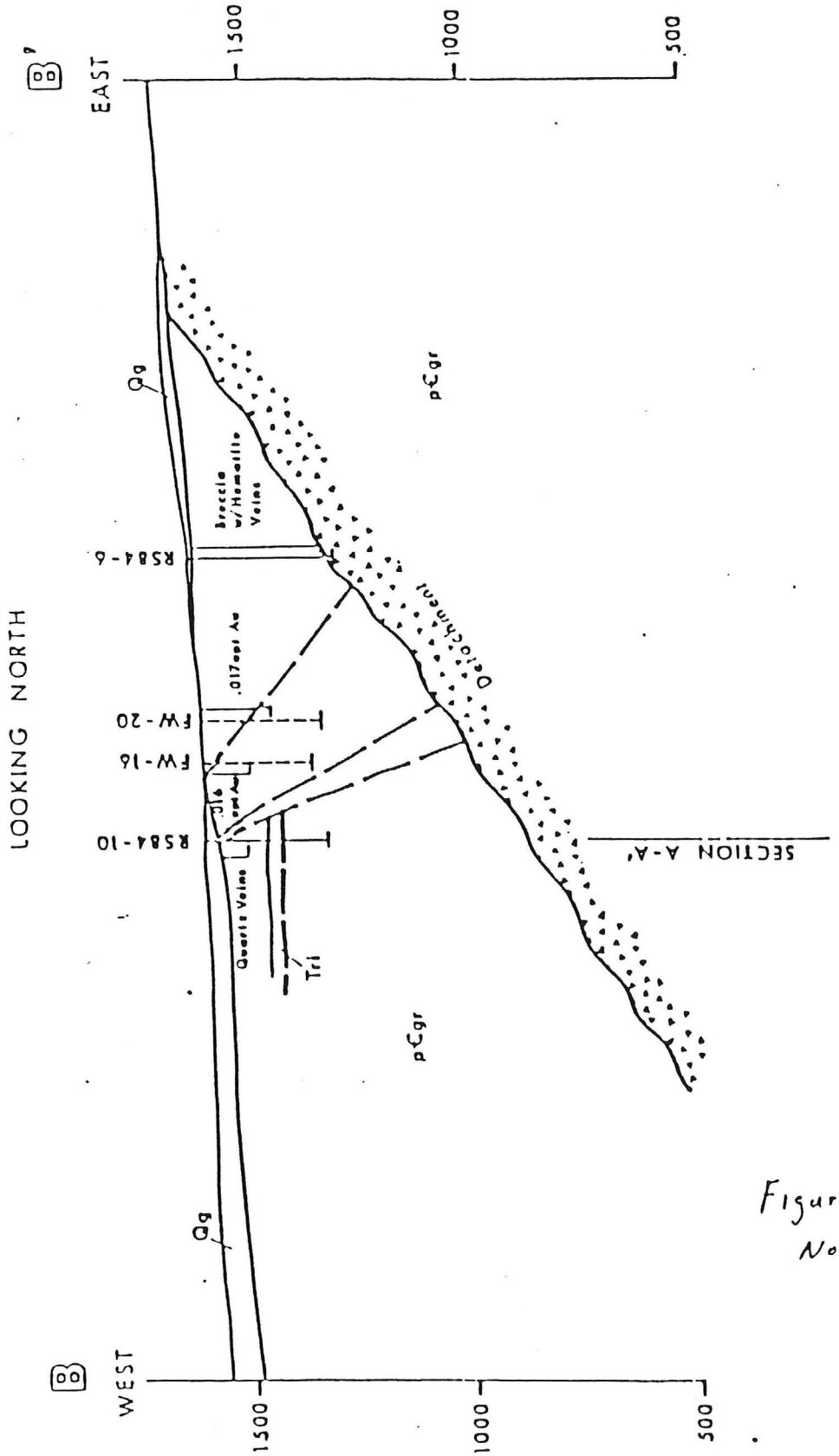


Figure 8: E-W x-section North of Gold Chain Hill

ANACONDA Minerals Company

ROADSIDE PROJECT

Figure 18. East-west cross-section north of Gold Chain Hill

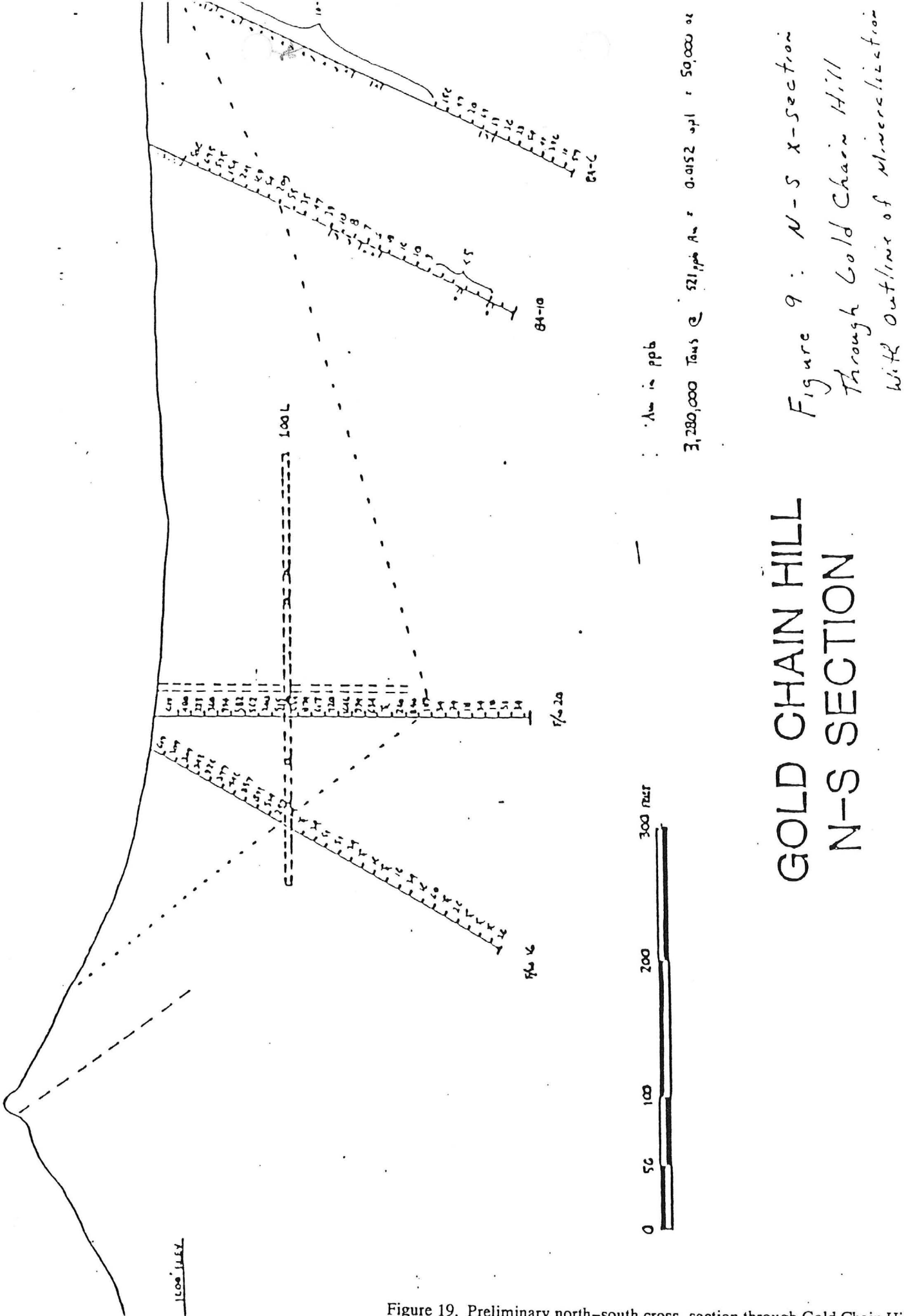


Figure 19. Preliminary north–south cross–section through Gold Chain Hill

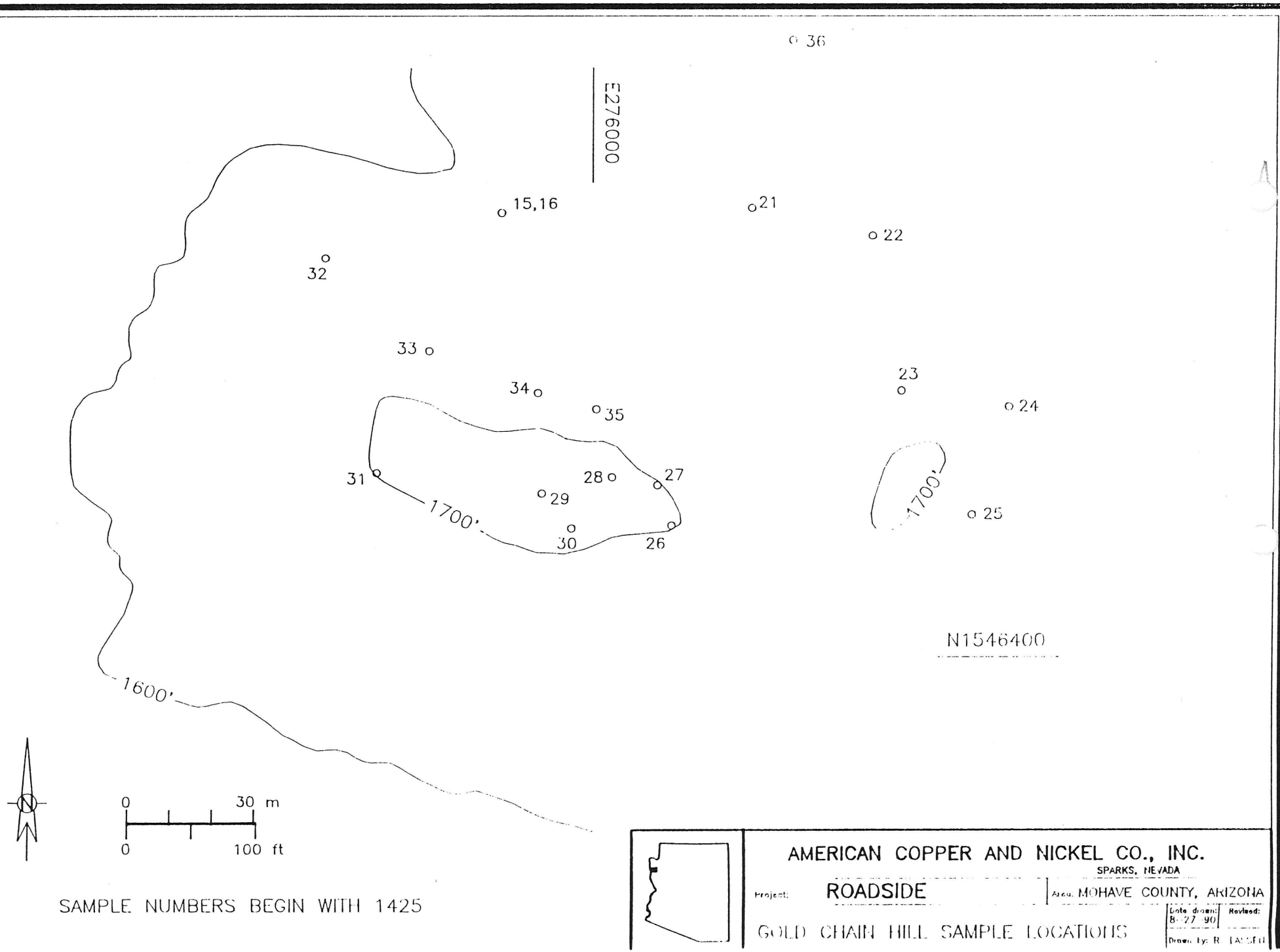


Figure 20. ACNC sample sites at Gold Chain Hill

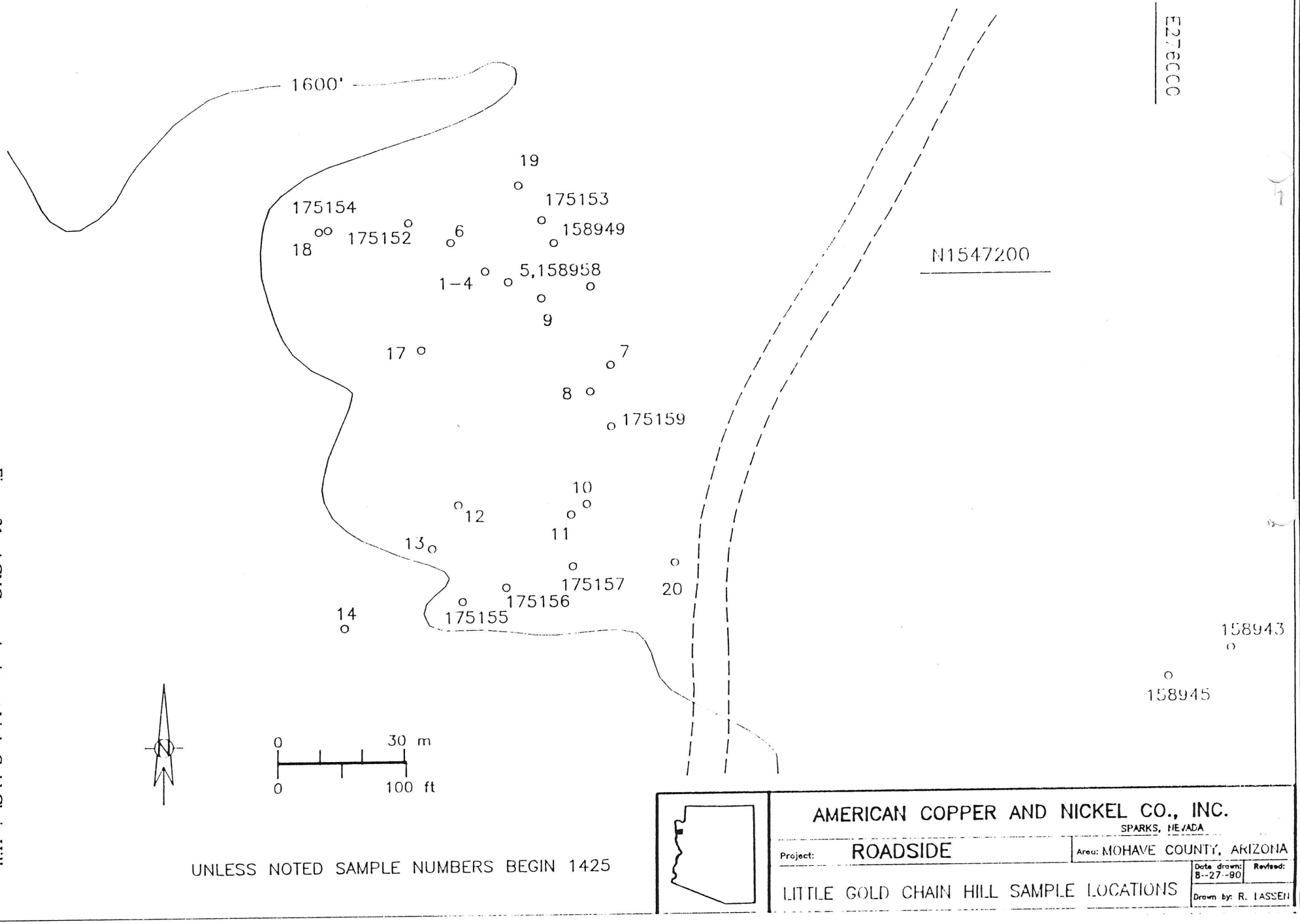


