



CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
416 W. Congress St., Suite 100
Tucson, Arizona 85701
520-770-3500
<http://www.azgs.az.gov>
inquiries@azgs.az.gov

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James Doyle Sell Mining Collection

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~~8/18/89~~
8/11/89

(44)

115-245

115-155 = 35'	0.22	} 45' @ .018	} 145' @ .039
155-165	10'		
165-190	25'	.051	
190-235	45'	.014	
235-245	30'	.099	
		100' @ .049	

(43)

65-85 - 20' - 0.072

4 sites in on up dip { 3S
3U
2W
3Y

3 " on extension { 3AA
3BB
3CC

3x between 11 & 29
3v between 23 & 22

More sample along road.
No alteration sample
Unknown where VAA goes thru along road, no
estimate

~~Cost on 8K worth of drilling = 19.5K~~

8
1

JIM,
I AM SENDING ORIGINAL SECTIONS
SINCE THE XEROX COPY IS NOT
VERY GOOD.

Mark

MEMO TO J.D. SEW

ASARCO Incorporated

AUG 3 1989

SW Exploration

PHASE 3 PROGRAM

YARNELL PROJECT.

YAVAPAI CO., AZ

THIRTY FOUR DRILL HOLES ~~TOTAL~~ TOTALING 8750
ARE PROPOSED FOR A PHASE 3 PROGRAM AT YARNELL.
THESE HOLES ARE DESIGNED TO TEST AREAS W/IN
THE MINERALIZED ZONE ~~WHERE~~ WHERE PROBLEMS
STILL EXIST w/ CONTINUITY OF GRADE + THICKNESS
STILL OCCUR, DIP EXTENSIONS of THE SOUTH WESTERN
EXTENSION of THE MINERALIZED ZONE PAST YMA-11 of YMA-23
A PROPOSED COST ESTIMATE IS ATTACHED FOR A PHASE 3
PROGRAM. ALONG w/ THE ESTIMATED EXPENDITURES FOR
THE PHASE 2 PROGRAM.

WE HAVE DRILLED IN PHASE 1 of 2 A TOTAL of
13,157' IN 45 DRILL HOLES. THE NATURE +
CONFIGURATION of THE MINERALIZATION HAS ~~NOT~~ ESSENTIALLY
REMAINED THE SAME AS DEFINED IN HOLES 1-9 DETAILED
IN MY REPORT TO JDSEW DATED 5/2/89. ^{GOLD} ~~THE~~ MINERALIZATION
STILL OCCURS w/IN THE ALTERED "ENVELOPE" WHERE BIOTITE
~~HAS BEEN~~ IS ABSENT of SILICIFICATION VARIES IN
INTENSITY (UP TO 20% ^{of} ORIGINAL) w/IN THE MINERALIZED
ZONE. THE "ORE GRADE" ZONE WHEN ENCOUNTERED IS
USUALLY INDICATED ^{BY} ~~FROM~~ A CHROMAL INC IN LIMONITE

(VERTICALLY)

AS ONE APPROACHES THE Y.F.Z. (YARNGUL FAULT ZONE).
"ORE GRADE" ^(G.O.D.) MINERALIZATION STILL OCCURS BOTH ABOVE &
BELOW THE YFZ HOWEVER THE GREATEST MAJORITY APPEARS
TO OCCUR ABOVE THE H.W. OF THE F.Z. THE ~~H.W.~~ HANGING
WALL OF THE MINERALIZED ZONE ~~IS~~ APPEARS TO BE
AN "ASSAY EDGE" w/ A LOW GRADE ZONE OF $+0.015 - .025$
OCCURRING ~~FROM SECTIONS~~ ABOVE THE HIGHER GRADE ^{ZONE} FROM
SECTIONS C-G; FOR A DISTANCE OF $\sim 900'$ ALONG STRIKE.

~~FOR~~ IN CONTRAST, THE F.W. OF THE MINERALIZED ZONE IS
VERY ABRUPT w/ ASSAY VALUES CHANGING FROM ORE GRADE
 \rightarrow DETECTION w/in ONE ^{SAMPLE} INTERVAL. (5')

A TABULATION OF DRILL HOLES IS INCLUDED WHICH
SHOWS THE ~~FOR~~ ASSAY INTERVAL AND GRADE FOR THE
45 HOLES DRILLED. (TABLE 1)

TABLE 2 IS A LIST OF PROPOSED DRILL HOLES FOR A PHASE 3
PROGRAM. ALSO ATTACHED IS A MAP SHOWING PROPOSED HOLE LOCATIONS
ALONG W/ SECTIONS.

TABLE 3 ~~IS~~ A DETAILS ESTIMATED EXPENDITURES FOR PHASE 2
(HOLES 11-45)

TABLE 4 DETAILS ~~IS~~ THE COST ESTIMATE FOR A PHASE
3 DRILLING PROGRAM. THIS COST ESTIMATE INCLUDES ADDITIONAL COSTS
THAT WILL BE (OR MAY BE) INCURRED AND MAY HAVE ^{BEEN} PARTIALLY
INCLUDED W/in PREVIOUS AUTHORIZATIONS BUT THE WORK HAS NOT
BEEN DONE AT THIS TIME.

Mark Miller
PROS GEOLOGIST

ADD THIS LIST TO FABULATION OF DRILL HOLES
 FROM MY 1/4 LY REPORT 7/19/89
 AND INCLUDE IN THIS REPORT
 (HOLES 1-45)

Drill Hole TABULATION

TABLE 1

ELEVATION VM-19 4973.5

1	2	3	4	5	6	7	8	9	10	11	12	13
HOLES	ELEVATION	FROM	TO	THICKNESS	ASSEMBLY							
22	4884	215	225	10'	.035							
		270	285	15'	.025							
23	4860	40	125	85'	.047							
24	4893	75	115	40	.092							
25	4947	55	95	40	.062							
26		200	290	90'	.054							
		290	320	30'	.016							
27	4835	60	95	35'	.018							
		235	265	30'	.019							
		300	315	15'	.033							
28	4817	95	215	120'	.023							
		225	245	20	.042							
29	4859	220	230	10	.032							
30	4894	215	245	30	.032							
31	4918	365	385	20	.054							
32	4920	120	200	80'	.014							
33	4969	15	55	45	.016							
		275	365	90'	.051							
34	4672	110	180	20'	.013							

1	2	3	4	5	6	7	8	9	10	11	12	13
NOLOG #	ELEVATION		FROM	TO		THICK		% ASSAY	OP. #			
35	4730		35	90		5'		.016				
36	4705		115	145		25'		.026				
37	4925		120	125 180		60'		.034				
38	4984		185	240		55'		.023				
39	5011		0	35		35'		.029				
			145	155		10'		.024				
			205	215		10'		.024				
			300	360		60'		.035				
			285	360		75'		.032				
40	5024		275	375		100'		.064				
41	4978		295	335		40'		.045				
42	4909		75	85		10'		.024				
			110	125		15'		.024				
			165	175		10'		.014				
43	4907		65	85		20'		.072				
44	4910		115	155		35'		.022				
			155	165		10'		.008				
			165	190		25'		.051				
			190	235		45'		.016				
			235	265		30'		.099				
45	4980		No	RESULTS		YET-						

- BOTTOMED IN ORE

TABLE 2

HOLE PROPOSALS

HOLE #	1	2	3	TARGET	5	OBJECTIVE OF DRILL	8	HOLE	10	11	12	13
3A	200'			TEST U.D. of 35	AND MINERALIZATION	SEGN	IN	SURFACE SAMPLING				
3B	250'			LOW GRADE → NE, FLY ASH	MINERALIZATION							
C	300'			LOW GRADE D.D. of YM-28	LOW GRADE SECTION							
D	350'			D.D. FROM YM-28	THICK LOW GRADE SECTION							
E	75'			U.D. YM-43	H.G. YANGLU FRUIT ZONE (YFZ)							
F	150'			U.D. YM-18								
G	400'			LOW GRADE ZONE BETWEEN 42+28	+ H.G. MIN IN YFZ							
H	350'			DISCREPANCY IN THICKNESS OF ZONE	BETWEEN 8+9.							
I	100'			U.D. of YMG								
J	300'			THICK ZONE IN YM-15	SPLIT ZONE IN YM-19.							
K	400'			THICK L.G. ZONE IN 8	BETWEEN 39 & 8 - THICK ZONE IN 8							
L	350'			FINISHING OF MINERALIZED ZONE	IN 4+12							
M	450'			H.G. D.D. IN YM YM-33								
N	350'			THICK ZONE IN 33	PROJECTION → NE							
O	400'			YM-41 MINERALIZATION	D.D.							
P	330'			REVERSAL IN MINERALIZED SECTIONS	IN 7 & 5							
Q	400'			THICK SECTION YM-26	D.D.							
R	350'			"	" " U.D.							
S	100'			YM-25	U.D.							
T	330'			CONTINUITY OF MINERALIZATION	BETWEEN 10 & 30							
U	175'			MINERALIZATION YM-24	U.D.							
V	250'			YM-23	D.D.							
W	100'			YM-23	U.D.							
X	300'			YM-11	D.D.							
Y	150'			YM-11	U.D.							
Z	250'			SW EXTENSION OF MINERALIZED ZONE								
3AA	250'			SW	" " YM-41 MINERALIZED ZONE							
BB	240'			"	" " " " " "							
CC	240'			"	" " " " " "							
DD	100'			"	" " " " " "							

TABLE 3

TA

PHASE 2 COMPLETION (ESTIMATED)

DRILLING 2800' 2800'	25,200
ASSAYING 2800'	8400
SUPPLIES	800
SUPERVISION	7000
LIVING EXPENSE	1000
SITE PREPARATION	<u>2000</u>
	45900
PAST EXPENDITURE (ESTIMATED) PHASE 2	172,600
TOTAL	217,900

ADDITIONAL COSTS TO BE INCURRED (EST)

(APPLIED TO PHASE 3 PROGRAM)

OPEN CUT SAMPLING + TRANSPORT OF BULK SAMPLE	5000
METALLURGICAL TESTING - MCCULLINO LABS.	20,000
SANTA FE MINERAL RTS	10,000
NORCOLD PAYMENTS 10/1/89.	15,000
WESTERN BUILDING + MINING PAYMENT → DEC 31, 1989	<u>3,000</u>
DIAMOND DRILLING	<u>30,000</u>
TOTAL →	83000

TABLE 4

PHASE 3 PROGRAM
COST ESTIMATES

Drilling; 34 HOLE (8750')	78,750
Assaying	26,250
SURVEYING	5,000
SITE PREPARATION 34 SITES	9,000
DIAMOND DRILLING 1200'	30,000
SUPERVISION - MAM, JSM, SPD	18,000
LIVING EXPENSE	1,500
VEHICLE EXPENSE	2,000
LEGAL	5,000
TOTAL	145,500
CONTINGENCIES @ 10%	160,050
OTHER ITEMS -	
METALLOGICAL TESTING + SAMPLE	
BULK SAMPLE COLLECTION + METALLOGICAL TESTING	25,000
SANTA FE MINERAL RIGHTS	10,000
NORGOLD PAYMENT 10/1/89	15,000
WESTERN BUILDING PAYMENTS → DEC 31, 1989	3,000
DIAMOND DRILLING 1200'	30,000
TOTAL	83,000
GRAND TOTAL PHASE 3 PROPOSAL	\$ 243,050

102,000N

101,500N

USLM
1112 ▲

101,000N

100,500N

100,000N

99,500N

99,000N

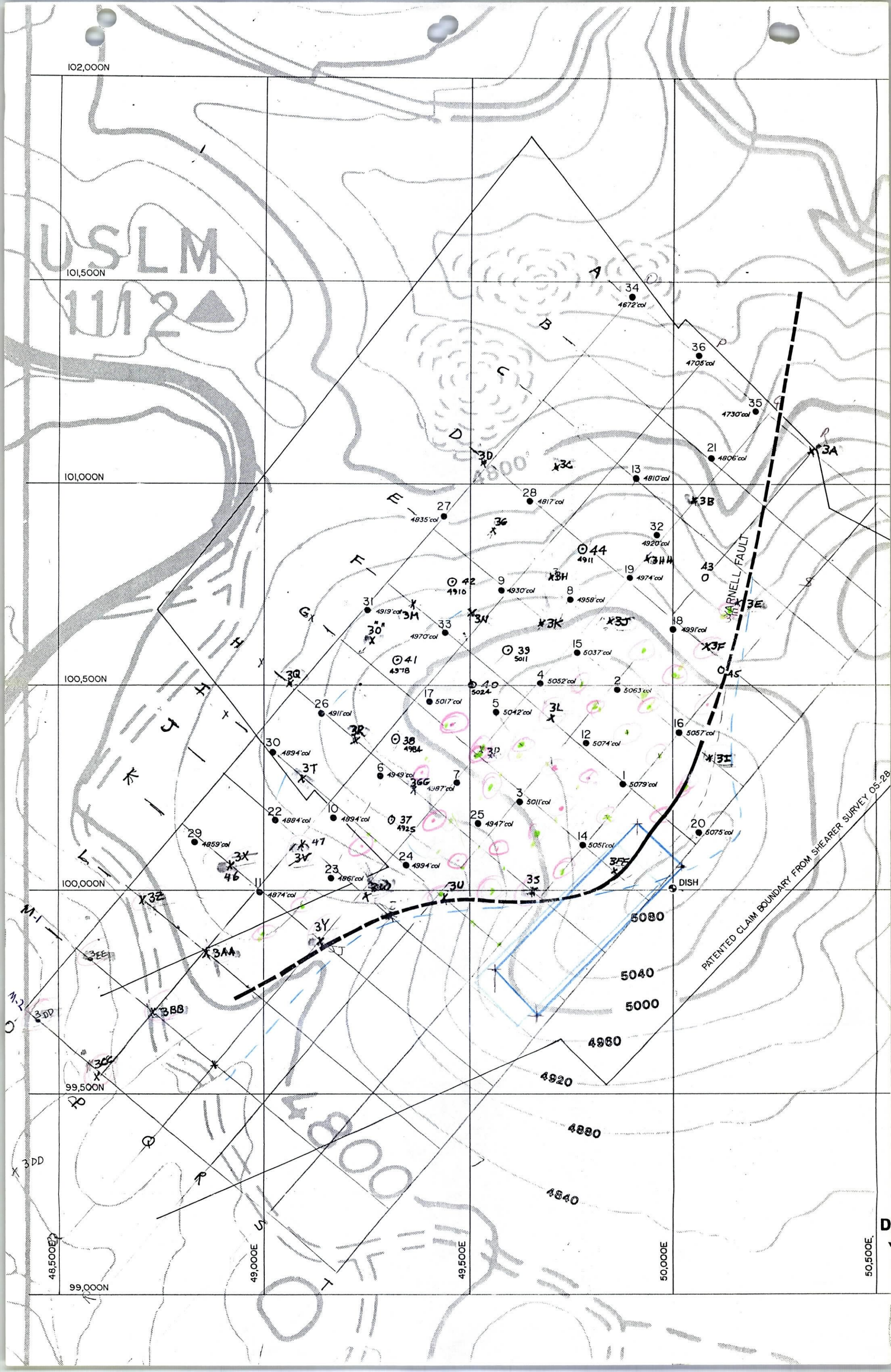
48,5000E

49,000E

49,500E

50,000E

50,500E



PATENTED CLAIM BOUNDARY FROM SHEARER SURVEY 05-28

BARNELL FAULT

A

B

C

D

E

F

G

H

I

J

K

L

M-1

M-2

O

P

Q

R

S

T

U

V

W

X

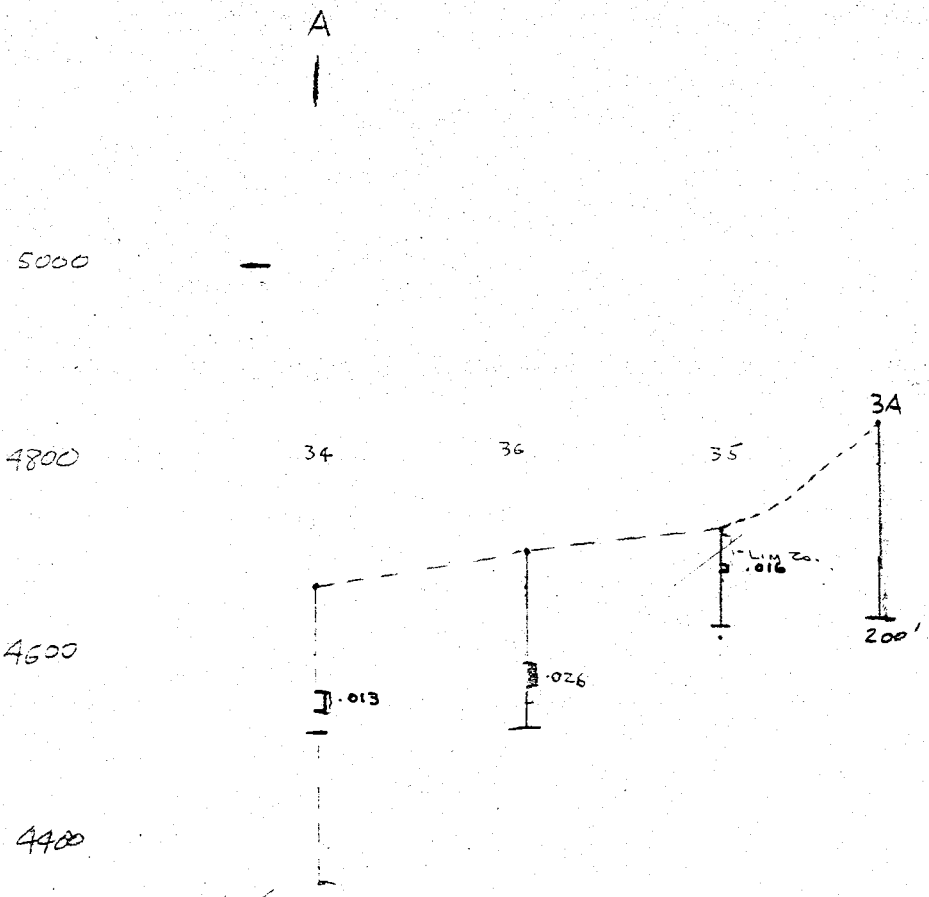
Y

Z

D

A-A'

Reeper - 120211
34A 300'



A-A'

C-C 1 = 200

Pros 65' SW

3B

1

Pros
70' NE

Pros
70' NE

⊖ 150'
NN- 300'
ZZ 100'
UU 100'

5000

1

Pros
100' NE

13

32

22

UV

3C



NN

Pros 70'
NE

3E

43

072
- YFE

150'

75'

? V.F. Pros?

300'

022

250

.018

.012

.014

C-C

D-D'

③

Proposed height

✓ 150

⑥ 300' +

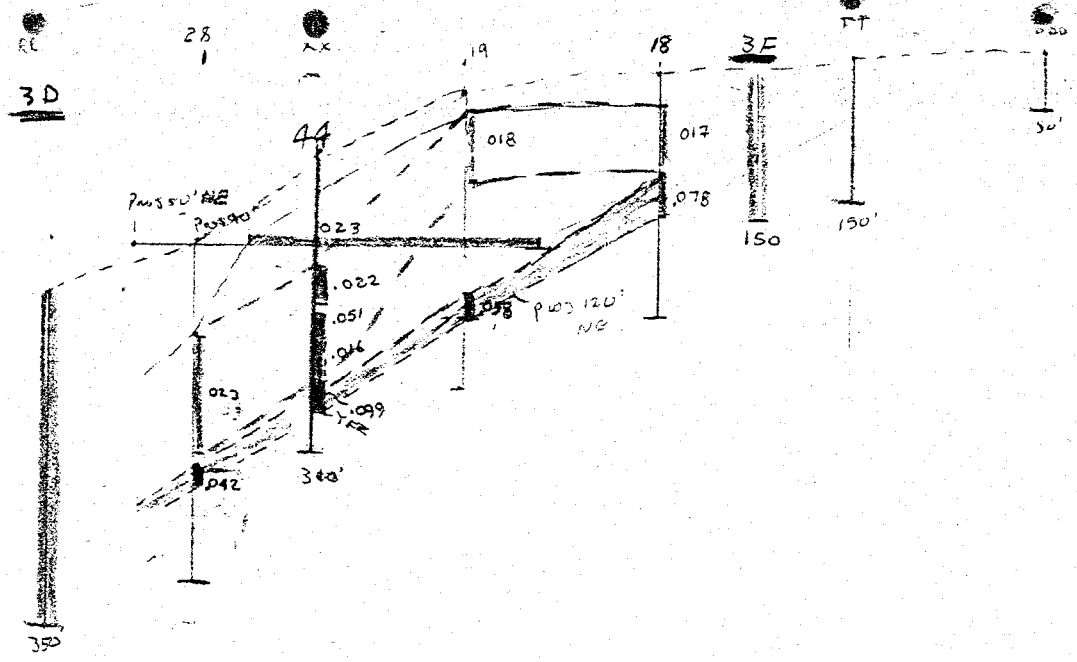
DD 50'

✓ RR 350'

D

D'

5000
4800
4600
4400
4200



D-D

E-E'

- Proposed profiles -

OR-400'

SS 350'

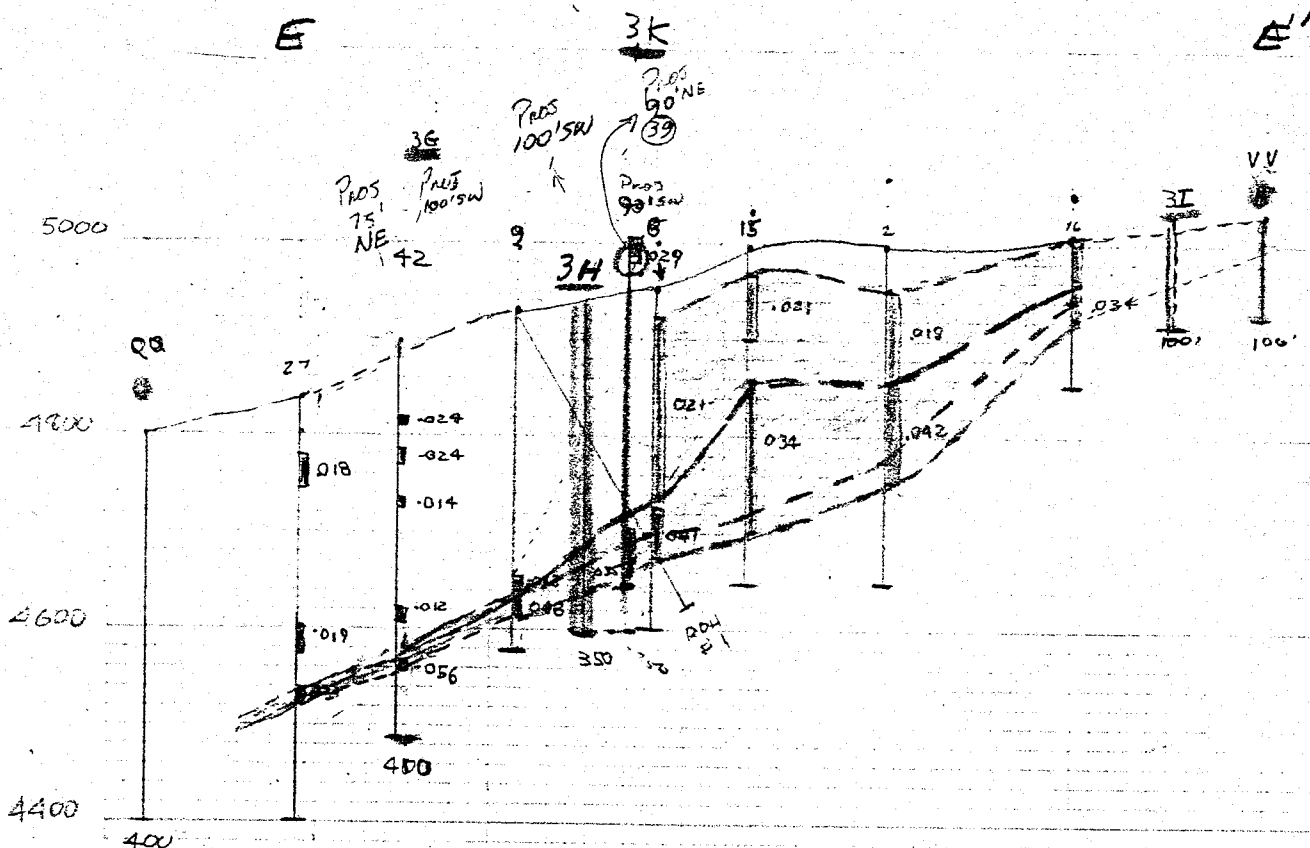
DDH-1 300'

SS0'E

V.V. 100'

⑤ 400'

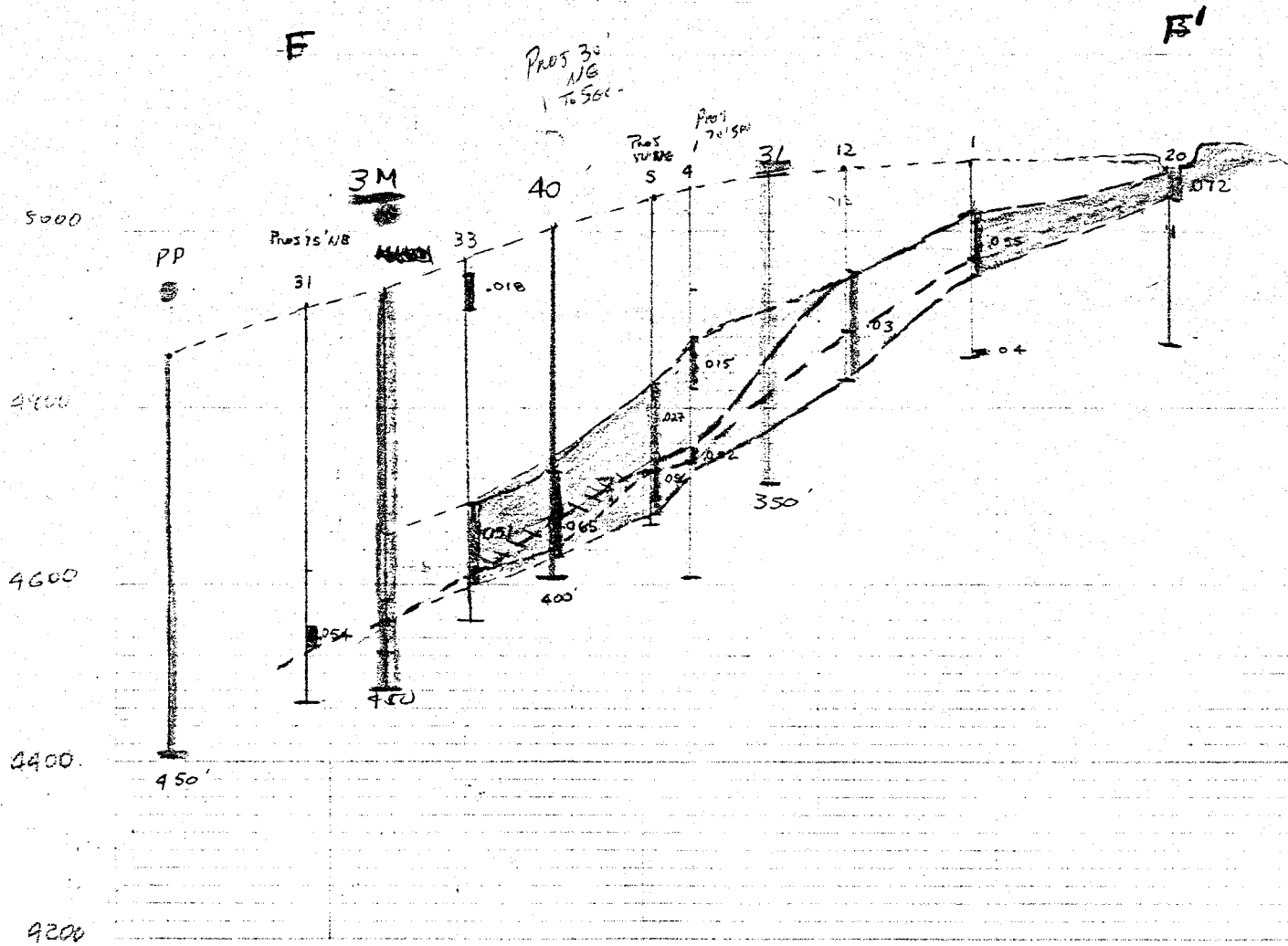
⑦ 350'



E-E'

B-B'

1"=200'



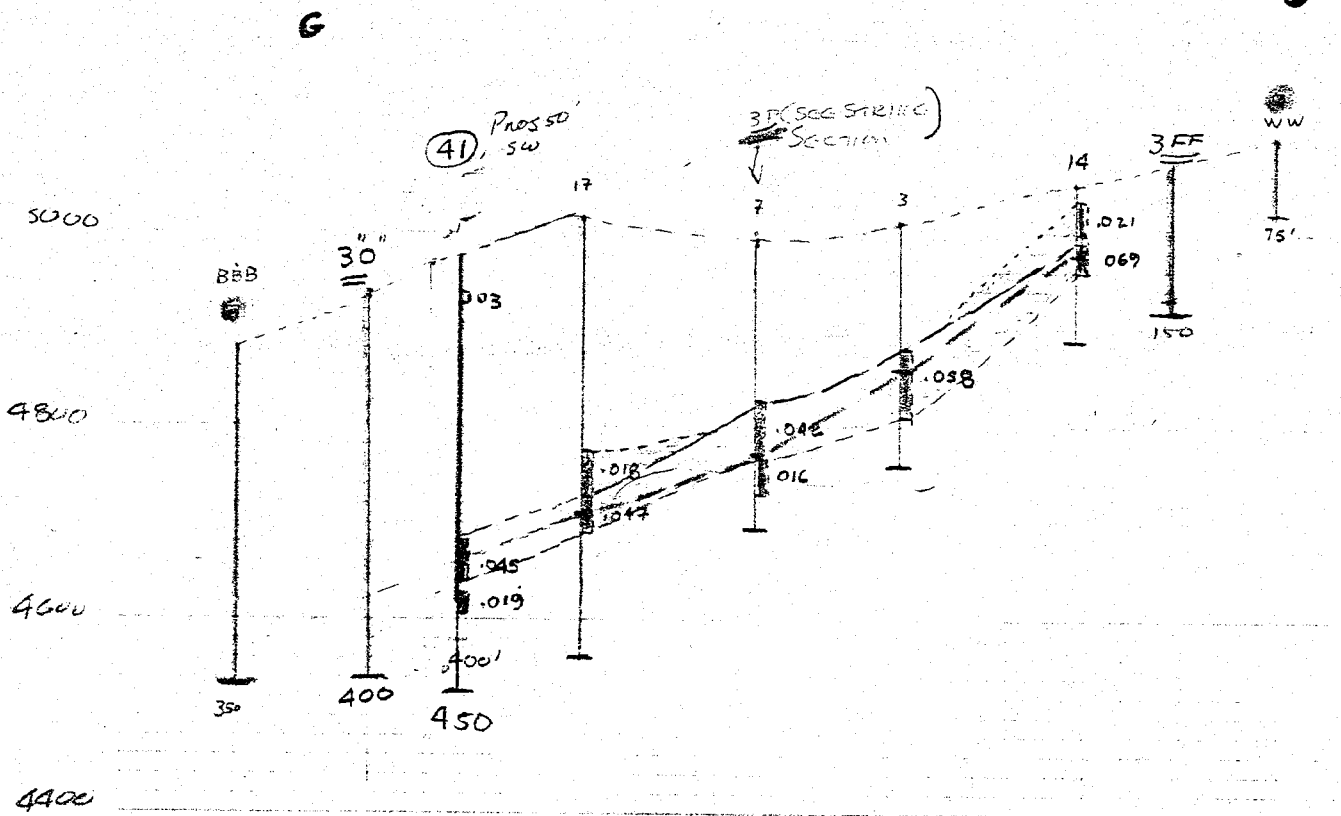
Proposed Holes
 (4) ~~400'~~ - 400'
~~400'~~
 MMM 450'
 PP - 450'

F-F

G-G' 1" = 200' Long NE



Proposed holes
WW - 75'
~~BBB 350~~
BBB 350
③ 400'



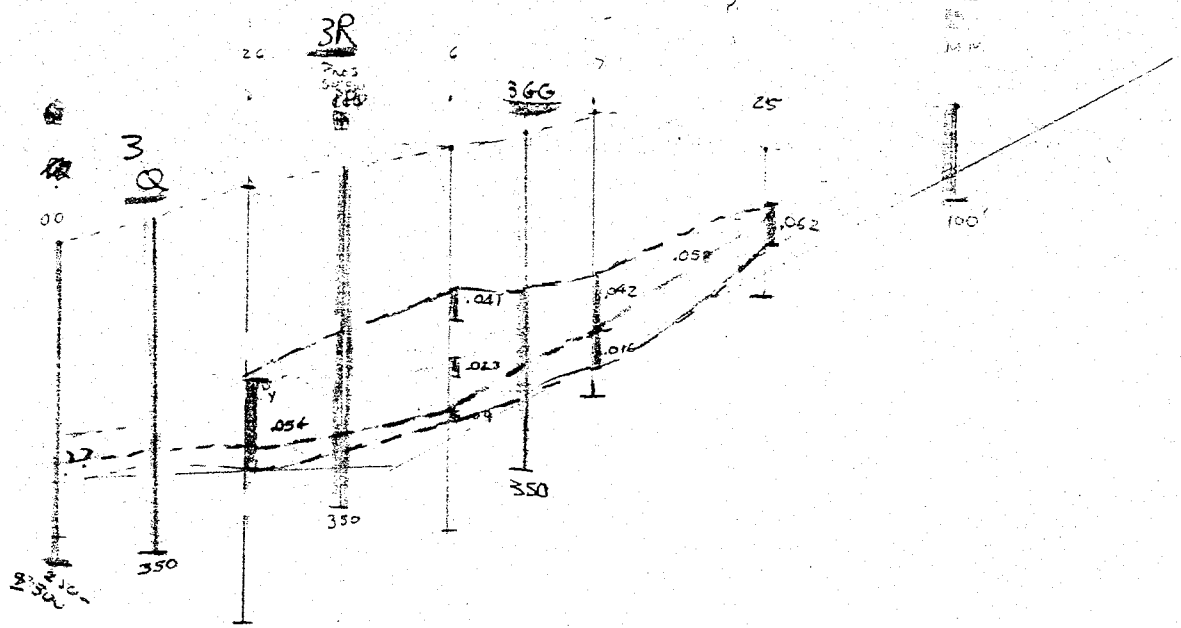
G-G'

H-H'

1" = 200' Length

Proposed Road

SS	300
MM	100
CC	350



H-H

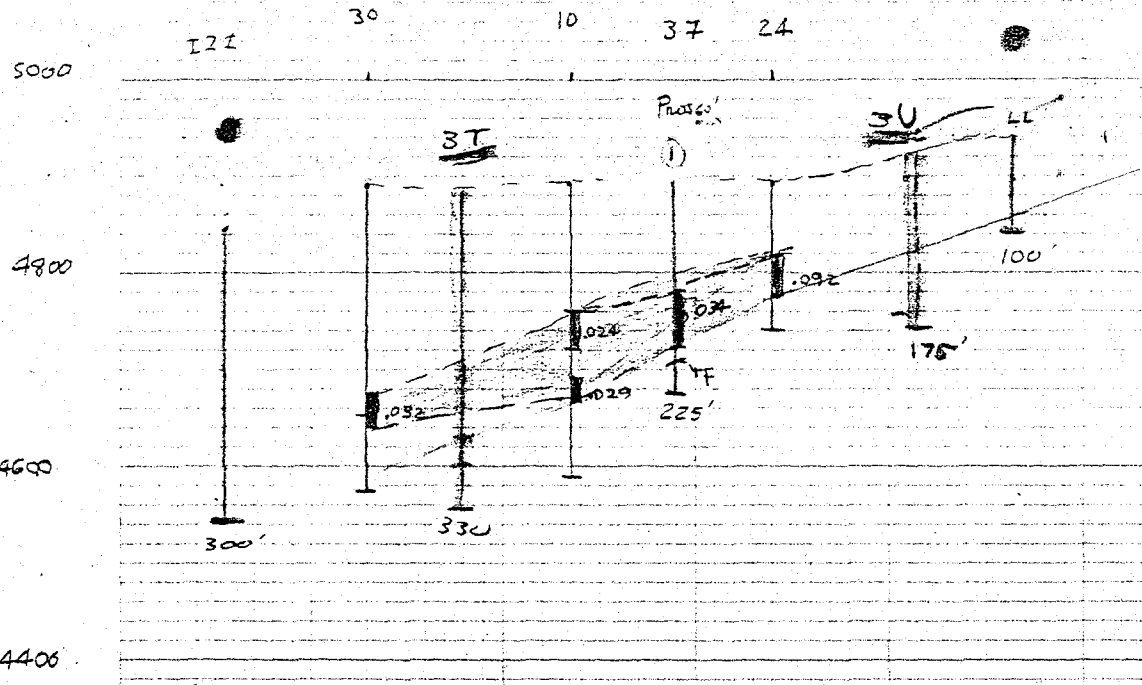
I-I'

1" = 200'

Proposed Holes
LL - 100'
III 300'

H

I'



I-I'

J-J'

J

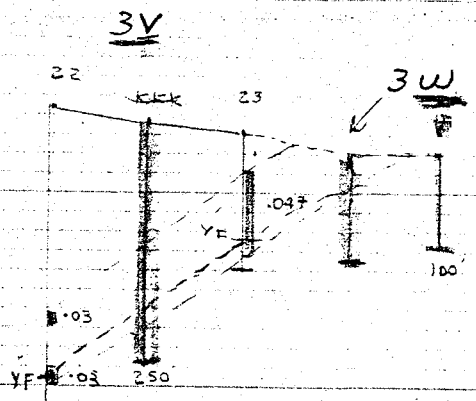
J'

Proposed Holes.
KK - 100'
KKK - 250'
JJ - 150'

5000

4800

4600



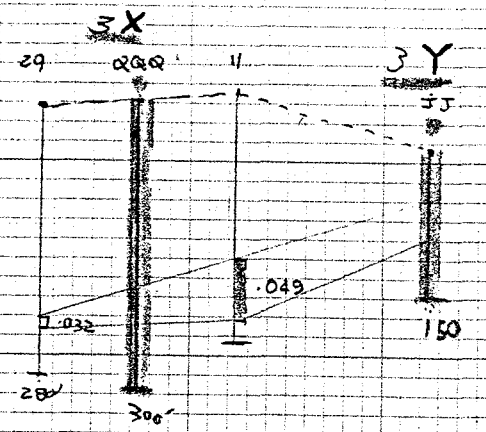
J-J'

6000

K-K' 1" = 200'

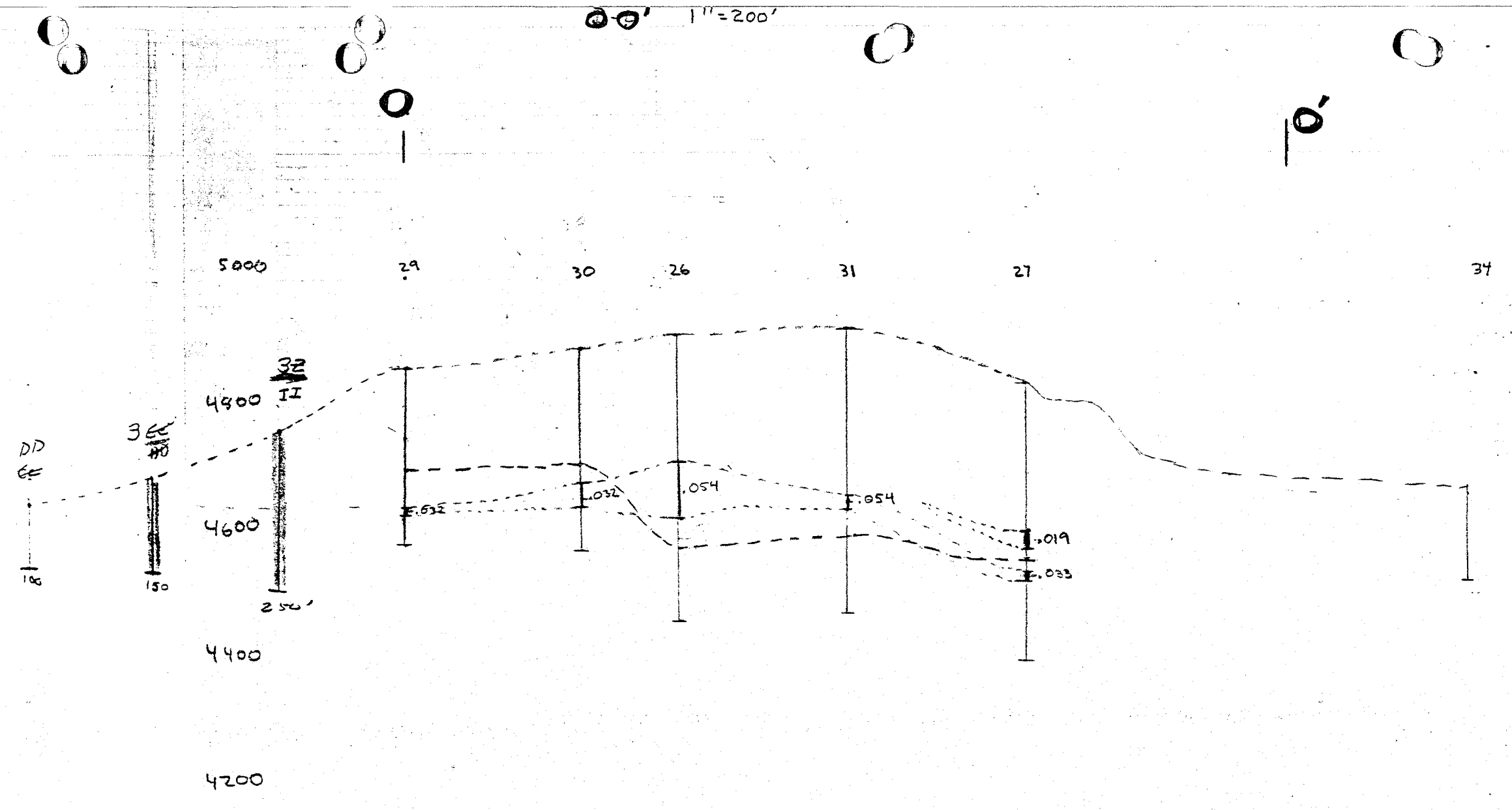
4800

4600



K-K'

1" = 200'

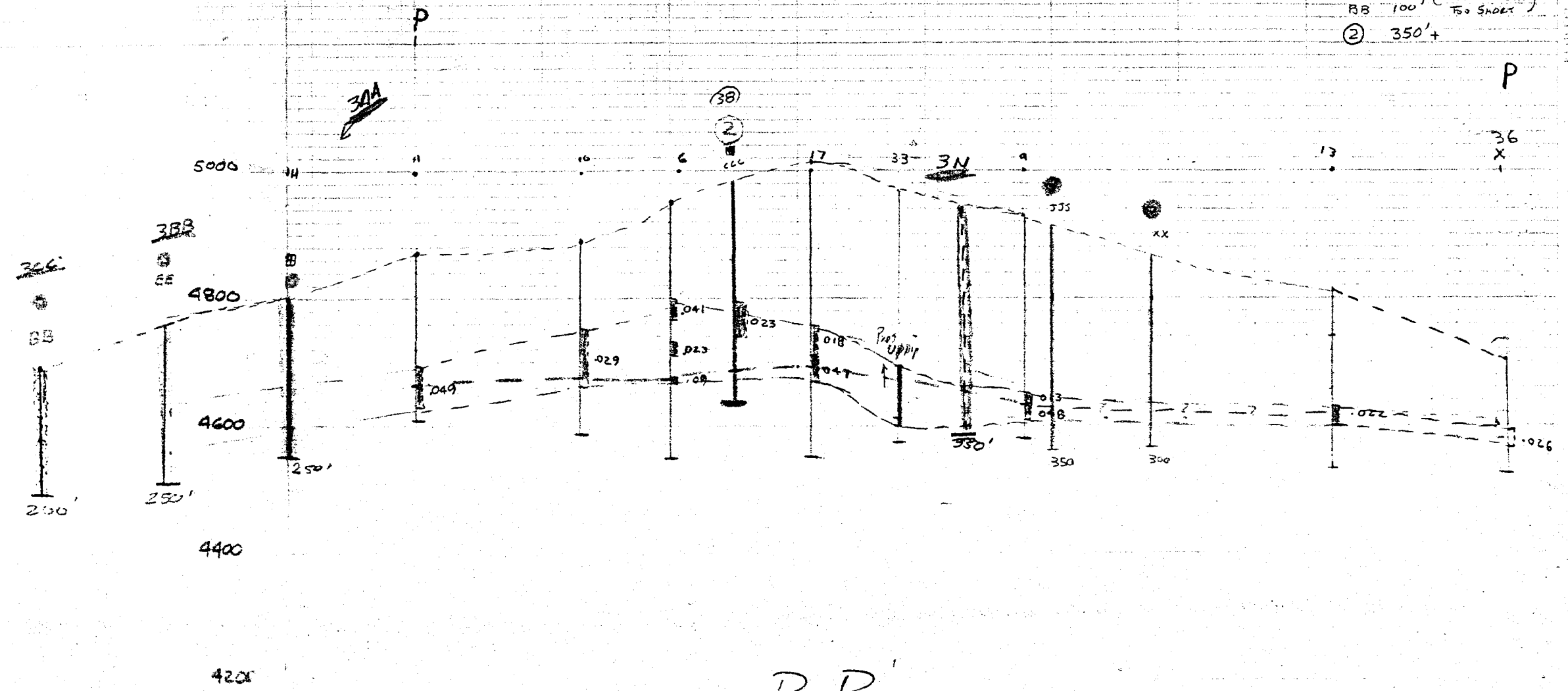


0-0'

- water table
- >.03
- <.03

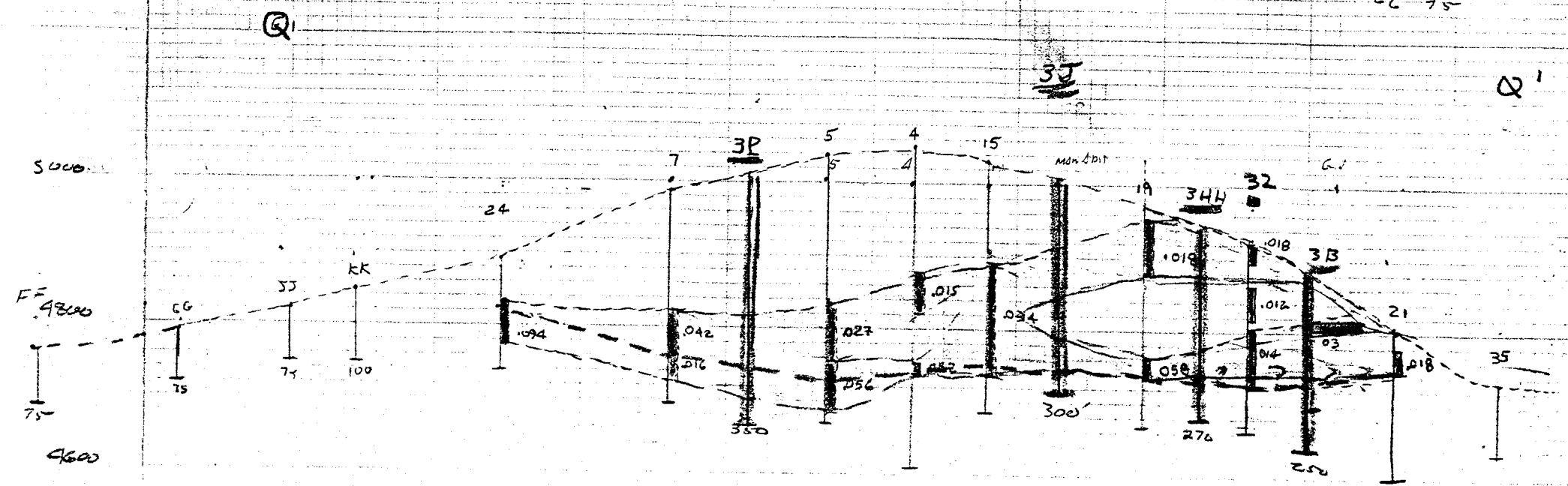
p-p 1"=200'

Proposed
HH 200'
ES 150' (Not on Section)
BB 100' To Shore
② 350'+



PROJECT RESOURCES
MADE IN U.S.A.

KK 75
JJ 75
CC 75



Q-Q'

yy = 150
EGG = 100

R
|

R

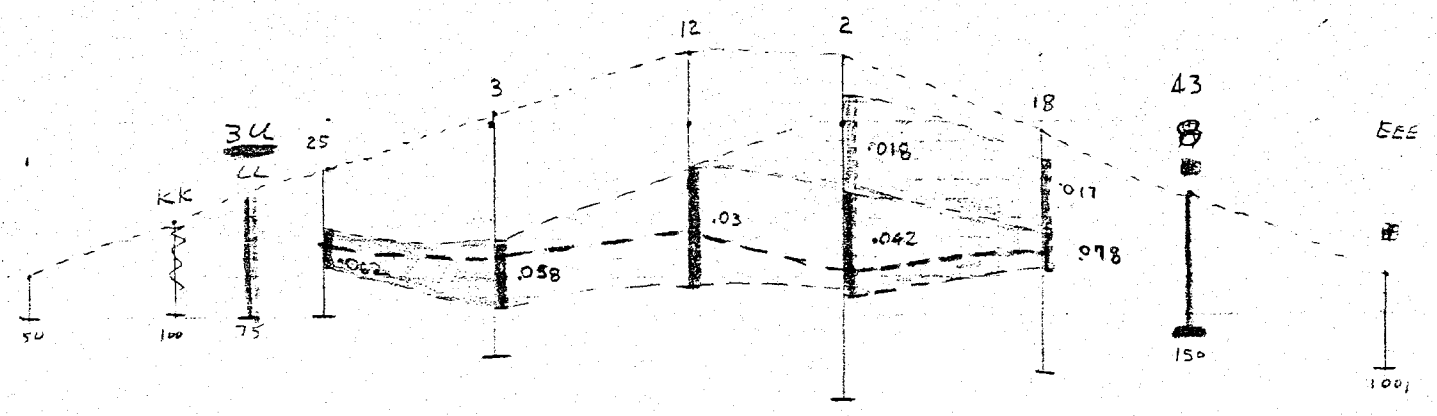
5000

4800

4600

4400

4200



R-R'

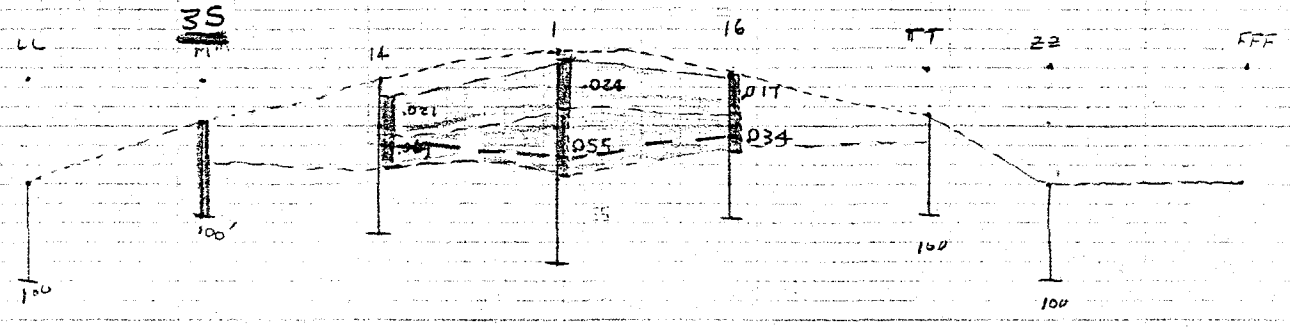
55'

MM - 100' ✓
LL - 100' ✓
TT - 100' ✓
ZZ - 100'

S

S

000
800
1600
2400



S-S'

August 3, 1989

J.D. Sell

Use of Terex/955
Yarnell Project
Yavapai County, AZ

As discussed, we plan to mobilize the Terex bulldozer and the 955 track loader currently on the property to do our site work and loading of the sample from the open cut. The hourly rate will be \$90 for the Terex and \$60 for the 955. Asarco will buy batteries (\$270) to get the machine running. This cost will be recovered in operating hours. Asarco will participate in repairs not to exceed \$2000.00.

The obvious advantages to using the Terex/955 are (1) Cost, \$90 vs. \$125/hr. for the D-8, (2) immediate accessibility in case of emergency (stuck drill, stuck truck) which would cause standby time on the drill crew.

In the event that the machine(s) becomes inoperable we will use the D-8 or a comparable machine as in the past.

MAM:mek

Mark A. Miller/mek
Mark A. Miller

PURCHASE ORDER

ASARCO INCORPORATED

DATE	7/31/89
ORDER NO.	T-206-9
REQUISITION NO.	

PLANT JOB NO.	
APPROPRIATION NO.	

~~ASARCO INCORPORATED~~
~~American Smelting And Refining Co.~~

TUCSON OFFICE
P. O. BOX 5747

1150 NORTH 7TH AVENUE
TUCSON, ARIZONA 85703

To: Y.O.U. 527 South Church Street Hazleton, PA 18201 (Phone: 717-454-4762)	
DATE REQUIRED AT DESTINATION:	
SHIPPING INTERVAL PROMISED	SELLER WILL SHIP BEFORE:
POINT OF SHIPMENT	TERMS:
F.O.B. POINT	

FINAL DESTINATION — PLEASE NOTE CONSIGNMENT BELOW
CONSIGNMENT — SELLER WILL SHIP TO
— RENDER BILLS AS PER ATTACHED SHIPPING INSTRUCTIONS —
SHIP VIA

QUANTITY	UNIT	SPECIFICATIONS	ITEM NO.	UNIT PRICE
		<p>Y.O.U., hereinafter referred to as the CONTRACTOR, will make Drill Pads and do any road work at Asarco's Yarnell Project in Arizona as directed by Asarco's representative(s) at the job site. Payment for work performed will be as billed once approved by Asarco's representative at the job site.</p> <p>CONTRACTOR will provide all necessary materials and equipment to complete the required work (TEREX/955 Loader).</p> <p>It is understood by both parties to this order that CONTRACTOR will perform all work in a diligent and workman-like manner and in accordance with recognized standard drilling practices. Asarco will not be charged for delays caused by failure of CONTRACTOR's equipment or personnel, and repairs not to exceed \$2000.</p> <p>CONTRACTOR and his personnel will make every effort to minimize disturbance of the natural environment, and crews will establish and maintain sanitation systems which are acceptable to Asarco and which comply with standards set by any government agency whether federal, state, county, or municipal which has jurisdiction over the site area.</p> <p>CONTRACTOR's particular attention is called to Clause Eleven (11) on the reverse of this order. Before entering upon Asarco's property to perform this work, CONTRACTOR will submit acceptable evidence of compliance with the Workmen's Compensation Laws of the State of Arizona, and, on Asarco's standard insurance form or your own similar form, acceptable evidence of other required insurance.</p>		



IMPORTANT

Attached Acknowledgment ~~Copy~~ must be completed and returned promptly.

Orig. & Acknowledgment Copy: Y.O.U.
CC: J.D. Sell, W.D. Gay, Acctg Dept.

PLEASE ENTER OUR ORDER FOR THE ITEMS SPECIFIED ABOVE, SUBJECT TO ALL INSTRUCTIONS AND PROVISIONS ON REVERSE SIDE.

J.D. Sell, Manager, SWED

INSTRUCTIONS

INVOICE: Priced invoices in the requisite number giving the correct purchase order and requisition numbers, together with required Bills of Lading, must be forwarded on day of each shipment AS PER SPECIAL SHIPPING INSTRUCTIONS ACCOMPANYING THIS ORDER, otherwise delay in payment of account may result.

TERMS: As previously arranged or specified on this order. Care must be exercised to show cash discount, if allowed, on face of invoice.

PROVISIONS

1. **ACCEPTANCE:** Acceptance of this order constitutes acceptance of all terms herein stated. All representations and warranties by the seller relating to the subject-matter of this order or its performance shall be binding on the seller as if fully set forth herein, and shall survive inspection and acceptance of the goods ordered. No acknowledgment or acceptance of this order or any other communication by the seller shall vary or add any terms or conditions to those contained herein and any such attempted modification or addition which is not accepted in writing by the buyer, shall be void and may be disregarded without further notice or disclaimer.

2. **PRICES:** This order must not be filled at higher prices than last quoted without authority of the buyer.

3. **SHIPMENTS:** All materials must be forwarded by the route designated and seller will be held strictly accountable for any deviation therefrom.

When the material covered by this order shall aggregate a carload shipment or more, the seller must forward in carload lots, unless duly authorized in writing by the buyer to ship in less than carloads. If this order aggregates less than a minimum carload, seller must forward the entire quantity at one time unless otherwise authorized in writing by the buyer.

When blocking or dunnage, etc., not constituting a part of the car are used to protect and make shipments secure in transit, seller must show on Bills of Lading, separately, the weights of such materials, provided the lading shall aggregate a minimum carload or more, and will be held responsible for failure to comply with this rule.

Shipments will not be considered as completed until Bill of Lading, or express or mail receipt is received.

4. **PACKING AND CARTAGE CHARGES:** No charge will be allowed for packing, boxing or cartage, unless agreed upon at the time of purchase; damage to any material not properly packed to insure adequate protection in transit will be charged to the seller. All packing must conform with tariff or classification requirements so as to secure lowest possible freight rates. It is understood the buyer will receive the benefit of any decrease in freight charges between time of quotation and date of shipment, where freight enters into the price originally quoted.

5. **QUALITY AND INSPECTION:** All material furnished must be as specified and will be subject to inspection and approval of buyer after delivery. The right is reserved to reject and return at the risk and expense of the seller such portion of any shipment which may be defective or fail to comply with the specifications without invalidating the remainder of the order. If rejected it may be held for disposition at the expense and risk of the seller.

6. **QUANTITY:** The specific quantity ordered must not be changed without buyer's permission in writing.

7. **NON-PERFORMANCE:** Buyer reserves the right to cancel this order or any portion of same if delivery is not made when and as specified, time being of the essence of this order, and charge seller for any loss entailed.

8. **PATENTS:** The seller hereby guarantees the buyer against all losses of profits, damages, or both, resulting from any patent infringement by reason of purchasing or using goods covered by this order, or by reason of any loss suffered in not being able, without liability, to use such goods. This guarantee also includes the reimbursement to the buyer of all litigation costs which it may suffer as the result of any suit respecting the purchase or use of such goods, in addition to the recoveries which may be secured against it of profits and/or damages.

GENERAL:

9. The material on this order must be furnished only by the person or firm to whom the order is addressed unless otherwise authorized by the buyer.

10. No drafts for purchases made will be honored unless by agreement.

11. If it becomes necessary for the seller or any agent, contractor, or employee thereof to enter upon the property of the buyer in order to construct, inspect or deliver hereunder, the seller hereby agrees to protect the buyer's property and all persons thereon from injury, damage or loss, and the seller shall save harmless and indemnify the buyer from and against any expense, loss or damage on account of any claim, demand or suit made by any person whomsoever, including any employee of the buyer, which is in any way caused by or connected with or grows out of the performance hereunder by the seller or any agent, contractor or employee thereof; provided however that the seller shall not be required to indemnify the buyer against any loss caused solely by the negligence or willful fault of the buyer or its employees. If the seller performs any work hereunder knowing it to be contrary to any local law, ordinance, rule and regulation, the seller shall bear all costs arising therefrom. Seller to carry Liability Insurance and to carry Workmen's Compensation Insurance as provided by the laws of the State in which the work is performed and further, is to obtain a certificate for same, which is to be furnished for the file of the buyer. If for any reason the seller's or any subcontractor's employees or agents may acquire a status imposing liability on the buyer for employer's contributions or taxes under the Federal Social Security Act or under any State Unemployment Insurance, Old Age Benefit, or similar Acts, the seller shall be exclusively liable for, and shall indemnify the buyer against, the same and does agree to comply with all laws and regulations so as to relieve the buyer from any and all liability therefor or the responsibility of making any reports or keeping any records with respect thereto.

12. In accepting this order the seller certified that these goods were produced in compliance with all applicable requirements of Sections 6, 7 and 12 of the Fair Labor Standards Act of 1938, as amended, and of the regulations and orders of the United States Department of Labor issued under Section 14 thereof. It will be necessary in order for us to honor your future invoices to us that the above clause or a substantial equivalent thereof appear on your invoices.

13. By acceptance of this order, seller warrants that the prices specified do not exceed the maximum prices established under any applicable United States law or regulation thereunder.

you

YANNUZZI OVERLAND UNLIMITED
527 SOUTH CHURCH STREET
HAZLETON, PA 18201

527 South Church Street
Hazleton, Pennsylvania 18201
Phone: (717) 454-4762 / 800-248-4762
FAX# 717-454-5688

TRANSMITTAL COVER SHEET

TO: Mark Miller Re: Yarnell Mine

FROM: Jack Yannuzzi

NUMBER OF PAGES 2 (including cover sheet)

ASARCO Inc

JUL 31 1989

SW Explo...

**COMMERCIAL GENERAL LIABILITY COVERAGE PART
MEMORANDUM OF INSURANCE DECLARATIONS**

Coverage provided by the
Granite State Insurance Company

Forming a part of

Policy No. **CDO 644-62-09**

Named Insured

• **Same**

Policy Period: From **11/30/88** to **11/30/89**

at 12:01 A.M. Standard Time at your mailing address shown on the Common Declarations.

IN RETURN FOR THE PAYMENT OF THE PREMIUM, AND SUBJECT TO ALL THE TERMS OF THIS POLICY, WE AGREE WITH YOU TO PROVIDE THE INSURANCE AS STATED IN THIS POLICY.

LIMITS OF INSURANCE

General Aggregate Limit (Other Than Products—Completed Operations)	\$ 1,000,000	
Products—Completed Operations Aggregate Limit	\$ 500,000	
Personal and Advertising Injury Limit	\$ 500,000	
Each Occurrence Limit	\$ 500,000	
Fire Damage Limit	\$ 50,000	Any One Fire
Medical Expense Limit	\$ 5,000	Any One Person

RETROACTIVE DATE (CG 00 02 only)

Coverage A of this Insurance does not apply to "bodily injury" or "property damage" which occurs before the Retroactive Date if any, shown here: **None**

(Enter Date or "None" if no Retroactive Date applies)

DESCRIPTION OF BUSINESS AND LOCATION OF PREMISES

Form of Business:

Individual Joint Venture Partnership Organization (Other than Partnership or Joint Venture)

Business Description:

Fuel Oil Dealer

Location of All Premises You Own, Rent or Occupy:

**Rt. 309 Banks Twp., PA
527-535 S. Church St., Hazleton, PA**

PREMIUM

Classification	Code No.	Premium Basis	Rate		Advance Premium	
			Pr/Co	All Other	Pr/Co	All Other
Building or Premises bank or office—Mercantile or MFG (Lessor's risk only)	61211	264 Area			\$ Incl.	\$ Incl.
Gasoline Station—Full Service	13450	715,000 Sales			Incl.	Incl.
Fuel Oil Dealer	13202	1,310,000 Sales			Incl.	Incl.
Truckers	99793	10,400 Payroll			Incl.	Incl.
Total Advance Premium					\$ Incl.	

Premium shown is payable: \$ _____ at inception; \$ _____ 1st Anniversary; \$ _____ 2nd Anniversary

FORMS AND ENDORSEMENTS

Forms and Endorsements applying to this Coverage Part and made part of this policy at time of issue:

**CL100 (11/85), CL130 (1/86), CL175 (11/85)
CL131 (2/86), GU276a (11/85), LD6291 (3/88)**

22536

THIS MEMORANDUM OF INSURANCE IS FOR INFORMATION ONLY. IT IS NOT A CONTRACT OF INSURANCE BUT ATTESTS THAT A POLICY AS NUMBERED HEREIN, AND AS IT STANDS AT THE DATE OF THIS MEMORANDUM OF INSURANCE, HAS BEEN ISSUED BY THE COMPANY. SAID POLICY IS SUBJECT TO CHANGE BY ENDORSEMENT AND TO TRANSFER AND CANCELLATION IN ACCORDANCE WITH ITS TERMS.

ASARCO

Southwestern Exploration Division

JDS

August 3, 1989

J.D. Sell

Bulk Sample Shipment
Yarnell Project
Yavapai County, AZ

AR Pflugar Trucking out of Wickenburg will haul the sample to McClelland Labs in Sparks, Nevada (702-356-1300). Jack MacPartland of McClelland will be the contact person. Cost of shipment will be \$750.00. Payable by a Purchase Order. (T-218-9).

Mark A. Miller / mek

MAM:mek

Mark A. Miller

cc: C.L. Snow

August 3, 1989

J.D. Sell

Check Sampling
Low Grade Zone in the
Main Tunnel
Yarnell Project
Yavapai County, AZ

Per my memo of 7/26/89 on Bulk Sampling, it was decided to take a low grade sample from the underground in the main tunnel. To further verify the grade of the intervals 220-230, 230-240, a series of channels were cut with an air hammer (see attached diagrams).

The check of 220-230 (composite of four channel samples) was .053 vs. .03 opt Au obtained in prior sampling. Upon reexamination of the face a quartz vein was seen which was cut by 3 of 4 channels (A, B & D). This would probably influence the composite grade. In 230-240 the composite grade was .02 vs. .02 from prior sampling.

Two full slabbing runs 2' x 4' x 7' will be pulled between 230-240 to achieve the low grade sample (.02 opt Au).

The bulk sampling program will begin on 7/30/89 with anticipated completion by week's end.

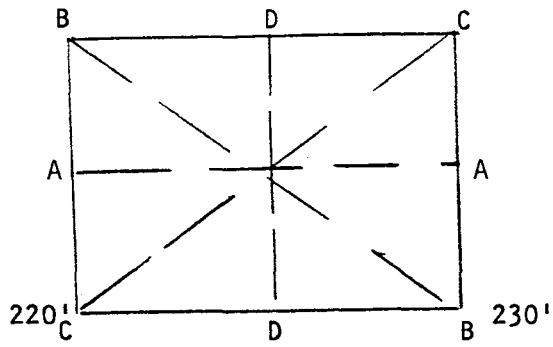
Mark A. Miller/mek

Mark A. Miller

MAM:mek

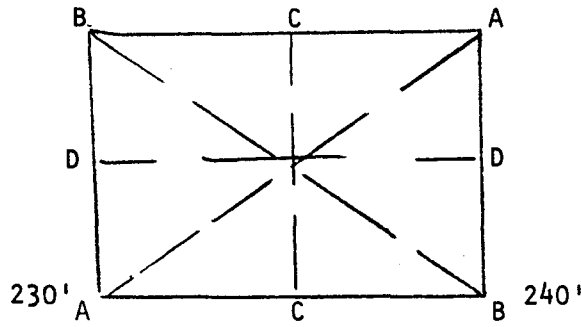
cc: W.L. Kurtz
D.F. Skidmore
D.E. Crowell
W.D. Gay

Note: Mark to resample faces of his blasted core underground & in open-cut to compare with a) surface of face sample (original); b) fresh met composite; c) new face sample results. JDS 8/7/89



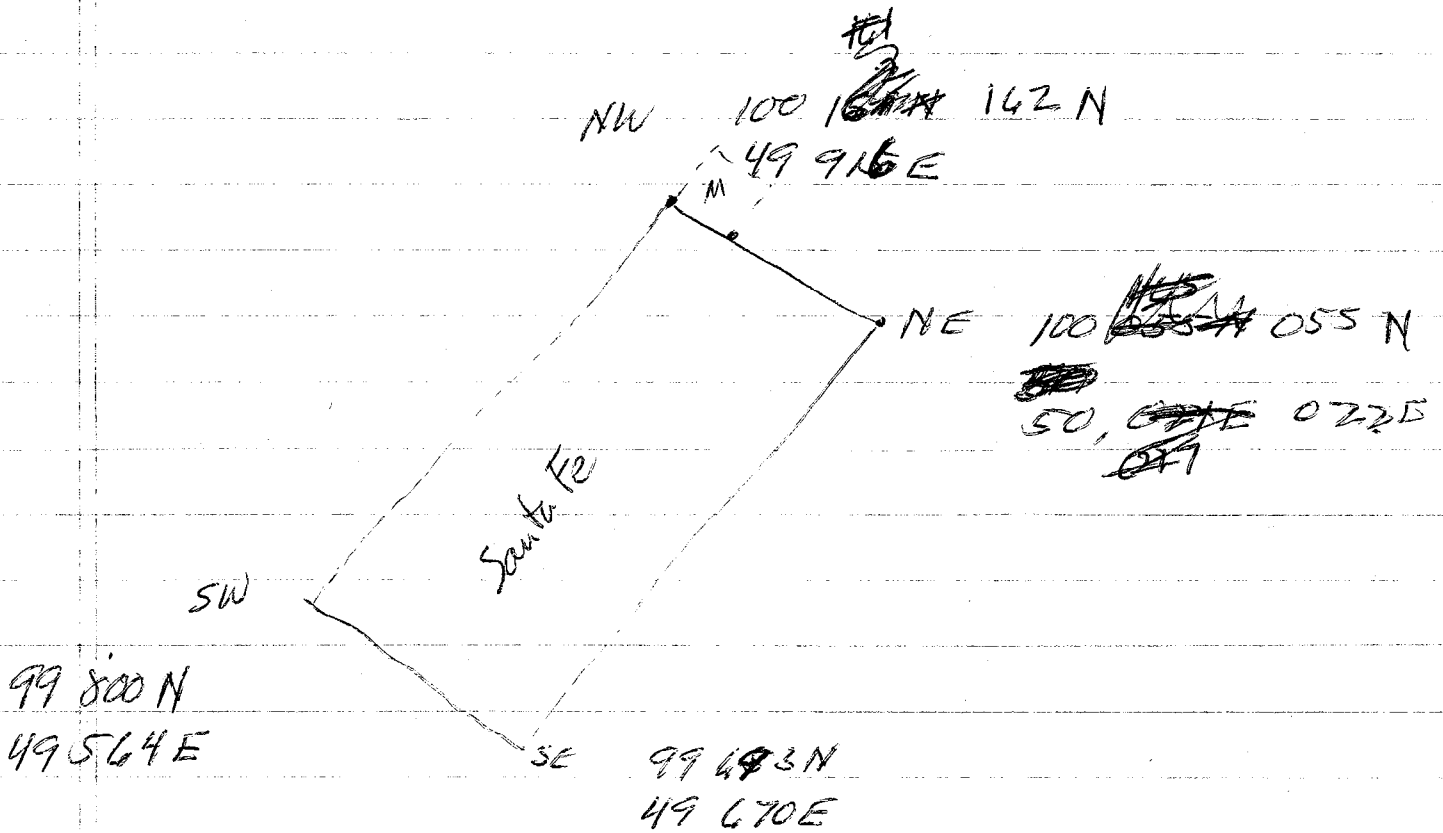
Looking NE

A	10'	@	.078	} .053
B	12'	@	.082	
C	12'	@	.012	
D	7'	@	.041	



Looking NE

A	12'	@	.027	} .02
B	12'	@	.009	
C	7'	@	.010	
D	10'	@	.034	



Call in 8/4/89 by MAW
 from WPG Notes

ASARCO

Southwestern Exploration Division

JDS

August 4, 1989

Dave Skidmore/Don Crowell

Costs
Yarnell Project
Yavapai Co., AZ

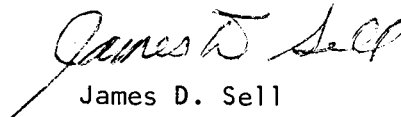
Mr. Graybeal has asked if you would think about and provide, at some time prior to a meeting on about August 21, for a 2000 tpd operation at Yarnell:

Such things as:

Capital Costs
Contract Mining
Contract Crushing
Operating
Metallurgical
Thoughts on mining 0.01-0.02 opt material and leaching,
uncrushed, on separate pads.
And other things you think need to be considered.

Thanks.

JDS:mek


James D. Sell

cc: F.T. Graybeal
W.L. Kurtz

ASARCO

JDS

Exploration Department

Southwestern United States Division

James D. Sell
Manager

August 4, 1989

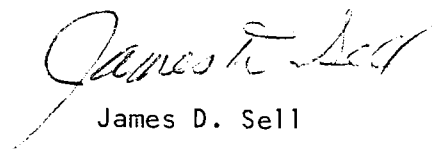
Y.O.U.
527 South Church Street
Hazleton, PA 18201

YARNELL PROJECT
P.O. T-206-9

Gentlemen:

Enclosed is Asarco's purchase order No. T-206-9 for work at Asarco's Yarnell Project in Arizona. Please sign the acknowledgment copy and return it to me. The original purchase order is for your records.

Sincerely yours,



James D. Sell

JDS:mek
Enc.

cc: C.L. Snow
W.D. Gay
M.A. Miller

INSTRUCTIONS

INVOICE: Priced invoices in the requisite number giving the correct purchase order and requisition numbers, together with required Bills of Lading, must be forwarded on day of each shipment AS PER SPECIAL SHIPPING INSTRUCTIONS ACCOMPANYING THIS ORDER, otherwise delay in payment of account may result.

TERMS: As previously arranged or specified on this order. Care must be exercised to show cash discount, if allowed, on face of invoice.

PROVISIONS

1. ACCEPTANCE: Acceptance of this order constitutes acceptance of all terms herein stated. All representations and warranties by the seller relating to the subject-matter of this order or its performance shall be binding on the seller as if fully set forth herein, and shall survive inspection and acceptance of the goods ordered. No acknowledgment or acceptance of this order or any other communication by the seller shall vary or add any terms or conditions to those contained herein and any such attempted modification or addition which is not accepted in writing by the buyer, shall be void and may be disregarded without further notice or disclaimer.

2. PRICES: This order must not be filled at higher prices than last quoted without authority of the buyer.

3. SHIPMENTS: All materials must be forwarded by the route designated and seller will be held strictly accountable for any deviation therefrom.

When the material covered by this order shall aggregate a carload shipment or more, the seller must forward in carload lots, unless duly authorized in writing by the buyer to ship in less than carloads. If this order aggregates less than a minimum carload, seller must forward the entire quantity at one time unless otherwise authorized in writing by the buyer.

When blocking or dunnage, etc., not constituting a part of the car are used to protect and make shipments secure in transit, seller must show on Bills of Lading, separately, the weights of such materials, provided the lading shall aggregate a minimum carload or more, and will be held responsible for failure to comply with this rule.

Shipments will not be considered as completed until Bill of Lading, or express or mail receipt is received.

4. PACKING AND CARTAGE CHARGES: No charge will be allowed for packing, boxing or cartage, unless agreed upon at the time of purchase; damage to any material not properly packed to insure adequate protection in transit will be charged to the seller. All packing must conform with tariff or classification requirements so as to secure lowest possible freight rates. It is understood the buyer will receive the benefit of any decrease in freight charges between time of quotation and date of shipment, where freight enters into the price originally quoted.

5. QUALITY AND INSPECTION: All material furnished must be as specified and will be subject to inspection and approval of buyer after delivery. The right is reserved to reject and return at the risk and expense of the seller such portion of any shipment which may be defective or fail to comply with the specifications without invalidating the remainder of the order. If rejected it may be held for disposition at the expense and risk of the seller.

6. QUANTITY: The specific quantity ordered must not be changed without buyer's permission in writing.

7. NON-PERFORMANCE: Buyer reserves the right to cancel this order or any portion of same if delivery is not made when and as specified, time being of the essence of this order, and charge seller for any loss entailed.

8. PATENTS: The seller hereby guarantees the buyer against all losses of profits, damages, or both, resulting from any patent infringement by reason of purchasing or using goods covered by this order, or by reason of any loss suffered in not being able, without liability, to use such goods. This guarantee also includes the reimbursement to the buyer of all litigation costs which it may suffer as the result of any suit respecting the purchase or use of such goods, in addition to the recoveries which may be secured against it of profits and/or damages.

GENERAL:

9. The material on this order must be furnished only by the person or firm to whom the order is addressed unless otherwise authorized by the buyer.

10. No drafts for purchases made will be honored unless by agreement.

11. If it becomes necessary for the seller or any agent, contractor, or employee thereof to enter upon the property of the buyer in order to construct, inspect or deliver hereunder, the seller hereby agrees to protect the buyer's property and all persons thereon from injury, damage or loss, and the seller shall save harmless and indemnify the buyer from and against any expense, loss or damage on account of any claim, demand or suit made by any person whomsoever, including any employee of the buyer, which is in any way caused by or connected with or grows out of the performance hereunder by the seller or any agent, contractor or employee thereof; provided however that the seller shall not be required to indemnify the buyer against any loss caused solely by the negligence or willful fault of the buyer or its employees. If the seller performs any work hereunder knowing it to be contrary to any local law, ordinance, rule and regulation, the seller shall bear all costs arising therefrom. Seller to carry Liability Insurance and to carry Workmen's Compensation Insurance as provided by the laws of the State in which the work is performed and further, is to obtain a certificate for same, which is to be furnished for the file of the buyer. If for any reason the seller's or any subcontractor's employees or agents may acquire a status imposing liability on the buyer for employer's contributions or taxes under the Federal Social Security Act or under any State Unemployment Insurance, Old Age Benefit, or similar Acts, the seller shall be exclusively liable for, and shall indemnify the buyer against, the same and does agree to comply with all laws and regulations so as to relieve the buyer from any and all liability therefor or the responsibility of making any reports or keeping any records with respect thereto.

12. In accepting this order the seller certified that these goods were produced in compliance with all applicable requirements of Sections 6, 7 and 12 of the Fair Labor Standards Act of 1938, as amended, and of the regulations and orders of the United States Department of Labor issued under Section 14 thereof. It will be necessary in order for us to honor your future invoices to us that the above clause or a substantial equivalent thereof appear on your invoices.

13. By acceptance of this order, seller warrants that the prices specified do not exceed the maximum prices established under any applicable United States law or regulation thereunder.

ASARCO

Exploration Department
Western USA

W. L. Kurtz
Manager

VIA FAX 604-685-8045

August 4, 1989

Mr. Christopher Moat, President
NORGOLD RESOURCES INC.

Yarnell Project
Weekly Information

Dear Mr. Moat:

We are FAXing you assay results received this week, updated drill hole survey data and a copy of map showing the location of holes YM-43 and YM-44.

Sincerely,



WLK:mek

W. L. Kurtz

cc: J.D. Sell

YM-42	65.	70.	.NIL
YM-42	70.	75.	.001
YM-42	75.	80.	.016
YM-42	80.	85.	.038
YM-42	85.	90.	.002
YM-42	90.	95.	.001
YM-42	95.	100.	.TR
YM-42	100.	105.	.TR
YM-42	105.	110.	.001
YM-42	110.	115.	.011
YM-42	115.	120.	.036
YM-42	120.	125.	.027
YM-42	125.	130.	.003
YM-42	130.	135.	.001
YM-42	135.	140.	.001
YM-42	140.	145.	.TR
YM-42	145.	150.	.008
YM-42	150.	155.	.002
YM-42	155.	160.	.NIL
YM-42	160.	165.	.TR
YM-42	165.	170.	.016
YM-42	170.	175.	.013
YM-42	175.	180.	.002
YM-42	180.	185.	.003
YM-42	185.	190.	.002
YM-42	190.	195.	.001
YM-42	195.	200.	.TR
YM-42	200.	205.	.TR
YM-42	205.	210.	.001
YM-42	210.	215.	.002
YM-42	215.	220.	.001
YM-42	220.	225.	.002
YM-42	225.	230.	.002
YM-42	230.	235.	.003
YM-42	235.	240.	.003
YM-42	240.	245.	.002
YM-42	245.	250.	.002
YM-42	250.	255.	.001
YM-42	255.	260.	.TR
YM-42	260.	265.	.009
YM-42	265.	270.	.004
YM-42	270.	275.	.003
YM-42	275.	280.	.016
YM-42	280.	285.	.008
YM-42	285.	290.	.012
YM-42	290.	295.	.002
YM-42	295.	300.	.008
YM-42	300.	305.	.TR
YM-42	305.	310.	.TR
YM-42	310.	315.	.003
YM-42	315.	320.	.002
YM-42	320.	325.	.004

YM-42	325.	330.	.003
YM-42	330.	335.	.077
YM-42	335.	340.	.035
YM-42	340.	345.	.004
YM-42	345.	350.	.002
YM-42	350.	355.	.001
YM-42	355.	360.	.001
YM-42	360.	365.	.004
YM-42	365.	370.	.TR
YM-42	370.	375.	.001
YM-42	375.	380.	.001
YM-42	380.	385.	.001
YM-42	385.	390.	.TR
YM-42	395.	400.	Not Received.
YM-42	400.	405.	.TR
YM-42	405.	410.	.TR

Fletcher Standard

YM-42	11.	14.-A	.017
YM-42	96.	99.-B	Lost Refiring
YM-42	183.	184.-A	.025
YM-42	291.	293.	.008

YM-43	0.	5.	.008
YM-43	5.	10.	.017
YM-43	10.	15.	.007
YM-43	15.	20.	.007
YM-43	20.	25.	.003
YM-43	25.	30.	.002
YM-43	30.	35.	.015
YM-43	35.	40.	.006
YM-43	40.	45.	.003
YM-43	45.	50.	.007
YM-43	50.	55.	.003
YM-43	55.	60.	.002
YM-43	60.	65.	.001
YM-43	65.	70.	.028
YM-43	70.	75.	.121
YM-43	75.	80.	.069
YM-43	80.	85.	.032
YM-43	85.	90.	.003
YM-43	90.	95.	.007
YM-43	95.	100.	.TR
YM-43	100.	105.	.003 -100=100% -200=81%
YM-43	105.	110.	.002
YM-43	110.	115.	.NIL
YM-43	115.	120.	.TR
YM-43	120.	125.	.TR
YM-43	125.	130.	.TR
YM-43	130.	135.	.NIL
YM-43	135.	140.	.NIL

Fletcher Standard

YM-43	11.	13.-A	.024
YM-43	51.	54.-B	.007
YM-43	91.	94.-A	.022
YM-43	121.	124.-B	.007
YM-44	0.	5.	.027
YM-44	5.	10.	.TR
YM-44	10.	15.	.002
YM-44	15.	20.	.006
YM-44	20.	25.	.004
YM-44	25.	30.	.001
YM-44	30.	35.	.002
YM-44	35.	40.	.001
YM-44	40.	45.	.007
YM-44	45.	50.	.005
YM-44	50.	55.	.005
YM-44	55.	60.	.008
YM-44	60.	65.	.002
YM-44	65.	70.	.002
YM-44	70.	75.	.001
YM-44	75.	80.	.006
YM-44	80.	85.	.021
YM-44	85.	90.	.004
YM-44	90.	95.	.003
YM-44	95.	100.	.001
YM-44	100.	105.	.010
YM-44	105.	110.	.002
YM-44	110.	115.	.005
YM-44	115.	120.	.064
YM-44	120.	125.	Missing
YM-44	125.	130.	.009
YM-44	130.	135.	.012
YM-44	135.	140.	.012
YM-44	140.	145.	.028
YM-44	145.	150.	.002
YM-44	150.	155.	.028
YM-44	155.	160.	.008
YM-44	160.	165.	.007
YM-44	165.	170.	.070
YM-44	170.	175.	.041
YM-44	175.	180.	.058
YM-44	180.	185.	.051
YM-44	185.	190.	.038
YM-44	190.	195.	.014
YM-44	195.	200.	.026
YM-44	200.	205.	.012
YM-44	205.	210.	.014
YM-44	210.	215.	.016
YM-44	215.	220.	.022
YM-44	220.	225.	.018
YM-44	225.	230.	.014

YM-44	230.	235.	.009	
YM-44	235.	240.	.036	
YM-44	240.	245.	.025	
YM-44	245.	250.	.083	Screen -100=100%
				-200=78%
YM-44	250.	255.	.264	
YM-44	255.	260.	.260	
YM-44	260.	265.	.191	
YM-44	265.	270.	.009	
YM-44	270.	275.	.003	
YM-44	275.	280.	.005	
YM-44	280.	285.	.003	
YM-44	285.	290.	.001	
YM-44	290.	295.	.002	
YM-44	295.	300.	.001	
YM-44	300.	305.	.001	
YM-44	305.	310.	.NIL	

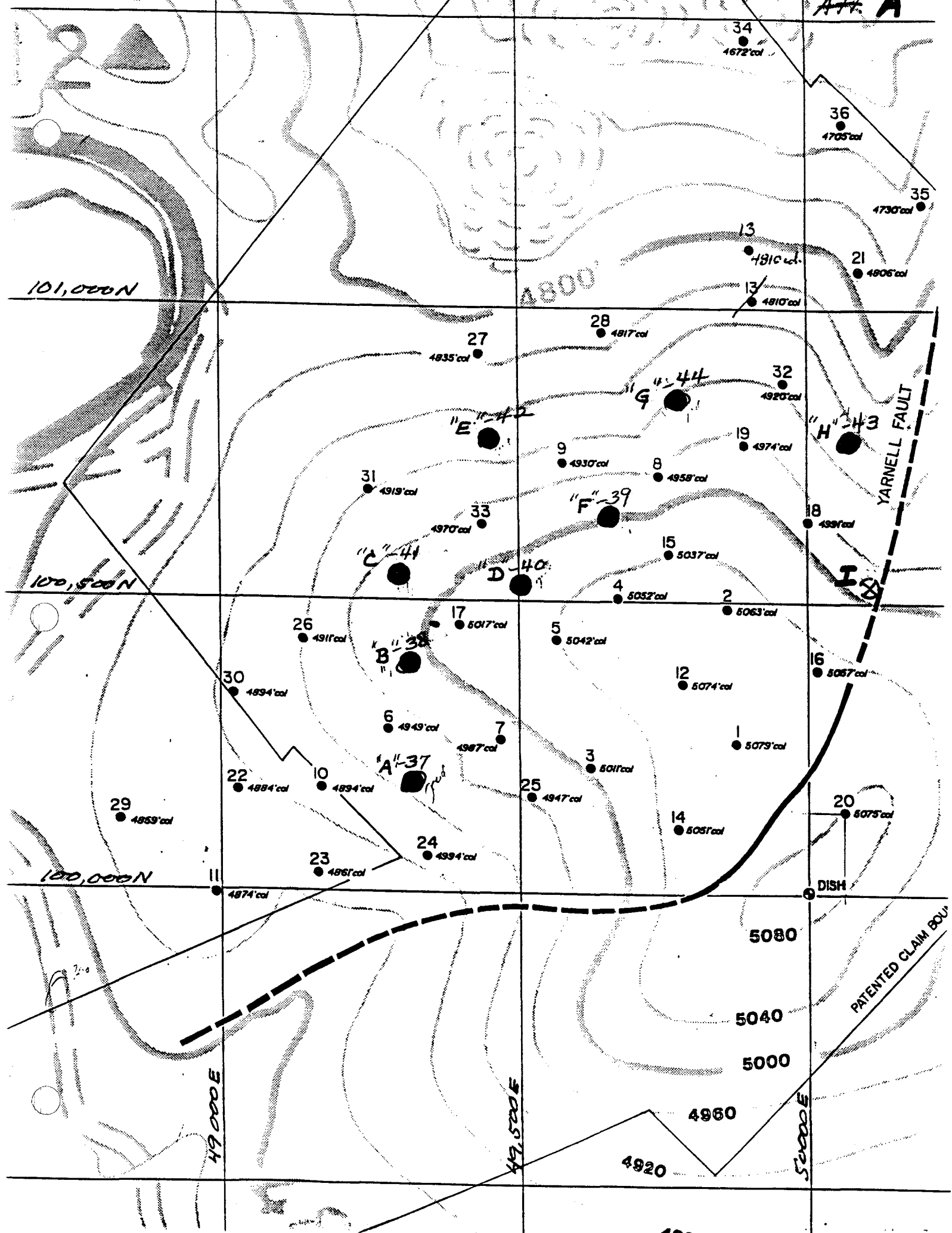
Fletcher Standard

YM-44	7.	9.-A	.022
YM-44	103.	104.-B	.008
YM-44	197.	199.-A	.025
YM-44	251.	254.-B	.008

YARNELL DRILL HOLE
SURVEY DATA

<u>DRILL HOLE</u> <u>NUMBER</u>	<u>COORDINATES</u>		<u>ELEVATION</u>
	<u>NORTH</u>	<u>EAST</u>	
YM-1	100,255.5	49,875.4	5,078.5
YM-2	100,490.7	49,860.6	5,063.0
YM-3	100,218.5	49,625.8	5,010.7
YM-4	100,505.3	49,675.8	5,052.3
YM-5	100,437.1	49,565.2	5,041.8
YM-6	100,278.7	49,286.7	4,949.0
YM-7	100,260.5	49,471.6	4,986.9
YM-8	100,717.9	49,749.2	4,957.9
YM-9	100,734.8	49,577.2	4,930.2
YM-10	100,177.0	49,171.1	4,893.9
YM-11	99,998.0	48,983.2	4,874.0
YM-12	100,356.5	49,788.4	5,073.6
YM-13	101,099.2	49,909.0	4,810.1
YM-14	100,110.1	49,780.1	5,050.5
YM-15	100,581.8	49,765.5	5,036.8
YM-16	100,383.9	50,017.0	5,057.1
YM-17	100,458.2	49,405.8	5,017.2
YM-18	100,637.8	50,002.4	4,990.8
YM-19	100,769.4	49,894.2	4,973.5
YM-20	100,136.5	50,065.9	5,074.7
YM-21	101,062.1	50,094.4	4,806.2
YM-22	100,172.6	49,027.2	4,884.0
YM-23	100,027.2	49,165.2	4,860.9
YM-24	100,062.9	49,349.4	4,893.5
YM-25	100,164.1	49,521.7	4,947.3
YM-26	100,427.5	49,139.4	4,911.0
YM-27	100,923.0	49,436.3	4,835.4
YM-28	100,959.3	49,648.0	4,817.0
YM-29	100,118.7	48,832.5	4,858.6
YM-30	100,331.8	49,022.5	4,894.1
YM-31	100,684.2	49,253.6	4,918.6
YM-32	100,873.5	49,960.0	4,920.2
YM-33	100,629.8	49,440.8	4,969.7
YM-34	101,468.1	49,898.0	4,671.9
YM-35	101,181.8	50,199.4	4,729.8
YM-36	101,319.7	50,064.8	4,705.2
YM-37	100,178.0	49,314.9	4,925.1
YM-38	100,374.7	49,312.5	4,983.9
YM-39	100,587.8	49,594.9	5,010.7
YM-40	100,501.3	49,506.1	5,024.4
YM-41	100,564.3	49,330.1	4,978.4
YM-42	100,760.1	49,454.9	4,909.6
YM-43	100,793.2	50,066.0	4,907.9
YM-44	100,850.2	49,780.1	4,910.5
YM-45	100,551.4	50,110.8	4,980.4

Att. A



August 7, 1989

J.D. Sell

Yarnell Project
New Hire
Stephen G. Keehner

I have hired Stephen G. Keehner to replace Steve Duncan as sampler on the Yarnell Project. He will be paid \$7.50 per hour.

Steve has worked with Bill Gay quite extensively as a surveyor helper and is very capable of handling any job. All the paper work on his employment has been left with Coy Snow.

MAM:mek



Mark A. Miller

August 7, 1989

R.L. Brown
New York Office

Yarnell Project
Yavapai County, AZ

I submit an application for Supplemental Exploration Appropriation, Form 302-MB, for 10,000 feet of drilling at the Yarnell Project, EA-0444, Yavapai County, Arizona.

The previous drilling has indicated some 4 million tons at 0.04-0.05 opt gold with a 3-4/1 stripping ratio with some higher grade and low stripping in the early years.

A 6-10 ton column-leach test is underway and the results on the lower-grade ore in the hanging wall may show that the material can be processed as low-grade leach and the overall stripping ratio reduced.

The present wide-spaced drilling, approximately 200-foot centers, shows a good continuity of mineralization but with a variable grade and thickness between holes. Similar variation in grade along strike was noted in a detail sampling of the small (200' long) open-cut.

Additional drilling is recommended to test the extension along strike which could add a half million tons or so and in-fill drilling of the main zone to permit resolvment and confirmation of thickness-grade.

Table 1 is the estimated costs for the ten thousand feet of drilling and support through the end of the year.

Figure 1 is the Drilling Progress Map with the location, elevations, and values of the 45 holes drilled to date. A few of the proposed holes are also indicated to show the approximate 100' centers proposed in the main zone. Drilling is continuing on wide-spaced centers for testing the southwest extension.

I look forward to the confirmation for the additional drilling at Yarnell.

JDS:mek
Attachments


James D. Sell

cc: W.L. Kurtz
M.A. Miller
C.L. Snow (Form 302-M only)

APPLICATION FOR SUPPLEMENTAL EXPLORATION APPROPRIATION

..... August 7, 1989..... Originating Office .. Tucson

Application is hereby made for supplemental Appropriation to cover cost, in excess of original estimate, of work authorized by New York.

No. EA-0444-02, Yarnell Project, Yavapai County, Arizona

Present total Estimated Cost (Form 302-MA attached)	\$ 570,000
Amount previously authorized (date thru 4/19/89)	\$ 340,000
Balance for which Authorization is now requested	\$ 230,000

ADDITIONAL WORK CONTEMPLATED:

- 10,000 feet of reverse circulation drilling
- 6-10 ton sample, column leach tests
- Mapping and surveying
- Land payments.

EXPLANATION OF INCREASED COST:

Drilling on 200-foot centers in 45 holes with 13,000 feet of reverse circulation drilling, has returned encouraging, but mixed, gold intercepts. The configurations support the concept of an open-pit operation, and the preliminary bottle roll tests suggest heap-leaching metallurgy.

The proposed drilling will test for extensions of mineralization along strike and test within the gold zone discovered in the previous drilling.

Reviewed by *C. L. Snow* ACC'T. MGR. OR CHIEF ACCNT.

Recommended by *James D. Sell* SUPERVISOR
James D. Sell

Approved by CONTROLLER

Account Chargeable to TO BE FILLED IN BY CONTROLLER

Approved by VICE PRESIDENT

Approved by Advisory Committee

Approved by Board of Directors

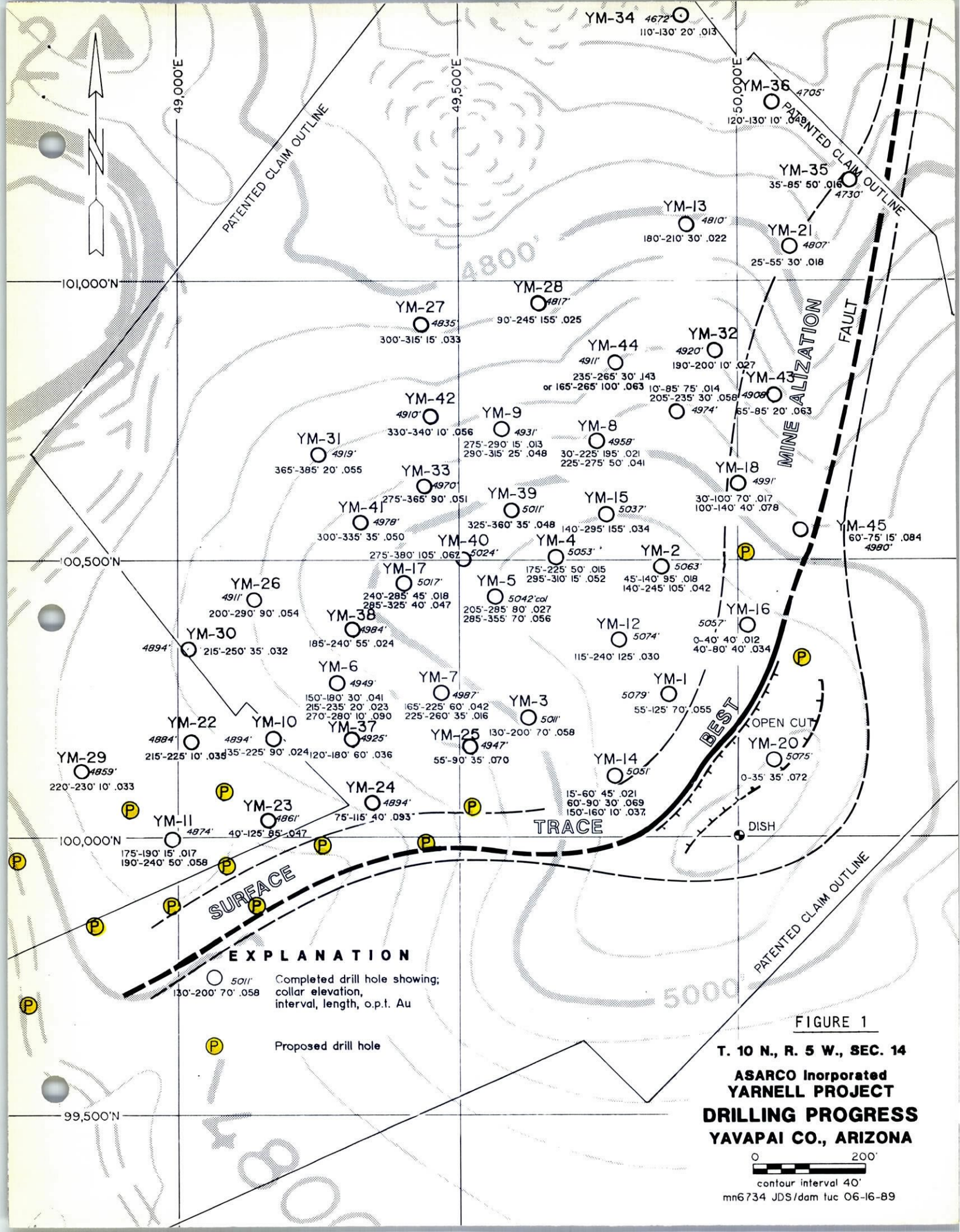
..... 19.....

..... 19.....

TABLE 1

Estimated costs

1. Drilling, 10,000' at \$9/ft.	\$ 90,000
2. Assaying, 10,000' at \$3/ft.	30,000
3. Site preparations, 50 holes at \$300/site	15,000
4. Metallurgical sample collection & tests, 5K & 20K	25,000
5. Asarco Supervision	30,000
6. Asarco board & room expenses	3,000
7. Asarco vehicle expenses	4,000
8. Payment to Norgold, October, Agreement	15,000
9. Payment to Western Bldg., October-December	3,000
10. Payment to Heintzelman lease, December	5,000
11. Purchase of Santa Fe ground/minerals	<u>10,000</u>
	<u>\$230,000</u>



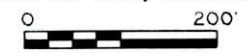
EXPLANATION

○ 5011' 130'-200' 70'.058 Completed drill hole showing; collar elevation, interval, length, o.p.t. Au

○ Proposed drill hole

FIGURE 1

T. 10 N., R. 5 W., SEC. 14
ASARCO Incorporated
YARNELL PROJECT
DRILLING PROGRESS
YAVAPAI CO., ARIZONA



contour interval 40'
 mn6734 JDS/dam luc 06-16-89

August 7, 1989

J.D. Sell

Phase 3 Program
Yarnell Project
Yavapai Co., AZ

Thirty-four drill holes totaling 8750 are proposed for a Phase 3 program at Yarnell. These holes are designed to test areas within the mineralized zone where problems with continuity of grade and thickness still exist, dip extensions and the south western extension of the mineralized zone past YM-11 and YM-23. A proposed cost estimate is attached for a Phase 3 program. Also attached is a copy with the estimated expenditures for the Phase 2 program.

We have drilled in Phase 1 & 2 a total of 13,157' in 45 drill holes. The nature and configuration of the mineralization has essentially remained the same as defined in holes 1-9 detailed in my report to J.D. Sell dated 5/2/89. Gold mineralization still occurs within the altered envelope where biotite is absent and silicification varies in intensity (up to 20% overall) within the mineralized zone. The "ore grade" zone when encountered is usually indicated by a gradual increase in limonite as one approaches (vertically) the Y.F.Z. (Yarnell Fault Zone). "Ore Grade" gold mineralization still occurs both above and below the Y.F.Z.; however, the majority appears to occur above the hanging wall of the fault zone. The hanging wall of the mineralized zone appears to be an "assay edge" with a low grade zone of +.010 - .025 opt Au occurring above the higher grade zone from Sections C-G; a distance of ~800' along strike. In contrast, the foot wall of the mineralized zone is usually very abrupt with assay values changing from ore grade -> detection within one sample interval (5').

A tabulation of drill holes is included which shows the assay interval and grade for the 45 holes drilled (Table 1).

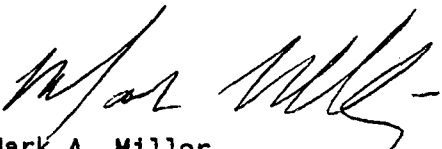
Table 2 is a list of proposed drill holes for a Phase 3 program. Also attached is a map showing proposed hole locations along with sections A-S.

Table 3 details estimated expenditures for Phase 2 (holes 11-45).

Table 4 details the cost estimate for a Phase 3 drilling program. This cost estimate included additional costs that will be (or may be)

incurred and may have been partially included within previous authorizations, but the work has not been done at this time.

MAM:mek
Attachments


Mark A. Miller

cc: R.L. Brown
F.T. Graybeal
W.L. Kurtz

TABLE 1 - YARNELL PROJECT
TABULATION OF DRILL HOLES

<u>HOLE NO.</u>	<u>ELEVATION</u>	<u>(F/T) INTERVAL</u>	<u>THICKNESS</u>	<u>(opt) GRADE</u>
1	5079'	5-55 55-125	50' 70'	.024 .055
2	5063	45-140 140-200 200-240 stope 240-245	95' 60' 40' 5'	.018 .051 stope .027
3	5011	130-200	70'	.058
4	5052	170-220 295-310	50' 15'	.015 .052
5	5042	205-285 285-335	80' 70'	.027 .056
6	4949	150-180 215-235 270-280	30' 20' 10'	.041 .023 .090
7	4987	165-225 225-260	60' 35'	.042 .016
8	4958	30-225 225-275	195' 50'	.021 .041
9	4930	275-290 290-315	15' 25'	.013 .048
10	4894	135-225	90'	.024
11	4874	175-190 190-240	15' 50'	.017 .058
12	5074	115-240	125'	.030*
13	4810	180-210	30'	.022
14	5052	15-60 60-90 150-160	45' 30' 10'	.021 .069 .037
15	5037	140-295	155'	.034
16	5057	0-40 40-80	40' 40'	.017 .034

17	5017	240-285 285-325	45' 40'	.018 .077
18	4991	30-100 100-140	70' 40'	.017 .078
19	4974	10-85 205-235	75' 30'	.014 .058
20	5075	0-35	35'	.070
21	4806	25-55 215-225	30' 10'	.019 .035
22	4884	215-225 270-285	10' 15'	.035 .025
23	4860	40-125	85'	.047
24	4893	75-115	40'	.092
25	4947	55-95	40'	.062
26	4911	200-290 290-320	90' 30'	.054 .016
27	4835	60-95 235-265 300-315	35' 30' 15'	.018 .019 .033
28	4817	95-215 225-245	120' 20'	.023 .042
29	4859	220-230	10'	.032
30	4894	215-250	35'	.032
31	4918	365-385	20'	.054
32	4920	120-200	80'	.014
33	4969	15-55 275-365	40' 90'	.016 .051
34	4672	110-130	20'	.013
35	4730	35-40	5'	.016
36	4705	115-140	25'	.026
37	4925	120-180	60'	.034
38	4984	185-240	55'	.023

39	5011	0-35	35'	.029
		145-155	10'	.024
		205-215	10'	.024
		300-360	60'	.035
		285-360	75'	.032*
40	5024	275-375	100'	.064
41	4978	295-335	40'	.045
42	4909	75-85	10'	.024
		110-125	15'	.024
		165-175	10'	.014
43	4907	65-85	20'	.072
44	4910	115-155	40'	.022
		155-165	10'	.008
		165-190	25'	.051
		190-235	45'	.016
		235-265	30'	.099
45	4980	60-75	15'	.084

*Bottomed in Ore.

8/8/89 - MAM

TABLE 2 - YARNELL PROJECTHOLE PROPOSALS

<u>HOLE NO.</u>	<u>DEPTH</u>	<u>TARGET (Objective of Drill Hole)</u>
3A	200'	Test up dip of 35 and mineralization seen in surface sampling.
3B	250'	Low grade -->NE, fly adit mineralization.
3C	300'	Low grade down dip & YM-28 zone -->NE.
3D	350'	Down dip from YM-28 thick low grade section.
3E	75'	Up dip YM-43 high grade Yarnell Fault Zone (YFZ).
3F	150'	Up dip YM-18.
3G	400'	Low grade zone between 42 and 28 and high grade mineralization in YFZ.
3H	350'	Discrepancy in thickness of zone between 8 & 9.
3I	100'	Up dip of YM-16
3J	300'	Thick zone in YM-15, split zone in YM-19.
3K	400'	Thick low grade zone in 8 between 39 & 8 - Ore zone in 8.
3L	350'	Pinching of mineralized zone in 4 & 12.
3M	450'	High grade down dip in YM-33.
3N	350'	Thick zone in 33 projected -->NE
3O	400'	YM-41 mineralization down dip.
3P	350'	Reversal in mineralized sections in 7 & 5.
3Q	400'	Thick section YM-26 down dip.
3R	350'	Thick section YM-26 up dip.
3S	100'	YM-25 up dip.
3T	330'	Continuity of mineralization between 10 & 30.
3U	175'	YM-24 up dip.

3V	250'	YM-23 down dip.
3W	100'	YM-23 up dip.
3X	300'	YM-11 down dip.
3Y	150'	YM-11 up dip.
3Z	250'	SW extension of mineralized zone.
3AA	250'	SW extension of mineralized zone.
3BB	250'	SW extension of mineralized zone.
3CC	200'	SW extension of mineralized zone.
3DD	100'	SW extension of mineralized zone.
3EE	150'	Strike extension (SW) of mineralized zone.
3FF	150'	YM-14 up dip.
3GG	350'	Continuity of mineralization between 6 & 7.
3HH	270'	Split zones in 19 & 32.
	<u>8750'</u>	

8/8/89 - MAM

TABLE 3

Phase 2 Completion (Estimated)

Drilling 2800'	\$ 25,200
Assaying	8,400
Supplies	800
Supervision	7,000
Living Expense	1,000
Site Preparation	<u>2,000</u>
	\$ 44,400
Past Expenditure (Estimated)	<u>172,600</u>
<u>Total</u>	<u>\$216,400</u>

Additional Costs to be Incurred (Estimated)

(Applied to Phase 3 Program)

Open Cut Sampling & Transport of Bulk Sample	\$ 5,000
Metallurgical Testing - McClelland Labs	20,000
Santa Fe Mineral Rts.	10,000
Norgold Payment 10/1/89	15,000
Western Building & Mining Payment - Dec. 31, 1989	3,000
Diamond Drilling	<u>30,000</u>
Total	\$83,000

TABLE 4

Phase 3 ProgramCost Estimates

Drilling, 34 holes (8750')	\$ 78,750
Assaying	26,250
Surveying	5,000
Site Preparation - 34 sites	9,000
Supervision - MAM, JJM, SPD	18,000
Living Expense	1,500
Vehicle Expense	2,000
Legal	<u>5,000</u>
<u>Total</u>	<u>\$145,500</u>
With Contingencies @ 10%	<u>\$160,050</u>
Other Items	
Bulk Sample Collection & Metallurgical Testing	\$ 25,000
Santa Fe Mineral Rights	10,000
Norgold Payment 10/1/89	15,000
Western Building Payments - Dec. 31, 1989	3,000
Diamond Drilling 1200'	<u>30,000</u>
<u>Total</u>	<u>\$ 83,000</u>
<u>GRAND TOTAL PHASE 3 PROPOSAL</u>	<u>\$243,050</u>

102,000N

101,500N

101,000N

100,500N

100,000N

99,500N

99,000N

48,500E

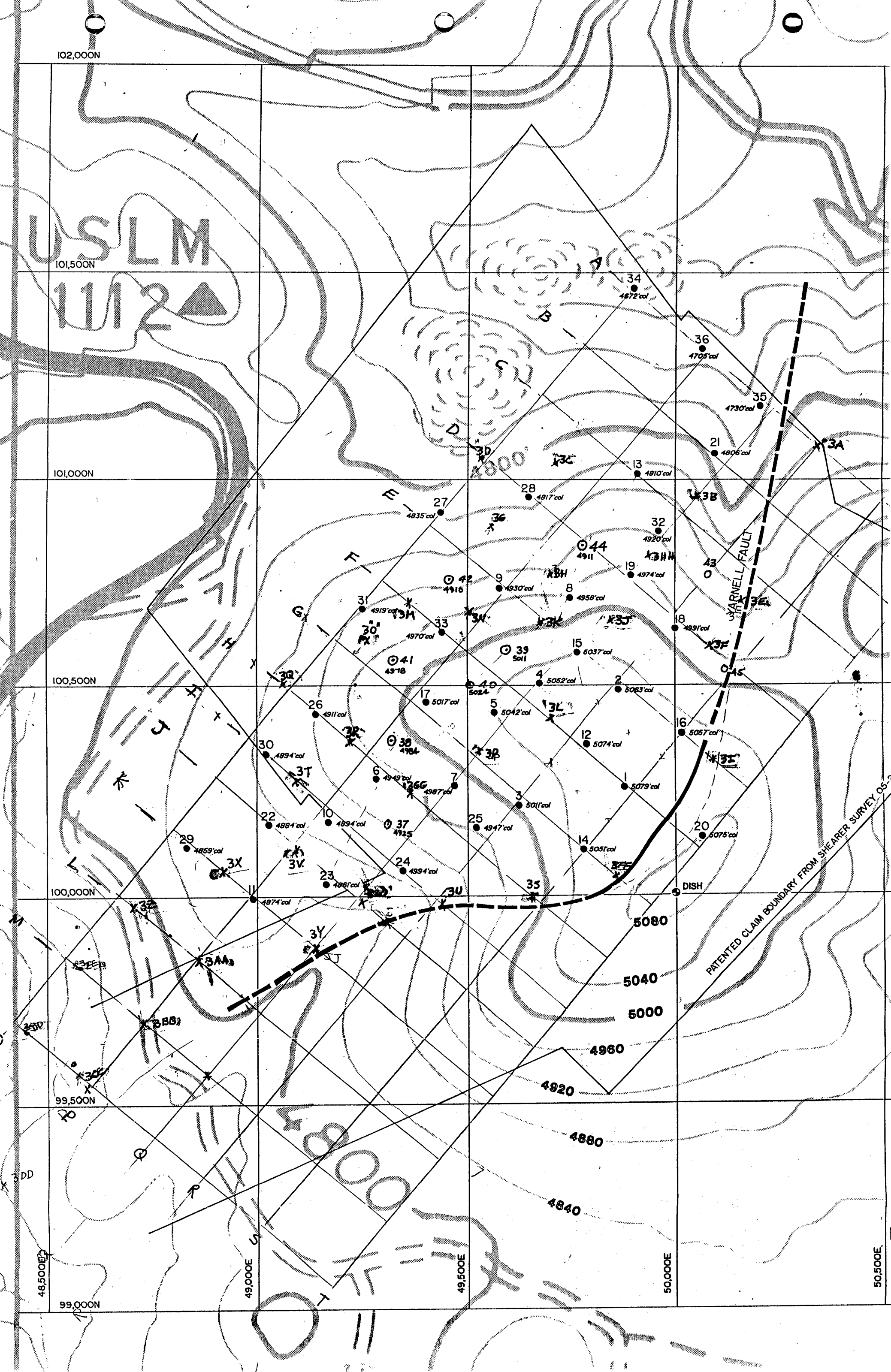
49,000E

49,500E

50,000E

50,500E

USLM
1112



A' A'

Reopen - 10/20/12
34A 300'

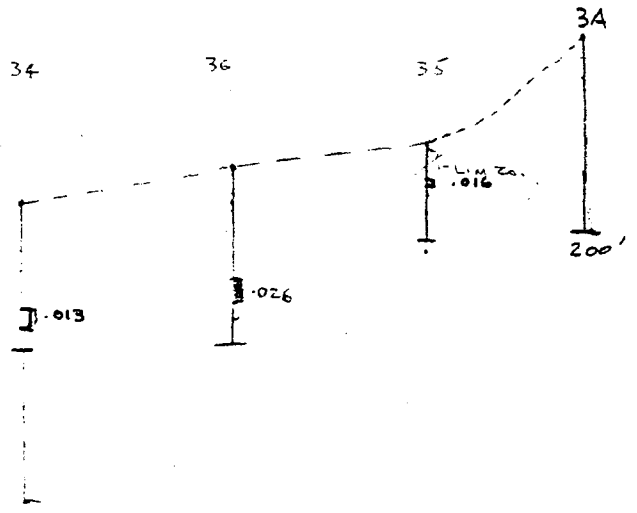
A
|

5000

4800

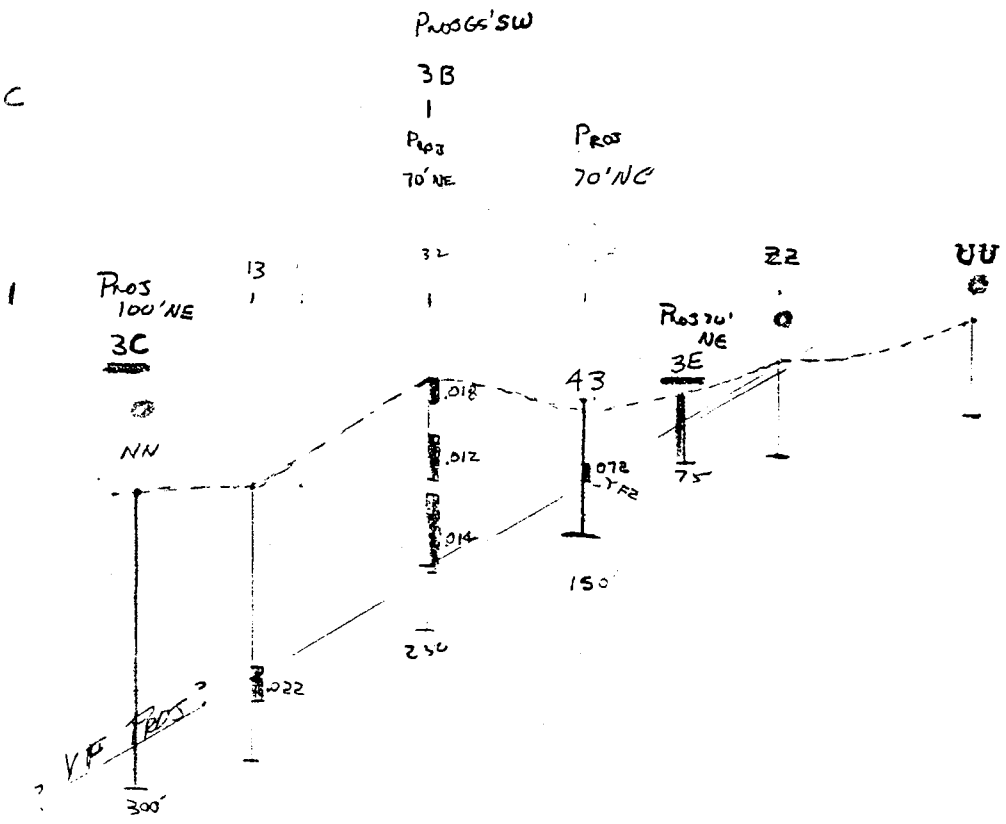
4600

4400



5000
4000
3000
2000

C



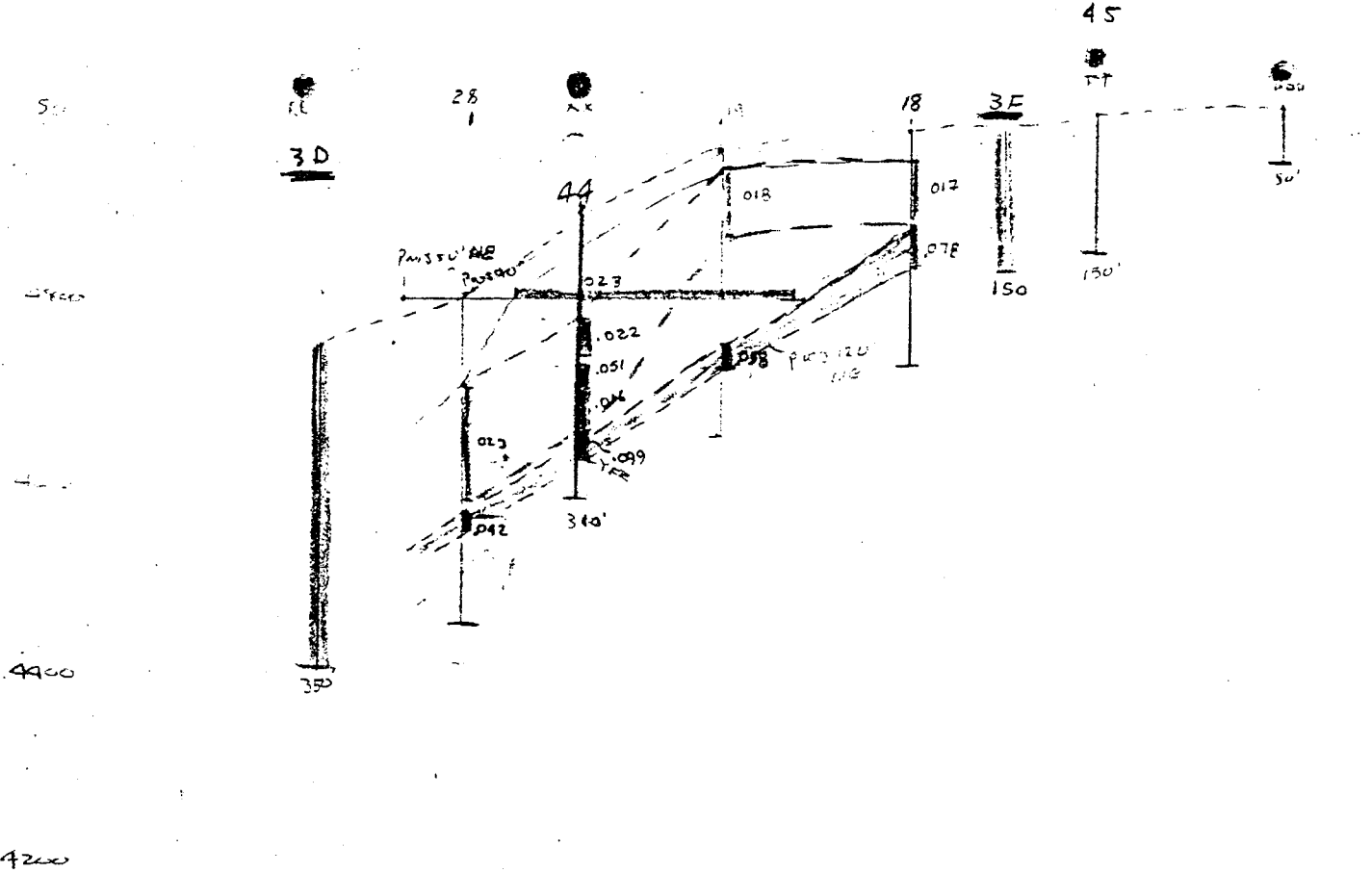
(8) 150'
NN- 300'
ZZ- 100'
UU- 100'

D-D'

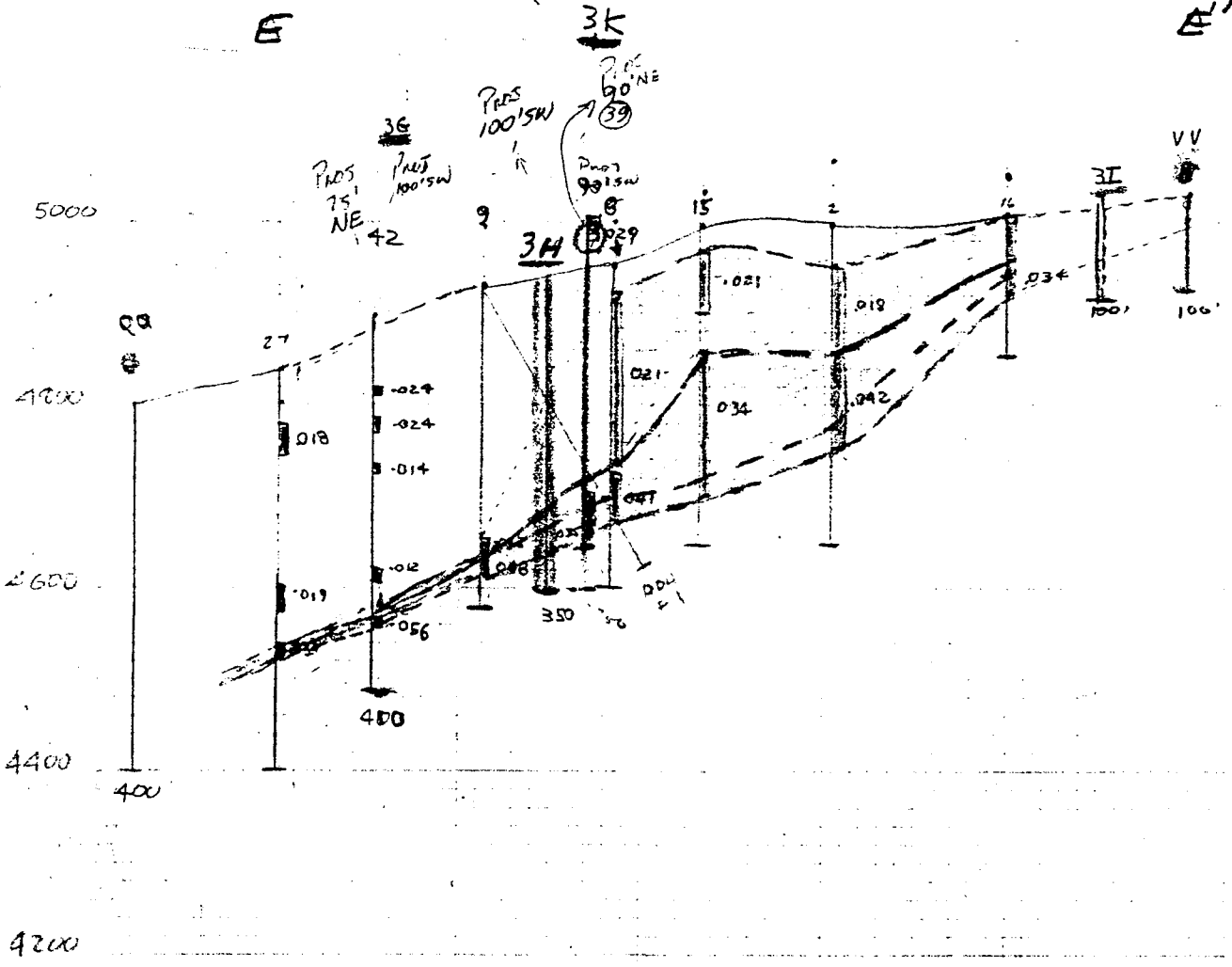
D

D'

Proposed
 ✓ 300' +
 (6) 300' +
 RR 350'



E E'



Proposed

94-400'
 533 350'
 DDH-1 300'
 S50E
 V.V. 100'
 (5) 400'
 (7) 350'

B-B'

1"=200'

F

B'

Proposed Holes

④ ~~MMM-400'~~

MMM-450'

PP-450'

PROS 30
NG
1 to 5 sec.

PROS 50
NG
7 to 15 sec.

5000'

4800'

4600'

4400'

4200'

PP

PROS 15
NG

3M

31

33

40

PROS 50
NG

4

PROS 70
NG

31

12

13

1

20

072

.010

.005

.015

.027

.052

.03

.04

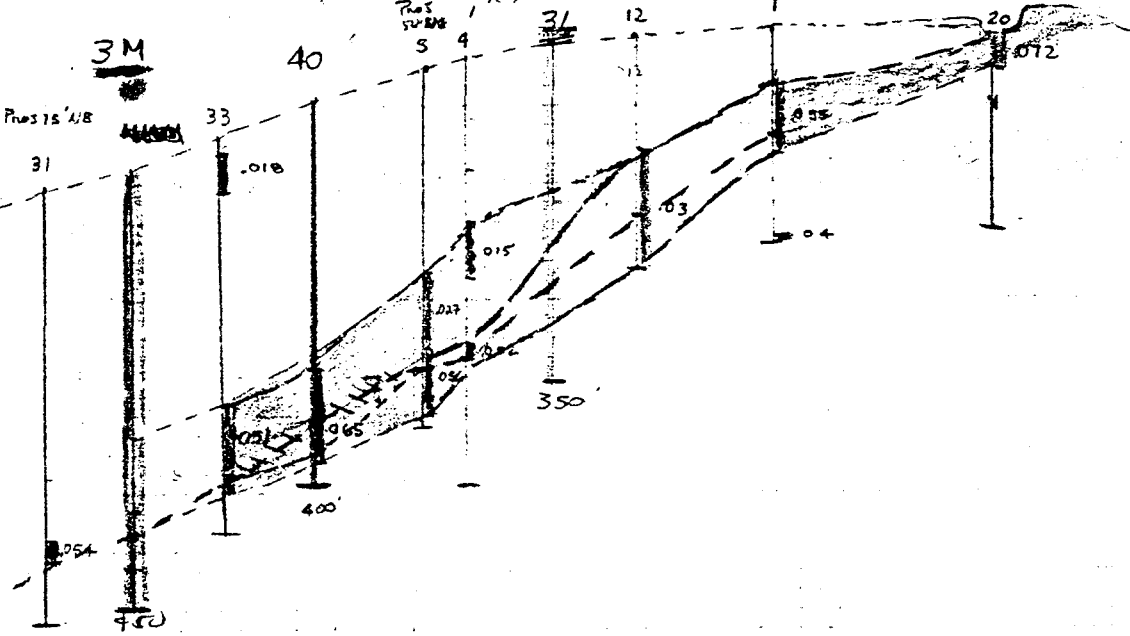
.054

470

400'

350'

450'



G-G'

1" = 200'

Long NE

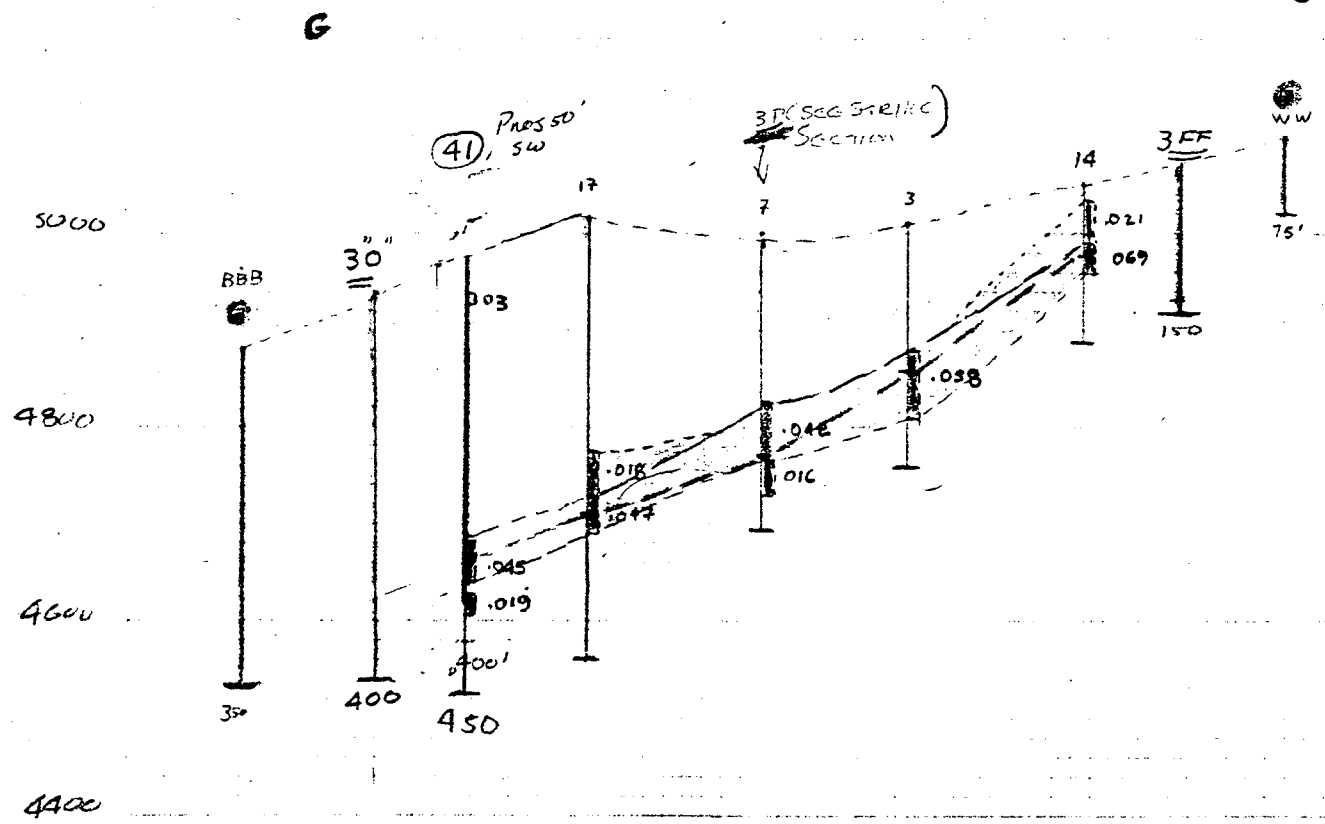
Proposed holes

WW - 75'

~~BBB 400~~

BBB 350

③ 400'



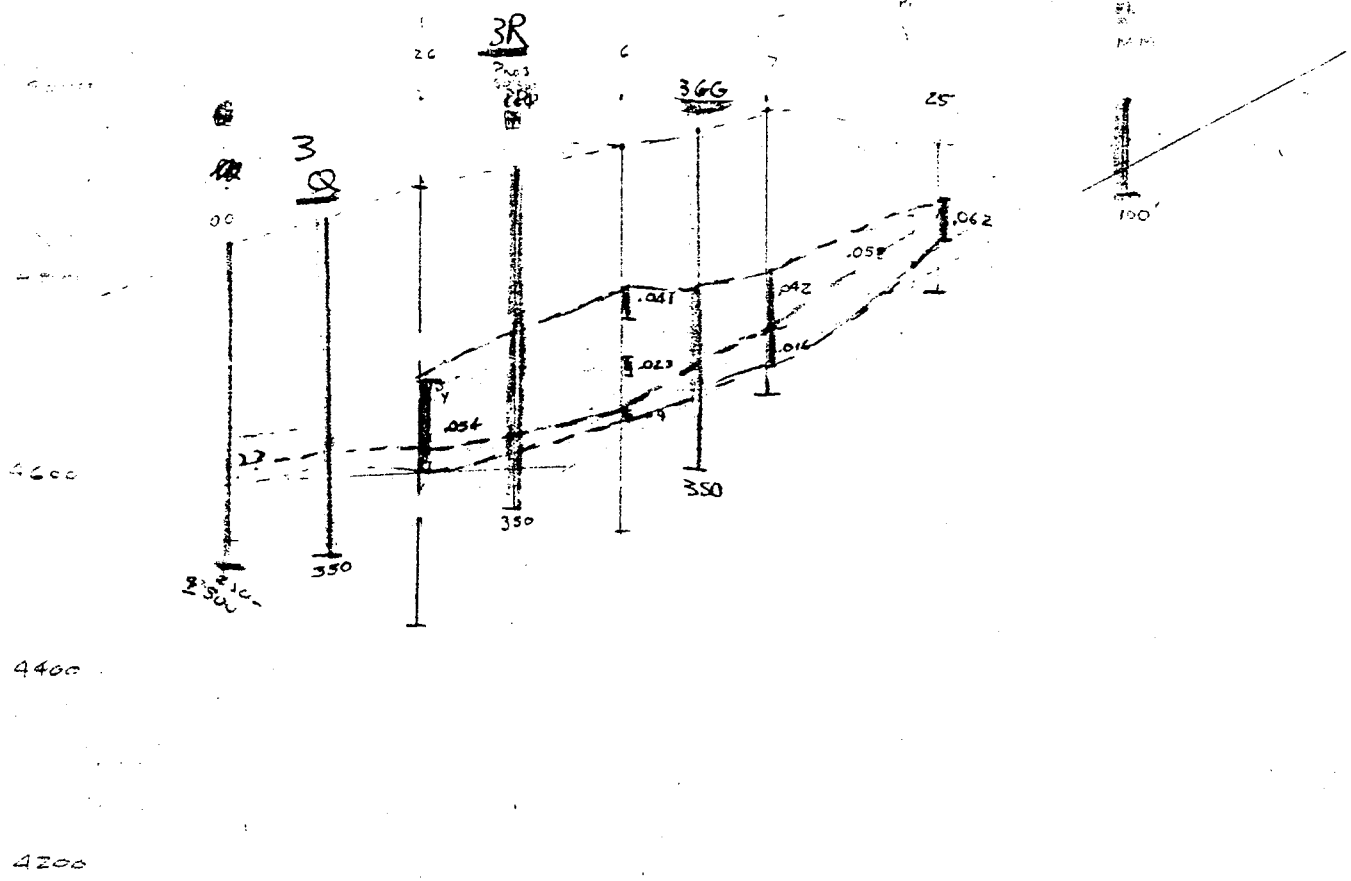


H-H' 1" = 200' Length 110



Purpose of Plot

00 - 300
MAI 100
000 350



I-I'

1" = 200'

Proposed Holes

LL - 100'

III 300'

I

0' I'

121

30

10

37

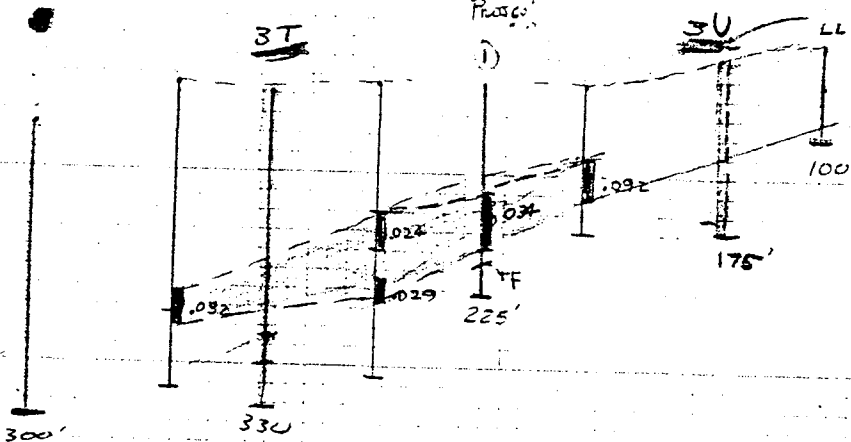
24

5000

4900

4600

4400



J-J'

J

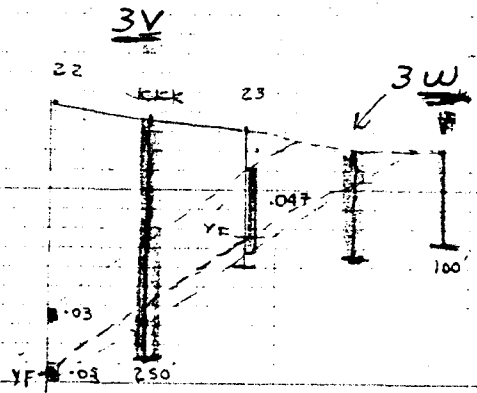
4'

Proposed Holes.
 KK - 100'
 KKK - 250'
 JJ - 150'

5000

4800

4600

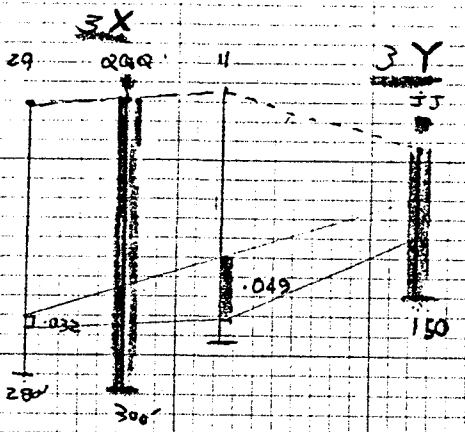


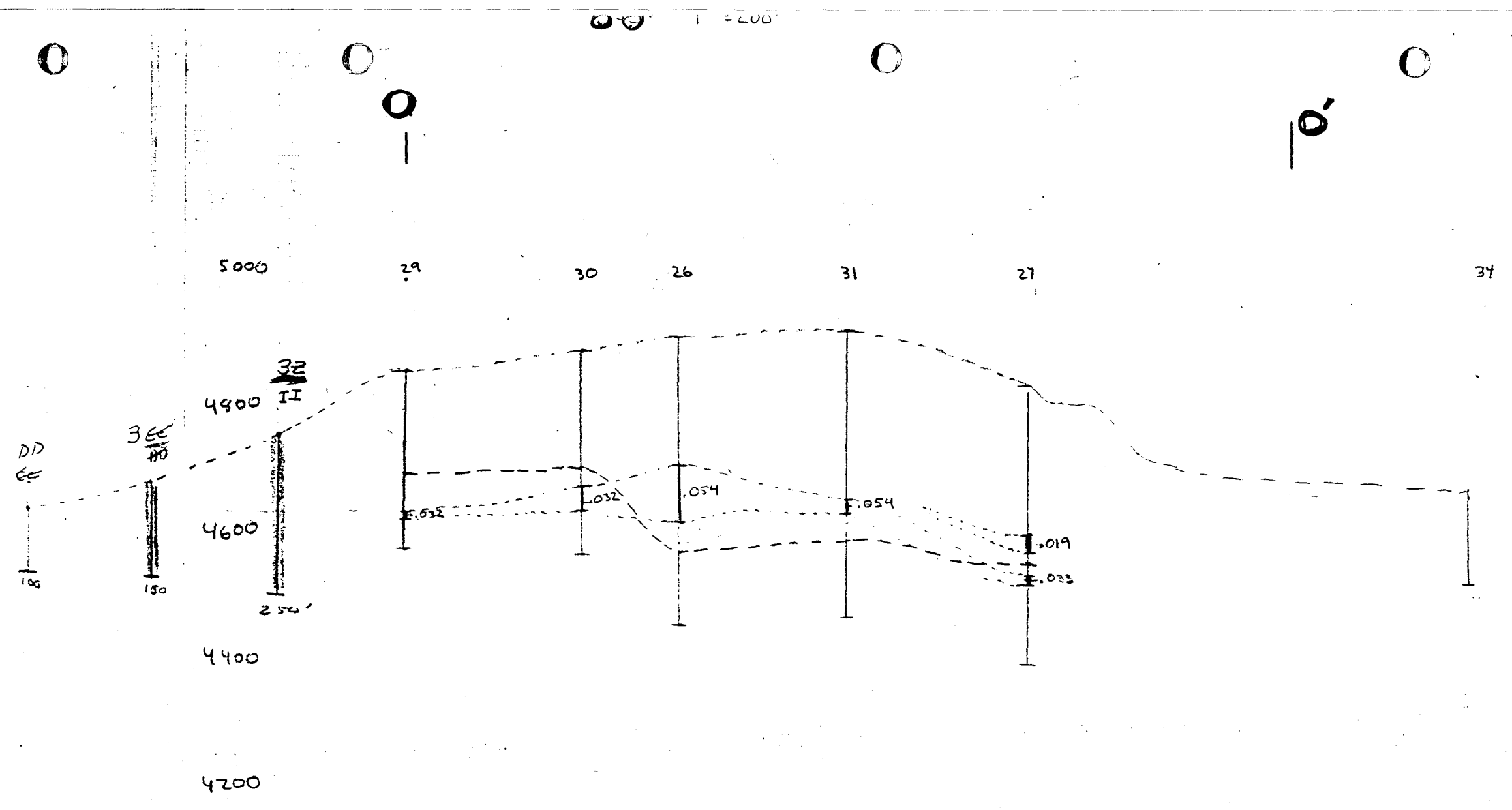
K-K' 11" = 250'

6000

4800

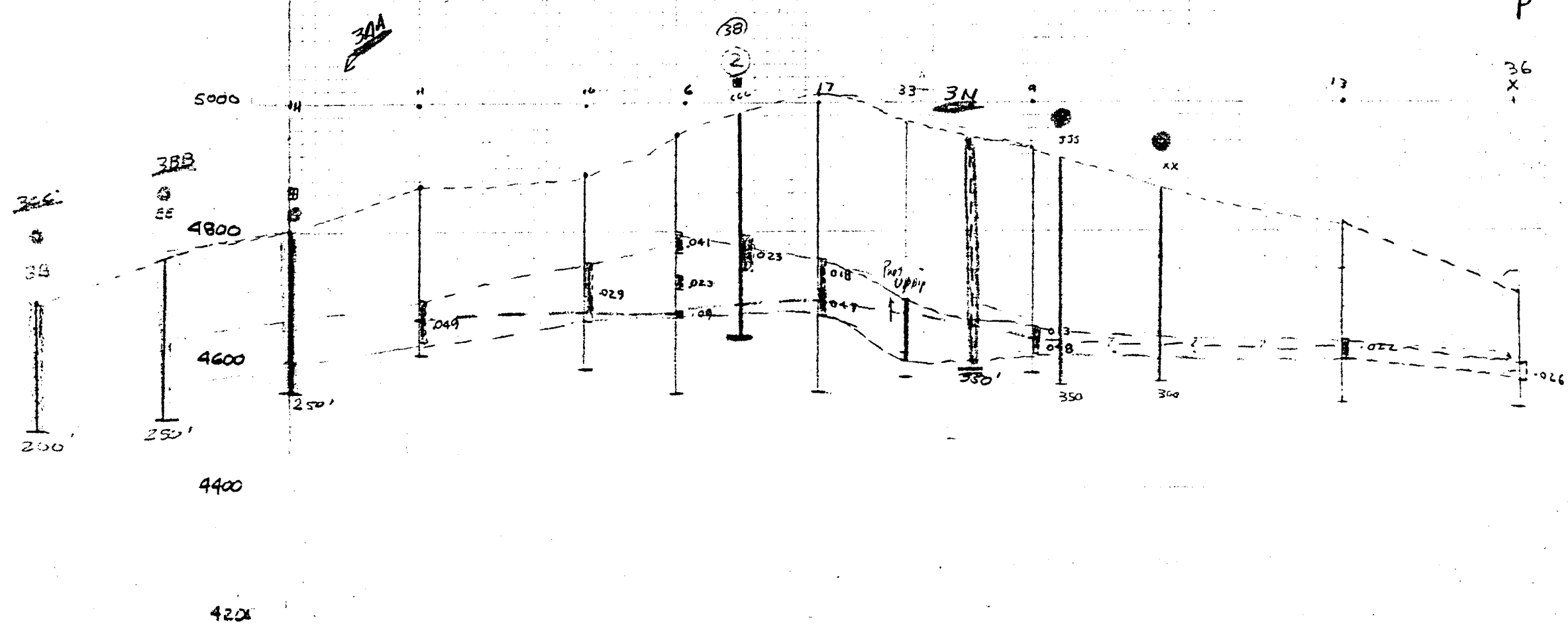
4600



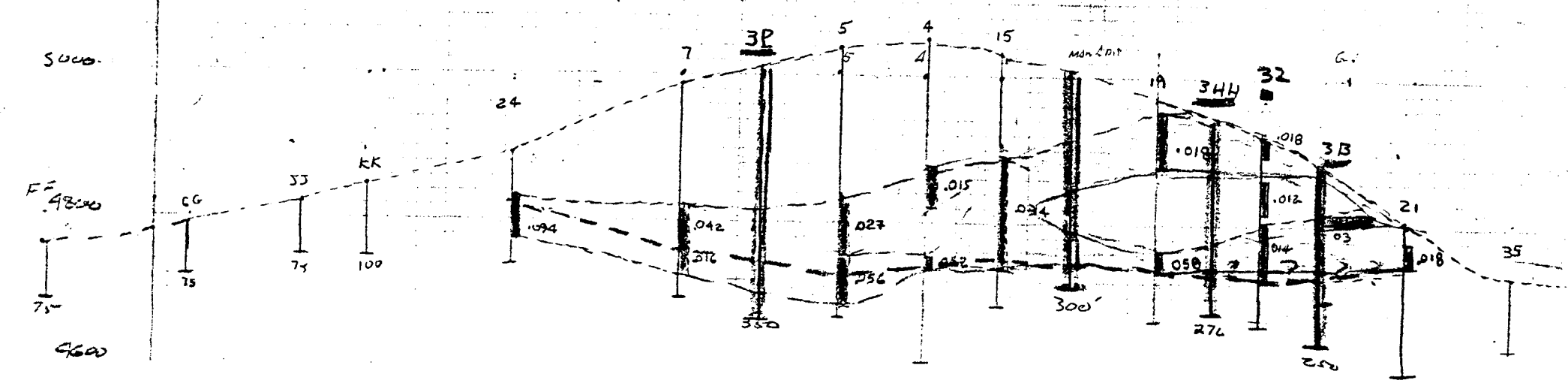


— water table
 — >.03
 — <.03

Proposed
HH 200'
EE 150' (NOT TO SCALE)
BB 100' TO SHOOT
② 350'+



KK 00
JJ 00
CG 75



5000

FF 4800

4600

4400

4200

Q

3J

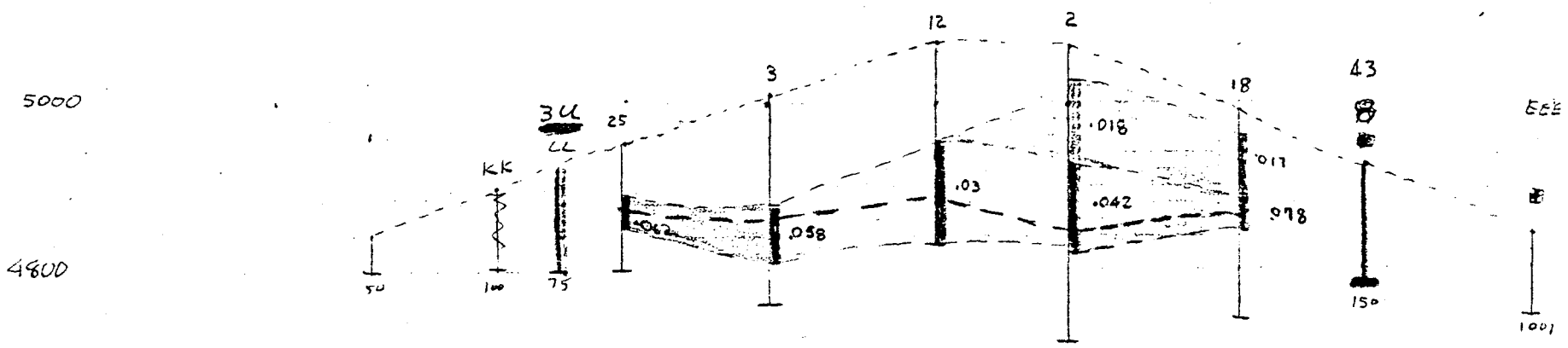
Q'

R-R'

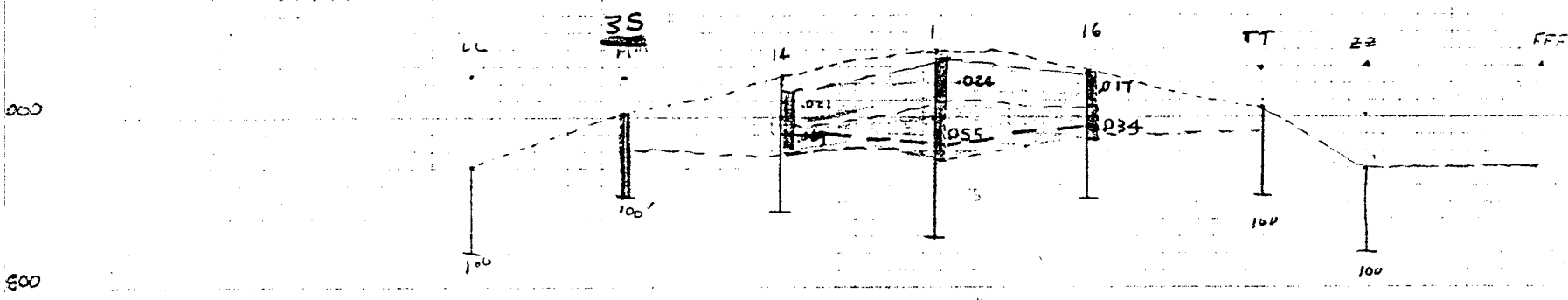
yy = 150
EGG = 100

R

R



1 - 100 ✓
22 - 100 ✓
TT - 100 ✓
ZZ - 100 ✓



8/8/89

Verbal from MAM:

see July 24 memo

Probable loading sequence -

Front of truck

1 ton pile of hi-seeds ^{+0.2} NW wall 210 w/ 160 low-seeds ^{0.02}

5 ton pile of ave ^{0.018} SE wall 110-120

3 ton pile of low-ave ^{0.034} SE wall 220

3 ton pile of hi-ave ^{0.042} SE wall 280

wooden ~~barrier~~ wall separator

2 barrels-drums of goose NW wall 90

wooden wall separator (?)

3 ton pile of low-seeds ^{0.02} from adit.

Left Gravel Friday? or Saturday Aug 5

Ans Garbis by Tuesday Aug 8 w/ McClelland questions!

ASARCO

Exploration Department

Frederick T. Graybeal
Chief Geologist

August 8, 1989

ASARCO Incorporated

Mr. J. D. Sell
Tucson Office

AUG 11 1989

SW Exploration

Yarnell Reserve Estimate

Dear Mr. Sell:

My first-pass estimate of gold reserves at Yarnell gives 3.9 million tons averaging 0.047 oz Au at waste/ore=3.5/1. Parameters were:

- 1) 1,500 x 500 x 65 ft. dimensions; 12.5 cu. ft./ton
- 2) 0.02 oz Au cutoff; all assays at face value
- 3) +20 ft. intersections of 0.01 - 0.02 oz Au could be run-of-mine leached to break even on mining costs, thereby reducing waste.

This estimate was an attempt to clarify my understanding of the mineralization and was only roughly conformed to mining costs from Mr. Skidmore's note of May 22, 1989. A sketch map (attached) shows the approximate position of the reserve and the edge of the pit. Depending on mining costs, this reserve might not be ore due to high waste/ore and I did not make a second pass. The contours on the sketch map show waste/ore in the pit which increases to the northwest. Waste/ore on the map is simply the thickness of the ore intersection in each hole divided into the thickness of overlying waste from which I have removed +20 ft. zones of 0.01-0.02 oz Au. Removing the 0.01-0.02 oz Au zones from the waste eliminates all waste for several holes and substantially reduces waste in others.

My assumption is that leaching the 0.01-0.02 oz Au rock might recover the mining and leaching costs, particularly if crushing and agglomerating are not required and, if it works, this practice will have an important effect on the Yarnell reserve tonnage. Western Mining uses this approach to reduce mining costs at their Hog Ranch Mine in northwestern Nevada. Please discuss this at length with Mr. Jansen.

The sketch map of the reserve modifies the position of the Yarnell fault by extending it to a point just south of hole YM-20 which apparently cut the fault based on assays. This has the effect of modestly increasing the reserve estimate in this area.

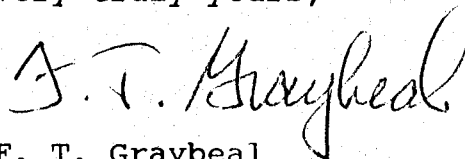
Also attached are some geologic interpretations from assay data and many more could be made. Early in the project W. L. Kurtz noted a possible northwest trend of the underground workings in the plane of the Yarnell fault. With this in mind I made a structure contour map (attached) of the base of the Yarnell fault, using high grade assays to identify the fault. Although there are almost certainly several faults in some holes, all interpretations indicate a strong flex in the Yarnell fault which strikes N70-75W, roughly through YM-3 to YM-26. This flex may have influenced breaking of the hangingwall as multiple structures seem most numerous just east of the flex and thickness of higher grade mineralization was greatest east of the flex.

I also contoured the total footage of +0.02 oz Au assays and, separately, +0.05 oz Au assays in each drill hole, whether or not part of a continuous zone of ore grade gold and these two maps are also attached. These maps seem to define zones which strike N20-50W. However, contours of the average grade of potentially mineable intersections at a 0.02 oz Au cutoff (see contours on the map of W/O values) define EW-striking zones. These directions may reflect ore controls or be artifacts of contouring with no practical relevance. Mr. Jansen has advised his first work with the Yarnell data will be to construct a variogram. We will then have to review this data with Mr. Jansen to determine whether it fits what is currently known about the geology.

I assume the variograms will be run using uncut values, but we need to discuss whether higher gold values should be cut and, if cut, to what value. I see a zeroing of Mr. Jansen's histograms at about 0.14 oz Au with roughly 10% of the gold above that value. Cutting high values back to 0.14 oz Au would presumably reduce the calculated grade from 0.047 to 0.042 oz Au (assuming equal spacing of holes). Maybe we should do a mini-reserve for those areas of high grade, since the underground workings suggest high grade zones have some continuity, and also consider close-spaced holes around the shallow high grade zone in YM-24 to see how far we can extend high grade values.

Please discuss your own thoughts with Messrs. Kurtz, Miller, and Jansen. I hope to get to Tucson Monday, August 21, when we can discuss progress to date. By that time Mr. Jansen will have finished his variograms and you and he will have had time to discuss their fit to the geology. Perhaps other contour maps of the type attached would be useful as we attempt to assess the variograms, particularly since some of my sketches did not include all drill data.

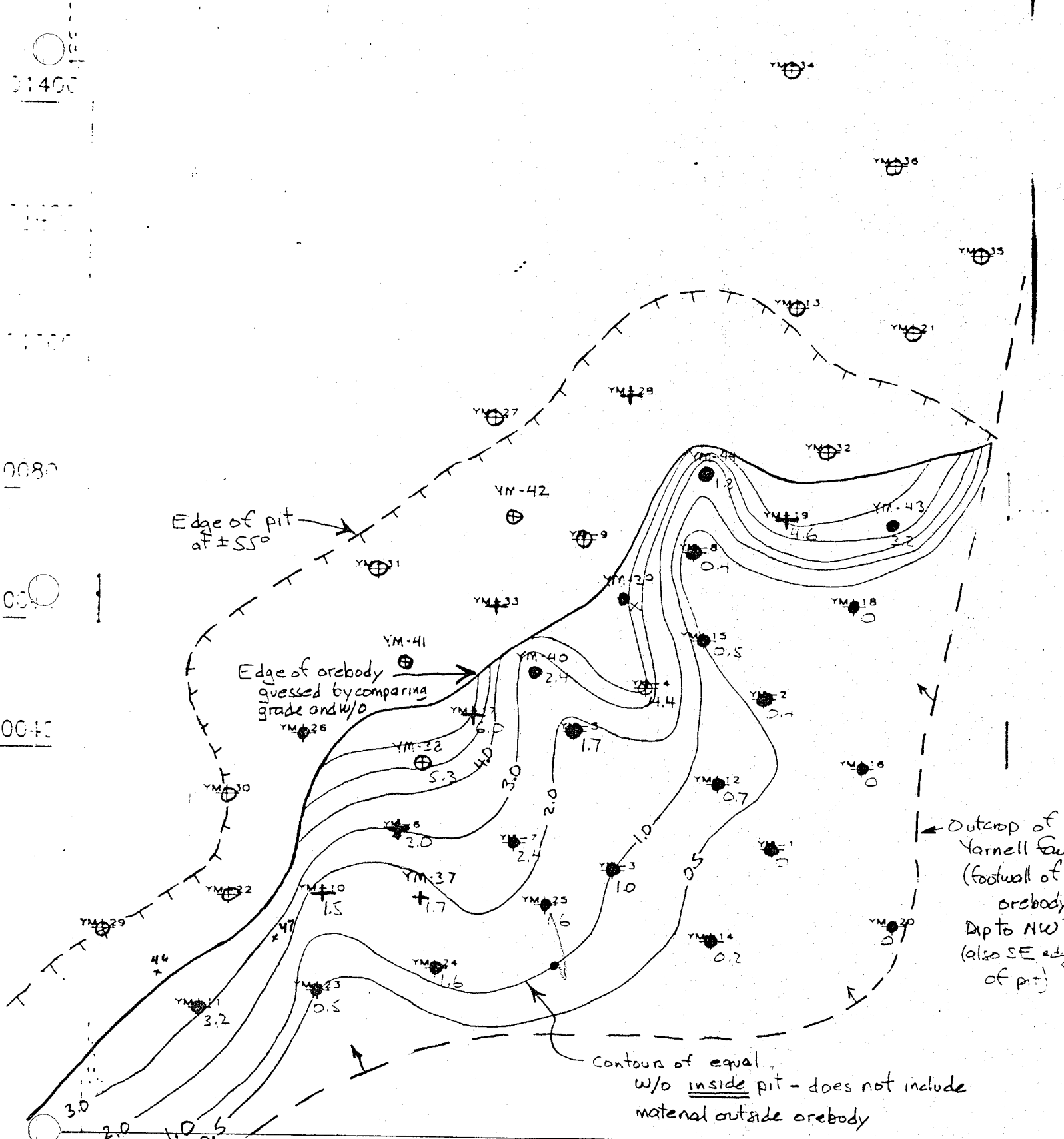
Very truly yours,



F. T. Graybeal

cc: W. L. Kurtz
L. J. Jansen

HORIZONTAL SECTION, Elevation 5200



Edge of pit at ±550

Edge of orebody guessed by comparing grade and w/o

Outcrop of Yarnell Fault (footwall of orebody) Dip to NW (also SE edge of pit)

Contours of equal w/o inside pit - does not include material outside orebody

- ore hole
- + marginal hole
- waste hole

OREBODY MAP

1.2 - w/o in individual drill hole after removing +20 ft zone of 0.01-0.02 Au from waste

North
1" = 200'

ASARCO Engineering Computer

**YARNELL PROJECT
DRILL LOCATION**

SCALE: 1" = 200' CHECKED BY: DATE: 13-AUG-88

HORIZONTAL SECTION, Elevation 5200

1400

1300

1200

1080

900

800

YM+34

YM+36
454

YM+35
452

YM+13
450

YM+21
450

YM+28
450

YM+27
450

YM+32
450

YM-9
450

YM-8
450

YM+19
450

YM+31
450

YM+33
450

YM+18
450

YM-4
450

YM-2
450

YM+26
450

YM+17
450

YM-5
450

YM+16
450

YM+30
450

YM+12
450

YM-6
450

YM-7
450

YM-1
450

YM+22
450

YM+10
450

YM-3
450

YM+20
450

YM+29
450

x 44

x 47

YM+1
450

YM+23
450

YM+2
450

YM+25
450

YM+14
450

4700

4750

4800

4850

4900

4950

5000

Structure contours on base (or middle strand if more than one) of Yarnell fault

(2)

ASARCO Engineering Computer Se	
YARNELL PROJECT	
DRILL LOCATION M	
SCALE of map	CHECKED BY
1:100 00	PLOT DATE FILE
	15-JUL-89 YAR-

HORIZONTAL SECTION, Elevation 5200

1400

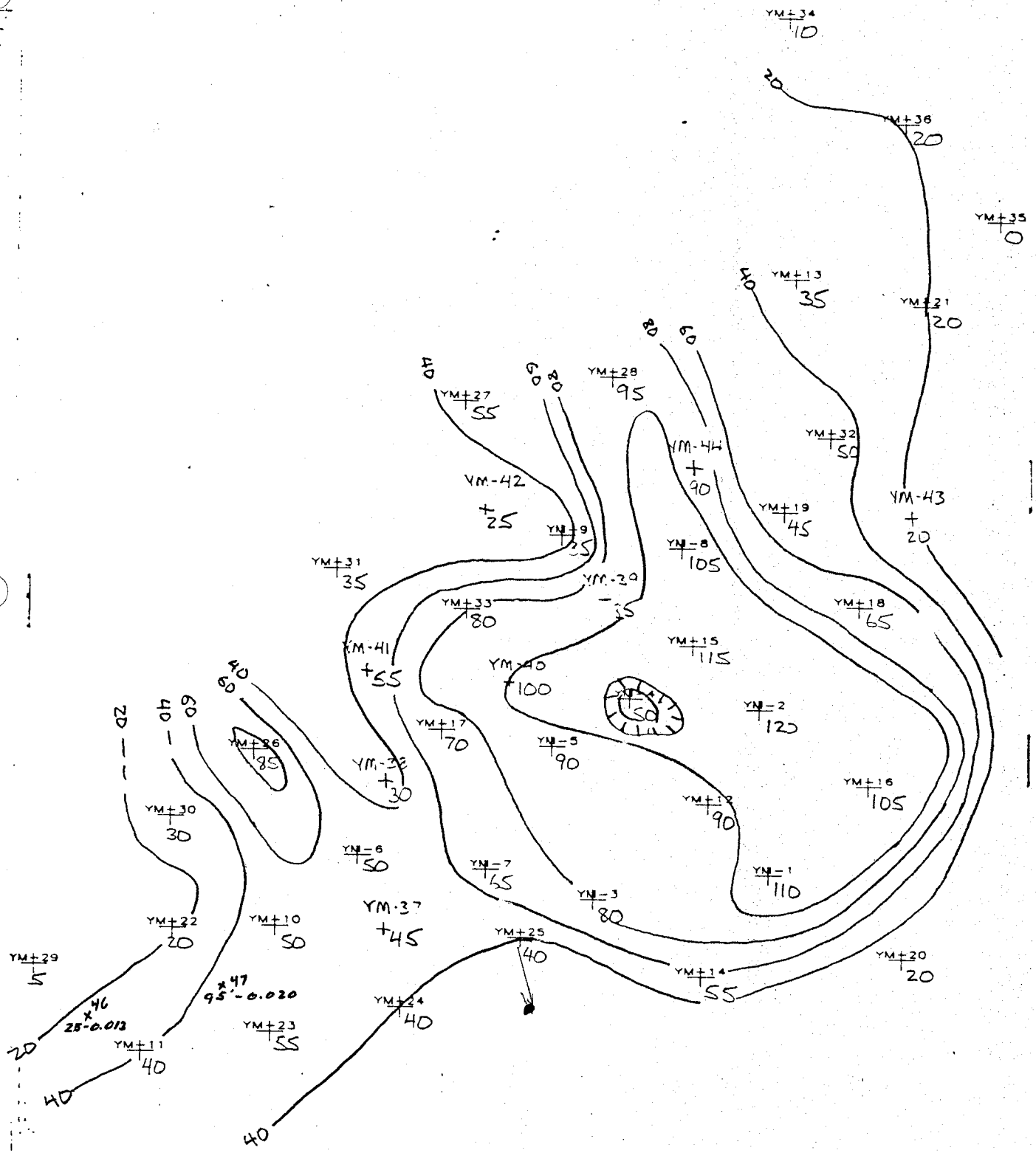
1300

1200

1080

1000

940



Feet of +0.0202 Au in drill hole

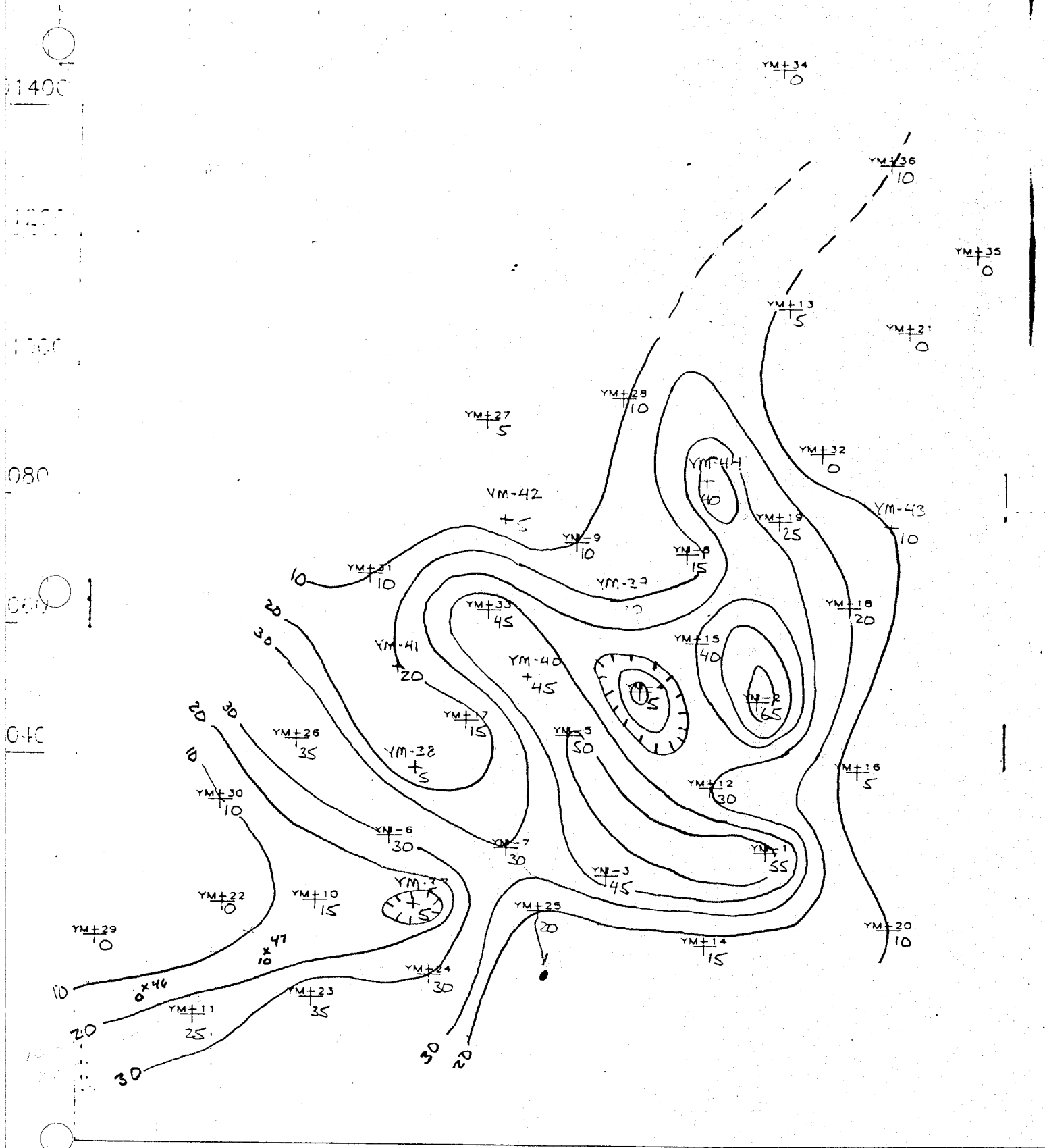
3

ASARCO Engineering & Computer Services

YARNELL PROJECT
DRILL LOCATION MAP

SCALE: 1" = 100'	CHECKED BY:	PLLOT DATE:	FILE:
1:100.00		13-JUL-89	YAR-24

HORIZONTAL SECTION, Elevation 5200




Feet of +0.05 \approx 2 Au
 (UG workings included as +0.05oz)

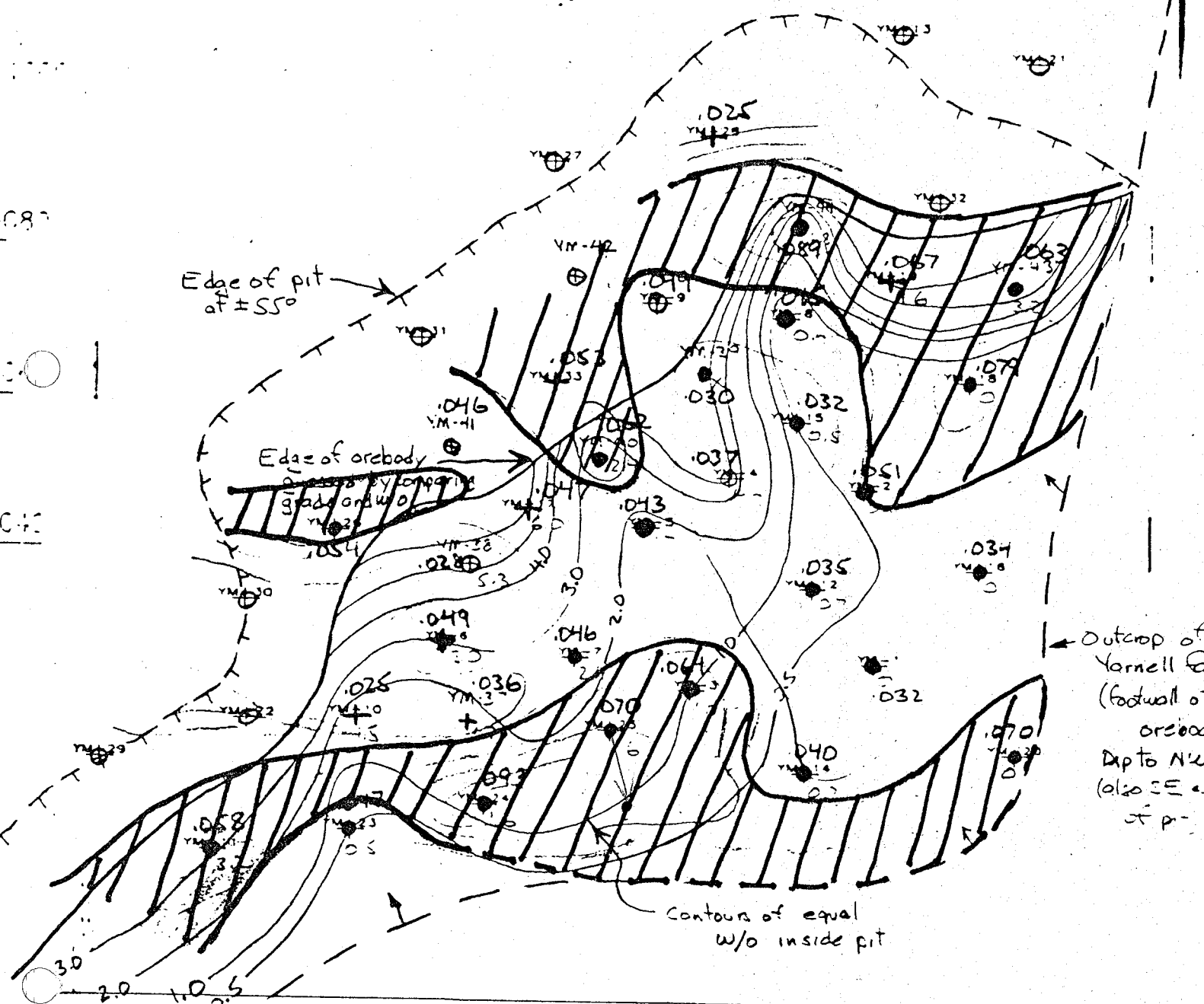
④

ASARCO Engineering & Computer Services	
YARNELL PROJECT DRILL LOCATION MAP	
SCALE: 1" = 100.00'	CHECKED BY: [Signature]
DATE: 13-JUL-89	FILE: YAR-24

HORIZONTAL SECTION, Elevation 5200

115

 + 0.05 oz Au in reserve intersection.

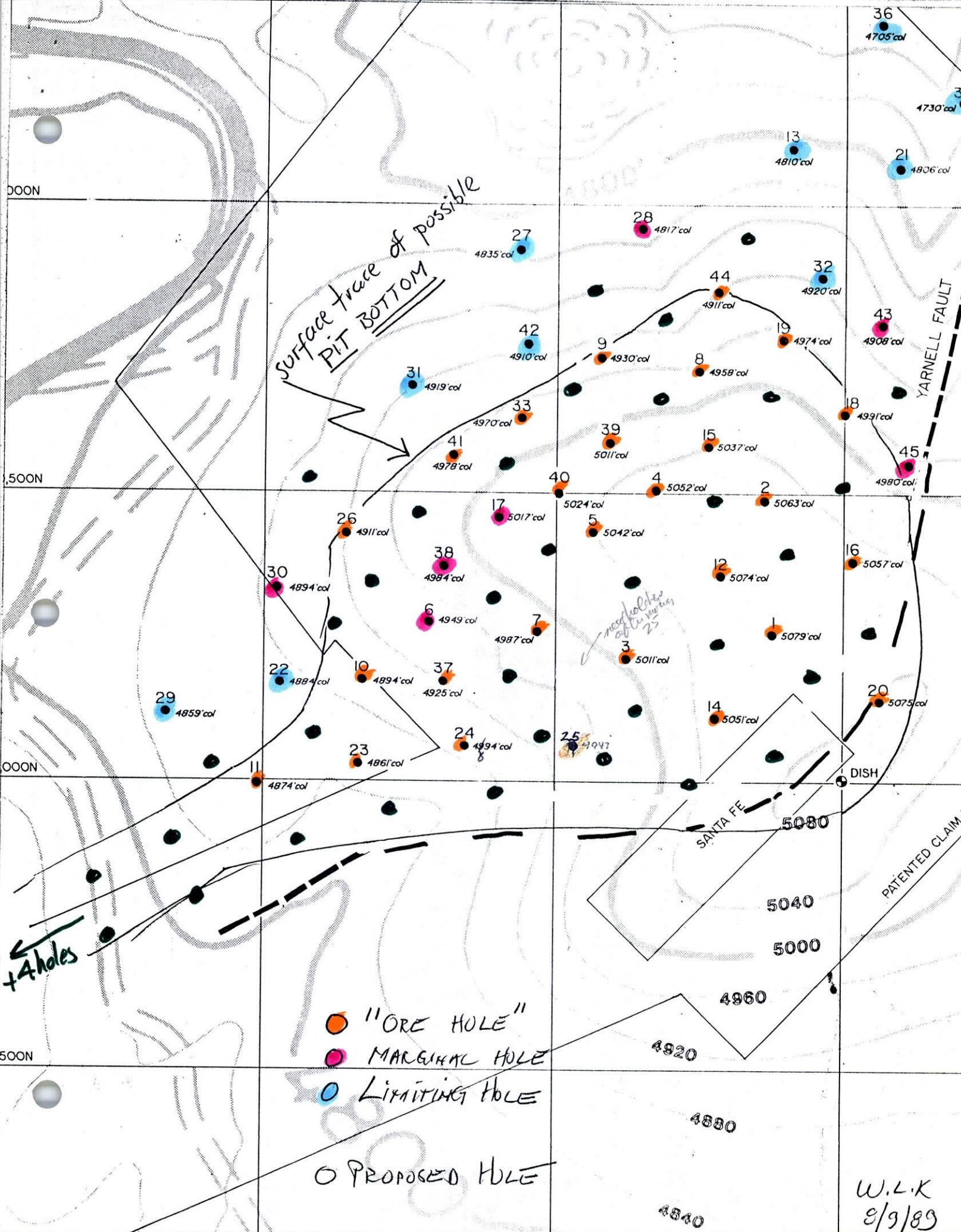


- ore hole
- + 11.01 x 10.0
- waste hole

... in individual drill hole after removing +20 ft zones of 0.01-0.02 oz Au from waste

1" = 200'

ASARCO Engine Computer
YARNELL PROJ
DRILL LOCATION

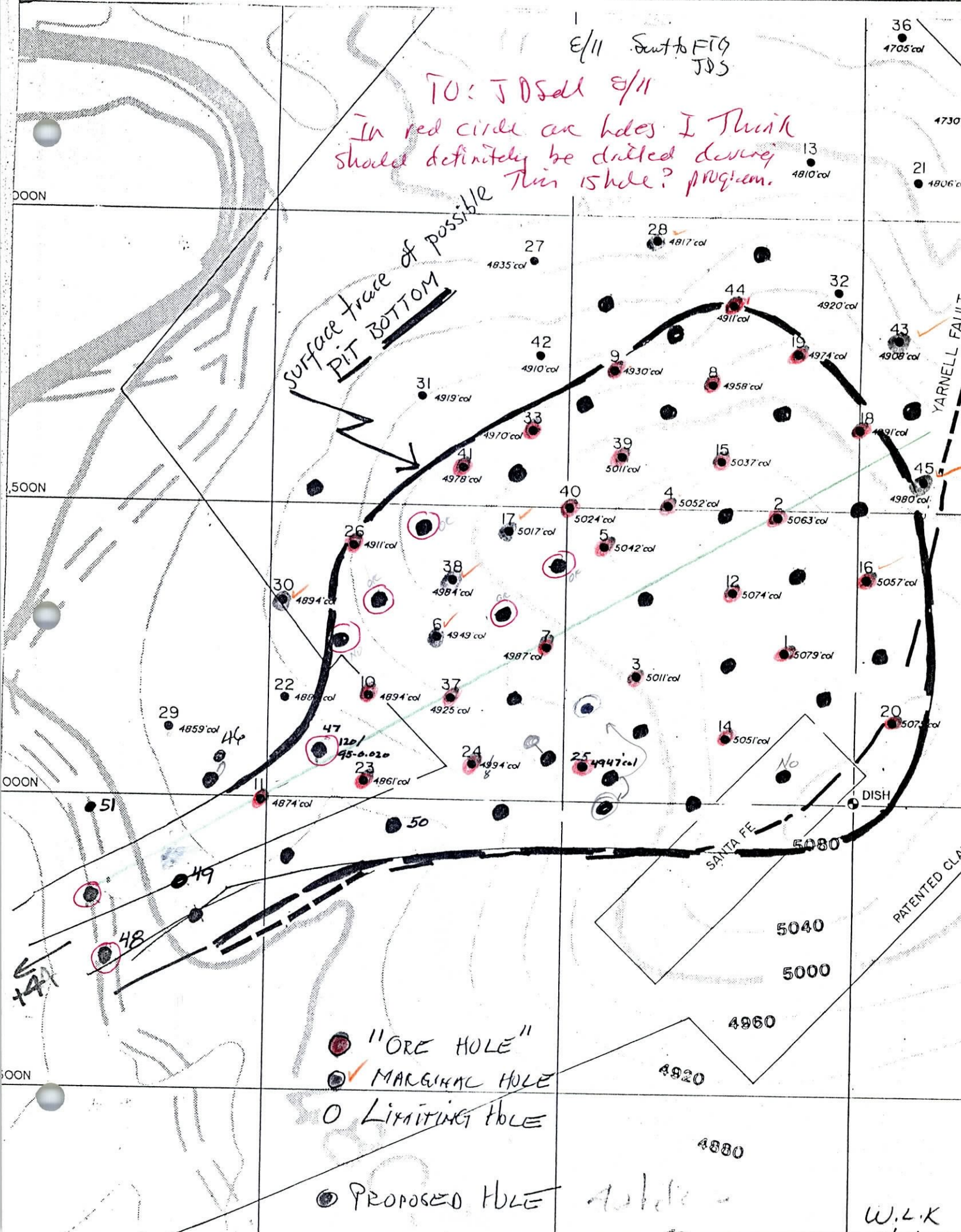


E/11 South to FIG
JDS

TO: JDS all E/11

In red circle are holes I think
should definitely be drilled during
this 15 hole program.

Surface trace of possible
PIT BOTTOM



- "ORE HOLE"
- ✓ MARGINAL HOLE
- LIMITING HOLE
- PROPOSED HOLE

W.L.K

August 8, 1989

W.L. Kurtz

Phase 3 Program
Yarnell Project
Yavapai County, AZ

You have received a copy of Mr. Miller's proposal on the Phase 3 program of drilling. As he has stated, 45 holes have presently been completed at the Yarnell Project. The results are shown on Figure 1 attached.

I concur that additional holes may be needed down-dip in the vicinity of the thick intercept of +0.02 opt gold in the hanging wall of the Yarnell Fault in the vicinity of holes 40, 15, 18, 8, & 44, as should the on-going large column leach tests show that this material is viable to leach then such zones would create an overall lower stripping ratio. Such drilling in my estimation should be postponed until the leach test results are evaluated.

The two lines of wide-spread centers of drilling (200' centers) extending southwesterly should be done (the holes are presently being drilled). Success along strike with a shallow 1-2/1 stripping ratio and higher than average grades would be an asset to the project.

As noted, the bulk of the M.A. Miller recommendations were in deeper, down-dip portions of the zone with a general high 3-10 to 1 stripping ratio.

My recommendation is to continue to drill out the near outcrop sector and in-fill the top of the hill. The lower line of drilling would extend from hole 43 on the northeast, thru 15, 4, 5, 6, 10, going southwesterly to the extended southwesterly drilling. The sites are shown on Figure 1 attached. (Note 3 holes extend off the map to the southwest).

Table 1 lists the holes from the northeast to the southwest and approximates 9500 feet of drilling.

You have also received a copy of the Form 302-MB requesting funds for an additional 10,000 feet of drilling.

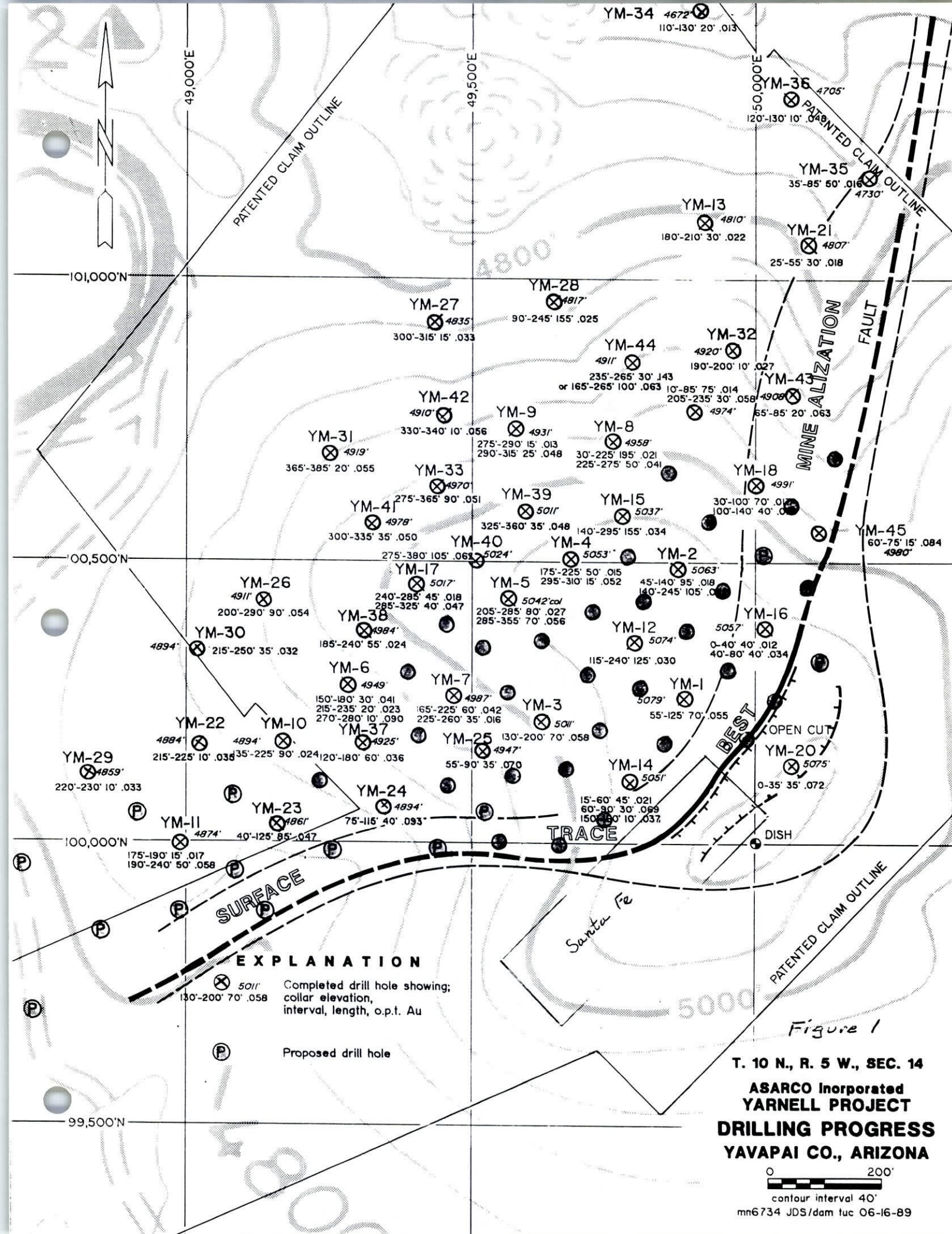
Mr. Brown requested the authorization request as the drilling will be on-going for a while and he did not want a large overrun. As Mr. Brown has stated, he intends to be in Tucson late this month to review the Yarnell Project, and in the meantime, the most critical holes should be drilled for input to an ore-reserve type study.

Your critique on the holes to be drilled is appreciated.

JDS:mek
Atts.

James D. Sell
James D. Sell

cc: F.T. Graybeal, M.A. Miller



49,000'E
49,500'E
101,000'N
00,500'N
00,000'N
100,000'N
99,500'N

PATENTED CLAIM OUTLINE

PATENTED CLAIM OUTLINE

MINE ALIENATION FAULT

TRACE

Santa Fe

PATENTED CLAIM OUTLINE

EXPLANATION

- ⊗ 5011' 130'-200' 70' .058 Completed drill hole showing; collar elevation, interval, length, o.p.t. Au
- ⊙ Proposed drill hole

Figure 1
T. 10 N., R. 5 W., SEC. 14
ASARCO Incorporated
YARNELL PROJECT
DRILLING PROGRESS
YAVAPAI CO., ARIZONA

0 200'
contour interval 40'
mn6734 JDS/dam tuc 06-16-89

Table 1 - RECOMMENDED PHASE 3 DRILLING

YARNELL PROJECT

<u>Number</u>	<u>MAM Coordinates</u>		<u>Depth</u>
-	C.5	R.5	150
3F	D	R.5	150
3J (r)	D.5	Q.25	325
-	D.5	R	250
-	D.5	R.5	175
-	D.5	S	100
-	E	R.5	225
3I	E	S.5	100
-	E.35	Q.5	325
-	E.5	R	300
-	E.5	R.5	250
-	E.5	S	150
-	E.5	S.5	125
3L	F	Q.5	350
-	F	S.5	150
-	F.25	R.5	225
-	F.5	Q.5	325
-	F.5	R.1	275
-	F.5	S	200
-	F.75	R.5	225
-	G	P.5	300
-	G	Q	300
-	G.25	Q.5	250
-	G.25	R.5	225
-	G.5	S	150
-	G.75	P.5	350
-	G.8	R.25	175
3S	H	R.8	100
-	H.2	Q.2	300
-	H.35	Q.85	150
-	H.5	R.5	150
3U	I	R	175
-	I.25	P.7	225
3V	J	P.2	250
3W	J	Q.2	100
-	J.7	P.5	250
3X	K	0.6	300
3Y	K	Q	150
3Z	L	0.2	250
3AA	L	P	250
3EE	M-1	0.2	150
3BB	M-1	P	250
3DD	M-2	0.2	100
3CC	M-2	P	200

August 8, 1989

R.L. Brown/F.T. Graybeal
New York Office

Activity Progress Report
July 1989
Yarnell Project
Yavapai County, Arizona

As per your request, I submit the July report for the Activity Progress at the Yarnell Project.

The attached chart shows the week blocked off if work was done in that area. Explanation for the unfinished and ongoing work is highlighted below.

1. Drilling and Assaying has been completed on 45 holes which completes 13,000 feet of drilling. Surveying of the holes has been completed. The new drilling worksheet showing the holes and the Santa Fe owned ground is attached. Check assays have been submitted throughout and a special set of 65 samples were sent to Skyline. They report similar values for the most part but it is probable that a coarse gold "nugget" effect is present which causes variations in assay checks.

A Phase 3 drilling proposal has been set out by Miller and Sell, and the final drilling pattern will be determined.

A drilling authorization has been requested for an additional 10,000 feet of extension and in-fill drilling.

2. Geologic-Alteration Mapping and Sampling has progressed slowly as Mr. Miller was on vacation for half of July. No map has been produced, though some reconnaissance on the south and rock chip sampling of the public road on the east has been made.
3. Surveying is nearly complete on the patented claims and much of the unpatented claims. The field notes are being worked up and rechecked. Fifty year posts and rock piles on the old claims are difficult to locate and as Mr. Gay says -- they most often are not where the locator thought they were.

The aerial survey control and panels were set and the area flown early in July. Processing is continuing and a final map and photos are expected by mid-August.

Only minor field review of possible water resources has been made.

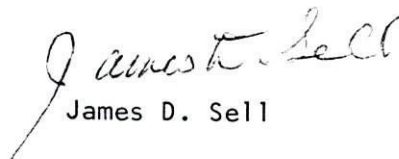
4. End of the assessment year and other work loads have slowed the input of the SWMD.
5. No work has been received from our contact, Mr. Leo Smith, on the Yarnell-Glen 11ah status.
6. The Computer Services group are poised for reintegrating all the data from the drill holes, open-cut sampling and some underground sampling. They will also receive a digital set of data on the topography from Western Aerial and be able to construct and use the new topographic base.
7. The bulk sample from the underground (low-grade, ± 0.02 opt gold) and the open-cut (average grade, ± 0.05) as well as a special gouge sample has been collected and shipped to Sparks, Nevada for large column leach tests.
8. Future

Drilling is now underway on seven holes testing the southwestern extension along strike from holes YM-23 and YM-11. The drilling will continue testing the near surface zone just down-dip from the surface trace of the Yarnell fault and in-filling critical areas of the main drilling.

Steve Duncan has joined the Marine Corps and has been replaced by a local Yarnell man (Steve G. Keehner) who has worked on the drill rig as well as with Mr. Gay in surveying and general work.

JDS:mek
Attachments

cc: W.L. Kurtz
M.A. Miller
W.D. Gay


James D. Sell

YARNELL PROJECT EA-0444

Yavapai County, Arizona

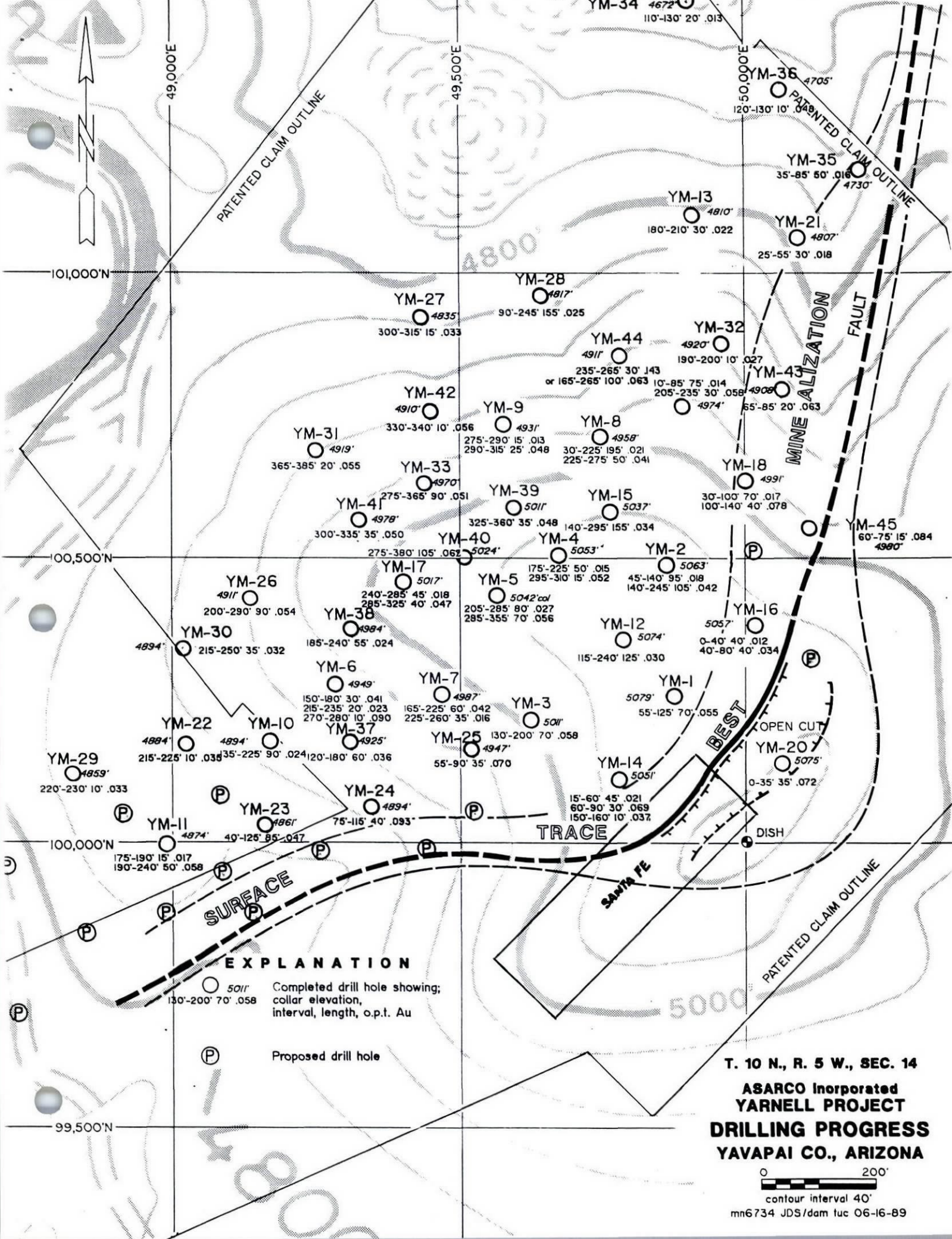
AREA OF ACTIVITY	PERSONNEL	1989							1990
		JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.
Geol. Mapping/Alteration Studies - Claim Area	MAM	XXXX							
Sampling for discovery - Claim Area	MAM	XXXX	X						
Permits, Drilling, as needed	MAM	XXXX	X						
Rotary Drilling, 25 holes, sites, logging	SPD-JJM-MAM	XXXX	XXXX	XXXXX					
Drill Hole Location Survey	WDG	XXXX	XXXX	XXXXX	X				
Claim Survey, Clean-up	WDG	XXXX							
Re-Tuned ROI, Preliminary	SWMD	XXXX							
Base-Line Water Survey	WDG-MAM	XXXX	XXXX	XXXXX	XXXX	XXXX	XXXXX	XXXX	
Open-cut Sampling, Metallurgical	JJM-MAM	XXXX							
Aerial Survey Control Points	WDG	XXXX							
Permits - Establish Guidelines/Time Table	SWMD	XX							
Mapping/Sampling - Outside Claims	MAM	X	XXXX						
Claim Staking Anomalous Areas	MAM-WDG	X	XXXX						
Local Demography (Yarnell/Glen Ilah)	JDS-Consultant	XX					XX		
Core Drilling, 4 holes, sites, logging, Metallurgy	SPD-JJM-MAM		XXXX						
Photography, Aerial	WDG-Contractor								
Blasting & Removal of Open-cut Metallurgical Sample	SWMD-Contractor								
Topography Map, Mine Area/Photography Total Area	WDG-Contractor			X					
Underground Surveying	WDG-Contractor		X	XXX					
Underground Sampling	WDG-JJM		X	X					
Final Drilling/Geology/Ore Reserve Est. Report	MAM-JDS			XX					
Permits for Mining/Metallurgical Operations	SWMD			XXXXX	XXXX	XXXX	XXXXX	XXXX	XXXXX
Column Leach Tests	MBD-McC		XX	XXXXX	XXXX				
Ore Reserve	SWMD-SWED			XXXX					
Water Supply Evaluation/Recommendations	MAM-WDG-SWMD				XXXX				
Development/Condemnation Drilling	MAM-SWMD					XXXX	XXXXX	XXXX	XXXXX
Metallurgical Reports/Recommendations	MBD-McC					XXXX			
Feasibility Report	SWMD					XXXX			
Removal of Microwave Towers	WDG-Contractor					XXXX			
Mine/Metallurgical Plant Planning/Development	SWMD-MBD					XXXX	XXXXX	XXXX	XXXXX

PERSONNEL:

JDS, James D. Sell
JJM, John J. Malusa, geologist, temporary
MAM, Mark A. Miller, project supervisor, geolgoist
MBD, Mineral Beneficiation Dept.
McC, McClelland Laboratories, Inc.
SPD, Steven P. Duncan, technician
SWED, Southwestern Exploration Division
SWMD, Southwestern Mining Department
WDG, William D. Gay, land engineer

J.D. Sell

8/8/89

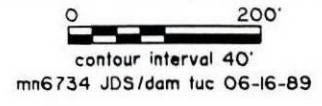


EXPLANATION

○ 501' 130°-200' 70' .058 Completed drill hole showing; collar elevation, interval, length, o.p.t. Au

Ⓟ Proposed drill hole

T. 10 N., R. 5 W., SEC. 14
ASARCO Incorporated
YARNELL PROJECT
DRILLING PROGRESS
YAVAPAI CO., ARIZONA



ASARCO

Southwestern Exploration Division

JDS

August 8, 1989

M.A. Miller

BLM - AZ Water
Yarnell Project
Yavapai County, AZ

Do you need to notify the BLM, et al, that you are drilling additional holes on the unpatented ground at Yarnell?