Figure 21. ACNC sample sites at Little Gold Chain Hill

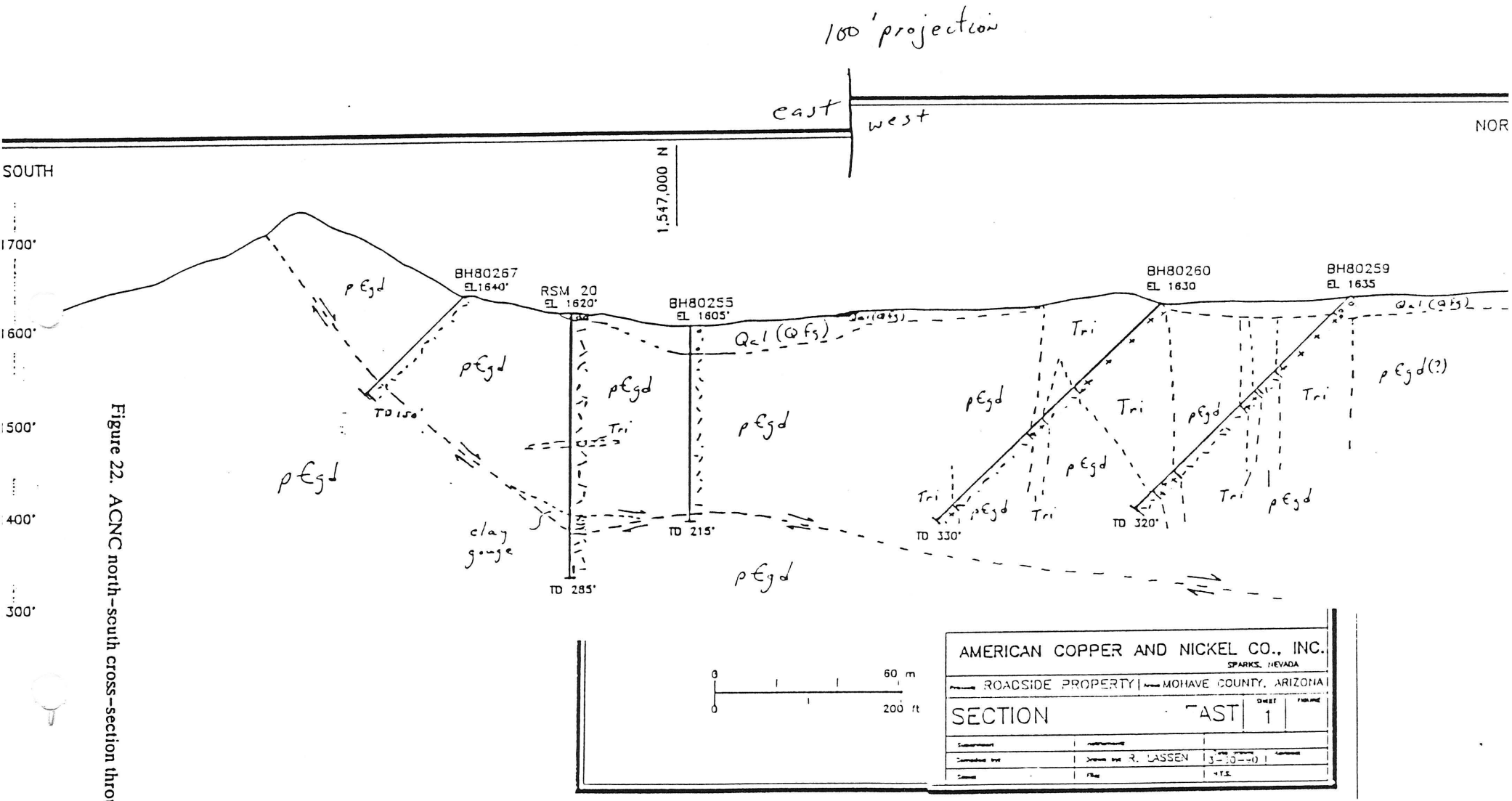
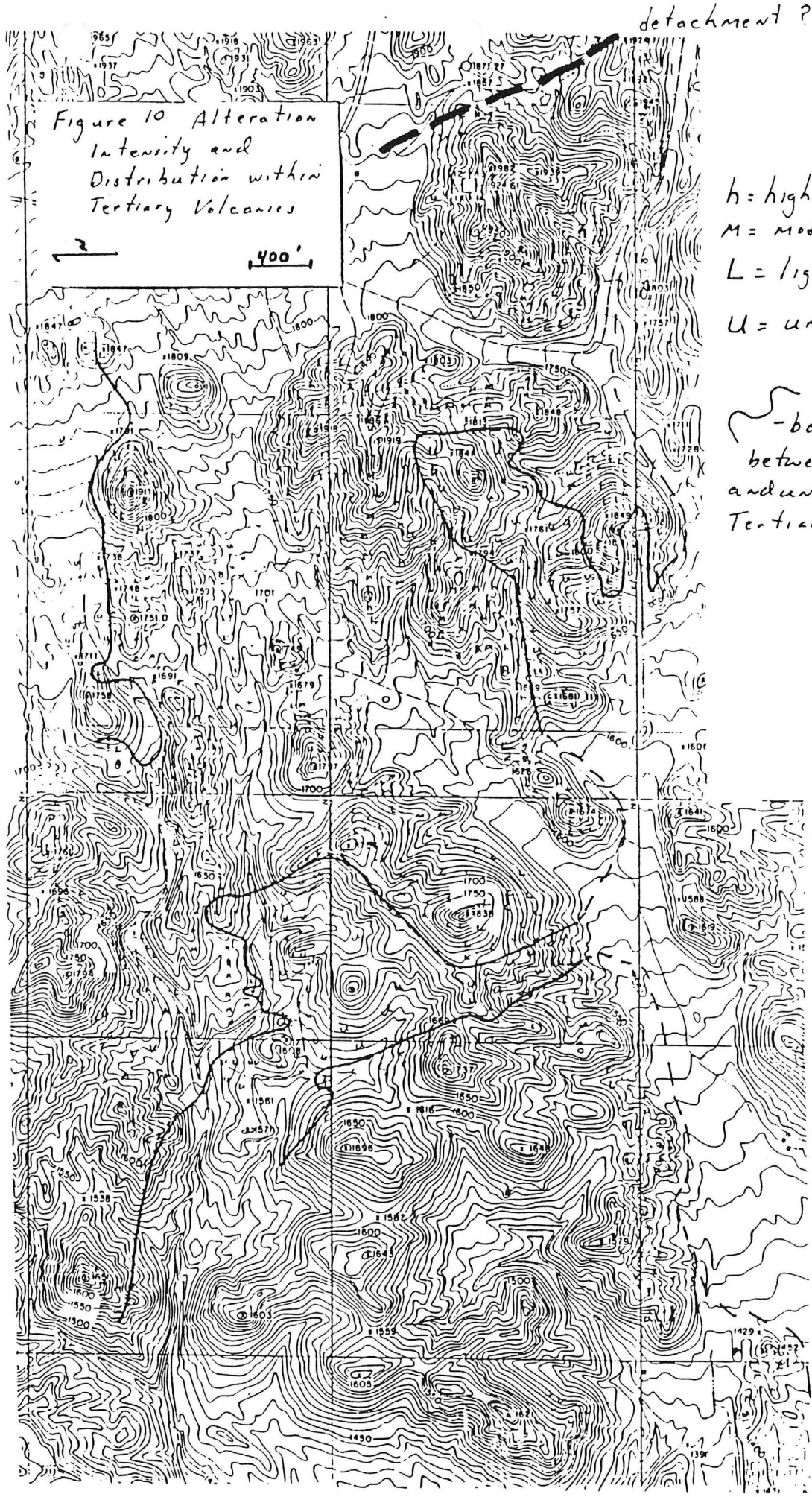


Figure 22. ACNC north-south cross-section through Gold Chain Hill

Figure 23. North–south section through Gold Chain Hill illustrating anomalous gold distribution


detachment ?
Figure 10 Alteration Intensity and Distribution within Tertiary Volcanics
400'
h = highly altere
M = moderately "
L = lightly "
U = unaltered
-boundary between alteren and unaltered Tertiary volcanic

intense. Silicic alteration is present locally while FeOx and sericite to argillic alteration are more wide spread. Prospects are scattered throughout the altered rocks and rock chip samples were collected from several of the prospects (Fifures 25, 26). More detailed mapping and sampling will be needed in this area to better determine target potential.

NORTHERN TARGET:

An area located 2000 feet north of Billy Goat Acres is known as the "northern target". Mineralization may be related to a shear zone which is exposed for approximately 400' on an isolated hill which is surrounded by Quaternary alluvium and Quaternary fanglomerate. Eleven surface samples were collected by ACNC (Figure 27) and range in gold concentration from 39 ppb to 1.3 ppm (Figure 28). Fischer–Watt drilled two RVC holes (RS–86–9 and RS–86–10) into this zone (Map 9). The results are disappointing as most of the fine foot intercepts contained 0.00x ozs/ton gold. The highest value of 0.06 oz/ton gold was obtained in the 0.5 foot interval of RS–86–9.

SUNSHINE LUCKY TARGET:

The Sunshine–Lucky target is located 1400 feet west of Billy Goat Acres. Mineralization is present in hematitically altered Precambrian granodiorite intruded Tertiary rhyodacite (Figure 29). Seven surface samples collected by ACNC range from 21 ppb to 3.2 ppm gold (Figure 30). Four RVC holes were drilled near this target (Figures 29, 31; Map 9). Drill hole RS–86–8 contained an intercept of 80' of 0.009 oz/ton gold which in turn contained two intercepts of 15' of 0.012 oz/ton gold and 15' of 0.016 oz/ton gold (Figure 32; Table 6).

ADAMS TARGET:

The Adams target lies within the Lake Meade Recreation Area. At this time, ACNC is still trying to obtain the lease permit from the