JDS:mek


James D. Sell

cc: W.L. Kurtz
W.D. Gay

August 8, 1989

FILE NOTE

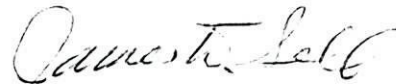
YARNELL PHONE

The "office" phone at the Yarnell house has been changed as of August 8, 1989 to 602/427-3848.

The old number (427-3556) is now at Jack's new home in Yarnell.

Please change all your numbers to the new number 427-3848 so as not to bother Jack's residence.

JDS:mek



James D. Sell

cc: W.L. Kurtz
W.D. Gay
M.A. Miller
J.J. Malusa

August 8, 1989

M.A. Miller

Tops & Bottom Elevation
and Coordinates
Open-Cut Samples
Yarnell Project
Yavapai County, AZ

Mr. Graybeal has requested that the sample lines cut in the open-cut be placed in the computer as if they were short drill holes.

Provide a memo to L.J. Jansen giving the top and bottom elevations and coordinates for all the lines cut. You also need to provide him with a grade of the intervals.

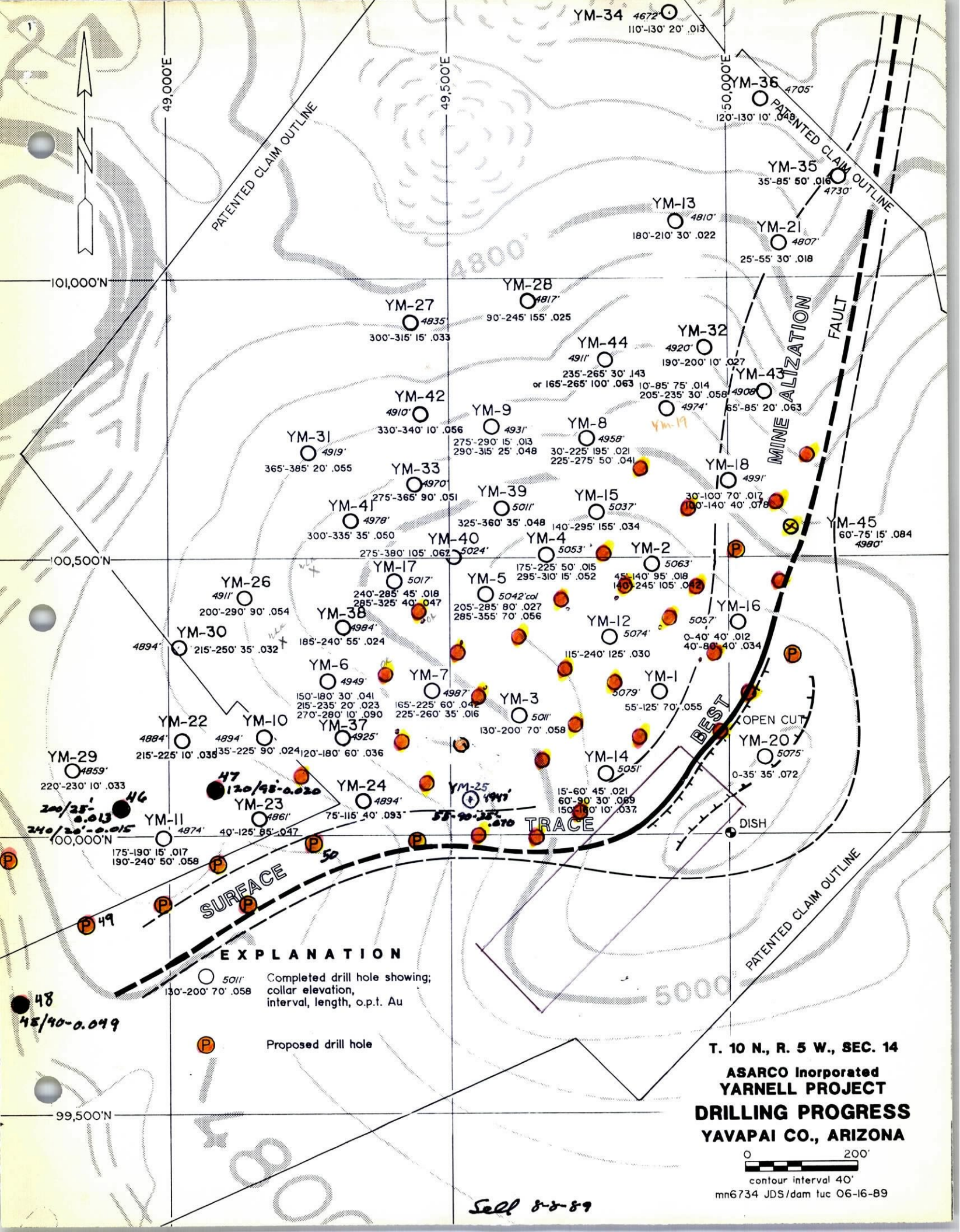
Check with Lou as to how he would like the data so that he can use it.

JDS:mek

James D. Sell

James D. Sell

cc: W.L. Kurtz
L.J. Jansen



EXPLANATION

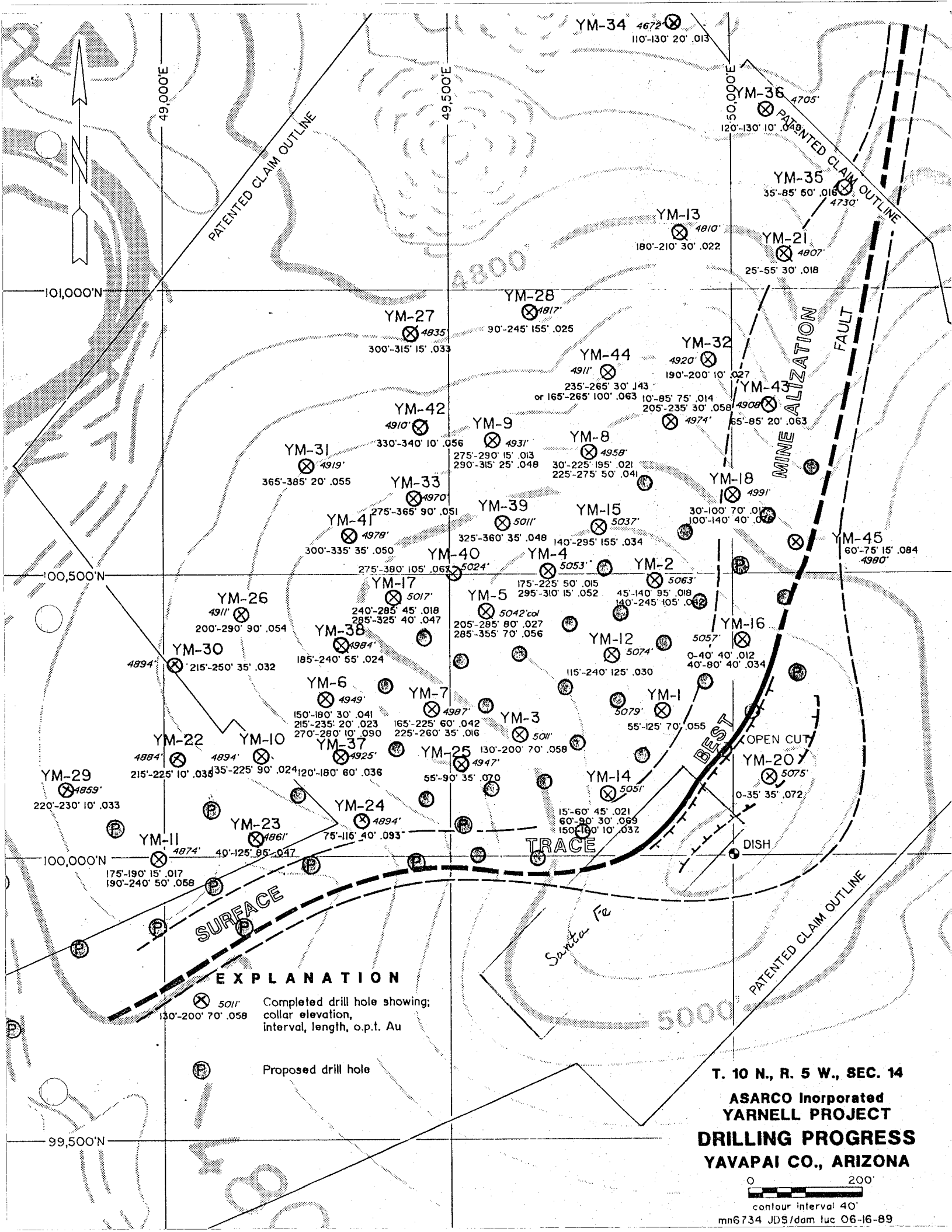
- 
 5011' 130'-200' 70' .058 Completed drill hole showing; collar elevation, interval, length, o.p.t. Au
-  Proposed drill hole

T. 10 N., R. 5 W., SEC. 14
ASARCO Incorporated
YARNELL PROJECT
DRILLING PROGRESS
YAVAPAI CO., ARIZONA





contour interval 40'
 mn6734 JDS/dam tuc 06-16-89

Self 8-8-89



EXPLANATION

- 
 5011' 130°-200' 70'.058 Completed drill hole showing; collar elevation, interval, length, o.p.t. Au
- 
 Proposed drill hole

T. 10 N., R. 5 W., SEC. 14

**ASARCO Incorporated
YARNELL PROJECT
DRILLING PROGRESS
YAVAPAI CO., ARIZONA**

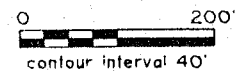
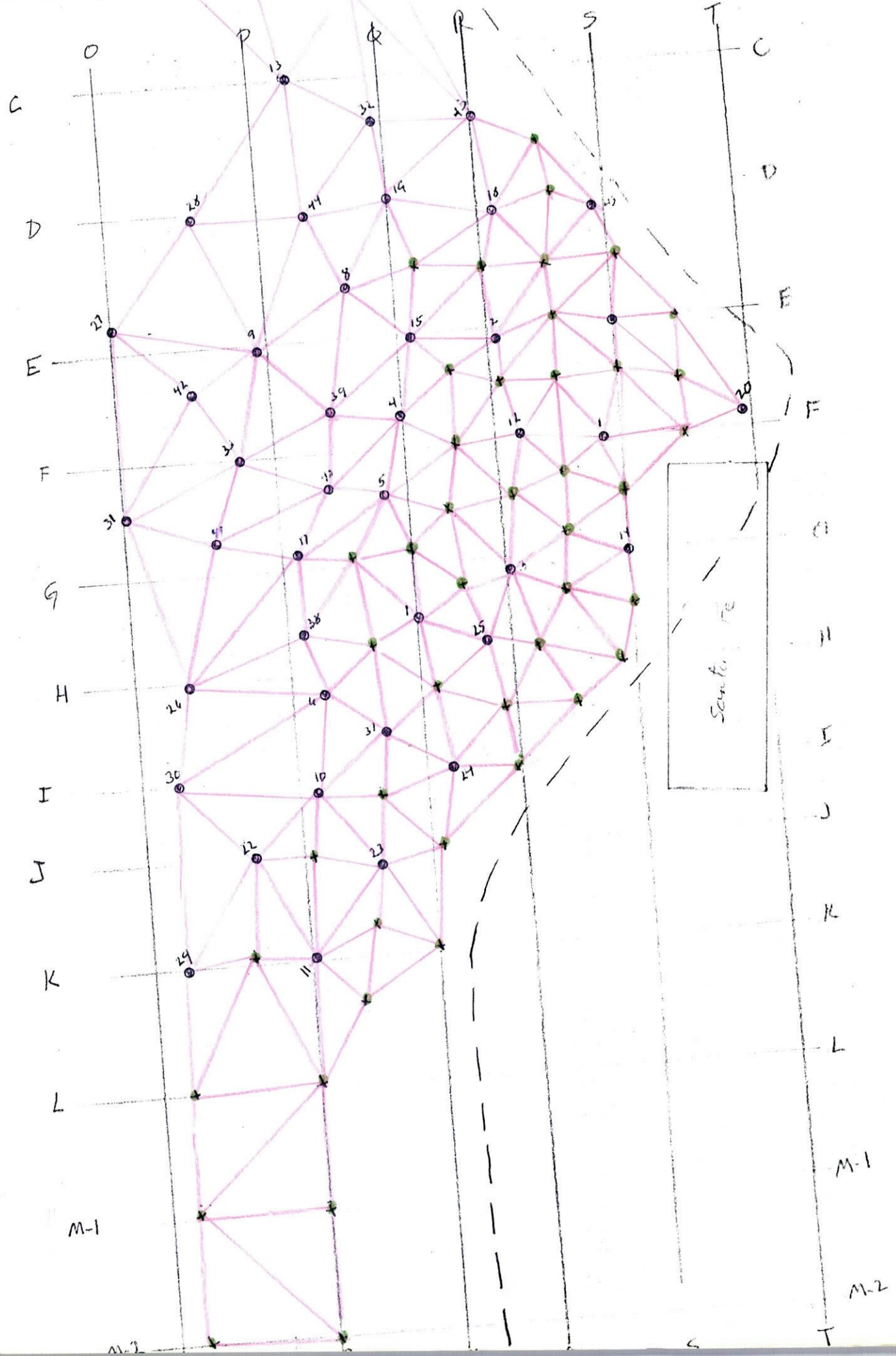


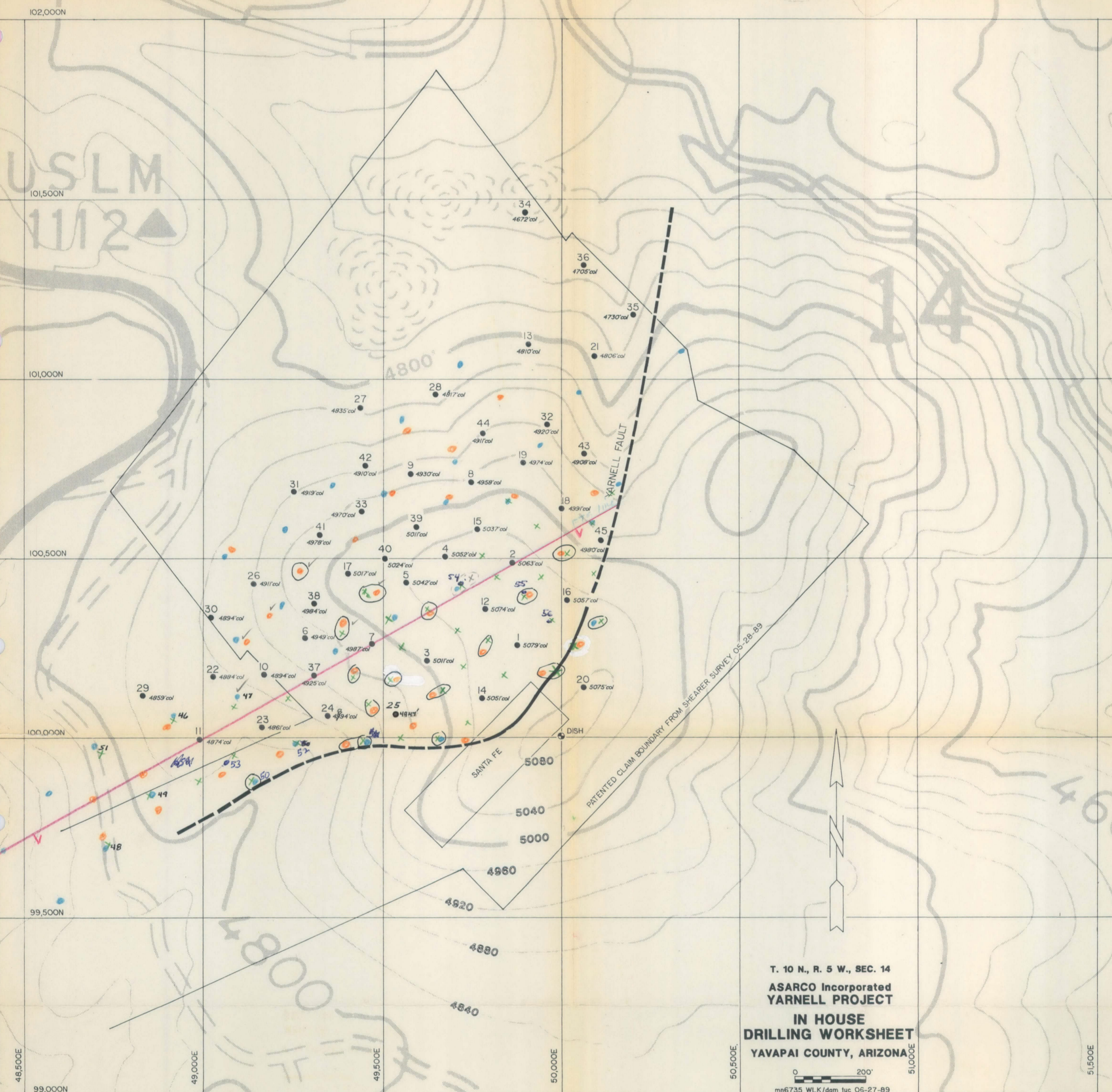
Table One -

Recommended Phase 3 Drilling

Number	MAM Coordinates		Depth	Number	MAM Coordinates		Depth
-	C.5	R.5	150	3S	H	R.8	100
3F	D	R.5	150	-	H.2	Q.2	300
3J ⁽²⁾	D.5	Q.25	325	-	H.35	Q.85	150
-	D.5	R	250	-	H.5	R.5	150
-	D.5	R.5	175	3U	I	R	175
-	D.5	S	100	-	I.25	P.7	225
-	E	R.5	225	3V	J	P.2	250
3I	E	S.5	100	3W	J	Q.2	100
-	E.35	Q.5	325	-	J.7	P.5	250
-	E.5	R	300	3X	K	Q.6	300
-	E.5	R.5	250	3Y	K	Q	150
-	E.5	S	150	3Z	L	Q.2	250
-	E.5	S.5	125	3AA	L	P	250
3L	F	Q.5	350	3EE	M-1	Q.2	150
-	F	S.5	150	3BB	M-1	P	250
-	F.25	R.5	225	3DD	M-2	Q.2	100
-	F.5	Q.5	225	3CC	M-2	P	200
-	F.5	R.1	275				
-	F.5	S	200				9475
-	F.75	R.5	225				
-	G	P.5	300				
-	G	Q	300				
-	G.25	Q.5	250				
-	G.25	R.5	225				
-	G.5	S	150				
-	G.75	P.5	350				
-	G.8	R.25	175				







USLM
1112 ▲

T. 10 N., R. 5 W., SEC. 14
ASARCO Incorporated
YARNELL PROJECT
IN HOUSE
DRILLING WORKSHEET
YAVAPAI COUNTY, ARIZONA

0 200'
 mn6735 WLK/dam luc 06-27-89
 contour interval 40'

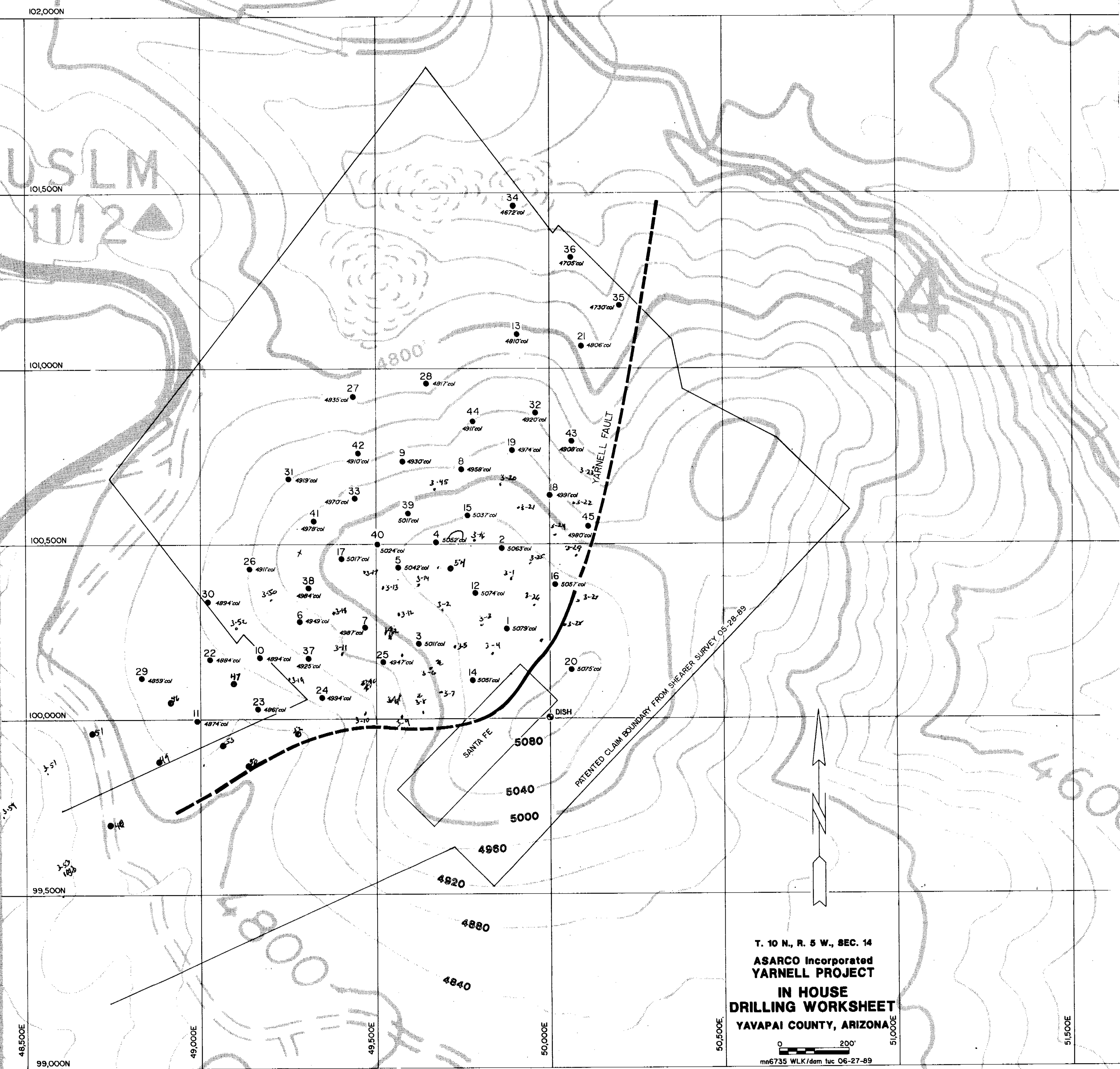
- MAM
- JDS
- ▲ WLK *definit*
- ✕ FTG *explor*

Corrected Sheet
on Apr 25

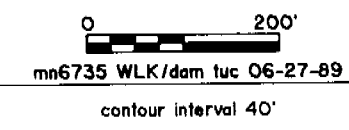
SOUTHWEST CORNER SECTION 14

Tentative Holes

U.S.L.M.
1112 ▲



T. 10 N., R. 5 W., SEC. 14
ASARCO Incorporated
YARNELL PROJECT
IN HOUSE
DRILLING WORKSHEET
YAVAPAI COUNTY, ARIZONA



SOUTH WEST CORNER SECTION 14

MAW 3- coordinate

102,000N

101,500N

101,000N

100,500N

100,000N

99,500N

99,000N

USLM

1112

3ND

3DD

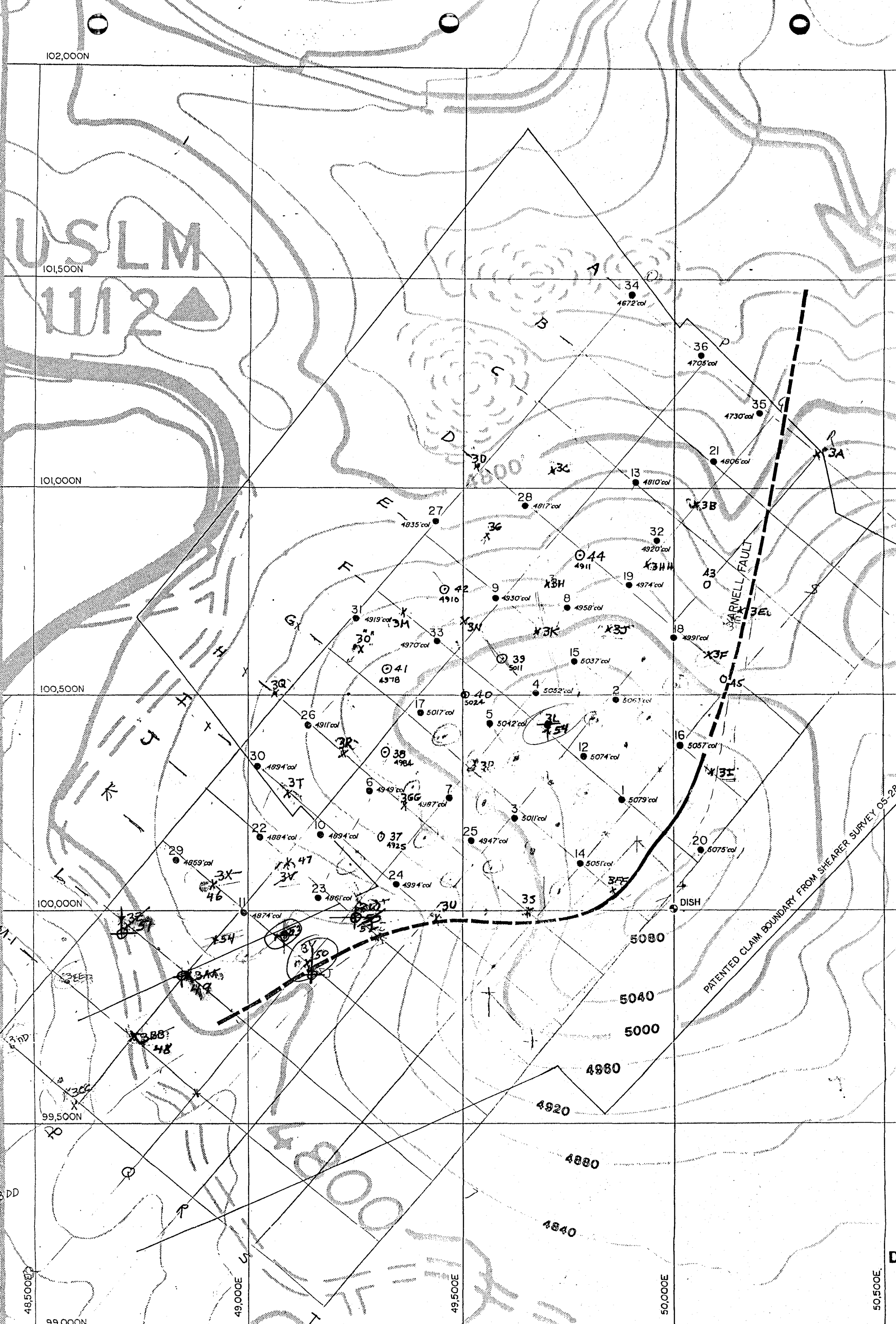
48,500E

49,000E

49,500E

50,000E

50,500E



PATENTED CLAIM BOUNDARY FROM SHEARER SURVEY 05-28

39, at MAW
C.S. preliminary

<u>Hole</u>	<u>Depth</u>	
46	300	
47	320	
48	220	
49	220	
50	85	
51	240	
52	200	
53	150	
54	240 340	
55	220	
56	180	
57	120	
58	90	
59	180	
60	110	
61	<u>250</u>	5/22/89

3225' Subtotal

3-13 ~~3-13~~ 3P

~~3-13~~
~~3-18~~

~~10-30~~

3-50 3R

3-52

hold Sec
10-30 = 670

ft

~~325~~

6-20

350

7-38

325

32-26-17-4

425

85

400
100

604/681-5566 ~~Call + do not see what's up~~ 8/19/89
at al

~~with agent~~ Mike Philpot 685-8730

New heard the 350K; I + do Moat we wanted to see data before we made a bid for the property; Based on Koote I'm not interested.

→ JDS
✓

Alvarado Mine
Yarnell area
Yavapai Co., AZ

Jerry Haggard called 8/19/89 to say that Mr. Scarth had written a letter to him stating that an individual from Prescott, AZ, was interested in leasing - purchase of the Alvarado. A lease-purchase is being drafted according to Mr. Scarth.

The individual is Mr. "M." ^{Melluapoo} and no mention of Don Jenkins was made or implied by Scarth.

What has Norgold done? Should we set Jerry free to negotiate?

C. Moat returned my call on 8/10

350K he said that Norgold ~~got~~ ^{just} received little hard data from Scarth and that the main thing was that they wanted 350K for the property.

He said he asked you to say that ASAPes was interested & he would go after it for the ASAPes account.

Fleet's comments are on the book (mic mark on the phone).

Sp price is ± 1300^{ac}/acre - see comments on back side.

JDS

Kouty: memo date Aug 28, '85

Tails: 140,000 tons @ 0.035 ??

but samples of his only

50,000 tons @ 0.06 ?

but .023 OKAY in other.

Vein: 5' .98 .84

3'-5' .14

Slackwork .007 - .02

UG
3.57 ft 140,000 .26 —

Say: Tails: 110,000 tons @ 0.03 = 3,300 oz Au

50,000 tons @ 0.06 = 3,000 " "

UG 140,000 tons @ 0.26 = 36,4000 " "

42,700 oz Au in "reserve"

of the 6,300 oz in tails are OK to leach

then $\times \$400/\text{oz Au} = \2.5 million

Mike thought the tails had lots of sulfide

in it + ? the leachability, but

? direct smelter flux if silica is enough.

Freehold reports:

patented claims 116 net acres

unpatented claims 158 unpat^{acres} + State Lease

274 | 350,000 = $\pm 1300/\text{acre}$

hi but not
unreasonably
if any potential to
move + level as you would
+ other exploring reserves?
JMS

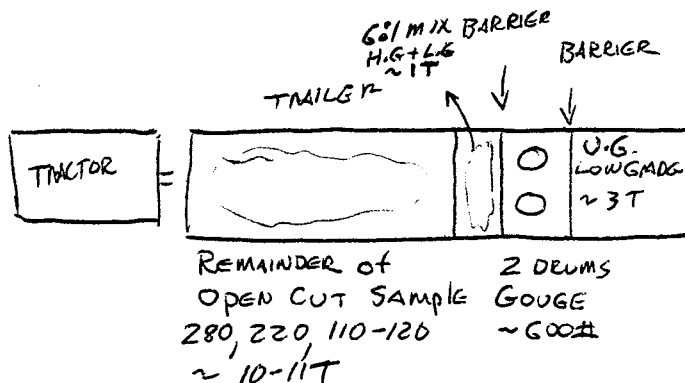
8/9/89

MEMO TO J.D. SELL.

METALLURGICAL BULK SAMPLE
TRUCK SHIPMENT TO
McCLENNAND LABS, SPARKS, NV

PER YOUR REQUEST I HAVE SHOWN SAMPLE
PLACEMENT ON THE TRUCK WE SHIPPED TO
McCLENNAND LABS. THE SHIPMENT ARRIVED ON 8/7/89
@ THE LAB. SAMPLE PILES WERE SAMPLED AFTER UNLOADING.

NO SCALE:



Mark Miller
PROJECT GEOLOGIST

cc: D. E. Crowell
W. L. Kurtz

August 10, 1989

W.D. Gay

Drill Hole 25 Coordinates
Yarnell Project
Yavapai County, Arizona


The Yarnell Project Preliminary map from the Aerial Map group has placed the panel and drill hole YAR-25 some hundred feet south and ten feet east of where it was plotted on the maps by your submitted coordinates.

Please check your notes for a possible solution to the problem.

Don Melhado has checked the listing of the other holes vs. the panels and has found no problem with the coordinates supplied.

Also, please check the elevation of all the holes on the Preliminary Map vs. the list of published elevations for the drill holes and make a list of possible differences.

The Preliminary Map will be modified, I imagine, when the digital tape is sent to Asarco, and L. Jansen will have a chance to print a new copy. However, I think we should be aware of any problems that need to be resolved between the field and Aerial Map group.


James D. Sell

JDS:mek

cc: W.L. Kurtz
M.A. Miller

August 10, 1989

FILE NOTE

Tower Site/Rights
Yarnell Project
Yavapai County, AZ

Mike Philpot called 8/10/89 to say that he has been in contact with a Mr. Harper of Yarnell. *Cave Creek*

Mr. Harper apparently owns the east-west strip of land from Yarnell east to the proposed communications tower sites northeast of the drilled area.

Mike believes he can secure an option on 1/2 acre of land adjacent to the present tower on the ridge for \$1500 down on a 1-year option with a \$5,000 buy-out.

Mr. Harper controls the ingress and egress to the parcel as well as owning the parcel in question.

I said that I agreed the money would be well spent to tie it up now.

Yarnell Cable TV, now Mission Cable, apparently secured their one acre site for \$15,000 several years ago.

JDS:mek

James D. Sell
James D. Sell

cc: R.L. Brown
F.T. Graybeal
W.L. Kurtz
M.A. Miller

Rand Edgar & Sedun

Barristers & Solicitors

William A. Rand* Brian D. Edgar* Gregg J. Sedun*

2200 Hongkong Bank of Canada Bldg
885 West Georgia Street
Vancouver, B.C. V6C 1E8
Tel. (604) 687-9931
Telefax (604) 681-7116

File No. 2003

VIA TELEFAX

August 10, 1989

Asarco Incorporated
180 Maiden Lane
New York, New York
U.S.A. 10038Attention: Mr. Fred Graybeal, Chief Geologist

Dear Sirs:

Re: NORGOLD RESOURCES (US) INC.
Yarnell Project, Arizona

Please find enclosed the following:

1. draft news release dated August 11, 1989;
2. draft agreement with Santa Fe Railway Company; and
3. letter from Boyle, Pecharich, Cline & Whittington, dated August 2, 1989, regarding the Heintzelman property.

We understand that Mr. Christopher Moat has left a message with your office to have you give him a call early on Friday morning and he would like the opportunity to discuss the enclosed documents with you.

Yours very truly,

RAND EDGAR & SEDUN
Brian D. Edgar:vb
Encl.

0956V

cc WLK
JDS
FILERECEIVED
AUG 11 1989
EXPLORATION DEPARTMENT

*Faxed to Haggard
E/J***NORGOLD RESOURCES INC.****Santa Fe Railway Company**

August 10, 1989

*need firm calloway for wave
cable notification***RECEIVED**

AUG 11 1989

EXPLORATION DEPARTMENT

Attention:**Dear Sirs:****Re: SANTA FE RAILWAY COMPANY MICROWAVE
COMMUNICATION TOWER, Yarnell, Arizona**

Further to our recent telephone conversations and correspondence, Norgold Resources (US) Inc. ("Norgold") would like to make the following offer to Santa Fe Railway Company ("Santa Fe") with respect to Santa Fe selling to Norgold the land comprising approximately 1.72 acres located in Yavapai County, Arizona near the town of Yarnell (the "Property") on which is located a microwave communication tower maintained and operated by Santa Fe.

Norgold's offer is as follows:*10,000*

1. In consideration for the sum of \$20,000.00 U.S., Norgold offers to purchase the Property and all rights related thereto in fee title free and clear of all financial liens, charges and encumbrances from Santa Fe.

2. The purchase price would be paid within five (5) business days of the acceptance of this offer by Santa Fe.

3. Within five (5) years of the date of acceptance of this offer by Santa Fe, Norgold shall be entitled to send a notice in writing to Santa Fe requesting:

- (a) possession of the Property;
- (b) that title to the Property be transferred to Norgold or its assign; and
- (c) that Santa Fe move all surface facilities maintained by it on the Property (the "Facilities") to another site (the "Alternate Site").

4. Norgold shall provide the Alternate Site without cost to Santa Fe which shall be located in the vicinity of the Property and which site shall be reasonably equivalent to the Property for use in providing a location for a microwave communication facility of the kind presently operated by Santa Fe on the Property. Without limitation, the Alternate Site shall have equivalent or better radio and microwave signal reception and transmitting qualities, have reasonably equivalent ingress and egress qualities and reasonably equivalent maintenance attributes.

- 2 -

5. Title to the Alternate Site shall be transferred by Norgold to Santa Fe free and clear of all financial liens, charges or encumbrances prior to Santa Fe's moving of the Facilities.

6. The moving of the Facilities from the Property to the Alternate Site shall be under the complete direction of servants, agents or employees of Santa Fe. Santa Fe shall keep accurate records of the direct cost of moving the Facilities and such cost shall be paid by Norgold. Prior to moving the Facilities, Santa Fe shall make a detailed estimate of the cost of moving the Facilities and such estimated amount shall be paid by Norgold to Santa Fe in advance with the appropriate adjustment to be made once the actual cost of moving the Facilities is known subsequent to such Facilities being moved and an accounting being rendered to Norgold by Santa Fe.

7. In the event that Norgold does not request that Santa Fe deliver over possession of and title to the Property and move the Facilities within five (5) years as aforesaid, this agreement shall become null and void, Santa Fe shall be entitled to retain the full amount of the purchase price and Norgold shall have no interest in the Property whatsoever.

8. Norgold acknowledges that the Facilities are an integral part of Santa Fe's communication system and is of vital importance to its operations. The particular location of the Alternate Site and the establishment of new Facilities on the Alternate Site are, accordingly, most important to Santa Fe and it is the intent of this agreement that Santa Fe shall be satisfied in every reasonable way with respect to its technical requirements for re-establishing the Facilities on the Alternate Site.

9. In the event that Norgold does elect to take over title to and possession of the Property and have Santa Fe move the Facilities, both Santa Fe and Norgold agree to execute such other documents and do such other things as may be necessary to carry out the full intent of this agreement. The parties acknowledge that the intent of this agreement is for Norgold to be able to purchase the Property, should it deem such purchase necessary for the purpose of conducting exploration or mining operations on or near the Property and, in such event, Norgold will purchase an equivalent property located in the area of the Property on which Santa Fe will establish the equivalent communication facilities. The cost to Norgold will be \$20,000.00 U.S. and the assumption of Santa Fe's direct cost in moving the Facilities, including without limitation, the cost of purchasing the Alternate Site. In consideration for Santa Fe agreeing to the foregoing, Santa Fe will receive \$20,000.00 U.S. and will have all of its direct expenses in complying with the terms of this agreement paid for by Norgold. (10,000)

10. Norgold shall be entitled to register this agreement on title to the Property at any time to give third parties notice of its interest in the Property.

If the foregoing proposal is agreeable to you, please execute the copy of this letter in the place provided to form a binding agreement. Norgold will, as provided above, deliver to you a cheque in the amount of \$20,000.00 U.S. within five (5) business days. (10,000)

⊗

- 3 -

Thank you for your cooperation in this matter.

Yours very truly,

NORGOLD RESOURCES (US) INC.

Per:

Agreed and accepted this ____ day of _____, 1989.

SANTA FE RAILWAY COMPANY

Per:

0955V

⊗

*Fut all to Huggan
E/11*

LAW OFFICES
BOYLE, PECHARICH, CLINE & WHITTINGTON
 126 NORTH GRANITE STREET
 P. O. BOX 1181
 PRESCOTT, ARIZONA 86302-1181

TELEPHONE 445-0122
 AREA CODE 602

JAMES P. BOYLE, JR.
 ROBERT S. PECHARICH
 BARRY B. CLINE
 WILLIAM R. WHITTINGTON
 ROBERT C. KOZAK
 KENTON D. JONES

August 2, 1989

**RAND, EDGAR & SEDUN
 RECEIVED**

AUG 8 1989

Mr. Brian D. Edgar
 Rand Edgar & Sedun
 2200-885 West Georgia Street
 Vancouver, British Columbia
 Canada V6C 3E8

TIME
 BY: _____

Re: Forrest B. Heintzelman -
 Norgold Resources (US) Inc.

Gentlemen:

We have encountered some difficulty in setting up an escrow at First American Title Insurance Company. In my discussion with the manager of the local office, I was told that there are basically two problems: (i) Norgold Resources may not want to purchase a title insurance policy (First American's primary source of revenue is from title insurance premiums), and (ii) the escrow may continue for 36 months, and First American has to make regular reports to the State Insurance Department concerning its open escrows, which creates unnecessary work, from First American's viewpoint.

Under the circumstances, we would have two sugges-
 tions:

1. The Quit-Claim Deed and Affidavit of Property Value could simply be retained in our offices, pending payment of the purchase price. Obviously, we would not be an escrow agent, since we are serving as counsel for Mr. Heintzelman. On the other hand, you will have the assurance that there is a signed Quit-Claim Deed being held, awaiting exercise of the option.

⊗

Mr. Brian D. Edgar
August 2, 1989
Page two

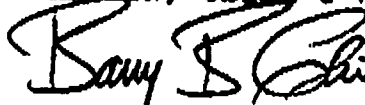
2. As an alternative, if Norgold Resources would commit to purchasing a policy of title insurance upon exercise of the option, we may be able to "twist some arms" and prevail upon First American Title to handle the escrow. We do a considerable amount of business with First American Title, and have some influence as a result.

Presumably this is not a matter of concern for Mr. Heintzelman. We would therefore request that you provide us with your reaction to the foregoing and your instructions.

Sincerely yours,

BOYLE, PECHARICH, CLINE & WHITTINGTON

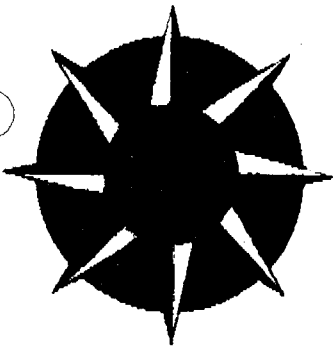
By


Barry B. Cline

BBC:tka

cc: Mr. Edmund G. Hauff
Mr. Forrest B. Heintzelman

⊗



NORGOLD RESOURCES INC.

DRAFT

STOCK EXCHANGE:VSE
TRADING SYMBOL:NGR

AUGUST 11, 1989

NEWS RELEASE

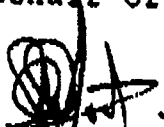
ARIZONA UPDATE/YARNELL PROJECT

Norgold has received data from the Phase II 10,000 foot drill program, which is now being evaluated by our independent engineer. It would appear, at this time, that the drill results are consistent with the Phase I results reported in our News Release dated May 01, 1989.

Surface geological mapping and rock chip sampling was completed over the mineral deposit and some of the underground workings. A 10,000 pound bulk sample is presently being metallurgically tested in Reno, Nevada.

A further 15 hole drill program has commenced and will continue through the balance of August, 1989.

On Behalf of the Board,


Christopher S. Moat
President

ASARCO

Exploration Department
Western USA
W. L. Kurtz
Manager

VIA FAX 604-685-8045

August 11, 1989

Mr. C. Moat
Norgold Resources Inc.
Vancouver, B.C. V6B-4N6

Alvarado Mine
Yarnell Project

Dear Mr. Moat:

1. Alvarado Mine: Asarco is not interested in optioning, buying, or leasing this mine from Scarth Oil.
2. Santa Fe purchase offer should be \$10,000 total. Agreement draft will be reviewed by Woods and/or Haggard on Monday (as stated to you by Mr. Graybeal) and you should check with them before meeting with Santa Fe. My non-legal mind says that you should add something like: upon receipt of notice from Norgold to move communications facilities Santa Fe will do so within 120 days.

Sincerely,



W. L. Kurtz

WLK:mek

cc: F.T. Graybeal (by FAX)
J.D. Sell

2/11/89

FROM: W. L. KURTZ

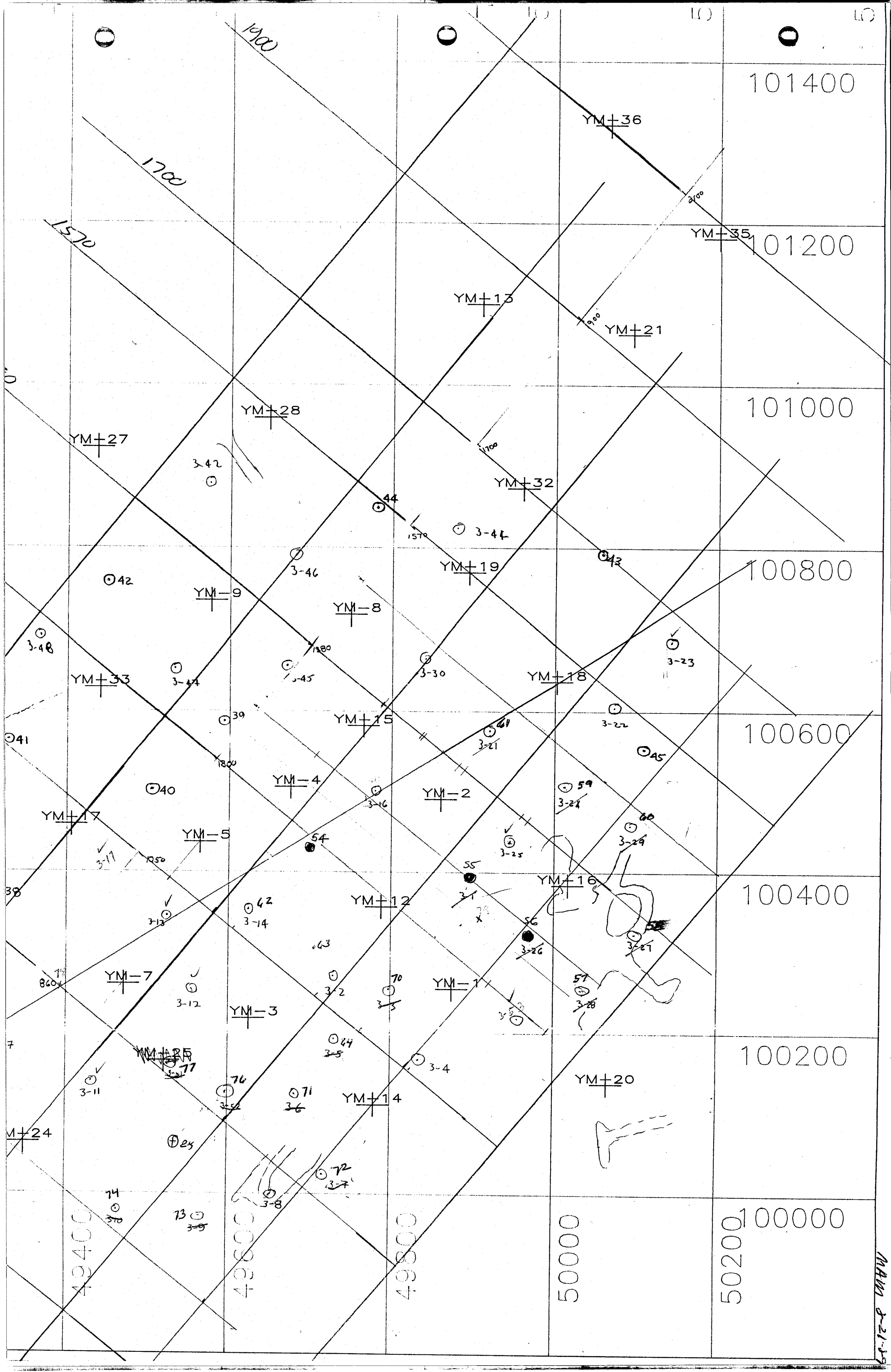
TO: F. T. Graybeal

You have Miller's + Sell's
have is my effort

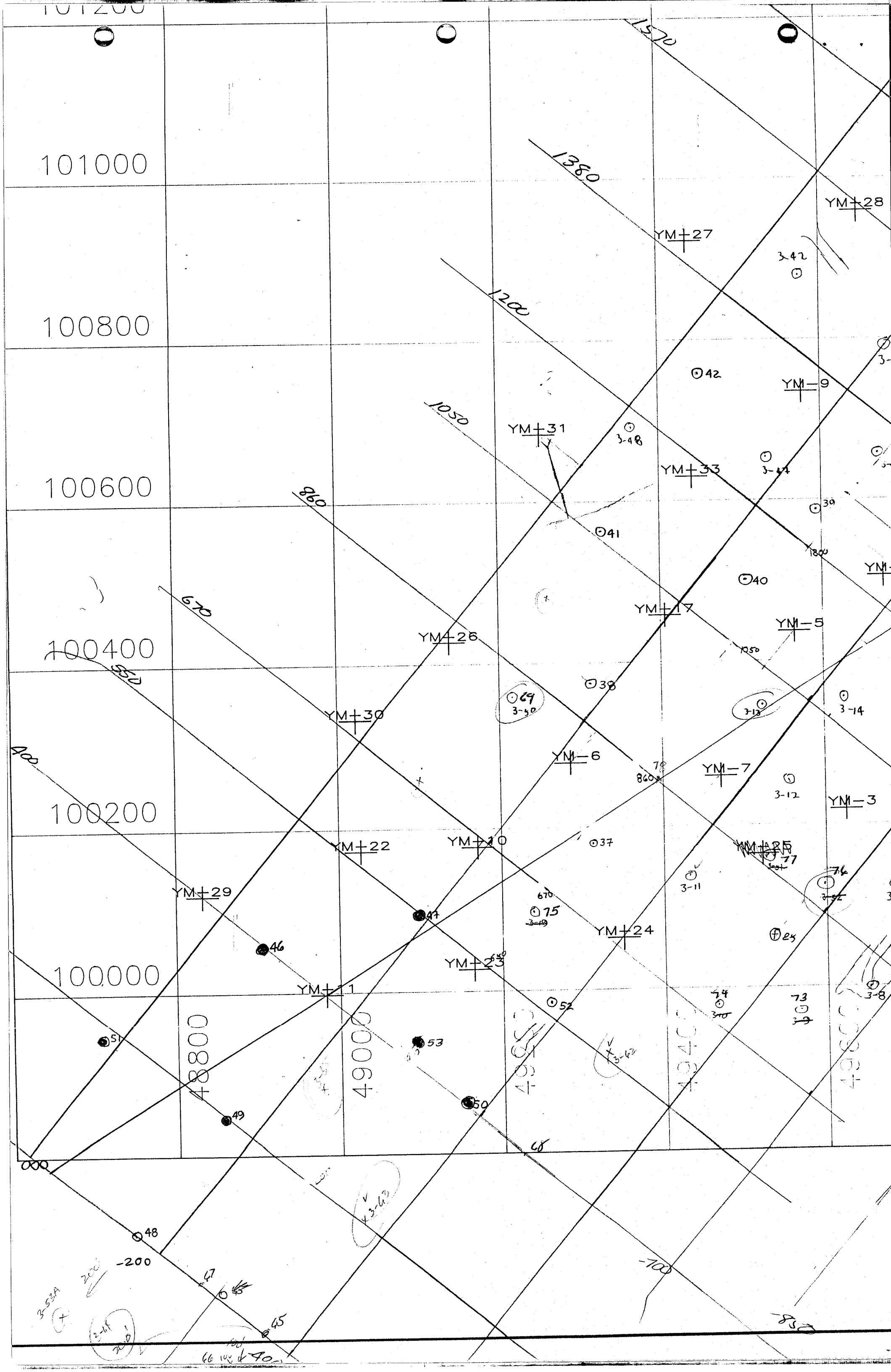
This drill program (40 holes)
should allow a rather
firm ore reserve to be
calculated.

Additional drilling may be
required for more planning

cc JDSell



NAVAID 8-21-57



101000

100800

100600

100400

100200

100000

48800

49000

49200

49400

49600

1570

1380

1200

1050

860

670

400

200

-200

-100

YM+28

YM+27

342

42

YM-9

YM+31

348

YM+33

344

39

41

1800

40

YM+17

YM-5

1050

YM+26

38

69
3-50

313

3-14

YM-6

78
860

YM-7

3-12

YM-3

YM+30

YM+10

37

YM+25

76
3-7

YM+29

47

670
75
3-19

YM+24

25

46

YM+23

3-11

YM+1

52

74
3-10

73
3-9

3-8

51

53

49

50

43
43

48

45

45

46
100
40

3-53A

2-11
200

258

ASARCO

Exploration Department
Western USA

W. L. Kurtz
Manager

VIA FAX 604-685-8045

August 11, 1989

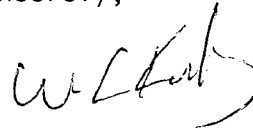
Mr. Christopher Moat, President
NORGOLD RESOURCES INC.
Vancouver, B.C.

Yarnell Project
Weekly Information

Dear Mr. Moat:

We are FAXing you assay results on Hole YM-46 and a copy of map showing the location of Hole YM-46.

Sincerely,



W. L. Kurtz

WLK:mek

cc: J.D. Sell

*note: ym-45 found up later in day
after Philpot rolled.*

**BULK
ASSAY
REPORT**



TRIAD MINERALS CO.

ASSAYING & CONSULTING
P.O. Box 2754 - Mile Post 115, Hwy. 69
Wickenburg, Arizona 85358
602-684-3818



DATE 8-10-89

ASARCO Incorporated

COMPANY ASARCO LAB. #080989-1

AUG 11 1989

HOLE # 46 Sample Description	Ounces per ton		PAGE 1	Remarks
	AU (gold)	AG (silver)		
YM 46 0-3	.023			
" " 0-5	.001			
" " 5-10	TR			
" " 10-15	TR			
" " 15-20	.001			
" " 20-25	TR			
" " 25-30	TR			
" " 30-35	.001			
" " 35-40	.001			
" " 40-45	TR			
" " 45-50	NIL			
" " 50-55	.005			
" " 55-60	.006			
" " 60-65	.001			
" " 65-70	.001			
" " 70-75	TR			
" " 75-80	TR			
" " 80-85	.001			
" " 85-90	TR			
" " 90-95	TR			
" " 91-93	.008			
" " 95-100	.002			
" " 100-105	.001			
" " 105-110	.001			

**Certified Assays When
Signed And Dated**
8-10-89 *[Signature]*
DATE SIGNATURE

**BULK
ASSAY
REPORT**



TRIAD MINERALS CO.

ASSAYING & CONSULTING
P.O. Box 2754 - Mile Post 115, Hwy. 89
Wickenburg, Arizona 85358
602-684-3816



DATE 8-10-89

COMPANY ASARCO LAB#080989-2

ASARCO Inc.

HOLE # 46 Sample Description	Ounces per ton		Remarks SW Exploration
	AU (gold)	AG (silver)	
YM 46 110-115	TR		
" " 115-120	.002		
" " 120-125	.002		
" " 125-130	TR		
" " 130-135	.001		
" " 135-140	TR		
" " 140-145	.003		
" " 145-150	.001		
" " 150-155	.002		
" " 155-160	.005		
" " 157-159	.025		
" " 160-165	.006		
" " 165-170	.003		
" " 170-175	.005		
" " 175-180	.004		
" " 180-185	.004		
" " 185-190	.005		
" " 190-195	.003		
" " 195-200	.002		
" " 200-205	.010		
" " 205-210	.008		
" " 210-215	.017		
" " 215-220	.020		
" " 220-225	.010		

PAGE 2

AUG 11 1989

**Certified Assays When
Signed And Dated**
8-10-89 *[Signature]*
DATE SIGNATURE

**BULK
ASSAY
REPORT**



TRIAD MINERALS CO.

ASSAYING & CONSULTING
P.O. Box 2754 • Mile Post 115, Hwy. 89
Wickenburg, Arizona 85358
602-684-3816



DATE 8-10-89

ASARCO Incorporated

COMPANY ASARCO LAB# 080989-3

AUG 11 1989

HOLE # 46

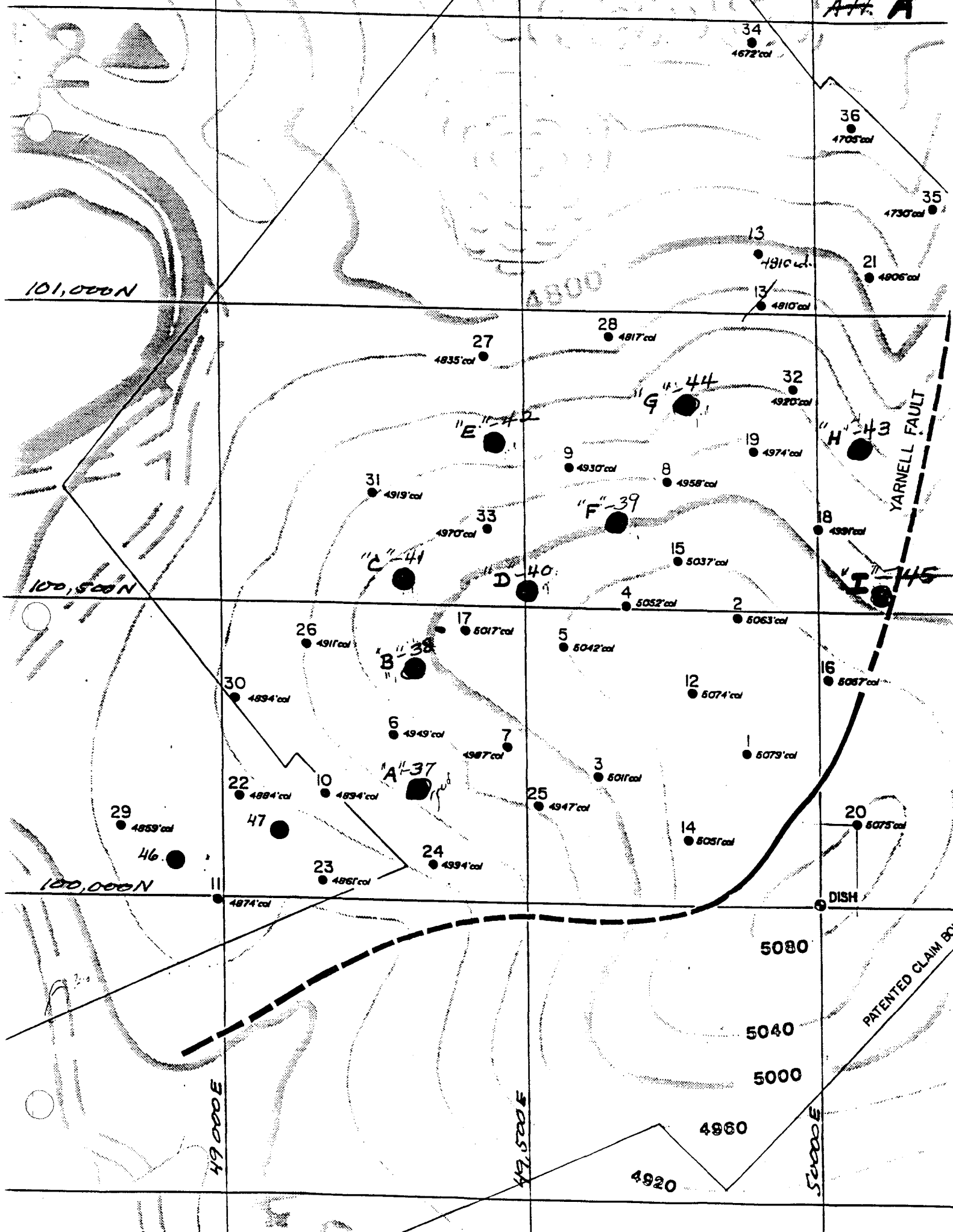
Ounces per ton

PAGE 3

Sample Description	Ounces per ton		Remarks	SW Expiration
	AU (gold)	AG (silver)		
YM 46 225-230	.006			
" " 230-235	.003			
" " 235-240	.007			
" " 240-245	.015			
" " 245-250	.015			
" " 250-255	.011			
" " 255-260	.018			
" " 260-265	.008			
" " 265-270	.010			
" " 270-275	.007			
" " 275-280	.011			
" " 280-285	.005			
" " 285-290	.015			
" " 290-295	.005			
" " 291-293-B	.007			
" " 295-300	.003			

Certified Assays When Signed And Dated	
8-10-89	<i>[Signature]</i>
DATE	SIGNATURE

Att. A



101,000N

100,500N

100,000N

49,000E

49,500E

5000E

YARNELL FAULT

PATENTED CLAIM BOUNDARY

DISH

34
4672' col

36
4705' col

35
4730' col

21
4806' col

13
4810' col

13
4810' col

28
4817' col

27
4835' col

32
4920' col

9
4930' col

19
4974' col

8
4958' col

31
4919' col

33
4970' col

"F"-39

15
5037' col

18
4939' col

100,500N

26
4911' col

17
5017' col

5
5042' col

2
5063' col

"B"-38

12
5074' col

16
5067' col

6
4949' col

7
4987' col

3
5011' col

1
5079' col

29
4859' col

22
4884' col

10
4894' col

"A"-37

25
4947' col

14
5051' col

20
5075' col

47

23
4861' col

24
4994' col

100,000N

11
4874' col

5080

5040

5000

4960

4920

NORGOLD RESOURCES INC. (NGR-V)

THIRD PHASE DRILLING STARTED - Norgold Resources Inc. has received data from the Phase II drill program of 10,000 feet on the Yarnell project, which is now being evaluated. The Yarnell project 30 miles NE of Wickenburg in Yavapai county, Arizona as an open heap leach gold project. The drill results are consistent with the Phase I results. (SEE GCNL NO.84, May 2,1989 for assay results which indicated several million tons of gold mineralization.) Surface geological mapping and rock chip sampling was completed over the mineral deposit and some of the underground workings. A 12,000 pound bulk sample is presently being metallurgically tested in Reno, Nevada.

A further 15 hole drill program has started and will continue through the balance of August 1989. Asarco Inc. hold an option to earn a 51% interest in the property.

X-CAL RESOURCES LTD. (XCL-T)

SNOWBIRD PROPERTY ENLARGED - Shawn Kennedy, president of X-Cal Resources Ltd. reports that the staking of additional claims has doubled the claim area connected with the Snowbird gold deposit near Fort St. James, B.C. to approximately 12,000 acres. The claims were staked due to the continued favourable results from the on going exploration program on the Snowbird deposit. Claims contiguous to the expanded claim block have also been staked by a major company.

RULE RESOURCES LTD. (RUL-V)

COPPER PROPERTY OPTIONED - John B.Lepinski, president reports Rule Resources Ltd. has paid \$20,000 for an option to acquire a 100% interest in a copper property in the Highland Valley of B.C., exercisable upon staged payment of \$395,000 and 100,000 shares and a 1.5% net smelter return to limit of \$605,000 subject to regulatory approval. The company has granted options on 384,466 shares at 15¢ each until 11Aug91.

NEVADA GOLDFIELDS CORPORATION

(NGF-T,NGFCF-Nasdaq,NGF SG-Stuttgart Exchange)

NEW BEGINNINGS RESOURCES INC. (NBR-V)

KINGSTON MINE PLACED ON STANDBY - Nevada Goldfields' Kingston Mine, located in Kingston Canyon, 50 miles south of Austin, Nevada and 125 miles southwest of Reno, Nevada will be placed on standby service 18Aug89 to conserve cash flow. The mine has been operating at a loss for the past two quarters because of lower than forecast gold grades and increased waste mining. Underground exploratory development and drilling for extensions of the ore reserves have been unsuccessful. For fiscal year ended 30Jun89, the mine produced 25,131 ounces of the company's gold production of 38,880 ounces.

Nevada Goldfields holds the mine under a revised and restated agreement with New Beginnings and is actively seeking a joint venture partner to fund the continuance of its drilling programs.

WOODWARD'S LIMITED (WDS-V,T,M,ALBERTA)

WOODWARD FAMILY SIGNS - C.N.W. Woodward, on behalf of OPTION AGREEMENTS certain Woodward family interests

standby commitment to purchase any unsubscribed rights from the rights offering to issue \$25,000,000 convertible subordinate notes is proceeding satisfactorily and is expected to be executed by 15Sept89. (SEE GCNL NO.143, 26Jul89, p.1 FOR MORE DETAIL).

NORAMCO MINING CORPORATION (NNN-V,T,M)

YEAR END QUARTERLY - Noramco Mining Corporation reported **FINANCIAL RESULTS** a loss of \$56,000 in the 3 months ended 30Jun89, compared to a loss of \$3,750,000 or 23¢ per share in the same period of 1988. Cash and short term investments amount to \$12,575,000 and the company is now operating on a breakeven basis.

For the fiscal year end of 31Mar89, Noramco had a loss of \$61,341,000, due to the operating loss at the Golden Rose mine and the writedown of investments. The reduced loss in the current quarter reflects cost reductions implemented in early 1989, including the closure of the mine and two exploration offices, and the consolidation of the exploration program to concentrate on the most promising 10% of existing properties.

Noramco will not be proceeding with an amalgamation with GOLDEN DAY MINING EXPLORATIONS INC. (GDY-M).

FOR THE RECORD

AISI RESEARCH CORP. (AIZ-V) reports that William Smith, former president of the company, has agreed to sell 3,054,772 earn-out escrow shares and 224,482 free shares to a Hong Kong investor group, retaining 500,000 earn-out escrow shares for himself, subject to regulatory and shareholder approval. An extraordinary general meeting will be held in October 1989 for this purpose.

BRENNA RESOURCES LTD. (BRW-V) shares were conditionally listed 10Aug89 on VSE. The shares will be called for trading when the Exchange has rec'd.evidence of satisfactory distribution of the following offering. By 2Aug89 prospectus filed with B.C.Supt.of Brokers 9Aug89. Brenna are offering 700,000 shares at 35¢ per share on VSE thru Canarim Investment Corporation as agent. Canarim will be issued 175,000 non-transferable warrants exercisable for 2 years from the date the share are called for trading at 35¢ p/sh. in the year 1 and at 40¢ p/sh. in year 2.

BURDETT RESOURCES LTD. (BDT-V) has completed conditions to acquire the exclusive Canadian and European marketing rights for a line of products developed by Alpha Research & Development Inc. of Arlington, Washington. The rights include Alpha's cosmetic and skin care product line marketed in the USA under the name of the Tara-Mar label; an organic adjuvant; fish based fertilizer; and fish feed pellets. Burdett Resources has advanced to Alpha a Cdn. \$20,000 loan, which is being used to expanded laboratory and production facilities in Arlington. Burdett is negotiating other possible agreements.

CONTINENTAL GOLD CORP. (CNT-V;NDTVF-Nasdaq) Continental Gold Corp. has reported the appointment of Ray W.Ballmer as a director. He is vice chairman and chief executive officer of Rio Algom Limited. Rio Algom recently bought 628,053 shares or 8.6% of Continental Gold Corp. which has 7,396,114 shares outstanding.

FAIR HARBOUR MINING CORPORATION (FH-V) reports drilling started Aug. 3, 1989 on the copper-zinc Trinity property

ASARCO

Southwestern Exploration Division

August 14, 1989

J.D. Sell

Yarnell Project
Coordinates for YM-25

Reference is made to your memo of 8/10/89.

Correct coordinates for YM-25 are:

N 100,063.1
E 49,533.7

Elevation remains 4947.3

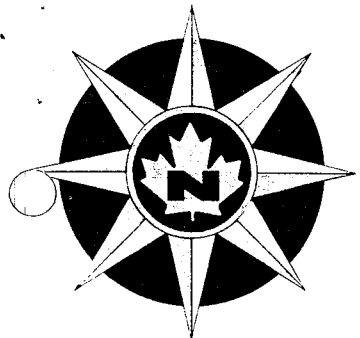
The drill hole locations and elevations have been checked on the preliminary (Western Air) contour map. Some elevations need to be field checked. These results will be available next week.

WDG:mek

cc: Melhado, DA

W. D. Gay
W. D. Gay

JDS



NORGOLD RESOURCES INC.

Norgold Resources (US) Inc.
13935 Chamy Drive
Reno, Nevada 89511

August 15, 1989

ACF 10 111

AUG 24 1989

BY EXPLORE

ASARCO Inc.
1150 North 7th Avenue
P. O. Box 5747
Tucson, AZ 85703

Attn: Mark Miller / Jim Sell

The following sheets are transcripts of the notes taken during microscopic review of the slides sent to me by Mark. Please note that this review is summary and somewhat sketchy in nature and is considered preliminary.

As you are probably aware, while optical microscopic review with transmitted light may help to determine such things as the proper direction in which to approach beneficiation studies, and/or geologic environment of formation of certain ores, it is only one step towards determination of such factors.

The following were suggested by this preliminary review of these slides:

1) The presence of fine-grained pyrites in quartz-rich rock from the area of the shoots may suggest gold is contained within the pyrites. This can be determined by further optical means including preparation of polished sections and ore petrography studies.

If gold is contained in the pyrites which in turn occur throughout the f.gr. quartz-rich matrix, milling of the higher-grade, silica-rich, portions of the deposit could substantially improve recoveries over those obtained from a coarse crush, simple heap-leach process.

2) the presence of iron-oxides within fractures throughout other rocks combined with a general absence of fresh sulfides, if of ore grade, suggest that these rocks would be amenable to
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heap leach processes. It is possible that gold associated with iron-oxides could be identified through examination of polished sections as suggested for determination of gold within pyrites.

If the gold in these rocks is contained within iron-oxides they should readily leach using standard heap leach procedures.

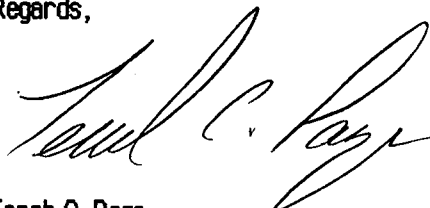
3) the predominance of quartz, sericite, and illite over clays (ie. montmorillonite) within mineralized rocks suggests that there should be little to no need for agglomeration prior to leaching these ores.

4) the presence of epithermal textures within several slides suggest that the area of the pit and upper level formed, at least in part, under epithermal conditions. From reconnaissance et al., I would suggest that mineralization near the elevation of the pit may represent the upper, epithermal part of a largely mesothermal system. Slides of mineralization from the lower levels of the mine could be quite useful in this determination.

It is hoped that these observations are useful to your understanding of the deposit and I would appreciate any thoughts concerning these. It should be cautioned that ore petrology and petrography are not my 'tour-de-force' and that this should be reviewed only as a preliminary study. As previously discussed, however, I would be glad to have polished sections made and to review these with the hope of learning where the preponderance of the gold within these rocks is found.

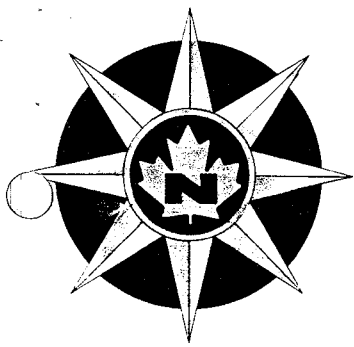
Best of luck to you.

Regards,

A handwritten signature in cursive script, appearing to read "Terch C. Page".

Terch C. Page

Exploration Manager



NORGOLD RESOURCES INC.

Yarnell slide analyses:

- 50% - 1 - 2% tr 5% 3%

"Fly" - Quartz-Orthoclase-Plagioclase-Muscovite-Sericite/Illite-Zircon-Clays-FeOx

overall demeanor of rock is porphyritic with very high proportion of felsics
phenocrysts are primarily plagioclase and orthoclase (2:1) and compose nearly 50% of
the rock

Groundmass is 45% of the rock and v. f. gr. and is more siliceous (ie. quartz-rich) but
also contains plagioclase, and orthoclase grains, and traces of muscovite

Finest-grained portions occur in thin zones and are nearly all silica - they suggest
late-stage silica-flooding along fractures or late consolidation of a residual silica-rich magma
minor shear/cataclasis through

definite muscovite occurs as v. small laths possibly replacing ferro-mags (ie. biotite
and the amphiboles)

plagioclase twins are often v. well preserved indicating near equilibrium conditions
during alteration or little to no alteration

minor clays (5% to locally 10%) including probable kaolinite occur

Iron-oxides (approx. 3% but locally to 5%) occur through and typically contain
v.v.f.gr. opaque inclusions

Iron-oxide is typically associated with the clays

3 - 5% 5 - 10%

"Main Sh 20 NB" Quartz - Orthoclase - Plagioclase - Sericite/Illite - Clays - Pyrite - FeOx

silica-flooded rocks with pyrite

note silica replacement of large orthoclase phenocrysts (3 - 5% of the rock) and locally
total replacement of unidentified phenocrysts by clays and/or opaques

5 - 10% sericite/illite occurs on fractures and intergranularly through

Iron-oxides w/ abundant sericite/illite line late fractures

Pyrite however, generally occurs throughout the groundmass and in replacement silica

Pyrite near late fractures is typically replaced or partially replaced by hematite

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(604) 681-5566

"Main Sh W"

extremely highly comminuted and fractured siliceous rock with gouge

Rock is nearly 100 % f.gr. quartz except in most comminuted gouge zone which is nearly 90% clays and garbage grind

A few vugs and late fractures are lined and/or filled with chalcedony

V.f.gr. opaques and pyrite occur throughout the f.gr. silica and appear to have been introduced simultaneously

Fe-oxides line the later fractures

10%

10%

15%

65%

"Main shoot Red" - Quartz phenos - Orthoclase - Illite/serecite - Hematite stained matrix

Quartz and Orthoclase phenocrysts are surrounded by a hematite-rich red-stained matrix in this highly fractured rock

Several vugs occur through, often of cubic form and often filled with v.f.gr. to chalcedonic quartz that probably replaced calcite crystals

Illite is locally very abundant

Hematite-stain approaches 60% of the rock and tends to occur along and adjacent to fractures

No opaques are evident

Epithermal character of the rock predominates

40% 15% 10% 5% 30%

"Y - 8" - Quartz - Orthoclase - Plagioclase - Muscovite - Illite/serecite

Silica-flooded and partially replaced leuco-granodiorite(?); originally not porphyritic

Quartz - Orthoclase - Plagioclase phenocrysts occur in a 2:1:1 ratio

Replacement of feldspars includes formation of abundant illite/serecite and minor muscovite

Fracture planes are apparently annealed by late silicification and silica-flooding

Latest fractures may contain illite/serecite ± quartz

Fe-oxides occur on late fractures through

Minor opaques are ill-defined, v.f.gr., and occur sporadically throughout rock

"Y - 9" - similar to Y - 8 but is more altered

may be slightly porphyritic

slightly more quartz-flooding

more intense illite/serecization

coarser serecites suggest a higher temperature domain for alteration than that of Y - 8

3 - 5% opaques occur scattered throughout rock

"O.C." - weathered - porphyritic

phenocrysts include quartz - orthoclase - plagioclase in a 1.5:1:1 ratio

some plagioclase and orthoclase occurs in the f.gr. more quartz-rich groundmass

clays and iron-oxide in groundmass may primarily reflect weathering

pseudomorphs in f.gr. groundmass include disseminated pyrite (locally 5 - 10%)

hematite to 10 to 15% also occurs locally

rock is probably originally of porphyritic character with mineralization that includes quartz-flooding/silicification, formation of pyrites, and illitization/serecization.

weathering makes relations and identifications obscure

John:
What are depths of:

8/22/89

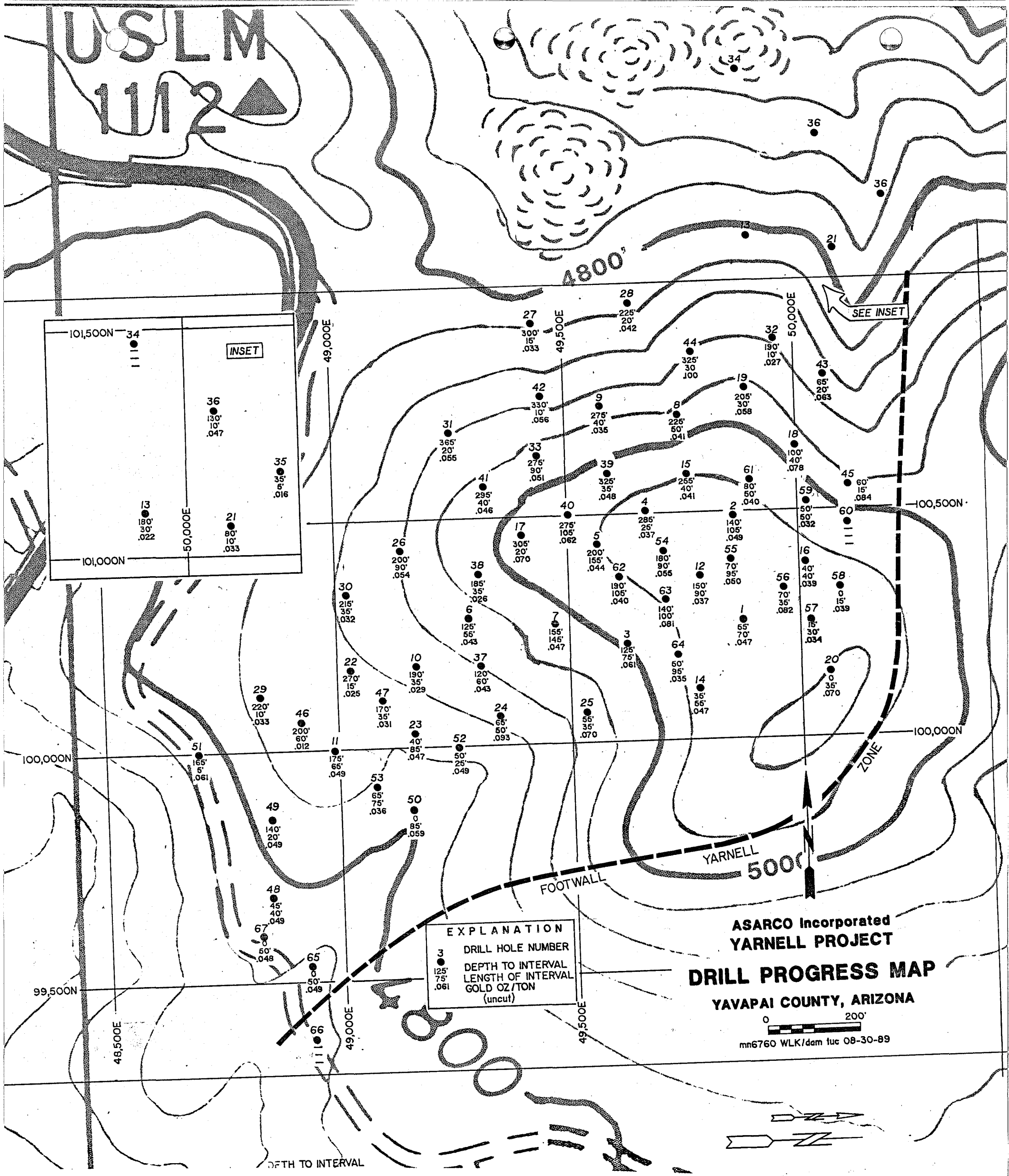
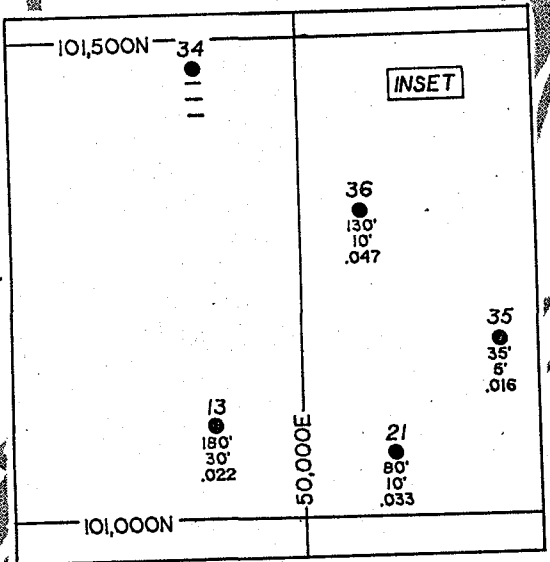
56	180
57	120
58	90
59	<u>TD 180</u>
60	110
61	250

3-21

hole 59 footage 180-225 = is really 4150 footage 40-85

~~to~~
hole 62 = location 3-14

USLM
1112



EXPLANATION

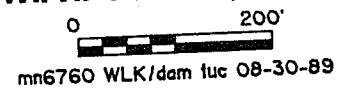
● DRILL HOLE NUMBER

● DEPTH TO INTERVAL

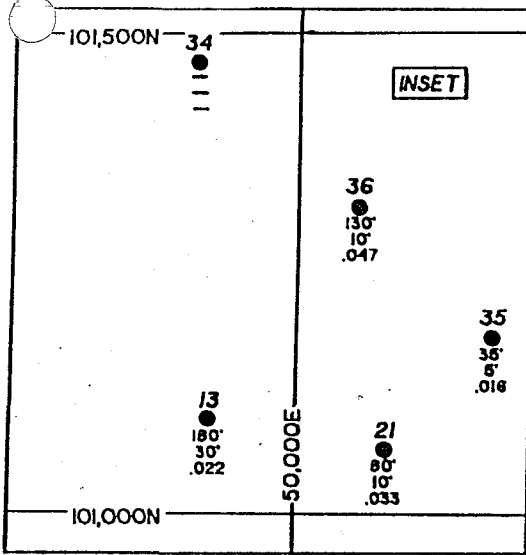
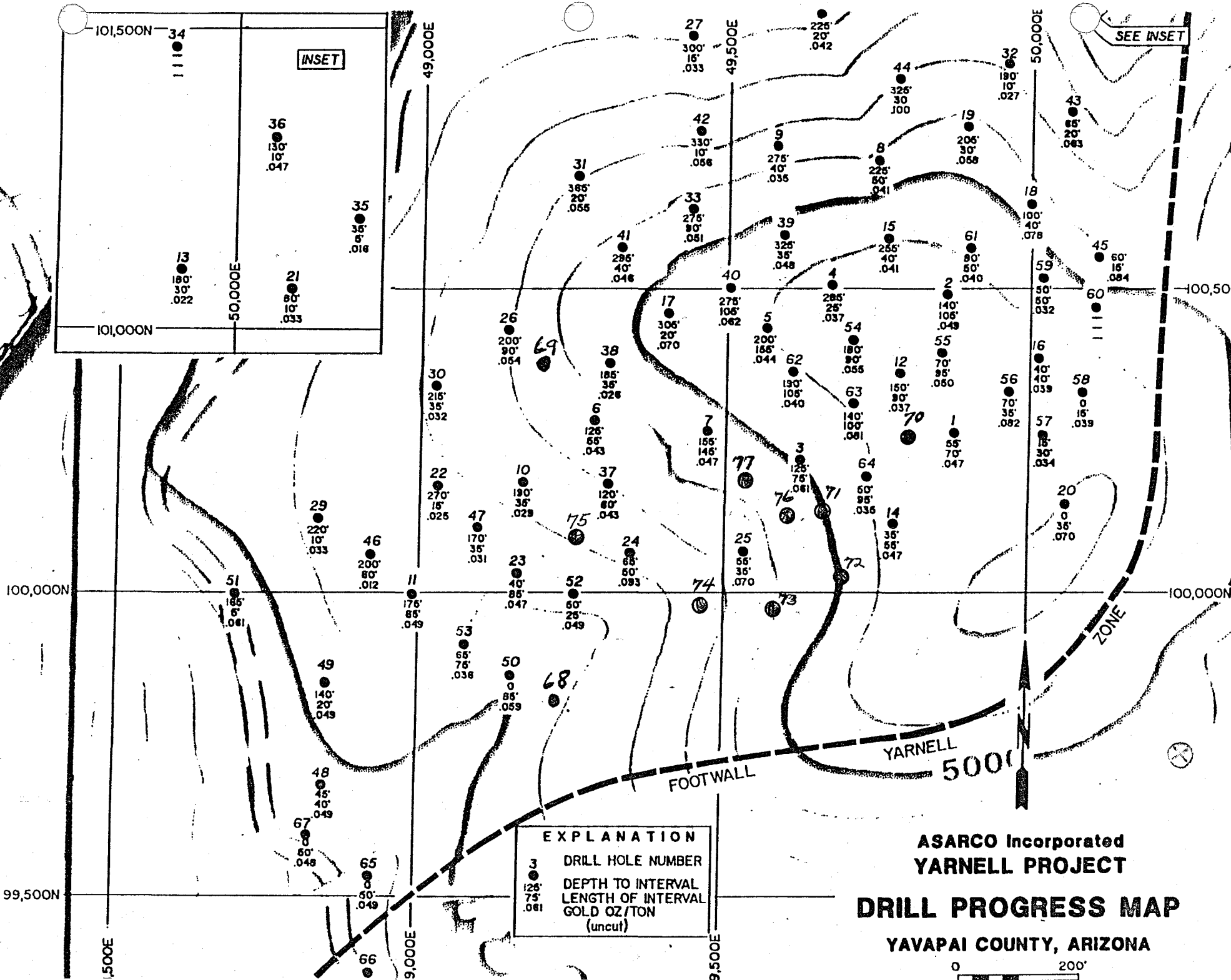
● LENGTH OF INTERVAL

● GOLD OZ./TON (uncut)

ASARCO Incorporated
YARNELL PROJECT
DRILL PROGRESS MAP
YAVAPAI COUNTY, ARIZONA



DEPTH TO INTERVAL



SEE INSET

EXPLANATION

3 DRILL HOLE NUMBER

● DEPTH TO INTERVAL

○ LENGTH OF INTERVAL

.061 GOLD OZ./TON

(uncut)

ASARCO Incorporated
YARNELL PROJECT
DRILL PROGRESS MAP
YAVAPAI COUNTY, ARIZONA

0 200'

August 24, 1989

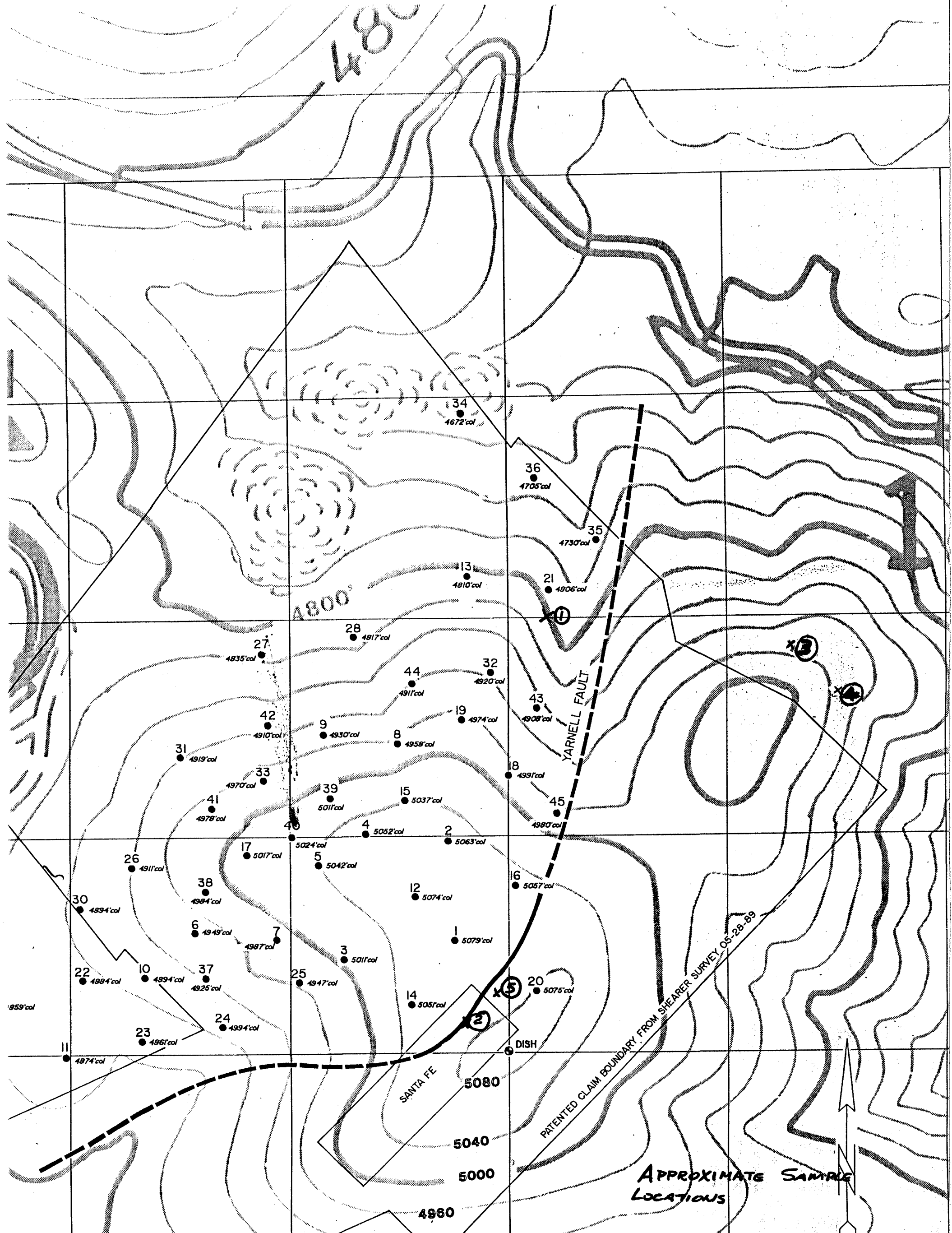
J.D. Sell

Yarnell Thin Section
Locations
Yavapai County, AZ

- (1) Fly - Sample taken from inside of Fly Adit. By microscopic examination appears to be strong argillic alteration. All texture has been destroyed. 30'
- (2) Main Shear Zone - Taken in open cut along the outcrop of the Yarnell Fault Zone. Silicified rock without characteristic red hematite staining. 70'W
- (3) Y-8 - Location from 1st sampling. Alt granite/granodiorite strong Hm/Lm along fractures and clots pervasive silicification.
- (4) Y-9 - Similar to Y-8 quartz/sericite pyrite cubes up to $\frac{1}{4}$ " in size.
- (5) O.C. - Grab sample of open cut H.G. muck. Strong red Hm colorings.

MAM:mek
Att.

Mark A. Miller/mek
Mark A. Miller



August 15, 1989

FILE MEMORANDUM

Yarnell Project

The assays of the three samples sent to McClelland have been received and are as follows:

<u>Sample</u>	<u>Assay No. - opt Au</u>			<u>Average</u>
	<u>1</u>	<u>2</u>	<u>3</u>	
Low grade from underground	0.011	0.009	0.004	0.008
Low grade from open cut	0.030	0.038	0.032	0.033
High grade from open cut	0.089	0.103	0.080	0.091

The assays of the composite made from the two open cut samples have not been received but, based on the above, should be ± 0.039 .

All of the above are somewhat lower than anticipated, but should be adequate for the proposed testwork.


D. E. Crowell

DEC:brw

cc: W. L. Kurtz
J. D. Sell
M. A. Miller/W. D. Gay
T. E. Scartaccini/D. F. Skidmore

ASARCO Inc.

AUG 15 1989

SW Exploration

cc: R.L. Brown/F.T. Graybeal - New York (FAX)

See MAM report of July 26, 1989

FTG:

how were samples cut? from piles per bottle
roll
Same pulp? No

Bottle roll result next week will check
these head values.

10 - 5th Sample
Reduced to sand
& de duplicate assay.

5^{-5th} x 3 bolts
x 2nd assay each

ASARCO

Southwestern Exploration Division

JDS

August 15, 1989

W.L. Kurtz

T. Page Review
Optical Microscopic
Yarnell Project
Yavapai County, AZ

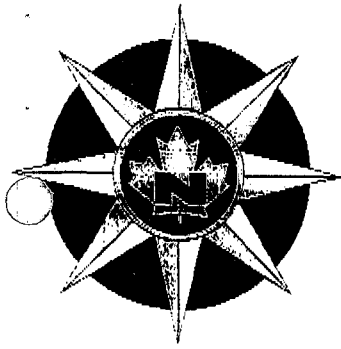
The attached report by Tench Page has been received but M.A. Miller did not leave any word on where the samples were collected.

A copy is sent to F.T. Graybeal and D.E. Crowell for their info.

JDS:mek
Att.


James D. Sell

cc: F.T. Graybeal
D.E. Crowell
M.A. Miller



NORGOLD RESOURCES INC.

Norgold Resources (US) Inc.
13935 Chamy Drive
Reno, Nevada 89511

August 15, 1989

ASARCO Inc.
1150 North 7th Avenue
P. O. Box 5747
Tucson, AZ 85703

ASARCO Incorporated

AUG 15 1989

SW Exploration

Attn: Mark Miller / Jim Sell

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2380 Harbour Centre, P.O. Box 12122, 555 W. Hastings Street, Vancouver, B.C. V6B-4N6

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heap leach processes. It is possible that gold associated with iron-oxides could be identified through examination of polished sections as suggested for determination of gold within pyrites.

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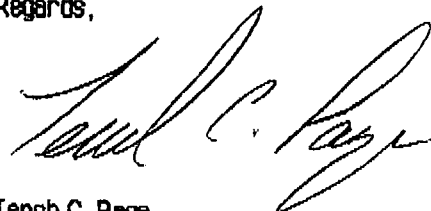
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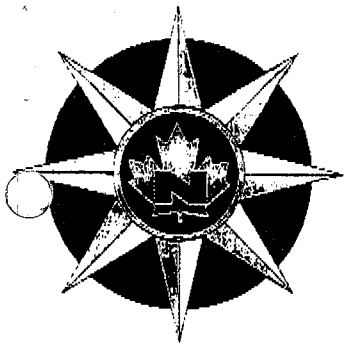
Best of luck to you.

Regards,



Tench C. Page

Exploration Manager



NORGOLD RESOURCES INC.

Yarnell slide analyses:

- 50% - 1 - 2% tr 5% 3%

"Ely" - Quartz-Orthoclase-Plagioclase-Muscovite-Sericite/Illite-Zircon-Clays-FeOx

overall demeanor of rock is porphyritic with very high proportion of felsics
phenocrysts are primarily plagioclase and orthoclase (2:1) and compose nearly 50% of
the rock

Groundmass is 45% of the rock and v. f. gr. and is more siliceous (ie. quartz-rich) but
also contains plagioclase, and orthoclase grains, and traces of muscovite

Finest-grained portions occur in thin zones and are nearly all silica - they suggest
late-stage silica-flooding along fractures or late consolidation of a residual silica-rich magma
minor shear/cataclasis through

definite muscovite occurs as v. small laths possibly replacing ferro-mags (ie. biotite
and the amphiboles)

plagioclase twins are often v. well preserved indicating near equilibrium conditions
during alteration or little to no alteration

minor clays (5% to locally 10%) including probable kaolinite occur

Iron-oxides (approx. 3% but locally to 5%) occur through and typically contain
v.v.f.gr. opaque inclusions

Iron-oxide is typically associated with the clays

3 - 5% 5 - 10%

"Main Sh. 20 NB" Quartz - Orthoclase - Plagioclase - Sericite/Illite - Clays - Pyrite - FeOx

silica-flooded rocks with pyrite

note silica replacement of large orthoclase phenocrysts (3 - 5% of the rock) and locally
total replacement of unidentified phenocrysts by clays and/or opaques

5 - 10% sericite/illite occurs on fractures and intergranularly through

Iron-oxides w/ abundant sericite/illite line late fractures

Pyrite however, generally occurs throughout the groundmass and in replacement silica

Pyrite near late fractures is typically replaced or partially replaced by hematite

2380 Harbour Centre, P.O. Box 12122, 555 W. Hastings Street, Vancouver, B.C. V6B-4N6

(604) 681-5566

"Main Sh W"

extremely highly comminuted and fractured siliceous rock with gouge

Rock is nearly 100 % f.gr. quartz except in most comminuted gouge zone which is nearly 90% clays and garbage grind

A few vugs and late fractures are lined and/or filled with chalcedony

V.f.gr. opaques and pyrite occur throughout the f.gr. silica and appear to have been introduced simultaneously

Fe-oxides line the later fractures

10%

10%

15%

65%

"Main shoot Red" - Quartz phenos - Orthoclase - Illite/sericite - Hematite stained matrix

Quartz and Orthoclase phenocrysts are surrounded by a hematite-rich red-stained matrix in this highly fractured rock

Several vugs occur through, often of cubic form and often filled with v.f.gr. to chalcedonic quartz that probably replaced calcite crystals

Illite is locally very abundant

Hematite-stain approaches 60% of the rock and tends to occur along and adjacent to fractures

No opaques are evident

Epithermal character of the rock predominates

40% 15% 10% 5% 30%

"Y - 8" - Quartz - Orthoclase - Plagioclase - Muscovite - illite/sericite

Silica-flooded and partially replaced leuco-granodiorite(?); originally not porphyritic

Quartz - Orthoclase - Plagioclase phenocrysts occur in a 2:1:1 ratio

Replacement of feldspars includes formation of abundant illite/sericite and minor muscovite

Fracture planes are apparently annealed by late silicification and silica-flooding

Latest fractures may contain illite/sericite ± quartz

Fe-oxides occur on late fractures through

Minor opaques are ill-defined, v.f.gr., and occur sporadically throughout rock

"Y - 9" - similar to Y - 8 but is more altered

may be slightly porphyritic

slightly more quartz-flooding

more intense illite/sericitization

coarser sericites suggest a higher temperature domain for alteration than that of Y - 8

3 - 5% opaques occur scattered throughout rock

"O.C." - weathered - porphyritic

phenocrysts include quartz - orthoclase - plagioclase in a 1.5:1:1 ratio

some plagioclase and orthoclase occurs in the f.gr. more quartz-rich groundmass

clays and iron-oxide in groundmass may primarily reflect weathering

pseudomorphs in f.gr. groundmass include disseminated pyrite (locally 5 - 10%)

hematite to 10 to 15% also occurs locally

rock is probably originally of porphyritic character with mineralization that includes quartz-flooding/silicification, formation of pyrites, and illitization/sericitization.

weathering makes relations and identifications obscure

ASARCO

FILE

JDS

Exploration Department

Frederick T. Graybeal
Chief Geologist

August 15, 1989

ASARCO INC.

Mr. J. D. Sell
Tucson Office

AUG 17 1989

SW Exploration

Phase 3 Drilling
Yarnell Project

Dear Mr. Sell:

I have seen recommendations made by you, Mr. Kurtz, and Mr. Miller. My recommendation would be to drill all phase 3 holes in the shallow portion of the deposit, south of a line between hole 2 and 10. Drilling in the deeper parts of the deposit can be reviewed following results of the shallow work.

My objective would be to confirm the first 2 million tons to a degree of certainty acceptable to the Exploration Department and with sufficiently close spacing so the engineers can schedule mining. The northwest edge of the ultimate pit will be determined by the price of gold at the time that area is mined, so drilling in the northwestern half of the deposit might better be done out of cash flow from the mine. Drilling should also be extended to the southwest as agreed by everyone.

Following results of the shallow detailed drilling, we can reassess the confidence in the deeper reserve and fill in only to the extent required to estimate a reasonable life of the mine for the purpose of optimum sizing of the operation and a feasibility.

Very truly yours,

F. T. Graybeal
F. T. Graybeal

FTG:mc

cc: W. L. Kurtz

August 16, 1989

FILE MEMORANDUM

Yarnell Project

As requested by J. D. Sell, I have asked McClelland Laboratories to have some basic mineralogical work done on Yarnell ore to determine the form in which the gold occurs. This work will be done by R. Honea of Denver who McClelland has used previously and feels is proficient in mineralogical examination, particularly as it applies to metallurgical processes.