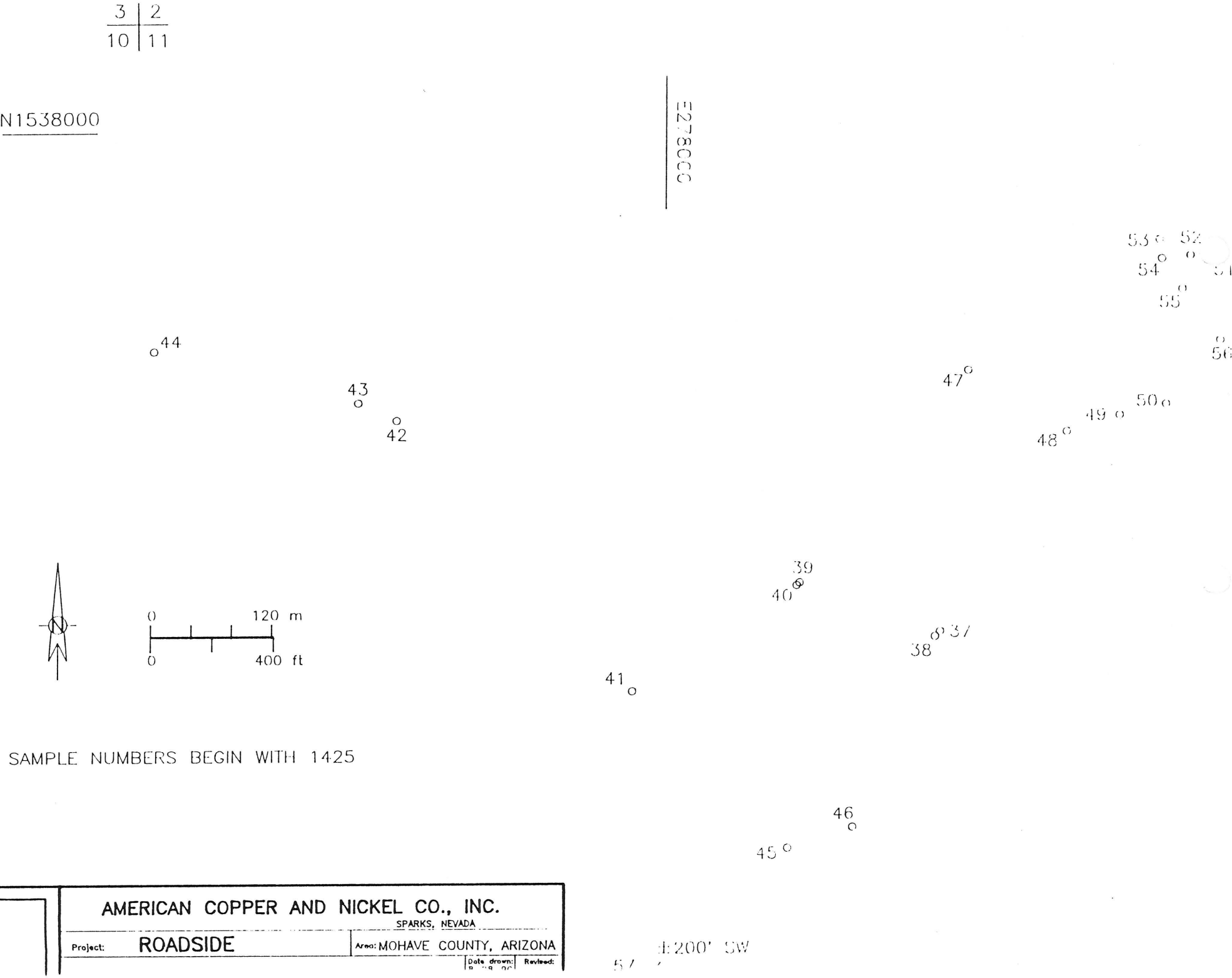


Figure 25. ACNC sample locations in the volcanic target

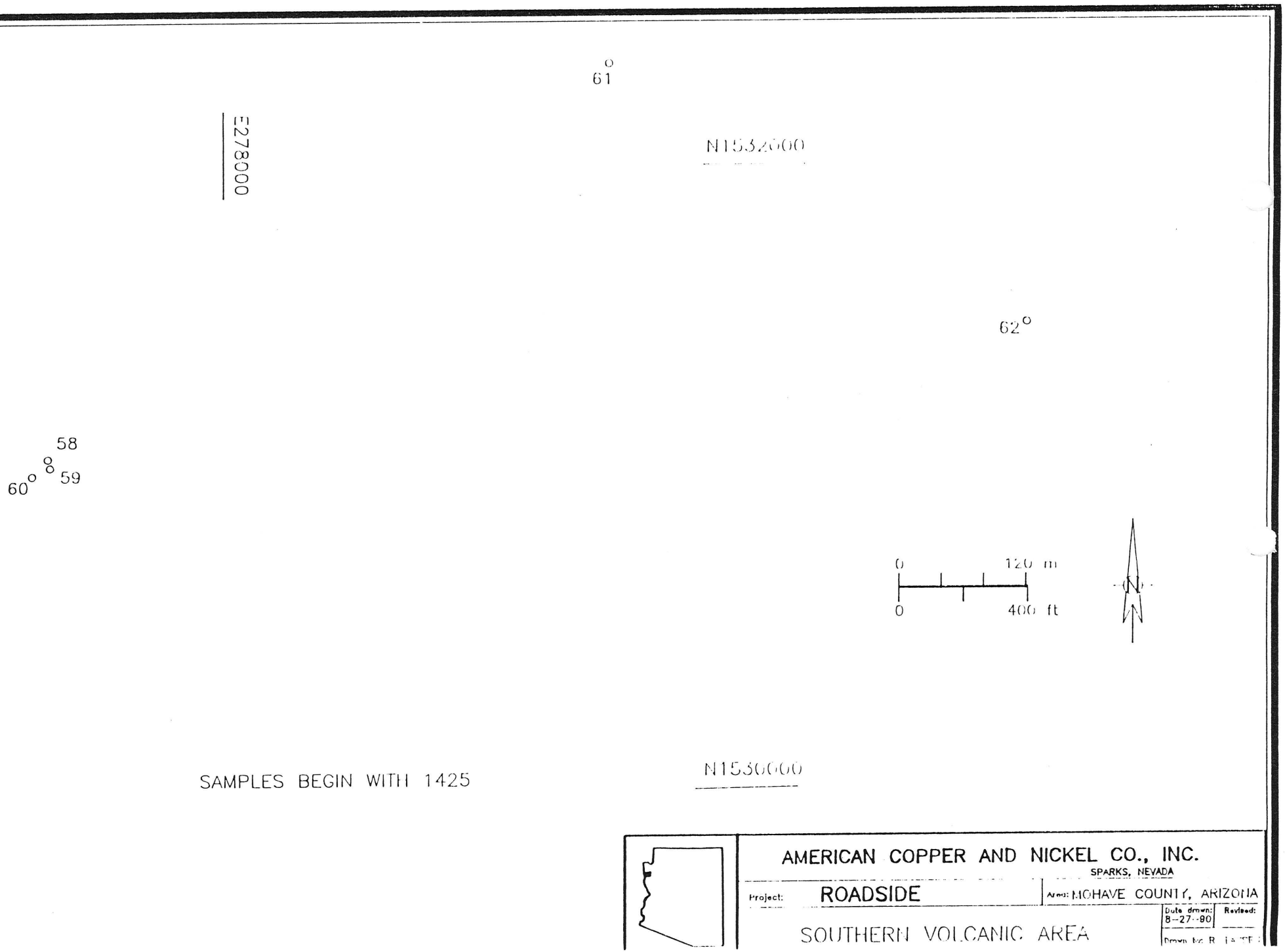
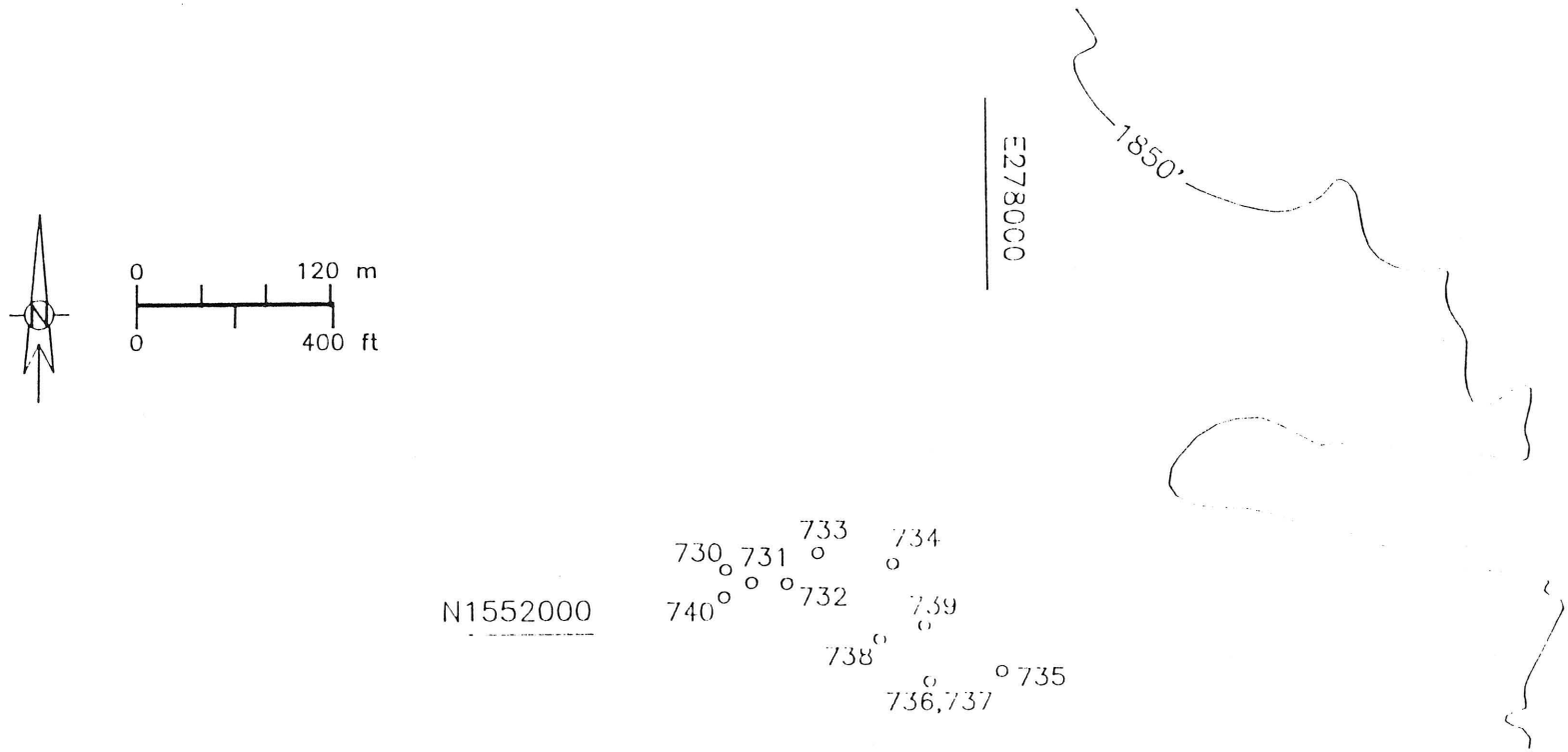


Figure 26. ACNC sample locations in the southern volcanic target



SAMPLE NUMBERS BEGIN 142

AMERICAN COPPER AND NICKEL CO., INC.
SPARKS, NEVADA

Project: ROADSIDE

Area: MOHAVE COUNTY, ARIZONA

Date drawn: 5-28-90

Revised:

Drawn by: R. LARSEN

NORTHERN AREA SAMPLE LOCATIONS

Figure 27. ACNC sample locations in the northern area

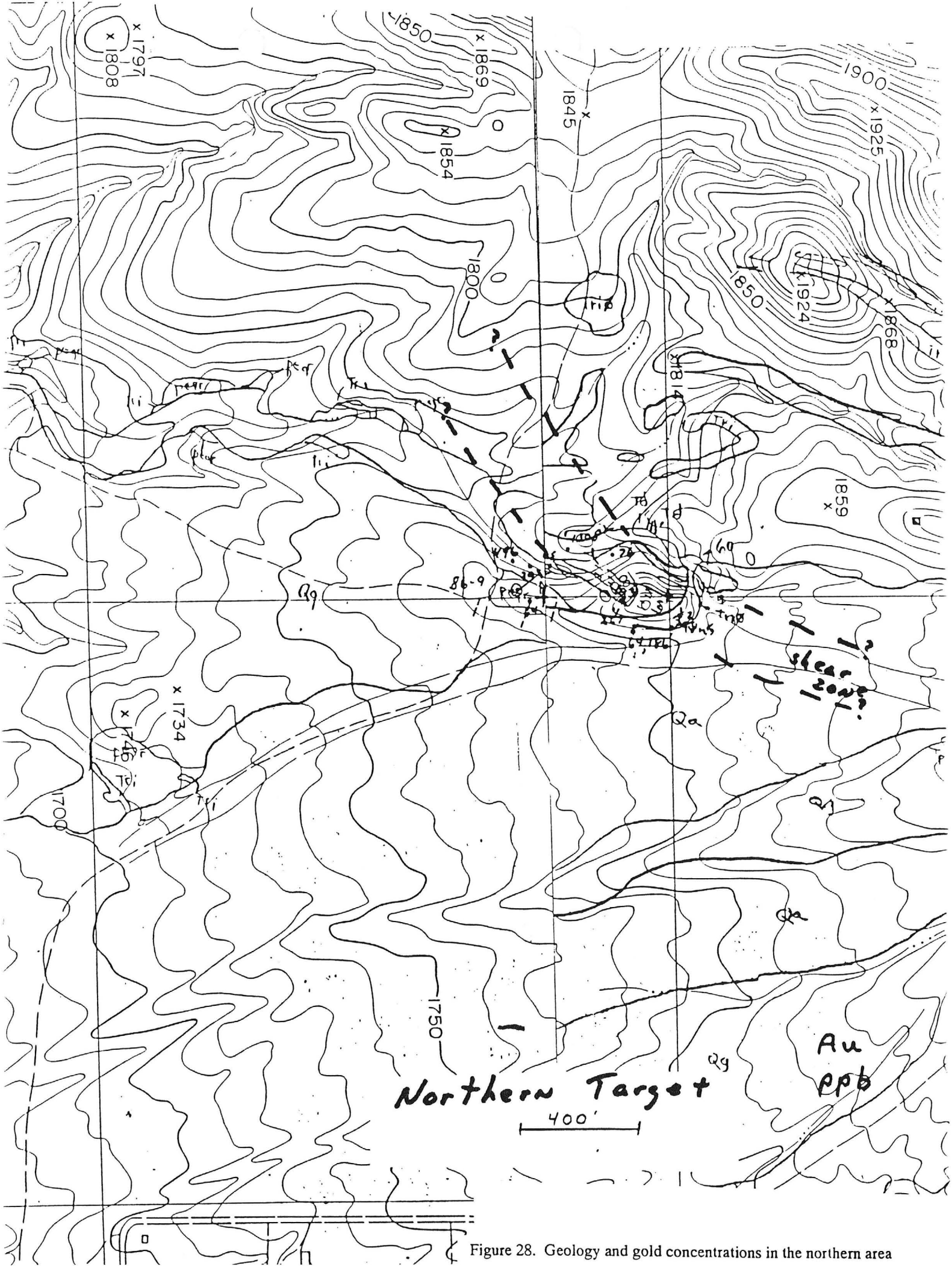


Figure 28. Geology and gold concentrations in the northern area

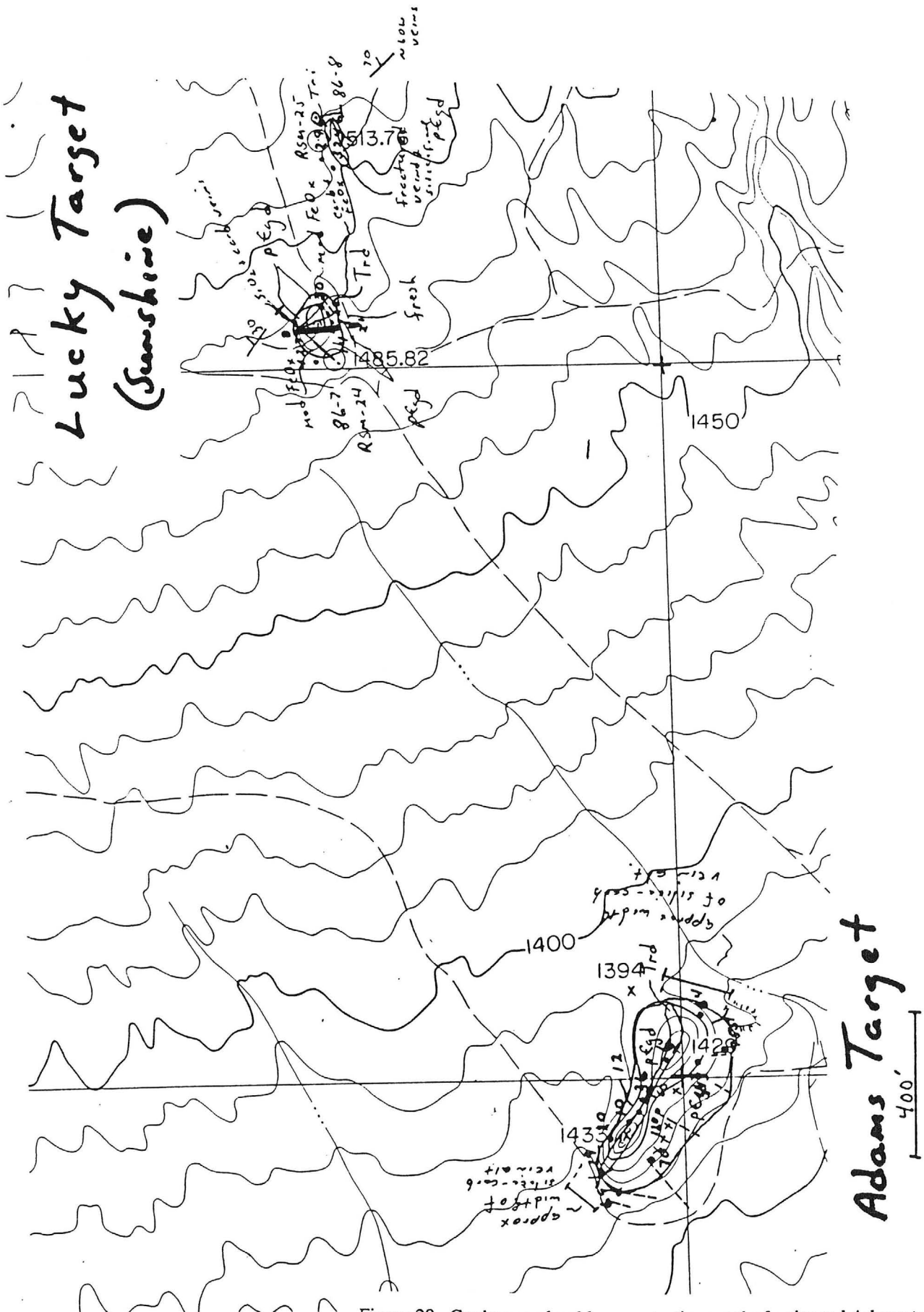


Figure 29. Geology and gold concentrations at the Lucky and Adams targets

Department of Interior. Lease proceedings began five years ago by Fischer–Watt and is still pending. Precambrian granodiorite is intruded by Tertiary rhyodacite. The granodiorite is variably altered to hematite and locally is intensely silicified and veined with quartz (Figure 29). The Tertiary rhyodacite is intensely veined with quartz. Perry Durning of Fischer–Watt informed me by phone that they had collected several samples with gold concentrations in the range of 0.1x on the surface. Two sample programs by ACNC totaling 35 samples contained maximum gold concentration of 1.8 ppm Figures 30, 33). Because of the land status, this target has not been drilled yet.

BURT HILL TARGET:

The Burt Hill target is located on the western boundary of the claim block and is partially located in the Lake Meade Recreation Area. The inselberg is composed of variably altered Tertiary rhyolite intrusion, which intrudes Precambrian granodiorite. Drilling indicates that the Precambrian granodiorite is intensely altered to hematite locally near the rhyolite. The rhyolite is variably altered to argillic assemblages as well as carbonate and locally chalcedonic silica. Surfical samples contain barely detectable gold (up to 6 ppb gold) and up to 800 ppb mercury (Figure 34). Gold is not present on the south side of the target (RVC hole 84–2). However, three drill holes on the north flank of the rhyolite contained more silicified intervals and many intervals with gold concentrations greater than 120 ppb (0.004 oz/ton) (Figure 35; Map 9). Several intercepts 10 to 25 feet long contain 0.01 to 0.12 oz/ton gold.