The initial test will be done on a 10-mesh split of the high grade portion of the open cut sample. It might be desirable to repeat this work later on the lower grade portion of this sample or even the low grade underground sample; although, at ± 0.02 opt it can be difficult to find much gold.

The basic procedure will be to grind the sample to ± 80 mesh, concentrate the heavy fraction by gravity or heavy media, and examine polished briquettes of this concentrate by microscope. Micro-probe work can also be done if indicated. A preliminary report will be issued based on optical examination only, with further micro-probe work done if requested.

Costs will be \$200.00 per sample for the optical work and \$600.00 per sample if micro-probe work is requested.



D. E. Crowell

DEC:brw

cc: W. L. Kurtz
J. D. Sell
M. A. Miller
T. E. Scartaccini/D. F. Skidmore

ASARCO Incorporated

AUG 17 1989

SW Exploration

Fred

Western Topo in KS

1 - 1 1/2 striping rates center
of FTG map.

Western Air Map, line

~~Lenexa, KS~~

Olathe, KS

913 / 888-5266

(5)

Frank Deal

602 / 866-7391

8/14

Says he'll recheck - KS said it was sent
he'll also write an apology letter.

Called back on 8/15/89

Bossman says that MANU ^{requests} corrections
have been added & Topo discussed is
WILL be mailed Wed Aug 16 AM

1
1000 000

1
1000 000 000

8/17 WJMAN

has mapped 100' wide fault-shear zone
West Edge cuts hole 39 and heads for hole 42
East edge is between hole 4 & 15 and heads halfway
between 9 & 8.

West Edge also heads toward 12 → 1
Now steers west.

Does not understand it, — its post mineral
bond on cutting, late stage gtz vein & has
no selvages etc itself.

Hasn't look at drill results etc to
see if any cont'd.

Flick thru section — shows changes
on each side of projection !!!

August 17, 1989

*Sel receiving
Aug 25, 1989*

L.J. Jansen

Zone Footages
Yarnell Project
Yavapai County, AZ

Attached is my table of zone footages from drill holes YAR-1 through YAR-45.

I have separated the intervals in each hole, if they are present, into Zone A, the upper lower grade zone, and Zone B, the main Yarnell Fault zone and the envelope mineralization that is associated at a grade which will probably be mined.

A prime ('') (such as A,A'') is on some intervals and this signifies a break either in the assay value between the two intervals or a break in footages between the two intervals.

I have also placed a question mark (?) after some zone designations and this indicates that I am unsure as to what is going on to place it without question.

How you want to treat the question mark intervals is up to you, but you may want to ignore them at this time of the study.

JDS:mek
Att.

James D. Sell, mek
James D. Sell

cc: F.T. Graybeal
W.L. Kurtz
M.A. Miller

L. J. Jansen

Zone Footages
Yarnell Project
Yavapai Co., AZ

FT Graybeal, WL Kuntz, MA Miller, & I have revised the Zone Footages memo of August 17, 1989. These have been only slightly modified ~~but~~ and can be used as a guide, but I understand your computer makes its own decisions.

As before, the intervals, if present, are separated into Zone A, the upper lower grade zone, and Zone B, the main Yarnell Fault zone and the envelope mineralization that is associated at a grade which will generally average over 0.02 opt gold over a twenty-foot length of sample.

A prime (') (such as A, A') is on some intervals and this signifies a break either in assay value between the two intervals or a break in footage between two intervals.

James D. Lee

Attach.

cc: FT Graybeal
WL Kuntz
MA Miller

Note:
 Use YM-
 not YAR-

8/16/89

TABLE 1 - YARNELL PROJECT
ZONE INTERVAL TABULATION

<u>DRILL HOLE</u>	<u>ZONE*</u>	<u>FROM</u>	<u>TO</u>
YM			
YAR-1	A	5	75 55
YAR-1	B	75 55	125 includes storage
	A	45	140
YAR-2	B	160 140	245
	A	20	125
YAR-3	B	130 125	200
YAR-4	A	15	135
YAR-4	A'	175	230
YAR-4	B	295 285	310
YAR-5	A	200	285
YAR-5	B	285 200	355
YAR-6	B (?)	185 125	180
YAR-7	B	155	220 230
YAR-8	A	30	225
YAR-8	B	225	275
YAR-9	B	285 275	315
YAR-10	A	135 130	190
YAR-10	B	190	225
YAR-11	B	175	240
YAR-12	A	40	155 150
YAR-12	B	165 150	240
YAR-13	B	180	210
YAR-14	A	15	60 35
YAR-14	B <i>copy</i>	60 35	90

TABLE 1 - YARNELL PROJECT

ZONE INTERVAL TABULATION

<u>DRILL HOLE</u>	<u>ZONE*</u>	<u>FROM</u>	<u>TO</u>
YAR-15	A	25	140
YAR-15	A'	25 140	255
YAR-15	B	255	295
YAR-16	A	0	40
YAR-16	B	40	80
YAR-17	A	210	305
YAR-17	B	305	325
YAR-18	A	0	100
YAR-18	B	100	140
YAR-19	A	10	85
YAR-19	B	205	235
YAR-20	B	0	35
YAR-21	A	25	55
YAR-21	B	80	90
YAR-22	B A	215	225
YAR-22	B	270	285
YAR-23	B	40	125
YAR-24	B	75 65	115
YAR-25	B	55	90
YAR-26	A	200	260
YAR-26	B	260 200	290 295
YAR-26	B	290	320
YAR-27	A A'	35	300 95
YAR-27	B	300 235	315 245
YAR-28	A	95	225
YAR-28	B	225	245
YAR-29	A (?) B	220	240 230
YAR-30	A	145	200
YAR-30	A (?) B	215	250
YAR-31	A	115	135
YAR-31	B	365	385

TABLE 1 - YARNELL PROJECT

ZONE INTERVAL TABULATION

<u>DRILL HOLE</u>	<u>ZONE*</u>	<u>FROM</u>	<u>TO</u>
<i>ym-32</i> YAR-32	A	0	25
YAR-32	A'	60	190
YAR-32	B	190	200
YAR-33	A	15	55
YAR-33	B	275	365
YAR-34 <i>ym-34</i>	A	110	130
	B Not Reached	Not reached	
YAR-35	A	15	20
YAR-35	B	35	40
YAR-36	A	35	55
YAR-36	B	130	140
YAR-37	A	120	155
YAR-37	B	155 120	180
YAR-38	B	185	240 220 245
YAR-39	A	0	35
<i>ym39</i> YAR-39	B A'	285 ²⁸⁵ 325	360 ³²⁵
YAR-40	B	275	380
YAR-41	B	295	335
YAR-42	B	330	340
YAR-43	B	65	85
YAR-44	A	115	235
YAR-44	B	235	265
YAR-45	B	60	75

46	B (2)	200-260
47	B	170-205
48		45-85
49		140-160
50		0-85
51		165-170
52		50-75
53		65-105 140
54		180-270
55		70-165
56		70-105
57		18-45
58		0-15

46. B 200-260

47 A 120-170

B 170-205

48 B 45-85

49 B 135-160

50 B 0-85

B zone, bottom in core.

51 B 165-170

52 B 50-75

53 B 65-140

54 A 55-125

B 180-270

55 B 70-190 *check field notes*

56 A Surf 45

B 70-105

57 B 15-45

58 B 0-20

59 B 50-100

60 — in FW

*Zone A - Upper low-grade zone
*Zone B - Main Yarnell Fault Zone & envelope)

67
02
370

LA
7/4

Fletcher Standard

YM-45	21.	24.	.022
YM-45	92.	93.-B	.007
YM-46	0.	5.	.001
YM-46	5.	10.	TR
YM-46	10.	15.	TR
YM-46	15.	20.	.001
YM-46	20.	25.	TR
YM-46	25.	30.	TR
YM-46	30.	35.	.001
YM-46	35.	40.	.001
YM-46	40.	45.	TR
YM-46	45.	50.	NIL
YM-46	50.	55.	.005
YM-46	55.	60.	.006
YM-46	60.	65.	.001
YM-46	65.	70.	.001
YM-46	70.	75.	TR
YM-46	75.	80.	TR
YM-46	80.	85.	.001
YM-46	85.	90.	TR
YM-46	90.	95.	TR
YM-46	95.	100.	.002
YM-46	100.	105.	.001
YM-46	105.	110.	.001
YM-46	110.	115.	TR
YM-46	115.	120.	.002
YM-46	120.	125.	.002
YM-46	125.	130.	TR
YM-46	130.	135.	.001
YM-46	135.	140.	TR
YM-46	140.	145.	.003
YM-46	145.	150.	.001
YM-46	150.	155.	.002
YM-46	155.	160.	.005
YM-46	160.	165.	.006
YM-46	165.	170.	.003
YM-46	170.	175.	.005
YM-46	175.	180.	.004
YM-46	180.	185.	.004
YM-46	185.	190.	.005
YM-46	190.	195.	.003
YM-46	195.	200.	.002
YM-46	200.	205.	.010
YM-46	205.	210.	.008
YM-46	210.	215.	.017
YM-46	215.	220.	.020
YM-46	220.	225.	.010
YM-46	225.	230.	.006
YM-46	230.	235.	.003

ASARCO

Exploration Department
Western USA

W. L. Kurtz
Manager

VIA FAX 604-685-8045

August 18, 1989

Mr. Christopher Moat, President
NORGOLD RESOURCES INC.
Vancouver, B.C.

Yarnell Project
Weekly Information

Dear Mr. Moat:

We are FAXing you assay results on Holes 47, 48, 49, 50 and 51, and a copy of map showing their location.

Sincerely,

W. L. Kurtz
W. L. Kurtz *J/mek*

WLK:mek

cc: J.D. Sell

August 18, 1989

J.D. Sell

Replicate Assaying
Yarnell Project
Yavapai County, AZ

In order to better understand the variance in assays from the 75 sample assay comparison between Triad Minerals and Skyline Labs, a series of replicates are being made from the coarse reject "A" samples for 11 intervals. Assay values range from .006 - .264 opt and are listed below. The grade ranges may also show "nugget effect" especially in the higher assays. The 11 intervals will be separately pulverized by Triad to ± 200 mesh and will be statistically split into 6 samples/interval for a total of 66 samples.

Each lab will receive 33 coded samples consisting of 3 replicates/interval for fire assay. The results will be compared for both internal variance (within the lab) and lab vs. lab variance.

<u>Hole No.</u>	<u>Interval</u>	<u>Triad Minerals Assay - opt Au</u>
YM-28	150-155	.006
YM-10	175-180	.012
YM-33	50-55	.021
YM-28	145-150	.034
YM-29	220-225	.046
YM-39	5-10	.056
YM-44	165-170	.07
YM-40	350-355	.081
YM-40	345-350	.108
YM-14	65-70	.136
YM-44	250-255	.264

MAM:mek

cc: W.L. Kurtz
D.F. Skidmore

Mark A. Miller, mek
Mark A. Miller
Project Geologist

ASARCO

Southwestern Exploration Division

JDS

August 18, 1989

J.D. Sell

Inspection Report
State Mine Inspector
Yarnell Project
Yavapai County, AZ

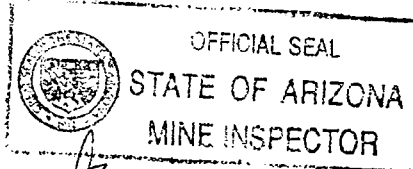
With regard to the attached, all violations have been eliminated and the inspector, David Hamm, was verbally notified by phone on 8-11-89.

MAM:mek

Mark A. Miller /mek

Mark A. Miller
Project Geologist

OFFICE OF STATE MINE INSPECTOR
1616 West Adams, Suite 411
Phoenix, Arizona 85007-2627
(602) 255-5971



HEALTH AND SAFETY INSPECTION REPORT

COMPANY NAME: ASARCO INC.
MINE/PLANT NAME: Yarnell Mine
MAILING ADDRESS: P. O. BOX 921
CITY: Yarnell, AZ 85362
MINE/PLANT LOCATION: RANGE: 5-W, TOWNSHIP: 10-N SECTION 14

.5 miles south of Yarnell on

Hwy. 89.

TELEPHONE NUMBER:

IDENTIFICATION NUMBER:

STATUS: PERMANENT INTERMITTENT TEMPORARY/PORTABLE

THIS REPORT IS BASED ON AN INSPECTION MADE PURSUANT TO ARIZONA
REVISED STATUTES SECTION 27-128 & SECTION 27-124

DATE OF INSPECTION: July 31, 1989
TYPE OF OPERATION: Exploration
PRINCIPAL PRODUCT: Samples
COUNTY: Yavapai

COMPANY OFFICIALS:
J. D. Sell, Mgr. S.W. Exploratic
Mark Miller, Proj. Mgr.

INSPECTION PARTY: Mark Miller, Proj. Mgr. NUMBER OF EMPLOYEES: 5

DAVID HAMM
DEPUTY MINE INSPECTOR

cc: ASARCO INC.
ff P. O. BOX 5747
Tucson, AZ 85703

ASARCO INC.
Yarnell Mine
July 31, 1989

VIOLATIONS OF RULES AND REGULATIONS OF STATE OF ARIZONA MINING CODE.

1. ARS 27-303 Failure to notify This Office of intent to do underground exploration work in the State of Arizona. HAZARD ELIMINATED
2. ARS 27-306 Provide a first aid kit with a stretcher, by 8/5/89.
3. ARS 27-344 Properly portal the Yarnell Adit, by 8/5/89.

DAVID HAMM
DEPUTY MINE INSPECTOR

Leo Smith

Casa Adobe Professional Plaza

6985 North Oracle Road

Tucson, AZ 85704

ph. 602 / 797-0777

FAX 602/797-9770

8/18 has request out "Cities & Towns Learned" for updates
on General - Glenn Shel . No reply yet. Mail
recheck

Moat:

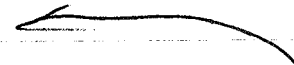
Frank: Head of Communications Div. ~~KA~~ ^{KC}

1) Cost: Walk away towers, dishes, bolted eyes etc. Full radio, batteries.

So need to purchase new equipment
is, steel towers, building, etc.
Sept 15 cost figures due date

SF say "Why should we move it"!

^{review}
Send letters

then follow-up to see how it is going 
hold off on any ~~to~~ trip til after the review, then

$$\frac{75000}{500 \times 150 \times 50} \cdot \frac{2}{12.5 \cdot 25}$$

~~2000~~

$$\frac{250 \times 150 \times 50}{12.5}$$

$$\frac{1,875,000}{12.5}$$

$$- 150,000$$

$$\frac{.04}{6,000.00}$$

To JDS

Date 8/18 Time 12:55

WHILE YOU WERE OUT

M Mike Philpot

of _____

Phone 604-685-8730

Area Code Number Extension

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

RETURNED YOUR CALL

Message _____

Mary
Operator

 **AMPAD**
EFFICIENCY®

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

1. Mr. Harper: 1/2 acre - not enough, go for 1 1/2 acres
: 5,000 half acre 15K. for all in 1 year
w/ 2,500 option cost for the 1 year.
2. Computer disk for with all drill data being sent.
3. Can he (Marty) get copy of topo disk.

ASARCO

Southwestern Exploration Division

JDS

August 21, 1989

J.D. Sell

Strike Section Drill Holes
Yarnell Project

As we discussed, it will be necessary to project the drill hole intercepts to the strike section lines. You mentioned that Lou can do this task although I think that it will be necessary to project each drill hole based upon the dip angle of the mineralized zone from each individual dip section. Perhaps the average of the dip throughout each section might be the way to project the data. If Lou can rotate the drill holes as you mentioned, then this would also work to show the strike configuration of the mineralized zone.

MAM:mek

Mark A. Miller / mek

Mark A. Miller

ASARCO

Southwestern Mining Department

August 21, 1989

MEMORANDUM

TO: J. D. Sell
FROM: P. J. Maley
RE: Yarnell Project Environmental Considerations

The environmental considerations associated with the development of the Yarnell Project fall generally into three broad categories: water, air and general. Although my knowledge in this area is still very limited, preliminary research indicates the following:

WATER QUANTITY

We must locate an adequate supply of water to conduct operations which will not significantly impact other groundwater users in the area. Permits associated with this activity will come from the Arizona Department of Water Quality and will be well construction and water withdrawal permits.

WATER QUALITY

We must identify the existence and character of any aquifer which may be impacted by operations. We must also identify any surface water reaches, including dry washes, which may be impacted and determine their protected use status, which will be used to dictate effluent restrictions.

Two water quality permits will be required for the operation, an Aquifer Protection Permit (APP) and a National Pollutant Discharge Elimination System (NPDES) Permit. The issuing agency for both will be the Arizona Department of Environmental Quality. Of the two, the Aquifer Protection Permit will be the most difficult and time-consuming: The minimum time frame for issuance of an APP is on the order of nine months.

The Southwestern Mining Department has retained Errol Montgomery and Associates to provide hydrogeological services for the project. Work performed by Montgomery and associates to date has included two meetings and a trip to the project with Asarco personnel, as well as substantial research into well records and other available hydrogeological data from previous work done in the area by Federal, State and private sources. Montgomery and Associates are currently working on a narrative report which will cover:

1. A summary of results to date, covering three major target areas, Antelope Creek Basin, the Yarnell Area and People's Basin. Information will include well information - yields, depth and approximate volume of groundwater storage; potential impacts on other users; and water chemistry.
2. Suggestions for the next several steps, including:
 - a) Activities
 - b) Estimated costs
 - c) Estimated time for completion

The report is expected to be completed by August 30.

AIR QUALITY

Two permits will be required for the project, an installation permit prior to construction, and an operating permit prior to startup. The issuing agency will be the Arizona Department of Environmental Quality. Steps to the issuance of permits will include:

1. Determine maximum particulate emission potential in tons per year.

2. If potential emissions exceed 250 tons per year (this is very unlikely) a PSD (prevent significant deterioration) study will be required. This would include modelling and a baseline air quality study of 4 - 12 months.
3. Identify any Class I airsheds in close proximity to the project. The existence of National Monuments, wilderness areas, etc. would impose more stringent emission standards.

Since a plant design is the first step in this process, no work has been done in this area as yet.

GENERAL CONSIDERATIONS

1. Since some BLM land will probably be involved, a reclamation plan will be required.
2. If significant resistance is encountered from any agency or from the general public, a full environmental impact statement may be required.
3. A major consideration in any cyanide leach operation is the prevention of kills of birds and other wildlife. This has been a major problem in some other Arizona operations.

This list is preliminary and should not be considered comprehensive, due the lack of information on the project and the fact that I am still on the lower end of the learning curve of environmental regulation, but it does given an indication of major concerns as I see them.



P. J. Maley

PJM/kh

cc: TEsCartaccini

ccc: FT Graybeal
 WI Kuntz
 MA Mills
 WIO Gay
 FILE

FILE NOTE

To J.D. Sell
 Date 8/21 Time 3:02

WHILE YOU WERE OUT

M John
 of Yarnell

Phone 1-427-3848

Area Code	Number	Extension
TELEPHONED	<input checked="" type="checkbox"/>	PLEASE CALL
CALLED TO SEE YOU	<input type="checkbox"/>	WILL CALL AGAIN
WANTS TO SEE YOU	<input type="checkbox"/>	URGENT
RETURNED YOUR CALL		

Message _____

Operator _____

John Malusa reports:

Hole	MAM Set Map
55	3-1
56	3-24
57	3-28
58	3-27
59	3-24
60	3-29
61	prob. 3-21



AMPAD EFFICIENCY®

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

*Notes: In ASSAYS
 hole 57 went to 120 T.D.
 On sheet Assays hole 57 = hole 50 repeat*

120-125 = 0-5

125-130 = 5-10

130-135 = 10-15

135-140 = 15-20

140-145 = 20-25

145-150 = 25-30

155-160 = 35-40

cc: J.D. Sell

W.L.K.'s Proposed.

good

Hole between 23 & 22

40/85' - 0.047

215/10' - 0.035

YAR-47

120/95' @ 0.020

or 185/5' @ 0.091

or 170/20' @ 0.040

w/2 sides

No

#3-52

Hole between 10 & 30

135/90' - 0.024

215/35' - 0.032

Only if you

want thick 0.02

?

#3-50

Hole between 6 & 26

150/30' - 0.041

215/20' - 0.023

270/10' - 0.090

26

200/90' - 0.054

Notes: along strike

to east is

hole 38

185/55' - 0.024

There possible higher grade zone very narrow down dip.

100' under FTG may 4.

OK.

Mid 3-18

Hole between 7 & 38

145/40' - 0.042

225/35' - 0.016

38

185/55' - 0.024

On break between good section & low grade.

but close to FTG line

O.K.

Medwin

Hole between 38

185/55' - 0.024

26

200/90' - 0.054

17

240/85' - 0.018

225/45' - 0.047

OR 240/90' - 0.033

41

300/35' - 0.050

Expanded zone ?? of ave grade = 0.04??

OK

hole 37-13 + 3-07

Hole on strike (W) of 5

205/80' - 0.027

225/70' - 0.056

+ (SE) of 17

(OR) 240/90' - 0.033

& (S) of 40

275/105' - 0.062

good chance of expanded zone.

ASARCO

Exploration Department
Southwestern United States Division

August 21, 1989

Mr. Tench C. Page
Exploration Manager
Norgold Resources (US) Inc.
2380 Harbour Centre
P.O. Box 12122
555 W. Hastings Street
Vancouver, B.C. V6B-4N6
Canada

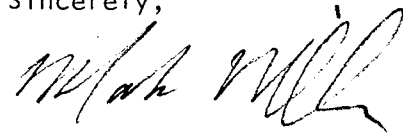
Delbert & Pricilla Layton
Unpatented Claims
Assessment Year 1989
Yavapai County, Arizona

Dear Tench:

Asarco has completed assessment work in excess of \$5,000 on claims contiguous to and for the benefit of the Layton Claims located in Yavapai County, Arizona. This has been done through reverse circulation drilling and geological reconnaissance. The drilling was done by Drilling Services of Chandler, Arizona, within the entire contiguous claim block. The work completed will satisfy the assessment work for the 1989 assessment year on the following unpatented claims:

Black Dike #1
Black Dike Extension #1 thru #5
Rim Rock #1
Victoria #1 thru #5
Thunder Hill
Sky High #1 thru #5
Grey Mare #1 thru #5
Poncho Villa #1 and #2
Green Rock #1
Red Rock #1
Black Rock #1
Crazy Horse O.K.
Crazy Horse TOKAY
Crazy Horse #1 thru #4
Kachina Doll #1

Sincerely,



Mark A. Miller
Project Geologist

MAM:mek

cc: J.D. Sell
W.D. Gay

LAW OFFICES

Evans, Kitchel & Jenckes, P.C.

2600 NORTH CENTRAL AVENUE
PHOENIX, ARIZONA 85004-3099
TELEPHONE (602) 234-2600

TO James D. Sell

FROM Jerry L. Haggard

DATE August 21, 1989

SUBJECT TELECOPY

WE WILL BE TRANSMITTING 9 PAGES INCLUDING
THIS COVER SHEET.

IF YOU DO NOT RECEIVE ALL OF THE PAGES, PLEASE
CALL (602) 240-2472.

REMARKS:

AS1000 Inc. pers. l.

AUG 22 1989

SW Exploration

cc: FAX to C. Moat (604-685-8045) 8/22/89
Norgold Resources (US) Inc.

cc: F.T. Graybeal
W.D. Gay
J.D. Sell

August 21, 1989

100 Incorporated

Maricopa County

AUG 22 1989

SW Exploration

Attention:

Dear Sirs:

Re: MARICOPA COUNTY MICROWAVE
COMMUNICATION TOWER, Yarnell, Arizona

As discussed with you recently, Norgold Resources Inc. ("Norgold") and associated companies are presently conducting exploration work to determine the feasibility of developing a mine on mineral claims controlled by Norgold near the town of Yarnell, Arizona. Maricopa County owns the nonmineral estate in a parcel of land containing approximately .12 of an acre (the "Property"), and an easement appurtenant to the Property, on which Maricopa County maintains a microwave communication tower (the "Facility"). In the event that Norgold determines that a mining operation would be feasible upon its property, it is highly likely that the Facility would have to be moved and the easement and Property be acquired by Norgold to facilitate an efficient mining plan. Maricopa County has acknowledged that it would be in its best interest if Norgold were successful in developing a mine on its property and accordingly has agreed in principle to allow the Facility to be moved to another property located in the area subject to the terms of this agreement. The Property and easement are more fully described on Exhibit 1 hereto.

The agreement between Norgold and Maricopa County concerning the Property is as follows:

1. Within five (5) years of the date of acceptance of this agreement by Maricopa County, Norgold shall be entitled to send a notice in writing to Maricopa County requesting that title to and possession of the Property be transferred to Norgold or its assign.
2. Norgold shall acquire at its own expense an alternate site (the "Alternate Site") for the relocation of the Facility to be located in the vicinity of the Property which site shall be reasonably equivalent to the Property for use in providing a location for a microwave communication facility of the kind presently operated by Maricopa County on the Property. Without

limitation, the Alternate Site shall have equivalent or better radio and microwave signal and reception and transmitting qualities, have reasonably equivalent ingress and egress qualities and reasonably equivalent maintenance attributes. In anticipation of electing to move the Facility, Norgold intends to acquire the Alternate Site as soon as practicable and shall work and consult with representatives of Maricopa County to ensure that the Alternate Site acquired by Norgold in order to comply with its obligations under this agreement meets the requirements of Maricopa County.

3. The aforesaid notice from Norgold to Maricopa County shall contain a deed of land pursuant to which Maricopa County will be transferred title to the Alternate Site free and clear of all financial liens, charges or encumbrances. Within twenty (20) days after the receipt of said notice, Maricopa County shall convey to Norgold the title to the Property and easement free and clear of all financial liens, charges or encumbrances.

4. Norgold shall be responsible for the relocation of the Facility from the Property to the Alternate Site. Such relocation activities shall be carried out in consultation with representatives of Maricopa County to ensure that the relocation is conveniently scheduled, that there is no undue delay in reinstating the Facility to full operating conditions and that the communication facility when relocated, operates to provide the equivalent service that it now provides.

5. In the event that Norgold does elect to acquire title to and possession of the Property and move the Facility, both Maricopa County and Norgold agree to execute such other documents and do such other things as may be necessary to carry out the full intent of this agreement. The parties acknowledge that the intent of this agreement is for Norgold to be able to acquire the Property and easement should it deem such acquisition necessary for the purpose of conducting exploration or mining operations on or near the Property and in such event Norgold will acquire property equivalent in size located in the area of the Property on which the Facility will be relocated. All the foregoing is to be accomplished without any direct cost to Maricopa County and, without limitation, Norgold is to pay for the cost of acquiring the Alternate Site and the cost of constructing or reconstructing the Facility to the Alternate Site. Maricopa County shall have the right to approve the Property for its purposes for a microwave communication facility which approval shall not be unreasonably withheld.

6. Norgold shall be entitled to register this agreement on title to the Property at any time to give third parties notice of its interest in the Property.

If the foregoing proposal is agreeable to you, please execute the copy of this letter in the place provided to form a binding agreement.

Thank you for your cooperation in this matter.

Yours very truly,

NORGOLD RESOURCES (U.S.) INC.

Per:

Agreed and accepted this
_____ day of _____, 1989.

MARICOPA COUNTY

Per:

Proposed Communication Site
at Yarnell, Arizona

W.O. #75322

Legal Description

That portion of the JUNIPER LODGE MINING CLAIM, M.S. No. 1112 as shown in Book 36 of Deeds, pages 229, 230, 231 & 232, Yavapai County Records, Arizona and which is also shown on the plat attached hereto and made a part of this description, described as follows: BEGINNING at the Northeastly end of the Northwestly side line of the parcel of land conveyed to the California, Arizona and Santa Fe Railway Company more particularly described as Beginning at Corner No. 1 of said JUNIPER claim; thence North 44°30' West along the 1-5 line of said claim 237.56 feet to the actual point of beginning for the description of the herein described tract; thence continuing along said 1-5 line, 150.0 feet; thence North 44°30' East parallel with the 5-6 line of said claim, 300.0 feet; thence South 44°30' East parallel with said 1-5 line, 150.0 feet; thence South 44°30' West parallel with said 5-4 line to the actual point of beginning, in Book 235 of Deeds, page 8, Yavapai County Records, Arizona;

THENCE North 44°30' East, 75 feet along the Northeastly prolongation of the Northwestly side line of said C.A. & S.F.R. Co. parcel; thence South 44°30' East 70 feet along a line parallel with the Northeastly end line of said C.A. & S.F.R. Co. parcel; thence in a Southwestly direction to a point on said Northeastly end line that is South 44°30' East, 75 feet from the Point of Beginning for the herein described parcel of land; thence North 44°30' West, 75 feet along the Northeastly end line of said C.A. & S.F. R. Co. parcel to said Point of Beginning.

ALSO, an easement for ingress and egress over an existing road from U. S. Highway No. 89 to the above described tract. Said easement for roadway purposes crosses the EDMOND, the TRIANGLE and the JUNIPER Lodge Mining Claims designated by the Surveyor General as Survey Nos. 1114, 1115 and 1112, respectively, and lying 6.0 feet on each side of the following described centerline: BEGINNING at the West quarter corner of Section Fourteen(14), Township Ten(10) North, Range Five(5) West of the Gila and Salt River Basins and Meridian; thence North along the West line thereof 33.63 feet; thence South 84°44' East, 426.95 feet; thence South 35°19'30" East 405.0 feet to point No. 1, the actual Point of Beginning for the aforesaid center line; thence South 03°47' West 492.0 feet to angle point No. 2; thence South 34°37'30" West 149.0 feet to angle point No. 3; thence South 74°02'30" East 530.0 feet to angle point No. 4; thence North 25°57'30" West 252.0 feet to angle point No. 5; thence North 32°23'30" East 90.0 feet to angle point No. 6; thence South 69°15'30" East 290.0 feet to angle point No. 7; thence North 38°09'30" East 95.92 feet to angle point No. 8; thence North 9°29'30" West 139.0 feet to angle point No. 9; thence South 67°38'30" East 475.0 feet to angle point No. 10; thence South 01°02' West 260.0 feet to angle point No. 11; thence South 16°13' West 87.0 feet to angle point No. 12; thence South 49°41' West, 280.0 feet to angle point No. 13; thence South 83°51' West 185.0 feet to angle point No. 14; thence along an irregular curve to the right to the aforesaid angle point No. 7, said curve passing through a point 60 feet Westly from the Meridian line, which line bears South 07°31' East 375.0 feet from said angle point No. 7 as described in said Book 235 of Deeds, Page 8, Y.C.R.

AND ALSO, an easement for ingress and egress over and across that portion of the Juniper Lodge Mining Claim, U.S. 1112, lying between the Northwestly side line of the herein described proposed Communication Site and that portion of said irregular curve between point No. 14 and angle point No. 7 lying Northerly of the Northwestly side line of the California, Arizona and Santa Fe Railway Company parcel.

EXCEPT any portion not lying within the Juniper Lodge Mining Claim.

BOOK 1265 PAGE 695

EXHIBIT 1

M.S.A.
Plat
11/17/20
7/20/20
11/17/20
Approved
11/17/20

August 21, 1989

Santa Fe Railway Company

Attention:

Dear Sirs:

Re: SANTA FE RAILWAY COMPANY MICROWAVE
COMMUNICATION TOWER, Yarnell, Arizona

Further to our recent telephone conversations and correspondence, Norgold Resources (U.S.) Inc. ("Norgold") would like to make the following offer to Santa Fe Railway Company ("Santa Fe") with respect to Santa Fe conveying to Norgold the land comprising approximately 1.72 acres and an appurtenant easement located in Yavapai County, Arizona near the town of Yarnell (the "Property") on which is located a microwave communication tower maintained and operated by Santa Fe. The Property is described more fully in that Warranty Deed recorded in Yavapai County, Arizona in Book 235, Page 8, attached hereto as Exhibit A.

Norgold's offer is as follows:

1. In consideration for the sum of \$10,000.00 U.S., payable within five (5) business days of the acceptance of this offer by Santa Fe, Norgold shall have the exclusive option to acquire by exchange the Property and all rights related thereto in fee title free and clear of all financial liens, charges and encumbrances from Santa Fe within five (5) years of the date of acceptance of this offer by Santa Fe.
2. Norgold shall exercise the option by sending a notice in writing to Santa Fe requesting that title to and possession of the Property be transferred to Norgold or its assign and that Santa Fe move all surface facilities maintained by it on the Property (the "Facilities") to another site (the "Alternate Site"). Santa Fe shall use its best efforts to move the surface facilities to the Alternate Site within 120 days of the receipt of the aforesaid notice from Norgold.
3. Norgold shall provide the Alternate Site without cost to Santa Fe which shall be located in the vicinity of the Property and which site shall be reasonably equivalent to the Property for use in providing a location for a microwave communication facility of the kind presently operated by Santa Fe on the Property. Without limitation, the Alternate Site shall have equivalent or better radio and microwave signal

reception and transmitting qualities, have reasonably equivalent ingress and egress qualities and reasonably equivalent maintenance attributes.

4. Title to the Alternate Site shall be transferred by Norgold to Santa Fe and title to the Property shall be transferred by Santa Fe to Norgold free and clear of all financial liens, charges or encumbrances prior to Santa Fe's moving of the Facilities.

5. The moving of the Facilities from the Property to the Alternate Site shall be under the complete direction of servants, agents or employees of Santa Fe. Santa Fe shall keep accurate records of the direct cost of moving the Facilities and such cost shall be paid by Norgold. Prior to moving the Facilities, Santa Fe shall make a detailed estimate of the cost of moving the Facilities and such estimated amount shall be paid by Norgold to Santa Fe in advance with the appropriate adjustment to be made once the actual cost of moving the Facilities is known subsequent to such Facilities being moved and an accounting being rendered to Norgold by Santa Fe.

6. In the event that Norgold does not request that Santa Fe deliver over possession of and title to the Property and move the Facilities within five (5) years as aforesaid, this agreement shall become null and void, Santa Fe shall be entitled to retain the full amount of the option price and Norgold shall have no interest in the Property whatsoever.

7. Norgold acknowledges that the Facilities are an integral part of Santa Fe's communication system and is of vital importance to its operations. The particular location of the Alternate Site and the establishment of new Facilities on the Alternate Site are, accordingly, most important to Santa Fe and it is the intent of this agreement that Santa Fe shall be satisfied in every reasonable way with respect to its technical requirements for relocating the Facilities on the Alternate Site and, for such purpose, Santa Fe shall have the right to approve the Alternate Site, which approval shall not be unreasonably withheld.

8. In the event that Norgold does elect to take over title to and possession of the Property and have Santa Fe move the Facilities, both Santa Fe and Norgold agree to execute such other documents and do such other things as may be necessary to carry out the full intent of this agreement. The parties acknowledge that the intent of this agreement is for Norgold to be able to acquire the Property, should it deem such acquisition is necessary for the purpose of conducting exploration or mining operations on or near the Property and, in such event, Norgold will purchase an equivalent property located in the area of the Property on which Santa Fe will relocate the equivalent communication facilities. Norgold shall reimburse Santa

Fe for its direct cost in moving the Facilities and shall pay for the cost of purchasing the Alternate Site.

9. Norgold shall be entitled to register this agreement on title to the Property at any time to give third parties notice of its interest in the Property.

If the foregoing proposal is agreeable to you, please execute the copy of this letter in the place provided to form a binding agreement. Norgold will, as provided above, deliver to you a cheque in the amount of \$10,000.00 U.S. within five (5) business days after Santa Fe has executed the copy of this letter.

Thank you for your cooperation in this matter.

Yours very truly,

NORGOLD RESOURCES (U.S.) INC.

Per:

Agreed and accepted this _____ day
of _____, 1989.

SANTA FE RAILWAY COMPANY

Per:

INDEXED

When recorded, mail to:



FRANK C. BAUER, County Recorder
9. Harmon Yumbuck Arizona

Warranty Deed

ESCROW # 1022-000

For the consideration of Ten Dollars, and other valuable considerations, the undersigned RAY KRIEGER and JAYNELL KRIEGER, his wife, and TOM RIDGEWAY and MABLE RIDGEWAY, his wife
do hereby convey to CALIFORNIA, ARIZONA AND SANTA FE RAILWAY COMPANY, a California corporation, the following real property situated in Yavapai County, Arizona:

All that portion of the JUNIPER Lode Mining Claim, designated by the Surveyor General as Survey No. 1112, United States Patent whereof is recorded in Book 36 of Deeds, pages 229-232, described as follows:

BEGINNING at corner No. 1 of said Juniper claim; thence North 44°30' West along the 1-5 line of said claim 237.56 feet to the actual POINT OF BEGINNING for the description of the herein described tract; thence continuing along said 1-5 line, 150.0 feet; thence North 44°30' East parallel with the 5-4 line of said claim, 500.0 feet; thence South 44°30' East parallel with said 1-5 line, 150 feet; thence South 44°30' West parallel with said 5-4 line, 500 feet to the actual POINT OF BEGINNING.

Together with an easement for ingress and egress over an existing road, from U. S. Highway No. 89 to the above described tract. Said easement for roadway purposes crosses the EDMUND, the TRIANGLE and the JUNIPER Lode Mining Claims designated by the Surveyor General as Survey Nos. 1114, 1115 and 1112, respectively, and lying 6.0 feet on each side of the following described center line:

BEGINNING at the West Quarter corner of Section Fourteen, Township Ten North, Range Five West of the Gila and Salt River Base and Meridian; thence North along the West line thereof 33.63 feet; thence South 84°44' East, 426.95 feet; thence South 35°19'30" East 405.0 feet to point No. 1, the actual POINT OF BEGINNING for the aforesaid center line; thence South 03°47' West 492.0 feet to angle point No. 2; thence South 34°37'30" West 149.0 feet to angle point No. 3; thence South 74°02'30" East 530.0 feet to angle point No. 4; thence North 25°57'30" West 252.0 feet to angle point No. 5; thence North 32°23'30" East 90.0 feet to angle point No. 6; thence South 69°15'30" East 290.0 feet to angle point No. 7; thence North 38°09'30" East 95.92 feet to angle point No. 8; thence North 9°29'30" West 139.0 feet to angle point No. 9; thence South 67°30'30" East 475.0 feet to angle point No. 10; thence South 01°02' West 260.0 feet to angle point No. 11; thence South 16°13' West 87.0 feet to angle point No. 12; thence South 49°41' West, 290.0 feet to angle point No. 13; thence South 83°53' West 185.0 feet to angle point No. 14; thence along an irregular curve to the right to the aforesaid angle point No. 7, said curve passing through a point 60 feet Westerly from the Microwave site which site bears South 07°31' East 375.0 feet from said angle point No. 7.

Grantors herein assume no responsibility in connection with maintaining or repairing the above described road.

And I or we do warrant the title against all persons whomsoever, subject to the the matters above set forth.

Dated this 29th day of September 19 61

Ray Krieger Ray Krieger
Jaynell Krieger Jaynell Krieger

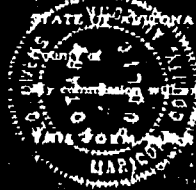
Tom Ridgeway Tom Ridgeway
Mable Ridgeway Mable Ridgeway

STATE OF ARIZONA } This instrument was acknowledged before me this 29th day of Sept, 19 61
County of } by RAY KRIEGER and JAYNELL KRIEGER, his wife

My commission will expire: My Commission Expires Feb. 14, 1963 Leo Owens
Notary Public

STATE OF ARIZONA } This instrument was acknowledged before me this 29th day of Sept, 19 61
County of } by TOM RIDGEWAY and MABLE RIDGEWAY, his wife

My commission will expire: My Commission Expires Feb. 16, 1963 Leo Owens
Notary Public



PREPARED AND FORWARDED THROUGH COURTESY OF GUARANTEE TITLE AND TRUST COMPANY

BOOK 235 PAGE 8

EXHIBIT A

**BULK
ASSAY
REPORT**



TRIAD MINERALS CO.
ASSAYING & CONSULTING
P.O. Box 2754 - Mile Post 115, Hwy. 89
Wickenburg, Arizona 85358
602-684-3818

DATE 8-22-89

ASARCO Inc. P. 19

AUG 22 1989

COMPANY ASARCO LAB # 082189-2

** HOLE # 57

PAGE 2

Sample Description	Ounces per ton		Remarks
	AU (gold)	AG (silver)	
*** YM 57 120-125	.061		YM 50 0-5
" " 125-130	.092		YM 50 5-10
" " 130-135	.119		YM 50 10-15
" " 135-140	.008		YM 50 15-20
" " 140-145	.006		YM 50 20-25
" " 145-150	.009		YM 50 25-30
" " 150-155	.005		YM 50 30-35
" " 155-160	.015		YM 50 35-40
** REASSAYS OF HOLE #50 REJECTS (See Remarks column)			
*** YM 50 (See Remarks column)			

**Certified Assays When
Signed And Dated**
[Signature]
DATE SIGNATURE

**BULK
ASSAY
REPORT**



TRIAD MINERALS CO.

ASSAYING & CONSULTING
P.O. Box 2754 - Mile Post 115, Hwy. 89
Wickenburg, Arizona 85358
602-684-3818



DATE 8-23-89

Revised Interpretation

AUG 24 1989

SW exploration

COMPANY ASARCO LAB.# 082289-2

HOLE # 59

PAGE 2

Sample Description	Ounces per ton		Remarks
	AU (gold)	AG (silver)	
YM 59 115-120	.008		
" " 120-125	.001		
" " 125-130	.003		
" " 130-135	.001		
" " 135-140	.001		
" " 140-145	TR		
" " 145-150	NIL		
" " 150-155	.007		
" " 155-160	.002		
" " 160-165	.001		
" " 165-170	.001		
" " 170-175	.001		
" " 175-180	TR		
** " " 180-185	.017		YM 50 40-45
** " " 186-187*	.004*		YM 50 46-47
** " " 185-190	.288	REFIRING	YM 50 45-50
** " " 190-195	.011		YM 50 50-55
** " " 195-200	.062		YM 50 55-60
** " " 200-205	.003		YM 50 60-65
** " " 205-210	.146		YM 50 65-70
** " " 210-215	.011	YM 50 70-75	
" " 215-220	.168	YM 50 75-80	
** " " 220-225	.108	YM 50 80-85	
*Fletcher Standard			
**Reassays of Hole #50 Reflects (see Remarks column)			

**Certified Assays When
Signed And Dated**
8-23-89 Ch. R. [Signature]
 DATE SIGNATURE

**BULK
ASSAY
REPORT**



TRIAD MINERALS CO.

ASSAYING & CONSULTING
P.O. Box 2754 - Mile Post 115, Hwy. 89
Wickenburg, Arizona 85358
602-684-3818



DATE 8-25-89

COMPANY ASARCO LAB #082489-3

AUG 25 1989

HOLE # 62

PAGE 3

Sample Description	Ounces per ton		Remarks	Off. Description
	AU (gold)	AG (silver)		
YM 62 230-235	.013			
" " 235-240	.048			
" " 240-245	.021			
" " 241-243*	.024*			
" " 245-250	.099			
" " 290-295	.043		No SAMPLE 250 THUR 290	
" " 295-300	.003		No RETURN	
" " 300-305	.002			
" " 305-310	.003			
" " 310-315	.006			
" " 315-320	.052			
** " 320-325	.058	→	YM-56 70-75	Orig. Assay .083
" 321-323 *	.007 *	→		
** " 325-330	.026	→	YM-56 75-80	.028
** " 330-335	.038	→	YM-56 80-85	.027
** " 335-340	.091	→	YM-56 85-90	.105
** " 340-345	.123	→	YM-56 90-95	.105
** " 345-350	.116	→	YM-56 95-100	.128
** " 350-355	.104	→	YM-56 100-105	.095
**Reassay of YM-56 (See Remarks column)				
Fletcher Standard				

**Certified Assays When
Signed And Dated**
8-25-89
 DATE *[Signature]*
 SIGNATURE

Meeting 8/23/89.

LJ Jensen, SA Angione, FT Graybeal, WL Kuntz, MA Muller, JD Sell

1. Bench polygons

20' benches - for 1st pass.

Pick starting elevations - vary ones to look for any impact, ie, 5000', then 4900'

Cut-off grade.

Zone A. ~~0.01-0.015~~ 0.01-0.015, & + 0.015

Zone B 0.01-0.02 and + 0.02

Cutting hi-assay? No, not now, maybe later!

Remove U.G. workings - need outlines

Grid/blast hole section of drill holes - check

holes 20 & NE drilling, ie 57, 58, 60, on to 45. - yawell fault in floor of pit,

so full section available. Wait

until first hole assay are in.

Use pit slope of 50°.

NEED new photo with mine in center of photo.

Review logs & bottoms.

Meeting 8/23/89

DE Crowell, SA Angione, FT Graybeal, MA Muller, JD Sell

1. Need 100 scale map of Section 23 to match 100 scale in Sec. 14.

2. Column leaching being loaded, leaching starting Monday 28th.

3. Need multiple 200 lb samples from head sample for increased numbers.

4. Need multiple ~~split~~ 200 lb samples (5) with at least 4, perhaps 5 multiple assays on each split.
5. Need bottle roll test on drill holes on E-W, N-S, + vertical samples of drill holes. [initial hole 3, 20' composite, + fault / stage according]
6. Pick up remainder of U.G. bulk sample and send to Sparks and remix with the U.G. sample at Sparks.
7. Resample 4-5 times (200#) & then multiple assays of each.

J.D. Sell

P.S. Meeting 8/23/89 FT Grayhead, Wickert, MAM, J.D. Sell

1. Pull all ore intervals & recheck for possible variations in sample weight of samples.
2. Give Lou a map showing outcrop of ore zone.
- * 3. Pick 5 good holes & in ore interval & ^{from reject.} prepare new pulp & assay. Using from low (10.01) or up!
4. After column block tests are in - if additional tests are needed - then collect by hand and drilling.
5. Twin holes - No, not at this time - see item 3.
 - a. Use fence of holes to check as under J.D.
- * 6. Use rejects (composited over hole) for the item 3.
7. Check DEC & how to get a specific gravity number from Mc Clelland.

P.S. Meeting (Continued)

8. More petrographic - metallographic tests for Au-relationship. Possibly by diamond drill.
9. Drill W&K zone holes
10. Status of geologic mapping. Not good but on-going.
11. Status of demography
Leo Smith on-going.
12. Environmental status - central - characteristics.
13. Copy of Haggard-wood - Mansold letter.

* W&K, JDS, MAM	Designation			
	New Hole	Old Hole		
	A	5	✓	
	B	7	✓	makes 2 lines, 1 clay
	C	8	✓	8 strike, on down dip
	D	12	✓	4 cones all 4 drillers
	E	20	✓	session / rig / drillers
	F	24	✓	
	G	40	✓	†
	H	50	(clone) ✓	†
	I	56	✓	
	J	3	✓	

D. Crowell, SAA, 776, WCLL, MAM, SDS 8/23

100 Seal on Sec 23 to match 100 Seal on Sec 14.
Center Min on new photo 100 Seal.

0.048, 0.02, 0.40 ave 0.063

Column starting Monday - 28th

Multiple ~~200~~ 200[#] test out of column. (at least 4 w/ 5 assays of each)

Also on weed assays ~~200~~ the redo.

Roll on dirt like E-W NS Vertical.

Pick-up remainder of 09 bulk.

Low.

bench polygons

20' benches - for 1st pass

Pick starting elevation. - vary once to look for
up to 5000'
4900'

Cut-off grade:

Zone A 0.01-0.02 0.01-0.015 ~~+0.015-0.02~~

Zone B 0.001-0.02

0

② +0.02

cut high areas - not now, maybe later

remove OG workings. - need parameters.

2nd/blast hole section of drill holes -

ch hole 20 & NE drilling in 57, 58, 60 to 45

fit slope 50°

Low, Salazar, FTG, WCK, MAM, & JOL. 8/23

ASARCO

JDS

Southwestern Exploration Division

August 24, 1989

J.D. Sell

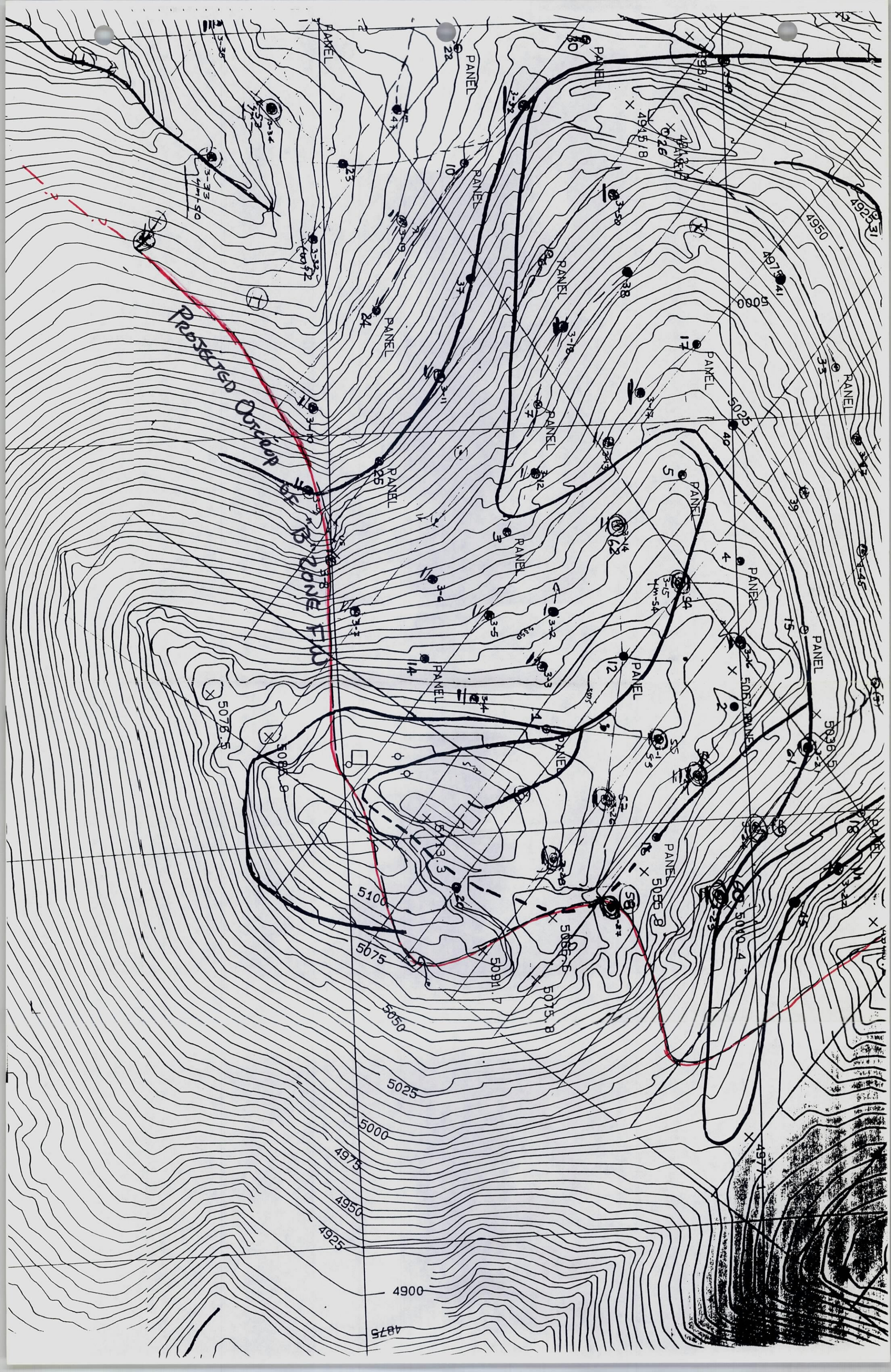
Projected Outcrop
Location "B" Zone
F.W. Yarnell Proj.
Yavapai Co., AZ

The attached map shows the approximate location of the F.W. of the "B" mineralized zone based upon my updip projection of the drill intercepts. I have talked to Lou Jansen and he has said that his computer modeling will redefine this line by topography and projection of the "B" Zone along the dip.

MAM:mek

Mark A. Miller/mek

Mark A. Miller



August 24, 1989

W.L. Kurtz

Original Pulp Assay vs.
Reject-New Pulp Assay
Drill Hole YM-50
Yarnell Project
Yavapai County, AZ

The first hole, of a series through the deposit, for rechecking Triad original pulp assay with a new pulp from the original reject, is hole YM-50.

The results show excellent overall correlation.

<u>Footage</u>	<u>Orig.Pulp</u>	<u>Composite</u>	<u>New Pulp</u>	<u>Composite</u>
0-5	.053		.061	
5-10	.081	0-20	.092	0-20
10-15	.128	20' @ 0.070	.119	20' @ 0.070
15-20	.016		.008	
20-25	.010		.006	
25-30	.009	20-40	.009	20-40
30-35	.008	20' @ 0.009	.005	20' @ 0.009
35-40	.008		.015	
40-45	.029		.017	
45-50	.275 (.197)	40-85	.228	40-85
50-55	.011	45' @ 0.086	.011	45' @ 0.084
55-60	.080		.062	
60-65	.002 (.003)		.003	
65-70	.081	Total 0-85	.146	Total 0-85
70-75	.018		.011	
75-80	.102	85' @ 0.064	.168	85' @ 0.062
80-85	.173		.108	

*Compare data here!
if you do it again.*

James D. Sell
James D. Sell

JDS:mek

cc: F.T. Graybeal
M.A. Miller

August 25, 1989

J.D. Sell/M.A. Miller

Multiple Assays from
YM-55 Pulp
Yarnell Project
Yavapai Co., AZ

Please have following done by Triad; please have results by time the assay reject program is completed.

YM-55

Use existing pulp and make four splits (if enough pulp) for assay (same size split as original assay - 30 gm?) on following pulps:

<u>YM-55</u> <u>Footage</u>	<u>Orig. Assay</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
90-95	.015				
95-100	.021				
110-115	.046				
125-130	.008				
130-140	.142				

You may tell Triad that we are checking to determine 'nugget effect' in pulp so they don't worry about difference from original assay -- should keep 'em honest.

WLK:mek


W. L. Kurtz

8/21/93

J D Sell
Tucson office

YANKEE TOPO

I think it would be helpful to have a topo map for geologic plotting, drill holes etc that used a 25' contour interval or a greatly screened topo at 5' but with the 25' lines somewhat ~~accentuated~~.

This topo needs only cover the "deposit area"

ASARCO

JDS

Exploration Department
Southwestern United States Division
James D. Sell
Manager

CERTIFIED MAIL
RETURN RECEIPT

August 25, 1989

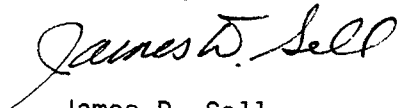
Mr. A.J. Roman, President
Western Building & Mining Co., Inc.
P.O. Box 4006
Reading, PA 19606

Western Building
Monthly Payment
Yarnell Project
Yavapai Co., AZ

Dear Mr. Roman:

Enclosed is Asarco's check of \$1,000 U.S. for the monthly payment of September 1, 1989, due Western Building as per Article 4 of the Norgold Resources, Inc. - Western Building and Mining Co., Inc. Agreement dated December 30, 1988.

Sincerely,


James D. Sell

JDS:mek

cc: W.L. Kurtz
C.L. Snow
C. Moat - Norgold

VOUCHER NO. 8-264

DATE Aug 1989

ASARCO INCORPORATED
TUCSON OFFICE
TUCSON, ARIZONA 85703

Monthly payment
Yarnell Project

1,000.00

DETACH BEFORE PRESENTING FOR PAYMENT

ASARCO

DOWNTOWN OFFICE
THE VALLEY NATIONAL BANK
TUCSON, ARIZONA

ASARCO INCORPORATED
TUCSON OFFICE
TUCSON, ARIZONA 85703

91-2/1221

No. 0031678

PAY

The sum of \$1,000 and 00cts

August 25, 1989
\$1,000.00

TO THE ORDER OF

ASARCO INCORPORATED
TUCSON OFFICE

WESTERN BUILDING & MINING CO., INC.
PO Bx 4006
Reading, PA 19606

C. L. Snow
Mildred C. Koeppen

⑈031678⑈ ⑆122100024⑆

2000⑈0673⑈

ASARCO

Southwestern Exploration Division

JDS

August 25, 1989

D. A. Melhado

New Drilling Map
Yarnell Project
Yavapai County, AZ

As discussed, put together a new Drilling Progress Map with the expanded drilling and having 25 foot contour intervals on the topo.

If you use the Preliminary Map 6756, then all will match existing data.

JDS:mek


James D. Sell

cc: W.L. Kurtz

ASARCO

JDS

Exploration Department

Frederick T. Graybeal
Chief Geologist

August 25, 1989

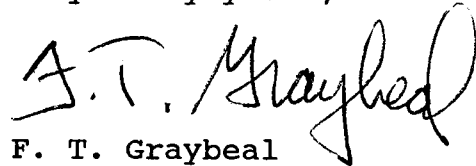
Mr. J. D. Sell
Tucson Office

Yarnell Project Arizona

Dear Mr. Sell:

I attach hereto a copy of Form 302-MB and the request for the above-captioned project. Please note that this form has been processed by the Controllers Department and by Messrs. R. deJ. Osborne and T. C. Osborne.

Very truly yours,



F. T. Graybeal

FTG:mc
Att.

cc: E. J. Franko (w/att.)
W. L. Kurtz (w/att.)
W. L. Schoonmaker (w/att.)

cc: C.L. Snow (w/att.)
W.D. Gay (w/att.)
(8/30/89)

New York, N.Y., August 14, 1989

To: T. C. Osborne

AUG 14 1989

Yarnell Project
Arizona

5 to 10 tons.

Attached is a Supplemental Exploration Authorization request from the Tucson Office for \$230,000 to continue drilling at the Yarnell gold project and to begin bulk metallurgical testing.

Yarnell is located 80 miles northwest of Phoenix along the main highway to Prescott. Reverse circulation drilling in 44 holes which began earlier this year has defined a zone of near-surface gold mineralization containing 3.9 million tons averaging 0.047 oz Au which would be available in an open pit at waste/ore=3.5/1. Waste/ore is nearly zero on the south side of the reserve and increases to the northwest. It is likely that at least half of the mineralization is available at waste/ore=1:1. Gold is disseminated in a gently-dipping fault with the potentially mineable mineralization averaging about 65 ft. in thickness. Mineralization is oxidized and bench tests indicate it will respond well to heap leaching.

The property covers several square miles and has been acquired under a joint venture option from Norgold Resources, a junior mining company located in Vancouver, B.C. Asarco has an option to earn 51 to 75% of the property, depending on certain elections by Norgold, upon completion of an expenditure of \$250,000 by July 1, 1990, and by completing a feasibility study by July 1, 1991 with a commitment to put the deposit in production by July 1, 1994 subject to extensions for periods when the price of gold is less than \$350/oz. There are also modest royalties to owners of certain underlying claims.

The purpose of the authorization would be to confirm continuity between existing holes (which are spaced at 150-200 ft. intervals) for ore reserve and mine scheduling purposes, to develop additional reserves along the southwestern extension of the fault, and to determine optimum metallurgy so that a formal feasibility study can be completed by the end of this year. Certain underlying land payments would also be made as outlined on the attached table. If you agree with the recommended expenditure, please obtain necessary approval and return the attached form to the Exploration Department.

F. T. Graybeal
F. T. Graybeal

FTG:mc
Att.

RECEIVED
AUG 20 1989
EXPLORATION DEPT.

APPLICATION FOR SUPPLEMENTAL EXPLORATION APPROPRIATION

August 7, 1989

Originating Office Tucson

Application is hereby made for supplemental Appropriation to cover cost, in excess of original estimate, of work authorized by New York.

No. EA-0444-02, Yarnell Project, Yavapai County, Arizona

Present total Estimated Cost (Form 302-MA attached)	\$ 570,000
Amount previously authorized (date thru 4/19/89)	\$ 340,000
Balance for which Authorization is now requested	\$ 230,000

ADDITIONAL WORK CONTEMPLATED:

- 10,000 feet of reverse circulation drilling
- 6-10 ton sample, column leach tests
- Mapping and surveying
- Land payments.

EXPLANATION OF INCREASED COST:

Drilling on 200-foot centers in 45 holes with 13,000 feet of reverse circulation drilling, has returned encouraging, but mixed, gold intercepts. The configurations support the concept of an open-pit operation, and the preliminary bottle roll tests suggest heap-leaching metallurgy.

The proposed drilling will test for extensions of mineralization along strike and test within the gold zone discovered in the previous drilling.

Reviewed by *C. L. Shea*
CONT. MGR. OR CHIEF ACCT.

Approved by *R. J. O'Keefe*
CONTROLLER

Account Chargeable to *Exploration*
TO BE FILLED IN BY CONTROLLER

Recommended by *James D. Sell*
JAMES D. SELL SUPERVISOR

Approved by *J. T. Mayhew*
VICE PRESIDENT

Approved by Advisory Committee

Approved by Board of Directors

..... 19.....

..... 19.....

8/25/89

TABLE 1 - YMNELL PROJECT
ZONE INTERVAL TABULATION

<u>DRILL HOLE</u>	<u>ZONE*</u>	<u>FROM</u>	<u>TO</u>
YM-1	A	5	55 = 50' at 0.025
YM-1	B	55	125 includes ^{20'} slope = 70' at 0.023
YM-2	A	45	140 = 45' at 0.017
	B	140	245 = 105' at 0.049 include 40' slope
YM-3	A	20	125 = 105' at 0.011
	B	125	200 = 75' at 0.060
YM-4	A	15	135 = 120' at 0.012) 175' at
YM-4	A → A'	175	230 = 35' at 0.016) 0.013
YM-4	B	285	310 = 25' at 0.031
- 5	A	150	200 = 50' at 0.005
YM-5	B	200	355 = 155' at 0.041 include 35' slope
YM-6	B	125	180 = 55' at 0.042
YM-7	B	155	230 = 75' at 0.047 include 5' slope
YM-8	A	30	225 = 195' at 0.022
YM-8	B	225	275 = 30' at 0.041
YM-9	B	275	315 = 40' at 0.035
YM-10	A	130	190 = 60' at 0.021
YM-10	B	190	225 = 35' at 0.029
YM-11	B	175	240 = 65' at 0.049
YM-12	A	40	150 = 110' at 0.013
YM-12	B	150	240 = 90' at 0.039 include 15' slope
YM-13	B	180	210 = 30' at 0.022
YM-14	A	15	35 = 20' at 0.021 75' at
YM-14	B) B	35	90 = 55' at 0.047 0.040

TABLE 1 - YARNELL PROJECT

ZONE INTERVAL TABULATION

<u>DRILL HOLE</u>	<u>ZONE*</u>	<u>FROM</u>	<u>TO</u>
YM-14	B	35	90 see previous sheet
YM-15	A	25	140 = 115' at 0.015
YM-15	A - B	140	255 = 115' at 0.031
YM-15	B	255	295 = 40' at 0.041 + 155' at 0.034
YM-16	A	0	40 = 40' at 0.017
YM-16	B	40	80 = 40' at 0.039 include 5' steps
YM-17	A	210	285-305 = 75' at 0.015
YM-17	B	210 - 305	325 = 40' at 0.047
YM-18	A	0	100 = 100' at 0.022
YM-18	B	100	140 = 40' at 0.078
YM-19	A	10	85 = 75' at 0.015
YM-19	B	205	235 = 30' at 0.058
YM-20	B	0	35 = 35' at 0.070
YM-21	A	25	55 = 30' at 0.019
YM-21	B	80	90 = 10' at 0.033
YM-22	A	215	225 = 10' at 0.036
YM-22	B	270	285 = 15' at 0.025
YM-23	B	40	125 = 85' at 0.047
YM-24	B	65	115 = 50' at 0.093 include 10' steps
YM-25	B	55	90 = 35' at 0.070
YM-26	B	200	290-295 = 90' at 0.054
YM-27	A	35	95 = 60' at 0.013
YM-27	A	235	265 = 30' at 0.019
YM-27	B	300	315 = 15' at 0.033
YM-28	A	95	225 = 130' at 0.022
YM-28	B	225	245 = 20' at 0.042
YM-29	B	220	230 = 10' at 0.033
YM-30	A	170 - 165	200 = 30' at 0.012
YM-30	B	215	250 = 35' at 0.032

TABLE 1 - YARNELL PROJECT
ZONE INTERVAL TABULATION

<u>DRILL HOLE</u>	<u>ZONE*</u>	<u>FROM</u>	<u>TO</u>
YM-31	A	115	135 = 20' at 0.017
YM-31	B	365	385 = 20' at 0.055
YM-32	A)	0	25 = 25' at 0.018
YM-32	A')	60	190 = 130' at 0.011
YM-32	B	190	200 = 10' at 0.027
YM-33	A	15	55 = 40' at 0.015
YM-33	B	275	365 = 90' at 0.051
YM-34	A	110	130 = 20' at 0.013
YM-34	B	Say 240 - Not reached -	250 = 10' at 0.025
YM-35	A B	15	20 = 5' at 0.017
YM-35	B	35	40 = 5' at 0.016
YM-36	A	35	55 = 20' at 0.023
YM-36	B	130	140 = 10' at 0.048
YM-37	B	120	180 = 60' at 0.036
YM-38	B	185	220 - 245 = 35' at 0.028
YM-39	A)	0	35 = 35' at 0.030
YM-39	A')	285	325 = 40' at 0.019
YM-39	B	325	360 = 35' at 0.048
YM-40	A	20	80 = 60' at 0.014
YM-40	B	275	380 = 105' at 0.062
YM-41	B	295	335 = 40' at 0.046
YM-42	B	330	340 = 10' at 0.056
YM-43	B	65	85 = 20' at 0.063
YM-44	A	115	235 = 120' at 0.029
YM-44	B	235	265 = 30' at 0.143
YM-45	B	60	75 = 15' at 0.084
YM-46	B	200	260 = 60' at 0.012
YM-47	A	120	170 = 50' at 0.014
YM-47	B	170	205 = 35' at 0.031

TABLE 1 - YARNELL PROJECT
ZONE INTERVAL TABULATION

<u>DRILL HOLE</u>	<u>ZONE*</u>	<u>FROM</u>	<u>TO</u>
YM-48	B	45	85 = 40' at 0.049
YM-49	B	140-135	160 = 20' at 0.049
YM-50	B	0	85 = 85' at 0.059
YM-51	B	165	170 = 5' at 0.001
YM-52	B	50	75 = 25' at 0.049
YM-53	B	65	140 = 75' at 0.036
YM-54	A	55	125 = 70' at 0.015
YM-54	B	180	270 = 90' at 0.054
⁻⁵⁵ YM-55	A	0	70 = 70' at 0.011
YM-55	B	70	165-190 = 9.5' at 0.050 includes 15' stage
YM-56	A	Surf.	45 = 45' at 0.012
YM-56	B	70	105 = 35' at 0.052
⁵⁷ YM-57	A	0	15 = 15' at 0.011
YM-57	B	15 ^{are p}	45 = 30' at 0.037
		but 15-47 = 32' = 0.035 with 13' open stage below.	
		15-60 = 45' total	
YM-58	B	0	20 = 20' at 0.034
YM-59	B	50	100 = 50' at 0.032
YM-60	-	something goes in FW unhere.	-

*Zone A - Upper low-grade zone
 *Zone B - Main Yarnell Fault Zone & envelope

YM-61	B	80	175
YM-62	A	115	210 + 15' stage = 0.022
YM-62	B	210	250 + 40' stage + 5' = 0.043

See next work sheet

YM-61 B 80 ~~175 = 95' at 0.038 with 15' open step + 10' at 0.022~~
200 = 120 at 0.037 incl. 15' steps

~~175 = 95' at 0.038 with 15' open step + 10' at 0.022~~
~~200 = 120 at 0.037 incl. 15' steps~~

-62 A 115 190 = 75' at 0.015

-62 B 190 295 = 105' at 0.040, include 40' open steps.

-63 A 10 140 = 130' at 0.011
B 140 240 = 100' at 0.081, end in sea.

-64 A 50 110 = 60' at 0.025

-64 B 110 145 = 35' at 0.053

-65 B Surf 50 = 50' at 0.049

-66 blank, in FW

-67 B Surf 50 = 50' at 0.048

-68 blank - must be fault to N, between 65 + 50!

-69 A 185 250 = 65' at 0.011

-69 B 250 280 = 30' at 0.069

-70 A 60 95 = 35' at 0.011

-70 B 95 135 = 40' at 0.031

-71 B 45 110 = 65' at 0.131

if his scale is set to 0.5_{oz}, then 65' at 0.097

YM-72 B Surf 35 = 35' at 0.084

-73 B Surf 20 = 20' at 0.190

-74 In Waste Block (FTW) 15-20^{5' at} = 0.011 @ 20-85 = 0.023 !!

-75 A 65 105 = 40' at 0.023

-75 B 105 170 = 65' at 0.066

-76 A Surf 75 = 75' at 0.012

-76 B 75 115 = 40' at 0.034, include 15' open step at top

-77 A 70 107 = 37' at 0.022

-77 B 107 180 = 73' at 0.048, includes 13' open step at top

-78 A 130 215 = 85' at 0.011

B 215 270 = 55' at 0.070

-79 A 10 120 = 110' at 0.019

-79 B 120 170 = 50' at 0.046

-80 A 140 230 = 90' at 0.023

-80 B 230 280 = 50' at 0.040

-81 A 5 55 = 50' at 0.015

-81 B 55 90 = 35' at 0.066

-82 A Surf 35 = 35' at 0.015

-82 B 35 95 = 60' at 0.049

100

YM-83	A	Surf	140 = 140' at 0.014	
-83	B	140	240 = 100' at 0.044	20' at
-84	A	10	105 = 95' at 0.017	
-84	B	105	140 = 35' at 0.062	
-85	B?	No values	30 = 30' at 0.0022 ^{0.0025} (best 0.004)	
-86	B?	50	70 = 20' at 0.013	
87	A	245	285 = 40' at 0.010	
87	B	285	305 = 20' at 0.050	
-88	A	180	240 = 60' at 0.020	
-88	B	240	295 = 55' at 0.064 has surr. 295-340 = 45' at 0.022	
-89	A	40	180 = 140' at 0.010	
-89	B	180	270 = 90' at 0.051 has surr. 270-340 = 70' at 0.016	
-90	A	10	120 = 110' at 0.012	
-90	B	120	215 = 95' at 0.062 has surr. 215-235 = 20' at 0.019	
-91	A	10	95 = 85' at 0.010	
-91	B	95	180 = 85' at 0.051	ASSUME: from all dimensions holv 37-62-77-89-90
-92	B	35	55 = 20' at 0.072	
-93	B	5	25 = 20' at 0.064	

-94 B 105 155 = 50' at 0.086 30' dist

-95 B 385 395 = 10' at 0.015

~~-96 B 495-535 = 40' at 0.005
OR 520-525 = 5' at 0.013 dist~~

96 B 570 575 = 5' at 0.061

ASARCO

Exploration Department
Western USA
W. L. Kurtz
Manager

VIA FAX 604-685-8045

August 25, 1989

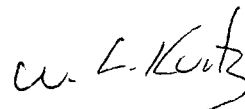
Mr. Christopher Moat, President
NORGOLD RESOURCES INC.
Vancouver, B.C.

Yarnell Project
Weekly Information

Dear Mr. Moat:

We are FAXing you assay results on Holes 52, 53, 54, 55, 56, 57, 58, 59, 60, 61 and reassays of YM-50, along with a map showing their location.

Sincerely,



WLK:mek

W. L. Kurtz

cc: J.D. Sell

JDS

JDS

Southwestern Exploration Division

August 25, 1989

Zone Footages
Yarnell Project
Yavapai County, AZ

① There are other holes
That have slopes
work

yes, many include
the one as sheet
it on the sheet
I gave her
to type (LSD)
of the other
Jim

② I thought for Janer
every thing above B equals

yes
A and he does not
use your footage but

automatically calculates +

accommodates change in the
grades we put on blackboard

③ Still need (?) to discuss how Lou
treats slopes, no assay cores

I have revised the Zone
ve been only slightly
understand your computer

eparated into Zone A,
main Yarnell Fault zone
ociated at a grade which
ver a twenty foot length

als. This signifies a
intervals, or a break

James D. Sell
James D. Sell

cc: F.T. Graybeal
W.L. Kurtz
M.A. Miller

↑
Lou's program ignores the open zone
and assigns it the value of the available
data within the interval computed.
i.e., if the 1st ten feet averages 0.012
& the next 10 feet is slope, then the
average of the 20' is 0.015.
He can vary this in any manner
you want, i.e., to say to the computer,
if the 20' only has 5' of data then
ignore total 20'. etc. etc.

Jim

ASARCO

Southwestern Exploration Division

JDS

August 25, 1989

L.J. Jansen

Zone Footages
Yarnell Project
Yavapai County, AZ

F.T. Graybeal, W.L. Kurtz, M.A. Miller, and I have revised the Zone Footages memo of August 17, 1989. These have been only slightly modified and can be used as a guide, but I understand your computer makes its own decisions.

As before, the intervals, if present, are separated into Zone A, the upper lower grade zone, and Zone B, the main Yarnell Fault zone and the envelope mineralization that is associated at a grade which will generally average over 0.02 opt gold over a twenty foot length of sample.

A prime(') (such as A,A') is on some intervals. This signifies a break either in assay value between the two intervals, or a break in footage between two intervals.

JDS:mek
Att.


James D. Sell

cc: F.T. Graybeal
W.L. Kurtz
M.A. Miller

3/25/89

TABLE 1 - YMNELL PROJECT
ZONE INTERVAL TABULATION

<u>DRILL HOLE</u>	<u>ZONE*</u>	<u>FROM</u>	<u>TO</u>
YM-1	A	5	55
YM-1	B	55	125 includes stope
YM-2	A	45	140
	B	140	245
YM-3	A	20	125
	B	125	200
YM-4	A	15	135
YM-4	A'	175	230
YM-4	B	285	310
YM-5	B	200	355
YM-6	B	125	180
YM-7	B	155	230
YM-8	A	30	225
YM-8	B	225	275
YM-9	B	275	315
YM-10	A	130	190
YM-10	B	190	225
YM-11	B	175	240
YM-12	A	40	150
YM-12	B	150	240
YM-13	B	180	210
YM-14	A	15	35

TABLE 1 - YARNELL PROJECT

ZONE INTERVAL TABULATION

<u>DRILL HOLE</u>	<u>ZONE*</u>	<u>FROM</u>	<u>TO</u>
YM-14	B	35	90
YM-15	A	25	140
YM-15	A'	140	255
YM-15	B	255	295
YM-16	A	0	40
YM-16	B	40	80
YM-17	A	210	305
YM-17	B	305	325
YM-18	A	0	100
YM-18	B	100	140
YM-19	A	10	85
YM-19	B	205	235
YM-20	B	0	35
YM-21	A	25	55
YM-21	B	80	90
YM-22	A	215	225
YM-22	B	270	285
YM-23	B	40	125
YM-24	B	65	115
YM-25	B	55	90
YM-26	B	200	295
YM-27	A	35	95
YM-27	A'	235	265
YM-27	B	300	315
YM-28	A	95	225
YM-28	B	225	245
YM-29	B	220	230
YM-30	A	165	200
YM-30	B	215	250

TABLE 1 - YARNELL PROJECT

ZONE INTERVAL TABULATION

<u>DRILL HOLE</u>	<u>ZONE*</u>	<u>FROM</u>	<u>TO</u>
YM-31	A	115	135
YM-31	B	365	385
YM-32	A	0	25
YM-32	A'	60	190
YM-32	B	190	200
YM-33	A	15	55
YM-33	B	275	365
YM-34	A	110	130
YM-34	B	-Not reached-	
YM-35	A	15	20
YM-35	B	35	40
YM-36	A	35	55
YM-36	B	130	140
YM-37	B	120	180
YM-38	B	185	245
YM-39	A	0	35
YM-39	A'	285	325
YM-39	B	325	360
YM-40	B	275	380
YM-41	B	295	335
YM-42	B	330	340
YM-43	B	65	85
YM-44	A	115	235
YM-44	B	235	265
YM-45	B	60	75
YM-46	B	200	260
YM-47	A	120	170
YM-47	B	170	205

TABLE 1 - YARNELL PROJECT
ZONE INTERVAL TABULATION

<u>DRILL HOLE</u>	<u>ZONE*</u>	<u>FROM</u>	<u>TO</u>
YM-48	B	45	85
YM-49	B	135	160
YM-50	B	0	85
YM-51	B	165	170
YM-52	B	50	75
YM-53	B	65	140
YM-54	A	55	125
YM-54	B	180	270
YM-55	B	70	190
YM-56	A	Surf.	45
YM-56	B	70	105
YM-57	B	15	45
YM-58	B	0	20
YM-59	B	50	100
YM-60	-	in FW	

*Zone A - Upper low-grade zone

*Zone B - Main Yarnell Fault Zone & envelope

YM-61	B	80	175
YM-62	A	115	210 + 15' slope + 10' - 0.022
YM-62	B	210	250 + 40' slope + 5' - 0.043

FAX 10: JERRY MAGGARD - O.K.
F. I. GRAYBENT

JDS

LAW OFFICES OF
LEO N. SMITH
CASAS ADOBES PROFESSIONAL PLAZA
6985 NORTH ORACLE ROAD
TUCSON, ARIZONA 85704

FAX (602) 797-9770

TELEPHONE (602) 797-0777

Note: This is the land to which
Sante Fe and Maricopa communication
facilities will be moved.

W.L.K.
8/29/89

VIA TELECOPIER

604/685-8045

RECEIVED

AUG 29 1989

EXPLORATION DEPARTMENT

August 26, 1989

Michael Philpot
Norgold Resources, Inc.
P.O. Box 12122
Vancouver, B.C. V6B 4N6

Re: Yarnell Mine Project
Harper et al. Option Agreement

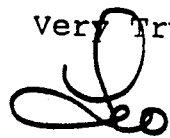
Dear Mike:

Faxed herewith is a draft of proposed Option Agreement between Norgold and Eugene C. Harper et ux., et al., together with Exhibits A and B. The various documents furnished reflect Mr. Harper's middle initial as "G.", "E." and "C". I have used "C" since this appears to be the initial he used in signing the document recorded at 1530/630.

As you will note, I have combined the two options in a single agreement. I attempted to frame the Exhibit B Easement Agreement language along the same general lines as was used in the Easement Agreement which you furnished to me for Hi Point Communications.

If you wish changes to be made to the draft, please let me know.

Very Truly Yours



Leo N. Smith

LNS:jf

xc: Brian D. Edgar, Esq. (w/encl.)
W.L. Kurtz (w/encl.)



OPTION AGREEMENT

THIS AGREEMENT is made effective as of the _____ day of _____, 1989, by and between EUGENE C. HARPER and FLORENCE A. HARPER, husband and wife, and LESTER J. HAYT, SR., and ELOISE G. HAYT, husband and wife (collectively as "Owners") and NORGOLD RESOURCES (US) INC., a Nevada corporation authorized to do business in Arizona (as "Optionee").

WHEREAS, Owners represent to Optionee that they are the owners of, and are willing to grant to Optionee the sole and exclusive option to purchase, the hereinafter described parcels of real property situated in Yavapai County, Arizona, all as more particularly described as Parcel One and Parcel Two in Exhibit A attached hereto and made a part hereof; and

WHEREAS, in the event Optionee exercises one or both of its options to purchase, Owners are willing to grant to Optionee an Easement Agreement for ingress to and egress from the property described in Exhibit A and for construction, use and maintenance of utilities to serve the same across adjacent real property owned by Owners;

NOW, THEREFORE, for a good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged by Owners, Owners and Optionee agree as follows:

1. Term; Option Payment

Unless Optionee sooner exercises its option to purchase as hereinafter provided, the term of this Agreement shall be for a period expiring on the date twelve (12) months from the effective

date hereof (the "Option Period"). Upon execution of this Agreement by Owners and Optionee, Optionee shall pay to Owners the sum of One Thousand Five Hundred Dollars (\$1,500.00) as consideration for the purchase options granted herein.

2. Grant; Exercise of Options; Purchase Price

Owners hereby grant to Optionee the sole exclusive rights and options, exercisable at any time prior to expiration of the Option Period, to (1) purchase Parcel One, or (2) purchase Parcel Two, or (3) purchase both Parcels One and Parcel Two, by giving written notice to Owners in the manner hereinafter set forth of Optionee's election to purchase, which notice shall designate the Parcel or Parcels which Optionee elects to purchase and shall designate a title insurance company with offices in Yavapai County to act as escrow agent for the closing of the purchase. If Optionee elects to purchase only Parcel One, the purchase price shall be the sum of Ten Thousand Dollars (\$10,000.00). If Optionee elects to purchase only Parcel Two, the purchase price shall be the sum of Five Thousand Dollars (\$5,000.00). If Optionee elects to purchase both Parcel One and Parcel Two, the purchase price shall be the sum of Fifteen Thousand Dollars (\$15,000.00). Promptly following exercise by Optionee of its option to purchase, the parties shall execute and deliver to the escrow agent, escrow instructions consistent with their Agreement, which instructions shall direct escrow agent to close the escrow within thirty (30) days of establishing the escrow. Owners shall thereupon execute and deliver into escrow a Warranty Deed of the applicable Parcel or Parcels, warranting title as against all liens and encumbrances other than as set forth in Exhibit A and Optionee shall deliver into escrow the applicable purchase price set forth above. The parties shall also execute and deliver into escrow an Easement Agreement in the form attached as Exhibit B, together with an affidavit of value as required under the laws of the State of Arizona. Real property taxes shall be prorated as of the date of closing and the escrow



agent shall deliver to Optionee a policy of title insurance, insuring Optionee's title as herein represented. The cost of the title policy shall be the responsibility of Owners and the costs of escrow shall be divided between the parties. Upon closing of the escrow this Agreement shall terminate.

3. Examination by Optionee; Indemnity

Optionee shall have the right, at any time prior to the expiration of the Option Period, to enter upon, examine and survey the real property described in Exhibit A. In the event Optionee enters thereon during the Option Period to examine or survey the property, it shall conduct work performed thereon in a good and workmanlike manner and in compliance with all applicable local, state and federal statutes. Optionee shall pay all expenses incurred by it in its operations thereon and shall allow no liens arising from any act of Optionee to remain upon the said real property. Optionee shall indemnify Owner against and hold Owner harmless from any liability to third persons resulting from Optionee's operations hereunder.

4. Notices

Any notice or communication required or permitted hereunder shall be effective when personally delivered or shall be effective when addressed:

If to Owner:

c/o Eugene G. Harper
P.O. Box 4169
Cave Creek, AZ 85331

If to Optionee:

Norgold Resources (US) Inc.
P.O. Box 12122
Vancouver, B.C. V6B 4N6

and deposited, postage prepaid, and registered, in the United States or Canadian mail, as the case may be. Either party may,

by notice to the other given as aforesaid, change its mailing address for future notices hereunder.

5. Construction, Memorandum; Inurement

This Agreement, and the rights and obligations of the parties hereunder, shall be governed by the laws of the State of Arizona. Section headings in this Agreement are for convenience only and shall not be considered a part of this Agreement or used in its interpretation. The parties shall join in the execution of a Memorandum of this Agreement in a form sufficient to constitute notice hereof to third parties under the laws of the State of Arizona. This Agreement shall inure to the benefit of and be binding upon the respective heirs, devisees, personal representatives, successors and assigns of the parties hereto.

IN WITNESS WHEREOF, this OPTION AGREEMENT has been executed as of the date first above set forth.

OWNERS

Eugene C. Harper

Lester J. Hayt, Sr.

Florence A. Harper

Eloise G. Hayt

OPTIONEE

NORGOLD RESOURCES (US) INC.

By _____

Its: _____

STATE OF ARIZONA)
)
COUNTY OF _____) ss.

The foregoing instrument was acknowledged before me this
_____ day of _____, 1989, by Eugene C. Harper and
Florence A. Harper, husband and wife.

Notary Public

My Commission Expires:

STATE OF ARIZONA)
)
COUNTY OF _____) ss.

The foregoing instrument was acknowledged before me this
_____ day of _____, 1989, by Lester J. Hayt, Sr., and
Eloise G. Hayt, husband and wife.

Notary Public

My Commission Expires:

PROVINCE OF)
)
BRITISH COLUMBIA) ss.

The foregoing instrument was acknowledged before me this
_____ day of _____, 1989 by
the _____ of Norgold Resources (US) a Nevada
corporation on behalf of the corporation.

Notary Public

My Commission Does Not Expire:



EXHIBIT A

EXHIBIT A to OPTION AGREEMENT (and Memorandum thereof) being a description of the real property subject to the said Option Agreement and Memorandum:

PARCEL ONE

That portion of the Southwest Quarter of the Southeast Quarter of Section 11, Township 10 North, Range 5 West, Gila and Salt River Meridian, Yavapai County, Arizona, described as follows:

BEGINNING at a point on the South line of said Section 11, from which the South Quarter corner bears North 89° 55' West, 96.20 feet;

thence North 0° 05' East, 208.71 feet;

thence South 89° 55' East, 208.71 feet to a point, such point being the northwest corner of the property described in instrument recorded in Book 387 of Official Records, page 502, records of Yavapai County, Arizona;

thence South 0° 05' West, 208.71 feet along the East line of the last referenced property to a point on the South line of said Section;

thence North 89° 55' West along said South line, 208.71 feet, to the POINT OF BEGINNING;

containing one acre, more or less.

EXCEPT all coal and other minerals as reserved in Patent from United States of America.

PARCEL TWO

That portion of the Southwest Quarter of the Southeast Quarter of Section 11, Township 10 North, Range 5 West, Gila and Salt River Meridian, Yavapai County, Arizona, described as follows:

BEGINNING at a point on the South line of said Section 11, from which the South Quarter corner bears North 89° 55' West, 617.98 feet, and being the southeast corner of the property described in instrument recorded in

Book 1530 of Official Records, page 629, records of Yavapai County, Arizona;

thence North 0° 05' East along the East line of the last referenced property, 104.36 feet to a point on the East line of said property;

thence South 89° 55' East 208.71 feet;

thence South 0° 05' West, 104.36 feet to a point on the South line of said Section;

thence North 89° 55' West along said South line, 208.71 feet, to the POINT OF BEGINNING;

containing one-half acre, more or less.

EXCEPT all coal and other minerals as reserved in Patent from United States of America.

BOTH OF WHICH PARCELS ARE SUBJECT TO:

1. All existing roads, rights of way and easements and those of record in the office of the Recorder of Yavapai County, Arizona;
2. All taxes which may constitute a lien but which are not yet due and payable; and
3. Exceptions and reservations in the United States Patent thereto.

EXHIBIT B

EASEMENT AGREEMENT

The undersigned, EUGENE C. HARPER and FLORENCE A. HARPER, husband and wife, and LESTER J. HAYT, SR. and ELOISE G. HAYT, husband and wife (collectively as "Grantors"), being the owners of the real property included within Tax Parcel 203-07-37B situated in the Southeast Quarter of Section 11, Township 10 North, Range 5 West, Gila and Salt River Meridian, Yavapai County, Arizona hereby grant a non-exclusive easement for ingress and egress across and over the real property included within Tax Parcel 203-07-37B (but specifically excepting and excluding those portions of the Southeast Quarter within Tax Parcel 203-07-37A, Tax Parcel 203-07-38 and Plat C Amended of Yarnell) to NORGOLD RESOURCES (US) INC., a Nevada corporation ("Norgold"), the buyer of that portion of said Tax Parcel 203-07-37B described in Schedule A attached hereto and made a part hereof, such easement being granted herein in an undefined manner and to encompass those portions of the existing roadway heretofore used to service communication facilities within Tax Parcels 203-07-37A and 203-07-38. At such time as development of Grantors' remaining property within Tax Parcel 203-07-37B takes place, Norgold agrees to accept ingress and egress from the nearest developed street that will permit vehicle travel to the real property described in Schedule A.

Owners further hereby grant to Norgold a temporary utility easement across the real property included within Tax Parcel 203-07-37B (but specifically excepting and excluding those portions of the Southeast Quarter within Tax Parcel 203-07-37A, Tax Parcel 203-07-38 and Plat C Amended of Yarnell) for the construction, use and maintenance of utilities to service any facilities placed by Norgold on the property described in Schedule A until such time, if any, as developments takes place resulting in bordering



sources of utilities being made available to Norgold for such purposes.

This Agreement and the conditions hereof shall inure to the benefit of and be binding upon Grantors and Norgold and their respective heirs, devisees, personal representatives, successor and assigns as the same relates to the property included within Tax Parcel 203-07-37B.

DATED: _____

Eugene C. Harper, Grantor

Florence A. Harper, Grantor

Lester J. Hayt, Sr. Grantor

Eloise G. Hayt, Grantor

Accepted:

NORGOLD RESOURCES (US) INC.

By: _____
Its:

Note: Add Schedule A (description of property purchased by Norgold) and acknowledgments at time of execution of the Easement Agreement.



August 28, 1989

File Note

Air Photos
Yarnell Project
Yavapai County, AZ

The colored photos with section corner control have been received from Western Air Maps, Inc.

Of these, the following have been taken to the Yarnell Project site:

- a) 1" = 100', mine area SW $\frac{1}{4}$, Sec. 14
- b) 1" = 200', Sections 13, 14, 15, 22, 23, & 24.

The remainder of the colored photos are in the Drafting Department files:

- a) 1" = 200', Sections 10, 11, 12, 25, 26, 27.

All the photos are in T10N, R5W, as shown on Figure 1, attached.

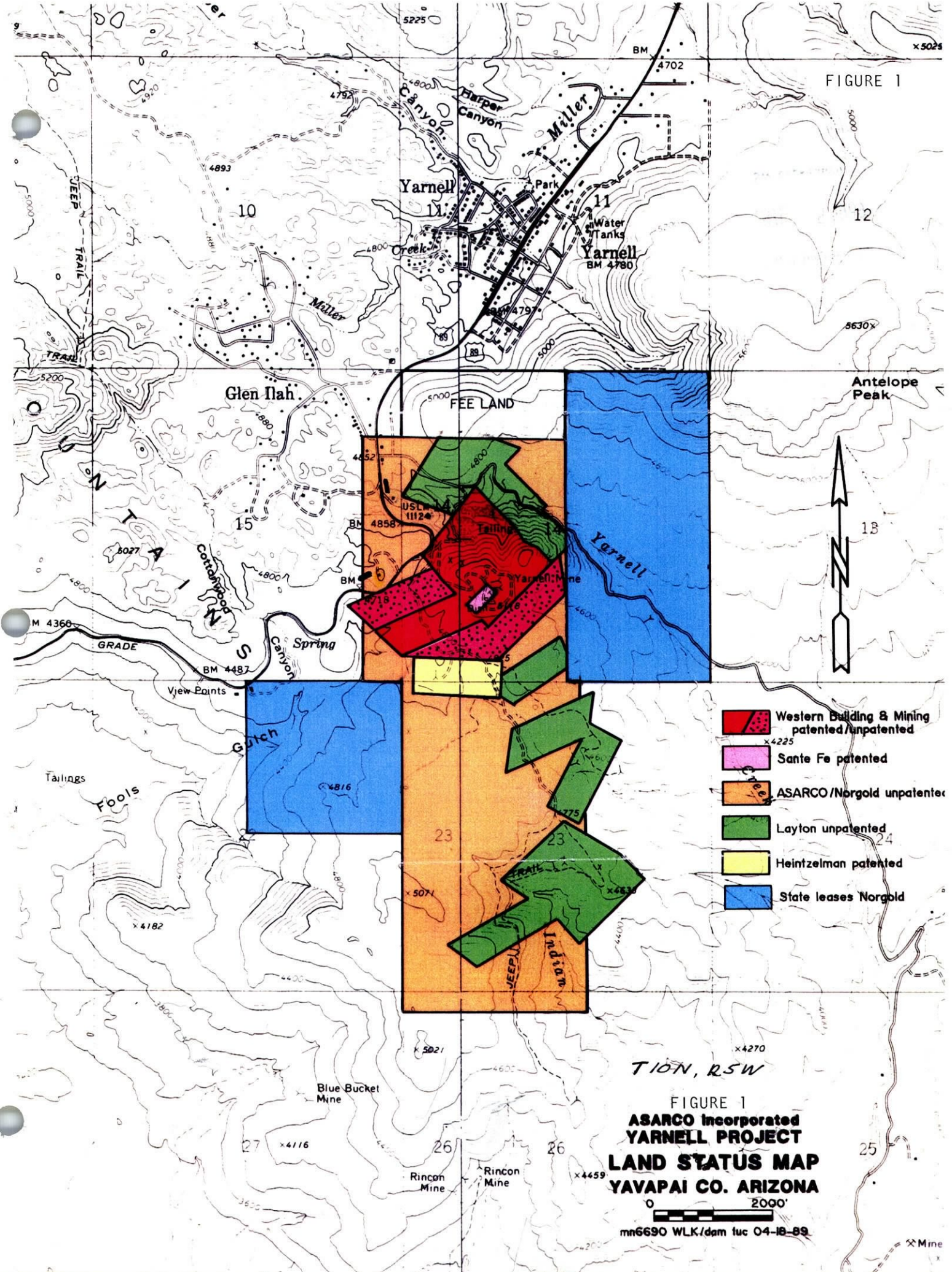
*logs - all were
taken to
Yarnell
8/29/89*

JDS:mek
Att.

James D. Sell /mek
James D. Sell

cc: W.L. Kurtz
M.A. Miller
D.A. Melhado

FIGURE 1



- Western Building & Mining patented/unpatented
- Sante Fe patented
- ASARCO/Norgold unpatented
- Layton unpatented
- Heintzelman patented
- State leases Norgold

FIGURE 1
ASARCO Incorporated
YARNELL PROJECT
LAND STATUS MAP
YAVAPAI CO. ARIZONA

0 2000'
 mn6690 WLK/dam luc 04-18-89

✕ Mine

ASARCO Incorporated

JUL 5 1989

SW Exploration

ASARCO

Exploration Department
Western USA

W. L. Kurtz
Manager

August 29, 1989

Mr. Christopher Moat
NORGOLD RESOURCES (US) INC.
2380 Harbour Centre
P.O. Box 12122
555 W. Hastings Street
Vancouver, B.C. V6B-4N6
Canada

Yarnell Project
Yavapai County, AZ

Dear Mr. Moat:

Enclosed are two computer discs containing the following information
on drill holes YM-1 through YM-45:

List of Coordinates
Collar Elevations
Individual Assays.

Sincerely,



W. L. Kurtz

WLK:mek
enc.

cc: J.D. Sell

FAX

8/31/89

FROM: W. L. KURTZ

TO: F. T. GRAYBEAL

- ① Enclosed is data on comparison of the original assay with that of a new pulp from the Reject.
- (X) Mr. Miller has just (like one minute ago) informed me that assayer, because Miller called him and Miller said he was generally higher, is going to refine all of the reject pulps — assayer says there may have been crucible problem whatever that means. Sounds more likely he is trying to please and perhaps Miller should not have talked with him.
- ② Also enclosed are the results of some multiple pulp splits. These check real well and suggest "nugget problem" does not exist in the 200 mesh fraction.

Guess we await the new fires on reject pulp before we get overly excited.

cc. JDSell
MAM

W.L.K
8/31/89

ASSAY REJECT CHECKS YARNELL

REJECT
% DIFF

OLE	FOOTAGE [⊗]	ORIG ASSAY FOR INTERVAL	REJECT ASSAY FOR INTERVAL	% DIFF
3	130-145; 160-205	.058	.058	—
5	200-290; 330-350	.033	.032	- 3%
7	155-220; 225-230	.047	.053	+ 12%
8	225-230; 235-275	.041	.057	+ 39%
12	150-185; 195-240	.037	.046	+ 24%
20	0-35	.07	.083	+ 18½%
24	75-115	.093	.121	+ 30%
40	275-380	.058	.060	+ 3%
50	0-85	.064	.062	- 3%
56	70-105	.082	.079	- 3%

○

W.L.K 8/31/89

ASSAY REJECT CHECKS BY GRAVE RANGE

GRAVE	ORIG RES		ORIG RES		ORIG RES		ORIG RES		ORIG RES	
	<.01		.01-.02		.02-.05		.05-.1		>.1	
YM-3			.016	.010	.021	.023	.068	.074	.129	.113
					.031	.029	.091	.040		
					.047	.049	.055	.081		
					.047	.073	.073	.107		
					.035	.051	.080	.051		
YM-5	.001	.004	.011	.031	.029	.051	.055	.009	.195	.056
	.006	.005	.013	.070	.020	.011	.051	.032		
	.004	.016	.010	.014	.024	.034	.065	.096		
			.013	.031	.027	.043				
			.014	.020	.025	.019				
					.037	.030				
YM-7			.011	.041	.024	.030	.091	.080	.142	.149
			.011	.012	.034	.049	.055	.077		
					.020	.012	.053	.048		
					.036	.025	.062	.086		
					.042	.051	.056	.060		
					.022	.018				
YM-8			.018	.025	.047	.066	.087	.108		
			.013	.018	.029	.055	.063	.093		
					.048	.056				
					.023	.049				
					.037	.046				
YM-12	.008	.009	.013	.018	.021	.040	.068	.084		
			.018	.025	.031	.053	.096	.126		
			.015	.014	.049	.092	.074	.032		
					.025	.023				
					.045	.083				
					.040	.030				
					.024	.022				
					.034	.034				
					.030	.043				

	ORIG RES L.OI	ORIG RES .01-	RES .02	ORIG RES .02-	RES .05	ORIG RES .05	RES .1	ORIG RES 7.1	RES	
Y-20		.011	.016	.044	.068	.052	.083	.331	.386	
		.016	.011	.024	.032					
		.015	.018							
YM-24				.038	.114	.052	.061	.229	.281	
				.029	.036	.081	.091	.118	.165	
						.095	.108			
						.099	.115			
YM-40		.018	.020	.023	.030	.071	.096	.129	.123	
		.012	.023	.036	.045	.079	.063	.177	.168	
		.013	.016	.041	.045			.162	.119	
		.018	.026	.027	.046			.131	.069	
				.021	.045					
				.043	.056					
				.034	.046					
				.043	.042					
				.033	.063					
YM-50	.009	.009	.016	.008	.029	.017	.053	.061	.128	.119
	.008	.005	.010	.006			.081	.092	.275	.228
	.008	.015	.011	.011			.080	.062	.102	.168
	.002	.003	.018	.011			.081	.146	.173	.108
YM-56				.028	.026	.083	.058	.105	.091	
				.027	.038	.095	.104	.105	.123	
								.128	.116	
AVERAGE	.006	.008	.014	.021	.032	.043	.072	.078	.162	.102

2/3/89

PULP CHECKS (MULTIPLE ASSAYS SAME PULP)

1-55

ASSAY
MULTIPLE PULP SPLIT

ORIG ASSAY

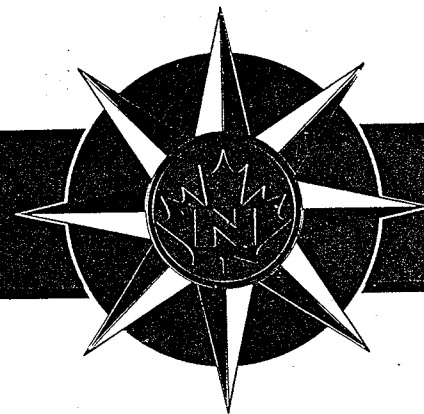
ORIG ASSAY	ASSAY	MULTIPLE PULP SPLIT	MULTIPLE PULP SPLIT	MULTIPLE PULP SPLIT	MULTIPLE PULP SPLIT
90-95 .015	.018	.016	.019	.022	
95-100 .021	.023				
110-115 .046	.063	.046	.044		
125-130 .008	.011	.010	.012	.008	
135-140 .142	.146	.131	.145		

○

○

NORCOLD RESOURCES INC.

ANNUAL REPORT 1989



HEAD OFFICE

VANCOUVER, B.C.

EXPLORATION OFFICE

NEVADA

RENO

MARIPOSA CANYON PROJECT

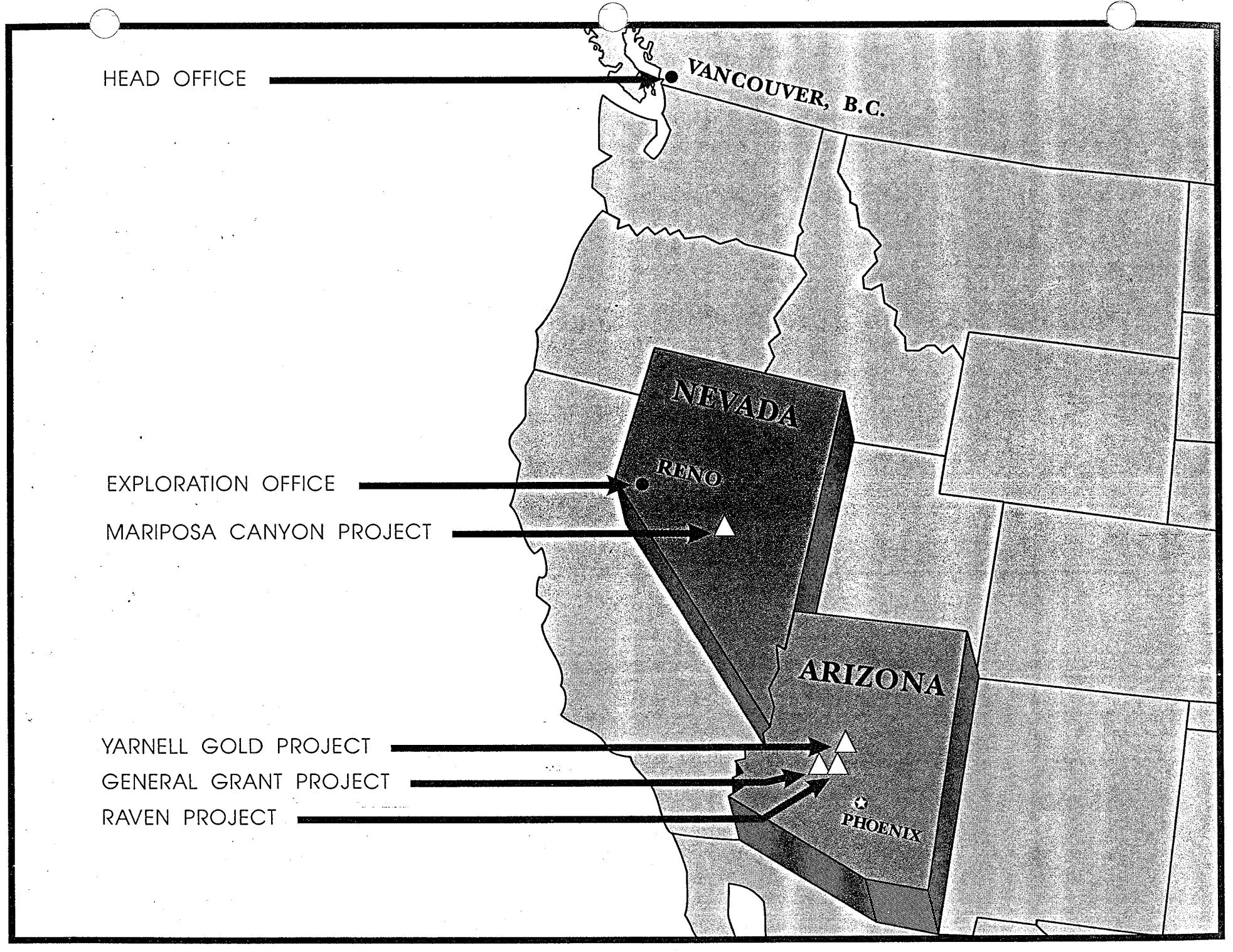
ARIZONA

YARNELL GOLD PROJECT

GENERAL GRANT PROJECT

RAVEN PROJECT

PHOENIX



TO THE SHAREHOLDERS:

On behalf of the Board of Directors, it is a pleasure to present the Annual Report and Financial Statements of the Company for the year ended August 31, 1989.

This year has been one of exciting change for Norgold. The company has expanded its project inventory in the southwest United States, and continued towards its objective of developing an open pit/heap leach gold mine.

The Yarnell Gold Project in Arizona can certainly be called the success of 1989. Norgold began the year by entering into a joint venture with ASARCO INC. on this exciting prospect. The agreement provided Norgold with a 100% carried interest through to presentation of a positive bankable feasibility study by mid 1991.

ASARCO aggressively developed the Yarnell Project, completing a 80 hole reverse circulation drill program in less than 5 months. At present, over 100 holes have been completed, including a diamond drill program. Norgold's independent engineers have calculated a geological reserve of 8.4 million tons grading .042 ounces gold per ton, which is open to both the north and the west.

Exploratory work is continuing with the objective of expanding the reserve base. A 20,000 pound bulk sample was removed for metallurgical analysis and a pre-feasibility study is anticipated in early 1990.

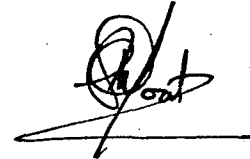
In 1989, the Mariposa Canyon Project was explored by Noranda Inc. 30 shallow reverse circulation drill holes were completed, and the information will be used for further exploratory work. A 3,000 acre land package, the Mariposa Project, is located between Echo Bay, Homestake's Round Mountain Gold Mine, and Echo Bay's Manhattan Gold Mine.

Other properties were acquired in Arizona in 1989. The General Grant, General Lee and Raven claims form a portfolio of exploration projects that the company will evaluate through 1990. A sampling and mapping program is planned for this winter.

Your company is now in a position to grow further in 1990. With the Yarnell Gold Project in an advanced state of development, Norgold is poised to become a gold producer. Other projects will follow the established corporate formula for success, that being exploration and development via joint venture. Well financed, the company can continue to move ahead in 1990.

Your Board of Directors and the Officers of the Company wish to thank all shareholders for their valued support in 1989 and look forward to a prosperous 1990.

On behalf of the board,



Christopher S. Moat
Chief Executive Officer
Chairman of the Board

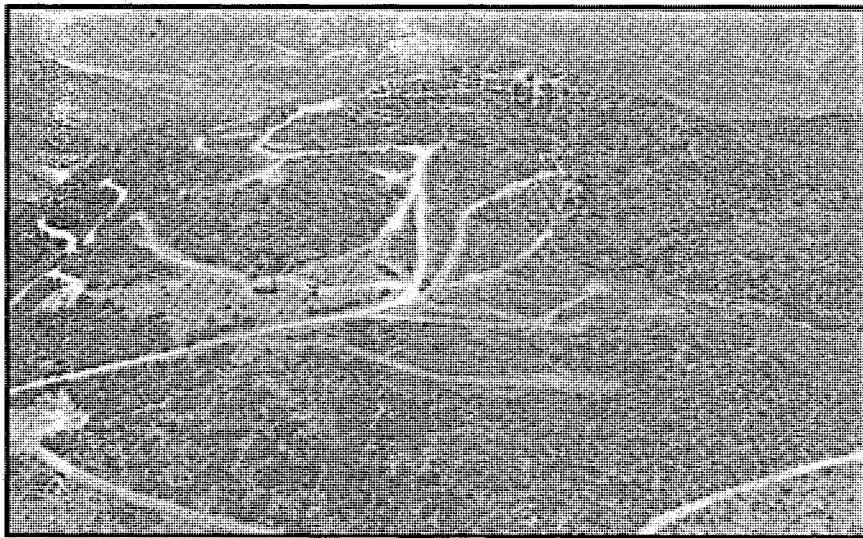
THE YARNELL PROJECT

The Yarnell Gold Project is a joint venture between Norgold Resources Inc. and Asarco Inc. The two companies expect to place the property, which is located 72 miles northwest of Phoenix, Arizona, into production within one and a half years.

The property encompasses the old Yarnell Mine site (elevation 4,800 ft.) and lies between the towns of Prescott and Wickenburg on Highway 89. The mine site is easily accessible, near all necessary mining amenities, and can be worked year round.

The project consists of patented and unpatented lode claims controlled by Norgold and Asarco. In all, the joint venture partners control over 2,000 acres in the area.

Drilling has been completed on approximately one hundred foot centres in the area of the old Yarnell Mine site. Assays from this exploration programme have defined a large low-grade, gold ore-body.



Norgold owns 100 percent of the Yarnell Project. Under the joint venture agreement Asarco has the right to earn 51 percent of the project under the following terms:

Asarco assumes Norgold's underlying agreements and payments;

Asarco makes scheduled cash payments totalling \$90,000 by July 1, 1991;

Asarco presents Norgold with a bankable positive feasibility study by July 1, 1991 and places the property into production within a three year period; and

Asarco assumes operation of the project.

The underlying agreement includes a net smelter return of two percent for the initial two years, one percent in years three and four, and one-half percent thereafter. The annual production royalty is capped at \$100,000.

GEOLOGY AND RESERVES

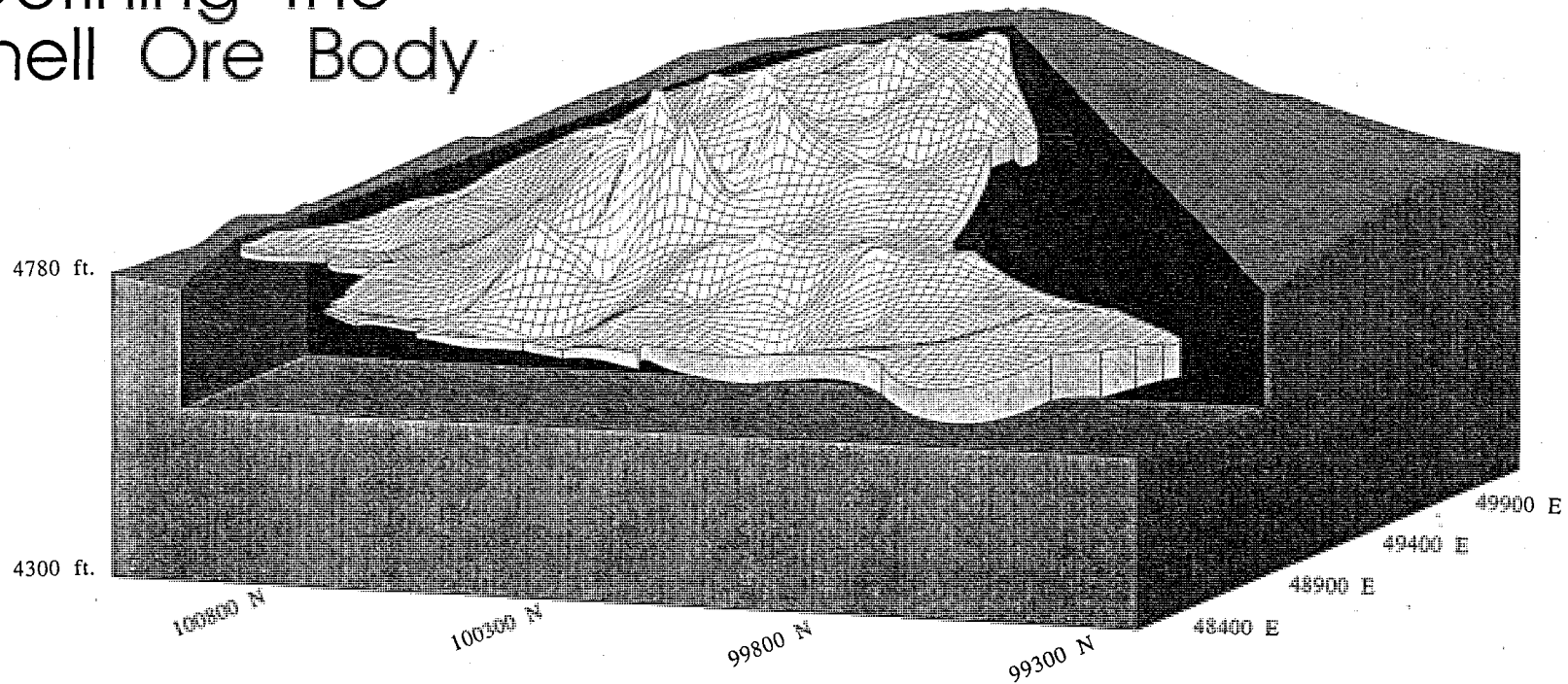
The Yarnell reverse circulation drill reserve, defined by 80 holes, consists of 8.4 million tons drill-indicated mineralization grading .042 ounces per ton gold. The mineralization is open in both strike directions as well as down dip, so there is good potential to expand reserves.

Detailed pit design studies are currently being reviewed and it is expected the overall stripping ratio will be less than 2:1.

Mineralization at the Yarnell Project is structurally controlled within an altered and strongly jointed Precambrian granite. The main structure is the Yarnell Fault, a low angle thrust fault, which is the interpreted feeder for the mineralization and alteration.

(continued on page 4)

Defining the Yarnell Ore Body



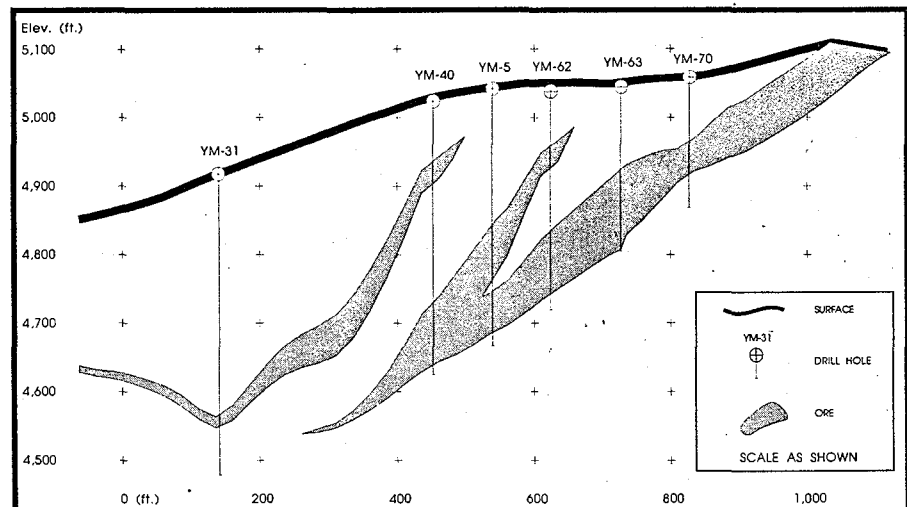
The images used to define the Yarnell Ore Body were generated by geological software from three surfaces; the overlying topography, the top of the ore body, and the bottom of the ore body.

The surface coordinates were entered into the system and were then gridded to produce a three dimensional perspective view of the topographic surface.

Assays from 80 drill holes were used to determine an economic ore body. Coordinates were determined for the periphery of the ore body, based on a 200 foot radius area of influence.

These coordinates were then gridded to produce three dimensional perspective views of both the top and the bottom surface of the ore body.

The three surfaces were combined to produce the above image, which has a portion of the surrounding waste rock removed to reveal the ore body. The accompanying cross-section (right) is a geological interpretation of the economic ore body.



Cross-section Looking North East

THE MARIPOSA CANYON PROJECT

The Mariposa Canyon Project encompasses more than 3000 acres (4.5 square miles) occurring on the west flank of the Toquima Range in southwest central Nevada. Echo Bay's Round Mountain Gold Mine is located four miles to the north, and the Manhattan Mine is located four miles to the south.

The underlying agreement calls for a \$250,000 US purchase price in \$25,000 annual instalments, with a .05% NSR thereafter (\$200,000 currently outstanding on purchase price).

GEOLOGICAL RESERVE TARGET

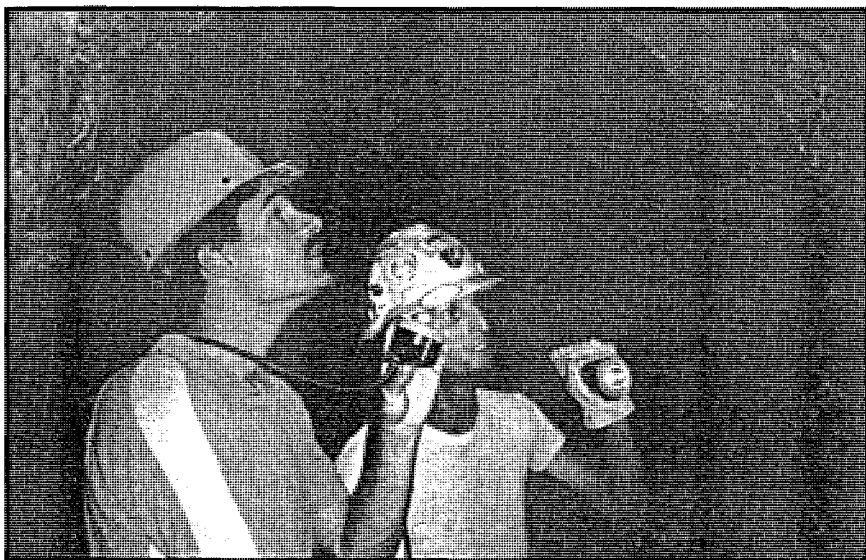
The property occurs within and on the north margin of the Manhattan Caldera and is several miles south of the Toquima/Jefferson Caldera. The margins of these volcanic centres are known to be spatially related to precious metals deposits.

- Round Mountain - 200 million tons/8.09 million ounces gold
- Jefferson Canyon - 10 million tons/750,000 ounces gold
- Manhattan Mine - 10 million tons/500,000 ounces gold

All the above deposits are related to northwest trending structures with Caldera margins at the intersection of northwest/northeast structures. Field mapping and aerial photographic interpretation indicate well developed northwest and northeast trending faults and fractures within the Mariposa Canyon Property. Arcuate fractures and Manhattan Caldera margins also are evident.

Independent evaluation of biogeochemical sampling indicates six areas of high precious metals potential with gold concentrations comparing favourably to those encountered at the Sleeper Mine, Chimney Creek Mine, and Round Mountain Mine.

In mid 1989, Noranda Explorations Inc. drilled 30 reverse circulation holes totalling 6,820 feet. Placed on a random basis, this program failed to encounter appreciable mineralization, but silicification and



Norgold President Michael Philpot and ASARCO Inc.'s project manager Mark Miller – underground at Yarnell mine site.

(continued from page 2)

The fault has a strike of north 45 degrees east and an average dip of 30 degrees to the northwest. At its base, there are gouge and breccia zones which grade 0.10 to 0.50 ounces per ton gold over two to 20 feet. In the hanging wall there appears to be a set of fractures (imbricate faults) that are related to the main fault. These faults appear to have acted as hanging wall feeders and are probably responsible for the thick zone of alteration and mineralization. The altered zone attains a thickness of up to 230 feet with a grade varying from 0.01 to 0.05 ounces per ton.

Preliminary bottle roll leach tests were conducted during 24 hour and 72 hour periods on three selected samples. Seventy to eighty percent gold recovery was achieved with the cyanide and lime consumption being 0.4 and 4.0 pounds per ton respectively.

Detailed metallurgical bench studies are in progress to determine the optimum crush size for heap leach extraction of the gold.

alteration were encountered. Information from this program has narrowed down areas of interest within the large overall land package. Future work is targeted to primary biogeochemical gold anomalies which appear to coincide with the northwest and northeast structures.

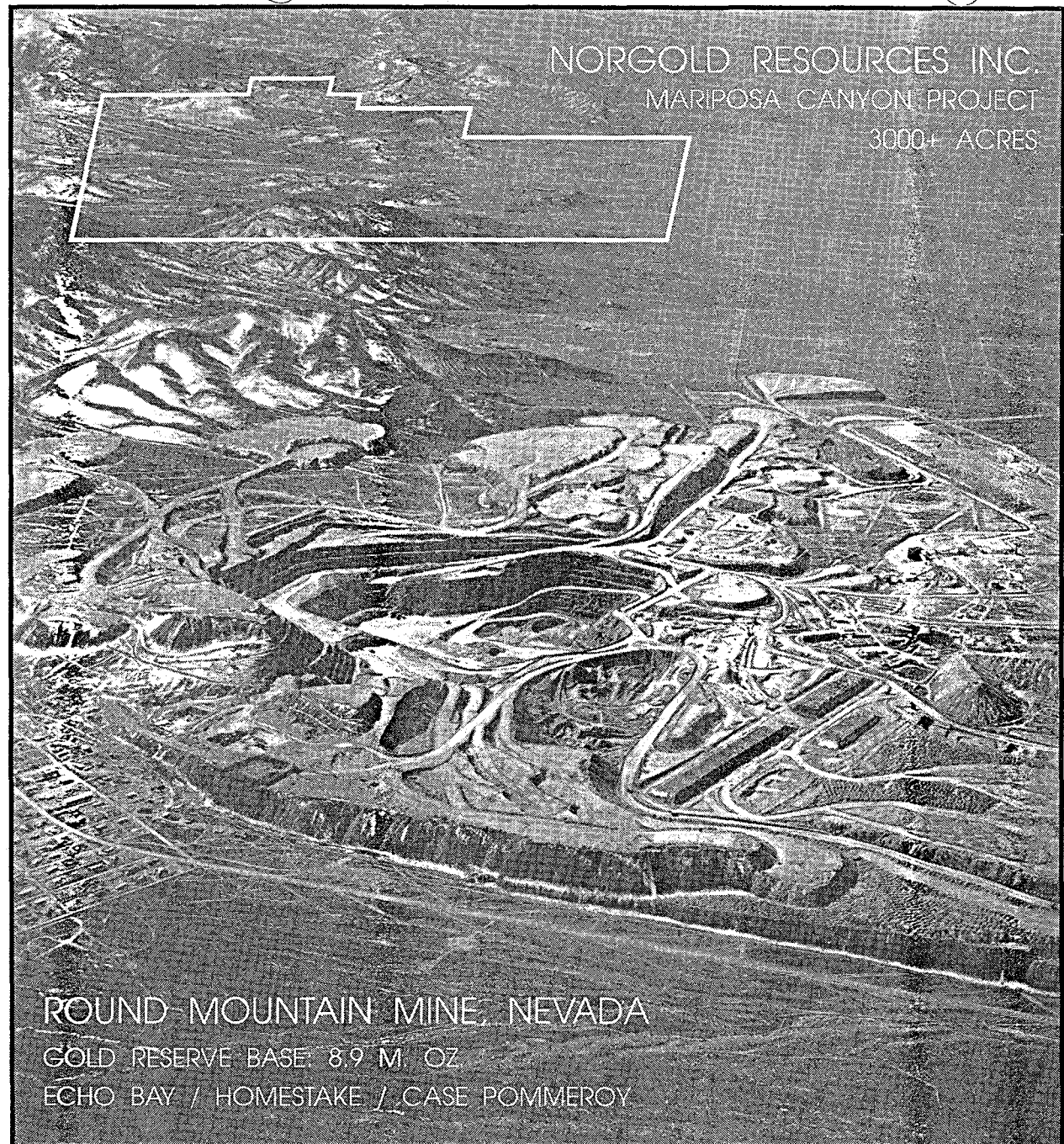
Currently, the company is looking to negotiate a joint venture with a major mining company to undertake a detailed sampling and drill program this winter. All future work will be coordinated with Norgold's Exploration Office in Reno, Nevada, where a substantial data base on the property has been compiled. The future program will likely consist of more detailed sampling and drilling.

THE GENERAL GRANT AND THE RAVEN PROJECTS

Both these projects are located in Maricopa County, in central Arizona. The General Grant Project is located on the eastern flank of the Bighorn Range, five miles east of the U.S. mine. The geological targets are several silicified and weakly mineralized hills that protrude from the desert floor.

The Raven project is located two miles south of the famous Vulture Mine, which has historic gold production exceeding 400,000 ounces.

Exploration programmes are planned for both projects in early 1990.



CONSOLIDATED FINANCIAL STATEMENT

CONSOLIDATED BALANCE SHEET
AUGUST 31, 1989
ASSETS

	1989	1988 (Restated)
CURRENT ASSETS		
Cash and term deposits	\$ 194,914	\$ 39,079
Accounts receivable	2,645	-
Prepaid expenses	-	1,147
Total current assets	197,559	40,226
MINERAL PROPERTIES (Note 4)	101,042	152,561
DEFERRED EXPLORATION EXPENDITURES	76,851	145,719
EQUIPMENT, net of accumulated depreciation	1,635	-
	<u>\$ 377,087</u>	<u>\$ 338,506</u>

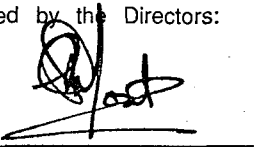
LIABILITIES

CURRENT LIABILITIES		
Accounts payable and accrued liabilities	\$ 24,944	\$ 34,897
Management fees payable	-	2,000
Total current liabilities	24,944	36,897
SUBSEQUENT EVENTS (Note 5)		

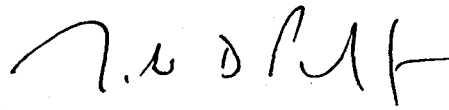
SHAREHOLDERS' EQUITY

SHARE CAPITAL (Note 6)	1,085,550	598,000
DEFICIT	(733,407)	(296,391)
	<u>352,143</u>	<u>301,609</u>
	<u>\$ 377,087</u>	<u>\$ 338,506</u>

Approved by the Directors:



Director



Director

CONSOLIDATED STATEMENT OF INCOME
YEAR ENDED AUGUST 31, 1989

	1989	1988 (Restated)
INCOME		
Interest earned	\$ 5,295	\$ 3,664
ADMINISTRATION EXPENSES		
Legal	54,435	20,404
Management fees	16,500	16,000
Accounting and audit	12,861	6,070
Telephone	12,597	4,614
Consulting	12,070	3,750
Office	11,059	10,969
Listing and transfer agency fees	9,844	5,869
Promotion	8,593	468
Rent	6,626	6,173
Insurance	2,655	-
Printing	1,936	5,450
Foreign exchange loss	884	-
Miscellaneous	723	-
Bank charges	412	561
Depreciation	182	-
Loss on investment	-	5,661
Total administration expenses	151,377	85,989
DEFERRED EXPLORATION EXPENDITURES WRITTEN OFF	146,732	129,878
MINERAL PROPERTY COSTS WRITTEN OFF	144,202	36,042
	<u>442,311</u>	<u>251,909</u>
LOSS FOR THE YEAR	\$(437,016)	\$(248,245)
LOSS PER SHARE (Note 8)	\$ (.15)	\$ (.15)

CONSOLIDATED STATEMENT OF DEFICIT
YEAR ENDED AUGUST 31, 1989

	1989	1988 (Restated)
DEFICIT AT BEGINNING OF YEAR		
As previously reported	\$ 186,916	\$ -
Adjustments to prior period (Note 2):		
Administration expenses written off	87,973	22,944
Finder's fees written off	20,000	-
Incorporation costs written off	1,502	1,502
Adjusted deficit at beginning of year	296,391	24,446
LOSS FOR THE YEAR	437,016	248,245
PROSPECTUS ISSUE COSTS		
Legal	-	12,000
Audit and accounting	-	2,700
Printing	-	4,500
Listing fees	-	4,500
	-	23,700
DEFICIT AT END OF YEAR	\$ 733,407	\$ 296,391

CONSOLIDATED STATEMENT OF CHANGES IN FINANCIAL POSITION
YEAR ENDED AUGUST 31, 1989

	1989	1988 (Restated)
OPERATING ACTIVITIES		
Loss for the year	\$(437,016)	\$(248,245)
Prospectus issue costs	-	(23,700)
Items not affecting cash:		
Deferred exploration expenditures written off	146,732	129,878
Mineral property costs written off	144,202	36,042
Depreciation	182	-
	(145,900)	(106,025)
Changes in non-cash working capital balances relating to operations:		
Accounts receivable	(2,645)	-
Prepaid expenses	1,147	448
Accounts payable	(9,953)	6,286
Management fees payable	(2,000)	(2,000)
	(159,351)	(101,291)
FINANCING ACTIVITIES		
Issuance of shares for cash	451,000	353,000
Issuance of shares for mineral properties	36,550	-
	487,550	353,000
INVESTING ACTIVITIES		
Acquisition of mineral properties	(92,683)	(90,952)
Exploration expenditures	(172,184)	(177,566)
Option payment received	94,320	-
Purchase of equipment	(1,817)	-
	(172,364)	(268,518)
CHANGE IN CASH DURING THE YEAR	155,835	(16,809)
CASH AT BEGINNING OF YEAR	39,079	55,888
CASH AT END OF YEAR	\$ 194,914	\$ 39,079
REPRESENTED BY:		
Cash	\$ 19,914	\$ 39,079
Term deposits	175,000	-
	\$ 194,914	\$ 39,079

**CONSOLIDATED STATEMENT OF DEFERRED EXPLORATION
EXPENDITURES
YEAR ENDED AUGUST 31, 1989**

	1989	1988 (Restated)
EXPENDITURES INCURRED DURING THE YEAR		
Legal and recording fees	\$ 64,985	\$ 25,000
Exploration management and wages	42,562	39,353
Office and supervision	25,592	-
Consulting and exploration fees	22,641	24,924
Travel	9,284	285
Geochemical and assaying	8,922	20,608
Room and board	3,637	3,397
Equipment rental	2,511	4,960
Claims staking	2,042	-
Storage	938	-
Field supplies	765	882
Drilling	-	29,048
Geological	-	17,881
Road building	-	11,228
Expenses recovered	(11,695)	-
	<u>172,184</u>	<u>177,566</u>
BALANCE AT BEGINNING OF YEAR	145,719	98,031
	<u>317,903</u>	<u>275,597</u>
OPTION PAYMENTS RECEIVED	(94,320)	-
DEFERRED EXPLORATION EXPENDITURES WRITTEN OFF	(146,732)	(129,878)
BALANCE AT END OF YEAR	<u>\$76,851</u>	<u>\$145,719</u>
Allocated to:		
Yarnell Mine Project claims	\$ 8,466	\$ 2,933
Maricopa County claims	2,031	-
Nye County claims	43,154	142,786
Other	23,200	-
	<u>\$ 76,851</u>	<u>\$ 145,719</u>

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
AUGUST 31, 1989**

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

- a) Principles of Consolidation -
The consolidated financial statements of the company include the accounts of Norgold Resources Inc., a British Columbia corporation and its wholly-owned subsidiary, Norgold Resources (U.S.) Inc., a Delaware corporation.
- b) Mineral Properties -
 - i) Deferred Exploration Expenditures - The company defers costs directly attributable to the acquisition, exploration and development of mineral properties, pending a decision as to the ability to commercially mine a property. If commercial ore reserves are developed, the deferred costs will be amortized to expense when production is commenced on the property. Such amortization will be computed on the basis of units produced in relation to the estimated reserves. Upon abandonment or sale of the project, all deferred costs relating to the specific project will be expensed in the year abandoned or sold.
 - ii) Values - The amounts shown for mineral properties and for deferred exploration expenditures represent cost to date, and do not necessarily represent present or future values as they are entirely dependent on the economic recovery of current and future reserves.
 - iii) Cost of Maintaining Mineral Properties - The company does not accrue the estimated future costs of maintaining its mineral properties in good standing.
- c) Equipment -
Equipment is stated at historical cost and depreciated over its estimated useful life applying the declining balance method at an annual rate of 20%.
- d) Foreign Currency Translation -
In the translation of foreign currency financial statements incorporated in the company's financial statements, current assets and liabilities are translated into Canadian dollars at the current rate of exchange at the balance sheet date; non-current assets and liabilities are translated at historical rates.

Revenues and expenses are translated at the average exchange rate for the year. Exchange gains or losses which are realized during the year, and unrealized exchange gains and losses which relate to the translation of current assets and liabilities, are included in the determination of net income for the year.

2. CHANGE IN ACCOUNTING POLICY

- a) Deferred Exploration Expenditures -
 During the year, the company changed its accounting treatment of administration expenses. Such expenses which were previously capitalized to Deferred Exploration and Administration Costs are now expensed through the Statement of Income. The change has been applied retroactively and the comparative figures for the prior year have been restated to reflect this change.

Deferred exploration expenditures, as previously reported	\$233,692
Reallocation of prior period administration expenses	<u>87,973</u>
As restated	<u>\$145,719</u>

- b) Mineral Properties -
 Included in mineral property costs was \$20,000 paid by the issue of 50,000 common shares as finder's fees on the Red Cloud Property, California. This property was abandoned in the prior period and this amount has consequently been written off as a prior period adjustment.

Mineral properties, as previously reported	\$172,561
Finder's fees written off	<u>20,000</u>
As restated	<u>\$152,561</u>

- c) Incorporation Costs -
 During the year, the company changed its accounting treatment of incorporation costs. Such costs which were previously capitalized are now expensed. The change has been applied retroactively and the comparative figures for the prior year have been restated to reflect this change.

3. NATURE OF OPERATIONS

The company is primarily engaged in the business of acquiring and exploring mineral properties with subsequent development or sale of such properties if commercially profitable reserves are discovered. Realization of capitalized property costs is dependent upon the company's ability to successfully locate reserves, to obtain necessary financing to develop its leases and rights and to sell any ore produced at a profit. Although management believes that it is pursuing a course of action that will accomplish these objectives, the outcome of these matters is uncertain.

4. MINERAL PROPERTIES

- a) Yarnell Mine Project - Yavapai County, Arizona -
 The Yarnell Mine Project consists of the Western Building claims, Y claims, Victoria claims and the Mother Lode claims. All of these properties are subject to the joint venture agreement with Asarco Incorporated specified in Note 10. Expenses of keeping the Yarnell Mine Project claims in good standing are the responsibility of Asarco Incorporated until the formation of the joint venture, and thereafter will be the responsibility of the joint venture.

i) Western Building Claims

Pursuant to an agreement dated December 30, 1988, the company acquired from Western Building and Mining Co. Inc., an option to purchase the Yarnell Mine property consisting of 4 patented and 4 unpatented mining claims. The consideration for this option is as follows:

- \$3,000 U.S. on the date of execution of the formal agreement (paid)
- \$1,000 U.S. per month for 10 months commencing March 1, 1989 (paid)
- \$100,000 U.S. on each January 1, 1990, 1991 and 1992
- \$150,000 U.S. on January 1, 1993

After the above payments totalling \$463,000 U.S. have been made, the company shall be entitled to become the legal and beneficial owner of the property subject to the net smelter return royalty ("NSR") as follows:

a) Precious Metals (Gold, Silver, Platinum/Palladium)

- i) a 2% NSR for the first 2 years after the commencement of commercial production;
- ii) a 1% NSR for years 3 and 4 after the commencement of commercial production; and
- iii) a 0.5% NSR for years 5 through 14 after commencement of commercial production.

b) Base Metals (Lead, Zinc, Copper etc.)

- i) a 2% NSR for the period ending 14 years from the commencement of commercial production;

The company shall put the property into commercial production by January 1, 1994 which date may be extended each year until January 1, 1998 in consideration for the company paying advance NSR payments of \$50,000 U.S. per year on January 1st of each year.

10. ASARCO INCORPORATED ("ASARCO") - JOINT VENTURE

The company has a letter of agreement dated January 25, 1989 with Asarco (see Note 5(a)) to explore and develop the Yarnell Mine Project claims in the Yarnell Mining District located in Yavapai County, Arizona. Under the terms of the agreement, Asarco can only earn a 51% interest upon the presentation of a positive bankable feasibility study after adhering to a work commitment of 3000 ft. of drilling and an expenditure on the property of \$250,000 U.S. between July 1, 1989 and July 1, 1990. This commitment has been met. In addition, Asarco will pay the following cash payments to the company:

Upon acceptance of terms	\$10,000 U.S. (received)
Due March 5, 1989	\$15,000 U.S. (received)
Due July 1, 1989	\$15,000 U.S. (received)
Due October 1, 1989	\$15,000 U.S. (received)
Due January 1, 1990	\$20,000 U.S.
Due July 1, 1990	\$20,000 U.S.
Due January 1, 1991	\$25,000 U.S.
Due July 1, 1991	\$25,000 U.S.

Upon receipt of the positive bankable feasibility study and Asarco's commitment to put the property into production, the company will have six months to make a one-time election of:

- a) A 49% joint venture interest which may be diluted to a 15% net profits interest, or
- b) A 5% interest until all of Asarco's capital expenditures are paid back at which time the company will receive a 25% carried interest.

If the company elects a joint venture interest, it will pay its 49% share of development and operating costs. If it elects to have a carried interest, Asarco will pay all development costs. Asarco will be the operator of the project. If Production has not started by January 1, 1992, Asarco is to pay \$25,000 a year until January 1, 1994.

Asarco has advised that U.S. \$382,253 has been spent on the property to August 31, 1989 out of Asarco's initial exploration budget amount of \$570,000. Since then, further exploration expenditures have been incurred and continue to be incurred by Asarco.

Under the letter of agreement, Asarco must advise by October 1st of the year of its intention to make the next payment due to Western Building and Mining Co. Inc., (see Note 4(a)) on the property. By letter dated September 20, 1989, Asarco has committed to make the next U.S. \$100,000 payment due on January 1, 1990.

11. SEGMENTED INFORMATION

The company operates in one industry segment, being the exploration and development of mineral properties. Substantially all of the company's business is carried out in the United States through its wholly owned subsidiary. The only assets which are included in Canada are cash and term deposits amounting to \$194,914.

AUDITORS' REPORT

To the Shareholders of Norgold Resources Inc.

We have examined the consolidated balance sheet of NORGOLD RESOURCES INC. as at August 31, 1989, and the consolidated statements of income, deficit, deferred exploration expenditures and changes in financial position for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as we considered necessary in the circumstances.

In our opinion, these consolidated financial statements present fairly the financial position of the company as at August 31, 1989 and the results of its activities and the changes in its financial position for the year then ended in accordance with generally accepted accounting principles applied, after giving retroactive effect to the changes in the method of capitalizing administration, finder's fees and incorporation costs as described in Note 2, on a basis consistent with that of the preceding year.



Vancouver, British Columbia
 October 11, 1989
 (November 3, 1989 as to Note 5(a))

Chartered Accountants



Brian D. Edgar
Director



Gordon Gutrath
Director



Adrian F. C. Hobkirk
Vice President/Corporate Relations



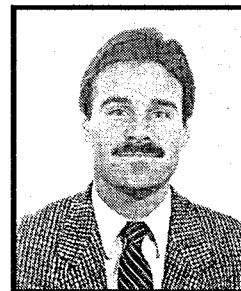
Patrick W. McCleery
Vice President of Finance
and Director



Christopher S. Moat
Chairman of the Board
Chief Executive Officer
and Director



Tench Page
Explorations Manager, U.S.A.



Michael D. Philpot
President and Director



William A. Rand
Secretary

CORPORATE PROFILE

Vancouver Office
#210-475 Howe Street
Vancouver, British Columbia
V6C 2B3
Tel. (604) 681-5566
Fax (604) 687-8789

United States Office
13935 Chamy Drive
Reno, Nevada, U.S.A. 89511
Tel. (702) 851-3177

Auditors
Manning Jamison
Chartered Accountants
300-1195 West Broadway
Vancouver, British Columbia V6H 3X6

Solicitors
Rand, Edgar and Sedun
2200-885 W. Georgia Street
Vancouver, British Columbia V6C 3E8

Registrar and Transfer Agent
Montreal Trust Company
2nd Floor, 510 Burrard Street
Vancouver, British Columbia V6C 3B9

Listing
Vancouver Stock Exchange
Trading Symbol NGR
12g3-2(b) Exemption # 82-2130
Standard and Poor's Listing August
1988

Capitalization
Authorized - 20,000,000 common shares
Issued - 3,800,001 common shares



HEAD OFFICE

210-475 Howe Street
Vancouver, B.C. V6C 2B3
(604) 681-5566 Fax (604) 687-8789

U.S. EXPLORATION OFFICE

13935 Chamy Drive
Reno, Nevada 89511
(702) 851-3177

FAX

2/31/99

FROM: W. L. KURTZ

TO: F. T. GRAYBEAL

YARNELL REJECT CHECKS

JUST SO IT DOES NOT GET FORGOTTEN
I SELECTED REJECT CHECKS IN PART TO
COVER DIFFERENT DRILL PERIODS

Hides 1 - 9

Hides 10 - 36

Hides 37 - 45

Hides + 45 to present

cc JDS
MAM
WKK

Mr. Sell, here are the replacement
bills you requested.

Mananne

Re: Norgold

W.D. Gay for
approval for
payment
mek
8/31/89

Orig to Asatg 8/31/89

JDS

APKER, APKER, HAGGARD & KURTZ, P.C.
P. O. Box 10280
Phoenix, Arizona 85064-0280
(602) 381-0085

Exploration Dept., Western District
ASARCO Incorporated
P.O. Box 5747
Tucson, Arizona 85703

August 1, 1989
Page 1
Client: 111
Matter: 12

Matter: Re: Norgold Resources, Inc.

Date Professional Services Rendered

- 07/24/89 Telephone conference with Mr. Woods re Norgold agreements.
- 07/25/89 Telephone conference with Mr. Smith re changes to Norgold agreements.
- 07/26/89 Review and revise exploration and option agreement form modified by Norgold for Yarnell project; conference with Mr. Woods; telephone conferences with Messrs. Kurtz and Smith.
- 07/27/89 Prepare correspondence to Mr. Woods re revisions to Norgold exploration and option agreement for Yarnell project.

Total Services 697.00

Disbursements

- 07/31/89 Miscellaneous costs advanced 20.25
Federal Express delivery to Mr. Kurtz on 7/17/89.
- 07/31/89 Miscellaneous costs advanced 25.25
Federal Express delivery to Mr. Woods on 7/18/89.

Total Disbursements 45.50

Current Charges 742.50

ASARCO Incorporated
AUG 31 1989
SW Exploration

APPROVED FOR PAYMENT
By: _____
(Signature)

Original to acctg 8/31/89

APKER, APKER, HAGGARD & KURTZ, P.C.
P. O. Box 10280
Phoenix, Arizona 85064-0280
(602) 381-0085

Exploration Dept., Western District
ASARCO Incorporated
P.O. Box 5747
Tucson, Arizona 85703

July 24, 1989
Page 1
Client: 111
Matter: 12

Matter: Re: Norgold Resources, Inc.

Date Professional Services Rendered

- 07/17/89 Review and revise joint venture agreement, accounting procedures, net profits definition, amendments to agreement and tax matters schedules for Norgold agreement on Yarnell project; telephone conference with Mr. Woods; prepare correspondence to Mr. Woods.
- 07/19/89 Telephone conferences with Messrs. Woods and Brown and prepare revisions to Norgold documentation.
- 07/20/89 Telephone conferences with Messrs. Kurtz and Sell; revise Norgold mining lease agreement and joint venture agreement; transmit property description to Mr. Sell; prepare correspondence to Mr. Smith.
- 07/21/89 Draft assignment and assumption agreement for Western Building agreement; telephone conferences with Messrs. Kurtz and Sell; prepare correspondence to Messrs. Woods and Smith re Norgold agreements for Yarnell project; telephone conference with Mr. Smith re exploration and option agreement.
- 07/23/89 Review Heintzelman and Jenkins agreements and draft assignment and assumption agreements and estoppel certificate for the Heintzelman and Jenkins assignments.

Total Services	2,907.00
Current Charges	2,907.00

ASARCO Incorporated

AUG 31 1989

SW Exploration

APPROVED FOR PAYMENT

By: _____
(Signature)

ASARCO

Exploration Department
Western USA

W. L. Kurtz
Manager

VIA FAX 604-685-8045

September 1, 1989

Mr. Christopher Moat, President
NORGOLD RESOURCES INC.
Vancouver, B.C.

Yarnell Project
Weekly Information

Dear Mr. Moat:

We are FAXing you assay results on Holes 62, 63, 64 and 65, along with a map showing their location.

Sincerely,

W. L. Kurtz /mek

W. L. Kurtz

WLK:mek

cc: J.D. Sell

JAS

LAW OFFICES OF
APKER, APKER, HAGGARD & KURTZ, P.C.
A PROFESSIONAL CORPORATION
PARK ONE

BURTON M. APKER*
JERRY L. HAGGARD**
DAVID B. APKER***
GERRIE APKER KURTZ
JOHN R. FITZPATRICK

2111 EAST HIGHLAND AVENUE, SUITE 230
PHOENIX, ARIZONA 85016
AREA CODE 602 TELEPHONE 381-0085

MAILING ADDRESS
P. O. BOX 10280
PHOENIX, ARIZONA 85084-0280

TELECOPIER
(602) 956-3457

*ALSO ADMITTED IN WISCONSIN
**ALSO ADMITTED IN DISTRICT OF COLUMBIA AND KANSAS
***ALSO ADMITTED IN COLORADO

September 1, 1989

RECEIVED

James L. Woods, Esq.
Associate General Counsel
ASARCO Incorporated
180 Maiden Lane
New York, New York 10038

SEP 5 1989

EXPLORATION DEPARTMENT

Re: Harper et al. Option Agreement

Dear Mr. Woods:

I understand that you have received from Mr. Kurtz the draft of the Option Agreement with the Harpers and Hayts sent with Leo Smith's August 26, 1989 letter to Michael Philpot. This agreement is for an option on the land to which the Santa Fe and Maricopa County communication facilities may be moved. We have the following comments on that draft:

1. The ownership of the two properties is unclear as to whether Mr. and Mrs. Harper own one property and Mr. and Mrs. Hayt own the other property or whether those four persons have some joint ownership of the two properties. The nature of the ownership and the relationship of the four parties in that ownership should be acknowledged in the first recital.

2. Because this is the land to which the Sante Fe and Maricopa County communication facilities may be relocated, it is curious that the option is for only 12 months while the Sante Fe and Maricopa County options are for 5 years.

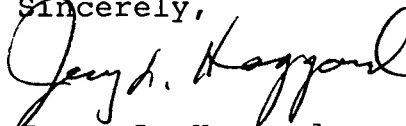
3. It is suggested that the word "total" be added after the word "the" on the third line on page 2.

4. To avoid questions and possible difficulties in making the option and purchase price payments, a provision should be added in Section 2 or in a separate section designating the party which will receive the payments to satisfy the obligation to all of the owners.

James L. Woods, Esq.
September 1, 1989
Page Two

Please advise of any other changes which should be made and we or Mr. Kurtz can provide them to Leo Smith.

Sincerely,



Jerry L. Haggard
For APKER, APKER, HAGGARD &
KURTZ, P.C.

JLH:lk

cc: W.L. Kurtz
F.T. Graybeal

cc: J.D. Sell (9/5/89)

JDS

LAW OFFICES OF
APKER, APKER, HAGGARD & KURTZ, P.C.

A PROFESSIONAL CORPORATION

PARK ONE

2111 EAST HIGHLAND AVENUE, SUITE 230

PHOENIX, ARIZONA 85016

AREA CODE 602 TELEPHONE 381-0085

BURTON M. APKER*
JERRY L. HAGGARD**
DAVID B. APKER***
GERRIE APKER KURTZ
JOHN R. FITZPATRICK

MAILING ADDRESS
P. O. BOX 10280
PHOENIX, ARIZONA 85064-0280

TELECOPIER
(602) 956-3457

September 5, 1989

VIA FAX

James L. Woods, Esq.
Associate General Counsel
ASARCO Incorporated
180 Maiden Lane
New York, New York 10038

RECEIVED

SEP 6 1989

EXPLORATION DEPARTMENT

Re: Yarnell Project - Norgold Agreements

Dear Mr. Woods:

Leo Smith's three letters dated August 17, 1989 transmitted the revised Exploration and Option Agreement, handwritten revisions to the Mining Lease and a list of proposed revisions to the Joint Venture Agreement. Mr. Smith's letters indicated that a copy of each document went to you and to Mr. Kurtz. The following are our comments on the significant revisions proposed by Norgold:

Exploration and Option Agreement

1. Norgold provides in Section 5.1 that Asarco may terminate the Agreement only prior to the date Asarco delivers the Feasibility Study to Norgold. Because, as provided in Section 3.4, Norgold will convey to Asarco 51% of Norgold's interest in the Property at the time the Feasibility Study is delivered to Norgold, this cutoff date on the ability to terminate the Agreement may be reasonable. However, Asarco should be aware that this limitation on termination will obligate Asarco to continue making the payments to Norgold provided for in Section 2.1 and, as provided in Norgold's revisions to Section 2 of the Mining Lease and to Section 4.1 of the Joint Venture Agreement, this interest of Asarco in the Property must be reconveyed to Norgold if Asarco does not commence Commercial Production within three years after the Feasibility Study is delivered.

2. The description of the Area of Interest in Section 6.1 coincides with the description proposed by Mr. Kurtz's telecopy dated July 20, 1989.

3. Following the words "Exhibit D" in line 10 of Section 8.1 and line 21 of Section 8.3, the following phrase should be added:

James L. Woods, Esq.
September 5, 1989
Page 2

"and a Joint Venture Agreement in the form attached as Exhibit C modified as provided in Schedule D thereto".

4. You should review the revisions by Norgold commencing on the 11th line from the bottom of page 10 and continuing to Article IX on page 11. I believe this does set forth Asarco's intent with respect to recovering expenditures for the discovery and development of an Additional Development Block.

5. The first two lines of Section 15.1 have been revised to provide, in effect, for Norgold to covenant that, to the best of its knowledge, Norgold holds "its interest" (i.e., whatever interest it holds) in the property subject to the matters set forth in Exhibit A. To create a meaning for this covenant, the second line of Section 15.1 should be changed to read "Norgold now holds the title and right to possession of the".

The revision of Section 15.2 provides in effect that, if Norgold, to the best of its knowledge, does not hold "its interest" (i.e., whatever interest it holds), the amounts spent by Asarco in acquiring outstanding mineral interests other than those exceptions set forth in Exhibit A will be a credit against the additional expenditure requirements under the Agreement or Asarco may terminate the Agreement and Norgold will reimburse Asarco for all amounts paid to Norgold under Section 2.1 of the Agreement. Because Norgold apparently has not examined the title to the Property, it has no knowledge that it does not hold title covenanted in Section 15.1 and Section 15.2 would provide Asarco no reimbursement for curing defects in Norgold's title. Therefore, the first three lines of Section 15.2 should read:

"In the event Norgold does not hold title and possession of the Property free and clear from all former grants, sales, liens or encumbrances of any kind subject only to the paramount title of the United States and to those matters set forth in Exhibit A hereto, then all sums expended by Asarco in or acquiring any . . ."

6. Under the terms of the Exploration and Option Agreement (Section 15.2), Asarco would not recover any expenditures made for clearing Norgold's title unless that Agreement is terminated, in which event, Asarco could recover such expenditures from Norgold limited by the payments Asarco had made

James L. Woods, Esq.
September 5, 1989
Page 3

to Norgold. Under the provisions of the Mining Lease (revised Section 21) such expenditures for clearing title would be deemed and recovered by Asarco as Development and Capital Expenditures. However, if Norgold elects the 49%/51% Joint Venture, there is no provision by which Asarco would receive credit for title clearing expenditures. This could be provided for by referring, in Section 2.1 of the 49%/51% Joint Venture Agreement, to Section 15.2 of the Exploration Option Agreement and making title clearing expenditures a part of Asarco's Initial Contribution.

Mining Lease

1. The changes made in Section 2 could accelerate the possible termination of the Lease if Asarco delivers the Feasibility Study to Norgold sooner than the latest date (July 1, 1991) at which the Feasibility Study may be delivered and does not commence Commercial Production within three years thereafter.

2. A provision has been added in Section 2 of the Mining Lease and in Section 4.1 of the Joint Venture Agreement that Asarco must reconvey its 51% interest in the Property back to Norgold if Commercial Production is not commenced within three years after the Feasibility Study is furnished. I was not aware the parties intended that Asarco could lose its earned property interest in this manner.

3. The second from the last sentence in Section 2 on page 2 has been revised to eliminate Asarco receiving interest on its exploration expenditures. The same change was made in Section 6.

4. The revision in Section 13 eliminates the waiver by Norgold of extralateral rights in properties held by Asarco outside the properties subject to this Mining Lease. This change should not cause a problem considering that any long term mining operations will be under a joint venture rather than under a continuing mineral lease with Norgold.

5. The revision at the bottom of page 8 would require Asarco to provide to Norgold copies of all factual data from the Property at any time in the future even after all of these Agreements may be terminated.

6. I believe the revisions to Section 15 are appropriate.

James L. Woods, Esq.
September 5, 1989
Page 4

7. The revision to Section 20 would appear to cause Asarco to have some kind of continuing obligation to Norgold if the Lease terminates under Section 2 for Asarco failing to commence Commercial production within three years after delivering the Feasibility Study. If the Lease is terminated because Asarco has not commenced Commercial Production within the required time, it appears that Asarco should be under no further obligation to Norgold. This is apparently to incorporate Asarco's obligation to reconvey the Property to Norgold and, if so, it should be limited to that obligation.

8. The lesser interest provisions of Section 21 have been substantially revised. The revision does provide that any costs incurred by Asarco in acquiring outstanding mineral interests which Norgold represented it had, would be recovered by Asarco as development and capital expenditures. However, it will be necessary to revise this change to Section 21 in a manner that the remedy of Asarco for having to acquire additional title will not be limited to the title covenanted by Norgold to the best of its knowledge. (See item 5 under the Exploration and Option Agreement discussion above.)

9. There should be no objection to Leo Smith's suggestion that Exhibit A be left blank with a notation that it is to be completed later after other properties may be added to the project prior to the commencement of this Mining Lease.

10. Norgold made many revisions to Attachment B (definitions of net profits) sent to you with our July 21 letter, the more significant of which are identified as follows:

(a) In paragraph (d)(i), the following have been deleted as items of mining costs which would be deducted from net returns to reach net profits on which the royalty is based: labor, machinery operation, depreciation and amortization of mining equipment and machinery required after commencement of Commercial Production.

(b) Additional deductions in the form of depreciation and capital costs incurred prior to Commercial Production have been deleted from subparagraph (ii).

(c) In paragraph (i), Exploration Expenditures have been separated from Development and Capital Expenditures in paragraph (j) to carry out Norgold's changed provision in

James L. Woods, Esq.
September 5, 1989
Page 5

Section 6 that Asarco will recover interest only on Development and Capital Expenditures but not on Exploration Expenditures.

Joint Venture Agreement

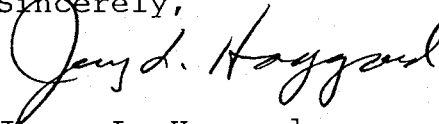
1. The change in Section 4.1 could accelerate the possible termination of the Joint Venture Agreement for failure to commence Commercial Production prior to July 1, 1994 if Asarco delivers the Feasibility Study to Norgold prior to July 1, 1991.

2. As mentioned in item 3 above with respect to the Mining Lease, the proposed revisions to Sections 4.1 and 4.3 of the Joint Venture Agreement would require Asarco to reconvey to Norgold its 51% in the property if Commercial Production is not commenced within three years after the Feasibility Study is submitted.

3. The changes made in Article 1 of Schedule D were apparently intended to avoid Asarco recovering interest on Exploration Expenditures as discussed in item 1 of Leo Smith's letter on the Mining Lease. However, if this is the intent, the reference in new Section 1.16 to "interest on the Exploration and Development Expenditures" should be changed to "interest on Development and Capital Expenditures."

Please advise me of what final changes should be made in these Agreements so that they may be completed and executed.

Sincerely,



Jerry L. Haggard
For APKER, APKER, HAGGARD
& KURTZ, P.C.

JLH/jb

cc: Mr. W. L. Kurtz ✓

cc: J.D. Sell (9/6/89)

September 5, 1989

J.D. Sell

Open Stope Tabulation
Yarnell Project
Yavapai County, AZ

Attached is a tabulation of open stopes/questionable muck samples for all the drill holes to date (thru YM-67).

<u>Hole #</u>	<u>No Sample</u>	<u>Muck or Questionable Sample</u>
YM-1	100 - 120	120 - 125
YM-2	200 - 240	240 - 255
YM-3	147 - 150	150 - 160
YM-5	295 - 330	
YM-7	220 - 228	220 - 230
YM-9	40 - 42.5	
YM-12	183 - 190	190 - 195
YM-16	55 - 70	70 - 85 <i>See sample all way</i>
YM-24	65 - 75	
YM-55	150 - 158	158 - 165
YM-57	47 - 60	60 - 63
YM-61	175 - 180	180 - 190
YM-62	246 - 285	285 - 293
YM-63		180 - 190

MAM:mek

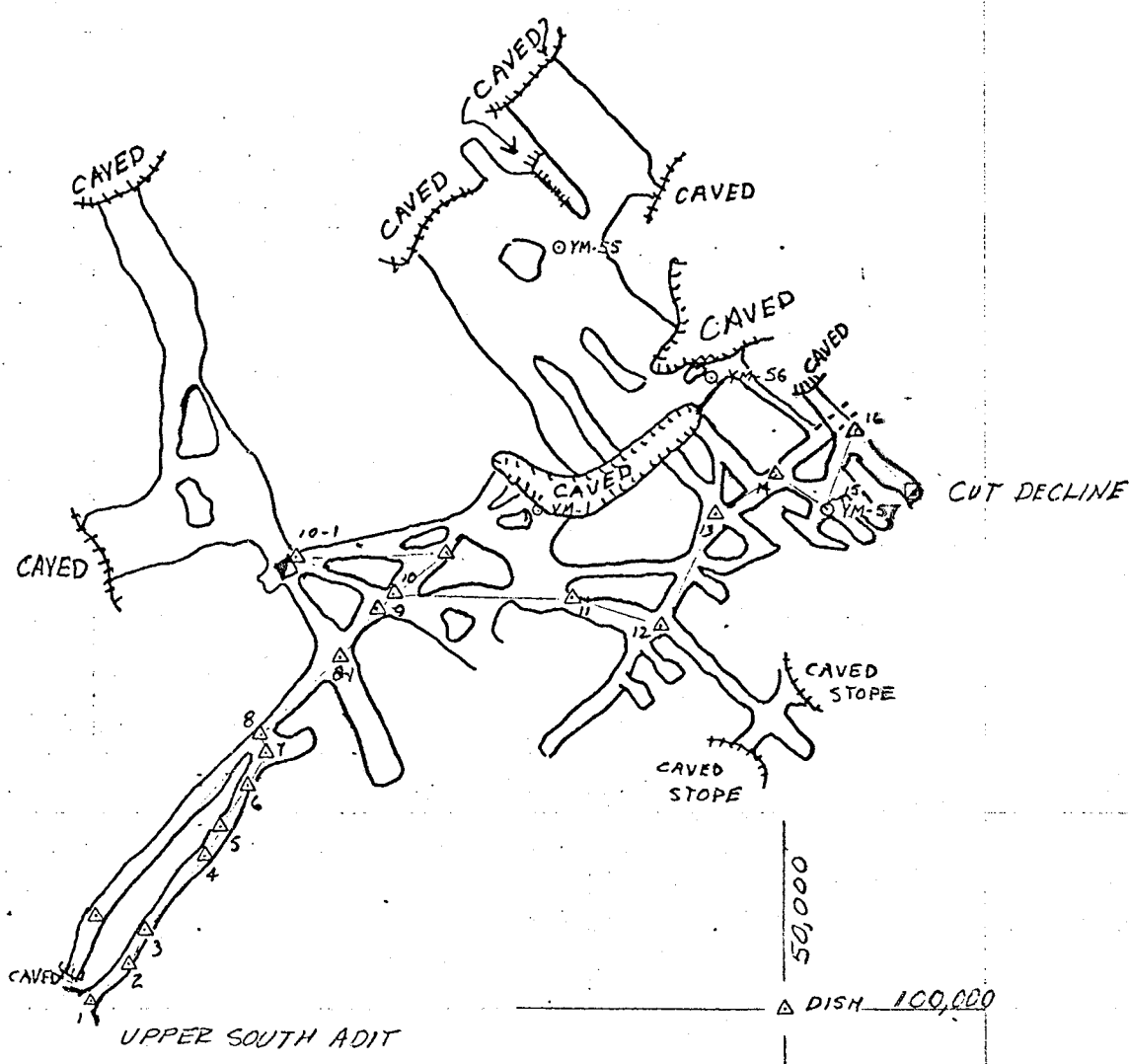
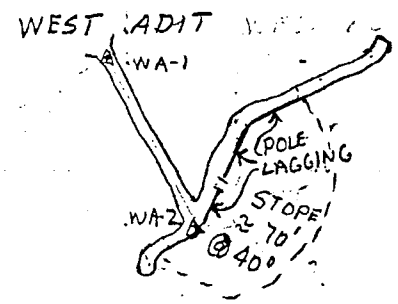
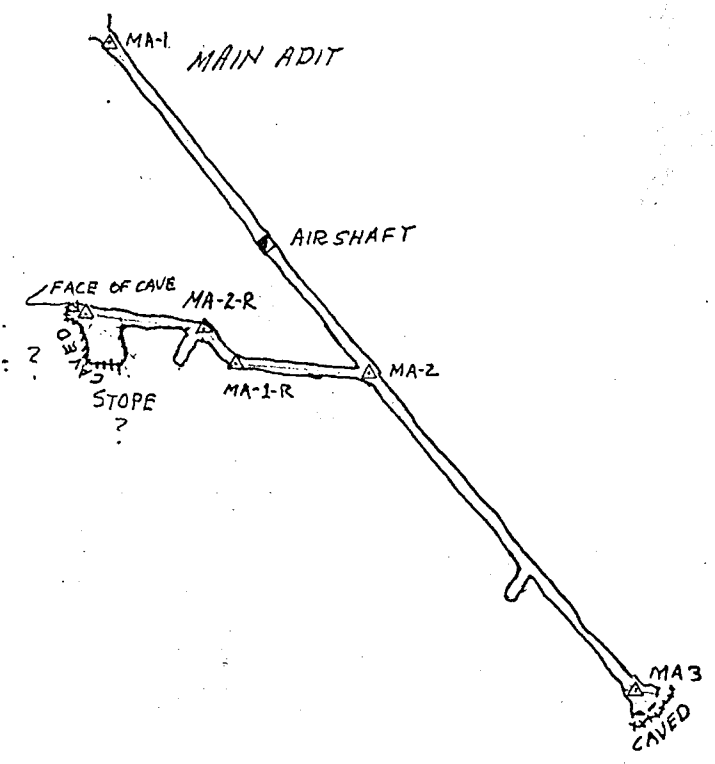

Mark A. Miller

FLY/SPIDER
ADIT

YARNELL UNDERGROUND

SCALE 1" = 100'

Δ INDICATES SURVEYED
POINT - ALL OTHER
AREAS BY BRUNTON
OR ESTIMATE.
SEPT. 1989

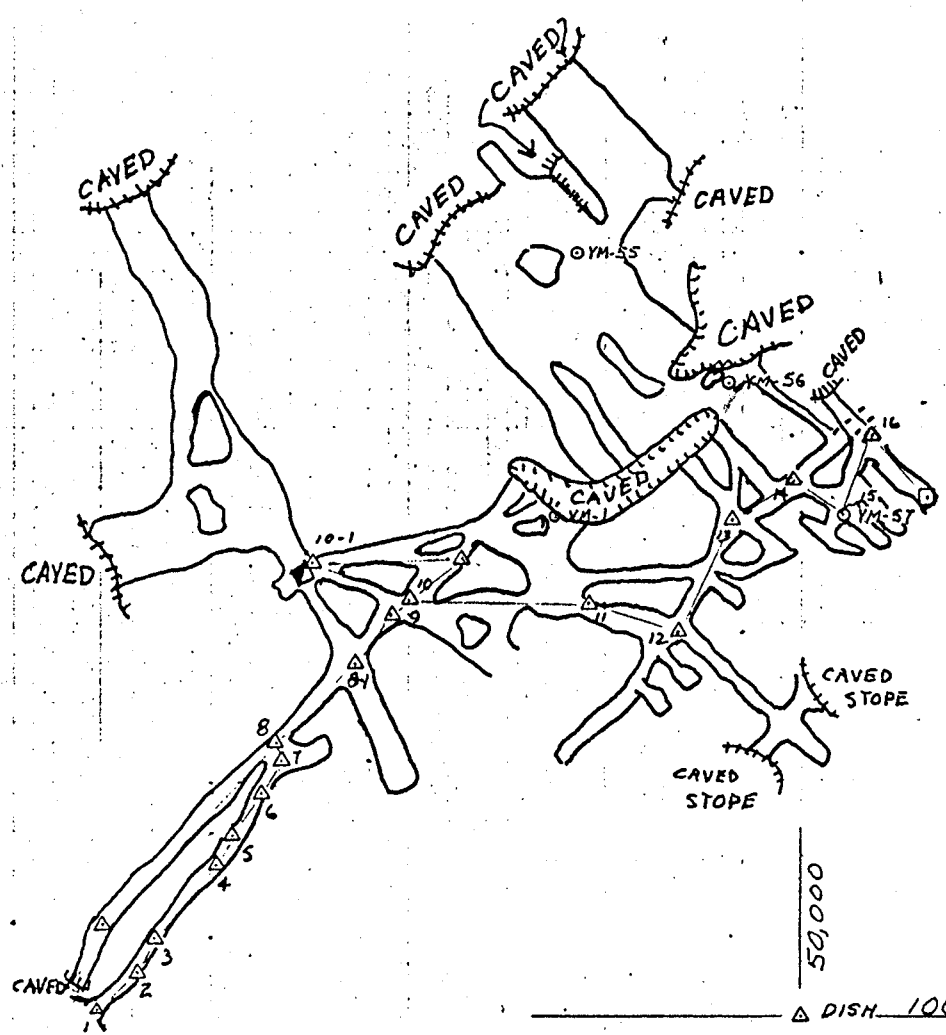
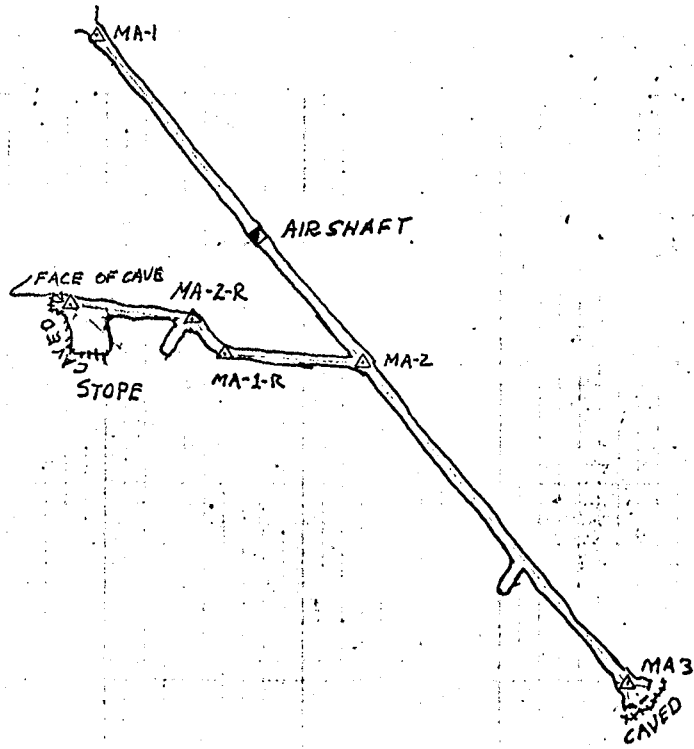


YARNELL UNDERGROUND

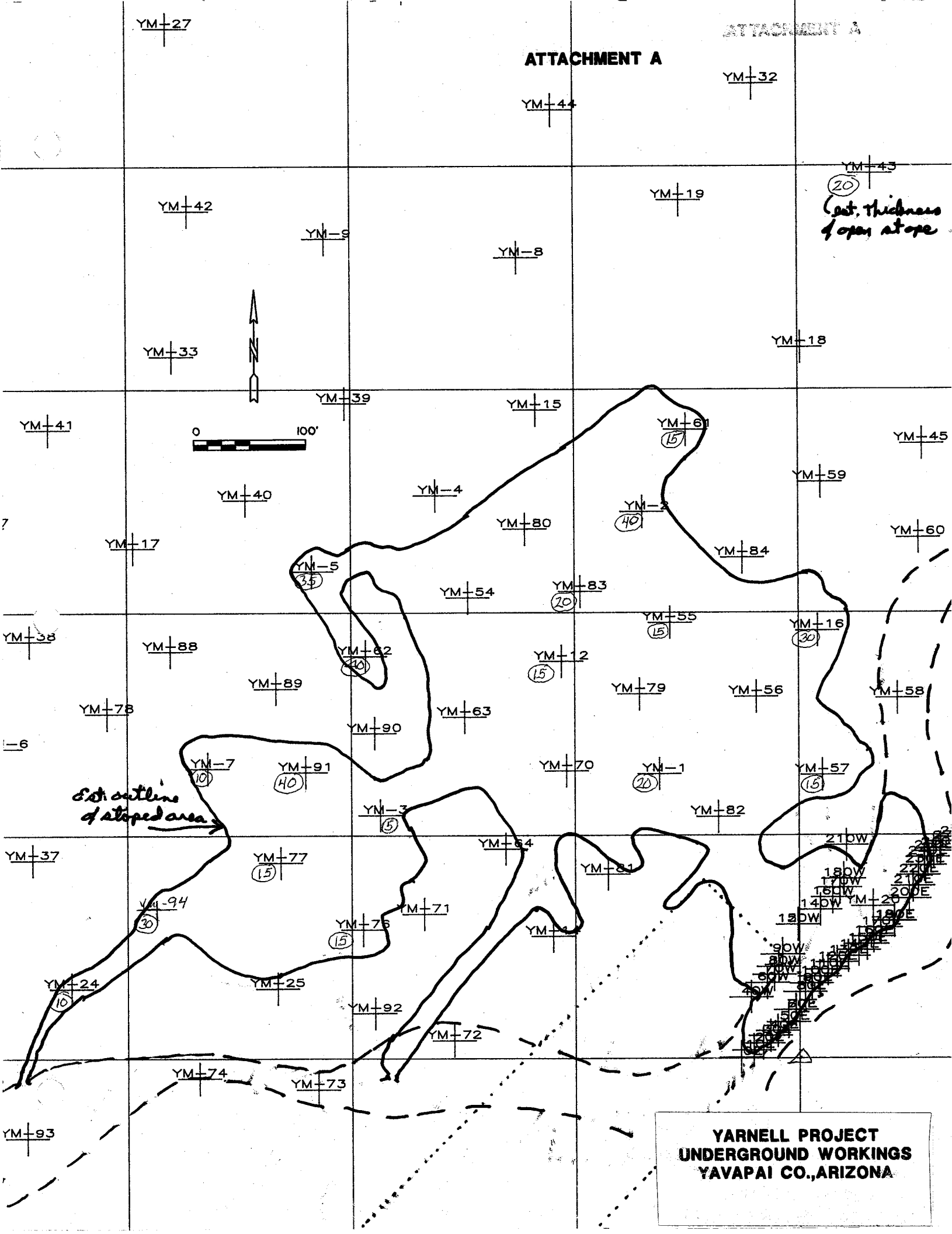
SCALE 1" = 100'

△ INDICATES SURVEY POINT - ALL OTHER AREAS BY BRUNTON OR ESTIMATE.

SEPT. 1989



ATTACHMENT A



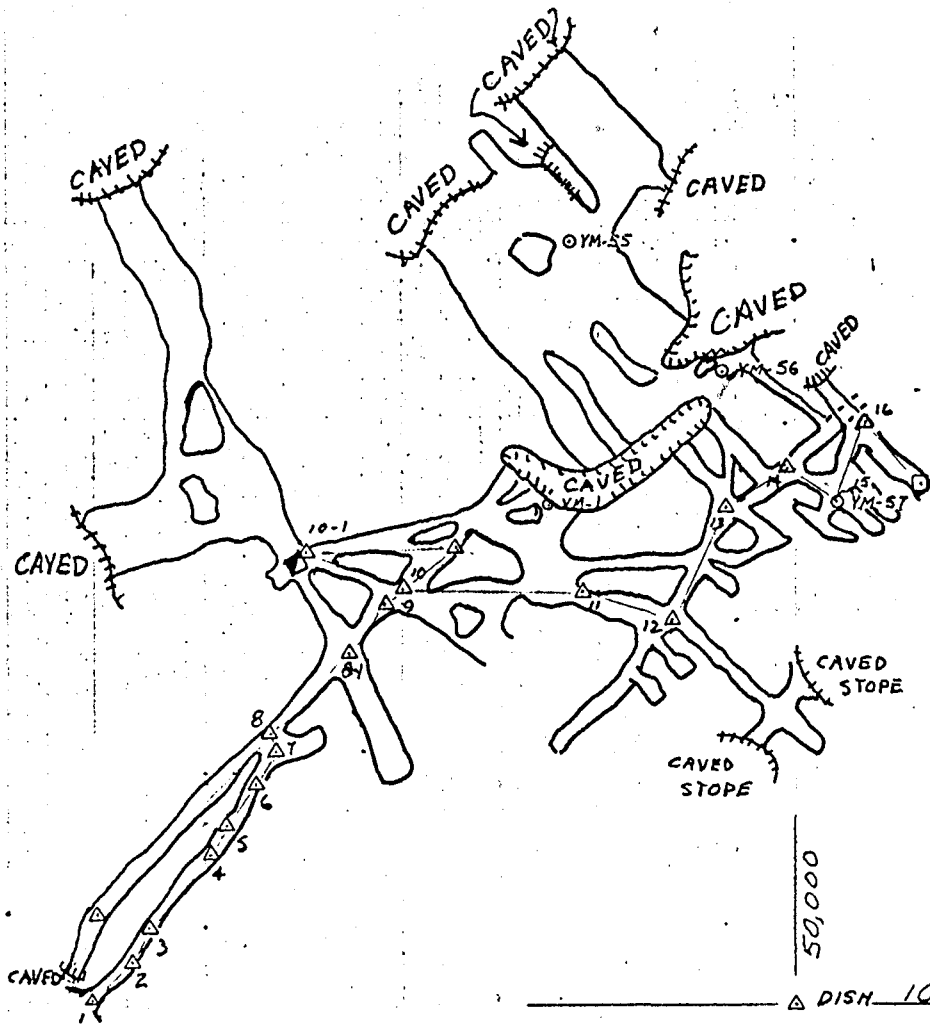
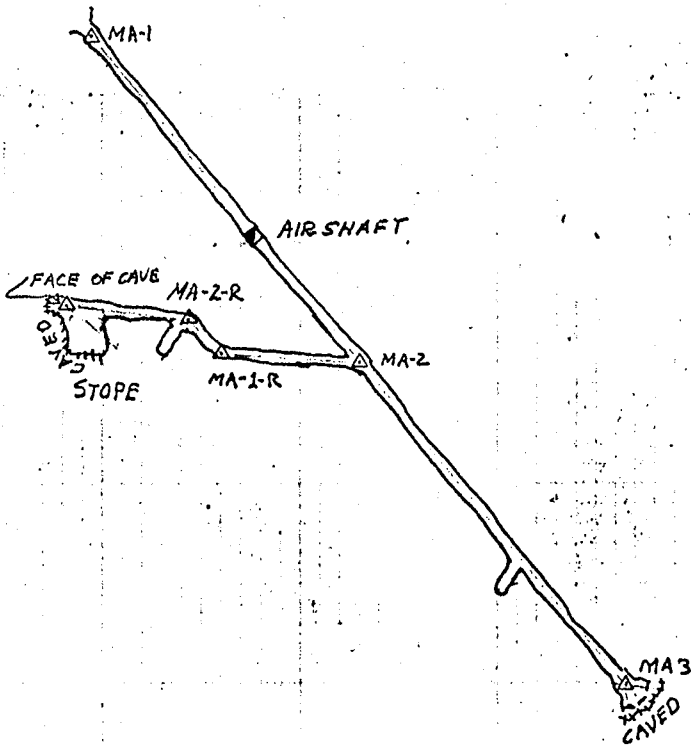
**YARNELL PROJECT
UNDERGROUND WORKINGS
YAVAPAI CO., ARIZONA**

YARNELL UNDERGROUND

SCALE 1" = 100'

△ INDICATES SURVEYED POINT - ALL OTHER AREAS BY BRUNTON OR ESTIMATE.

SEPT. 1989



Russell M. Honea
Consulting Geologist

AC 303 466-9779

Office
1105 BELLAIRE
BROOMFIELD, COLORADO 80020

Mailing Address
P.O. BOX 323
BROOMFIELD, COLORADO 80020

September 5, 1989

MINERAL

SEP 19 1989

BENEFICIATION DEPT.

Mr. Jack McPartland
McClelland Laboratories, Inc.
1016 Greg Street
Sparks, Nevada 89431

Re: ASARCO High Grade

Dear Jack:

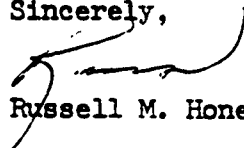
Enclosed are results of polished section examination of the ASARCO sample you sent a couple of weeks ago. The material was examined in polished sections of the "as received" or head sample ground to minus 70 mesh and in a panned concentrate prepared therefrom. Photomicrographs showing the character of some of the coarser particles are enclosed.

A total of 14 gold particles were observed - 10 of which are liberated and 4 of which are in composites with goethite. Particle size of native gold varies from 12 to 280 microns, and the average particle diameter is 78 microns.

The sample is very strongly oxidized, and contains very minor remnant pyrite along with an oxidation suite of dominant goethite and minor associated psilomelane. Small amounts of silicates from the minor accessory suite of the host are also present.

Please let me know if there are questions or problems regarding the data.

Sincerely,


Russell M. Honea

Encl.

cc: R.L. Brown
F.T. Graybeal
W.L. Kurtz
M.A. Miller
J.D. Sell

AS&R-1 (High Grade). Liberated and composite native gold particles in strongly oxidized host with minor remnants of pyrite and relatively abundant goethite and psilomelane.

Native gold - -1% - Dark golden yellow color - suggesting low silver content, isotropic but does not show complete extinction because of polishing scratches. Observed as 14 particles - 10 of which are liberated and 4 of which form composites with goethite. Grain size ranges from 12 to 280 microns, and average diameter of particles is 78 microns.

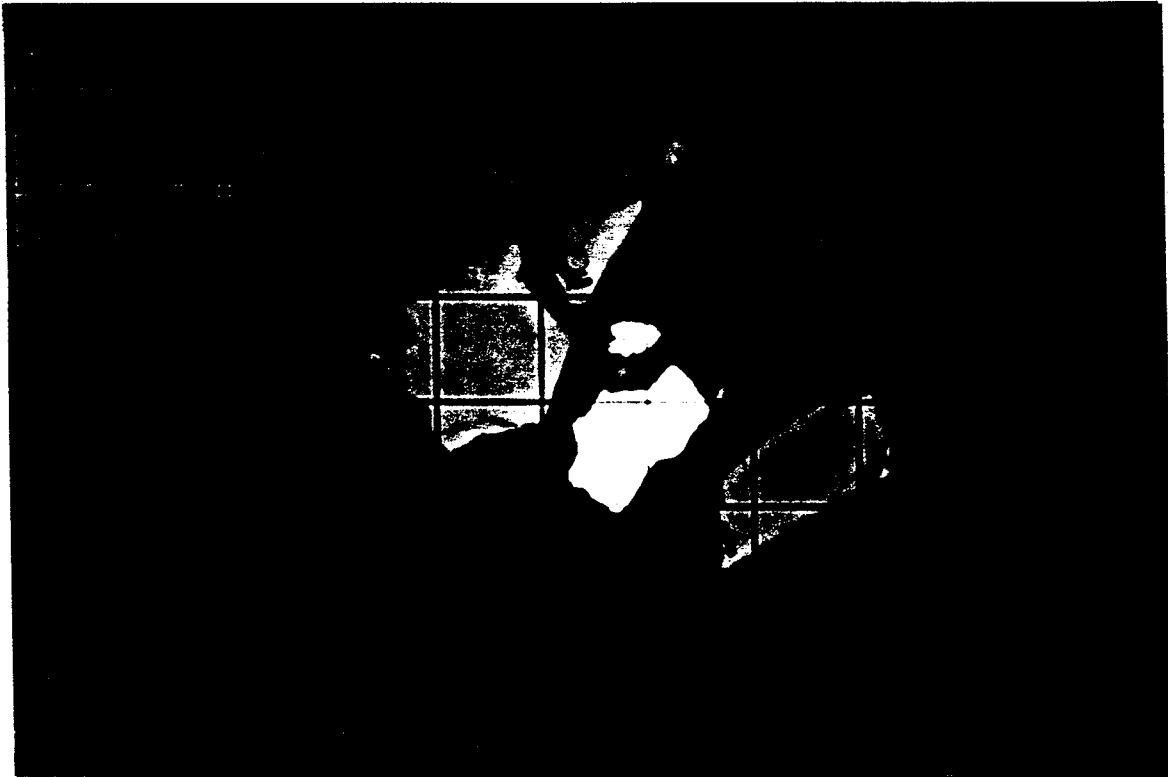
Pyrite - -1% - Pale yellow, either isotropic or with weak anomalous anisotropism and very faint blue to purplish polarization colors, hard and is well polished. Scarce pyritohedral remnant crystals with margins corroded by oxidation. Most is replaced by goethite oxidation products.

Goethite - 2+% - Medium gray with bluish tint where better polished, anisotropic but with polarization colors masked by strong reddish brown internal reflections, highly variable hardness and perfection of polish. Occurs in separate grains formed as oxidation pseudomorphs after pyrite and intergrown with psilomelane. Often finely banded.

Psilomelane - -1% - Light grayish blue, moderately anisotropic and with polarization colors of blue to gray, moderate hardness and is well polished. Present as thin-banded and in part microbotryoidal aggregates with radial to subradial fibrous internal texture. Present both alone and with goethite.

Rutile + Zircon + Sphene(?) - -1% - Medium gray, anisotropic but with polarization colors masked by strong colorless to pale yellowish brown internal reflections, hard and is well polished. Present as both liberated particles and in composites with silicate gangue. Derived from the minor accessory suite of host or from alteration of host (rutile).

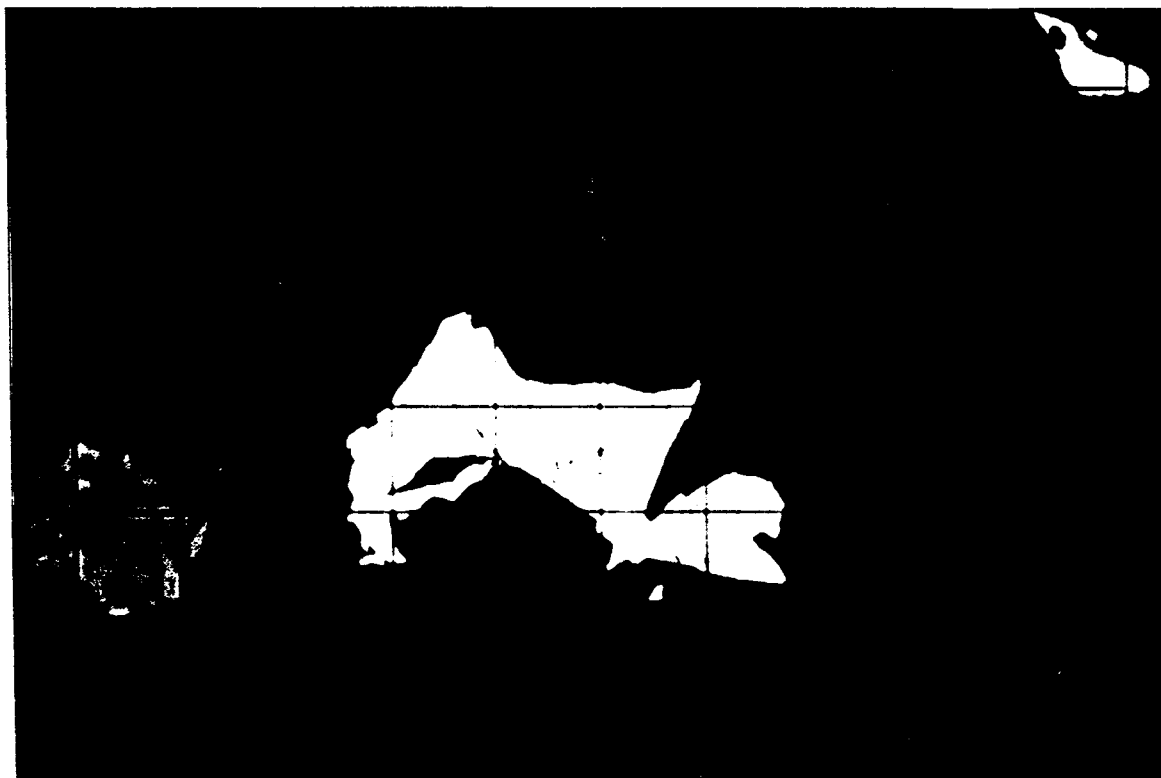
Non-metallic gangue - 97%



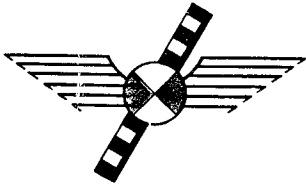
AS&R-1 (H.G.). Polished section photomicrograph of native gold particle with goethite in concentrate panned from head sample. Plain light, X435. Each square of grid is 32 microns on an edge.



AS&R-1 (H.G.) Polished section photomicrograph of large liberated native gold particle bordered at bottom by minor and poorly polished goethite. Plain light, X435. Each square of grid is 32 microns on an edge.



AS&R-1 (H.G.) Polished section photomicrograph of relatively coarse native gold forming composite with goethite and silicate gangue. Plain light, X435. Each square of grid is 32 microns on an edge.



WESTERN AIR MAPS, INC.

P.O. BOX 14988 • LENEXA, KANSAS 66215 • (913) 888-5266

Reply To: 11221 N. 28th Drive, Suite E-104 • Phoenix, AZ 85029

(602) 866-7391 • FAX (602) 866-0826

September 5, 1989

ASARCO, Inc.
P.O. Box 5747
Tucson, Az. 85703

Attn: Mr. Jim Sell

Dear Mr. Sell

Western Air Maps Inc. would like to take this opportunity apologize and explain the delay we had in delivering the mapping for the Yarnell project.

We originally planned to have the mapping completed within 10 working days after the photography and receipt of the control. We obtained the photography as per schedule but we did not receive the control until 5 days later. Their delay was caused by the additional survey work requested by ASARCO. The additional survey work was not required for our mapping purposes but was more economical to be completed at the same time. This delay caused us to miss the time slot we had planned and caught us in our vacation schedule which left us short on personell. there was an additional delay do some symbolic changes requested by ASARCO.

We do not wish to use these as excuses but only to explain some of the unforeseen problems we encountered. We value ASARCO as a client and want to continue doing business with you.

Very truly yours,
Western Air Maps Inc.

Frank J. Deal
Area Manager

SEP 8 1989

SW Exploration

CC: FT Grayhead
WL Kealy
MA Miller

FILE

JDS

ASARCO

JDS

Southwestern Exploration Division

September 5, 1989

assay returned on 9-29 → 9-3

J.D. Sell

Rechecks of (B Zone)
Ore Intervals
Selected Holes
Yarnell Project
Yavapai County, AZ

As discussed, we have pulled the "A" rejects for Holes 3, 5, 7, 8, 12, 20, 24, and 40. Holes 50 and 56 have already been checked. The new hole designations with corresponding footages are listed on Attachment A with the original hole numbers and corresponding original footages. These will be sent to Triad Minerals. Additionally, Hole #3 upon return from the assayer will be sent to McClelland Labs for bottle roll testing. A memo describing this will be forthcoming.

MAM:mek


Mark A. Miller

RECHECKS OF (B ZONE) ORE INTERVALSSELECTED HOLESYARNELL PROJECT

<u>NEW HOLE</u>	<u>FOOTAGE</u>	<u>ORIGINAL HOLE</u>	<u>FOOTAGE</u>
1A	0 - 5	YM 5A	200 - 205
	5 - 10		210 - 215
	10 - 15		215 - 220
	15 - 20		220 - 225
	20 - 25		225 - 230
	25 - 30		230 - 235
	30 - 35		235 - 240
	35 - 40		240 - 245
	40 - 45		245 - 250
			250 - 255 Missing
	45 - 50		255 - 260
	50 - 55		260 - 265
	55 - 60		265 - 270
	60 - 65		270 - 275
	65 - 70		275 - 280
	70 - 75		280 - 285
	75 - 80		285 - 290
			290 - 330 Stop
	80 - 85		330 - 335
85 - 90	345 - 350		
1B	0 - 5	YM 7A	155 - 160
	5 - 10		160 - 165
	10 - 15		165 - 170
	15 - 20		170 - 175
	20 - 25		175 - 180
	25 - 30		180 - 185
	30 - 35		185 - 190
	35 - 40		190 - 195
	40 - 45		195 - 200
	45 - 50		200 - 205
	50 - 55		205 - 210
	55 - 60		210 - 215
	60 - 65		215 - 220
			220 - 225 No Return
	65 - 70		225 - 230
1C	0 - 5	YM 8A	225 - 230
			230 - 235 Missing
	5 - 10		235 - 240
	10 - 15		240 - 245
	15 - 20		245 - 250
	20 - 25		250 - 255
	25 - 30		255 - 260
	30 - 35		260 - 265
	35 - 40		265 - 270
	40 - 45		270 - 275

RECHECKS OF (B ZONE) ORE INTERVALSSELECTED HOLES
YARNELL PROJECT

<u>NEW HOLE</u>	<u>FOOTAGE</u>	<u>ORIGINAL HOLE</u>	<u>FOOTAGE</u>
1D	0 - 5	YM 12A	150 - 155
	5 - 10		155 - 160
	10 - 15		160 - 165
	15 - 20		165 - 170
	20 - 25		170 - 175
	25 - 30		175 - 180
	30 - 35		180 - 185
			185 - 190 No Sample Sto
			190 - 195 " " "
			195 - 200 Bad Rtn. sma
			200 - 205
			205 - 210
			210 - 215
			215 - 220
			220 - 225
			225 - 230
			230 - 235
	235 - 240		
1E	Same No.'s	YM 20A	Same No.'s
1F	0 - 5	YM 24A	75 - 80
	5 - 10		80 - 85
	10 - 15		85 - 90
	15 - 20		90 - 95
	20 - 25		95 - 100
	25 - 30		100 - 105
	30 - 35		105 - 110
	35 - 40		110 - 115
1G	0 - 5	YM 40A	275 - 280
	5 - 10		280 - 285
	10 - 15		285 - 290
	15 - 20		290 - 295
	20 - 25		295 - 300
	25 - 30		300 - 305
	30 - 35		305 - 310
	35 - 40		310 - 315
	40 - 45		315 - 320
	45 - 50		320 - 325
	50 - 55		325 - 330
	55 - 60		330 - 335
	60 - 65		335 - 340
65 - 70	340 - 345		
70 - 75	355 - 360		
75 - 80	360 - 365		

RECHECKS OF (B ZONE) ORE INTERVALSSELECTED HOLESYARNELL PROJECT

<u>NEW HOLE</u>	<u>FOOTAGE</u>	<u>ORIGINAL HOLE</u>	<u>FOOTAGE</u>
1G	80 - 85	YM 40A	365 - 370
	85 - 90		370 - 275
	90 - 95		375 - 380
	95 - 100		345 - 350 Pulps only
	100 - 105		350 - 355 " "
1J	0 - 5	YM 3A	130 - 135
	5 - 10		135 - 140
	10 - 15		140 - 145
	15 - 20		145 - 160 Missing Stope
	20 - 25		160 - 165
	25 - 30		165 - 170
	30 - 35		170 - 175
	35 - 40		175 - 180
	40 - 45		180 - 185
	45 - 50		185 - 190
	50 - 55		190 - 195
	55 - 60		195 - 200
			200 - 205

**BULK
ASSAY
REPORT**



TRIAD MINERALS CO.

ASSAYING & CONSULTING
P.O. Box 2754 - Mile Post 115, Hwy. 89
Wickenburg, Arizona 85358
602-684-3816



DATE 8-29-89

JDS

ASARCO Incorporated

Original holes

COMPANY ASARCO

LAB # 082889-2

AUG 29 1989

SW Exploration

HOLE # <u>YM-1A</u>	Ounces per ton		PAGE #1	Remarks
	AU (gold)	AG (silver)		
Sample Description				
YM 1A 0-5	.051			
" " 5-10	.056			
" " 10-15	.011			
" " 15-20	.004			
" " 20-25	.031			
" " 25-30	.009			
" " 30-35	.005			
" " 35-40	.032			
" " 40-45	.070			
" " 45-50	.034			
" " 50-55	.043			
" " 55-60	.019			
" " 60-65	.014			
" " 65-70	.031			
" " 70-75	.020			
" " 75-80	.096			
" " 80-85	.016			
" " 85-90	.030			

**Certified Assays When
Signed And Dated**
[Signature]
DATE 8-29-89 SIGNATURE

BULK ASSAY REPORT



TRIAD MINERALS CO.

ASSAYING & CONSULTING
P.O. Box 2754 - Mile Post 115, Hwy. 89
Wickenburg, Arizona 85358
602-684-3818



DATE 8-29-89

ADMITTED INSPECTION

AUG 29 1989

SW Exploration

Critical Hole 7

COMPANY ASARCO

LAB # 082889-2

PAGE # 1

HOLE # <u>YM-1B</u>	Ounces per ton		Remarks
	AU (gold)	AG (silver)	
Sample Description			
YM-1B 0-5	.030		
" " 5-10	.041		
" " 10-15	.049		
" " 15-20	.080		
" " 20-25	.077		
" " 25-30	.149		
" " 30-35	.012		
" " 35-40	.012		
" " 40-45	.048		
" " 45-50	.025		
" " 50-55	.051		
" " 55-60	.086		
" " 60-65	.060		
" " 65-70	.018		

**Certified Assays When
Signed And Dated**

DATE 8-29-89 SIGNATURE [Signature]

JDS

BULK ASSAY REPORT



TRIAD MINERALS CO.

ASSAYING & CONSULTING
P.O. Box 2754 - Mile Post 115, Hwy. 89
Wickenburg, Arizona 85358
602-684-3816



DATE 9-3-89

Original hole 8

COMPANY ASARCO LAB #090289-4

REFIRES

Sample Description	Ounces per ton		Remarks
	AU (gold)	AG (silver)	
<i>YM 1C</i> 0-5	.066		
" " 5-10	.052		
" " 10-15	.027		
" " 15-20	.015		
" " 20-25	.052		
" " 25-30	.100		
" " 30-35	.092		
" " 35-40	.042		
" " 40-45	.046		

Certified Assays When Signed And Dated

9/3/89 [Signature]
DATE SIGNATURE

**BULK
ASSAY
REPORT**



TRIAD MINERALS CO.

ASSAYING & CONSULTING
P.O. Box 2754 - Mile Post 115, Hwy. 89
Wickenburg, Arizona 85358
602-684-3818



DATE 9-3-89

Original hole 12

COMPANY ASARCO LAB# 090289-5

REFIRES

Sample Description	Ounces per ton		Remarks
	AU (gold)	AG (silver)	
YM. 10 0-5	.022		
" " 5-10	.056	0.041 REFIRING	
" " 10-15	.035		
" " 15-20	.094	0.139 REFIRING	
" " 20-25	.030	0.029 REFIRING	
" " 25-30	.032		
" " 30-35	.009		
" " 45-50	.021		
" " 50-55	.069	0.067 REFIRING	
" " 55-60	.020		
" " 60-65	.070		
" " 65-70	.026		
" " 70-75	.022		
" " 75-80	.021		
" " 80-85	.023	0.034 REFIRING	
" " 85-90	.040		

**Certified Assays When
Signed And Dated**
9/3/89 [Signature]
DATE SIGNATURE

**BULK
ASSAY
REPORT**



TRIAD MINERALS CO.

ASSAYING & CONSULTING
P.O. Box 2754 · Mile Post 115, Hwy. 69
Wickenburg, Arizona 85358
602-684-3816



DATE 9-3-89

Original hole 20

COMPANY ASARCO LAB # 090289-6

REFIRES

between

Sample Description	Ounces per ton		Remarks
	AU (gold)	AG (silver)	
<u>YM E1</u> 0-5	.060		
" " 5-10	.017		
" " 10-15	.016		
" " 15-20	.013		
" " 20-25	.052	0.047 REFIRING	
" " 25-30	.348		
" " 30-35	.026		

Certified Assays When
Signed And Dated

9-3-89 *W. B. Edler*
DATE SIGNATURE

JPS



TRIAD MINERALS CO.

ASSAYING & CONSULTING
P.O. Box 2754 - Mile Post 115, Hwy. 89
Wickenburg, Arizona 85358
602-684-3816



DATE 9-3-89

BULK ASSAY REPORT

Original vol 24

COMPANY ASARCO LAB #090289-7

REF ID'S	Sample Description	Ounces per ton		Remarks
		AU (gold)	AG (silver)	
<i>W24</i>	YM 1F 0-5	.261		
	" " 5-10	.164		
	" " 10-15	.061		
	" " 15-20	.087		
	" " 20-25	.092		
	" " 25-30	.102		
	" " 30-35	.106		
	" " 35-40	.034		

Certified Assays When Signed And Dated	
5381 <i>[Signature]</i> DATE	<i>[Signature]</i> SIGNATURE

**BULK
ASSAY
REPORT**



TRIAD MINERALS CO.

ASSAYING & CONSULTING
P.O. Box 2754 - Mile Post 115, Hwy. 89
Wickenburg, Arizona 85358
602-684-3816



DATE 9-3-89

Original hole 40

COMPANY ASARCO LAB #090289-8

Sample Description	Ounces per ton		Remarks
	AU (gold)	AG (silver)	
<i>YM 16</i> C-5	.028		
" " 5-10	.019		
" " 10-15	.015	0.013 REFIRING	
" " 15-20	.076	REFIRING	
" " 20-25	.045		
" " 25-30	.038		
" " 30-35	.036		
" " 35-40	.137		
" " 40-45	.057		
" " 45-50	.016		
" " 50-55	.062		
" " 55-60	.110		
" " 60-65	.052		
" " 65-70	.043		
" " 70-75	.066		
" " 75-80	.049		
" " 80-85	.030	0.061 <i>refire</i>	
" " 85-90	.062		
" " 90-95	.025		
" " 95-100	.136		
" " 100-105	.139	0.126 REFIRING	

**Certified Assays When
Signed And Dated**
 9-3-89 *[Signature]*
 DATE SIGNATURE

Original hole

Reject/repuls

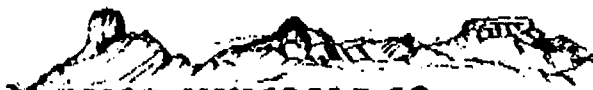
50

1 H

54

1 I

**BULK
ASSAY
REPORT**



TRIAD MINERALS CO.