ABNER TARGET:

The Abner target is located west of Black Dyke and is the largest inselberg on the property. Precambrian granodiorite is overlain (structural contact?) by Tertiary volcanics which are intruded by an unaltered rhyodacite plug and several rhyolite intrusions. Several high angle structures are locally replaced by argillic assemblages. A low angle structure on the west side of the hill emplaces a sliver of Precambrian

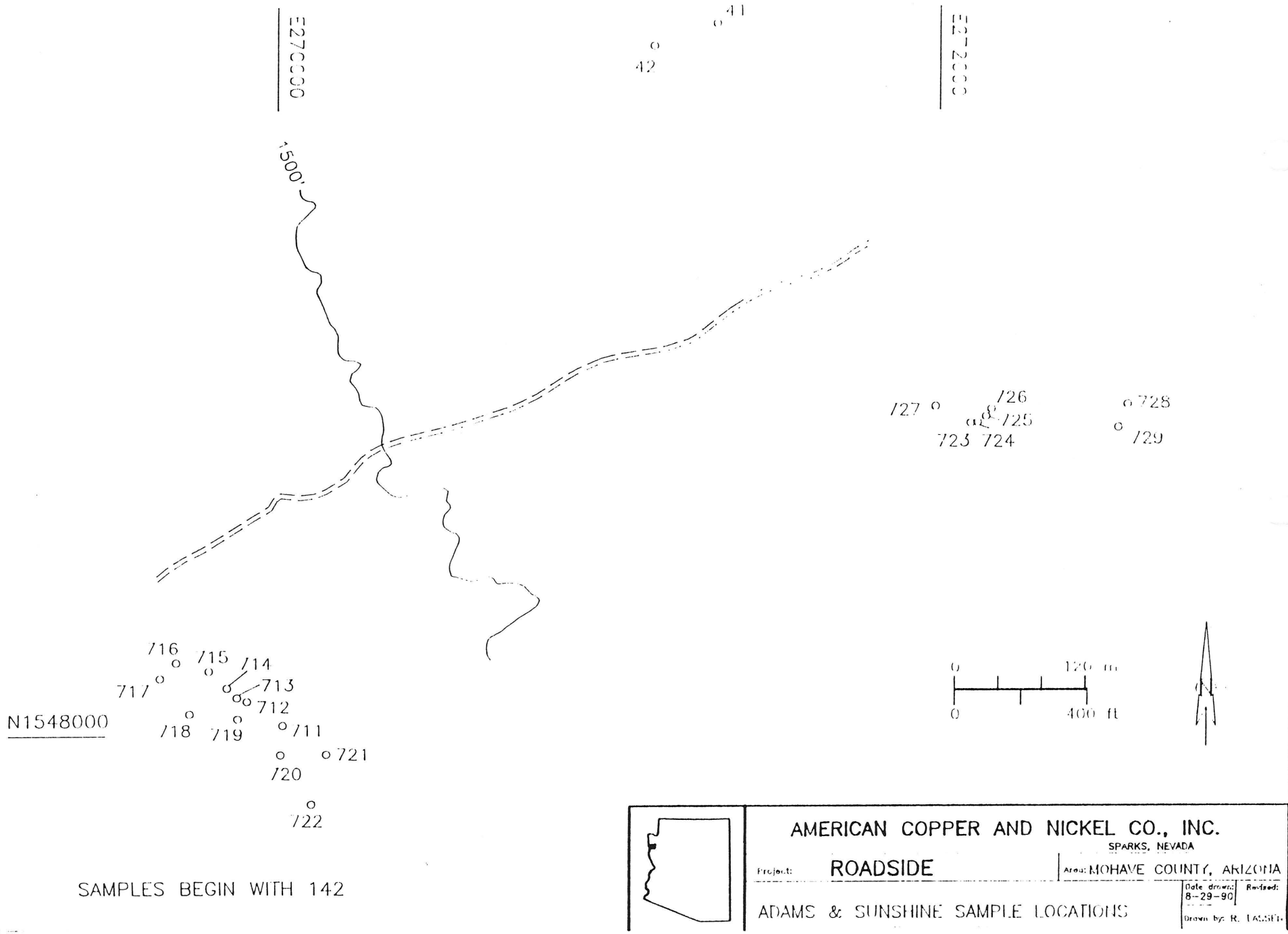


Figure 30. ACNC sample locations at the Lucky and Adams targets

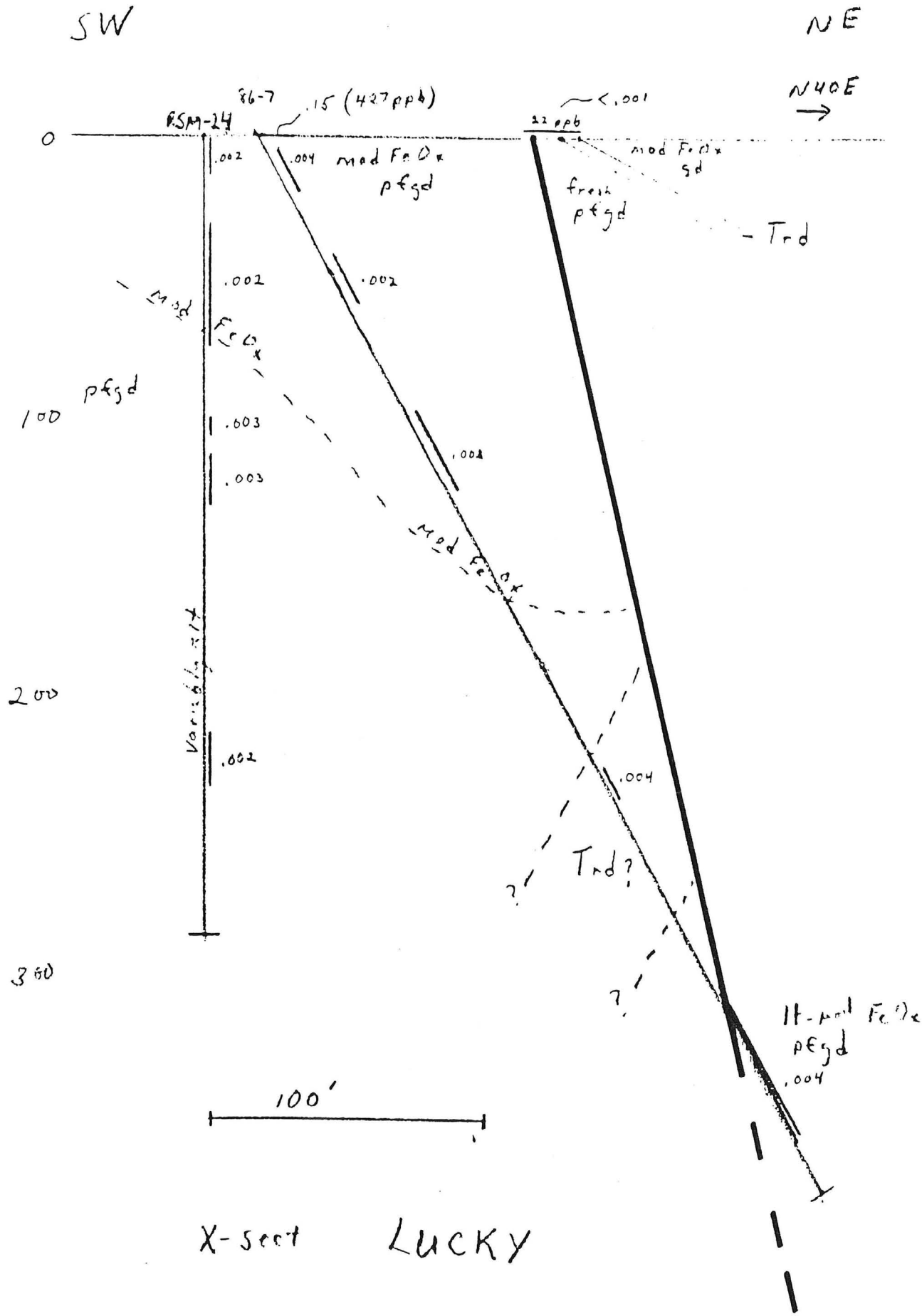


Figure 31. Southwest–northeast cross–section through Lucky target

PAGE

PROJECT: [illegible] DDH # [illegible]-8 BEARING: [illegible] DIP: 55° TD: [illegible]

LOGGED BY: [illegible] DATE: [illegible] SCALE: CORE SIZE:

FOOTAGE	RQD%	ROCK TYPE	ROCK DESCRIPTION	ALTERATION	SAMPLE	AU	AG	PB	ZN	CU
			mixed [illegible]	—						
10			" "	—						
20			RQD = 18-20'	—						
25			Still 75% upper [illegible] cent.; minor qtz, [illegible], gr, ??	—						
35			?? mod Fe ox stain pÉ gr ? qtz latite?	SiO_2						
			" "	" "						
			50% qtz, Fe ox stain, entire sample very SiO_2 rich minor veinlets of qtz.	$\geq SiO_2$		.012			.0109	
			less qtz; bit more Fe ox	$<<SiO_2$						
			" "	$>>SiO_2$						
			pÉ gr - ≈ 70% qtz; mod Fe ox stain	$<SiO_2$		.016				
			" "	"						
65			pÉ gr - still SiO_2 rich but less [illegible] bit more Fe ox	SiO_2						
70			" some Cl⁻ staining	SiO_2 + Cl⁻						
75			" 5% Cl⁻	↓						
80			50% Cl⁻ ([illegible]) 50% pÉgr	$\geq Cl^-$ [illegible]						
85			10% Cl⁻ - 90% Fe ox stained pÉgr.	$<<Cl^-$ [illegible]						
90			100% pÉ gr	—						
95			" " bit more qtz; bit more Cl⁻	—						
100			" "	—						
105			" "	Cl^-						
			"	—						
			green/gray latite → dike?? pÉ gr. → " " <<Fe ox	$>>Cl^-$ [illegible]						
120			[illegible] pÉ gr; >Fe ox unaltered + unchanged	—		.003				
125			" bit more Cl⁻	$>Cl^-$						
130										
135			" bit more qtz; some calcite	—						

1435 S. 10th AVE.

Jacobs Assay Office

Registered Assayers

PHONE 622-0813

TUCSON, ARIZONA 85713

65109

9/12 1986

Sample Submitted By Mr. FISCHER-WATT

SAMPLE MARKED	GOLD Ozs. per ton ore	GOLD Value per ton ore	SILVER Ozs. per ton ore	LEAD Per cent Wet Assay	COPPER Per cent Wet Assay	Per cent Wet Assay	Per cent Wet Assay
RS-86 #1 SUR	0.005	$	<0.05				
2	0.005		<0.05				
3	0.002		<0.05				
4	TRACE		<0.05				
5	0.002		<0.05				
6	0.002		<0.05				
7	0.002		<0.05				
8	0.003		<0.05				
9	0.006		<0.05				
10	TRACE		<0.05				
RS-86-8 0-10	TRACE		<0.05				
10	0.002		<0.05				
25	0.008		0.05				
30	0.002		<0.05				
35	0.008		0.05				
40	0.010		<0.05				
45	0.012		0.10				
50	0.015		<0.05				
55	0.009		<0.05				
60	0.024		<0.05				
65	0.012		<0.05				
70	0.012		<0.05				
75	0.005		<0.05				
80	0.002		<0.05				
85	TRACE		<0.05				
90	TRACE		<0.05				
95	TRACE		0.05				
100	TRACE		<0.05				
105	TRACE		0.05				
110	0.002		<0.05				
115	0.002		<0.05				
120	0.005		<0.05				
125	0.003		<0.05				
130	0.003		<0.05				
135-140	0.003		<0.05				

FINE-DRY
2-PORSHAPION
2-CRUSHING

Charges $ 350.00

Very respectfully,

REGISTERED ASSAYER
11650
MICHAEL G. JACOBS
TUCSON, U.S.A.

Table 6. Assays for RS-86-8

Project	Land holdings (acres) Located	Leased	Current FWM Interest	J.V. Partner	Commitment required by J.V. to earn interest	Diluted FWM Interest after commitment	Type of Deposit	Ore Reserve Tonnage	o/T Au	o/T Ag	Project Status
Hayden Hill Lassen Co. California	950	2800	50% working	Pecos Resources Vancouver B.C. Canada	Already earned $1.6x 10^6$ expended in 1984	50% working subject to 3% Net Profits Finders Fee	Open pit- Heap leach Drill Indic Add pot.	7,900,000T +12,000,000T	0.042 +0.05	0.40	Active J.V., ore reserves defined, ready for production 825 oz Au produced in 1984
Dexter Elko Co Nevada	1,100	300	25% Net Profits Carried	Pecos Resources Goldbelt Res Vancouver B. C. Canada	Already earned $1.8x 10^6$ expended in 1984	25% Net Profits Carried	Open pit- Heap Leach Drill prov. Add pot.	2,000,000T +2,000,000T	0.039 as above	1.90	Active J.V., ore reserves defined, ready for production. Minor production in 1984
Democrat Lemhi Co Idaho	-0-	550	50% Net Profits Carried	Democrat Resources Vancouver B.C. Canada	$1.3x 10^6$ already expend $2.0x 10^6$ must be expend to earn 50% interest	50% working or be diluted to 6% Net Profits Carried	Underground Milling drill & spl Potential	50,000T Could be large	0.09 15% Pb	9.00 5%Zn	Active J.V., further exploration required prior to production
Buffalo Valley Lander Co Nevada	-0-	2800+	5% Net Profits	Consolidated Mining Denver Colorado	None	5% Net Profits Carried	Open Pit- Heap leach drill ind. Add pot	750,000T unknown	0.07		Inactive J.V., ore reserves defined, ready for production
Roadside Mohave Co Arizona	-0-	5820	50% Net Profits Carried	Pecos Resources Anaconda Mineral Denver Colorado	±$200,000 expended must expend $1.5x 10^6$ by 6/87 to earn interest	20% working 7.5% Net Profits carried Subject to 3% Net Profits finders fee	Open pit- Heap leach Drill ind. Add pot	300,000T Could be large	0.03		Active J.V., further exploration in progress
Golden Syncline San Bern California	1,760	1,800	100%				Open pit- heap leach potential	Could be very large	speculate ±0.05		Geology, geochem completed drill targets defined
Pancake Nye Co Nevada	1,540	-0-	100%				Open pit- Heap leach Potential	Could be very large	speculate 0.05-0.10		Limited geology and geochem completed. Further work required to define drill targets
Little Butte La Paz Co Arizona	-0-	800	100%				Open pit Heap leach Potential	2,000,000T	0.03-0.07		Geology and geochem completed, drill targets defined
Van Deeman Mohave Co Arizona	-0-	500	100%				Open pit- Heap Leach Potential	1,000,000- 2,000,000 T	0.04-0.07		Geology and geochem completed, drill targets defined
Comstock Storey Co Nevada	55	175	100%	Westley Mines Vancouver B.C. Canada	Expend $500,000 to earn 80% interest	20% working interest Subject to dilution	Underground Milling Potential	+1,000,000T	+0.50	+20.0	Geology and geochem completed, drill targets defined
Bovard- Rand Mineral Co Nevada	40	550	100%				Open pit- Heap leach Potential Underground Milling Potential	+500,000T +500,000T	0.05-0.10 0.20-0.40	±10.00	Preliminary geology and geochem completed drill targets defined for open pit reserve. Further work required for underground drill target
Kemble Camp Mohave Co Arizona	700	-0-	100%				Open pit- Heap leach Potential	+2,000,000T	0.03-0.07		Geology and geochem completed, drill targets defined
Border Mine Pima Co Arizona	400	-0-	100%				Open pit- Heap leach Potential	+1,000,000T	0.03-0.06		Initial geology and geochem completed. Further work required to define drill target
Mineral Springs San Bern California	320	-0-	100%				Open pit- Heap leach Potential	+2,000,000T	0.04-0.07		Initial geology and geochem completed. Further work required prior to drilling
Gemfield Esmeralda Co Nevada	-0-	140	1% Net Smelter Royalty	Santa Fe Minerals Reno Nevada	Take over terms of FWM lease	1% Net Smelter Royalty	Open pit- Heap leach Potential	+1,000,000T	unknown		Actively being explored by partner