ASSAYING & CONSULTING
P.O. Box 2754 - Mile Post 115, Hwy. 89
Wickenburg, Arizona 85358
602-684-3816



DATE 9-3-89

Original vol 3

COMPANY ASARCO LAB # 090289-9

REFIRES	Ounces per ton		Remarks
	Sample Description	AU (gold)	
<i>W</i> YM 1J 0-5	.028		
" " 5-10	.027		
" " 10-15	.044		
" " 15-20	.081		
" " 20-25	.064		
" " 25-30	.041		
" " 30-35	.062	0.091 REFIRING	
" " 35-40	.054		
" " 40-45	.094		
" " 45-50	.101	0.067 REFIRING	
" " 50-55	.129		
" " 55-60	.010		
REFIRE			
YM 1B 60-65	.055		

**Certified Assays When
Signed And Dated**
 9-3-89 *[Signature]*
 DATE SIGNATURE

**BULK
ASSAY
REPORT**



TRIAD MINERALS CO.

ASSAYING & CONSULTING
P.O. Box 2754 - Mile Post 115, Hwy. 89
Wickenburg, Arizona 85358
602-684-3818



DATE 9-7-89

31100 In. 0.

SEP 7 1989

SW Exploration

COMPANY ASARCO LAB# 090689-1

REF ID'S Sample Description	Ounces per ton		Remarks
	AU (gold)	AG (silver)	
YM 63 230-245	.014		
" " 235-240	.061		
YM 1D 5-10	.041		
" " 15-20	.139		
" " 20-25	.029		
" " 50-55	.067		
" " 80-85	.034		
YM E1 20-25	.047		
YM 1G 10-15	.013		
" " 80-85	.061		
" " 100-105	.126		
YM 1J 30-35	.091		
" " 45-50	.067		

Certified Assays When
Signed And Dated
9-7-89 [Signature]
DATE SIGNATURE

JDS FILE

New York, N.Y., September 6, 1989

MEMORANDUM FOR T. C. Osborne

SEP 11 1989


Yarnell Project
Arizona

Attached is a copy of a recent drill map concerning this property. The infill drilling is confirming the results of the first scout drill campaign. We are adding modest amounts of ore in a southwesterly extension, although mineralization may dip more steeply in that area. My best guess is that the deposit will end up at about 4 million tons at 0.047 opt Au. It is contained in a 30° dipping fault zone and averages about 65 true thickness.

Computer-generated ore reserve calculations and "hand-drawn" calculations are now in progress. We are rotary drilling holes at sufficient density to confirm continuity of mineralization which may or may not also be adequate for mine planning of the up dip portion of the deposit, and this work will be completed by the end of September. Diamond drilling designed to test the accuracy of our rotary drilling sampling and assaying and to provide material for metallurgical testing will start soon and will be completed by mid-October at the latest. Negotiations to secure important small parcels of land are in progress and hopefully will be complete by the end of October. A geological map of the entire property will be finished by month end.

However, there is no real reason why feasibility studies, mine planning and permitting activities cannot begin very soon, and my suggestion is that the Mining Department begin to take hold (perhaps we could put together a sort of matrix team, similar to the one we had at Rock Creek) with the view toward assuming complete responsibility for the project well before the year-end.

If it could be arranged I would like to meet with you, Bob Kupsch and Tom Scartaccini to discuss this matter and to initiate additional Mining Department participation and responsibility for this project.



R. L. Brown

RLB:mc
Att.

cc: R. J. Kupsch (w/att.)
J. D. Sell/W. L. Kurtz (w/o att.)

JOS/AAA



Mineral Beneficiation Department
Tucson, Arizona

September 6, 1989

FILE MEMORANDUM - MISC. 36

Yarnell Metallurgical Tests - Status

The McClelland Laboratory was visited August 31, 1989, to discuss additional testwork and to observe the tests in progress. The two small columns have just started to return pregnant solution so there is no data available on these. The large column (-6 inch ore) has circulated solution for eight days. Total gold extracted to date is 12% which indicates a very slow leaching rate at this size. However, it will be several more weeks before any definitive data is obtained.

The bottle roll leach tests at 80% -3/8 inch size for 96 hours have been completed with the following results:

	<u>Open Cut Composite</u>	<u>Open Cut High Grade</u>	<u>Open Cut Low Grade</u>	<u>Clay Gouge</u>
96-hour extraction	63%	69%	70%	74%

These extractions are all a little lower than expected; although, the preliminary work indicated maximum recoveries of only 75% to 80% at a 10 mesh size. The low recovery of the composite is something of an anomaly since the open cut low and high grade samples which make up the composite both gave slightly higher extractions. This may be a function of the assay scatter we have had with this sample and I have asked for the tailing of this test to be reassayed in triplicate.

It was requested that McClelland assay each of the column tails plus the low grade underground sample heads (when fines have been mixed in) by taking four separate bulk splits and assaying each five times.

McClelland will run a repeat bottle roll test on the "revised" low grade underground sample.

ASARCO Incorporated

SEP 6 1989

SW Exploration

The sample for mineralogical examination has been sent to the mineralogist:

Russ Honea
P.O. Box 323
Bloomfield, CO 80020
Telephone: (303) 466-9779

The additional costs incurred by additional sampling/assaying and repeating the low grade bottle roll test are estimated at \$2,500.00.

The environmental testing will consist of monitoring a 15-day wash cycle of the test column which gives the best metallurgical results. This will consist of daily analyses to track the decrease in cyanide content of the wash solution. In addition, an E.P. Toxicity test will be run on the tailing. This work will cost an additional \$2,150.00.


D. E. Crowell

DEC:brw

cc: R. J. Kupsch
J. D. Sell/M. A. Miller
W. L. Kurtz
F. T. Graybeal
D. F. Skidmore/T. E. Scartaccini

ASARCO

Southwestern Exploration Division

September 6, 1989

W.L. Kurtz

Sulfide Zones
Yarnell Drill Holes
Yarnell Project
Yavapai County, AZ

As requested, I have compiled a list of sulfide zones encountered in the drill holes. The sulfides appear to occur along the downdip portion of the orebody (Holes 9, 17, 33, 26, 42) and along the SW extension of the zone (11, 46, 47, 48, 53). Also along the SW extension some of the better ore is partly contained within sulfides. Overall, however, the amount of the orebody associated with sulfides is rather small and when encountered, the sulfides usually occur below the 'B' ore zone.

MAM:mek
Att.



Mark A. Miller

cc: J.D. Sell

SULFIDE ZONES

Drill Hole (TD)	Sulfide Zone	% Py	(Reoccurrence of Biotite) Base Oxidation	"B" Ore Zone Interval
1 (220)	--	--	(195) ?	50 - 125
2 (350)	--	--	--	140 - 245
3 (250)	--	--	--	
4 (440)	--	--	--	
5 (370)	--	--	--	
6 (400)	300 - 360	½%	--	125 - 180
7 (292)	255 - 270	Tr	--	155 - 230
8 (350)	325 - 330	Tr	--	225 - 275
9 (350)	290 - 305	Tr Loc 1%	--	285 - 315
10 (300)	285 - 300	TR Loc 1%	--	190 - 225
11 (260)	215 - 235	2%	--	175 - 240
	235 - 240 (Mixed Ox + Sul)	Tr		
12 (240)	--	--	--	150 - 240
13 (280)	--	--	(235 - TD)	180 - 210
14 (160)	--	--	--	(35 - 90)
15 (350)	--	--	(150 - 170)	(255 - 295)
16 (150)	--	--	--	(40 - 80)
17 (450)	425 → TD (Mixed Ox + Sul)	<½%	--	(305 - 325)
18 (250)	--	--	--	100 - 140
19 (300)	??	--	--	205 - 235
20 (200)	--	--	(35 → TD) 35	0 - 35
21 (200)	--	--	--	80 - 90
22 (380)	--	--	(355 → TD)? 355?	270 - 285
23 (140)	--	--	(135 → TD) 135??	
24 (150)	--	--	--	65 - 115
25 (155)	--	--	--	55 - 90
26 (450)	(155 - 170) (200 - 230) (240 - 315) (365 - 410) Mixed sulfides & oxid.	Tr → <1%	(415 → TD) 415	200 - 295
27 (440)	(365 - 380) (240 - 250) (420 - 440)	Tr → <1%	(345 → TD) 410	300 - 315
28 (350)	205 - 225	<1%	(290 → TD) 305	225 - 245
29 (280)	210 - 235	<1%	--	220 - 230
30 (315)	245 - 280	Tr	--	215 - 250
31 (450)	245 - 280	Tr	(165 - 220)	365 - 385
32 (260)	--	--	(235 → TD) 235	190 - 200
33 (410)	(175 - 190) - Tr (390 - 410) - Tr	Tr	--	275 - 365
34 (150)	--	--	--	not reached
35 (100)	--	--	(70 → TD)	35 - 40
36 (180)	--	--	--	130 - 140
37 (240)	--	--	--	120 - 180
38 (360)	330 - 360	Tr → <½%	--	185 - 245
39 (360)	--	--	--	325 - 360
40 (400)	--	--	--	275 - 380
41 (460)	330 - 335 370 - 375	<½% Tr	(200 - 295)	295 - 335

SULFIDE ZONES

Drill Hole (TD)	Sulfide Zone	% Py	(Reoccurrence of Biotite) Base Oxidation	"B" Ore Zone Interval
42 (410)	115 - 155(Tr) (235-290) Tr 180 - 185(Tr)	Tr	(405 - 410) 405	330 - 340
43 (140)	30 - 45	Tr	(120 → TD)?? maybe spec. hem.	65 - 85
44 (310)	--	--	(90 - 205) (305 → TD)	235 - 265
45 (120)	--	--	--	60 - 75
46 (300)	265 → TD	Tr	--	200 - 260
47 (320)	205 - 230	Tr	(310 → TD) 310	170 - 205
48 (220)	(120 - 155) → Tr → ½ (170 - 190) → Tr	--	--	45 - 85
49 (220)	(165 - 180) (195 - 220)	Tr	--	135 - 160
50 (85)	50 → TD	Tr → <1%	55	0 - 85
51 (240)	160 - 230	Tr → <½%	215	165 - 170
52 (200)	195 - 200	Tr	--	50 - 75
53 (150)	115 - 150	Tr → ½%	--	65 - 140
54 (340)	50 - 55, 175 - 180	Tr	--	180 - 270
55 (220)	--	--	--	70 - 190
56 (180)	--	--	(170 → TD) 170	70 - 105
57 (120)	--	--	(105 → TD) 105	15 - 45
58 (90)	--	--	--	0 - 20
59 (180)	--	--	(135 - 140)	50 - 100
60 (110)	--	--	(20-45) (105-110) (70-75)	
61 (250)	--	--	--	80 - 130
62 (320)	--	--	(150 - 155)	190 - 295
63 (240)	230 → TD	Tr	--	140 - 240
64 (200)	--	--	--	50 - 145
65 (135)	85 - 120	Tr	--	0 - 50
66 (60)	--	--	--	
67 (90)	70 - 75	Tr	--	0 - 50
68	--	--	(110 → TD) 110	

ASARCO

Southwestern Exploration Division

September 6, 1989

W.L. Kurtz/J.D. Sell

Yarnell Project
Information Memo

On August 29, 1989 I discussed with Jerry Haggard how we could abandon the Sun and Y claims that were staked by D. Jenkins and insure that the new YAR claims were valid. He said that since both the Sun & Y and YAR claims were staked for the same interest he could write a letter to Tom Reitmeyer, Land Law Examiner for the BLM in Phoenix, and say the YAR claims were relocations. This would "kill" the Sun and Y claims and make the YAR claims valid. I asked him to go ahead.

Norgold was informed about this and were in agreement.

WDG:mek

W. D. Gay
W. D. Gay

September 6, 1989

W.L. Kurtz/J.D. Sell

Yarnell Project
Drill Hole YM-34
Information Memo

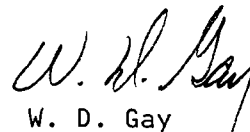
When drill hole YM-34 was drilled, a thick black viscous substance came out of the hole (depth not known).

Steve Duncan said it "smelled like old oil."

Also, Jack Yannuzi was at the drill rig while this hole was being drilled, which seemed unusual to me, and Steve Duncan said Jack helped shovel the substance out of the way.

Drill hole YM-34 is below the house in the bottom of the wash near the well for house water.

WDG:mek


W. D. Gay

ASARCO

JDS

Southwestern Exploration Division

September 7, 1989

J.D. Sell

Bottle Roll Test
YM-3
Yarnell Project

Drill Hole YM-3 "A" Rejects have been sent to McClelland Labs for Bottle Roll Testing. The hole was remarked 1-J and will be composited on 20' intervals as follows:

1-J	YM-3	
0-20	130-145	160-165 (145- 160- Stope)
20-40	165-180	
40-60	180-205	

If there is no objection to the above, I will send McClelland Labs a letter to start this testing.

MAM:mek



Mark A. Miller

cc: W.L. Kurtz
F.T. Graybeal
D.E. Crowell

September 7, 1989

J.D. Sell

PA Samples
Yarnell Project
Yavapai County, AZ

The attached samples were taken in a small adit located in the SW end of the projected mineralized zone. The adit was driven on a small quartz vein and shows a strong structure dipping NW approx. 40° striking N10-20°E. The walls of the drifts were chip sampled on 10' intervals.

Results of the sampling indicate trace to no gold present in the workings, although the host rock shows, strong limonite, and sericitic alteration. The location of the adit relative to the project of the YFZ indicates that the adit may be in the hanging wall of the fault zone or at the contact (outcrop) of the Y.F.Z.

*Mark's
your
choice!*

MAM:mek
att.



Mark A. Miller

cc: W.L. Kurtz
F.T. Graybeal

**BULK
ASSAY
REPORT**



TRIAD MINERALS CO.

ASSAYING & CONSULTING
P.O. Box 2754 - Mile Post 115, Hwy. 89
Wickenburg, Arizona 85358
602-684-3816



DATE 8-7-89

COMPANY ASARCO LAB #080589-3 Pig Adit.

Rock Chip Sample Description	Ounces per ton		YARNELL PROJECT #0444 Remarks
	AU (gold)	AG (silver)	
PA G-10	.005		ASARCO AUG 7 1989 SW EXPLO.
" 10-20	.001		
" 20-30	.001		
" 10	.001		
" 20	.001		
" 30	TR		
" 40	.004		
" 50	.003		
" 60	.001		
" 70	.001		
" 80	.008		
" 90	.001		
Y - 159	.012		
Y - 160	.001		
Y - 161	.002		

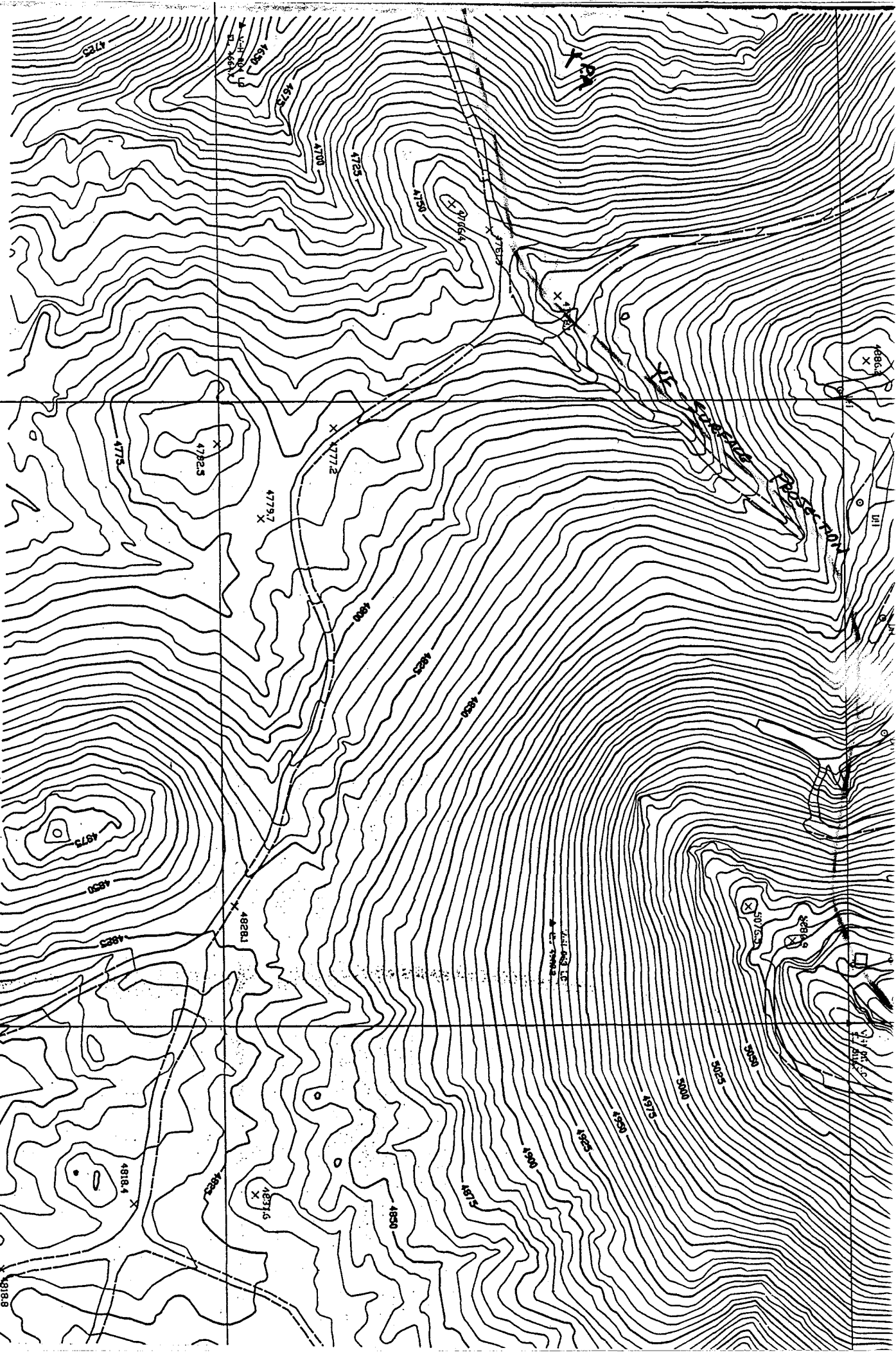
**Certified Assays When
Signed And Dated**
8-7-89 *Tom B. Edler*
DATE SIGNATURE

A V-11 552 LC
CL 47418

E 49000

E 50000

1" = 200'



September 7, 1989

R.L. Brown
New York Office

M.A. Miller
Monthly Report
August 1989
Yarnell Project

Drilling

Phase 3 drilling began at Hole 46 and at month's end was at Hole 67. This Phase is designed to test the SW extension of the ore zone and infill drilling in the main area of the deposit near the top of the hill and along the outcrop of the Y.F.Z. The distance between drill holes in the area of infill drilling is 75-100' apart. Additional holes are planned around YM-50 which assayed in 85' at .064 opt Au and ended in ore. This is along the SW end of the deposit where stripping ratios are <1:1. All collar locations and elevations are completed to Hole 62. The air photos and topographic mapping done by Western Air have been completed and photos are in our possession.

Surveying

95% of the claim block has been surveyed, which includes all YAR claims, patented claims, and most of the unpatented option claims (Layton Group). Some of the Victoria corners have been searched for, but not yet found due to topography, ground cover, and inaccurate ground versus written descriptions. In addition, several points on the Right of Way Boundary along U.S. 89 have been located and surveyed.

Geologic Mapping

The trace of the Yarnell Fault Zone has been mapped on the ground and located. In addition, the projection of the ore zone to the surface has been done. The north and west side of Yarnell Hill has been mapped. There appears to be a higher mineralized zone parallel to the Yarnell structure based upon close drill holes YM-39, YM-8, mapping underground and sampling of the west adit and rock chip outcrop sampling. Thickness and grade are +30' at +.03 opt Au.

Results received from sampling a small adit in the southern basin suggest that the adit may be near the Y.F.Z. outcrop. The adit was unmineralized WRT gold.

Forecast

Geologic interpretation of the sections will continue as drilling continues. Mapping will continue outside of immediate mine area with particular emphasis for discovery on each unpatented claim. The underground workings will be Brunton and tape surveyed.

MAM:mek

cc: W.L. Kurtz, J.D. Sell



Mark A. Miller

ASARCO

Exploration Department
Southwestern United States Division

CERTIFIED MAIL
RETURN RECEIPT

September 7, 1989

Bureau of Land Management
Arizona State Office
Mining Claims Section
P.O. Box 16563
Phoenix, AZ 85011

Amended Notices of Location
YAR Claims
Yarnell Mining District
Yavapai County, AZ


Gentlemen:

In accordance with Section 314 of the Federal Land Policy and Management Act of 1976, enclosed are the following Amended Notices of Location with maps as recorded in Yavapai County, Arizona.

<u>Name of Claim</u>	<u>Date of Location</u>	<u>Date of Amend.Loc.</u>	<u>Recorded Book</u>	<u>Pages</u>	<u>BLM Serial Number</u>
YAR #22	3/13/89	8/14/89	2174	858-859	AMC 294337
YAR #25	3/14/89	8/14/89	2174	860-861	AMC 294340
YAR #26	3/14/89	8/14/89	2174	862-863	AMC 294341
YAR #27	3/14/89	8/14/89	2174	864-865	AMC 294342
YAR #28	3/14/89	8/14/89	2174	866-867	AMC 294343

Asarco's check of \$25.00 as your filing fee and a stamped return envelope for your receipt and accounting advise are also enclosed.

Very truly yours,


William D. Gay
Land Engineer, SWED

WDG:mek
encs.

cc: J.D. Sell
M.A. Miller
R.L. Brown
C.L. Snow

September 7, 1989

J.D. Sell

August 1989
Yarnell Progress Report

1. Claim Survey, Clean-up. This is complete except for the ongoing search for several corners of the Victoria group and the Grey Mare group. Don Melhado has been given coordinates of surveyed claim points.
2. Underground Survey. This will be started in early September and completed about mid-September.
3. Claim Staking. Consisted of locating YAR-41 and YAR-42 over suspected fractions on northeast end of patented claims.

WDG:mek
Att.

William D. Gay
William D. Gay

cc: W.L. Kurtz

YARNELL PROJECT EA-0444

Yavapai County, Arizona

AREA OF ACTIVITY	PERSONNEL	1989										1990
		JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.			
Geol. Mapping/Alteration Studies - Claim Area	MAM	XXXX										
Sampling for discovery - Claim Area	MAM	XXXX	X									
Permits, Drilling, as needed	MAM	XXXX	X									
Rotary Drilling, 25 holes, sites, logging	SPD-JJM-MAM	XXXX	XXXX									
Drill Hole Location Survey	WDG	XXXX	XXXX	X								
Claim Survey, Clean-up	WDG	XXXX	(1)									
Re-Tuned ROI, Preliminary	SWMD	XXXX										
Base-Line Water Survey	WDG-MAM	XXXX	XXXX	XXXXX	XXXX	XXXX	XXXXX	XXXX				
Open-cut Sampling, Metallurgical	JJM-MAM	XX										
Aerial Survey Control Points	WDG	XX										
Permits - Establish Guidelines/Time Table	SWMD	XX										
Mapping/Sampling - Outside Claims	MAM	X	XXXX									
Claim Staking Anomalous Areas	MAM-WDG	XXXX	(3)	XXXX								
Local Demography (Yarnell/Glen Ilah)	JDS-Consultant	XX							XX			
Core Drilling, 4 holes, sites, logging, Metallurgy	SPD-JJM-MAM		XXXX									
Photography, Aerial	WDG-Contractor		X									
Blasting & Removal of Open-cut Metallurgical Sample	SWMD-Contractor		XX									
Topography Map, Mine Area/Photography Total Area	WDG-Contractor		XXX									
Underground Surveying	WDG-Contractor		XXX	X (2)								
Underground Sampling	WDG-JJM		X	X								
Final Drilling/Geology/Ore Reserve Est. Report	MAM-JDS			XX								
Permits for Mining/Metallurgical Operations	SWMD			XXXXX	XXXX	XXXX	XXXX	XXXXX	XXXX	XXXXX		
Column Leach Tests	MBD-McC		XX	XXXXX	XXXX							
Ore Reserve	SWMD-SWED			XXXX								
Water Supply Evaluation/Recommendations	MAM-WDG-SWMD				XXXX							
Development/Condemnation Drilling	MAM-SWMD					XXXX		XXXXX	XXXX	XXXXX		
Metallurgical Reports/Recommendations	MBD-McC					XXXX						
Feasibility Report	SWMD					XXXX						
Removal of Microwave Towers	WDG-Contractor					XXXX						
Mine/Metallurgical Plant Planning/Development	SWMD-MBD					XXXX		XXXXX	XXXX	XXXXX		

September 7, 1989

J.D. Sell

Structural Interpretation
Yarnell Project
Yavapai County, Arizona


Norgold brought a structural geologist, Dave Shaw, down to Yarnell for a quick look at the structural regime occurring in the Yarnell Deposit. Dave was able to trace the Yarnell Fault south to the valley floor (down by the dairy) thru road cuts and projections along structural contours. He has described a curvilinear surface, i.e. undulations on strike and dip. However, the resultant is a $N45-60^{\circ}E$, $30^{\circ}NW$ dipping structure of good continuity. The fabric seen within the fault, especially in the underground exposures suggests a thrust; top plate overriding lower plate.

Associated with the main Yarnell Fault are also antithetic faults (these dip away from the main structure) and synthetic faults dip with and curve away (listric). The significance of these synthetic faults are that splays from the Y.F.Z. may be pathways of mineralization into higher parts of the deposit. This might explain the "spikes" seen in some of the drill holes higher up in the mineralized section.

Dave will compile a structural contour map of the Yarnell Fault Zone. The $N40^{\circ}W$ structures very prevalent within the deposit are possibly old joint sets which have been cut by the Y.F.Z. There also appears to be a $N70^{\circ}W$ and $N10^{\circ}E$ joint set which is relatively young as it cuts thru structures and is unmineralized.

David will be submitting a report of his findings to Norgold.

MAM:mek



Mark A. Miller

cc: W.L. Kurtz
F.T. Graybeal

ASARCO

Exploration Department
Western USA

W. L. Kurtz
Manager

VIA FAX 604-685-8045

September 8, 1989

Mr. Christopher Moat, President
NORGOLD RESOURCES INC.
Vancouver, B.C.

Yarnell Project
Weekly Information

Dear Mr. Moat:

We are FAXing you assay results on Holes 66, 67, 68 and 69, along with a map showing their location.

Sincerely,

W. L. Kurtz, mek

W. L. Kurtz

WLK:mek

cc: J.D. Sell

remembered
to miss list
acts.

RLB 9/8/89

management at mission

LLB to TCO - Take over Yarnell & will take over project.

MAM to finish mapping, drilling, demand drilling.

follow-up, Mining Congress meeting - Sept 17-20 SF, CA,

set-up meeting w/ Kepske etc in Tucson.

4 dth. twin holes on regular holes (no those 9 needed)

use material for metallurgical.

PTG demand drilling, for on-going coming in.

discuss half core metall sample at Crowell

4 300 + 50

40 300

~~50~~

50 7 = 300

12 240

62 last

? Philpot - structure

DAM has WAG coordinate of claims

JDS
FILE

New York, N.Y., September 8, 1989

To: W. L. Kurtz
J. D. Sell

Diamond Drilling
Yarnell Project, Arizona

Being unable to get either of you by phone and having a hectic travel schedule (you will get my itinerary), I write instead. Please arrange as soon as possible to diamond drill 4 holes at Yarnell. These should twin existing RC holes (10 ft. spacing) which have reasonable lengths of ore grade mineralization and fair variations in grade. One hole should cut either the low grade 0.01-0.02 oz Au hangingwall or enough barren hangingwall +100 ft. to give the engineers some idea of rock strength for pit slope design purposes. I recall we talked of twinning 4 of the 5 holes which were being reassayed for reject homogeneity. Please confirm hole locations with me before the holes are collared.

Logging should be fully quantitative and the Mining Department should be invited to log for rock strength before splitting. We discussed core size which I recall was HQ, NQ, or NC; in any case large diameter exploration core, but not 6 inch core. Core should be split or sawed for assay. I prefer to select assay intervals which coincide with geological features which in any case should not exceed 10 ft. One or the other of you two must approve the intervals selected for assay before core is split. Involve as many people as you wish.

No doubt you will revise some of the above and add other thoughts. Important are start now, twin, large diameter, and Mining Department review before splitting. Also important is that we pay close attention to detail on everything regardless of how technically simple this project may look. Treat it as if this were a \$500 million development decision, because too many others are treating it as a toy. If we foul it up it might be very difficult to get a big one going. When things look simple, it's often because we don't understand them.


F. T. Graybeal

FTG:mc

cc: S. A. Anzalone

ASARCO

Exploration Department
Southwestern United States Division

September 8, 1989

Mr. Jerry L. Haggard
Apker, Apker, Haggard & Kurtz, P.C.
P.O. Box 10280
Phoenix, AZ 85064-0280

Yarnell Project
Yavapai County, AZ

Dear Jerry:

Enclosed are copies of the claim problem we discussed by telephone today.

We will not do anything soon, unless you discover something that requires attention.

Sincerely yours,

William D. Gay /mek

William D. Gay
Land Engineer, SWED

WDG:mek
Encs.

cc: W.L. Kurtz
J.D. Sell

OPTION AGREEMENT

This agreement is made and dated for reference the 16 day of September, 1988.

BETWEEN:

NORGOLD RESOURCES (US) INC., of 2380 Harbour Centre,
555 West Hastings Street, Vancouver, B.C., V6B 4N6

(hereinafter called "Norgold")

OF THE FIRST PART

AND:

DON JENKINS, 1632 Kile Street, Prescott,
Arizona, U.S.A., 86301

(hereinafter called "Jenkins")

OF THE SECOND PART

WHEREAS:

A. Jenkins is the registered and beneficial owner of the Y lode mining claims 1 through 7 inclusive located in Yavapai County, Arizona, BLM numbers 288934 through 288940, Book number 2078, Pages 420 through 435 (hereinafter called the "Property"); and

B. Jenkins has attended the Vancouver office of Norgold with a proposal to grant to Norgold, the exclusive right and option to purchase the Property under the terms contained herein.

NOW THEREFORE THIS AGREEMENT WITNESSES that in consideration of the premises and of the mutual covenants and agreements hereinafter contained the parties hereto agree as follows:

1. Jenkins hereby grants to Norgold the exclusive right and option to purchase the Property in consideration for the issue and delivery to Jenkins of the following fully paid nonassessable shares in the capital stock of Norgold's parent, Norgold Resources Inc. (the "Shares") as follows:

1. 25,000 shares within ten days of the execution of a formal agreement between Norgold and Western Building and Mining Co. Inc. concerning the Yarnell Mine property located south of the town of Yarnell, Yavapai County, Arizona; and

- b) 25,000 shares subsequent to the expenditure of \$100,000 (US) on exploration on the Yarnell Project (i.e. any mining properties in which Norgold has an interest in the immediate vicinity of the Yarnell Mine); and
- c) 25,000 shares after further \$250,000 (US) has been spent on the Yarnell Project; and
- d) 50,000 shares upon receipt by Norgold of an independent feasibility study recommending that property contained within the Yarnell Project be placed into commercial production.

2. The issue of 25,000 shares to Jenkins as set out in subparagraph 1(a) above, is subject to the approval of this agreement by the Vancouver Stock Exchange. The three subsequent share issuances as set out in subparagraphs 1(b), 1(c) and 1(d) above are subject to the filing by Norgold of engineering reports acceptable to the Vancouver Stock Exchange. Subsequent to the expenditure of \$100,000, \$250,000, and the receipt of the aforesaid independent feasibility study, Norgold shall make appropriate filings with the Vancouver Stock Exchange to obtain its consent to the issue of shares to Jenkins as provided above.

3. The Shares shall be fully paid and nonassessable shares in the capital stock of Norgold and their issue shall be subject to the provisions of the B.C. Securities Act and Regulations thereto and the rules and policies of the Vancouver Stock Exchange.

4. Upon the issue and delivery of 125,000 shares to Jenkins as provided herein, Norgold shall be deemed to have exercised the option and Norgold shall be the legal and beneficial owner of the Property and thereafter Jenkins shall have no further interest in the Property whatsoever.

5. Upon the issue and delivery of the initial 25,000 shares to Jenkins, Jenkins shall cause the title to the Property to be registered in the name of Norgold subject to the terms of this agreement.

6. In the event of the termination of this agreement prior to the exercise of the option, title to the Property shall be retransferred by Norgold to Jenkins and Norgold shall deliver up possession of the Property to Jenkins free and clear of any liens, charges or encumbrances caused by the activities of Norgold on the Property.

7. Jenkins warrants and represents to Norgold that:

- a) he is the registered and beneficial owner of the Property free and clear of all liens, charges or encumbrances; and
- b) the Property has been properly staked and recorded in accordance with all applicable laws and regulations; and
- c) no other firm, person or corporation has any interest in the Property whatsoever; and

- d) he has the full right, title, power, capacity and authority to enter into this agreement.

8. While this agreement remains in effect and prior to the exercise of the option, Norgold shall:

- a) not permit any lien, charge or encumbrance to be registered against the Property unless the same is disputed in good faith by Norgold; and
- b) perform all exploration work on the Property in a prudent and miner-like manner; and
- c) maintain the Property in good standing by performing all required assessment work and paying any required governmental levies or fees in accordance with applicable laws and regulations.

9. This agreement may be terminated as follows:

- a) by Jenkins, in the event of the breach of a term or condition of this agreement by Norgold provided that in the event of such breach, Jenkins shall serve written notice on Norgold setting out the full particulars of such breach and allowing Norgold 30 days to remedy the breach complained of, if such breach can reasonably be remedied within a 30 day period, or allowing Norgold 30 days within which to commence and diligently pursue remedial action with respect to a breach that cannot reasonably be remedied within 30 days. In the event that Norgold fails to remedy the breach or commence and diligently pursue remedial action, as the case may be, this agreement shall terminate; and
- b) by Norgold, upon 30 days' notice in writing to Jenkins.

10. As a condition of Norgold's agreement to deliver shares to Jenkins pursuant to this agreement:

- a) all share certificates representing the Shares shall be delivered to Pacific International Securities Inc. of 660 - 700 West Georgia Street, Toronto-Dominion Tower, Pacific Centre, Vancouver, B.C., care of Mr. Ron Loewen, or other registered securities dealer in Canada as they be designated, from time to time, by Jenkins by notice in writing; and
- b) the Shares may only be sold by Jenkins through the facilities of the Vancouver Stock Exchange or other non-United States based stock exchange on which shares of Norgold Resources Inc. are listed for trading.

11. Time shall be of the essence of this agreement.

12. The parties agree to do such things and execute such documents as are necessary to carry out the full intent of this agreement.

13. Unless otherwise provided herein, any notice, payment, or other communication to a party under this Agreement may be made, given or served by telegram, facsimile or hand delivery addressed as follows:

(a) If to Norgold:

Norgold Resources (US) Inc.
2380 Harbour Centre
555 West Hastings Street
Vancouver, B.C. V6B 4N6

with copy to:

Rand & Edgar
Barristers & Solicitors
2200 Hongkong Bank of Canada Building
885 West Hastings Street
Vancouver, B.C. V6C 3E8

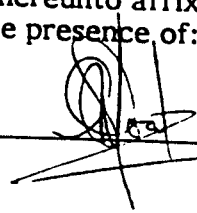
(b) If to Don Jenkins:

Don Jenkins
1632 Kile Street
Prescott, Arizona
U.S.A. 86301

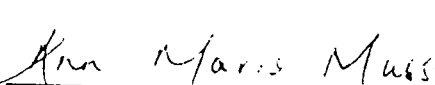
Any such notice, payment or other communication shall be deemed to have been given or served on the day after it was delivered for transmission. Each party may change its address for service at any time by notice in writing to the other.


14. This agreement shall enure to the benefit and be binding upon the parties hereto and their respective heirs, administrators, descendants and assigns.

IN WITNESS WHEREOF the parties have negotiated and executed this agreement in Vancouver, British Columbia as of the date and year first above written.

THE COMMON SEAL OF NORGOLD
RESOURCES (US) INC.
was hereunto affixed
in the presence of:

_____)
_____)

C/S

SIGNED, SEALED AND DELIVERED
by Don Jenkins in the
presence of:

_____)
_____)


_____)
Don Jenkins



GOLD RIVER EXPLORATION CO.

April 11, 1989

ASARCO Incorporated

James D. Sell
ASARCO
Exploration Dept.
P.O. Box 5747
Tucson, AZ 85703

APR 13 1989

SW Exploration

Dear Mr. Sell:

I have been advised by Michael Philpot of Norgold Resources Inc. that ASARCO has staked unpatented mining claims over pre-existing claims staked and recorded by us. It is my understanding that ASARCO considers the Y and Sun claims invalid. I have been advised by my claim staking crew that these claims were properly staked. Notices and corners were installed and end-center monuments were marked by rock mound and flagging. If these claims are invalid then I can honestly say that there are very few valid claims in the State of Arizona. An honest effort was made and I firmly believe that any judicial review will uphold the validity of these claims. In any case ASARCO does not have the right to arbitrarily invalidate these or any other claims....no law has been passed giving ASARCO this right.. ASARCO has no legal right to stake over the top of the Y and Sun claims. You may have the right to contest the validity of the claims, a right given all U.S. citizens over a certain age, but invalidation is determined by the BLM and the judicial process.

In January an ASARCO representative was expressly told to discuss the status of the Y and Sun claims with me personally. If there was concern by ASARCO regarding these claims it should have been dealt with in a professional manner....not in such an underhanded manner as was done. You owed us the professional courtesy of proper communication and subsequent action by all parties concerned. ASARCO has attacked my professional integrity and without justification. It is no wonder that large mining concerns have such a poor reputation and rapport with the small miner.

Since ownership of these claims now rests with Norgold any conflicts of ownership or title lies between Norgold and ASARCO; however, I shall not allow our professional integrity to be damaged by ASARCO. If ASARCO does not apologize for this unprofessional manner of handling this situation I will have no choice but to vigorously pursue this matter further. I will appreciate your immediate attention to this obvious conflict.

Sincerely,

Don L. Jenkins
Don L. Jenkins

cc: Norgold Resources
Hill & Savoy
BLM

1385 Iron Springs Road • Suite 234 • Prescott • Arizona • 86301
P.O. Box 4106 • Prescott • Arizona 86302

771-0056

ASARCO

Exploration Department
Western USA

W. L. Kurtz
Manager

April 14, 1989

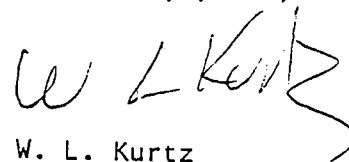
Mr. Don L. Jenkins
Gold River Exploration Co.
P.O. Box 4106
Prescott, Arizona 86302

Dear Mr. Jenkins:

Mr. Sell has shown me your letter of April 11, 1989 concerning the claim activities at Yarnell. I formally apologize to you for the manner in which Asarco handled the location of what was thought to be open ground. In hindsight, we should have more closely involved both you and Norgold before acting, so that all parties were in agreement on how to handle the situation.

Again, please accept my apology.

Very truly yours,



W. L. Kurtz

WLK:mek

cc: Norgold Resources
R.L. Brown
J.D. Sell

September 8, 1989

J.D. Sell

Specific Gravity Testing
Yarnell Project
Yavapai County, AZ

Twelve separate rock samples have been sent to McClelland Labs for specific gravity testing. The samples are representative of the various ore types and rock types found on the property. Descriptions of the samples are attached along with a map showing sample locations.

*PAX
See 10-18-89 or DEC memo 11/1/89
note from McClelland Labs.
"help"!*



Mark A. Miller

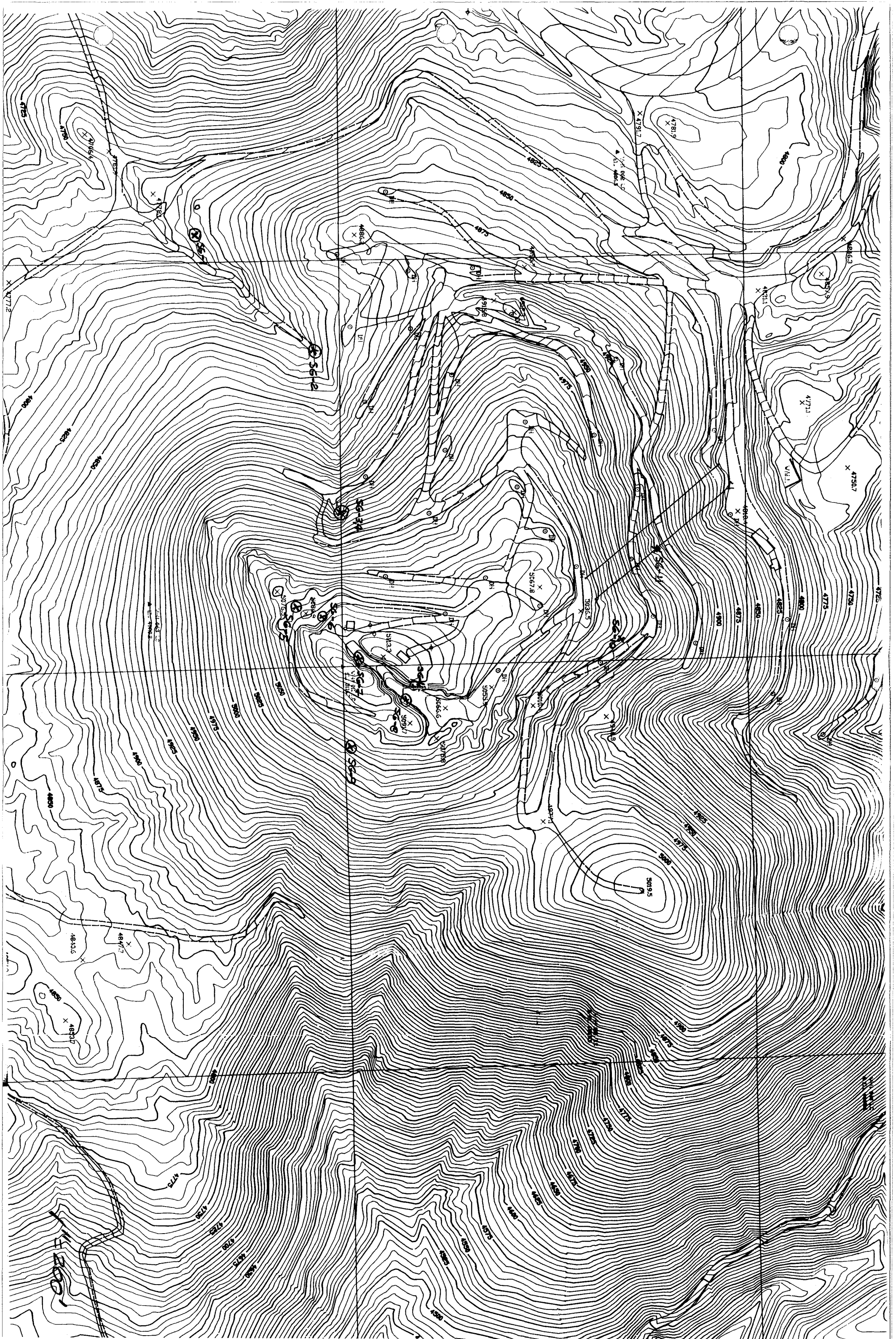
MAM:mek
Att.

cc: W.L. Kurtz
F.T. Graybeal
D.E. Crowell

Also See metcons 16 Oct 89

SPECIFIC GRAVITY SAMPLE DESCRIPTIONS

- YSG-1 Barr/Human Shaft - 3' quartz vein - probable Y.F.
- YSG-2 Lower South Adit (mouth) H.W. rocks of Yarnell Fault Zone (YFZ) sericitic → wk argillic alteration ore zone 1-2% limonite esp. on fractures.
- YSG-3 Upper South Adit (mouth) YFZ? - siliceous hematitic rock, very dense.
- YSG-4 Upper South Adit - partly siliceous, sericitic → wk argillic 1% limonite on fractures.
- YSG-5 Siliceous rib below open cut on SW end. Probably F.W. rocks of YFZ ore zone ("B" Zone) argillic alteration (in part) of feldspars quartz veining with minor limonite.
- YSG-6 Cut south of Santa Fe Tower on lower road. Ore zone, sericitic alteration; quartz/limonite on fractures, 1-2% specular hematite.
- YSG-7 Ore from Open Cut - SE side at 110'. Sericitic → wk argillic, partly siliceous, 2-3% limonite/pyrite.
- YSG-8 Ore from Open Cut - 220' SE. Mod/strong siliceous rock sericitic alteration.
- YSG-9 2nd Lower Road below SE side of Open Cut. Very weakly altered biotite present - feldspars very sltly. sericitic.
- YSG-10 100' Updip from YM-18: Weakly altered granite biotite present, very weakly oxidized.
- YSG-11 Underground Low Grade Sample 230-240'. Dense partly siliceous, few quartz veins and limonite on fractures <1%
- YSG-12 Open Cut NW side approx. 230'. Strongly limonitic and sericitic within <.01 opt Au grade range area.



ASARCO

Southwestern Exploration Division

JDS

September 8, 1989

W.L. Kurtz

Norgold Agreement

Jerry Haggard called to say that he had reread the agreement and with comments that he thought needed addressing. He will have those comments back from Woods-Brown-Graybeal soon, and if you or I have any comments, he'd like to have them -- or hear from us so he can start on the FINAL.

JDS:mek


James D. Sell

ASARCO

Southwestern Exploration Division

September 8, 1989

W.L. Kurtz/J.D. Sell

Yarnell Project
Information Memo

Disregard my memo dated 9/6/89. Today I received the letter which is attached to this memo.

Discussed the problem again with Jerry and our present position is to do nothing and let the Sun and Y claims become invalid for no assessment work. The only problem might be if D. Jenkins would file assessment work on his Y claims, which is due by 12/30/89. Will check county records to keep track of this about once a month.

WDG:mek

William D. Gay /mek
William D. Gay

cc: M.A. Miller

LAW OFFICES OF
APKER, APKER, HAGGARD & KURTZ, P.C.

A PROFESSIONAL CORPORATION

PARK ONE

2111 EAST HIGHLAND AVENUE, SUITE 230

PHOENIX, ARIZONA 85016

AREA CODE 602 TELEPHONE 381-0085

MAILING ADDRESS
P. O. BOX 10280
PHOENIX, ARIZONA 85064-0280

TELECOPIER
(602) 956-3457

BURTON M. APKER*
JERRY L. HAGGARD**
DAVID B. APKER***
GERRIE APKER KURTZ
JOHN R. FITZPATRICK

September 6, 1989

*ALSO ADMITTED IN WISCONSIN
**ALSO ADMITTED IN DISTRICT OF COLUMBIA AND KANSAS
***ALSO ADMITTED IN COLORADO

Mr. W. D. Gay
Land Engineer
ASARCO Incorporated
Southwestern Exploration Department
P.O. Box 5747
Tucson, Arizona 85703

ASARCO

SEP 8 1989

SW Exploration

Re: Yarnell Project

Dear Mr. Gay:

In your telephone call on August 29, you inquired about the effect of ASARCO locating the YAR claims over the Sun claims which had been located earlier by Don Jenkins as agent for Norgold. Your particular concern was whether the YAR claims could be valid to the extent they may have been located over any valid Sun claims.

I advised you that, at least in Arizona, the relocation of a mining claim by the owner of his own prior claim is effective as to the relocation, does not evidence an intention to abandon the original claim, and even negates an intention to abandon the ground. Hartman Gold Mining Co. v. Warning, 40 Ariz. 267 (1932). The same rule applies to a co-owner relocating over the claims of the other co-owner which is the case in the ASARCO-Norgold situation. 2 Am. L. of Mining § 38.03[1] (2d Ed. 1984). In making such relocations, we advise as an additional safeguard, that the following language be included in the relocation notice:

" All of the requirements of law relating to the location of mining claims have been or will be timely complied with by this relocation, but the locator by this relocation does not waive or abandon any rights it may have under and by virtue of said original location."

After a claim is relocated, there is a question as to whether assessment work and filings should be continued for the original claim. Although there are no decisions on this point, it is generally thought to be the safest course to duplicate the amount of work and filings for the original and relocated claims if it is desired to continue relying upon whatever validity there may have been in the original claim. An example of this situation would be a land withdrawal occurring

Mr. W. D. Gay
September 5, 1989
Page 2

between the location of the original and relocated claims. If the purpose is only to preserve whatever protection the original claim may provide against a hostile location between the original and relocated claim locations, that purpose may be served by including the nonwaiver of rights language in the relocation notice and abandoning the original claim after relocation, thereby avoiding the duplicated assessment work and filings.

However, the usual situation described above is clouded by the following sentence contained in each of the ASARCO location notices of the YAR claims:

"Any pre-existing valid mineral rights within the boundaries of this claim as of this date are not claimed by the claimant."

This statement could be taken to mean that the YAR claims do not claim or occupy mineral rights in any of the land occupied by any valid Sun claims. Although that sentence may have been included in the YAR claim notices for the purpose of reassuring other owners of claims which may be overlapped by the YAR claims, its meaning could well be extended to the Sun claims with the effect being that possibly parts of the Sun claims which are valid would not be located by the YAR claims but that any parts of the Sun claims which are not valid would be located by the YAR claims. Since we do not know what Sun claims or parts thereof may be valid or invalid, it would be risky to simply abandon the Sun claims.

Therefore, in view of this unusual situation, we do recommend that the Sun and YAR claims be relocated again with a notice containing the non-waiver of rights language stated above. Then, at some short time later, the Sun and YAR claims would be abandoned subject to the preservation of rights to that date. Forms of a relocation notice and of a relinquishment and abandonment for that purpose are enclosed.

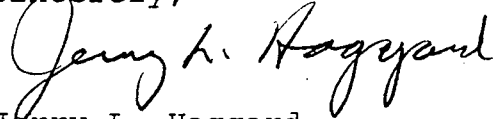
An alternative would be to simply continue with the claims as they now are but being certain that the full required amount of assessment work is performed for each of the Sun claims and YAR claims and that each set of claims be included in assessment work affidavits filed with the BLM.

Before carrying out either of the alternative actions we have proposed, these procedures should be cleared with Norgold

Mr. W. D. Gay
September 5, 1989
Page 3

and its counsel. Please feel free to call with any further questions regarding the above situation.

Sincerely,



Jerry L. Haggard
For APKER, APKER, HAGGARD
& KURTZ, P.C.

JLH/jb
Enclosure

cc: James L. Woods, Esq.

RELINQUISHMENT AND ABANDONMENT OF MINING CLAIMS

In order to perfect, cover any gaps between, and to realign boundaries of the Sun #1 through Sun #15 unpatented mining claims described on Exhibit A hereto and held by Norgold Resources (US) Inc., ASARCO Incorporated, being in privity of contract with Norgold Resources (US) Inc., located the same lands covered by the aforesaid Sun claims with the YAR Nos. 1 through 30 unpatented mining claims described on Exhibit B hereto. The land now being fully covered and held by the aforesaid YAR mining claims, Norgold and ASARCO, effective on the date of this instrument, hereby relinquish and abandon the Sun unpatented mining claims described on Exhibit A hereto.

DATED this _____ day of _____, 1989.

ASARCO Incorporated

By _____

Its _____

NORGOLD RESOURCES (US) INC.

By _____

Its _____

STATE OF _____)
County of _____) ss.

The foregoing instrument was acknowledged before me this _____ day of _____, 1989 by _____ of ASARCO Incorporated, a New Jersey corporation, on behalf of the corporation.

Notary Public

My Commission expires:

STATE OF _____)
County of _____) ss.

The foregoing instrument was acknowledged before me this _____ day of _____, 1989 by _____ of Norgold Resources (US) Inc., a _____ corporation, on behalf of the Corporation.

Notary Public

My Commission expires:

ARIZONA
NOTICE OF RELOCATION
(Lode Claim)

Notice is hereby given that _____, whose mailing address is _____, by its undersigned agent, makes this relocation of the _____ lode mining claim in the _____ Mining District, County of _____, State of Arizona.

The general course of the claim is from _____ to _____, and said claim is located within the _____ quarter(s) of Section _____, Township _____, Range _____, GSRB&M, Arizona.

The location monument is in Section _____, Township _____, Range _____, GSRB&M, Arizona.

This Notice is posted upon a location monument on the centerline of the claim, said monument being located approximately _____ feet _____ and _____ feet _____ from the _____ corner of Section _____, Township _____, Range _____, GSRB&M, Arizona. This claim is _____ feet in length, running _____ feet in a _____ direction from said location monument, and _____ feet in width (_____ feet on either side of the centerline of the claim), forming a claim in the shape of a parallelogram.

The undersigned claims the ground as depicted on the attached U.S.G.S. topographic map or sketch.

This claim has been monumented in accordance with State and Federal law.

This claim is intended as a relocation of the _____ lode mining claim, covering all or a part of the same ground included in the _____ lode mining claim. The original location notice and amended location notice(s), if any, for the _____ lode mining claim are recorded in the Official Records of _____ County, Arizona, and filed with the Bureau of Land Management, Department of the Interior, as follows:

Name of Claim	Recorded		BLM Serial Number
	Date	Book Page	

All of the requirements of law relating to the location of mining claims have been or will be timely complied with by this relocation, but the locator by this relocation does not waive or abandon any rights it may have under and by virtue of said original location.

Relocated, dated and posted on the ground this _____ day of _____, 19____. Time: _____.

[name of corporation] (owner)

By _____
Agent

Instructions for Arizona Notice of Relocation
(Lode Claim)

A Requirements for County Recording:

1. Record Notice of Relocation in the office of the county recorder within 90 days from the date of relocation.

2. Attach map, plat or sketch containing the information required by A.R.S. § 27-203(C).

B, Requirements for BLM Filing:

1. File copy of the official record of the Notice of Relocation and U.S.G.S. topographic map, sketch or narrative of claim in the State Office of the BLM within 90 days from the date of relocation.

2. Pay \$5.00 for each claim.

Scott Perkins
913/888-5266

Western Air Mg Leo
Lenexa, KA.

September 9, 1989

J.D. Sell

Original Pulp Assays vs.
Reject New Pulp Assays
Yarnell Project
Yavapai County, AZ

The attached tabulations compare the original pulp assay to a new pulp from reject assay. Additionally, the new pulp was refired as there was a possibility of a lab problem. Results of original pulp versus new pulp show a percent change from 0-30% with the new pulp usually higher (Table 2). The refire of the new pulp versus new pulp shows a percent change from 0-20% with a variance of about the same as seen in the original pulp versus new pulp. I do not think that we have a problem in the Assay Lab, but I cannot explain the percent difference in the original versus new assays, particularly since the new assays are higher than original. Perhaps this is a function of the ore?

It seems that the greatest amount of variance was in holes YM-7, 8, 12, 20. This would cover two drilling periods, 1-9, 10-36.

I recommend that we try to resolve this problem by checking 2-3 additional holes within the intervals mentioned (1-9, 10-36) and see if we can isolate the discrepancy. Possibly we can readjust the assays if an upgrade has occurred. Results past the 10-36 holes appear to be within acceptable limits.

Comments please?

MAM:mek

*Jim,
Corrected
DATA-*

[Signature]
11er

cc: RLB/FTG
WKK
SLL

Mek.
*w/ ORIGINAL ASSAY
SHEETS-*

ATTACH H

YARNELL PROJECT

ORIGINAL PULP ASSAY VS. REJECT NEW PULP ASSAY

Original Hole Footage	Original Pulp	New Pulp	New Pulp Refire (Check, Refire)
<u>YM-5</u>			
200-205	.029	.051 ✓	.061 ✓ (.062)
205-210 MISSING 210-215	.195 → .195	.056 ✓	.032 ✓
215-220	.020	.011 ✓	.003 ✓
220-225	.001	.004 ✓	.003 ✓
225-230	.011	.031 ✓	.032 ✓
230-235	.055	.009 ✓	.009 ✓
235-240	.006	.005 ✓	.005 ✓
240-245	.051	.032 ✓	.052 ✓
245-250	.013	.070 ✓	.076 ✓
250-255 MISSING 255-260	.024 → .024	.034 ✓	.022 ✓
260-265	.027	.043 ✓	.050 ✓
265-270	.025	.019 ✓	.017 ✓
270-275	.010	.014 ✓	.012 ✓
275-280	.013	.031 ✓	.033 ✓
280-285	.014	.020 ✓	.021 ✓
285-290	.065	.096 ✓	.094 ✓
290-295 MISSING 330-335	.004 → .004	.016 ✓	.012 ✓
345-350	.037	.030 ✓	.036 ✓
200- 350 350	.032	.032 .0318	0-90' Composite Footage .031 Composite Grade .0317 .032
<u>YM-7</u>			
155-160	.024	.030 ✓	.024 ✓
160-165	.016	.041 ✓	.017 ✓
165-170	.034	.049 ✓	.053 ✓
170-175	.091	.080 ✓	.095 ✓
175-180	.055	.077 ✓	.078 ✓
180-185	.142	.149 ✓	.148 ✓
185-190	.020	.012 ✓	.012 ✓
190-195	.012 → .011*	.012 ✓	.011 ✓
195-200	.053	.048 ✓	.050 ✓
200-205	.036	.061 ✓	.057 ✓
205-210	.042	.051 ✓	.045 ✓
210-215	.062	.086 ✓	.071 ✓
215-220	.056	.060 ✓	.055 ✓
220-225 STOP 225-230	.022	.018 ✓	.016 ✓
155-230	.0474	.052 .0554	70 0-60' Composite Footage .052 Composite Grade .0524

YARNELL PROJECT
ORIGINAL PULP ASSAY VS. REJECT NEW PULP ASSAY

<u>Original Hole Footage</u>	<u>Original Pulp</u>	<u>New Pulp</u>	<u>New Pulp Refire (Check Refire)</u>
<u>YM-8</u>			
225-230	.047	.066 ✓	.066 ✓
235-240	.029	.055 ✓	.052 ✓
240-245	.018	.025 ✓	.027 ✓
245-250	.013	.018 ✓	.015 ✓
250-255	.048	.056 ✓	.052 ✓
255-260	.087	.108 ✓	.100 ✓
260-265	.063	.093 ✓	.092 ✓
265-270	.023	.049 ✓	.042 ✓
270-275	.037	.046 ✓	.046 ✓
225-275	.040	.057	0-45' Composite Footage .054 Composite Grade .055
<u>YM 12</u>			
150-155 ✓	.013 ✓	.018 ✓	.022
155-160 ✓	.068 ✓	.084 ✓	.056 (.041)
160-165 ✓	.021 ✓	.040 ✓	.035
165-170 ✓	.096 ✓	.126 ✓	.094 (.139)
170-175 ✓	.031 ✓	.053 ✓	.030 (.029)
175-180 ✓	.074 ✓	.032 ✓	.032
180-185 ✓	.008 ✓	.009 ✓	.009
195-200 ✓	.018 ✓	.025 ✓	.021
200-205 ✓	.049 ✓	.092 ✓	.069 (.067)
205-210 ✓	.025 ✓	.023 ✓	.020
210-215 ✓	.045 ✓	.083 ✓	.070
215-220 ✓	.040 ✓	.030 ✓	.026
220-225 ✓	.024 ✓	.022 ✓	.022
225-230 ✓	.015 ✓	.014 ✓	.021
230-235 ✓	.034 ✓	.034 ✓	.023 (.034)
235-240 ✓	.030 ✓	.043 ✓	.04
150-240	.032 .036	.04 .045	0-90' Composite Footage .032 Composite Grade .037
<u>YM-20</u>			
0-5	.044 ✓	.068 ✓	.060 ✓
5-10	.021 ✓	.016 ✓	.017 ✓
10-15	.010 ✓	.011 ✓	.016 ✓
15-20	.015	.018 ✓	.013 ✓
20-25	.052	.083 ✓	.052 ✓ (.047)
25-30	.331	.386 ✓	.348 ✓
30-35	.024	.032 ✓	.026 ✓
0-35	.071 .070	.087 .088	0-35' Composite Footage .076 Composite Grade .070

YARNELL PROJECT
ORIGINAL PULP ASSAY VS. REJECT NEW PULP ASSAY

<u>Original Hole Footage</u>	<u>Original Pulp</u>	<u>New Pulp</u>	<u>New Pulp Refire (Check Refire)</u>
<u>YM-24</u> ¹¹²			
75-80	.229 ✓	.281 ✓	.261 ✓
80-85	.118 ✓	.165 ✓	.164 ✓
85-90	.052 ✓	.061 ✓	.061 ✓
90-95	.081 ✓	.091 ✓	.087 ✓
95-100	.095 ✓	.108 ✓	.092 ✓
100-105	.038 ✓	.114 ✓	.102 ✓
105-110	.099 ✓	.115 ✓	.106 ✓
110-115	.029 ✓	.036 ✓	.034 ✓
75-115	.092 .093	.121 ✓	0-40' Composite Footage .113 ✓ Composite Grade
<u>YM-40</u>			
275-280	.023 ✓	.030 ✓	.028 ✓
280-285	.018 ✓	.020 ✓	.019 ✓
285-290	.012 ✓	.023 ✓	.015 ✓ (.013)
290-295	.129 ✓	.123 ✓	.076 ✓
295-300	.036 ✓	.045 ✓	.045 ✓
300-305	.041 ✓	.046 ✓	.038 ✓
305-310	.027 ✓	.046 ✓	.036 ✓
310-315	.177 ✓	.168 ✓	.137 ✓
315-320	.071 ✓	.096 ✓	.057 ✓
320-325	.013 ✓	.016 ✓	.016 ✓
325-330	.021 ✓	.045 ✓	.062 ✓
330-335	.162 ✓	.119 ✓	.110 ✓
335-340	.043 ✓	.056 ✓	.052 ✓
340-345	.034 ✓	.046 ✓	.043 ✓
355-360	.131 ✓	.069 ✓	.066 ✓
360-365	.043 ✓	.042 ✓	.049 ✓
365-370	.079 ✓	.063 ✓	.030 ✓
370-375	.033 ✓	.063 ✓	.062 ✓
375-380	.018 ✓	.026 ✓	.025 ✓
345-350	.108 ✓	.142 ✓	.136 ✓
350-355	.081 ✓	.108 ✓	.139 ✓
275- ³⁸⁰ 355	.062 ✓	.066 ✓	0-105' Composite Footage .053 Composite Grade .059
<u>YM-3</u> ¹³⁵			
130-235	.021 ✓	.023 ✓	.028 ✓
135-140	.031 ✓	.029 ✓	.027 ✓
140-145	.047 ✓	.049 ✓	.044 ✓
160-165	.047 ✓	.073 ✓	.081 ✓
165-170	.068 ✓	.074 ✓	.064 ✓
170-175	.091 ✓	.040 ✓	.041 ✓

YARNELL PROJECT

ORIGINAL PULP ASSAY VS. REJECT NEW PULP ASSAY

<u>Original Hole Footage</u>	<u>Original Pulp</u>	<u>New Pulp</u>	<u>New Pulp Refire (Check Refire)</u>
<u>YM-3 (Continued)</u>			
175-180	.055 ✓	.081 ✓	.062 ✓
180-185	.035 ✓	.051 ✓	.054 ✓
185-190	.073 ✓	.107 ✓	.094 ✓
190-195	.080 ✓	.051 ✓	.101 ✓
195-200	.129 ✓	.113 ✓	.129 ✓
200-205	.016 ✓	.010 ✓	.010 ✓
130-205	.057 ✓ .058	.058 ✓	0-60' Composite Footage .061 ✓
<u>YM-50</u>			
0-5	.053	.061	
5-10	.081	.092	
10-15	.128	.119	
15-20	.016	.008	
20-25	.010	.006	
25-30	.009	.009	
30-35	.008	.005	
35-40	.008	.015	
40-45	.029	.017	
45-50	.275	.288	
50-55	.011	.011	
55-60	.080	.062	
60-65	.002	.003	
65-70	.081	.146	
70-75	.018	.011	
75-80	.102	.168	
80-85	.173	.108	

85' @ .064 ✓ 85' @ .062 ✓
-4% Difference between Original & New Pulp

YM-56

70-75	.083	.058
75-80	.028	.026
80-85	.027	.038
85-90	.105	.091
90-95	.105	.123
95-100	.128	.116
100-105	.095	.104

35' @ .082 35' @ .079
-4% Difference between Original & New Pulp

YARNELL PROJECT

ORIGINAL ASSAY VERSUS NEW REJECT ASSAY

(% Difference, Weighted Grade for Entire Interval)

Original Hole # (New Hole #)	Original Hole Assay	New Reject Assay	%Diff.from Orig. Hole	Refire New Pulp	%Diff.from New Reject	%Diff.from Orig. Hole
YM-5 (1A)	^{.033} .032	^{.032} .031	-3%	^{.032} .031	0	-3%
YM-7 (1B)	.047	^{.055} .052	⁺¹⁵ +10%	.052	0 +9%	+10%
YM-8 (1C)	.041	.057	+30%	^{.055} .054	+5%+3.5	+26% ^{25.5} %
YM-12 (1D)	^{.036} .032	.045	+20%	^{.037} .032	¹⁸ +20%	0 +3%
YM-20 (1E)	^{.070} .071	^{.088} .087	^{+20.5} +18%	.076	^{+1.4} +12%	⁸ +6%
YM-24 (1F)	^{.093} .092	.121	+24%	.113	+7%	+19%
YM-40 (1G)	.062	.066	+6%	^{.059} .053	⁺¹¹ +20%	-15 -5%
YM-3 (1J)	^{.058} .057	.058	+2 0	.061	-5%	+6 +5
YM-50	.064	.062	-4%			
YM-56	.082	.077	-4%			

September 9, 1989

J.D. Sell

Original Pulp Assays vs.
Reject New Pulp Assays
Yarnell Project
Yavapai County, AZ

The attached tabulations compare the original pulp assay to a new pulp from reject assay. Additionally, the new pulp was refired as there was a possibility of a lab problem. Results of original pulp versus new pulp show a percent change from 0-30% with the new pulp usually higher (Table 2). The refire of the new pulp versus new pulp shows a percent change from 0-20% with a variance of about the same as seen in the original pulp versus new pulp. I do not think that we have a problem in the Assay Lab, but I cannot explain the percent difference in the original versus new assays, particularly since the new assays are higher than original. Perhaps this is a function of the ore?

It seems that the greatest amount of variance was in holes YM-7, 8, 12, 20. This would cover two drilling periods, 1-9, 10-36.

I recommend that we try to resolve this problem by checking 2-3 additional holes within the intervals mentioned (1-9, 10-36) and see if we can isolate the discrepancy. Possibly we can readjust the assays if an upgrade has occurred. Results past the 10-36 holes appear to be within acceptable limits.

Comments please?

MAM:mek



Mark A. Miller

YARNELL PROJECT

ORIGINAL PULP ASSAY VS. REJECT NEW PULP ASSAY

<u>Original Hole Footage</u>	<u>Original Pulp</u>	<u>New Pulp</u>	<u>New Pulp Refire (Check Refire)</u>	
<u>YM-5</u>				
200-205	.029	.051	.061	(.062)
210-215	.195	.056	.032	
215-220	.02	.011	.003	
220-225	.001	.004	.003	
225-230	.011	.031	.032	
230-235	.055	.009	.009	
235-240	.006	.005	.005	
240-245	.051	.032	.052	
245-250	.013	.070	.076	
255-260	.024	.034	.022	
260-265	.027	.043	.050	
265-270	.025	.019	.017	
270-275	.01	.014	.012	
275-280	.013	.031	.033	
280-285	.014	.020	.021	
285-290	.065	.096	.094	
330-335	.004	.016	.012	
345-350	.037	.030	.036	
200-300	.032	.031	0-90'	Composite Footage Composite Grade
<u>YM-7</u>				
155-160	.024	.03	.024	
160-165	.016	.041	.017	
165-170	.034	.049	.053	
170-175	.091	.080	.095	
175-180	.055	.077	.078	
180-185	.142	.149	.148	
185-190	.02	.012	.012	
190-195	.012	.012	.011	
195-200	.053	.048	.05	
200-205	.036	.061	.057	
205-210	.042	.051	.045	
210-215	.062	.086	.071	
215-220	.056	.06	.055	
225-230	.022	.018	.016	
155-230	.047	.052	0-60'	Composite Footage Composite Grade

YARNELL PROJECT
ORIGINAL PULP ASSAY VS. REJECT NEW PULP ASSAY

<u>Original Hole Footage</u>	<u>Original Pulp</u>	<u>New Pulp</u>	<u>New Pulp Refire (Check Refire)</u>
<u>YM-8</u>			
225-230	.047	.066	.066
235-240	.029	.055	.052
240-245	.018	.025	.027
245-250	.013	.018	.015
250-255	.048	.056	.052
255-260	.087	.108	.100
260-265	.063	.093	.092
265-270	.023	.049	.042
270-275	.037	.046	.046
225-275	.04	.057	0-45' Composite Footage .054 Composite Grade
<u>YM 12</u>			
150-155	.013	.018	.022
155-160	.068	.084	.056 (.041)
160-165	.021	.04	.035
165-170	.096	.126	.094 (.139)
170-175	.031	.053	.03 (.029)
175-180	.074	.032	.032
180-185	.008	.009	.009
195-200	.018	.025	.021
200-205	.049	.092	.069 (.067)
205-210	.025	.023	.02
210-215	.045	.083	.07
215-220	.04	.03	.026
220-225	.024	.022	.022
225-230	.015	.014	.021
230-235	.034	.034	.023 (.034)
235-240	.03	.043	.04
150-240	.032	.04	0-90' Composite Footage .032 Composite Grade
<u>YM-20</u>			
0-5	.044	.068	.06
5-10	.021	.016	.017
10-15	.010	.011	.016
15-20	.015	.018	.013
20-25	.052	.083	.052 (.047)
25-30	.331	.386	.348
30-35	.024	.032	.026
0-35	.071	.087	0-35' Composite Footage .076 Composite Grade

YARNELL PROJECT
ORIGINAL PULP ASSAY VS. REJECT NEW PULP ASSAY

<u>Original Hole Footage</u>	<u>Original Pulp</u>	<u>New Pulp</u>	<u>New Pulp Refire (Check Refire)</u>
<u>YM-24</u>			
75-80	.229	.281	.261
80-85	.118	.165	.164
85-90	.052	.061	.061
90-95	.081	.091	.087
95-100	.095	.108	.092
100-105	.038	.114	.102
105-110	.099	.115	.106
110-115	.029	.036	.034
75-115	.092	.121	0-40' Composite Footage .113 Composite Grade
<u>YM-40</u>			
275-280	.023	.03	.028
280-285	.018	.02	.019
285-290	.012	.023	.015 (.013)
290-295	.129	.123	.076
295-300	.036	.045	.045
300-305	.041	.046	.038
305-310	.027	.046	.036
310-315	.177	.168	.137
315-320	.071	.096	.057
320-325	.013	.016	.016
325-330	.021	.045	.062
330-335	.162	.119	.110
335-340	.043	.056	.052
340-345	.034	.046	.043
355-360	.131	.069	.066
360-365	.043	.042	.049
365-370	.079	.063	.03
370-375	.033	.063	.062
375-380	.018	.026	.025
345-350	.108	.142	.136
350-355	.081	.108	.139
275-355	.062	.066	0-105' Composite Footage .053 Composite Grade
<u>YM-3</u>			
130-235	.021	.023	.028
135-140	.031	.029	.027
140-145	.047	.049	.044
160-165	.047	.073	.081
165-170	.068	.074	.064
170-175	.091	.040	.041

YARNELL PROJECT
ORIGINAL PULP ASSAY VS. REJECT NEW PULP ASSAY

<u>Original Hole Footage</u>	<u>Original Pulp</u>	<u>New Pulp</u>	<u>New Pulp Refire (Check Refire)</u>
<u>YM-3 (Continued)</u>			
175-180	.055	.081	.062
180-185	.035	.051	.054
185-190	.073	.107	.094
190-195	.08	.051	.101
195-200	.129	.113	.129
200-205	.016	.01	.01
130-205			0-60' Composite Footage
	.057	.058	.061

<u>YM-50</u>			
0-5	.053	.061	
5-10	.081	.092	
10-15	.128	.119	
15-20	.016	.008	
20-25	.010	.006	
25-30	.009	.009	
30-35	.008	.005	
35-40	.008	.015	
40-45	.029	.017	
45-50	.275	.288	
50-55	.011	.011	
55-60	.08	.062	
60-65	.002	.003	
65-70	.081	.146	
70-75	.018	.011	
75-80	.102	.168	
80-85	.173	.108	

85' @ .064 85' @ .062
-4% Difference between Original & New Pulp

<u>YM-56</u>			
70-75	.083	.058	
75-80	.028	.026	
80-85	.027	.038	
85-90	.105	.091	
90-95	.105	.123	
95-100	.128	.116	
100-105	.095	.104	

35' @ .082 35" @ .079
-4% Difference between Original & New Pulp

TABLE 2YARNELL PROJECTORIGINAL ASSAY VERSUS NEW REJECT ASSAY

(% Difference, Weighted Grade for Entire Interval)

<u>Original Hole # (New Hole #)</u>	<u>Original Hole Assay</u>	<u>New Reject Assay</u>	<u>%Diff.from Orig. Hole</u>	<u>Refire New Pulp</u>	<u>%Diff.from New Reject</u>	<u>%Diff.from Orig. Hole</u>
YM-5 (1A)	.032	.031	-3%	.031	0	-3%
YM-7 (1B)	.047	.052	+10%	.052	0	+10%
YM-8 (1C)	.04	.057	+30%	.054	+5%	+26%
YM-12 (1D)	.032	.04	+20%	.032	+20%	0
YM-20 (1E)	.071	.087	+18%	.076	+12%	+6%
YM-24 (1F)	.092	.121	+24%	.113	+7%	+19%
YM-40 (1G)	.062	.066	+6%	.053	+20%	-15%
YM-3 (1J)	.057	.058	+2%	.061	-5%	+6%
YM-50	.064	.062	-4%			
YM-56	.082	.077	-4%			

FROM: W. L. KURTZ

TO: J. A. Bell

9/11/81
Noydel

We agreed to provide Mont w.
Monthly reports. Keep it simple see
my first one. You please handle.

Please note: we did not send nor do we
contemplate sending Mont the open cut
sample program data.

ASARCO

J.D. Sell — you handle

Southwestern Exploration Division

September 11, 1989

J.D. Sell

Diamond Drilling
Yarnell Project
Yavapai County, AZ

As requested in F.T. Graybeal's memo of 9/8/89 and discussed with you on 9/8/89, I have picked 4 drill holes to twin and to accomplish the objectives stated by F.T. Graybeal. The proposed holes are tabulated on Attachment A with expected ore intervals and other objectives stated.

An alternate 5th hole has been added which will test a thick section of .03-.04 opt Au ore grade material. This hole will probably hit a stope. Diamond drilling will also provide insight into other structures present that influence ore grade mineralization.

MAM:mek
Att.

Mark A. Miller
Mark A. Miller
Project Geologist *mek*

cc: W.L. Kurtz
S.A. Anzalone
F.T. Graybeal

DIAMOND DRILLING

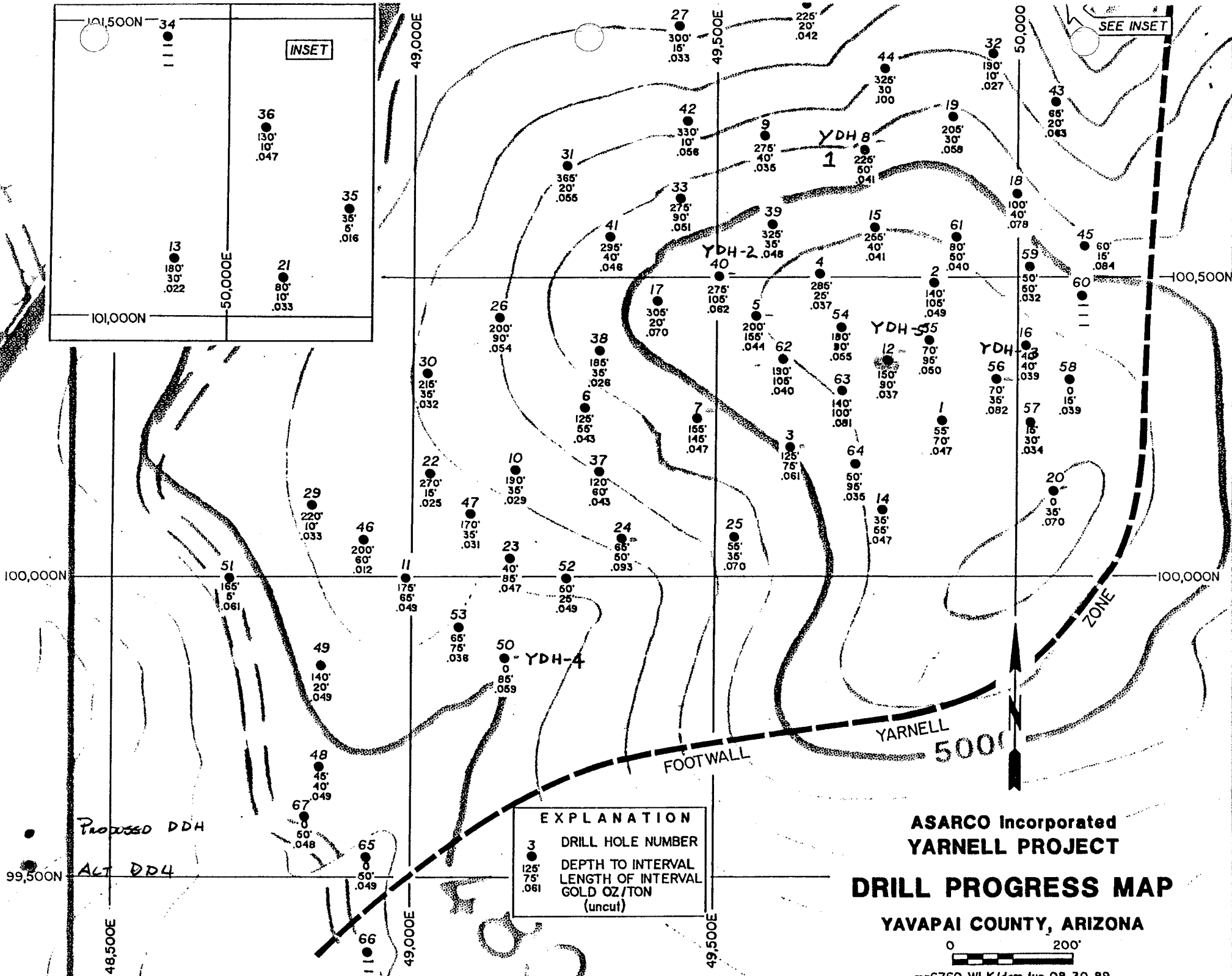
YARNELL PROJECT

<u>Proposed DDH Hole w/ Depth</u>	<u>RC Hole</u>	<u>Assay Interval and Grade opt Au</u>	<u>Remarks</u>
YDH-1 (350')	YM-8	30-225' @ .025 225-275' @ .041	Hole will cut thick low grade section.
YDH-2 (430')	YM-40	275-380' @ .062	Thick ore grad mineralized section +200' barren hanging wall.
YDH-3 (150')	YM-56	70-105' @ .082	High grade ore section - early phase of mining.
YDH-4 (150')	YM-50	0-85' @ .059	Test high grade section on SW extension of ore zone.
YDH-5 (300')	YM-12	150-240' @ .037	Alternate site - ore grade zone .03-.04 grade range. Will probably hit a stope.

Total Drilling 1080' for 4 holes @ \$25/ft (includes assay Costs) = \$27,000

Total Drilling 1380' for 5 holes @ \$25/ft (includes assay costs) = \$35,000

*WALK suggests. YM-8
-40
-12
-7
gts*



September 11, 1989

J.D. Sell

Yarnell MET

Please arrange to have a standard cyanide mill test performed on ± 0.05 sample. This should include the usual -- several grid sizes and several cyanide strengths. Might also add a pre-gravity circuit test.

WLK:mek

W. L. Kurtz / mek
W. L. Kurtz

cc: D. E. Crowell
F. T. Graybeal/R. L. Brown

DIAMOND CORE DRILLING
ROTARY DRILLING
GROUTING
FOUNDATION TESTING
DIRECTIONAL DRILLING
CORE ORIENTATION
HAZARDOUS WASTE DRILLING
WATER MONITORING DRILLING



General Offices and Plant
1707 South 4490 West P.O. Box 25068
SALT LAKE CITY, UTAH 84125
(801) 972-3333 TELEX: 3723464
Cable: BOYLESCO

JDS
DISTRICT OFFICES:
ANCHORAGE, ALASKA
PHOENIX, ARIZONA
GOLDEN, COLORADO
SPARKS, NEVADA
MURFREESBORO, TENN.
SALT LAKE CITY, UTAH
SPOKANE, WASHINGTON
SANTIAGO, CHILE
cable: BOYLESBROS
LIMA, PERU
cable: BOYLESCOP

FAX TRANSMISSION SHEET

DATE: September 11, 1989

TO: ASARCO

ATTENTION: JIM SELL

SUBJECT: YARNELL, ARIZONA PROJECT

FAX NO. (602) 792-3934

NO. OF PAGES (INCLUDING COVER PAGE) 5

FROM: JERROLD CULP

FAX NO. 801-972-6769

DIAMOND CORE DRILLING
ROTARY DRILLING
GROUTING
FOUNDATION TESTING
DIRECTIONAL DRILLING
CORE ORIENTATION
ENVIRONMENTAL DRILLING
NITOR WELLS



A CBC COMPANY

General Offices and Plant
1707 South 4490 West P.O. Box 25068
SALT LAKE CITY, UTAH 84125
(801) 972-3333 FAX 972-8789

DISTRICT OFFICES:
ANCHORAGE, ALASKA
PHOENIX, ARIZONA
GOLDEN, COLORADO
SPARKS, NEVADA
READING, PENN.
MURFREESBORO, TENN.
SALT LAKE CITY, UTAH
SPOKANE, WASHINGTON
SANTIAGO, CHILE
LIMA, PERU

JERROLD R. CULP

Manager
Administrative Services

September 11, 1989

ASARCO
P.O. Box 921
Yarnell, Arizona 85362

Attention: Mr. Mark Miller

Gentlemen:

We are pleased to submit our revised quotation (per the attached Exhibit A), for Core drilling on your project located in Yavapai County near Yarnell, Arizona.

Should you desire additional information concerning our proposal, please do not hesitate to contact Kleigh Hirschi of our Phoenix, Arizona office (602) 944-1731 or me. Should you accept our bid as submitted, please sign and return both copies, at which time we will sign and return one copy for your files.

Thank you for affording us the opportunity to bid on your project. We look forward to being of service to you.

Very truly yours,

A handwritten signature in cursive script, appearing to read 'Jerrold R. Culp', is written over the typed name.

Jerrold R. Culp
Manager, Administrative Services

JRC/cab

cc/Kleigh Hirschi

Encls.

ASARCO.AZ

EXHIBIT "A"

CORE DRILLING AGREEMENT

A. ADMINISTRATIVE INFORMATION:

1. ASARCO, hereinafter referred to as the Company.
2. BOYLES BROS. DRILLING COMPANY, hereinafter referred to as the Contractor.
3. Date of Agreement: September 11, 1989
4. The initial project shall consist of approximately 1500 feet.
5. Location:
State: Arizona County: Yavapai near: Yarnell

B. SCHEDULE OF RATES:

1. Mobilization and Demobilization.
 - (a) Total cost of mobilization from point of origin to point of access of supply truck will be accomplished for the lump sum of \$1,000.00 per drill unit requested. This cost will be invoiced with first drilling invoice.
 - (b) Moving from access point to first drill site and return to access point from last site will be invoiced at the rate of \$65.00 per hour per two man crew.
 - (c) Demobilization: No charge
2. Drilling Rates, Footage Rate Basis:
 - (a) Footage rates include bits, core barrels and rods unless otherwise specified below.
Hole size: _____ HX
Depth: 0 - 500 \$ 17.00
3. Hourly Rates, Rig Operating:
 - (a) Time consumed in the following activities will be invoiced at the rate of \$70.00 per hour per two man crew:
 - (a.1) Cementing, drilling out cement, hole conditioning, and lost circulation.

(a.2) Surveying, reaming.

(a.3) Installing and recovering casing.

4. Hourly Rates, Non Operating:

(a) Time consumed in the following activities will be invoiced at the rate of \$65.00 per hour per two man crew.

(a.1) Moving between holes, setting up, and tearing down, including first and last hole.

(a.2) Installation, relocation, maintenance, removal, of water line and/or supply pump or tanks.

(a.3) Standby time ordered by the Company's representative.

(a.4) Delays not caused by the Contractor.

(a.5) Waiting for cement to set during normal shift hours.

5. Time and Equipment Charges:

(a) If a third-party survey instrument or a third-party drilling device is required, Contractor will secure same and invoice the Company at list price plus 15%.

(b) Water truck will be invoiced at \$50.00 per day for each two wheel drive truck, plus \$1.25 per mile driven, if the Helper can function as a driver in addition to his other duties without causing operational delay. Operational delay will be invoiced at the rate in 4 (a).

(b.1) If a full-time driver is required, his services will be invoiced at \$210.00 per 10 hour day worked.

(b.2) If a third-party hauler is utilized, all costs will be invoiced to the Company at cost plus 15%.

(c) Subsistence in the amount of \$ N/A per day per man will be invoiced to the Company.

6. Materials:

- (a) Casing lost, damaged or left in the hole at the Company's request; core boxes, cement, drilling mud, mud additives, lost circulation materials consumed, casing shoes damaged or left in the hole, and the material and necessary items for installation and maintenance of water line, will be invoiced at list price plus 15%.
- (b) All diamond bit charges in excess of \$N/A per foot average will be invoiced to the Company.

C. EQUIPMENT AND WORKING SCHEDULES

- 1. Contractor will endeavor to assign the following equipment:

Drill Rigs: LONGYEAR 44 TRUCK MOUNTED CORE DRILL

Pumps: BEAN 35

Vehicles: F 260 PICKUP
F 700 WATER TRUCK

Wireline rods and core barrels, casing, bits, hand tools and accessories as are required to drill holes of the sizes and to the depths listed in Section B.

- 2. Contractor will endeavor to assign two crews to this project and operate the above listed equipment 20 hours per day, 10 days on 4 days off until the project is completed.

D. OTHER: N/A

ASARCO

Southwestern Exploration Division

JDS

September 11, 1989

J.D. Sell

Diamond Drilling
Yarnell Project
Yavapai County, AZ

As requested in F.T. Graybeal's memo of 9/8/89 and discussed with you on 9/8/89, I have picked 4 drill holes to twin and to accomplish the objectives stated by F.T. Graybeal. The proposed holes are tabulated on Attachment A with expected ore intervals and other objectives stated.

An alternate 5th hole has been added which will test a thick section of .03-.04 opt Au ore grade material. This hole will probably hit a stope. Diamond drilling will also provide insight into other structures present that influence ore grade mineralization.

MAM:mek
Att.

Mark A. Miller
Mark A. Miller
Project Geologist
mek

cc: W.L. Kurtz
S.A. Anzalone
F.T. Graybeal

DIAMOND DRILLING

YARNELL PROJECT

<u>Proposed DDH Hole w/ Depth</u>	<u>RC Hole</u>	<u>Assay Interval and Grade opt Au</u>	<u>Remarks</u>
YDH-1 (350')	YM-8	30-225' @ .025 225-275' @ .041	Hole will cut thick low grade section.
YDH-2 (430')	YM-40	275-380' @ .062	Thick ore grad mineralized section +200' barren hanging wall.
YDH-3 (150')	YM-56	70-105' @ .082	High grade ore section - early phase of mining.
YDH-4 (150')	YM-50	0-85' @ .059	Test high grade section on SW extension of ore zone.
YDH-5 (300')	YM-12	150-240' @ .037	Alternate site - ore grade zone .03-.04 grade range. Will probably hit a stope.

Total Drilling 1080' for 4 holes @ \$25/ft (includes assay Costs) = \$27,000

Total Drilling 1380' for 5 holes @ \$25/ft (includes assay costs) = \$35,000

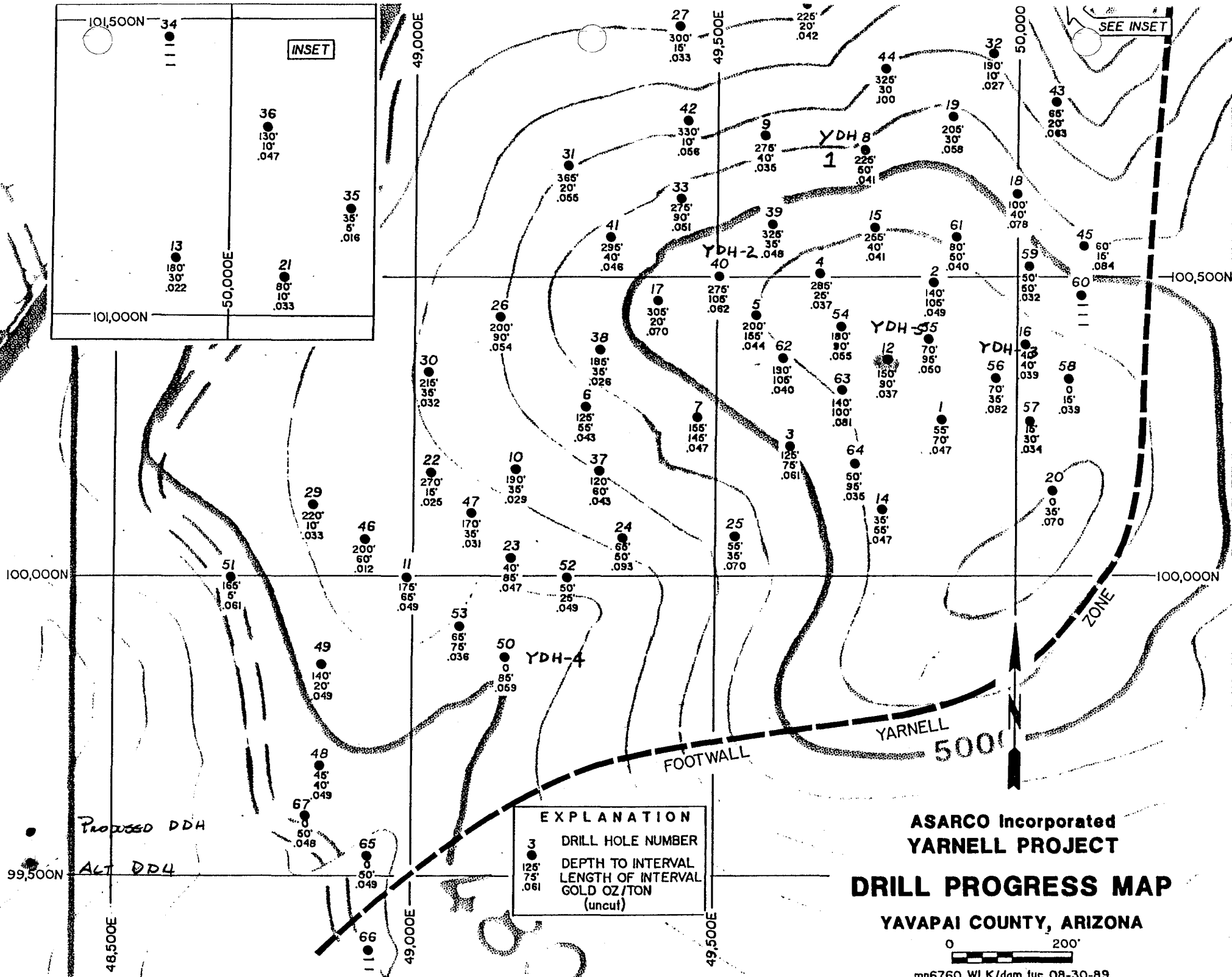
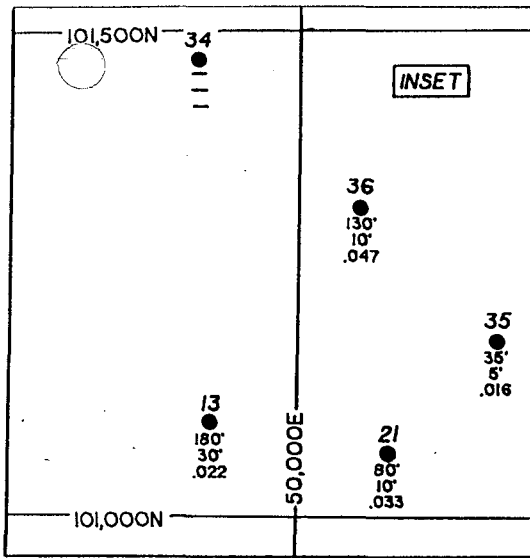
WLLK suggests: YM-8

-40

-12

-7





LAW OFFICES OF
LEO N. SMITH
CASAS ADOBES PROFESSIONAL PLAZA
6965 NORTH ORACLE ROAD
TUCSON, ARIZONA 85704

FAX (602) 797-9770

TELEPHONE (602) 797-0777

September 12, 1989

Mr. Eugene G. Harper
P.O. Box 4169
Cave Creek, AZ 85331

RECEIVED

SEP 13 1989

EXPLORATION DEPARTMENT

Re: Proposed Option Agreement
With Norgold Resources

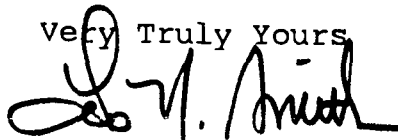
Dear Mr. Harper:

At the request of Mike Philpot of Norgold Resources (US) Inc., I am forwarding two copies of a proposed Option Agreement pertaining to the land which you and your co-owners own in Yavapai County, Arizona.

If you have any questions concerning the terms, I suggest you contact Mr. Philpot (604/685-8730). If you or your counsel have any questions concerning the legal effect of the draft, please feel free to contact the undersigned.

If you find the enclosed Option Agreement acceptable, please let me know and I will prepare and submit execution copies, together with a form of recording memorandum.

Very Truly Yours



Leo N. Smith

LNS:jf

xc: Michael Philpot (w/encl.)
W. L. Kurtz (w/encl.)

cc: J.D. Sell (w/enc.) 9/13/89

RECEIVED

SEP 13 1989

EXPLANATION DEPARTMENT

OPTION AGREEMENT

THIS AGREEMENT is made effective as of the _____ day of _____, 1989, by and between EUGENE C. HARPER and FLORENCE A. HARPER, husband and wife, and LESTER J. HAYT, SR., and ELOISE G. HAYT, husband and wife (collectively as "Owners") and NORGOLD RESOURCES (US) INC., a Nevada corporation authorized to do business in Arizona (as "Optionee").

WHEREAS, Owners represent to Optionee that they are the owners of, and are willing to grant to Optionee the sole and exclusive option to purchase, the hereinafter described parcels of real property situated in Yavapai County, Arizona, all as more particularly described as Parcel One and Parcel Two in Exhibit A attached hereto and made a part hereof; and

WHEREAS, in the event Optionee exercises one or both of its options to purchase, Owners are willing to grant to Optionee an Easement Agreement for ingress to and egress from the property described in Exhibit A and for construction, use and maintenance of utilities to serve the same across adjacent real property owned by Owners;

NOW, THEREFORE, for a good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged by Owners, Owners and Optionee agree as follows:

1. Term; Option Payment

Unless Optionee sooner exercises its option to purchase as hereinafter provided, the term of this Agreement shall be for a period expiring on the date twelve (12) months from the effective

date hereof (the "Option Period"). Upon execution of this Agreement by Owners and Optionee, Optionee shall pay to Owners the sum of Two Thousand Five Hundred Dollars (\$2,500.00) as consideration for the purchase options granted herein.

2. Grant; Exercise of Options; Purchase Price

Owners hereby grant to Optionee the sole exclusive rights and options, exercisable at any time prior to expiration of the Option Period, to (1) purchase Parcel One, or (2) purchase Parcel Two, or (3) purchase both Parcels One and Parcel Two, by giving written notice to Owners in the manner hereinafter set forth of Optionee's election to purchase, which notice shall designate the Parcel or Parcels which Optionee elects to purchase and shall designate a title insurance company with offices in Yavapai County to act as escrow agent for the closing of the purchase. If Optionee elects to purchase only Parcel One, the purchase price shall be the sum of Ten Thousand Dollars (\$10,000.00). If Optionee elects to purchase only Parcel Two, the purchase price shall be the sum of Five Thousand Dollars (\$5,000.00). If Optionee elects to purchase both Parcel One and Parcel Two, the purchase price shall be the sum of Fifteen Thousand Dollars (\$15,000.00). Promptly following exercise by Optionee of its option to purchase, the parties shall execute and deliver to the escrow agent, escrow instructions consistent with their Agreement, which instructions shall direct escrow agent to close the escrow within thirty (30) days of establishing the escrow. Owners shall thereupon execute and deliver into escrow a Warranty Deed of the applicable Parcel or Parcels, warranting title as against all liens and encumbrances other than as set forth in Exhibit A and Optionee shall deliver into escrow the applicable purchase price set forth above. The parties shall also execute and deliver into escrow an Easement Agreement in the form attached as Exhibit B, together with an affidavit of value as required under the laws of the State of Arizona. Real property taxes shall be prorated as of the date of closing and the escrow

agent shall deliver to Optionee a policy of title insurance, insuring Optionee's title as herein represented. The cost of the title policy shall be the responsibility of Owners and the costs of escrow shall be divided between the parties. Upon closing of the escrow this Agreement shall terminate.

3. Examination by Optionee; Indemnity

Optionee shall have the right, at any time prior to the expiration of the Option Period, to enter upon, examine and survey the real property described in Exhibit A. In the event Optionee enters thereon during the Option Period to examine or survey the property, it shall conduct work performed thereon in a good and workmanlike manner and in compliance with all applicable local, state and federal statutes. Optionee shall pay all expenses incurred by it in its operations thereon and shall allow no liens arising from any act of Optionee to remain upon the said real property. Optionee shall indemnify Owner against and hold Owner harmless from any liability to third persons resulting from Optionee's operations hereunder.

4. Notices

Any notice or communication required or permitted hereunder shall be effective when personally delivered or shall be effective when addressed:

If to Owner:

c/o Eugene G. Harper
P.O. Box 4169
Cave Creek, AZ 85331

If to Optionee:

Norgold Resources (US) Inc.
2380 Harbour Centre
P.O. Box 12122
555 W. Hastings Street
Vancouver, B.C. V6B 4N6

and deposited, postage prepaid, and registered, in the United States or Canadian mail, as the case may be. Either party may, by notice to the other given as aforesaid, change its mailing address for future notices hereunder.

5. Construction, Memorandum; Inurement

This Agreement, and the rights and obligations of the parties hereunder, shall be governed by the laws of the State of Arizona. Section headings in this Agreement are for convenience only and shall not be considered a part of this Agreement or used in its interpretation. The parties shall join in the execution of a Memorandum of this Agreement in a form sufficient to constitute notice hereof to third parties under the laws of the State of Arizona. This Agreement shall inure to the benefit of and be binding upon the respective heirs, devisees, personal representatives, successors and assigns of the parties hereto.

IN WITNESS WHEREOF, this OPTION AGREEMENT has been executed as of the date first above set forth.

OWNERS

Eugene C. Harper

Lester J. Hayt, Sr.

Florence A. Harper

Eloise G. Hayt

OPTIONEE

NORGOLD RESOURCES (US) INC.

By _____
Its:

STATE OF ARIZONA)
)
COUNTY OF _____) SS.

The foregoing instrument was acknowledged before me this
_____ day of _____, 1989, by Eugene C. Harper and
Florence A. Harper, husband and wife.

Notary Public

My Commission Expires:

STATE OF ARIZONA)
)
COUNTY OF _____) SS.

The foregoing instrument was acknowledged before me this
_____ day of _____, 1989, by Lester J. Hayt, Sr., and
Eloise G. Hayt, husband and wife.

Notary Public

My Commission Expires:

PROVINCE OF)
)
BRITISH COLUMBIA) SS.

The foregoing instrument was acknowledged before me this
_____ day of _____, 1989 by _____,
the _____ of Norgold Resources (US) Inc., a
Nevada corporation, on behalf of the corporation.

Notary Public

My Commission Does Not Expire:

EXHIBIT A

EXHIBIT A to OPTION AGREEMENT (and Memorandum thereof) being a description of the real property subject to the said Option Agreement and Memorandum:

PARCEL ONE

That portion of the Southwest Quarter of the Southeast Quarter of Section 11, Township 10 North, Range 5 West, Gila and Salt River Meridian, Yavapai County, Arizona, described as follows:

BEGINNING at a point on the South line of said Section 11, from which the South Quarter corner bears North 89° 55' West, 96.20 feet;

thence North 0° 05' East, 208.71 feet;

thence South 89° 55' East, 208.71 feet to a point, such point being the northwest corner of the property described in instrument recorded in Book 387 of Official Records, page 502, records of Yavapai County, Arizona;

thence South 0° 05' West, 208.71 feet along the East line of the last referenced property to a point on the South line of said Section;

thence North 89° 55' West along said South line, 208.71 feet, to the POINT OF BEGINNING;

containing one acre, more or less.

EXCEPT all coal and other minerals as reserved in Patent from United States of America.

PARCEL TWO

That portion of the Southwest Quarter of the Southeast Quarter of Section 11, Township 10 North, Range 5 West, Gila and Salt River Meridian, Yavapai County, Arizona, described as follows:

BEGINNING at a point on the South line of said Section 11, from which the South Quarter corner bears North 89° 55' West, 617.98 feet, and being the southeast corner of the property described in instrument recorded in

Book 1530 of Official Records, page 629, records of Yavapai County, Arizona;

thence North 0° 05' East along the East line of the last referenced property, 104.36 feet to a point on the East line of said property;

thence South 89° 55' East 208.71 feet;

thence South 0° 05' West, 104.36 feet to a point on the South line of said Section;

thence North 89° 55' West along said South line, 208.71 feet, to the POINT OF BEGINNING;

containing one-half acre, more or less.

EXCEPT all coal and other minerals as reserved in Patent from United States of America.

BOTH OF WHICH PARCELS ARE SUBJECT TO:

1. All existing roads, rights of way and easements and those of record in the office of the Recorder of Yavapai County, Arizona;
2. All taxes which may constitute a lien but which are not yet due and payable; and
3. Exceptions and reservations in the United States Patent thereto.

EXHIBIT B

EASEMENT AGREEMENT

The undersigned, EUGENE C. HARPER and FLORENCE A. HARPER, husband and wife, and LESTER J. HAYT, SR. and ELOISE G. HAYT, husband and wife (collectively as "Grantors"), being the owners of the real property included within Tax Parcel 203-07-37B situated in the Southeast Quarter of Section 11, Township 10 North, Range 5 West, Gila and Salt River Meridian, Yavapai County, Arizona hereby grant a non-exclusive easement for ingress and egress across and over the real property included within Tax Parcel 203-07-37B (but specifically excepting and excluding those portions of the Southeast Quarter within Tax Parcel 203-07-37A, Tax Parcel 203-07-38 and Plat C Amended of Yarnell) to NORGOLD RESOURCES (US) INC., a Nevada corporation ("Norgold"), the buyer of that portion of said Tax Parcel 203-07-37B described in Schedule A attached hereto and made a part hereof, such easement being granted herein in an undefined manner and to encompass those portions of the existing roadway heretofore used to service communication facilities within Tax Parcels 203-07-37A and 203-07-38. At such time as development of Grantors' remaining property within Tax Parcel 203-07-37B takes place, Norgold agrees to accept ingress and egress from the nearest developed street that will permit vehicle travel to the real property described in Schedule A.

Owners further hereby grant to Norgold a temporary utility easement across the real property included within Tax Parcel 203-07-37B (but specifically excepting and excluding those portions of the Southeast Quarter within Tax Parcel 203-07-37A, Tax Parcel 203-07-38 and Plat C Amended of Yarnell) for the construction, use and maintenance of utilities to service any facilities placed by Norgold on the property described in Schedule A until such time, if any, as developments takes place resulting in bordering

sources of utilities being made available to Norgold for such purposes.

This Agreement and the conditions hereof shall inure to the benefit of and be binding upon Grantors and Norgold and their respective heirs, devisees, personal representatives, successor and assigns as the same relates to the property included within Tax Parcel 203-07-37B.

DATED: _____

Eugene C. Harper, Grantor

Florence A. Harper, Grantor

Lester J. Hayt, Sr. Grantor

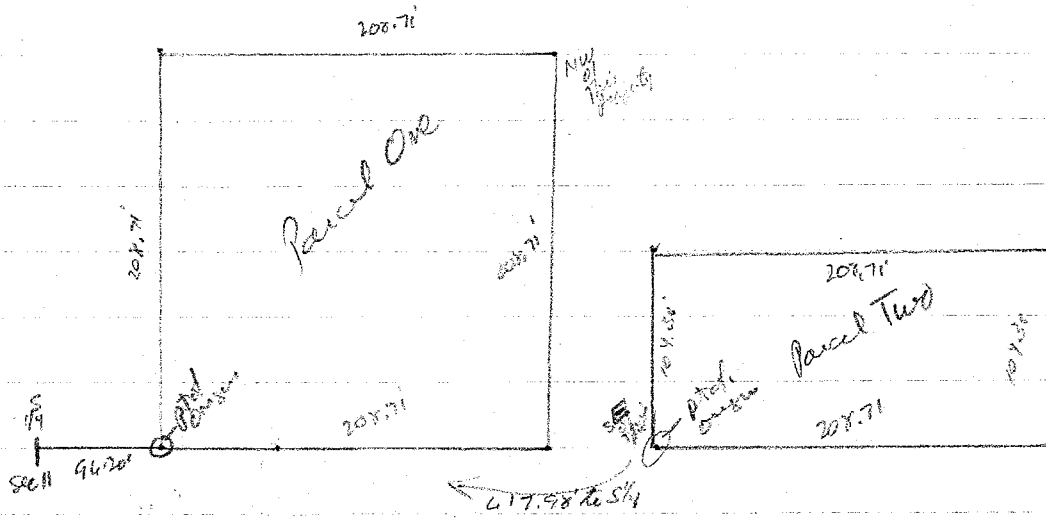
Eloise G. Hayt, Grantor

Accepted:

NORGOLD RESOURCES (US) INC.

By: _____
Its:

Note: Add Schedule A (description of property purchased by Norgold) and acknowledgments at time of execution of the Easement Agreement.



ASARCO

Exploration Department
Southwestern United States Division

CERTIFIED MAIL
RETURN RECEIPT

September 13, 1989

Bureau of Land Management
Arizona State Office
P.O. Box 16563
Phoenix, AZ 85011

Filing of Mining Claim
Notices of Location
Yarnell Project
Weaver Mining District
Yavapai County, AZ

Gentlemen:

In accordance with Section 314 of the Federal Land Policy and Management Act of 1976 (43 U.S.C., Sec. 1744), and the regulations thereto, enclosed for filing in your office are copies of the official record of the Notices of Location with maps for the following 2 lode claims in the Weaver Mining District, Yavapai County, Arizona:

<u>Name of Claim</u>	<u>Date of Location</u>	<u>Recorded in the Official Records of Yavapai County</u>		
		<u>Book</u>	<u>Page</u>	<u>Instrument No.</u>
YAR-41	8/27/89	2178	170	8931828
YAR-42	8/27/89	2178	169	8931827

A check for \$20 is enclosed as your filing fee. Please send receipt and accounting advise in the enclosed, stamped envelope.

Very truly yours,

William D. Gay
William D. Gay
Land Engineer, SWED

WDG:mek
encs.

cc: R.L. Brown
J.D. Sell
M.A. Miller
C.L. Snow



McCLELLAND LABORATORIES, INC.

1016 Crag Street, Sparks, Nevada 89431 702 / 356-1300
FAX 702 / 356-8917

TO: JIM SELL
ASARCO INC

FROM: JACK McPARTLAND
McCLELLAND LABORATORIES

SUBJECT: _____

DATE: 9-13-89
FAX #: (602) 792-3934

ASARCO Incorp.
SEP 13 1989
SW Exploration

MR SELL:

ATTACHED ARE OUR PROCEDURES FOR CONDUCTING BOTTLE ROLL TESTS. MARK MILLER ASKED ME TO SEND YOU A COPY OF THESE ALONG WITH THE FOLLOWING DESCRIPTION OF SAMPLE PREP. TO BE CONDUCTED ON THE DRILL HOLE 1-J CUTTINGS SAMPLES. EACH 5' INTERVAL WILL BE AIR DRIED, THOROUGHLY BLENDED AND SPLIT TO OBTAIN 1kg FOR COMPOSITING. THE 1kg SPLITS WILL BE COMBINED AS SHOWN BELOW, THOROUGHLY BLENDED, AND A SAMPLE WILL BE SPLIT FROM EACH COMP FOR A BOTTLE ROLL TEST.

COMP	INTERVAL, ft.	WT. TO COMP, Kg
1	0-5	1.0
	5-10	1.0
	10-15	1.0
	15-20	1.0
2	20-25	1.0
	25-30	1.0
	30-35	1.0
	35-40	1.0

COMP	INTERVAL, ft.	WT. TO COMP, Kg
3	40-45	1.0
	45-50	1.0
	50-55	1.0
	55-60	1.0

Jack McPartland

BOTTLE ROLL TEST PROCEDURE

Bottle roll tests are conducted in our laboratory on ore charges ranging from 1 to 15 kilograms, and on feed sizes ranging from stage ground pulps to 2 inch crushed ore. The procedures for the bottle roll tests are the same for any ore charge or feed size. Attrition grinding occurs during rolling of the coarse ore sizes (# 1/2 inch and up). Consequently, the bottle roll tests results indicate a maximum obtainable recovery for that feed size. The results, however, are valuable for indicating the heap leach amenability of an ore. These tests are preliminary in nature.

Bottle roll tests are conducted by mixing the ore charge with water to achieve the desired weight percent solids (40%). Lime is added to adjust the pH of the pulp to about 11 before adding the cyanide. Sodium cyanide, equivalent to 2.0 pounds NaCN per ton of solution, is added to the alkaline pulp. (The cyanide concentration can be varied). The pulp/cyanide mixture is rolled in bottles on the laboratory rolls for usually 96 hours (time variable). After 2, 6, 12, 24, 48, and 72 hours rolling is suspended briefly to allow the pulp to settle so a sample of pregnant solution can be taken for gold and silver analysis, and subsequently establish the extraction rate. The volume of solution withdrawn is filtered, measured, and sampled. The pH and cyanide concentration are determined. Any solids filtered from the sample are returned to the leach. Make-up water, equivalent to that withdrawn, is added to the pulp. The pH and cyanide concentration are restored to the initial value. Rolling is then resumed. The quantity of dissolved precious metal withdrawn with the interim solution samples is accounted for and added back into the metallurgical balance calculations.

After leaching is complete, the pulp is filtered to separate liquids and solids. The final pregnant solution volume is measured and a sample is taken for analysis. The final pH and cyanide concentration are determined. The leached residue is thoroughly washed, dried, weighed, and assayed directly to determine residual precious metal content.

The incremental and final cumulative recoveries are based on the calculated head from the specific test. These recoveries can be compared with the head versus tail metallurgical balance, provided that the assay head agrees closely with the calculated head from the test.

ASARCO

Exploration Department

R. L. Brown
Vice President

September 13, 1989

VIA TELECOPIER

Mr. Christopher Moat
President
Norgold Resources, Inc.
Suite 206 - 475 Howe Street
Vancouver, British Columbia
V6C 2B3
CANADA

ASARCO Incorporated

SEP 15 1989

SW Exploration

Dear Chris:

As I have told you exploration work is winding down on the Yarnell property and engineering evaluation activities are accelerating. The next round of rotary drilling, if there is to be one, will obviously be designed by the persons who are also involved in proposed pit designs.

Supervision and responsibility for the Yarnell project will now pass from us in the Exploration Department to the Mining Department, and this transition should be complete during the next two months. I will continue to look after the land work, which work will involve such things as completing the Norgold-Asarco agreement, the purchase from Santa Fe of their parcel of land, and other technical matters having to do with relocating and possibly perfecting for patent some claims. Mr. S. L. Lakoski, now mine superintendent at Asarco's Mission Mine, has been appointed project manager. Mr. Lakoski reports to Mr. T. E. Scartaccini, general manager of Asarco's Southwestern Mining Department. Mr. Lakoski, for the time being, will be stationed in Tucson and Mr. Scartaccini is, of course, located in Asarco's Tucson Office.

After a two- or three-week period, beginning about now, of easing out of his old responsibilities and easing into the Yarnell job, Mr. Lakoski will proceed forthwith to get the permitting and feasibility studies underway. Another important element in that part of Arizona will be to secure water supplies, and I am told that he will be proceeding vigorously on that front as well. In the meanwhile, I look

Mr. Christopher Moat

- 2 -

September 13, 1989

forward to working with you on the last tag ends of the land negotiations and the legal work involved with our agreement and, of course, we will be talking from time-to-time as this project continues.

Yours very truly,



R. L. Brown

RLB:mc

cc: R. J. Kupsch
W. L. Kurtz/J. D. Sell
T. E. Scartaccini

ASARCO

Exploration Department

R. L. Brown
Vice President

September 13, 1989

VIA TELECOPIER

Mr. Christopher Moat
President
Norgold Resources, Inc.
Suite 206 - 475 Howe Street
Vancouver, British Columbia
V6C 2B3
CANADA

ASARCO Incorporated

SEP 15 1989

SW Exploration

Dear Chris:

I acknowledge herewith receipt by fax of your proposed press release. We now have something more than 70 drill holes down, and I suspect assay logs of these holes will reach you next Friday. We have not completed anything like a formal ore reserve calculation, but the kind of preliminary back-of-envelope calculations geologists do on working projects indicates to us that we are somewhere between 4 and 5 million tons at .05 opt Au. I believe the strike length of the deposit is closer to 1400' than 2400'. We, however, don't want to be quoted yet as having calculated any reserve for publication and will not be in a position to do so until after the computer reserve has been hand checked.

Yours very truly,



R. L. Brown

RLB:mc

cc: J. D. Sell/W. L. Kurtz (w/att.)

FACSIMILE TRANSMISSION

DATE: September 12, 1989

TO: Mr. Dick Brown

ATTENTION: ASARCO, Inc.

TOTAL NO. OF PAGES: 2 (including this page)

FROM: Christopher Moat
Suite 206 - 475 Howe Street
Vancouver, British Columbia
V6C 2B3 CANADA

Telephone: (604) 687-4144
Fax No.: (604) 687-8789

IF THIS TRANSMISSION IS NOT FULLY OR LEGIBLY RECEIVED

PLEASE TELEPHONE (604) 687-4144

OPERATOR: _____

Please find enclosed our proposed news release.
We look forward to your approval of the contents of
this release as this submission is a requirement of
the Vancouver Stock Exchange.

RECEIVED
SEP 12 1989
EXPLORATION DEPT.

TRADING SYMBOL: NGR
STOCK EXCHANGE: VSE

SEPTEMBER 12, 1989
#89-15

NEWS RELEASE

Based on exploration data received from Norgold Resources Inc.'s joint venture partner and analysis done by Norgold's consulting engineer, the Company is pleased to announce that the Yarnell Mine Project containing approximately 1,000 acres in Yavapai Country, Arizona, has preliminary geological reserves estimated at ~~8~~ ¹¹ million tons grading between .04 and .05 ounces of gold per ton.

A reverse circulation drill program of ~~65~~ ⁷⁰ holes has defined a structurally controlled gold bearing zone 2,500 feet along strike and up to 800 feet down dip, averaging ~~60~~ ⁶⁵ feet in thickness. This structure is open in several directions and the average stripping ratio is expected to be ~~less than~~ ^{about} 3:1.

Preliminary metallurgy tests indicate gold recovery of up to 80% with moderate to low cyanide and lime consumption.

Currently, detailed bench studies are being conducted on a 20,000 pound bulk sample to determine the optimum crushing size amenable to heap leach extraction techniques.

Additional drilling is ongoing at the Project to further expand and confirm ore reserves. Surface sampling and trenching has commenced on additional step-out targets being the north east extension of the Yarnell Fault zone. Preliminary sampling in this area contains gold values consistent with the previous drill program results.

Management is most encouraged by exploration results to date. Currently Norgold Resources, Inc. is debt free with an excellent working capital position and is committed to an aggressive exploration and development program in Arizona.

On Behalf of the Board,

Christopher S. Moat
President

9-13-89

needs

cut 9-21

Send letters of total exploration costs to date

2. floppy disk of data

Send FAX sheet thru DC

cut 9-21

3. 1 egg map - Mylar

4. 'B' rejects available at later date

To WLR JDS
 Date 9/13/89 Time 8:36 AM PM
WHILE YOU WERE OUT
 M Chris Moat
 of _____
 Phone 604 681-5566
 Area Code Number Extension

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

RETURNED YOUR CALL

Message _____

M.
Operator

SF & manure letter sent out -

SF replacement is now in charge & hopes to get letter out.

Other property now under lease - purchase.

To WLR ou JDS
 Date 9/19/89 Time 12:50 AM PM
WHILE YOU WERE OUT
 M Mike Philpot
 of _____
 Phone () _____
 Area Code Number Extension

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

RETURNED YOUR CALL

Message _____

M.
Operator

Alan Cook 297-4908

Alan Blencow

W

Final
Draft

To WLK

Date 9/19/89 Time 8:53 AM PM

WHILE YOU WERE OUT

M Mike Philpot

of _____

Phone () 604-685-8730

Area Code	Number	Extension
TELEPHONED	<input checked="" type="checkbox"/>	PLEASE CALL <input checked="" type="checkbox"/>
CALLED TO SEE YOU	<input type="checkbox"/>	WILL CALL AGAIN <input type="checkbox"/>
WANTS TO SEE YOU	<input type="checkbox"/>	URGENT <input type="checkbox"/>

RETURNED YOUR CALL

Message ?

Mary
Operator

AD
CIENCY®

REORDER
#23-000

~~WLK - JDS~~

JDS

LAW OFFICES OF
APKER, APKER, HAGGARD & KURTZ, P.C.

A PROFESSIONAL CORPORATION

PARK ONE -

2111 EAST HIGHLAND AVENUE, SUITE 230
PHOENIX, ARIZONA 85016
AREA CODE 602 TELEPHONE 381-0085

MAILING ADDRESS
P. O. BOX 10280
PHOENIX, ARIZONA 85064-0280

BURTON M. APKER*
JERRY L. HAGGARD**
DAVID B. APKER***
GERRIE APKER KURTZ
JOHN R. FITZPATRICK

*ALSO ADMITTED IN WISCONSIN
**ALSO ADMITTED IN DISTRICT OF COLUMBIA AND KANSAS
***ALSO ADMITTED IN COLORADO

September 14, 1989

TELECOPIER
(602) 956-3457

RECEIVED

SEP 15 1989

EXPLORATION DEPARTMENT

Leo N. Smith, Esq.
6985 North Oracle Road
Tucson, Arizona 85704

Dear Leo:

ASARCO has reviewed the proposed revisions in the Exploration and Option Agreement, Mining Lease and Joint Venture Agreement transmitted with your three letters dated August 17, 1989 and proposes the minor modifications set forth in the enclosed retyped copies of the Mining Lease and Joint Venture Agreement. For your reference, those changes are identified on the enclosed revised forms sent with your August 17 letter. Because the Exploration and Option Agreement is on your system, the proposed changes in that Agreement are made by insertions in the enclosed form sent with your letter.

The following sets out the order of Agreements and of the Exhibits, Attachments and Schedules thereto in accordance with the structure of the enclosed documents:

Exploration and Option Agreement

- Exhibit A - Property description.
- Exhibit B - Western Building and Mining Company Agreement.
- Exhibit C - Joint Venture Agreement.
- Exhibit D - Mining Lease.

Mining Lease

- Attachment A - Property Description.
- Attachment B - Definition of Profits During Payback.

Joint Venture Agreement

- Schedule A - Property Description.
- Schedule B - Operations Accounting Procedures.

Leo N. Smith, Esq.
September 14, 1989
Page 2

Schedule C - Definition of Net Profits Royalty (4 deleted carried interest).

Schedule D - Amendments for 75%/25% Joint Venture Agreement.

Schedule E - Tax matters.

The following addresses the changes which have been made in the enclosed documents other than those which are self-explanatory:

Exploration and Option Agreement

1. In Section 3.1, the reference to the Definition of Exploration Expenditures and Development and Capital Expenditures has been changed to refer to the definitions in Attachment B to Exhibit D, the Mining Lease. We believe this is what is intended.

2. Because of the several references you have added in the Mining Lease (Sections 3, 5 and 12) to operations having to be in accordance with the Feasibility Study, the provision has been added to Section 3.2 acknowledging that the Feasibility Study can be revised.

3. The provisions in the first three lines in Section 15.2 allow some relief to ASARCO if Norgold does not hold the right to mine the Property as covenanted in Section 15.1. However, that covenant in Section 15.1 is only to the best of Norgold's knowledge. If Norgold should hold no mineral interest in the Property, so long as it is not aware of that fact, ASARCO would have no relief at all from such failure in title. The minimal relief afforded to ASARCO in Section 15.2 for acquiring the right to mine the Property should not be limited to acquiring those outstanding rights of which Norgold is not aware.

Mining Lease

1. With reference to Section 2, ASARCO believes the original understanding was that the Agreement would not terminate if Commercial Production had commenced by July 1, 1994. Norgold proposes to change this termination date to three years from the delivery of the Feasibility Study. There is no apparent reason for this change. ASARCO's reason for desiring the July 1, 1994 date is that even if the Feasibility

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Study is delivered prior to July 1, 1991, ASARCO desires the maximum amount of time to commence Commercial Production in order to better accommodate unanticipated delays which may only arguably fall within the force majeure provisions. It should be in Norgold's interest to accept the July 1, 1994 date because, if the date three years after submitting the Feasibility Study is used, ASARCO can merely delay submitting the Feasibility Study until July 1, 1991.

2. Section 13 has been revised again to be "extralateral right neutral" between ASARCO and Norgold with respect to both the Property and to any property held either by Norgold or ASARCO outside the boundaries of the Property.

3. Your revision of Section 21 has been revised again in accordance with point 3 in the discussion of the Option Agreement above.

4. ASARCO would prefer to have an Exhibit A attached to the Mining Lease to define the properties anticipated to be subject to the Lease with the addition of Part III acknowledging that other properties within the Area of Interest may be added.

5. You mentioned that Exhibit B (Definitions of Net Profits During Payback) is essentially your earlier draft of Exhibit "F" which you thought was agreed upon at Phoenix. Our recollection and notes indicate that we have generally followed the Rocky Mountain Mineral Law Foundation form of net profits royalty during payback. Norgold's revisions depart from that definition in the following major respects:

- (a) The definition of "Mining Costs" excludes costs and expenses for labor, machinery operation, depreciation and amortization of mining equipment and machinery acquired after Commencement of Commercial Production.
- (b) The definition of milling and processing costs excludes any allowance for depreciation of mill facilities and equipment acquired after Commencement of Commercial Production.

Each of these changes depart from the Rocky Mountain Mineral Law Foundation general form and from what appears to be the practice in the industry. Therefore, the enclosed Attachment

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B has followed that form. See 3 Am. L. of Mining, Title VII, Appendix 4 (2d Ed. 1984).

Joint Venture Agreement

1. With reference to your proposed changes in the second line of Section 4.1, see item 1 above addressing the same change in the Mining Lease.

2. ASARCO would prefer that Schedule A be attached with the added reference in Part Three to other properties which may become a part of the Property.

3. The other changes suggested in your letter have been included in the enclosed draft.

We hope that the enclosed forms of the Agreements will be approved and executed on behalf of Norgold.

Sincerely,



Jerry L. Haggard
For APKER, APKER, HAGGARD
& KURTZ, P.C.

JLH/jb
Enclosures

cc: J. L. Woods, Esq.
Mr. W. L. Kurtz ✓
Mr. R. L. Brown

cc: S. Lakosky (9/15/89)
J.D. Sell (9/15/89)

EXPLORATION AND OPTION AGREEMENT

THIS AGREEMENT is made and entered into effective as of the 30th day of January, 1989, by and between Asarco INCORPORATED, a New Jersey corporation (hereinafter referred to as "Asarco") and NORGOLD RESOURCES (US) INC., a Nevada corporation (hereinafter referred to as "Norgold").

WITNESSETH

WHEREAS, Norgold holds interests in certain patented and unpatented lode mining claims, that certain State of Arizona mineral lease and those certain State of Arizona prospecting permits all situated in the Martinez (Weaver, Yarnell) Mining District, Yavapai County, Arizona, as more particularly enumerated and described in Part One of Exhibit A attached hereto and made a part hereof; (hereinafter called the "Property");

AND WHEREAS, Norgold is seeking to acquire other interests in certain patented and unpatented lode mining claims more particularly described in Part Two of Exhibit A;

AND WHEREAS, Norgold has the full right, power and authority to enter into this Agreement and to deal with the interests in the Property as herein provided;

AND WHEREAS, Norgold wishes to grant Asarco the right to make an examination of the Property to determine if Asarco wishes to acquire an ownership interest in the Property for the purpose of exploring, developing and mining the Property;

AND WHEREAS, if Asarco acquires an ownership interest in the Property, the Parties agree that Norgold shall have the right to participate in joint operations for development and mining of the Property under either one of two options more fully described in Article VIII below, upon the terms and conditions hereinafter set forth;

NOW, THEREFORE, in consideration of the mutual promises contained herein, the Parties hereto agree as follows:

ARTICLE I

1.0 GRANT

1.1 Norgold hereby grants to Asarco until July 1, 1991 an exclusive option to earn an undivided fifty-one percent (51%) interest in Norgold's interest in the Property by the making of certain rental payments and by performing certain work on the Property and by performing certain obligations, all as described herein.

ARTICLE II

2.0 PAYMENTS

2.1 Subject to the right of Asarco to terminate this Agreement pursuant to Article V hereof, Asarco shall make the following payments to Norgold: \$10,000 on or about January 30, 1989; \$15,000 on or before March 6, 1989; \$15,000 on or before July 1, 1989; \$15,000 on or before October 1, 1989; \$20,000 on or before January 1, 1990; \$20,000 on or before July 1, 1990; \$25,000 on or before January 1, 1991; \$25,000 on or before July 1, 1991 and, Asarco shall make further payments of \$25,000 each on January 1 of the years 1992, 1993 and 1994 if Asarco has not initiated mine development of the Property by January 1 of said years.

ARTICLE III

3.0 WORK COMMITMENTS

3.1 In addition to the requirements set forth in Section 2.1 and subject to the right of Asarco to terminate this Agreement pursuant to Article V hereof, Asarco shall, between March 6, 1989 and July 1, 1989, complete at least 3,000 feet of drilling on the Property. Between July 1, 1989 and July 1, 1990, Asarco shall complete at least a total of an additional \$250,000 of the type and nature of expenditures defined as Exploration, ^{Expenditures on} and Development ^{and} ~~Expenditures in Schedule G~~ ^{total} to Exhibit ~~C~~ ^D hereto, on or for the benefit of the Property.
Attachment B

The Mining Lease (This should refer to Mining Lease, because J.V. definition refers to - after conversion date.)

3.2 Subject to the right of Asarco to terminate this Agreement pursuant to Article V hereof, Asarco shall prepare or have prepared and deliver to Norgold, on or before July 1, 1991, a Feasibility Study described in Section 3.3 and a written commitment to initiate Commercial Production (as defined in Article 1.4 of Exhibit C hereto) on the Property within three years thereafter. The three year time period shall be extended pursuant to Article XI and by the time corresponding to those periods (if any) after July 1, 1991 during which the price of gold posted in New York daily by Handy & Harman or by a substitute equivalent posting is less than \$350.00 per ounce. ✓ ok

3.3 The term "Feasibility Study" shall mean a written report prepared by or for Asarco and shall include projections of development and production figures and costs, projected cash flows, anticipated production and profit figures, preproduction and operating costs, calculations of proven ore reserves, intermediate engineering data and costs for mine, plant and equipment and shall contain the data, information and analyses upon which such costs and figures are based. The Feasibility Study shall be of the type and nature generally relied upon by prudent mine operators in arriving at decisions as to whether to commence development and production operations and expenditures and by money center banks in evaluating the advisability of financing mining projects of similar size and complexity and shall be adequate to clearly describe the feasibility of the project with a contingency range of 20% and may factor the costs of other similar projects in its calculations. Asarco acknowledges that Norgold may use the Feasibility Study as the basis for securing financing its share of project costs. To this end, and at the request of Norgold, Asarco shall provide additional information supplementing that contained in the Feasibility Study to the extent that such information is available or can be readily developed. ←

3.4 Upon Norgold's receipt of the Feasibility Study and Commercial Production commitment and a certification that Asarco

The parties hereto recognize that information obtained during the development and operation of the Property may cause the Feasibility Study to be revised and that Asarco may make such revisions based upon such information.

has performed the work identified in Section 3.1 hereof and has complied with all other terms of this Agreement, Norgold shall deliver to Asarco a special warranty deed and assignment, conveying and assigning an undivided fifty-one percent (51%) of Norgold's interest in the Property to Asarco and Asarco shall deliver to Norgold a special warranty deed and assignment, conveying and assigning an undivided forty-nine percent (49%) of Asarco's interest in any unpatented mining claims, lands or mineral interests in lands theretofore acquired by Asarco pursuant to Section 6.3.

ARTICLE IV

4.0 OTHER OBLIGATIONS

4.1 Asarco shall be obligated to perform and timely record and file affidavits evidencing the performance of all required assessment work and work requirements, or obtain deferments thereof, for the benefit of the unpatented claims and the State of Arizona mineral lease and prospecting permits included in the Property from year to year until either Asarco terminates this Agreement or Norgold elects to enter one of the agreements pursuant to Section 8.1 in the event of which election, assessment work and other work requirements shall be performed pursuant to the applicable agreement. Expenditures made pursuant to this Section 4.1 shall apply to Asarco's work commitment obligation set forth in Section 3.1 for the year in which such expenditures are made.

4.2 With the exception of the obligations of Norgold under its Option Agreement dated September 16, 1988 with Don Jenkins (the "Jenkins Option"), Asarco hereby expressly assumes and shall perform the obligations and commitments of Norgold under all of the leases, permits and agreements described under Part One of Exhibit A, including the Mining Agreement with Western Building and Mining Company, Inc. ("Western"), attached hereto as Exhibit B, provided, however, that Norgold must obtain a proper recordable form satisfactory to Asarco, within thirty (30) days

after the date hereof, all consents and approvals required to effect the assignment of an undivided interest in the said Mining Agreement to Asarco. In the event such consents and approvals cannot be obtained, this assumption by Asarco shall be of no force and effect. Within thirty (30) days after Norgold obtains the required consents and approvals, Asarco shall make payment to Norgold in the amount of \$1,000 in reimbursement for the March 1, 1989 payment by Norgold to Western under the Western Mining Agreement. Thereafter, Asarco shall by October 1 of each year notify Norgold if Asarco does not intend to make payment to Western of the sum due on or before January 1 under the terms of the Western Mining Agreement and failing such notice Asarco shall make such payment to Western; provided that if this Agreement is in effect on January of any such year, the giving of such notice shall not excuse Asarco's obligation to make such payment. With respect to the Jenkins Option, Asarco's sole obligation shall be to perform (or obtain deferment of) assessment work requirements as provided in Section 4.1. of

4.3 Asarco shall pay, on or before the date thirty (30) days prior to the delinquency thereof, all general property taxes assessed against the Property during the term of this Agreement and shall promptly furnish Norgold proof of such payments.

4.4 Asarco will discharge when due all claims, liabilities, expenses and obligations of, relating to or associated with the Property which arise from or relate to any action, failure to act, or man-made condition occurring or arising after (but not before) the effective date of this Agreement whether or not arising out of federal, state or local laws, rules or regulations now in effect or which may come into effect in the future, including without limitation (i) any and all obligations under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 as amended ("CERCLA"), Pub. L. 96-510, and 96-561, and the Resource Conservation and Recovery Act of 1980 (RCRA"), Pub. L. 96-482 with respect to the Property, and (ii) any and all personal injuries, property damage, contamination or

pollution, known or unknown, determined to have resulted from Asarco's activities or operations on the Property, or conditions made or caused by human intervention while the Property was under the ownership or control of Asarco.

ARTICLE V

5.0 TERMINATION

5.1 Asarco may terminate this Agreement at any time after July 1, 1989 and prior to the date for delivery to Norgold of the Feasibility Study as provided in Section 3.2 upon providing Norgold 30 days advance notice of such termination.

5.2 Subject to Article XI hereof ~~hereof~~, if Asarco has not, on or before July 1, 1991, prepared and delivered to Norgold the Feasibility Study, the Commercial Production commitment and the certification that Asarco has performed its obligations hereunder, all as more particularly described in Article III above, this Agreement shall terminate on such date.

5.3 Upon the termination or expiration of this Agreement pursuant to Section 5.1 or 5.2, Asarco shall promptly execute and deliver to Norgold a special warranty deed and assignment, conveying and assigning to Norgold all of its interest in the Property free and clear of all liens and encumbrances placed thereon by, or arising from operations conducted by, Asarco while this Agreement is in effect. AR

5.4 If termination of this Agreement pursuant to Section 5.1 or 5.2 occurs in any year after June 1 of such year, Asarco shall be obligated to perform, record and file all assessment work on all federal unpatented mining claims required by Federal or State law and regulation to maintain the status of such claims for the assessment year in which such termination is made, or obtain the deferment thereof. If such termination occurs on or after the date ninety (90) days prior to the annual work requirement deadline date for any of the State of Arizona mineral leases or prospecting permits then included as part of the Property, Asarco shall be obligated to perform, record and file all such annual

work requirements with respect to the work requirement year in which such termination occurs.

5.5 Termination of this Agreement pursuant to Section 5.1 or 5.2 shall not relieve Asarco from its obligation to notify Norgold by October 1 of the year in which termination occurs whether Asarco intends to make payment to Western of the sum due on or before the following January 1 under the terms of the Western Mining Agreement and if such termination occurs after October 1st of such year, Asarco shall be obliged to make the said January 1st payment to Western.

5.6 If, pursuant to Article VIII, the parties enter unto a Joint Venture Agreement or a Mining Lease, the applicable portions of this Agreement shall remain in full force and effect until termination of all Joint Venture Agreements and Mining Leases entered into hereunder or under the provision of Article XIII of the Joint Venture Agreement.

ARTICLE VI

6.0 ADDITIONAL ACQUISITIONS

6.1 Norgold shall, as directed by Asarco and at Asarco's expense, locate additional unpatented mining claims and apply for additional State of Arizona prospecting permits within the "Area of Interest" which shall mean those lands or mineral interests in those lands within the following public land surveys in the G. & S.R.M., Yavapai County, Arizona:

Township 10 North, Range 4 West:

Sections 6, 7, West Half (W 1/2) of 17, 18,
19, West Half (W 1/2) of 20 and 30.

Township 10 North, Range 5 West:

Sections 1 through 4, East Half (E 1/2) of 8,
9 through 16, East Half (E 1/2) of 17,
East Half (E 1/2) of 20, 21 through 28,
North Half (N 1/2) of 34, North Half (N
1/2) of 35 and North Half (N 1/2) of 36.

6.2 Other third party properties within the Area of Interest may be acquired by Norgold by purchase, lease or other form of acquisition agreement and shall become part of the Property subject to this Agreement if the terms of such purchase or lease are agreed to by Asarco. Such other properties shall include, without limitation, the properties described in Part Two of Exhibit A. Norgold shall keep Asarco informed of Norgold's progress and shall consult with Asarco in acquiring each of these properties, and shall provide to Asarco a copy of any proposed agreement for Asarco's approval prior to executing any binding agreement to acquire these properties. Properties so acquired with Asarco approval shall become part of the Property and subject to this Agreement and Asarco shall promptly reimburse Norgold for all of its acquisition payments and assume Norgold's obligations with respect to such properties so long as this Agreement is in force. If Asarco fails to approve the terms of any such acquisitions and if Norgold thereafter acquires the same, Norgold shall hold such properties free from any obligation or liability to Asarco under this Agreement and the areas included within such properties shall be thereafter excluded from the Property and the Area of Interest.

6.3 All unpatented mining claims, lands and other mineral interests in lands within the Area of Interest heretofore located or acquired by Asarco or hereafter located or acquired by Asarco while this Agreement is in effect shall also become part of the Property and subject to this Agreement.

ARTICLE VII

7.0 INSPECTION AND DATA

7.1 Asarco's engineering progress maps and factual data on all Asarco operations upon the Property shall be available upon request for Norgold's inspection for a reasonable period of time during normal business hours. Norgold's officers, directors, employees and its authorized agents or invitees may enter said Property at reasonable times and upon reasonable notice for the

and the Joint Venture Agreement in its form attached as Exhibit hereto as Exhibit C modified as provided in Schedule D hereto.

purpose of inspecting the same, and Asarco shall facilitate such inspection in every reasonable way, but Norgold shall enter upon said Property at Norgold's own risk and so as not to hinder unreasonably the operations of Asarco; and Norgold shall indemnify and hold harmless Asarco and its directors, officers and employees from any damage, claim or demand by reason of injury to or the presence of Norgold or Norgold's officers, directors, employees, agents and invitees or any of them on the Property or approaches thereto unless caused by the willful or negligent acts of Asarco or its employees or agents.

ARTICLE VIII

8.0 NORGOLD'S OPTIONS

8.1 Within 180 days after Asarco's delivery to Norgold of the Feasibility Study and the production commitment described in Section 3.2 hereof, a certification that Asarco has performed the work identified in Section 3.1 hereof and has complied with all other terms of this Agreement, and a work plan and budget provided for in Article 10 of the form of Joint Venture Agreement attached hereto as Exhibit C, Norgold shall elect to either: (1) execute and enter into the Joint Venture Agreement in the form attached hereto as Exhibit C or; (2) to execute and enter into the Mining Lease in the form attached hereto as Exhibit D. During the said 180-day period, Norgold may prepare an alternative work plan and budget for consideration by Asarco and either Norgold or Asarco may negotiate for the sale or transfer of its respective interest in the Property pursuant to Article ~~xx~~ 20 of the form of Joint Venture Agreement attached hereto as Exhibit C. If Norgold fails to make such election within the 180-day period, Norgold shall be deemed to have elected to enter into the Mining Lease and the Parties shall promptly thereafter execute the Mining Lease and a Joint Venture Agreement, modified as provided in Schedule D thereto. Asarco may record a notice of such election. Asarco acknowledges that the aforesaid 180 day period is to afford Norgold a reasonable time to secure project

financing based on the Feasibility Study should Norgold elect the 49%/51% Joint Venture Agreement.

8.2 In the event Norgold elects or is deemed to have elected to enter the Mining Lease, Norgold shall promptly execute and deliver to Asarco a special warranty deed and assignment, conveying and assigning to Asarco an additional undivided twenty-four percent (24%) interest in the Property.

8.3 The Parties now anticipate that the Property may contain a single mineral deposit to be developed as a surface, open pit, low grade, heap leachable gold deposit (the "Initial Surface Deposit"), which shall be the subject of the Feasibility Study described in Section 3.2. In the event that a separate and distinct mineral deposit (including a mineral deposit beneath the Initial Surface Deposit but excluding any lateral extension of the aforesaid Initial Surface Deposit) is discovered within the Property, each such ore body and so much of the Property as is necessary for the development and mining thereof shall constitute a separate "Additional Development Block". Promptly following any such discovery, Asarco shall give notice to Norgold thereof, which notice shall contain a delineation of the Additional Development Block and all expenditures within such Additional Development Block shall be conducted for the account of Asarco until such time as Asarco has prepared and delivered to Norgold a Feasibility study of the type and nature described in Section 3.3. above. Within 180 days thereafter, Norgold shall elect to either: (1) execute and enter into a Joint Venture Agreement in the form attached ^{hereto} as Exhibit C or; (2) enter into a Mining Lease in the form attached ^{hereto} as Exhibit D and ~~The~~ The rights of the parties during such 180-day shall be as set forth in Section 8.1 and 8.2. Anything in the form of the Joint Venture Agreement or in the form of the Mining Lease to the contrary notwithstanding, Asarco shall be entitled to recover from 95% of the "Net Profits", all of the costs incurred by Asarco in the exploration, development and equipping of the Additional Development Block from and after the creation thereof, together with interest on all of such

and the Joint Venture Agreement in the form attached hereto as Exhibit C modified as provided in Schedule O hereto.

"Exploration Expenditures" as well as on all of such Development and Capital Expenditures" (as those ^{quoted} terms are defined in said Attachment B) ^{to Exhibit D hereto} through the date on which Norgold commences to contribute its prorata share (in the event it elects the ^{4900/5100} Joint Venture Agreement Option) or through "Payback" (in the event it elects or is deemed to have elected the Mining Lease Option). The term "Payback" as used in this Section 8.3 shall mean the recovery by Asarco of the above-described costs and interest thereon from and after the date of the creation of the Additional Development Block and the term "Net Profits" as used in this Section 8.3 shall have same meaning as defined in Attachment B to Exhibit D except that the date of commencement of the computation thereof shall be the date of creation of the Additional Development Block instead of January 30, 1989. Until Asarco has so recovered all such costs, Norgold shall receive 5% of the Net Profits therefrom.

ARTICLE IX

9.0 ARBITRATION

9.1 In case of any dispute between the parties, the same shall be submitted to arbitrators and to an umpire who shall be selected in the manner hereinafter set forth. The party desiring arbitration shall nominate one arbitrator, and shall notify the other party of such nomination and the other party shall within thirty (30) days after receiving such notice, nominate an arbitrator, and the two, before proceeding to act, shall select a third person to act as umpire jointly with them. If said arbitrators shall be unable to agree in the selection of such third person as umpire, the umpire shall be designated by the American Arbitration Association under the rules of such association. Furthermore, if the party receiving the notice of the nomination of an arbitrator by the party desiring arbitration shall fail and neglect within said thirty (30) days to nominate an arbitrator, then the arbitrator nominated by the party desiring arbitration shall proceed alone in the manner

hereinafter prescribed as the procedure where two arbitrators and umpire are selected and his decision shall be binding upon the parties. After two such arbitrators and an umpire shall have been so selected, the umpire shall fix a time and place in Tucson, Arizona, or elsewhere if the parties hereto so agree, for the purpose of the arbitrators and umpire meeting and hearing the parties and any evidence that they may submit. and the decision of said arbitrators and umpire or any two of them in writing shall be binding upon the parties. The expense of the arbitrators and umpire shall be paid as directed in such decision. The persons to be selected as arbitrators and umpire shall be disinterested persons of experience in the mining business in the United States of America, or if no mining question is involved, the persons having technical competence relative to the point in dispute, and who are not and never have been associated directly or indirectly with any party to the dispute. The arbitrators shall retain jurisdiction to determine whether a default has been cured within a reasonable time. Any decision of the arbitrators shall bind the parties hereto with respect to the same issues in any dispute arising thereafter.

ARTICLE X

10.0 RELATIONSHIP OF THE PARTIES

10.1 No Party, without the written consent of the other (which consent shall not be unreasonably ~~be~~ withheld), shall have the power or authority to sell, assign, convey, mortgage, pledge, or otherwise dispose of or hypothecate any of the Property, or any part thereof, except as otherwise expressly provided for in this Agreement or in any Joint Venture Agreement or Mining Lease entered into pursuant to this Agreement.

10.2 Except as expressly provided for in this Agreement with respect to the Area of Interest, each Party shall have the free and unrestricted right independently, or in combination with one or more non-parties to engage in and receive the full benefits of any and all business endeavors of any sort whatsoever, including

but not limited to acquisition of mining properties, interests or rights and exploration for, production and sale of minerals, whether or not competitive with the endeavors contemplated herein; and neither of the Parties to this Agreement shall have any fiduciary obligation or other duty of whatsoever character to the other Party which would prevent it from engaging in or enjoying the benefit of such competing endeavors or would require it to consult with or allow the other Party to participate therein. Specifically, and without limiting the generality of any of the foregoing, neither of the Parties to this Agreement shall have any obligation to the other with respect to any opportunity to acquire any mining property, interest or right offered to it, except as expressly provided in this Agreement.

ARTICLE XI

11.0 FORCE MAJEURE

11.1 If Asarco is rendered unable, wholly or in part, to perform any of the terms or covenants of this Agreement, it shall not be deemed in default for any failure or delay in the performance thereof if such performance shall have been prevented or delayed by any of the following conditions of force majeure: labor disturbances, shortage of labor equipment, strikes, lockouts, other industrial disturbances, acts of God, act of the public enemy, war (whether defacto or declared), blockade, riot, insurrection, lightning, fire, storm, flood, inclement weather, explosion, inability to obtain governmental licenses, permits or approval, regulations, restrictions, orders or acts of governmental agencies or courts; or on account of any eventualities or conditions similar or dissimilar, whether enumerated or not, beyond the reasonable control of Asarco, including federal, state and local health, safety, land use and environmental statutes and regulations.

11.2 Asarco shall promptly notify Norgold in writing of the occurrence, nature and duration of any such condition of force

majeure and shall use reasonable diligence to remove any such conditions of force majeure which may occur from time to time.

ARTICLE XII

12.0 DATA, INFORMATION AND CONFIDENTIALITY

12.1 Except as otherwise provided in this Agreement, and excepting necessary disclosures to contractors, consultants, subcontractors, governmental authorities and prospective sources of project development financing, each Party agrees that without prior written consent of the other Party, which consent shall not unreasonably be withheld, it will treat as confidential and prevent disclosure to any nonparties of any geological, geophysical or other factual and technical information and data relating to operations undertaken pursuant to this Agreement. This obligation shall be a continuing obligation of each Party throughout the term of this Agreement, notwithstanding that such Party may have ceased to be a Party to this Agreement before its termination. Consent is hereby given to each Party to disclose such information and data to any affiliate of such Party. Upon termination of this Agreement, each of the Parties shall be entitled to all information acquired hereunder, including copies of all maps, data and reports which can be reproduced and which have not theretofore been furnished; and thereafter, the Parties hereto may use such data and other information as they see fit.

12.2 No Party shall make any announcement, press release, or public statement relating in any manner to this Agreement or operations or activities conducted hereunder without first furnishing the proposed text thereof to the other Party and obtaining the other Party's prior approval in writing, which approval shall not be unreasonably withheld, provided that neither Party shall be required to obtain consent from the other Party for any announcements or disclosures which the disclosing Party reasonably believes to be required by law or regulation, or required by any stock exchange on which the disclosing Party's stock may be listed.

12.3 Notwithstanding the foregoing, the Parties recognize that each is a public company or a wholly owned subsidiary of a public company listed for trading on public exchanges and that a Party shall have the right to issue such announcements as, in the opinion of its counsel, it is obligated by law, regulation and/or exchange rules to so announce; provided, however, that such Party shall furnish to the other Party a copy of such proposed announcement prior to its release. In any such instance, the Party furnished with a proposed release or announcement shall comment on the same within three working days of the receipt thereof from the releasing or announcing Party, unless such law, regulation and/or exchange rule requires a shorter period. Asarco agrees to keep Norgold promptly advised of exploration work done on the Properties by Asarco prior to Asarco's acquiring a vested interest by furnishing to Norgold (i) factual assay data as it becomes available to Asarco, (ii) weekly factual drilling reports, and (iii) monthly factual summary reports of Asarco's work and expenditures upon the Property.

ARTICLE XIII

13.0 NOTICES

13.1 Any notice, election, invoice, statement, billing, payment or other correspondence required or permitted hereunder shall be deemed to have been properly given or delivered when made in writing and delivered personally to the Party to whom directed, or when delivered to such Party by United States mail duly registered, courier service or Western Union telegraph, with all necessary charges fully prepaid (or in the case of a telegram, confirmation of delivery), and addressed to the Party to whom directed at its below-specified address:

As to Norgold:

Mr. Christopher Moat, President
Norgold Resources (US) Inc.
2380 Harbour Center
P.O. Box 12122

555 West Hastings Street
Vancouver, B.C. V6B 4N6
Canada
Facsimile No. 604/685-8045

With a copy to:

Brian D. Edgar
Rand Edgar & Sedun
Suite 2200
885 W. Georgia Street
Vancouver, B.C. V6C 3E8
Canada
Facsimile No. 604/681-7116

As to Asarco:

Exploration Department
Asarco Incorporated
180 Maiden Lane
New York, New York 10038
Facsimile No. 212/510-1908

With a copy to:

Exploration Department
Asarco Incorporated
1150 North 7th Avenue
Tucson, Arizona 85705
Facsimile No. 602/792-3934

13.2 Either Party hereto may change its address for the purpose of notices or communications hereunder by furnishing notice thereof to the other Party in compliance with this provision.

ARTICLE XIV

14.0 TRANSFER AND ASSIGNMENT OF INTERESTS

14.1 Should any Party desire to sell all or any part of its interests under this Agreement or its rights and interests in the Property, it shall promptly give written notice to the other Party, with full information concerning its proposed sale, which shall include the name and address of the prospective purchaser (who must be ready, willing and able to purchase) the purchase price, and all other terms of the offer. The other Party shall then have an optional prior right, for a period of 30 days after receipt of the notice, to purchase on the same terms and

conditions the interest which the other Party proposes to sell. However, there shall be no preferential right to purchase in those cases where (i) any Party wishes to mortgage its interests, or to dispose of its interests by merger, reorganization, consolidation or sale of all or substantially all of its assets to a subsidiary or parent company or to a subsidiary of a parent company, or to any company in which any one Party owns a controlling interest; or (ii) any transfer, conveyance or reorganization of its interest and properties by any Party with an affiliate, or to any such reorganization resulting in the conveyance or transfer of all or substantially all of a Party's mineral rights and interest to a third party in which the conveying Party obtains or retains an interest in the successor owner upon completion of such transfer, conveyance or reorganization, provided that any successor to a Party's right and interest shall be bound by all of the terms and conditions of this Agreement.

14.2 No conveyance, assignment or other transfer affecting the Property, the production therefrom or equipment thereon shall be made other than for lawful money of the United States and unless same shall cover the entire undivided interest of the assignor or seller, it being the intention of this provision to maintain the unit ownership, development and operation of the Property. The sale of a lesser interest than seller's entire undivided interest may be made upon securing the prior written consent of the other Party.

14.3 No assignment of any interest shall be binding upon the other Party until the first day of the second calendar month following that in which the assignor or assignee shall have furnished the non-assigning Party with an executed or photostatic copy thereof, together with the proper and complete address of assignee. Any assignment of interest, whether expressly stated or not, shall operate to impose upon the assigned interest the proportionate part or share of any unpaid obligations theretofore chargeable hereunder to said assigned interest. An assignment

shall not operate to relieve the assigned interest or the assignor from any liability or obligation which accrued prior to such assignment.

ARTICLE XV

15.0 PROPERTY INTERESTS

(and to mine)

15.1 Norgold covenants that to the best of its knowledge, Norgold now holds ^{*the title*} ~~its interest in and~~ ^{*exclusive*} right to possession of the Property free and clear from all former grants, sales, liens or encumbrances of any kind subject only to the paramount title of the United States and to those matters set forth in Exhibit A hereto. Norgold covenants that there are no delinquent taxes and agrees to furnish Asarco such abstracts, deeds or other evidences of title as may be in Norgold's possession and control, and to allow and cooperate with Asarco, at Asarco's option and cost and expense, to have abstracts brought to date and to take such steps and proceedings to search and check title as Asarco shall deem advisable. Norgold covenants that it has full power and authority to enter this Agreement, and that to the best of its knowledge, all unpatented mining claims within the Property were validly located and have been maintained in compliance with the law including all filings and recordations required by law.

15.2 In the event Norgold ^{*does not hold the exclusive*} ~~interest in and~~ right to possession of the Property ^{*and to mine*} ~~is less than~~ covenanted in Section

~~15.1 hereof~~, then all sums expended by Asarco in or acquiring any outstanding mineral interest (other than as to those matters set forth in Exhibit A), shall be a credit against the additional expenditure requirements set forth in Section 3.1, or, if Asarco notifies Norgold in writing specifying such lesser mineral interest on or before the date thirty (30) days after the execution of this Agreement by both Parties, and Norgold is unable at its expense to acquire such outstanding mineral interest, Asarco shall have the right to terminate this Agreement and Norgold shall repay to Asarco all sums theretofore paid to Norgold pursuant to Section 2.0 hereof.

free and clear from all former grants, sales, liens or encumbrances of any kind subject only to the paramount title of the United States and to those matters set forth in Exhibit A hereto,

ARTICLE XVI

16.0 DEFAULT

16.1 The failure of Asarco to make or cause to be made any of the payments herein provided for or to keep or perform any agreement on its part to be performed according to the terms and provisions of this Agreement, shall, at the election of Norgold, work a forfeiture hereof; provided, however, that in the event of a default on the part of Asarco, and the election of Norgold to terminate this Agreement on account thereof, Norgold shall give to Asarco a written notice of its intention to declare a forfeiture of this Agreement and to terminate the same on account thereof, specifying the particular default or defaults relied upon by it, and Asarco shall have thirty (30) days after receipt of such notice in which to cure the alleged default, or, if such default is incapable of being cured within such thirty day period, to commence and diligently thereafter pursue to completion action to cure the alleged default or defaults, in which event there shall be no forfeiture therefor. If Asarco disagrees that such default occurred, it shall advise Norgold in writing within thirty (30) days after receipt of the notice of default. If, within fifteen (15) days thereafter, the parties have not resolved the dispute by mutual agreement, the issue of default shall then be referred to arbitration pursuant to Section 9.1 hereof.

ARTICLE XVII

17.0 ADDITIONAL PROVISIONS

17.1 Governing Law. For all purposes, this Agreement shall be deemed to be a contract made in and governed by the laws of Arizona.

17.2 Partition of the Property. Each Party hereto covenants and agrees that so long as this Agreement is in effect, it will not commence an action for partition of ownership interest which it may hold in the Property.

17.3 No Implied Covenants. It is expressly understood and agreed that no implied covenants or condition whatsoever other than those of good faith and fair dealing shall be read into this Agreement relating to exploration, development, mining or production or the time therefor, or to any obligation of the Parties hereunder or to the measure of diligence thereof.

17.4 Other Instruments. The Parties hereto agree that they will execute any and all instruments that may be necessary or required to carry out and effectuate any and all of the provisions or objectives of this Agreement.

17.5 Severability. Should any section or provision of this Agreement be declared void or unenforceable, such declaration shall be effective only as to that portion of the Agreement so held void and unenforceable in any jurisdiction, and insofar as possible, all other sections, terms, covenants and conditions of the Agreement shall remain in full force and effect in such jurisdiction, and the invalidity or unenforceability of any provision hereof in any jurisdiction shall not ^a effect the validity or enforceability of any such provision in any other jurisdiction.

17.6 Succession. Subject to the provisions hereof, this Agreement shall be binding upon and inure to the benefit of the Parties and their respective successors, legal representatives and permitted assigns.

17.7 Time. Time is of the essence in this Agreement.

17.8 Currency. All monetary amounts expressed in this Agreement shall be in United States Dollars.

17.9 No Stock Purchase. So long as this Agreement is in effect, Asarco shall not buy, sell, offer to buy, offer to sell, or obtain any direct or indirect interest in the common stock issued by Norgold, whether through any option, warrant, voting trust or other agreement, from Norgold or any other holder of

such common stock, without the express prior written consent of Norgold.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the day and year first above written.

Norgold Resources (US) Inc.

Asarco INCORPORATED

By _____

By _____

Its _____

Its _____

MINING LEASE
between
NORGOLD RESOURCES (US) INC.
and
ASARCO INCORPORATION

Dated _____, 19__

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Attachment A Property Description
Attachment B Definition of Net Profits

MINING LEASE

THIS MINING LEASE (the "Lease") effective as of the ____ day of _____, 19____, regardless of the actual times of signing and acknowledgement, between NORGOLD RESOURCES (US) INC., a Nevada corporation, (hereinafter called "Norgold"), and ASARCO INCORPORATED, a New Jersey corporation (hereinafter called "Asarco").

RECITALS

WHEREAS, pursuant to that certain Exploration and Option Agreement (hereinafter the "Option Agreement") dated effective January 30, 1989 between Asarco and Norgold, Asarco has earned an undivided 75% interest in and to the agreements, mineral leases, prospecting permits and patented and unpatented mining claims situated in the Martinez (Weaver, Yarnell) Mining District, Yavapai County, Arizona more particularly enumerated and described in Part One of Attachment A attached hereto and made a part hereof and, if hereafter acquired by Norgold and accepted by Asarco, in and to the patented lands described in Part Two of Attachment A hereto (hereinafter called the "Property"); and

WHEREAS, Norgold has elected, pursuant to Article VIII of the Option Agreement, to enter this Lease and to lease to Asarco Norgold's undivided 25% interest in the Property, all on the terms and conditions hereinafter set forth;

EXHIBIT D

1. Grant of Lease. Norgold, in consideration of the Option Agreement and of the rents and royalties herein reserved and the covenants to be performed by Asarco, the sufficiency of which are hereby acknowledged, does hereby lease, let and demise unto Asarco, its permitted successors and assigns, all of Norgold's undivided twenty-five percent (25%) right, title and interest in the Property. Pursuant to Article VI of the Option Agreement, Norgold is seeking to acquire the additional property (if any) described in Part Two of Attachment A hereto which property, when acquired by Norgold or Asarco, shall, upon acceptance by Norgold and Asarco, become a part of the Property and be subject to this Lease.

2. Term. The term of this Lease shall commence on the date on which and in the event this Lease is entered pursuant to Article VIII of the Option Agreement and shall extend to and include the date on which Payback (as hereinafter defined) occurs; provided, however, that if Asarco has not commenced Commercial Production (as defined in Attachment B hereto) on or before July 1, 1994, this Lease shall terminate on such date; and Asarco shall promptly execute and deliver to Norgold a special warranty deed and assignment, conveying and assigning to Norgold all of its interest in the Property free and clear of all liens and encumbrances placed thereon by, or arising from operations conducted by, Asarco while this Lease or the Option Agreement is in effect; provided further, that the date for commencement of Commercial Production (and the corresponding termination date hereof) shall be extended pursuant to Section 18 hereof and by the time corresponding to any periods (if any) after July 1, 1991 during which the price of gold posted in New York daily

by Handy & Harmon or by an equivalent posting is less than \$350.00 per ounce. As used herein, the term "Payback" shall mean the recovery by Asarco of its Exploration Expenditures and its Development and Capital Expenditures and interest on the Development and Capital Expenditures as provided in Section 6 hereof. Asarco shall provide notice to Norgold of the date on which Commercial Production commences within twenty (20) days after said date.

3. Possession and Operations. Asarco shall have, and it is hereby given and granted, the continued right to enter onto and take over immediately the sole and exclusive possession and control of said Property and the whole and every part thereof, and during the term of this Lease, to remain in the sole and exclusive possession and control thereof, and to investigate, measure, sample, examine, test, develop, work, operate, use, manage and control, the same and the water and water rights, and to mine, extract and remove from said Property the ores and minerals therein and appurtenant and belonging thereto, and to treat, mill, ship, sell or otherwise dispose of the same and receive the full proceeds therefrom, and to erect, construct, maintain, use and operate thereon and therein roads, utility lines, buildings, structures, machinery and equipment in accordance with the Feasibility Study heretofore delivered to Norgold pursuant to Section 3.2 of the Option Agreement. The time, nature, location and extent of such or any or all the above activities and mining or milling operations and the cessation and resumption thereof shall be at the sole discretion of Asarco, provided that the general mining and operational plan set forth in the Feasibility Study shall be followed. Such operations may include, without limitation, open

pit, underground, strip or solution mining methods, as contemplated by the Feasibility Study, together with the right, subject to Section 4 hereof, to use and destroy so much of the surface as may be necessary, useful or convenient for the enjoyment of all such rights herein granted. Asarco may also, if it so elects, use all or part of the Property in the enjoyment of such rights and may deposit or dump any materials thereon, whether produced therefrom or from other property providing such dumping or depositing does not affect the mining capability of the Property. Asarco shall timely make all payments and perform all of the other obligations and commitments to the lessors and optionors of the leases, options and permits described in Attachment A as the same become due. This Lease was entered into to develop and mine the ore body described in the Feasibility Study pursuant to which Norgold's election under Article VIII of the Option Agreement was made. If, pursuant to operations conducted by Asarco hereunder, Asarco discovers a distinct and separate mineral deposit (other than a lateral extension of the ore body described in the said Feasibility Study), each such mineral deposit and so much of the Property as is necessary for the development and mining thereof shall constitute a separate "Additional Development Block" and shall, from and after such discovery, be subject to the provisions of Section 8.3 of the Option Agreement.

4. Care in Operations. Asarco shall cause all work, development and mining to be done in a careful and miner-like manner, and to conform in all respects to all applicable mining laws and regulations of all governmental authorities (local, state and federal) having jurisdiction over the Property relating to Asarco's activities or operations on the Property.

5. Title to Equipment. Asarco shall proceed with reasonable diligence with the development of the Property in accordance with the general mining and operational plan set forth in the Feasibility Study in such manner and on a tonnage basis of such capacity as is deemed proper and adequate in Asarco's sole judgment, and shall advance all funds required therefor, including the initial working capital in such an amount as it may deem proper for the operation of the Property. In equipping the Property for operation, Asarco may determine in its sole judgment the location of any buildings, structures, machinery or equipment and whether the same shall be located outside the limits of the Property, and may acquire other land by purchase, lease or otherwise for such purposes. The title to and ownership of all capital items of property purchased or constructed by Asarco in equipping the Property for operation and all replacements and additions thereto shall remain solely in Asarco during the term of this Lease.

6. Royalty. Asarco will pay to Norgold a production royalty on all ores extracted and sold from the Property in the amount of five percent (5%) of Net Profits (as defined in Attachment B hereto) during the term of this Lease. During the term of this Lease and prior to the effective date of any subsequent joint venture agreement between the parties hereto, Asarco shall recover, by receiving 95% of Net Profits derived from the Property, a sum equal to Asarco's Exploration Expenditures and Asarco's Development and Capital Expenditures (as defined in Attachment B hereto) and, for one (1) year following commencement of Commercial Production (as defined in Attachment B hereto), interest on the Development and Capital

Expenditures at one-half (1/2) the rate quoted as "Prime" by the Chase Manhattan Bank at its head office. It is the further intention of Norgold and Asarco that Asarco shall be limited to a single recovery, either by recoupment of Exploration Expenditures and Development and Capital Expenditures or by depreciation of capital costs included within Milling and Processing Costs and/or Mining Costs as defined in Attachment B hereto.

7. Commingling. Subject to the provisions and conditions pertaining to the commingling of ores and materials as set forth in the Western Agreement described in Attachment A, Asarco may commingle ore or other mined material from the Property with ore or other mined material from other properties, either before or after concentration or beneficiation, so long as the data necessary to determine the weight and grade, or in the case of heap leaching, solution or in situ mining, the metal content and percent recovery, both of the ore removed from the Property and the ore with which it is commingled, are obtained by Asarco, and furnished to Norgold. Asarco shall then use such data to allocate Net Profits from the commingled ore between the Property and the other properties from which the other commingled ore or other mined material was removed. All such data and allocation calculations by Asarco shall be done in a manner recognized by the mining industry as practical and sufficient at that time.

8. Marketing of Products. All mineral products of the Property which are marketed shall be marketed at the best terms obtainable from any responsible smelter, refinery, or end user with due regard to freight differentials, and if such ores or concentrates

or other products shall be treated at a smelter or refinery owned or controlled by Asarco, the smelter or refinery schedules used for determining the Net Profits royalty shall not be less favorable to the Property than the schedules then being offered or being negotiated with independent shippers for materials of a like character and similar quantity. Smelter or refinery settlement sheets or sales invoices shall be provided to Norgold together with payment of production royalties.

9. Royalty Payments. Production royalties shall become due and payable by check on the fifteenth (15th) day of the month following each calendar quarter following the sale of the concentrates or smelting ores or mine products and the obtaining of all necessary information for the calculation of the royalties. Payment shall be based on the amount received by Asarco from the sale of gold or other minerals less deductions allowed hereunder, or in the case that Asarco in its sole judgment deems it reasonable to withhold production from sale then Asarco shall notify Norgold in writing with sufficient information as to the decision to withhold production from sale and Norgold shall have five (5) business days to notify Asarco of the intent of Norgold to participate with Asarco in potential market adjustments or to determine the royalty payment due to Norgold based on multiplying the average price per unit listed in Metals Week for such minerals for each calendar month by the total number of such units of gold or other minerals produced from the Property and subtracting from that product the appropriate deductions allowed hereunder.

10. Objections to Payments. Norgold shall be deemed to have waived any right it may have had to object to the royalty settlement made by Asarco for any quarter, unless Norgold notifies Asarco in writing of such objection within twenty-six (26) months after receipt of such royalty which may be disputed. If Norgold and Asarco are unable to resolve the question by agreement within thirty (30) days after Asarco's receipt of notice from Norgold, the dispute shall be resolved by arbitration as provided in Section 23 below.

11. Ownership of Mine Residue. Tailings and other residue resulting from the milling or other beneficiating of ores produced from the Property and subsequently utilized in mining operations shall be the sole and exclusive property and responsibility of Asarco during the term of this Lease. Tailing and other residue remaining on or in the Property shall become the property of both Asarco and Norgold, in proportion to their respective ownership interests in the Property, upon termination of this Lease.

12. Mining Methods. To the extent contemplated by the Feasibility Study, Asarco is hereby granted the right, if it so desires, to mine or remove from the Property any ores, waste, water and other materials existing therein or thereon or in any part thereof through or by means of shafts, openings or pits which may be sunk or made upon adjoining or nearby property owned or controlled by Asarco, and may stockpile any ores, waste or other materials and/or concentrated products or ores or materials from the Property or any part thereof, upon stockpile grounds situated upon any such adjoining or nearby property; and Asarco may, if it so desires, use the Property and any part thereof and any shafts, openings, pits and

stockpile grounds sunk or made thereon for the mining, removal and/or stockpiling of any ores, waste, water and other materials and/or concentrated products of ores or materials from such adjoining or nearby property, or for any purpose or purposes connected therewith, not, however, preventing or interfering with the mining or removal of ore from the Property.

13. Extralateral Rights. The parties intend that the ores and minerals which are subject to this Lease are those within the surface boundaries extended downward vertically and any extralateral rights from the Property extended into other property not held by Asarco or Norgold. Extralateral rights from the Property shall not extend into other properties held by Asarco or Norgold which are not subject to this lease and extralateral rights from other properties held by Norgold or Asarco which are not subject to this lease shall not extend into the Property.

14. Data and Inspections. Asarco's engineering progress maps and factual data (but excluding interpretive information or data) on all mining operations upon the Property pertinent to the computation of production royalties shall be available upon request for inspection by Norgold for a reasonable period of time during normal business hours, but not more often than once each calendar quarter and agents or invitees of Norgold, upon providing reasonable notice and authorization to Asarco, may enter the Property at reasonable times for the purpose of inspecting the same, and Asarco shall facilitate such inspection in every reasonable way, but Norgold shall enter upon said Property at the sole risk of Norgold and so as not to hinder unreasonably the operations of Asarco; and Norgold shall

indemnify and hold harmless Asarco and its directors, officers and employees from any damage, claim or demand by reason of injury to or the presence of Norgold or its agents, representatives, licensees or guests or any of them on the Property or approaches thereto unless caused by the willful acts of Asarco or its employees. Upon request by Norgold given within one (1) year after termination or expiration of this Lease, Asarco shall furnish Norgold with copies of all raw factual data obtained from exploration, development and mining of the Property.

15. Taxes. Asarco shall pay, during the term of this Lease, before they are delinquent all general property taxes assessed against the Property and all taxes levied or assessed against any and all personal property, machinery and equipment upon the Property. In the event that Norgold is required to pay income taxes with respect to any tax year (or portion thereof) prior to Payback as if it held a 25% Participating Interest in the Joint Venture Agreement which was executed by the parties at the same time this Lease was executed, Asarco shall reimburse Norgold for the amount of income taxes Norgold is required to pay prior to Payback in excess of that amount of income taxes Norgold would have been required to pay prior to Payback if Norgold had not been deemed to hold a 25% Participating Interest.

16. Compliance with Laws and Claims. Asarco shall comply with the Workmen's Compensation Laws of Arizona and with Social Security, Unemployment Insurance and all other state and federal laws and regulations relating to Asarco's operations and shall save Norgold harmless from any claim for damages or liability by reason thereof. Without limiting the applicability of the foregoing, Asarco

shall perform all reclamation and restoration of the Property required by local, state and federal laws and regulations as a result of Asarco's activities or operations on the Property, and this obligation shall survive termination of this Lease to the extent that any such reclamation and restoration obligations have not been completed on the date of termination.

Asarco will discharge when due all claims, liabilities, expenses and obligations of, relating to or associated with the Property which arise from or relate to any action, failure to act, or man-made condition occurring or arising after (but not before) the effective date of the Option Agreement whether or not arising out of federal, state or local laws, rules or regulations now in effect or which may come into effect in the future, including without limitation (i) any and all obligations under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 as amended ("CERCLA"), Pub. L. 96-510 and 96-561, and the Resource Conservation and Recovery Act of 1980 ("RCRA"), Pub. L. 96-482 with respect to the Property, and (ii) any and all personal injuries, property damage, contamination or pollution, known or unknown, determined to have resulted from Asarco's activities or operations on the Property, or conditions made or caused by human intervention while the Property was under the ownership or control of Asarco.

17. No Liens. Asarco shall keep the Property and the whole and every part thereof free and clear of liens for labor done or work performed upon the Property or materials furnished to it for the development or operations thereof under this Lease while the same is in force and effect, and will save and keep harmless Norgold and

indemnify Norgold from all costs, claims, loss or damage which may arise by reason of injury to any persons employed by Asarco in or upon the Property or any part thereof, or, except as provided in Section 14 hereof, which may arise by reason of injury to any persons or damage to any property as the result of any activities, work or operations of Asarco or of its possession and occupancy of the Property. A lien upon the Property shall not constitute a default if Asarco in good faith disputes the validity of the claim, in which event the existence of the lien shall constitute a default only if such lien remains longer than ten (10) days after the lien has been finally adjudicated as valid.

18. Force Majeure. If Asarco is rendered unable, wholly or in part, to perform any of the terms or covenants of this Lease, other than making the various payments hereunder, it shall not be deemed in default for any failure or delay in the performance thereof if such performance shall have been prevented or delayed by any of the following conditions of force majeure: labor disturbances, shortage of labor or equipment, strikes, lockouts, other industrial disturbances, acts of God, act of the public enemy, war (whether defacto or declared), blockade, riot, insurrection, lightning, fire, storm, flood, inclement weather, explosion, inability to obtain governmental licenses, permits or approval, regulations, restrictions, orders or acts of governmental agencies or courts; or on account of any eventualities or conditions, similar or dissimilar, whether enumerated or not, beyond the reasonable control of Asarco, including federal, state and local health, safety, land use and environmental statues and regulations. Asarco shall promptly notify

Norgold in writing of the occurrence, nature and anticipated duration of any such condition of force majeure and shall use reasonable diligence to remove any such conditions of force majeure which may occur from time to time.

19. Default. The failure of Asarco to make or cause to be made any of the payments herein provided for or to keep or perform any agreement on its part to be kept or performed according to the terms and provisions of this Lease, shall, at the election of Norgold, work a forfeiture hereof; provided, however, that in the event of a default on the part of Asarco, and the election of Norgold to terminate this Lease on account thereof, Norgold shall give to Asarco a written notice of its intention to declare a forfeiture of this Lease and to terminate the same on account thereof, specifying the particular default or defaults relied upon by it, and Asarco shall have thirty (30) days after receipt of such notice in which to cure or commence and diligently pursue actions to cure the alleged default or defaults, in which event there shall be no forfeiture therefor. If Asarco disagrees that such default occurred, it shall advise Norgold in writing thirty (30) days after receipt of the notice of default. If, within fifteen (15) days thereafter, the parties have not resolved the dispute by mutual agreement, the issue of default shall then be referred to arbitration pursuant to Section 23 hereof.

20. Termination. Asarco may terminate this Lease at any time by providing thirty (30) days' written notice. Upon total cancellation and termination of this Lease, other than by the occurrence of Payback pursuant to Section 2 above, Asarco shall be

under no further obligation of whatsoever kind or nature to Norgold except for the making of payments which have already accrued at the date of such cancellation and termination and for the payment of Asarco's proportion of the aforesaid taxes accrued while this Lease was in effect. However, if Asarco cancels and terminates this Lease in any year after June 1 of such year, Asarco shall be obligated to perform all assessment work for any unpatented mining claims within the Property for the assessment year in which such termination occurs. If Asarco shall have included any part of the Property in a "producing group" for tax assessment purposes, and taxes based on such assessment shall have been levied but shall not have been paid at the time of termination of this Lease, Asarco shall pay such taxes before they are delinquent.

21. Lesser Title. In the event Norgold, as of the date of its execution of the Option Agreement, did not hold the exclusive right to possession and to mine the Property free and clear from all former grants, rules, liens or encumbrances of any kind subject only to the paramount title of the United State and to those matters set forth in Exhibit A to the Option Agreement, then all sums expended by Asarco in acquiring any outstanding mineral interest (other than as to those matters set forth in Exhibit A to the Option Agreement) shall, to the extent the same were not credited against the additional expenditure requirements set forth in Section 3.1 of the Option Agreement, be deemed included as Development and Capital Expenditures under Attachment B hereto.

22. Relocation and Assessment Work. Subject to the provisions of the Western Agreement, if Asarco, at its option and in

its sole judgment, desires to amend or relocate any mining claims in the Property, or if it discovers that fractions exist between any of such claims, it may, at its sole expense, amend or relocate such claims and locate any such fractions, subject to this Lease. Asarco shall also prepare and file such notices and certificates as may be required by State and Federal law as may be deemed appropriate to effect such amendment or location. All such amended or relocated claims or any fractions so located by Asarco shall be included in the Property for purposes of this Lease.

Subject to Section 20 hereof, Asarco shall perform all assessment work (or obtain deferments of assessment work pursuant to 30 U.S.C. §28b) on the unpatented claims and Arizona State mineral leases and prospecting permits within the Property in compliance with Federal and State laws and regulations and shall timely record and file with the proper county, state and federal offices evidence of such work in compliance with assessment, recording and filing requirements.

23. Arbitration. In case of any dispute between the parties, the same shall be submitted to arbitrators and to an umpire who shall be selected in the manner hereinafter set forth. The party desiring arbitration shall nominate one arbitrator, and shall notify the other party of such nomination, and the other party shall within thirty (30) days after receiving such notice, nominate an arbitrator, and the two arbitrators, before proceeding to act, shall select a third person to act as umpire jointly with them. If said arbitrators shall be unable to agree in the selection of such third person as umpire, the umpire shall be designated by the American Arbitration

Association under the rules of such association. Furthermore, if the party receiving the notice of the nomination of an arbitrator by the party desiring arbitration shall fail and neglect within said thirty (30) days to nominate an arbitrator, then the arbitrator nominated by the party desiring arbitration shall proceed alone and his decision shall be binding upon the parties. After two such arbitrators and an umpire shall have been so selected, the umpire shall fix a time and place in Tucson, Arizona, or elsewhere if the parties hereto so agree, for the purpose of the arbitrators and umpire meeting and hearing the parties and any evidence that they may submit, and the decision of said arbitrators and umpire or any two of them in writing shall be binding upon the parties. The expense of the arbitrators and umpire shall be paid as directed in such decision. The persons to be selected as arbitrators and umpire shall be disinterested persons having experience in the mining business in the United States of America, or if no mining question is involved, the persons having technical competence relative to the point in dispute, and who are not and never have been associated directly or indirectly with any party to the dispute. The arbitrators shall retain jurisdiction to determine whether a default has been cured within a reasonable time. Any decision of the arbitrators shall bind the parties hereto with respect to the same issues in any dispute arising thereafter.

24. Recording. Norgold agrees to execute, upon request by Asarco, a short-form notice of this Lease, which notice shall be for purposes of recordation.

25. Notice. Any notice, payment or other correspondence required or permitted to be given or made to Norgold or Asarco

hereunder shall be deemed to have been properly given or delivered when made in writing and delivered personally to the party to whom directed, or when delivered to such party by United States mail duly registered, courier service or Western Union telegraph with all necessary charges thereon prepaid. All notices, payment or correspondence given hereunder shall be addressed to the respective addresses given below:

If to Lessor: Mr. Christopher Moat, President
Norgold Resources, Inc.
2380 Harbour Center
P.O. Box 12122
555 West Hastings Street
Vancouver, B.C. V6B 4N6 Canada
Facsimile No. 604/685-8045

With a copy to: Mr. Brian D. Edgar
Rand Edgar & Sedun
Suite 2200
885 W. Georgia Street
Vancouver, B.C. V6C 3E8
Facsimile No. 604/681-7116

If to Asarco: Exploration Department
ASARCO Incorporated
180 Maiden Lane
New York, New York 10038
Facsimile No. 212/510-1908

With a copy to: Exploration Department
ASARCO Incorporated
1150 North 7th Avenue
Tucson, Arizona 85705
Facsimile No. 602/792-3934

Said addresses for receiving notices may be changed by either party upon five (5) business days' previous notice to the other party.

26. Assignment. Neither party shall assign its interest in this Lease, or any part therein, without the prior written consent of the other party. No such consent shall be required, however, for an assignment by either party to an affiliated company which shall be defined as any company which owns 50% or more of the shares of the

assigning party or any company in which either assigning party owns at least a 50% interest. No assignment shall have any force and effect unless and until the person in whose favor such assignment is given, executes a written agreement with the other party to be bound by the provisions of this Lease as if it were a party to this Lease.

27. Time. Time is of the essence in this Lease.

28. Inurement. These presents shall inure to the benefit of and be binding upon the respective heirs, executors, administrators, successors and assigns of the parties hereto.

29. No Stock Purchase. So long as Norgold is in full compliance with all of its obligations hereunder, Asarco shall not buy, sell, offer to buy, offer to sell, or obtain any direct or indirect interest in the common stock issued by Norgold, whether through any option, warrant, voting trust or other agreement, from Norgold or any other holder of such common stock, without the express prior written consent of Norgold.

IN WITNESS WHEREOF, the parties hereto have executed this Lease as of the day and year first above written.

NORGOLD RESOURCES (US) INC.

By _____
Its _____

ASARCO INCORPORATED

By _____
Its _____

STATE OF _____)
: ss.
County of _____)

The foregoing instrument was acknowledged before me this
_____ day of _____, 1989, by _____, the
_____ of Norgold Resources (US) Inc., an
_____ corporation, for and on behalf of the corporation.

Notary Public

My Commission Expires:

STATE OF _____)
: ss.
County of _____)

The foregoing instrument was acknowledged before me this
_____ day of _____, 1989, by _____, the
_____ of ASARCO Incorporated, a New Jersey
corporation, for and on behalf of the corporation.

Notary Public

My Commission Expires:

Attachment "A"

Part One-

The following patented and unpatented lode mining claims, State of Arizona mineral lease and State of Arizona prospecting permits situated in Township 10 North, Range 5 West, G&SRB&M, Weaver Mining District, Yavapai County, Arizona:

A. Patented and unpatented Mining Claims subject to Mining Agreement (With Option to Purchase) dated December 30, 1988 between Norgold and Western Building and Mining Co., Inc.

I. Patented Claims

1. The Juniper lode mining claim, mineral survey no. 1112, patent whereof is recorded in Book 36 of Deeds, pages 229 through 232.

Except for that portion of said Juniper claim conveyed by Warranty Deed recorded in Book 235, page 8 and described as follows:

Commencing at corner No. 1 of said Juniper claim, thence North 44° 30' West along the 1-5 line of said claim 237.56 feet to the Point of Beginning for the description of the herein described tract; thence continuing along said 1-5 line 150.0 feet; thence North 44° 30' East parallel with the 5-4 line of said claim 500 feet; thence South 44° 30' East parallel with said 1-5 line 150 feet; thence South 44° 30' West parallel with said 5-4 line 500 feet to the Point of Beginning. Together with an easement for ingress and egress over an existing road from U.S. Highway 89 to the above described tract as described in the said Warranty Deed; (hereinafter the "Santa Fe Patented Land").

And Except for that portion of Juniper claim conveyed by Warranty Deeds recorded in Book 1265, page 694 and page 697 and described as follows:

Commencing at the Northeasterly end of the Northwesterly side line of the parcel of land conveyed in Book 235, page 8; thence North 44° 30' East 75 feet along the Northeasterly prolongation of the Northwesterly side line of said parcel conveyed in Book 235, page 8; thence South 44° 30' East 70 feet along a line parallel with the Northeasterly end line of said parcel conveyed in Book 235, page 8; thence in a Southwesterly direction to a point

on said Northeasterly end line that is South 44° 30' East 75 feet from the Point of Beginning for the herein described parcel of land; thence North 44° 30' West 75 feet along the Northeasterly end line of said parcel conveyed in Book 235, page 8 to the Point of Beginning.

2. The Edmond lode mining claim, mineral survey No. 1114, patent whereof is recorded in Book 36 of Deeds, pages 236 through 240.

3. The Edgar lode mining claim, mineral survey No. 1113, patent whereof is recorded in Book 36 of Deeds, pages 240 and 241.

4. The Triangle lode mining claim, mineral survey No. 1115, patent whereof is recorded in Book 36 of Deeds, pages 233 through 236.

Subject to the following:

(a) The conditions and the stipulations set forth in the patents to the Subject Patented Mining Claims recorded in Book 36 of Deeds, page 229 through 243 and Book 43 of Deeds, pages 296 through 300.

(b) An easement dated December 13, 1939 and recorded January 4, 1940 in Book 176 of Deeds, Page 176, for a right-of-way to the Mountain States Telephone and Telegraph Company for the right, privilege and authority to construct, operate and maintain telephone and telegraph lines and poles over an undescribed portion of the Edmond and Triangle patented mining claims.

(c) An easement for ingress and egress purposes over an existing roadway as reserved in that Joint Tenancy Deed dated March 29, 1973 and recorded in Book 1207, Page 425. (Affects the Edmond patented lode mining claim).

(d) An easement for ingress and egress purposes over an existing roadway, thirty feet in width, reserved in that Joint Tenancy Deed dated October 14, 1974 and that Warranty Deed dated August 21, 1982, recorded respectively in Book 1375, Page 64 and Book 1485, Page 769. (Affects the Edgar patented lode mining claim).

(e) An easement for ingress and egress over the Edmond and Triangle patented lode mining claims from U.S. Highway No. 89 as set forth in Warranty Deed dated September 28, 1979 recorded in Book 1265, Pages 694 through 705. Said easement being twelve feet in width, 6 feet on each side of the center line described in said documents.

(f) Taxes which constitute a lien but which are not yet due and payable.

II. Unpatented Claims

<u>Claim Name</u>	<u>Date Located or Amended</u>	<u>Book</u>	<u>Recorded Page</u>	<u>Date</u>	<u>BLM Serial No.</u>
Alvin J.	11/21/1975	991	423	11/21/75	AMC 33458
Amended	11/21/1975	996	261	1/2/76	AMC 33458
Kathryn A	11/21/1975	991	419	11/21/75	AMC 33459
Amended	11/21/1975	996	263	1/2/76	AMC 33459
Kathryn B	11/21/1975	991	421	11/21/75	AMC 33460
Amended	11/21/1975	996	265	1/2/76	AMC 33460
Pennsylvania No. 1	6/26/1981	1392	661	6/30/81	AMC 134462
Sun #1	9/9/1988	2079	476	9/13/88	AMC 288941
Sun #2	9/9/1988	2079	478	9/13/88	AMC 288942
Sun #3B	9/9/1988	2079	480	9/13/88	AMC 288943
Amended	10/25/1988	2091	499	10/26/88	AMC 288943
Sun #6B	9/9/1988	2079	486	9/13/88	AMC 288946
Amended	10/25/1988	2091	501	10/26/88	AMC 288946
Sun #7B	9/9/1988	2079	488	9/13/88	AMC 288947
Amended	10/25/1988	2091	503	10/26/88	AMC 288947
Sun #8	9/9/1988	2079	490	9/13/88	AMC 288948
Sun-8B	10/25/1988	2091	505	10/26/88	AMC 288948
Sun #9	9/9/1988	2079	492	9/13/88	AMC 288949
Sun #10	9/9/1988	2079	494	9/13/88	AMC 288950
Sun #11	9/9/1988	2079	496	9/13/88	AMC 288951
Sun #12	9/9/1988	2079	498	9/13/88	AMC 288952
Sun #13	9/9/1988	2079	500	9/13/88	AMC 288953
Sun #14	9/9/1988	2079	502	9/13/88	AMC 288954
Sun #15	9/9/1988	2079	504	9/13/88	AMC 288955

B. Unpatented mining claims subject to Option Agreement dated September 16, 1988 between Norgold and Don Jenkins.

<u>Claim Name</u>	<u>Date Located or Amended</u>	<u>Recorded Book</u>	<u>Page</u>	<u>BLM Serial No.</u>
Y-1B Amended	8-8-88 10-25-88	2078 2091	422/423 489/490	AMC 288934
Y-2B Amended	8-8-88 10-29-88	2078 2091	424/425 491/492	AMC 288935
Y-3B Amended	8-8-88 10-25-88	2078 2091	426/427 493/494	AMC 288936
Y-4F Amended	8-8-88 10-25-88	2078 2091	428/429 495/496	AMC 288937
Y-5B Amended	8-8-88 10-25-88	2078 2091	430/431 497/498	AMC 288938
Y-6	8-8-88	2078	432/433	AMC 288939
Y-7	8-8-88	2078	434/435	AMC 288940

C. Unpatented mining claims and State of Arizona mineral lease subject to Option to Purchase dated April 21, 1989 between Norgold and D.C. Layton et ux.

<u>Claim Name</u>	<u>Date Located or Amended</u>	<u>Book</u>	<u>Page</u>	<u>Recorded Date</u>	<u>BLM Serial No.</u>
Victoria #1	8/5/1974	924	198	8/5/74	AMC 78219
Amended	3/2/1980	1287	763	3/25/80	AMC 78219
Victoria #2	3/2/1980	1287	765	3/25/80	AMC 98902
Victoria #3	3/2/1980	1287	767	3/25/80	AMC 98903
Victoria #4	3/2/1980	1287	769	3/25/80	AMC 98904
Victoria #5	8/20/1985	1751	484	9/4/85	AMC 244644
Rim Rock 1		154	550		AMC 82449
Thunder Hill		941	750		AMC 78227
Black Dike 1		153	17		AMC 74727
Black Dike					
Kachina Doll 1		937	596		Arizona State Mineral Lease #11-31009

D. State of Arizona Prospecting Permits

Prospecting Permit No. 08 - 96868 - E 1/2 Section 14, Township 10 North, Range 5 West, G&SRB&M, Yavapai County, Arizona. Contains 268.25 acres

Prospecting Permit No. 08 - 96869 - NE 1/4 Section 22, Township 10 North, Range 5 West, G&SRB&M, Yavapai County, Arizona. Contains 154.74 acres.

ALL OF WHICH claims, leases and permits are SUBJECT TO:

(a) Paramount title of the United States, with respect to the unpatented mining claims;

(b) All roads, rights-of-way and easements existing, and those of record in the office of the Recorder of Yavapai County, and those of record in the Arizona State Office of the Bureau of Land Management and those of record in the office of the Arizona State Land Department;

(c) All leases, permits, approvals and other rights and privileges granted by or obtained from the United States in the administration of its paramount title and granted by or obtained from the State of Arizona in its administration of its title;

(d) The effect of conflicts (if any) with unpatented mining and mill site claims heretofore initiated under the mining laws of the United States;

(e) Taxes (if any), which by law constitute a lien but which are not yet due and payable; and

(f) The terms, conditions and provisions of the above-described Western Mining Agreement, the Jenkins Option Agreement and the Layton Option to Purchase.

Part Two

Patented Claims

Mother Patented Lode	MS 1201
Alvarado Gold Mines	NE 1/4 Sec. 21, T10N, R5W
Santa Fe Patented Land	

Attachment B
To That Mining Lease Dated _____, 19____
Between Norgold and Asarco

DEFINITION OF NET PROFITS DURING PAYBACK

For the purpose of calculating "Net Profits" pursuant to Section 6 of the Mining Lease (the "Lease") between ASARCO Incorporated (hereinafter referred to as "Asarco") and Norgold Resources (US) Inc. (hereinafter referred to as "Norgold"), to which this Attachment B is attached, the following terms shall have the meaning hereafter assigned:

- (a) "Agreement" shall mean the Exploration and Option Agreement dated effective as of January 30, 1989 between Asarco and Norgold.
- (b) "Commercial Production" shall have the meaning defined in Section 1.4 of the Exhibit C to the Agreement.
- (c) "Minerals" shall have the meaning defined in Section 1.7 of Exhibit C to the Agreement.
- (d) "Property" shall have the meaning defined in the first recital of the Lease.
- (e) "Gross Sales" in any Year shall mean the amount of earned revenues payable to Asarco by any smelter, refinery, or other purchaser of any and all Minerals produced from the Property less all penalties, assaying and sampling charges, whether or not deducted by the purchaser or paid or incurred by Asarco in the first instance; provided, however, that any written contract for the sale of such Minerals to an affiliate of Asarco or any sale of such Minerals to an affiliate of Asarco on a basis not involving such a contract or any use by Asarco shall not, without the prior written consent of Norgold, be on a basis less favorable to Asarco (including the terms thereof with respect to delivery and inventorying) at the time of such contract, sale, or use, as the case may be, to or by an unaffiliated third party.
- (f) "Operating Costs" shall mean the sum of the following costs and expenses incurred by Asarco in any Year;
 - (i) "Mining Costs" - which shall mean costs and expenses accrued or incurred in accordance with generally accepted accounting principles by Asarco after commencement of Commercial Production in exploring for, developing, mining, extracting, removing, and transporting to the Mill (as hereinafter defined) Minerals produced from the Property. Such costs and

expenses shall include, without limitation, those incurred for labor, machinery operation, fuel, explosives and other materials, exploration drilling, developmental or ore delineation drilling, a reasonable allowance for depreciation and amortization of mining equipment and machinery acquired after commencement of Commercial Production, and a reasonable allowance for future costs anticipated to be incurred by Asarco in reclaiming the Property in accordance with applicable laws and regulations. Mining Costs shall not include depletion, income taxes, or royalties paid by Asarco to Norgold.

- (ii) "Milling and Processing Costs" - which shall mean costs and expenses incurred after commencement of Commercial Production by Asarco in milling or processing minerals produced from the Property at Asarco's mill or central processing facility utilized by lessee to process Minerals produced from the Property (hereinafter referred to as the "Mill", if any). Asarco shall be entitled to a reasonable allowance for depreciation of Mill facilities and equipment acquired after commencement of Commercial Production; capital costs incurred prior to the commencement of Commercial Production are subject to recoupment under the definition of Development and Capital Expenditures" set forth below.
- (iii) "General and Administrative Costs" - which shall mean costs and expenses incurred by Asarco and properly allocable to the administration of the Property and the production of Minerals therefrom, but not including any General and Administrative Costs incurred with respect to operations of Asarco or its affiliates not directly related to the administration of the Property or the production of Minerals therefrom. General and Administrative Costs shall include, without limitation, any and all advance royalties, production royalties, or other payments of any nature whatsoever payable to third parties (i.e., other than Norgold or Asarco) having an interest in the Property. Indirect costs and expenses shall not exceed those chargeable under the Accounting Procedure attached as Schedule B to Exhibit C to the Agreement.
- (iv) "Selling and Delivery Costs" - which shall mean costs and expenses incurred by Asarco in or in connection with the marketing of Minerals from the Property and the delivery of such Minerals to points of ultimate delivery to customers.

- (v) "Interest" - which shall mean any interest cost incurred in any bona fide financing transaction directly related to the development, operation, or commercialization of the Property after the commencement of Commercial Production. In the event that such a financing transaction is with an affiliate of Asarco, the terms of such transaction shall provide for a reasonable reduction of outstanding indebtedness and shall not be less favorable to Asarco than that which would have been applicable with respect to a similar financing transaction with an unaffiliated third party and, in any event, at an interest rate not greater than the rate quoted as "Prime" by Chase Manhattan Bank at its head office.
- (vi) "Taxes" - which shall mean all taxes levied against operations on the Property and/or levied against the Property, excluding income taxes imposed upon profits, but including government royalties and mining and severance taxes.
- (g) "Exploration Expenditures" shall mean Asarco's total costs and expenses incurred with respect to examining and exploring the Property and all matters connected therewith incurred after January 30, 1989 and prior to commencement of Commercial Production including, without limitation, costs and expenses relating to geological, geochemical and geophysical studies, feasibility studies, exploration drilling, sampling and assaying.
- (h) "Development and Capital Expenditures" shall mean Asarco's total costs and expenses incurred with respect to developing the Property and all matters connected therewith incurred after January 30, 1989 and prior to commencement of Commercial Production including, without limitation, costs and expenses incurred with respect to the construction of the Mill (if any) or related facilities, together with costs and expenses relating to developmental drilling, sampling and assaying, mine design and development, the cost of any mining equipment or machinery purchased prior to commencement of Commercial Production, compliance with environmental and regulatory requirements (including attorney's fees), pre-production stripping, the construction of roads connecting the Property to a central road system, the costs (if any) incurred by Asarco in acquiring outstanding mineral interests as provided in Section 21 of the Lease and any other costs or expenses which would be included in the definition of Mining Costs and/or Milling and Processing Costs if such costs or expenses were incurred after commencement of Commercial Production.
- (i) "Net Returns" in any Year means Gross Sales accrued in that Year less Operating Costs accrued in that Year.

- (j) "Operating Loss" in any Year means the excess of Operating Costs accrued in that Year over Gross Sales accrued in that Year.
- (k) "Net Profits" in any Year means Net Returns in that Year less the following amounts which shall be recovered from Net Returns in the order and in the manner set forth below:
 - (i) the aggregate amount, if any, of Operating Loss for any prior Year or Years which shall not have been deducted and recovered from Net Returns in prior Years;
 - (ii) the aggregate amount, if any, of Exploration Expenditures and Development and Capital Expenditures (including interest thereon as provided in Section 6 of the Lease) which shall not have been deducted and recovered from Net Returns in prior Years.
- (l) "Year" or "Years" means the fiscal year established by Asarco for its operations upon the Property; provided, however, the first Year shall begin with the commencement of Commercial Production and shall continue until the beginning of Asarco's next fiscal year.

In the event that costs and expenses incurred with respect to construction if the Mill (if any) or other Exploration Expenditures and Development and Capital Expenditures benefit the development of other mineral properties controlled by Asarco, such Exploration Expenditures and Development and Capital Expenditures shall be allocated and apportioned by Asarco in accordance with generally accepted accounting principles as applied in the mining industry for the purpose of computing the Net Profits Royalty pursuant to the terms hereof.

MINING LEASE

THIS MINING LEASE (the "Lease") effective as of the ____ day of _____, 19____, regardless of the actual times of signing and acknowledgement, between NORGOLD RESOURCES (US) INC., a Nevada corporation, (hereinafter called "Norgold"), and ASARCO INCORPORATED, a New Jersey corporation (hereinafter called "Asarco").

INSERT ① attached

1. Grant of Lease. Norgold, in consideration of ^{the} ~~that~~ ^X
~~Exploration and Option Agreement dated January 30, 1989 between~~ ^X
~~Norgold and Asarco (the "Option Agreement")~~ and of the rents and ^X
royalties herein reserved and the covenants to be performed by
Asarco, the sufficiency of which are hereby acknowledged, does
hereby lease, let and demise unto Asarco, ^{twenty five percent} its permitted succes-
sors and assigns, all of Norgold's ^{undivided (25%)} right, title and interest in ^X
~~the patented and unpatented mining claims described in Part One~~ ^X
~~of Attachment A hereto (hereinafter referred to as~~ ^X
~~the~~ ^X
~~Property,~~ ^X ~~including all surface rights thereto, located in~~ ^X
Yavapai County, Arizona. Pursuant to Article VI of the Option
Agreement, Norgold is seeking to acquire the additional property ^(if any) ^X
described in Part Two of Attachment A hereto which property, when
acquired by Norgold or Asarco, shall, upon acceptance by Norgold
and Asarco, become a part of the Property and be subject to this
Lease.

2. Term. The term of this Lease shall commence on the date on which and in the event this Lease is entered pursuant to Article VIII of the Option Agreement and shall extend to and include the date on which Payback (as hereinafter defined)

EXHIBIT C D

occurs; provided, however, that if Asarco has not commenced Commercial Production (as defined in Attachment B hereto) ^{within three (3) years from the} ~~on or~~ ^{5+e7 X} ~~before July 1, 1994~~ ^{date Asarco delivered the Feasibility Study to Norgold pursuant to Section 3.2 of the option Agreement,} this Lease shall terminate on such date ^{and 2 attached}

provided further, that the date for commencement of Commercial Production (and the corresponding termination date hereof) shall be extended pursuant to Section 18 hereof and by the time corresponding to any periods (if any) after July 1, 1991 during which the price of gold posted in New York daily by Handy & Harmon or by an equivalent posting is less than \$350.00 per ounce. As used herein, the term "Payback" shall mean the recovery by Asarco of its Exploration ^{Expenditures its} and ^{and Capital} Development ^{Expenditures} and interest on the ~~Exploration and Development~~ ^{and Capital} Expenditures as provided in Section 6 hereof. Asarco shall provide notice to Norgold of the date on which Commercial Production commences within twenty (20) days after said date.

3. Possession and Operations. Asarco shall have, and it is hereby given and granted, the continued right to enter onto and take over immediately the sole and exclusive possession and control of said Property and the whole and every part thereof, and during the term of this Lease, to remain in the sole and exclusive possession and control thereof, and to investigate, measure, sample, examine, test, develop, work, operate, use, manage and control, the same and the water and water rights, and to mine, extract and remove from said Property the ores and minerals therein and appurtenant and belonging thereto, and to treat, mill, ship, sell or otherwise dispose of the same and receive the full proceeds therefrom, and to erect, construct, maintain, use and operate thereon and therein roads, utility

INSERT ②
to
Mining Lease

Asarco shall promptly execute and deliver to Norgold a special warranty deed and assignment, conveying and assigning to Norgold all of its interest in the Property free and clear of all liens and encumbrances placed thereon by, or arising from operations conducted by, Asarco while this Lease or the Option Agreement is in effect.

in accordance with the Feasibility Study heretofore delivered to Norgold pursuant to Section 3.2 of the Option Agreement.

lines, buildings, structures, machinery and equipment. The time, X
nature, location and extent of such or any or all the above
activities and mining or milling operations and the cessation and
provided that the general mining and operational plan set forth in the Feasibility Study shall
resumption thereof shall be at the sole discretion of Asarco, and be followed. X
Such operations
may include, without limitation, open pit, underground, strip or
solution mining methods, as contemplated by the Feasibility Study, together with the right, subject to X
Section 4 hereof, to use and destroy so much of the surface as
may be necessary, useful or convenient for the enjoyment of all
such rights herein granted. Asarco may also, if it so elects,
use all or part of the Property in the enjoyment of such rights,
and may deposit or dump any materials thereon, whether produced
therefrom or from other property providing such dumping or
depositing does not affect the mining capability of the Property. INSERT ③ as Hatched X

4. Care in Operations. Asarco shall cause all work,
development and mining to be done in a careful and minerlike
manner, and to conform in all respects to all applicable mining
laws and regulations of all governmental authorities (local,
state and federal) having jurisdiction over the Property relating
to Asarco's activities or operations on the Property.

5. Title to Equipment. Asarco shall proceed with
reasonable diligence with the development of the Property, in such
manner and on a tonnage basis of such capacity as is deemed X
proper and adequate in Asarco's sole judgment, and shall advance
all funds required therefor, including the initial working
capital in such an amount as it may deem proper for the operation
of the Property. In equipping the Property for operation, Asarco
may determine in its sole judgment the location of any buildings,
structures, machinery or equipment and whether the same shall be
in accordance with the general mining and operational plan set forth
in the Feasibility Study X

INSERT 3
to
Mining Lease

Asarco shall timely make all payments and perform all of the other obligations and commitments to the lessors and optionors of the leases, options and permits described in Attachment A as the same become due. This Lease was entered into to develop and mine the ore body described in the Feasibility Study pursuant to which Norgold's election under Article VIII of the Option Agreement was made. If, pursuant to operations conducted by Asarco hereunder, Asarco discovers a distinct and separate mineral deposit (other than a lateral extension of the ore body described in the said Feasibility Study), each such mineral deposit and so much of the Property as is necessary for the development and mining thereof shall constitute a separate "Additional Development Block" and shall, from and after such discovery, be subject to the provisions of Section 8.3 of the Option Agreement.

located outside the limits of the Property, and may acquire other land by purchase, lease or otherwise for such purposes. The title to and ownership of all capital items of property purchased or constructed by Asarco in equipping the Property for operation and all replacements and additions thereto shall remain solely in Asarco during the term of this Lease.

6. Royalty. Asarco will pay to Norgold a production royalty on all ores extracted and sold from the Property in the amount of five percent (5%) of Net Profits (as defined in Attachment B hereto) during the term of this Lease. During the term of this Lease and prior to the effective date of any subsequent joint venture agreement between the parties hereto, Asarco shall recover, by receiving 95% of Net Profits derived from the Property, a sum equal to Asarco's Exploration ^{Expenditures} and ^{Capital} Development _{Expenditures} (as defined in Attachment B hereto) and, for one (1) year following commencement of Commercial Production (as defined in Attachment B hereto), interest on the Exploration ^{and Capital} _{Expenditures} at one-half (1/2) the rate quoted as "Prime" by the Chase Manhattan Bank at its head office. It is the further intention of Norgold and Asarco that Asarco shall be limited to a single recovery, either by recoupment of Exploration ^{Expenditures} and ^{Capital} _{Development} _{Expenditures} or by depreciation of capital costs included within Milling and Processing Costs and/or Mining Costs as defined in Attachment B hereto.

7. Commingling. Asarco may commingle ore or other mined material from the Property with ore or other mined material from other properties, either before or after concentration or beneficiation, so long as the data necessary to determine the

Subject to the provisions and conditions pertaining to the commingling of ores and materials as set forth in the Western Agreement described in Attachment A,

royalties. Payment shall be based on the amount received by Asarco from the sale of gold or other minerals less deductions allowed hereunder, or in the case that Asarco in its sole judgment deems it reasonable to withhold production from sale then Asarco shall notify Norgold in writing with sufficient information as to the decision to withhold production from sale and Norgold shall have five (5) business days to notify Asarco of the intent of Norgold to participate with Asarco in potential market adjustments or to determine the royalty payment due to Norgold based on multiplying the average price per unit listed in Metals Week for such minerals for each calendar month by the total number of such units of gold or other minerals produced from the Property and subtracting from that product the appropriate deductions allowed hereunder.

10. Objections to Payments. Norgold shall be deemed to have waived any right it may have had to object to the royalty settlement made by Asarco for any quarter, unless Norgold notifies Asarco in writing of such objection within ^{+ twenty-six (26)} ~~twelve (12)~~ months after receipt of such royalty which may be disputed. If Norgold and Asarco are unable to resolve the question by agreement within thirty (30) days after Asarco's receipt of notice from Norgold, the dispute shall be resolved by arbitration as provided in Section 23 below.

11. Ownership of Mine Residue. Tailings and other residue resulting from the milling or other beneficiating of ores produced from the Property and subsequently utilized in mining operations shall be the sole and exclusive property and responsibility of Asarco during the term of this Lease. Tailing and

other residue remaining on or in the Property shall become the property of both Asarco and Norgold, in proportion to their respective ownership interests in the Property, upon termination of this Lease.

To the extent contemplated by the Feasibility Study,

12. Mining Methods. Asarco is hereby granted the right, if it so desires, to mine or remove from the Property any ores, waste, water and other materials existing therein or thereon or in any part thereof through or by means of shafts, openings or pits which may be sunk or made upon adjoining or nearby property owned or controlled by Asarco, and may stockpile any ores, waste or other materials and/or concentrated products or ores or materials from the Property or any part thereof, upon stockpile grounds situated upon any such adjoining or nearby property; and Asarco may, if it so desires, use the Property and any part thereof and any shafts, openings, pits and stockpile grounds sunk or made thereon for the mining, removal and/or stockpiling of any ores, waste, water and other materials and/or concentrated products of ores or materials from such adjoining or nearby property, or for any purpose or purposes connected therewith, not, however, preventing or interfering with the mining or removal of ore from the Property.

13. Extralateral Rights. *The parties intend that the ores and minerals which are subject to this lease are those within the surface boundaries extended downward vertically of any claim held under lease or agreement by Asarco, or now or hereafter owned by Asarco, shall belong to such claim and none extended into other property not held by Asarco or Norgold. Extralateral rights from the Property shall of such claim for ores mined and removed by it therefrom. As to the other claims or property adjoining or adjacent to the*

and Asarco shall not claim extralateral rights from such claim extending from such claim into the Property

or Norgold ^{which are} ~~and~~ ^{its} ~~extralateral~~ rights from other properties held by Norgold or Asarco, shall not extend into the Property. *which are not subject to this lease*

~~Property, this Lease is intended to and does hereby grant to~~ X
Asarco, subject to the terms hereof, the full rights of possession and enjoyment in and to the Property and all ore and minerals therein and appurtenant thereto and all ~~extralateral rights thereof as provided by law~~

14. Data and Inspections. Asarco's engineering progress maps and factual data (but excluding interpretive information or data) on all mining operations upon the Property pertinent to the computation of production royalties shall be available upon request for inspection by Norgold for a reasonable period of time during normal business hours, but not more often than once each calendar quarter and agents or invitees of Norgold, upon providing reasonable notice and authorization to Asarco, may enter the Property at reasonable times for the purpose of inspecting the same, and Asarco shall facilitate such inspection in every reasonable way, but Norgold shall enter upon said Property at the sole risk of Norgold and so as not to hinder unreasonably the operations of Asarco; and Norgold shall indemnify and hold harmless Asarco and its directors, officers and employees from any damage, claim or demand by reason of injury to or the presence of Norgold or its agents, representatives, licensees or guests or any of them on the Property or approaches thereto unless caused by the willful acts of Asarco or its employees. Upon request by Norgold, ^{Set} ~~given within ninety (90) days~~ ^{one (1) year} X

Set ~~after termination or expiration of this Lease,~~ X
Asarco shall X
furnish Norgold with copies of all raw factual data obtained from exploration, development and mining of the Property.

15. Taxes. Asarco shall pay, during the term of this Lease, before they are delinquent- all general property taxes assessed against the patented ~~mining claims and other patented~~ ^P property and all taxes levied or assessed against any and all personal property, machinery, and equipment placed upon the Property. ^{INSERT ④ a Hacked} ~~Asarco. As to severance tax and all other taxes that are now or may be hereafter levied and computed on the amount of value of ores produced from the Property, Norgold and Asarco shall each bear their pro rata share, provided the pro rata share of Norgold shall be determined by multiplying the gross amount of production royalties paid to Norgold during the taxing period by the applicable tax rate, the balance of the tax being Asarco's pro rata share. If Norgold fails to pay taxes chargeable solely to Norgold or its pro rata share of taxes when due, Asarco may at its option pay the pro rata share of Norgold as herein defined and deduct said payment or payments from royalty due or to become due to Norgold hereunder.~~

16. Compliance with Laws and Claims. Asarco shall comply with the Workmen's Compensation Laws of Arizona and with Social Security, Unemployment Insurance and all other state and federal laws and regulations relating to Asarco's operations and shall save Norgold harmless from any claim for damages or liability by reason thereof. Without limiting the applicability of the foregoing, Asarco shall perform all reclamation and restoration of the Property required by local, state and federal laws and regulations as a result of Asarco's activities or operations on the Property, and this obligation shall survive termination of

INSERT 4
to
Mining Lease

In the event that Norgold is required to pay income taxes with respect to any tax year (or portion thereof) prior to Pay[^]Back as if it held a 25% Participating Interest in the Joint Venture Agreement which was executed by the parties at the same time this Lease was executed, Asarco shall reimburse Norgold for the amount of income taxes Norgold is required to pay prior to Pay[^]Back in excess of that amount of income taxes Norgold would have been required to pay prior to Pay[^]Back if Norgold had not been deemed to hold a 25% Participating Interest.

or, except as provided in Section 14 hereof, which may arise by reason of injury to any persons or damage to any property as the result of any activities, work or operations of Asarco or of its possession and occupancy of the Property. A lien upon the Property shall not constitute a default if Asarco in good faith disputes the validity of the claim, in which event the existence of the lien shall constitute a default only if such lien remains longer than ten (10) days after the lien has been finally adjudicated as valid.

18. Force Majeure. If Asarco is rendered unable, wholly or in part, to perform any of the terms or covenants of this Lease, other than making the various payments hereunder, it shall not be deemed in default for any failure or delay in the performance thereof if such performance shall have been prevented or delayed by any of the following conditions of force majeure: labor disturbances, shortage of labor or equipment, strikes, lockouts, other industrial disturbances, acts of God, act of the public enemy, war (whether defacto or declared), blockade, riot, insurrection, lightning, fire, storm, flood, inclement weather, explosion, inability to obtain governmental licenses, permits or approval, regulations, restrictions, orders or acts of governmental agencies or courts; or on account of any eventualities or conditions, similar or dissimilar, whether enumerated or not, beyond the reasonable control of Asarco, including federal, state and local health, safety, land use and environmental statutes and regulations. Asarco shall promptly notify Norgold in writing of the occurrence, nature and duration of any such condition of force majeure and shall use reasonable diligence.

19. Default. The failure of Asarco to make or cause to be made any of the payments herein provided for or to keep or

to remove any such conditions of force majeure which may occur from time to time.

perform any agreement on its part to be kept or performed according to the terms and provisions of this Lease, shall, at the election of Norgold, work a forfeiture hereof; provided, however, that in the event of a default on the part of Asarco, and the election of Norgold to terminate this Lease on account thereof, Norgold shall give to Asarco a written notice of its intention to declare a forfeiture of this Lease and to terminate the same on account thereof, specifying the particular default or defaults relied upon by it, and Asarco shall have thirty (30) days after receipt of such notice in which to cure or commence and diligently pursue actions to cure the alleged default or defaults, in which event there shall be no forfeiture therefor. If Asarco disagrees that such default occurred, it shall advise Norgold in writing thirty (30) days after receipt of the notice of default. If, within fifteen (15) days thereafter, the parties have not resolved the dispute by mutual agreement, the issue of default shall then be referred to arbitration pursuant to Section 23 hereof.

20. Termination. Asarco may terminate this Lease at any time by providing thirty (30) days' ^{Section} written notice. Upon ~~total cancellation and termination of this Lease~~ ^{the occurrence of ~~Asarco's~~ ~~total cancellation and termination of this Lease~~ pursuant to 2 above,} Asarco shall be under no further obligation of whatsoever kind or nature to Norgold except for the making of payments which have already accrued at the date of such cancellation and termination and for the payment of Asarco's proportion of the aforesaid taxes accrued while this Lease was in effect. However, if Asarco cancels and terminates this Lease in any year after June 1 of such year, Asarco shall be obligated to perform all assessment work for any

unpatented mining claims within the Property for the assessment year in which such termination occurs. If Asarco shall have included any part of the Property in a "producing group" for tax assessment purposes, and taxes based on such assessment shall have been levied but shall not have been paid at the time of termination of this Lease, Asarco shall pay such taxes before they are delinquent.

21. Lesser Title. ^{Insert (5) attached} ~~Norgold covenants that to the best of its knowledge, Norgold now holds the title and possession of the Property free and clear from all former grants, sales, liens or encumbrances of any kind subject only to the paramount title of the United States and to those matters set forth in Attachment A hereto. Norgold covenants that there are no delinquent taxes and agrees to furnish Asarco such abstracts, deeds or other evidences of title as may be in Norgold's possession and control, and to allow and cooperate with Asarco, at Asarco's option and cost and expense, to have abstracts brought to date and to take such steps and proceedings to search and check title as Asarco shall deem advisable. Norgold covenants that it has full power and authority to enter this Lease, and that all unpatented mining claims within the Property were validly located and have been maintained in compliance with the law including all filings and recordations required by law.~~

~~In the event Norgold does not hold title and possession of the Property free and clear from all former grants, sales, liens or encumbrances of any kind subject only to the paramount title of the United States and to those matters set forth in Attachment A hereto, then all payments herein provided for shall~~

did not hold the exclusive right to possession and to mine the Property free and clear from all former grants, sales, liens or encumbrances of any kind subject only to the paramount title of the United States and to those matters set forth in Exhibit A to the Option Agreement

INSERT (5)
to
Mining Lease

In the event Norgold, as of the date of its execution of the Option Agreement, ~~owned a lesser mineral interest in the Property than was covenanted by Norgold in Section 15.1 thereof~~, then all sums expended by Asarco in acquiring any outstanding mineral interest (other than as to those matters set forth in Exhibit A to the Option Agreement) shall, to the extent the same were not credited against the additional expenditure requirements set forth in Section 3.1 of the Option Agreement, be deemed included as Development and Capital Expenditures under Attachment B hereto.

~~be paid to Norgold only in the proportion that the mineral interest held by Norgold bears to the entire mineral interest in the Property, and Norgold shall be entitled to retain only such proportion of any monies previously paid hereunder as said interest of Norgold bears to the mineral interest so covenanted.~~

Subject to the provisions of the Western Agreement,

22. Relocation and Assessment Work. [^] If Asarco, at its ~~X~~

option and in its sole judgment, desires to amend or relocate any mining claims in the Property, or if it discovers that fractions exist between any of such claims, it may, at its sole expense, amend or relocate such claims and locate any such fractions, subject to this Lease. Asarco shall also prepare and file such notices and certificates as may be required by State and Federal Law as may be deemed appropriate to effect such amendment or location. All such amended or relocated claims or any fractions so located by Asarco shall be included in the Property for purposes of this Lease.

Subject to Section 20 hereof, Asarco shall perform all assessment work[^] on the unpatented claims and Arizona State mineral leases and prospecting permits within the Property in compliance with Federal and State laws and regulations and shall timely record and file with the proper county, state and federal offices evidence of such work in compliance with assessment, recording and filing requirements. ~~In the event Asarco is prevented from performing such assessment work, Asarco shall use its best efforts to~~ ^{(or} obtain deferments of assessment work pursuant to 30 U.S.C. § 28b⁾

23. Arbitration. In case of any dispute between the parties, the same shall be submitted to arbitrators and to an

Attachment B
To That Mining Lease Dated _____, 1989^e
Between Norgold and Asarco

DEFINITION OF NET PROFITS DURING PAYBACK

Asarco (referred to herein as "Lessee") shall pay to Norgold (referred to herein as "Owner") a royalty equal to five percent (5%) of Net Profits (as defined below) during the term of the Mining Lease.

As used herein, the following terms shall have the meaning hereafter assigned:

(a) "Commercial Production" shall ~~mean~~ ^{mean} having the equipment in place on the Property necessary for the removal, extraction, production and to the extent applicable, concentration or processing of Minerals from the Property and the commencement of the use of said equipment for such purposes.

(b) "Minerals" shall ~~mean~~ ^{mean} all metallic and nonmetallic minerals and shall include ores, concentrates and solutions containing such Minerals and all forms in which Minerals may be found, extracted or produced, as well as any by-products thereof having commercial value.

(c) "Gross Sales" in any Year shall ^{Asarco} mean the amount of earned revenues payable to Lessee by any smelter, refinery, or other purchaser of any and all Minerals produced from the Property less all penalties, assaying and sampling charges, whether or not deducted by the purchaser or paid or incurred by Lessee in the first instance; provided, however, that any written contract for the sale of such Minerals to an affiliate of Lessee or any sale of such Minerals to an affiliate of Lessee on a basis not involving such a contract or any use by Lessee shall not, without the prior written consent of Owner, be on a basis less favorable to Lessee (including the terms thereof with respect to delivery and inventorying) at the time of such contract, sale, or use, as the case may be, ^{Asarco} ~~than that which would have been applicable with respect to a comparable contract, sale, or use, as the case may be,~~ to or by an unaffiliated third party.

(d) "Operating Costs" shall mean the sum of the following costs and expenses incurred by Lessee in any Year; ^{Asarco}

(i) "Mining Costs" - which shall mean costs and expenses accrued or incurred in accordance

Asarco
with generally accepted accounting principles by Lessee after commencement of Commercial Production in exploring for, developing, mining, extracting, removing, and transporting to the Mill (as hereinafter defined) Minerals produced from the Property. Such costs and expenses shall include, without limitation, those incurred for labor, machinery operation, fuel, explosives and other materials, exploration drilling, developmental or ore delineation drilling, a reasonable allowance for depreciation and amortization of mining equipment and machinery acquired after commencement of Commercial Production, and a reasonable allowance for future costs anticipated to be incurred by Lessee in reclaiming the Property in accordance with applicable laws and regulations. Mining Costs shall not include depletion, income taxes, or royalties paid by Lessee to Owner. *depreciation*

Ignore pencil notes

Asarco

Asarco

Norquold

(ii) "Milling and Processing Costs" - which shall mean costs and expenses incurred after commencement of Commercial Production by Lessee in milling or processing minerals produced from the Property at Lessee's mill or central processing facility utilized by lessee to process Minerals produced from the Property (hereinafter referred to as the "Mill", if any). Lessee shall be entitled to a reasonable allowance for depreciation of Mill facilities and equipment acquired after commencement of Commercial Production; capital costs incurred prior to the commencement of Commercial Production are subject to recoupment under the definition of "Exploration and Development Expenditures" set forth below.

Asarco
Asarco's
Asarco

Asarco

and Capital

depleted

(iii) "General and Administrative Costs" - which shall mean costs and expenses incurred by Lessee and properly allocable to the administration of the Property and the production of Minerals therefrom, but not including any General and Administrative Costs incurred with respect to operations of Lessee or its affiliates not directly related to the administration of the Property or the production of Minerals therefrom. General and Administrative Costs shall include, without limitation, any and all advance royalties, production royalties, or other payments of any nature whatsoever payable to third parties (i.e., other than Owner or Lessee) having an interest in the Property. Indirect costs and expenses shall not exceed those chargeable under the accounting procedure attached as Schedule B to Exhibit C to the Agreement.

Asarco

Norquold or Asarco

(iv) "Selling and Delivery Costs" - which shall mean costs and expenses incurred by Lessee in or in connection with the marketing of Minerals from the Property and the delivery of such Minerals to points of ultimate delivery to customers. *Asano*

(v) "Interest" - which shall mean any interest cost incurred in any bona fide financing transaction directly related to the development, operation, or commercialization of the Property. In the event that such a financing transaction is with an affiliate of Lessee, the terms of such transaction shall provide for a reasonable reduction of outstanding indebtedness and shall not be less favorable to Lessee than that which would have been applicable with respect to a similar financing transaction with an unaffiliated third party and, in any event, at an interest rate not greater than that charged by Chase Manhattan Bank, with respect to short-term loans to its most preferred commercial customers (commonly referred to as the "prime rate"). *Asano*

after the commencement of Commercial Production

Asano

the rate quoted as "Prime" by at its head office

(vi) "Taxes" - which shall mean all taxes levied against operations on the Property and/or levied against the Property, excluding income taxes imposed upon profits, but including government royalties and mining and severance taxes.

~~Where any Operating Costs are incurred with respect to the mining, milling, processing, selling, or delivering of Minerals produced from the Property in conjunction with the mining, milling, processing, selling, or delivering of Minerals produced from other properties controlled by Lessee, such Operating Costs shall be allocated and apportioned in accordance with generally accepted practices in the mining industry.~~

g
(g) "Exploration and Development Expenditures" shall mean Lessee's total costs and expenses incurred with respect to examining, ^{and} exploring, and developing the Property and all matters connected therewith incurred after January 30, 1989 and prior to commencement of Commercial Production including, without limitation, costs and expenses incurred with respect to the construction of the Mill (if any) or related facilities, together with costs and expenses relating to geological, geochemical and *Asano's*

geophysical studies, feasibility studies, exploration and developmental drilling, sampling and assaying, mine design and development, the cost of any mining equipment or machinery purchased prior to commencement of Commercial Production, compliance with environmental and regulatory requirements (including attorney's fees), pre-production stripping, the construction of roads connecting the Property to a central road system, and any other costs or expenses which would be included in the definition of Mining Costs and/or Milling and Processing Costs if such costs or expenses were incurred after commencement of Commercial Production. It is the intention of the parties that, in calculating net profits, Lessee shall be limited to a single recovery of capital, either by recoupment of Exploration and Development Expenditures or by depreciation of capital costs included within the definitions of Milling and Processing Costs and/or Mining Costs.

(h) "~~Development and Capital Expenditures~~" ← Insert from (j) L.S. Draft

In the event that costs and expenses incurred with respect to construction of the Mill (if any) or other Exploration and Development Expenditures benefit the development of other mineral properties controlled by Lessee, ^{as a result of} such Exploration and Development Expenditures shall be allocated and apportioned by Lessee in accordance with generally accepted accounting principles as applied in the mining industry for the purpose of computing the Net Profits Royalty pursuant to the terms hereof.

(f) "Net Returns" in any Year means Gross Sales accrued in that Year less Operating Costs accrued in that Year.

(g) "Operating Loss" in any Year means the excess of Operating Costs accrued in that Year over Gross Sales accrued in that Year.

(h) "Net Profits" in any Year means Net Returns in that Year less the following amounts which shall be recovered from Net Returns in the order and in the manner set forth below:

(i) the aggregate amount, if any, of Operating Loss for any prior Year or Years which shall not have been deducted and recovered from Net Returns in prior Years;

(ii) the aggregate ^{and Capital} amount, if any, of Exploration and Development Expenditures ^{Expenditures} which shall not have been deducted and recovered from Net Returns in prior Years.

(i) "Year" or "Years" means the fiscal year established by Lessee for its operations upon the Property;

(including interest thereon as provided in Section 6 of the lease)

provided, however, the first Year shall begin with the commencement of Commercial Production and shall continue until the beginning of Lessee's next fiscal year.

9/14/89

JOINT VENTURE AGREEMENT
between
NORGOLD RESOURCES (US INC.)
and
ASARCO INCORPORATED

Dated _____, 19__

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SCHEDULES

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- B. Operations Accounting Procedures
- C. Definition of Net Profits Royalty
- D. Amendments for 75%/25% Joint Venture Agreement
- E. Tax Matters

JOINT VENTURE AGREEMENT

THIS AGREEMENT is made and entered into as of the ____ day of _____, 19__, by and between NOR GOLD RESOURCES (US) INC., a Nevada corporation (hereinafter referred to as "Norgold"), and ASARCO INCORPORATED, a New Jersey corporation (hereinafter referred to as "Asarco").

W I T N E S S E T H:

RECITALS

WHEREAS, pursuant to that certain Exploration and Option Agreement dated effective January 30, 1989 between Asarco and Norgold, Asarco has earned an undivided interest in and to the agreements, mineral leases, prospecting permits and patented and unpatented mining claims situated in the Martinez (Weaver, Yarnell) Mining District, Yavapai County, Arizona more particularly enumerated and described in Part One of Schedule "A" attached hereto and made a part hereof and, if acquired by Norgold and accepted by Asarco, in and to the patented lands described in Part Two of Schedule "A" hereto (hereinafter called the "Property");

EXHIBIT C

WHEREAS, Norgold has elected, pursuant to Section 8.1 of the Exploration and Option Agreement, to enter this Agreement all on the terms and conditions hereinafter set forth; and

WHEREAS, Norgold and Asarco wish to participate in joint operations for the purpose of exploring, developing and mining the Property upon the terms and conditions hereinafter set forth;

NOW, THEREFORE, in consideration of the mutual promises contained herein, the Parties hereto agree as follows:

ARTICLE I

1.0 DEFINITIONS

Whenever used or referred to in this Agreement, unless otherwise expressly provided, the terms defined below shall have the meanings assigned to them in this Article.

1.1 "Account" shall mean the account maintained by Operator showing relative charges and credits accruing to the Parties as a result of Operations, land acquisition and maintenance costs and payments, and any other expenditures incurred or revenues received as a result of activities conducted pursuant to this Agreement, such account to be administered in accordance with Schedule "B" hereto.

1.2 "Accounting Procedure" shall mean the "Operations Accounting Procedures", attached hereto and incorporated herein as Schedule "B" hereto.

1.3 "Area of Interest" shall mean those lands or mineral interests in those lands within the following public land surveys in the G.&S.R.B.&M., Yavapai County, Arizona:

Township 10 North, Range 4 West:

Sections 6, 7, West Half (W 1/2) of 17, 18, 19, West Half (W 1/2) of 20, and 30.

Township 10 North, Range 5 West:

Sections 1 through 4, East Half (E 1/2) of 8, 9 through 16, East Half (E 1/2) of 17, East Half (E 1/2) of 20, 21 through 28, North Half (N 1/2) of 34, North Half (N 1/2) of 35 and North Half (N 1/2) of 36.

1.4 "Commercial Production" shall mean having the equipment in place on the Property necessary for the removal, extraction, production and to the extent applicable, concentrating or processing, of Minerals from the Property and the commencement of the use of said equipment for such purposes.

1.5 "Exploration and Option Agreement" shall mean that Exploration and Option Agreement dated effective as of January 30, 1989 between Asarco and Norgold for the Property.

1.6 "Mine" shall mean any shaft, pit, drill hole, excavation, tunnel, well or opening, whether underground or otherwise, from which Commercial Production of Minerals has been or may be achieved by any method whatsoever, whether now known or hereafter developed.

1.7 "Minerals" shall mean all metallic and nonmetallic minerals and shall include ores, concentrates and solutions containing such Minerals and all forms in which Minerals may be found, extracted or produced, as well as any by-products thereof having commercial value.

1.8 "Mining Lease" shall mean that agreement in the form attached as Exhibit C to the Exploration and Option Agreement which Norgold may elect to enter pursuant to Section 8.1 of the Exploration and Option Agreement.

1.9 "Net Profits" shall mean the amount defined in the "Definition of Net Profits" attached hereto and incorporated herein as Schedule "C" hereto.

1.10 "Non-Operator" shall mean the Party other than the Operator.

1.11 "Operator" shall mean Asarco or such other Party designated as, and serving in the capacity of, Operator pursuant to the provisions of this Agreement.

1.12 "Operations" shall mean all operations and activities undertaken pursuant to this Agreement on, under or for the benefit of the Property, including specifically development and production of mining operations and, if applicable, additional exploration and concentrating, beneficiating, or other processing of Minerals obtained through such operations; this term shall include operations in which both Parties are participating, as well as operations in which less than all Parties have elected to participate pursuant to Article 11 hereto.

1.13 "Participating Interest" shall mean the respective interest of each Party in and to production, revenues, expenses, assets or liabilities resulting from Operations and any assets subject to this Agreement. The Participating Interests of the Parties shall be subject to adjustment and forfeiture as hereinafter set forth.

1.14 "Party" or "Parties" shall mean and include Norgold and Asarco and their successors and permitted assigns.

1.15 "Property" shall mean all rights and interests in and to the Property described in Schedule "A" hereto and in and to other real property added to the Property pursuant to Article 13 hereof.

ARTICLE 2

2.0 JOINT VENTURE INTERESTS

2.1 Asarco shall be vested with a 51% initial Participating Interest in the Property with a deemed and actual value of contribution equal to the amount of its Initial Contribution. The Initial Contribution of Asarco shall be equal to the amounts Asarco pays or incurs pursuant to Sections 2.1, 3.1, 3.2, 4.1, 4.2, 4.3, 6.2, 6.3 and 15.2 of the Exploration and Option Agreement until the date on which Asarco presents to Norgold the Feasibility Study referred to in Article III of Exploration and Option Agreement. Norgold shall have an initial Participating Interest of 49%. The deemed and actual value of the Initial Contribution (X) of Norgold shall be determined as follows:

$$X = (Y \div 0.51) - Y$$

where X is the Initial Contribution of Norgold and Y is the Initial Contribution of Asarco. Thereafter, Norgold may elect to contribute to the costs of further exploration and development work and maintain its interest at a level of 49% or it may elect to allow its interest to be reduced pursuant to Article 11 of this Agreement. This Article 2 shall be amended pursuant to Schedule "D" hereto if, pursuant to Section 8.1 of the Exploration and Option Agreement, Norgold elects or is deemed to have elected to enter into the Mining Lease and the 75%/25% Joint Venture Agreement.

ARTICLE 3

3.0 OWNERSHIP OF THE PROPERTY

3.1 The Property is to be held in trust by the Parties on behalf of the Parties hereto in accordance with the purposes and provisions of this Agreement. The Parties shall be deemed to own or possess fractional, undivided interests in the Property corresponding to their respective Participating Interests as set forth in Section 2.1 hereof and subject to adjustment or forfeiture pursuant to Article 11 hereof.

3.2 The Parties hereby agree to execute and file of record any necessary adjustments, conveyances, statements or documents acknowledging that title and interest in and to the Property are held for the benefit of the Parties to this Agreement.

ARTICLE 4

4.0 TERM AND TERMINATION PROCEDURES

4.1 If Operator has not commenced Commercial Production from the Property on or before July 1, 1994, this Agreement shall terminate on such date; provided that the date for commencement of Commercial Production (and the corresponding termination date hereof) shall be extended pursuant to Article 15 hereof and by the time corresponding to those periods (if any) after July 1, 1991 during which the price of gold posted in New York daily by Handy & Harmon or by a substitute equivalent posting is less than \$350.00 per ounce. Upon termination pursuant to this Section 4.1, Asarco shall execute and deliver to

Norgold a special warranty deed and assignment, conveying and assigning to Norgold all of its interest in the Property free and clear of all liens and encumbrances placed thereon by, or arising from Operations conducted by, Asarco while this Agreement or the Exploration and Option Agreement is in effect.

4.2 Subject to the right of surrender set forth in Article 11 hereof and to Section 4.1 hereof and unless sooner terminated or further extended by mutual agreement of the remaining Parties, this Agreement shall remain in full force and effect so long as both Parties retain a Participating Interest in the Property, and thereafter until the termination procedures hereinafter specified have been completed and a final accounting has been made between the Parties; provided that Asarco's obligation to pay a royalty to Norgold set out in Section 11.6 hereof shall survive any termination of this Agreement and shall continue so long as Asarco produces any Minerals from the Property.

4.3 Upon termination of this Agreement other than pursuant to Section 4.1 above, unless otherwise agreed, all of the net assets subject thereto, including the Property, shall be distributed in kind or in undivided interests among the Parties on the basis of their then respective Participating Interests.

4.4 The Party serving as Operator shall be responsible for implementation of termination proceedings, and the Non-Operator shall take any and all reasonable actions to cooperate with and assist Operator, including specifically execution and delivery of recordable assignments, conveyances, quitclaims or other required documents.

Promptly following the conclusion of termination proceedings, the

Operator shall submit to Non-Operator a final accounting which, if desired by any of the Parties, shall be certified by a mutually acceptable certified public accounting firm.

ARTICLE 5

5.0 EXPENSES AND ACCOUNTING

5.1 The accounting for all direct costs, capital expenditures and all indirect costs and expenses incurred hereunder, such as administrative overhead, shall be in accordance with the Accounting Procedures; provided, however, in the event of any inconsistencies or conflicts between this Agreement and said Accounting Procedures, this Agreement shall control. All such direct costs and expenses incurred as a result of or associated with Operations conducted hereunder, including but not limited to mining, engineering, economic and environmental studies, environmental compliance costs, insurance, royalties, reclamation, mining operations, construction of facilities, and exploration for, extraction, processing, packaging, storage and disposition of Minerals from or upon the Property and all other preproduction, development, production and related costs and expenses shall be borne by the Parties in proportion to their respective Participating Interests.

5.2 Asarco shall as Operator, furnish Non-Operator with monthly statements of billings, and the Non-Operator shall be obligated to pay its share of such direct and indirect costs and expenses, as reflected by said statements and billings, in accordance with the provisions of the Accounting Procedures and this Agreement; provided,

however, if any Party elects not to pay its share of any such costs and expenses, in compliance with and subject to applicable provisions of the Accounting Procedures, that Party's Participating Interest shall be subject to reduction or forfeiture as provided elsewhere in this Agreement.

5.3 The proceeds of the sale of any tangible supplies, facilities and equipment from the Properties shall be allocated to the Parties in proportion to their respective Participating Interests and shall be calculated in accordance with the provisions of the Accounting Procedures.

5.4 The Operator shall prepare an annual audit of the accounting and financial records for each calendar year (or other accounting period), provided, however, that all written exceptions to and claims upon the Operator for discrepancies disclosed by such audit shall be made by the Non-Operator within 26 months after the completion and receipt by the Non-Operator of such audit. The audits shall be conducted by a firm of certified public accountants approved by the Operator and Non-Operator and shall be conducted in accordance with customary auditing standards for the preparation of financial statements. The cost of such audits shall be a cost of Operations. Non-Operator shall be entitled to conduct an independent audit of the accounting and financial records at its own expense. If any audit discloses that Operator's accounting for expenses of Operations exceeds 10% of such expenses disclosed by the Operator's audit the Operator shall reimburse the Non-Operator for the Non-Operator's cost of such audit.

ARTICLE 6

6.0 DESIGNATION OF OPERATOR; OPERATOR'S RIGHTS AND DUTIES;
MANAGEMENT FEE AND OPERATOR'S LIEN

6.1 Asarco is hereby designated as Operator for all Operations conducted under this Agreement; and Asarco hereby accepts such appointment and agrees to perform the duties of Operator as hereinafter set forth.

6.2 Subject to the direction of the Management Committee, Operator shall conduct, direct, supervise and control all activities, transactions and operations concerning the development and exploitation of the Property and shall have custody of all supplies, material, machinery, equipment, facilities and jointly-owned property employed thereon or in connection therewith. Without limiting the generality of the foregoing, Operator shall have the following specific rights, duties and obligations:

A. Operator shall not be liable to Non-Operator for losses sustained or liabilities incurred by reason of any act or omission in performing its duties and obligations under this Agreement, except those losses and liabilities resulting from its gross negligence or willful misconduct.

B. Operator shall prepare and submit to the Management Committee all work plans and budgets as set forth in Article 10 hereof and any supplemental work plans and budgets representing significant changes or departures from previously approved work plans and budgets in accordance with the provisions hereof and said Article 10 hereof.

C. Operator shall conduct all operations hereunder in a prudent, workmanlike and environmentally conscientious manner and in accordance with all terms and conditions of each approved work plan and budget.

D. Operator shall conduct all operations required by law and shall be responsible for compliance with all applicable statutes, regulations and ordinances, including obtaining any necessary permits, licenses or authorizations. If the cost of such operations, permits, licenses or authorizations is not included in a previously approved work plan and budget, and is material, Operator shall give prompt written notice thereof to Non-Operator.

E. In case of an emergency, Operator may take such action and make such immediate expenditures as it may deem necessary for the protection of life or property, but shall give immediate written notice thereof to Non-Operator.

F. Except as otherwise expressly provided, Operator shall keep the Property free from all liens and encumbrances occasioned by Operations hereunder, excepting only the lien hereinafter granted Operator, and shall pay and discharge all costs and expenses incurred by virtue of such operations, and shall charge the same to the Account, in accordance with the respective Participating Interest of the Parties, as provided in Article 5 hereof and Accounting Procedures. Operator shall account for and distribute to the Parties entitled thereto, as their respective Participating Interests may from time to time

appear, any income or revenues received by Operator for the Account from whatever source.

G. Operator shall maintain all books and records concerning operations in accordance with good accounting practices and the Accounting Procedures attached hereto. The Management Committee and Non-Operator shall have access at all reasonable times to and the right to inspect, copy and audit Operator's books, records and invoices pertaining to any matter of accounting arising hereunder. Non-Operator and its agents, duly authorized in writing, may enter upon the Property at Non-Operator's sole risk and expense to inspect the same at such time and upon such notice to Operator as shall not unreasonably hinder, interrupt or interfere with the operations and activities of Operator upon the Property. Operator shall facilitate and assist such inspections by Non-Operator in every reasonable manner. Operator shall account for and distribute to the Parties entitled thereto, as their respective Participating Interests may from time to time appear, any income or revenues received by Operator for the Account from whatever source.

H. After commencement of Commercial Production, Operator shall keep Non-Operator advised of the status of operations through monthly reports summarizing the nature and results of all activities upon or related to the Property. Operator shall also prepare and submit to the appropriate governmental authorities, with copies to Non-Operator if requested, all

information and reports required to be submitted with respect to the Operations; provided, however, it is expressly understood and agreed that Operator shall not be liable to Non-Operator for any inadvertent or accidental mistakes, errors or omissions in the information and reports so submitted to governmental authorities. Upon request, Non-Operator shall supply Operator with information in its possession, or which it alone can reasonably obtain, required for the completion and submission of such reports. Prior to commencement of Commercial Production, copies of all factual data obtained by Operator will be transmitted to Non-Operator at or about the end of each calendar year or, at the discretion of Operator, sooner but in no event later than 30 days after the end of the year.

I. Operator shall assert, settle or defend, as in its sole judgment appears best, any and all claims and suits against or by the Parties, or either of them, arising out of the conduct of any operations that (with respect to claims and suits against the Parties) are not fully covered by insurance maintained for the benefit of the Parties, but no such settlement in excess of \$5,000 shall be made by Operator without prior written approval of Non-Operator, provided, however, Operator shall give Non-Operator prompt notice of the commencement of any such suits by or against the Parties, or either of them, and Non-Operator shall have the right to appear therein, be represented by its own counsel and to participate in any assertion, defense or settlement thereof at their own

expense. All costs and expenses incurred by Operator in asserting, settling or litigating such suits or claims, and all payments, awards, claims or compromises of such claims and suits, including surface damage assessments, if the liability asserted in such suit and claim arose from Operations or in any way related thereto, shall be charged to the Account and borne by the Parties in proportion to their respective Participating Interests effective at the time such liability arose, except as otherwise expressly provided in this Agreement.

J. After commencement of Commercial Production, Operator may at its discretion suspend Operations during any period when the products of the Property cannot be produced and sold at a profit by reason of low prices or otherwise. Operator may at its discretion also suspend or curtail Operations when such products cannot be readily sold at prevailing prices so that an unreasonable inventory thereof has accumulated or would otherwise accumulate.

6.3 As full compensation for management and administrative overhead and all other direct expenses incurred by Operator pursuant to this Agreement, Operator shall be entitled to a management and overhead fee chargeable against and recoverable from the Account. The amount and methods of calculation and payment of said management fee are set forth in Section II, paragraph 2.11 of the Accounting Procedures.

6.4 Non-Operator hereby grants to Operator a lien upon its Participating Interest in all income, proceeds, profits and production of the Property, any and all appurtenant facilities,

improvements, tools, equipment and other assets located upon the Property or utilized in connection with Operations, and in any and all Minerals produced pursuant to this Agreement and the proceeds from the sale of all or any portions of said Property, assets or Minerals, to secure the payment of any costs chargeable to Non-Operator. Operator shall have the right to bring any action at law or in equity to enforce collection of such indebtedness, with or without foreclosure of such lien. In addition, upon default by any Non-Operator in the payment of costs chargeable to it, Operator shall have the right to collect and receive from the purchaser or purchasers thereof the proceeds from sale of such Non-Operator's share of production and apply it to the amount owing by such Non-Operator plus interest at the rate of 12% per annum until paid; each such purchaser shall be entitled to rely upon Operator's statement concerning the existence and amount of any such default.

ARTICLE 7

7.0 CHANGE OF OPERATOR

7.1 Operator may resign from its duties and obligations at any time upon written notice of not less than 180 days given to Non-Operator. Operator may be removed at any time by a vote of Parties owning a majority of the Participating Interests by written notice to Operator, or if: (a) a petition in bankruptcy is filed by or against Operator and such petition is not withdrawn or dismissed within 30 days after its filing; or (b) Operator shall make an assignment for the benefit of creditors; or (c) Operator shall allow

the appointment of a receiver or trustee of all or any part of its property and such receiver or trustee is not discharged within 30 days after his appointment; or (d) any process or execution is levied against any interest of the Operator on the Property that adversely affects the ability of the Operator to perform its duties hereunder and remains unsatisfied or remains undisputed by legal action by Operator for 30 days thereafter or (e) Operator defaults in observing or performing any covenant or condition of this Agreement on its part to be observed or performed in its capacity as Operator, and within 10 days after notice in writing has been given to the Operator by any Party specifying such default and demanding operator remedy the same, the Operator does not (i) cure such default, (ii) proceed and continue diligently to cure such default, or (iii) send to such Party a written denial of such claimed default with reasons for such denial; (f) as to a particular work plan, Operator becomes a non-participating Party as to that work plan; or (g) Operator assigns its entire interest in the Property.

7.2 An Operator which resigns or is replaced pursuant to this Article 7 shall continue to serve in the capacity of Operator until the other Party is ready to commence functioning as Operator, but shall not be obligated to so serve for more than 90 days following the selection of a successor Operator. The replaced Operator, upon ceasing to act in such capacity, shall deliver to its successor custody of the Property and all related facilities, equipment, supplies, assets, books, records, data, information and other property, both real and personal. The successor Operator shall

assume all duties and responsibilities of, and shall have all rights granted to, the prior Operator pursuant to this Agreement.

ARTICLE 8

8.0 INSURANCE

8.1 Operator shall, at all times while this Agreement is in effect, carry Public Liability Insurance, insuring the interests of both Parties, in such amounts as the Management Committee directs.

8.2 Operator shall require all contractors and subcontractors to carry insurance coverage naming the Parties as additional insureds.

8.3 Operator shall notify the Non-Operator of any termination of any of the insurance coverage included in these certificates of insurance, but Operator shall not be liable to Non-Operator for any uninsured losses sustained subsequent to such termination of coverage, unless Operator shall have failed to give Non-Operator timely notice of cancellation of such insurance coverage.

ARTICLE 9

9.0 MANAGEMENT COMMITTEE

9.1 A Management Committee comprised of one representative and one alternate representative of each of the Parties shall be established. The Management Committee shall direct the activities of the Operator and review the status of all Operations and, acting on behalf of the Parties in consultation with Operator, shall be responsible for making all major policy decisions involving

significant capital expenditures affecting Operations, for considering, revising and approving all work plan and budgets submitted pursuant to Article 10 hereof and for considering and approving any other development transactions concerning the Property. Operator shall consult freely with the Management Committee and shall keep the Committee fully advised of the status of present and prospective Operations.

9.2 Insofar as is possible, approval of proposed work plans and budgets and all other actions and decisions of the Management committee shall be accomplished by mutual agreement of the Parties; provided, however, decisions on matters as to which the Parties have been unable to reach agreement and resolution of dispute shall be accomplished by voting. Each Party's vote shall be weighed in proportion to its respective Participating Interest then in effect and a majority of such Participating Interest voted shall govern the outcome of the vote; no such vote will be effective if contrary to this Agreement.

9.3 Voting rights of each Party shall be exercised through either its representative or its alternate representative, but not both. Each Party shall advise the other in writing of the names and addresses of its representative and alternate representative, who shall be designed to represent and bind that Party with respect to any matter pertaining to Operations. Each Party's representative or alternate representative may be changed at any time by reasonable written notice to the other Party. Regular meetings of the Management Committee shall be held at least semi-annually at a time and place to be designated by the Chairman of the Management Committee or such

other place or places as may be mutually agreed upon among the Parties; and additional meetings may be called by any Party by request made in writing to the Operator to call a meeting and stating therein the purposes for which the meeting is to be called. Written notice of the time and place of each meeting, accompanied by an agenda, shall be given by Operator to the other Parties not less than 10 days before such meeting. Operator shall serve as Chairman of all Management Committee meetings and shall conduct all proceedings thereof. Each Party shall bear its own cost of attendance; provided, however, if Operator shall deem it necessary for any personnel who are assigned duties in connection with the conduct of Operations to attend any meeting, the cost incurred therefor shall be charged to the Account. Operator shall keep or cause to be kept and prepared, and thereafter shall submit to Non-Operator, appropriate minutes of each meeting; and, Non-Operator shall promptly approve same or suggest modifications or corrections thereto.

ARTICLE 10

10.0 SUBMISSION AND APPROVAL OF WORK PLANS AND BUDGETS

10.1 In the event Norgold has elected to enter this Joint Venture Agreement pursuant to Section 8.1 of the Exploration and Option Agreement, within 30 days following such election, the management Committee shall convene and consult on the basis set forth in Section 10.3 hereof and approval shall be accomplished pursuant to a vote as set forth in Section 9.2 hereof.

10.2 At such times as Operator, in consultation with the Management Committee, may deem appropriate, Operator shall submit to the Management Committee work plans and budgets for all Operations and major acquisitions or capital expenditures proposed to be implemented or accomplished. Said work plans and budgets shall set forth with reasonable detail and accuracy the nature, duration and projected costs of the Operations, activities or acquisitions thereby proposed. It is intended that each such work plan and budget, insofar as is practicable, shall encompass a significant and customarily distinguishable activity, operation or operating phase, from its inception through its completion, and that the terms of each work plan and budget will correspond to the total period required therefor. Accordingly, unless the circumstances plainly dictate otherwise or unless the Parties otherwise agree, no work plan and budget with a duration of less than 12 consecutive months shall be submitted, provided that all work involved in the construction of a mine, plant and mill to place the Property in Commercial Production shall be included in a single work plan and budget regardless of the time required. Within 15 days following the submission of any work plan and budget by Operator, Non-Operator may also submit work plans and budgets for consideration by the Management Committee, consisting either of original proposals or alternatives to proposals previously submitted by Operator.

10.3 Within 15 days following the submission of any proposed work plan and budget by the Operator, or any alternative proposals by Non-Operator, whichever submission is the later, the Management Committee shall convene and shall consult in good faith in an effort

to either agree upon the proposal submitted or to formulate an alternate work plan and budget acceptable to the Parties. If the aforesaid consultation results in a mutually agreeable work plan and budget, it shall be deemed approved. If the Parties are unable to reach mutual agreement, the Management Committee may require the Operator to submit a new work plan and budget and the Non-Operator may submit alternatives thereto, all within the time limits as set forth in this Article 10, or a vote shall be taken pursuant to Section 9.2 hereof. Any work plan and budget receiving votes equivalent to a majority of the Participating Interests then in effect shall be deemed approved, and no work plan and budget receiving votes equivalent to less than such majority shall be deemed approved; provided, however, a Party which voted against a work plan and budget that was nevertheless approved by vote of a majority of the other Parties' Participating Interests may be entitled to elect not to participate therein, subject to the applicable provisions of Article 11 hereof.

10.4 In the event that Operator determines that additional, extra or abnormal Operations or expenditures not included in a previously approved work plan and budget are necessitated or justified by the circumstances which would result in expenditures greater than 10% more than previously authorized in an approved budget, Operator shall prepare a supplemental work plan and budget specifying such additional Operations and expenditures and shall furnish copies thereof to Non-Operator. If said supplemental work plan and budget is acceptable to Non-Operator, it may be approved by transmittal of written notice to Operator and without the necessity of convening a

Management Committee meeting. If a supplemental work plan and budget is not approved by Non-Operator within 5 days of receipt thereof, or if Operator deems it otherwise necessary or appropriate, Operator shall call a meeting of the Management Committee pursuant to Section 9.3 hereof. Upon approval of any supplemental work plan and budget, Operator shall be deemed authorized to proceed with its implementation forthwith; provided, however, nothing contained in this provision shall be construed as restricting Operator's rights and obligations to make certain expenditures in excess of amounts specified in previously approved work plans and budgets pursuant to Sections 6.2E and 6.2F hereof. Except as provided in said Sections 6.2E and 6.2F, any expenditures in excess of 10% above those authorized in a previously approved work plan and budget shall be the sole responsibility of the Manager without revision of the participating interest of any party.

ARTICLE 11

11.0 WITHDRAWAL: NON-PARTICIPATING AND REDUCTION OR FORFEITURE OF PARTICIPATING INTEREST

11.1 Any party hereto shall have the right to voluntarily withdraw from the Project and terminate its interest in and under this Agreement by giving written notice of such withdrawal to the other Party. In the case of such withdrawal, all of the rights and obligations of the withdrawing Party under this Agreement shall terminate as of the date of receipt of such withdrawal notice; and the Participating Interest and all right, title and interest of the

withdrawing Party in and to the Property shall be deemed to have been relinquished and transferred automatically to the remaining Party; provided, however, that:

A. A withdrawing Party shall remain liable for all amounts chargeable to it with respect to any work plan and budget in which it elected to participate, including costs incurred pursuant to such work plan and budget after the effective date of the withdrawal, but not in excess of the most recent cost estimates committed to, or approved by, such withdrawing Party.

B. A withdrawing Party shall remain obligated to execute and deliver such instruments as may be necessary to formally effect the transfer of its Participating Interest and Interest in the Property to the other Parties.

C. A withdrawing Party shall remain liable, to the extent of its Participating Interest at the time of withdrawal, for all claims, liabilities, expenses and obligations of, relating to or associated with the Property which arise from or relate to any action, failure to act, or man-made condition occurring or arising prior to the effective date of withdrawal from this Agreement whether or not arising out of federal, state or local laws, rules or regulations now in effect or which may come into effect in the future, including without limitation (i) any and all obligations under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 as amended ("CERCLA"), Pub. L. 96-510 and 96-561, and the Resource Conservation and Recovery Act of 1980 ("RCRA"), Pub. L. 96-482, or reclamation

obligations with respect to the Property, and (ii) any and all personal injuries, property damage, contamination or pollution, known or unknown, determined to have resulted from Operations on the Property, or conditions made or caused by human intervention prior to the effective date of withdrawal from this Agreement.

11.2 Prior to approval of any work plan and budget, any Party may elect either to participate or not participate in work plans and budgets or to participate in work plans and budgets on a reduced basis by contributing thereto a lesser amount than would otherwise be chargeable to such Party's respective Participating Interest. Said election shall be exercised by delivery of written notice thereof to the other Party within 30 days of approval of the work plan and budget by the Management Committee. The remaining costs of implementing Operations contemplated by such work plan and budget shall be borne by and allocated to the Party electing to participate; provided that such Operations are commenced within 60 days of receipt of notice from the Party who elected not to participate or to participate on a reduced basis. If such Operations are not commenced until after the expiration of the aforesaid 60-day period, the Party which previously elected not to participate or to reduce its participation shall be afforded another opportunity to make an election pursuant to this provision.

11.3 In the event that either Party elects or is deemed to have elected not to participate or to participate on a reduced basis in any work plan and budget, or if for any reason the contributions of

all Parties to Operations are not in proportion to their Participating Interests, each Party's revised Participating Interest shall be determined in accordance with the following formulas:

$$\frac{A}{A+B} \times 100 = \% \text{ of Norgold's Participating Interest}$$

$$\frac{B}{A+B} \times 100 = \% \text{ of Asarco's Participating Interest}$$

where A is equal to all actual and deemed contributions of Norgold pursuant to this Agreement, and B is equal to all such actual and deemed contributions of Asarco.

11.4 Each Party shall remain free to elect to participate in any work plan and budget up to the extent of its then effective Participating Interest, as it may have been previously adjusted pursuant to Section 11.3 hereof; provided, however, no Party shall be entitled to increase its Participating Interest by electing to contribute to any work plan and budget an amount greater than is represented by such Party's Participating Interest, except that for work plans and budgets approved after the Date of Commercial Production, either party may increase its Participating Interest to its percent Participating Interest at the Date of Commercial Production by paying to the other Party 150% of the amount by which its payments for the period since the Date of Commercial Production were less than its full share of such required payments. Otherwise, a Party's Participating Interest may only be increased by virtue of reductions or forfeitures of Participating Interests of the other Party pursuant to this Article 11.

11.5 Subsequent to implementation of an approved work plan and budget, each Party electing to participate therein shall be and remain responsible for payment of its full share of costs and expenditures of Operations in proportion to its Participating Interest and in accordance with Accounting Procedures. Subject to the Operator's lien prescribed in Section 6.4 hereof, any Party which fails or refuses to pay all amounts properly invoiced to it, in compliance with Accounting Procedures, for a period of 3 consecutive months or more, shall be provided certified notice of termination with 30 days for correction, and shall be then deemed to have withdrawn pursuant to Section 11.1 hereof, and its Participating Interest and all right, title and interest in and to the Property shall be automatically forfeited and relinquished to the remaining Party, if such correction shall not have been completed during such 30-day period.

11.6 If, at any time, the Participating Interest of either Party declines to 15%, that Party shall be deemed to have withdrawn and its Participating Interest shall automatically be converted into a net profits royalty whereby 15% of Net Profits (as defined in Schedule "C") derived from the Property shall be paid to the Party whose Participating Interest declined to 15% by the Party whose Participating Interest has not so declined.

ARTICLE 12

12.0 ALLOCATION AND DISPOSITION OF PRODUCTION

12.1 Each of the Parties hereto shall take in kind or separately dispose of a share proportional to its respective Participating

Interest of all Minerals produced from the Property. Any extra expenditure incurred by reason of the taking in kind or separate disposition by any Party of its proportionate share of the Minerals so produced shall be individually borne by that Party; and such Party shall be required to construct, operate and maintain, all at its sole risk and expense, any and all facilities which may be necessary to receive, store and/or dispose of its share of production at the rate it is produced. In the event any Party shall fail or refuse to make the arrangements necessary to take in kind or separately dispose of its proportionate share of said Minerals, Operator shall have the right, but not the obligation, subject to revocation at will by the Party owning the share, to purchase for its own account or sell to others such share at not less than the market price prevailing in the area and not less than the price which Operator receives for its own share of the Minerals produced, provided that all contracts of sale executed by Operator for any other Party's share of Minerals produced shall be only for such reasonable periods of time as are consistent with the minimum needs of the industry under the circumstances, but in no event shall any such contract be for a period in excess of one year.

12.2 If any Party has failed or refused to take in kind or separately dispose of its share of such Minerals, any proceeds received by Operator on behalf of such Party shall be distributed or accounted for monthly to such Party; provided, however, that Operator shall be entitled to retain and apply any proceeds of production accruing to any Party hereto in satisfaction of any unpaid expenses

chargeable against such Party as herein provided, and subject to the Operator's lien set forth in Section 6.4 hereof.

12.3 If either Party hereto elects to forward sell its share of minerals produced, the other Party or Parties will cooperate with such Party by providing to such Party the information necessary to accomplish such forward sales provided that such Party shall reimburse the other Party or Parties for the costs of developing such information.

ARTICLE 13

13.0 AREA OF INTEREST; ADDITIONAL DEVELOPMENT BLOCKS

13.1 Any interest or option to acquire any interest in real property within the Area of Interest owned on the date hereof or acquired thereafter during the term of this Agreement by or on behalf of a Participant, shall be subject to the terms and provisions of this Agreement.

13.2 Within 30 days after the acquisition of any interest or the option to acquire any interest in real property wholly or partially within the Area of Interest (except real property acquired by the Operator pursuant to Article 10 hereof), the acquiring Participant shall notify the other Participant of such acquisition. The acquiring Participant's notice shall describe in detail the acquisition, the lands and minerals covered thereby, the costs thereof, and the reasons why the acquiring Participant believes that the acquisition of the interest is in the best interests of the

Participants under this Agreement. In addition to such notice, the acquiring Participant shall make any and all information concerning the acquired interest available for inspection by the other Participant.

13.3 If, within 60 days after receiving the acquiring Participant's notice, the other Participant notifies the acquiring Participant of its election to accept a proportionate interest in the acquired interest equal to its Participating Interest, the acquiring Participant shall convey to the other Participant, by special warranty deed, such a proportionate undivided interest therein. The acquired interest shall become a part of the Property for all purposes of this Agreement immediately upon the notice of such other Participant's election to accept the proportionate interest therein. Such other Participant shall promptly pay to the acquiring Participant its proportionate share of the latter's actual out-of-pocket acquisition cost.

13.4 If the other Participant does not give such notice within the 60 day period set forth in Section 13.3 hereof, it shall have no interest in the acquired interest, and the acquired interest shall not be a part of the Property or be subject to this Agreement.

13.5 This Agreement was entered into to develop and mine the ore body described in the Feasibility Study pursuant to which Norgold's election under Article VIII of the Option Agreement was made. If, pursuant to operations conducted by Operator hereunder, Operator discovers a distinct and separate mineral deposit (other than a lateral extension of the ore body described in the said Feasibility Study), each such mineral deposit and so much of the Property as is

necessary for the development and mining thereof shall constitute a separate "Additional Development Block" and shall, from and after such discovery be subject to the provisions of 8.3 of the Option Agreement.

ARTICLE 14

14.0 TAXATION

14.1 Each Party shall pay its own income taxes and other taxes and assessments for which it would be liable. In computing income taxes, each Party shall base its deductions for depletion of ore reserves upon its share of production.

ARTICLE 15

15.0 LAWS, REGULATIONS AND FORCE MAJEURE

15.1 No Party hereto shall be liable to the other Party and no Party hereto shall be deemed in default hereunder for any failure or delay to perform any of its covenants, agreements or obligations, other than the obligation to pay money, caused by or arising out of any of the following conditions of force majeure:

A. Labor disturbances, shortage of labor or equipment, strikes, lockouts, other industrial disturbances, act of God, act of a public enemy, war, blockade, riot, insurrection, disaster, lightning, fire, storm, flood, inclement weather, explosion or any laws, regulations, restrictions or acts of governmental agencies, or on account of any eventuality or

conditions, whether enumerated or not, beyond the reasonable control of such Party, including state, federal or local environmental statute or regulation.

B. In the event the Operator becomes or believes it is about to become subject, at any time, to environmental regulations, which shall include any governmental law, rule, order, regulation, policy, proposal or restriction relating to environmental pollution, which will prohibit or materially affect any Operations currently in process or reasonably anticipated, the Operator shall have the right to declare the existence of a condition of force majeure during the period in which it is in good faith seeking a feasible method to comply with, be exempted from, modify, obtain necessary permits or licenses under, or prevent the enactment or promulgation of said environmental regulations.

15.2 The Party affected by any conditions of force majeure as described in this Article shall promptly notify the other Party in writing and hereby agree to use reasonable diligence to remove any such conditions of force majeure which may occur from time to time. No right of a Party shall be affected for failure or delay of the Party to meet any condition of this Agreement where such failure or delay is caused by a condition of force majeure as defined herein, and such Party shall be excused from performance of any obligation affected by such condition of force majeure during the period required to overcome the delay; provided, however, nothing contained herein shall require the settlement of strikes, lock-outs or other

labor difficulties by the Party affected contrary to its wishes, and the disposition or manner of handling or remedying any and all such labor difficulties is hereby expressly acknowledged to be entirely within the discretion of the Party concerned.

ARTICLE 16

16.0 LIABILITY

16.1 It is understood and agreed between the Parties that ownership of the Property and the personal property located thereon or used in connection therewith shall be and is as tenants-in-common, and the liability of the Parties to non-parties shall be several and individual and not joint or collective. As between the Parties, however, in the absence of proof of gross negligence on the part of Operator, and subject to applicable provisions of this Agreement, all costs and expenses of satisfying, compromising, settling or defending against any claim or liability for damage, destruction, death or injury to persons or properties arising out of or in any way connected with Operations shall be allocated in proportion to the Parties' respective Participating Interests.

16.2 No Party shall be liable to the other in contract, tort or otherwise for special or consequential damages, including, without limitation, loss of profits or revenues.

ARTICLE 17

17.0 RELATIONSHIP OF THE PARTIES

17.1 Employees of the Operator or Non-Operator are not, and shall not be deemed to be, employees of the other.

17.2 No Party, without the written consent of the others, shall have the power or authority to sell, assign, convey, mortgage, pledge, or otherwise dispose of or hypothecate any of the Property, or any part thereof, except as otherwise expressly provided for in this Agreement.

17.3 Except as expressly provided for in this Agreement, each Party shall have the free and unrestricted right independently, or in combination with one or more non-parties, to engage in and receive the full benefits of any and all business endeavors of any sort whatsoever, including but not limited to acquisition of mining properties, interests or rights and exploration for, production and sale of Minerals, whether or not competitive with the endeavors contemplated herein; and neither of the Parties to this Agreement shall have any fiduciary obligation or other duty of whatsoever character to the other Party which would prevent it from engaging in or enjoying the benefit of such competing endeavors or would require it to consult with or allow the other Party to participate therein. Specifically, and without limiting the generality of any of the foregoing, neither of the Parties to this Agreement shall have any obligation to the other with respect to an opportunity to acquire any mining property, interest or right offered to it, except as expressly provided in this Agreement.

17.4 Nothing contained in this Agreement shall be deemed to constitute either Participant, the partner of the other, nor, except as expressly provided herein, to constitute either Participant, the agent or legal representative of the other. Without changing the effect of the foregoing, the Participants agree that their relationship shall constitute a tax partnership within the meaning of Section 761(a) of the United States Internal Revenue Code of 1986, as amended.

17.5 The Participants hereby waive and release all rights of partition or sale in lieu thereof or other divisions of the Property, including any such rights provided by statute.

17.6 The Participants designate the Operator as the tax matters partner as defined in Section 6231(a)(7) of the Internal Revenue Code of 1986 as amended (the "Code"). The Operator shall file with the appropriate offices of the Internal Revenue Service and any applicable state tax agencies the partnership income tax returns covering the operations concluded under this Agreement. Each Participant agrees to furnish to Operator such information relating to operations as may be required for proper preparation of such returns and Operator shall furnish the Participants estimated tax information within two calendar months after the end of each annual accounting period. Operator shall furnish each Participant a copy of the completed tax returns no later than seven months of the end of the tax year and at least one month prior to filing the partnership returns with the appropriate Federal and State agencies. Tax allocations and tax administration and liquidation procedures shall

be as set forth in Schedule "E" attached hereto and made a part hereof.

ARTICLE 18

18.0 DATA, INFORMATION AND CONFIDENTIALITY

18.1 Except as otherwise provided in this Agreement, and excepting necessary disclosures to contractors, consultants, subcontractors and governmental authorities, each Party agrees that without prior written consent of the other Party, which consent shall not unreasonably be withheld, it will treat as confidential and prevent disclosure to any non-parties of any geological, geophysical or other factual and technical information and data relating to Operations undertaken pursuant to this Agreement. This obligation shall be a continuing obligation of each Party throughout the term of this Agreement, notwithstanding that such Party may have ceased to be a Party to this Agreement before its termination. Consent is hereby given to each Party to disclose such information and data to any affiliate of such Party. Upon termination of this Agreement, each of the Parties shall be entitled to all information acquired hereunder, including copies of all maps, data and reports which can be reproduced and which have not theretofore been furnished; and thereafter, the Parties hereto may use such data and other information as they see fit.

18.2 No Party shall make any announcement, press release, or public statement relating in any manner to this Agreement or operations or activities conducted hereunder without first furnishing

the proposed text thereof to the other Party and obtaining the other Party's prior approval in writing, which approval shall not be unreasonably withheld, provided that neither Party shall be required to obtain consent from the other Party for any announcements or disclosures which the disclosing Party reasonably believes to be required by government law or regulation, or required by any stock exchange on which disclosing Party's stock may be listed.

18.3 Notwithstanding the foregoing, the Parties recognize that each is a public company or a wholly owned subsidiary of a public company listed for trading on public exchanges and that a Party shall have the right to issue such announcements as, in the opinion of its counsel, it is obligated by law, regulation and/or exchange rule to so announce; provided, however, that such Party shall furnish to the other Party a copy of such proposed announcement prior to its release. In any such instance, the Party furnished with a proposed release or announcement shall comment on the same within three working days of the receipt thereof from the releasing or announcing Party unless such law, regulation and/or exchange rule requires a shorter period.

ARTICLE 19

19.0 NOTICES

19.1 Any notice, election, invoice, statement, billing, payment or other correspondence required or permitted hereunder shall be deemed to have been properly given or delivered when made in writing and delivered personally to the Party to whom directed, or when delivered

to such party by United States mail duly registered, courier service or Western Union telegraph with all necessary postage or charges fully prepaid, and addressed to the Party to whom directed at its below-specified address:

As to Norgold:

Mr. Christopher Moat, President
Norgold Resources (US) Inc.
2380 Harbour Center
P.O. Box 12122
555 West Hastings Street
Vancouver, B.C. V6B 4N6
Canada
Facsimile No. 604/685-8045

With a copy to:

Mr. Brian D. Edgar
Rand Edgar & Sedun
Suite 2200
885 W. Georgia Street
Vancouver, B.C. V6C 3E8
Canada
Facsimile No. 604/681-7116

As to Asarco:

Exploration Department
ASARCO Incorporated
180 Maiden Lane
New York, New York 10038
Facsimile No. 212/510-1908

With a copy to:

Exploration Department
ASARCO Incorporated
1150 North 7th Avenue
Tucson, Arizona 85703
Facsimile No. 602/792-3934

19.2 Either Party hereto may change its address for the purpose of notices or communications hereunder by furnishing notice thereof to the other Party in compliance with Section 19.1 hereof.

ARTICLE 20

20.0 TRANSFER AND ASSIGNMENT OF INTERESTS

20.1 Should any Party desire to sell all or any part of its interests under this Agreement or its rights and interests in the Property, it shall promptly give written notice to the other Party, with full information concerning its proposed sale, which shall include the name and address of the prospective purchaser (who must be ready, willing and able to purchase), the purchase price, and all other terms of the offer. The other Party shall then have an optional prior right, for a period of 30 days after receipt of the notice, to purchase on the same terms and conditions the interest which the other Party proposes to sell. However, there shall be no preferential right to purchase in those cases where (i) any Party wishes to mortgage its interests, or to dispose of its interests by merger, reorganization, consolidation or sale of all or substantially all of its assets to a subsidiary or parent company or to a subsidiary of a parent company, or to any company in which any one Party owns a controlling interest; or (ii) any transfer, conveyance or reorganization of its interest and properties by any Party with an affiliate, or to any such reorganization resulting in the conveyance or transfer of all or substantially all of a Party's mineral rights and interest to a third party in which the conveying Party obtains or retains an interest in the successor owner upon completion of such transfer, conveyance or reorganization, provided that any successor to a Party's rights and interest shall be bound by all of the terms and conditions of this Agreement.

20.2 No conveyance, assignment or other transfer affecting the Property, the production therefrom or equipment thereon shall be made other than for lawful money of the United States and unless same shall cover the entire undivided interest of the assignor or seller, it being the intention of this provision to maintain the unit ownership, development and operation of the Property. The sale of a lesser interest than seller's entire undivided interest may be made upon securing the prior written consent of the other Party.

20.3 No assignment of any interest shall be binding upon the Operator until the first day of the second calendar month following that in which the assignor or assignee shall have furnished the Operator with an executed or photostatic copy thereof, together with the proper and complete address of assignee. Any assignment of interest, whether expressly stated or not, shall operate to impose upon the assigned interest the proportionate part or share of any unpaid obligations theretofore chargeable hereunder to said assigned interest. An assignment shall not operate to relieve the assigned interest or the assignor from any liability or obligation which accrued prior to such assignment.

ARTICLE 21

21.0 ARBITRATION

In case of any dispute between the parties, the same shall be submitted to arbitrators and to an umpire who shall be selected in the manner hereinafter set forth. The party desiring arbitration shall nominate one arbitrator, and shall notify the other party of

such nomination, and the other party shall within thirty (30) days after receiving such notice, nominate an arbitrator, and the two, before proceeding to act, shall select a third person to act as umpire jointly with them. If said arbitrators shall be unable to agree in the selection of such third person as umpire, the umpire shall be designated by the American Arbitration Association under the rules of such association. Furthermore, if the party receiving the notice of the nomination of an arbitrator by the party desiring arbitration shall fail and neglect within said thirty (30) days to nominate an arbitrator, then the arbitrator nominated by the party desiring arbitration shall proceed alone in the manner hereinafter prescribed as the procedure where two arbitrators and umpire are selected and his decision shall be binding upon the parties. After two such arbitrators and an umpire shall have been so selected, the umpire shall fix a time and place in Tucson, Arizona, or elsewhere if the parties hereto so agree, for the purpose of the arbitrators and umpire meeting and hearing the parties and any evidence that they may submit, and the decision of said arbitrators and umpire or any two of them in writing shall be binding upon the parties. The expense of the arbitrators and umpire shall be paid as directed in such decision. The persons to be selected as arbitrators and umpire shall be disinterested persons of experience in the mining business in the United States of America, or if no mining question is involved, then persons having technical competence relative to the point in dispute, and who are not and never have been associated directly or indirectly with any party to the dispute. The arbitrators shall retain jurisdiction to determine whether a default has been cured within a

reasonable time. Any decision of the arbitrators shall bind the parties hereto with respect to the same issues in any dispute arising thereafter.

ARTICLE 22

22.0 ADDITIONAL PROVISIONS

22.1 Governing Law. For all purposes, this Agreement shall be deemed to be a contract made in and governed by the laws of Arizona.

22.2 Partition of the Property. Each Party hereto covenants and agrees that so long as this Agreement is in effect, it will not commence an action for partition of ownership interests which it may hold in the Property.

22.3 No Implied Covenants. It is expressly understood and agreed that no implied covenants or condition whatsoever shall be read into this Agreement relating to exploration, development, mining or production or the time therefor, or to any obligation of the Parties hereunder or to the measure of diligence thereof.

22.4 Other Instruments. The Parties hereto agree that they will execute any and all instruments that may be necessary or required to carry out and effectuate any and all of the provisions or objectives of this Agreement.

22.5 Severability. Should any section or provision of this Agreement be declared void or unenforceable, such declaration shall be effective only as to that portion of the Agreement so held void and unenforceable in any jurisdiction, and insofar as possible, all other sections, terms, covenants and conditions of the Agreement

shall remain in full force and effect in such jurisdiction, and the invalidity or unenforceability of any provision hereof in any jurisdiction shall not affect the validity or enforceability of any such provision in any other jurisdiction.

22.6 Currency. All monetary amounts expressed in this Agreement shall be in United States Dollars.

22.7 Time. Time is of the essence in this Agreement.

22.8 Succession. Subject to the provisions hereof, this Agreement shall be binding upon and inure to the benefit of the Parties and their respective successors, legal representatives and permitted assigns.

22.9 No Stock Purchase. So long as this Agreement is in effect, Asarco shall not buy, sell offer to buy, offer to sell, or obtain any direct or indirect interest in the common stock issued by Norgold, whether through any option, warrant, voting trust or other agreement, from Norgold or any other holder of such common stock, without the express prior written consent of Norgold.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the day and year first above written.

NORGOLD RESOURCES (US) INC.

BY: _____

Its: _____

ASARCO INCORPORATED

BY: _____

Its: _____

Schedule "A"

Part One

The following patented and unpatented lode mining claims, State of Arizona mineral lease and State of Arizona prospecting permits situated in Township 10 North, Range 5 West, G&SRB&M, Weaver Mining District, Yavapai County, Arizona:

A. Patented and unpatented Mining Claims subject to Mining Agreement (With Option to Purchase) dated December 30, 1988 between Norgold and Western Building and Mining Co., Inc.

I. Patented Claims

1. The Juniper lode mining claim, mineral Survey No. 1112, patent whereof is recorded in Book 36 of Deeds, pages 229 through 232.

Except for that portion of said Juniper claim conveyed by Warranty Deed recorded in Book 235, page 8 and described as follows:

Commencing at corner No. 1 of said Juniper claim, thence North 44° 30' West along the 1-5 line of said claim 237.56 feet to the Point of Beginning for the description of the herein described tract; thence continuing along said 1-5 line 150.0 feet; thence North 44° 30' East parallel with the 5-4 line of said claim 500 feet; thence South 44° 30' East parallel with said 1-5 line 150 feet; thence South 44° 30' West parallel with said 5-4 line 500 feet to the Point of Beginning. Together with an easement for ingress and egress over an existing road from U.S. Highway 89 to the above described tract as described in the said Warranty Deed; (hereinafter the "Santa Fe Patented Land").

And Except for that portion of Juniper claim conveyed by Warranty Deeds recorded in Book 1265, page 694 and page 697 and described as follows:

Commencing at the Northeasterly end of the Northwesterly side line of the parcel of land conveyed in Book 235, page 8; thence North 44° 30' East 75 feet along the Northeasterly prolongation of the Northwesterly side line of said parcel conveyed in Book 235, page 8; thence South 44° 30' East 70 feet along a line parallel with the Northeasterly end line of said parcel conveyed in Book 235, page 8; thence in a Southwesterly direction to a point on said Northeasterly end line that is South 44° 30' East 75 feet from the Point of Beginning for the herein described parcel of land; thence North 44° 30' West 75 feet along the Northeasterly end line of said parcel conveyed in Book 235, page 8 to the Point of Beginning.

2. The Edmond lode mining claim, mineral survey No. 1114, patent whereof is recorded in Book 36 of Deeds, pages 236 through 240.

3. The Edgar lode mining claim, mineral survey No. 1113, patent whereof is recorded in Book 36 of Deeds, pages 240 and 241.

4. The Triangle lode mining claim, mineral survey No. 1115, patent whereof is recorded in Book 36 of Deeds, pages 233 through 236.

Subject to following:

(a) The conditions and the stipulations set forth in the patents to the Subject Patented Mining Claims recorded in Book 36 of Deeds, page 229 through 243 and Book 43 of Deeds, pages 296 through 300.

(b) An easement dated December 13, 1939 and recorded January 4, 1940 in Book 176 of Deeds, Page 176, for a right-of-way to the Mountain States Telephone and Telegraph Company for the right, privilege and authority to construct, operate and maintain telephone and telegraph lines and poles over an undescribed portion of the Edmond and Triangle patented mining claims.

(c) An easement for ingress and egress purposes over an existing roadway as reserved in that Joint Tenancy Deed dated March 29, 1973 and recorded in Book 1207, Page 425. (Affects the Edmond patented lode mining claim).

(d) An easement for ingress and egress purposes over an existing roadway, thirty feet in width, reserved in that Joint Tenancy Deed dated October 14, 1974 and that Warranty Deed dated August 21, 1982, recorded respectively in Book 1375, Page 64 and Book 1485, Page 769. (Affects the Edgar patented lode mining claim).

(e) An easement for ingress and egress over the Edmond and Triangle patented lode mining claims from U.S. Highway No. 89 as set forth in Warranty Deed dated September 28, 1979 recorded in Book 1265, Pages 694 through 705. Said easement being twelve feet in width, 6 feet on each side of the center line described in said documents.

(f) Taxes which constitute a lien but which are not yet due and payable.

II. Unpatented Claims

<u>Claim Name</u>	<u>Date Located or Amended</u>	<u>Book</u>	<u>Recorded Page</u>	<u>Date</u>	<u>BLM Serial No.</u>
Alvin J.	11/21/1975	991	423	11/21/75	AMC 33458
Amended	11/21/1975	996	261	1/2/76	AMC 33458
Kathryn A	11/21/1975	991	419	11/21/75	AMC 33459
Amended	11/21/1975	996	263	1/2/76	AMC 33459
Kathryn B	11/21/1975	991	421	11/21/75	AMC 33460
Amended	11/21/1975	996	265	1/2/76	AMC 33460
Pennsylvania No. 1	6/26/1981	1392	661	6/30/81	AMC 134462
Sun #1	9/9/1988	2079	476	9/13/88	AMC 288941
Sun #2	9/9/1988	2079	478	9/13/88	AMC 288942
Sun #3B	9/9/1988	2079	480	9/13/88	AMC 288943
Amended	10/25/1988	2091	499	10/26/88	AMC 288943
Sun #6B	9/9/1988	2079	486	9/13/88	AMC 288946
Amended	10/25/1988	2091	501	10/26/88	AMC 288946
Sun #7B	9/9/1988	2079	488	9/13/88	AMC 288947
Amended	10/25/1988	2091	503	10/26/88	AMC 288947
Sun #8	9/9/1988	2079	490	9/13/88	AMC 288948
Sun-8B	10/25/1988	2091	505	10/26/88	AMC 288948
Sun #9	9/9/1988	2079	492	9/13/88	AMC 288949
Sun #10	9/9/1988	2079	494	9/13/88	AMC 288950
Sun #11	9/9/1988	2079	496	9/13/88	AMC 288951
Sun #12	9/9/1988	2079	498	9/13/88	AMC 288952
Sun #13	9/9/1988	2079	500	9/13/88	AMC 288953
Sun #14	9/9/1988	2079	502	9/13/88	AMC 288954
Sun #15	9/9/1988	2079	504	9/13/88	AMC 288955

B. Unpatented mining claims subject to Option Agreement dated September 16, 1988 between Norgold and Don Jenkins.

<u>Claim Name</u>	<u>Date Located or Amended</u>	<u>Book</u>	<u>Recorded Page</u>	<u>BLM Serial No.</u>
Y-1B	8-8-88	2078	422/423	AMC 288934
Amended	10-25-88	2091	489/490	
Y-2B	8-8-88	2078	424/425	AMC 288935
Amended	10-29-88	2091	491/492	
Y-3B	8-8-88	2078	426/427	AMC 288936
Amended	10-25-88	2091	493/494	
Y-4F	8-8-88	2078	428/429	AMC 288937
Amended	10-25-88	2091	495/496	
Y-5B	8-8-88	2078	430/431	AMC 288938
Amended	10-25-88	2091	497/498	
Y-6	8-8-88	2078	432/433	AMC 288939
Y-7	8-8-88	2078	434/435	AMC 288940

C. Unpatented mining claims and State of Arizona mineral lease subject to Option to Purchase dated April 21, 1989 between Norgold and D.C. Layton et ux.

<u>Claim Name</u>	<u>Date Located or Amended</u>	<u>Book</u>	<u>Recorded Page</u>	<u>Date</u>	<u>BLM Serial No.</u>
Victoria #1	8/5/1974	924	198	8/5/74	AMC 78219
Amended	3/2/1980	1287	763	3/25/80	AMC 78219
Victoria #2	3/2/1980	1287	765	3/25/80	AMC 98902
Victoria #3	3/2/1980	1287	767	3/25/80	AMC 98903
Victoria #4	3/2/1980	1287	769	3/25/80	AMC 98904
Victoria #5	8/20/1985	1751	484	9/4/85	AMC 244644
Rim Rock 1		154	550		AMC 82449
Thunder Hill		941	750		AMC 78227
Black Dike 1		153	17		AMC 74727
Black Dike					
Kachina Doll 1		937	596		Arizona State Mineral Lease #11-31009

D. State of Arizona Prospecting Permits

Prospecting Permit No. 08 - 96868 - E 1/2 Section 14, Township 10 North, Range 5 West, G&SRB&M, Yavapai County, Arizona. Contains 268.25 acres

Prospecting Permit No. 08 - 96869 - NE 1/4 Section 22, Township 10 North, Range 5 West, G&SRB&M, Yavapai County, Arizona. Contains 154.74 acres.

ALL OF WHICH claims, leases and permits are SUBJECT TO:

(a) Paramount title of the United States, with respect to the unpatented mining claims;

(b) All roads, rights-of-way and easements existing, and those of record in the office of the Recorder of Yavapai County, and those of record in the Arizona State Office of the Bureau of Land Management and those of record in the office of the Arizona State Land Department;

(c) All leases, permits, approvals and other rights and privileges granted by or obtained from the United States in the administration of its paramount title and granted by or obtained from the State of Arizona in its administration of its title;

(d) The effect of conflicts (if any) with unpatented mining and mill site claims heretofore initiated under the mining laws of the United States;

(e) Taxes (if any), which by law constitute a lien but which are not yet due and payable; and

(f) The terms, conditions and provisions of the above-described Western Mining Agreement, the Jenkins Option Agreement and the Layton Option to Purchase.

Part Two

Patented Claims

Mother Patented Lode	MS 1201
Alvarado Gold Mines	NE 1/4 Sec. 21, T10N, R5W
Santa Fe Patented Land	

Part Three

Patented Claims

Listed under this Part 3 shall be other properties which may become part of the property pursuant to ARTICLE VI of the Exploration and Option Agreement.

SCHEDULE B

To That Joint Venture Agreement Dated _____, 1989
OPERATIONS ACCOUNTING PROCEDURES

In the event of a conflict between the provisions of this Accounting Procedure and the provisions of the Agreement to which this Accounting Procedure is attached, the provisions of the Agreement shall control; provided, however, that the definitions contained herein shall control as to the interpretation of this Accounting Procedure.

The purpose of this Accounting Procedure is to establish equitable methods for determining charges and credits applicable to operations under the Agreement. The Parties agree that if any such methods prove unfair or inequitable to Operator or Non-Operator(s), the Parties will meet and in good faith endeavor to agree on changes in methods deemed necessary to correct any unfairness or inequity.

I. GENERAL PROVISIONS

1. Definitions

1.1.1 "Agreement" means the Agreement to which this Accounting Procedure is attached.

1.1.2 "Controllable Material" shall mean material which the Operator subjects to record control and inventory. A list of types of such materials shall be furnished to Non-Operator upon request.

1.1.3 "Material" shall mean personal property, including supplies and equipment, acquired and held for use in Operations.

1.1.4 All other terms used as defined terms herein and which are defined in the Agreement shall have the same meanings as defined in the Agreement.

2. Statements, Billings and Adjustments

1.2.1 Each Party to the Agreement is responsible for preparing its own accounting reports to meet the requirements of any governmental authority having jurisdiction over operations. Operator is required to furnish Non-Operator statements and billings in such form as required to discharge such responsibilities.

1.2.2 Operator shall render to Non-Operator, on or before the last day of each month, a statement or billing for its proportionate share of the costs and expenses, for the preceding month. Each statement or billing shall consist of charges and credits to the Account, summarized by appropriate classifications indicative of the nature thereof, except that items of Controllable Material and unusual charges and credits shall be detailed.

1.2.3 Operator shall, upon request by Non-Operator, furnish a description of such accounting classifications.

1.2.4 Payment of any such bills shall not prejudice the right of any Non-Operator to protest or question the correctness thereof; however, all bills and statements rendered to Non-Operator by Operator during any calendar year shall conclusively be presumed to be true and correct after twenty-six (26) months following the end of any such calendar year, unless within the said twenty-six (26) month period a Non-Operator takes written exception thereto and makes claim on Operator for adjustment. No adjustment favorable to Operator shall be made unless it is made with same prescribed period. However, the provisions of this paragraph shall not prevent adjustments resulting from a physical inventory of the Property.

3. Advances and Payments

1.3.1. If Operator so requests, Non-Operator shall advance to Operator its share of estimated cash requirements for the succeeding month's operations. Such estimates shall be based on the latest information available to Operator at the time the request is forwarded as to operations cash requirements for the month. Operator shall make written request to Non-Operator at least twenty (20) days prior to the last due date on which Non-Operator is to make such advances. The due date of such advances shall be set by Operator, but shall be no sooner than the first day of the month for which the advances are required.

1.3.2 Should Operator be required to pay any large sums of money on behalf of the operations, which are unforeseen at the time of providing the Non-Operator with said monthly estimates of its cash requirements, the Operator may make a written request of Non-Operator for special advances covering the Non-Operator's share of such payments. Non-Operator shall make its proportional special advances within ten (10) days after receipt of such notice.

1.3.3 If Non-Operator's advances exceed its share of actual operations cash requirements, the next succeeding request for advances of cash requirements, after such determination, shall be reduced accordingly. However, Non-Operator may request that excess advances be refunded. The Operator shall make such refund within ten (10) days after receipt of Non-Operator's request.

1.3.4 If Non-Operator's advances are less than its share of actual expenditures, the deficiency shall, at Operator's option, be added to a subsequent request for advances of cash requirements or be paid by Non-Operator within fifteen (15) days following the receipt of Operator's billing to such Non-Operator for such deficiency.

1.3.5 If Operator does not request Non-Operator to advance its share of estimated cash requirements, Non-Operator shall pay

its share of actual expenditures within fifteen (15) days following receipt of Operator's billings.

1.3.6 All payments herein provided for shall be made on or before the due date, and if not so paid, the unpaid balance shall bear interest after the due date at the rate of twelve percent (12%) per annum until paid. Such rate, however, shall not exceed the maximum legal rate.

4. Audit

1.4.1 In addition to the annual audit provision in Article 5 of the Agreement, a Non-Operator, upon at least thirty (30) days advance written notice to Operator, shall have the right as set forth in Section 5.4 of the Agreement to audit the Account and related records for any calendar year (or other accounting period) or portion thereof within the twenty-six (26) month period following the end of such accounting period; however, the conducting of an audit shall not extend the time for the taking of written exception to and the adjustment of accounts as provided for in Paragraph 1.2.4 of this Section I.

1.4.2 Audits may be performed as often as Non-Operator deems it in its interest to perform an audit. Operator shall retain and Non-Operator may, during the course of an audit, examine all invoices and documents pertaining to charges and credits to the Account which may be necessary to trace any transaction to its completion.

1.4.3 Subject to prior unanimous approval of the Parties, an audit or verification of the Account may be performed for the benefit of all Parties, and the costs thereof shall be chargeable to the Account.

1.5 Budget Control

Statements and billings submitted by Operator under Paragraphs 1.2.1, 1.2.2 and 1.2.3 of this Section shall be so detailed or contain such explanations as to permit reference to each item therein to the appropriate item, if any in the approved budget.

II. CHARGEABLE COSTS AND EXPENDITURES

Operator shall charge the Account for all costs necessary to conduct Operations. Such costs shall include, but are not necessarily limited to:

2.1 Rentals, Fees, Etc.

2.1.1 Rentals, fees, etc. for development licenses, mining leases or rentals and royalties paid for the Account.

2.1.2 Permits, fees and other charges which are assessed by various governmental agencies.

2.2 Labor and Related Costs

2.2.1 Salaries and wages of employees of Operator who are directly engaged in the conduct of operations, whether temporarily or permanently assigned, as well as the cost of employee benefits, holidays, vacations, sickness, disability benefits and other customary allowances and reasonable expenses which are paid or reimbursed under the Operator's usual practice, and amounts imposed by governmental authorities, which are applicable to such employees. Operator shall keep and maintain records sufficient to show the basis for the allocation to the Account of labor costs for all of its employees temporarily assigned to the Operations and the nature of the work or services provided.

2.2.2 Employee Benefits. Operator's cost of established plans for employees' group life insurance, hospitalization, pension, retirement, stock purchase, thrift, bonus and other benefit plans of a similar nature, applicable to Operator's labor cost chargeable to the Account shall be chargeable at Operator's actual cost.

2.3 Material. Material purchased or furnished by Operator for use in Operations as provided under Section III.

2.4 Transportation and Employee Relocation Costs.

2.4.1 Transportation of Material and other related costs such as expediting, crating, freight and unloading at destination.

2.4.2 Transportation of employees of Operator as required in the conduct of Operations.

2.4.3 Relocation costs of employees permanently assigned and directly engaged in the conduct of Operations. Such costs shall include transportation of employee's families and their personal and household effects and all other relocation costs in accordance with Operator's usual practice.

2.5 Services.

2.5.1 Contract services, professional consultants and other services procured from outside sources other than services covered by Paragraph 2.8 of this Section II.

2.5.2 Technical services, such as but not limited to, laboratory analysis, drafting, geophysical and geological interpretation, engineering, reserve studies, and related computer services and data processing, performed by the Operator for the direct benefit of the Operations, provided such costs shall not exceed those currently prevailing if performed by outside technical service companies, nor shall such costs exceed the actual costs to Operator for providing such services.

2.6 Damages and Losses to Property.

All costs or expenses necessary for the repair or replacement of property resulting from damages or losses incurred by fire, flood, storm, theft, accident or any other cause. Operator shall furnish Non-Operator with written notice of damages or losses as soon as possible.

2.7 Insurance.

2.7.1 Premiums for the protection of the Parties less credits for settlements received from the insurance carrier and others.

2.7.2 Actual expenditures incurred in the settlement of all losses, claims, damages, judgments and other related expenses for the benefit of the Operations.

2.8 Legal Expense.

All costs or expenses of necessary routine legal advice relating to operations and of handling, investigating and settling litigation or claims arising by reason of the operations or necessary to protect or recover the Property, including, but not limited to, attorney fees, court costs, cost of investigation or procuring evidence and amounts paid in settlement or satisfaction of any such litigation or claims, however, no charge shall be made for the services of the legal staff of the Operator (such services being considered to be administrative charges under Paragraph 2.11) unless previously agreed to by Operator and Non-Operator.

2.9 Taxes.

All taxes (except taxes based on or determined with reference to income), fees and governmental assessments of every kind and nature.

2.10 Offices, Camps and Miscellaneous Facilities

Net cost of maintaining and operating any offices, sub-offices, camps, warehouses, housing and other facilities directly serving the operations shall be charged to the Account.

2.11 Managing and Overhead Fee.

Operator shall be entitled to charge to and recover from the Account (based upon the relative Percentage Interests of all Parties during the month in question) a fee for its indirect costs and expenses in an amount equal to 6% of the aggregate of Paragraphs 2.1 through 2.10 inclusive of this Section II provided that the amounts paid to independent contractors for contract mining or for construction and installation of major equipment and facilities shall be excluded for purposes of computing the management and overhead fee. It is the intention of the Parties

that this fee shall be an approximation of Operator's indirect costs and expenses and not result in a profit to the Operator. It shall be amended by the Parties from time to time, if, in practice, it is found to be insufficient or excessive so as to result in a profit or loss to Operator. The management and overhead fee shall constitute Operator's sole compensation for all executive supervision above the resident manager level, all off site administrative supervision, all general overhead, all executive and administrative travel expenses, all off site accounting, record keeping, data processing and personnel department costs and expenses, all staff legal costs, and all off site expenditures not expressly set forth in the Paragraph II. No depreciation, amortization or depletion charges shall be used in computing the management and overhead fee.

2.12 Storage of Production Inventories.

Each Party will bear the cost incurred for handling and storage of merchantable ore or concentrate as follows:

2.12.1 Personal property taxes on ore or concentrates in storage for a Party on the Property shall be charged to such Party.

2.12.2 The cost of loading out such ore or concentrates in storage for a Party from the Property shall be charged to such Party.

2.12.3 Cost associated with providing storage of ore or concentrates on the Property for a Party shall be charged to such Party.

2.12.4 Other costs arising out of storage for handling of ore or concentrates shall be charged to the Party owning such materials.

2.13 Other Expenditures.

Any other chargeable expenditures pursuant to an approved work plan and budget or otherwise approved by the Management Committee not covered or dealt with in the foregoing provisions which are incurred by the Operator for the necessary and proper conduct of the Operations.

III. BASIS OF CHARGES TO ACCOUNT

3.1 Purchases.

Material purchased and services procured shall be charged at the price paid by Operator after deduction of all discounts actually received.

3.2 Material Furnished by Operator.

3.2.1 New Material

(1) Material shall be priced at the current replacement cost of the same kind of material, effective at date of movement and f.o.b. the supply store or railway receiving point nearest the Property where Material of the same kind is normally available.

(2) The account shall not be credited with cash discounts applicable to prices provided for in this Paragraph 3.2.1 of Section III.

3.2.2 Used Material

(1) Material in sound and serviceable condition and suitable for re-use shall be priced at fair market value not to exceed 75% of the current price of new material, f.o.b. the Property.

(2) Obsolete material shall be priced at a value commensurate with its fair market value.

3.3 Premium Prices.

Whenever material is not readily obtainable at prices specified in Paragraphs 3.1 and Paragraph 3.2 of this Section III because of national emergencies, strikes or other unusual causes over which the Operator has no control, the Operator may charge the Account for the required material at the Operator's actual cost incurred in procuring such material, in making it suitable for use, and in moving it to the Property, provided that notice in writing is furnished to Non-Operator of the proposed charge prior to billing Non-Operator for such material. Non-Operator shall, within ten days after receiving notice from Operator, furnish in kind all or part of its share of such material available to Non-Operator, suitable for use and acceptable to Operator.

3.4 Warranty of Material Furnished by Operator.

Operator does not warrant the material furnished. In case of defective material, credit shall not be passed to the Account until adjustments have been received by Operator from the manufacturers or their agents.

3.5 Equipment and Facilities Furnished by Operator.

3.5.1 Operator shall charge the Account for approved use of Operator's equipment and facilities at rates commensurate with Operator's cost of ownership and operation. Such rates shall include cost of maintenance, repairs, other operating expense, insurance, taxes (other than income taxes), depreciation and

interest on actual purchase cost) cost at a rate not to exceed 7% per annum, provided such rates shall not exceed those currently prevailing in the immediate area within which the Property is located. In lieu of rates based on costs of ownership and operation of equipment, Operator may elect to use commercial rates prevailing in the area of the Property less 20%. Rates for laboratory services shall not exceed those currently prevailing if performed by outside service laboratories.

3.5.2 Operator shall inform Non-Operator in advance of the rates it proposes to charge.

3.5.3 The rates referred to in Paragraph 3.5.1 shall be revised and adjusted from time to time when found to be either excessive or insufficient.

IV. INVENTORIES

4.1 Periodic Inventories shall be taken by Operator of all Controllable Material as required by the Parties. Operator shall give ninety days written notice of intention to take such inventories to allow Non-Operator to be represented when any inventory is taken. Failure of Non-Operator to be represented shall bind Non-Operator to accept the inventory taken by Operator.

4.2 Reconciliation of inventory with the Account will be made and a list of overages and shortages shall be furnished to each Non-Operator. Inventory adjustments shall be made to the Account, if required by the Parties.

4.3 Whenever there is a sale or change of interest in the Property, a special inventory may be taken by the Operator, provided the seller and/or purchaser of such interest agree to bear all of the expense thereof. In such cases, both the seller and the purchaser shall be entitled to be represented and shall be governed by the inventory so taken.

V. RECORD KEEPING

The Operator agrees to keep detailed records and receipts sufficient to support all costs and expenditures allocated to the Account. Such costs shall be maintained on a development block and property by property basis as anticipated in the Agreement and as needed for tax reporting purposes. Records shall include, but are not limited to, ordinary books and records required by generally accepted accounting principles, receipts, time cards/sheet, payroll records, detailed billings from all outside parties and evidence of comparable market costs when required by the provisions of the Agreement or Schedule B. Such records shall be maintained for a period of four years. Such period of record retention may be extended on written notice from any Party that they are subject to legal claims or have waived a statute of limitations for tax purposes for so long as the legal claim or tax matter is open. The records will be

available to all Parties and their agents for review and copying during normal business hours. To the extent that the cumulative total of unsupported expenditures exceeds \$10,000 in any calendar year (or other 12-month accounting period), the absence of detailed records to support any expenditures allocated to the Account shall be conclusive proof that the amounts in question are inappropriate cost allocations which must be reimbursed to the Account.

Schedule "C"
To That Joint Venture Agreement Dated _____, 19____
Between Norgold and ASARCO

DEFINITION OF NET PROFITS ROYALTY

In the event that Section 11.6 of the Joint Venture Agreement (the "Agreement") to which this Schedule "C" is attached becomes effective, the Party whose Participating Interest has not declined to 15% (referred to herein as "Owner") shall pay to the Party whose Participating Interest has declined to 15% (referred to herein as "Royalty Holder") a royalty equal to fifteen percent (15%) of Net Profits (as defined below) derived from the Property from and after the date on which the Royalty Holder's Participating Interest is converted into a Net Profits royalty (the "Conversion Date") pursuant to Section 11.6 of the Agreement.

As used herein, the following terms shall have the meaning hereafter assigned:

- (a) "Commercial Production" shall have the meaning defined in Section 1.4 of the Agreement.
- (b) "Minerals" shall have the meaning defined in Section 1.7 of the Agreement.
- (c) "Property" shall mean the rights and interests described in Schedule "A" to the Agreement less any deletions therefrom and plus any additions thereto made by the Parties to the Agreement prior to the Conversion Date.
- (d) "Gross Sales" in any Year shall mean the amount of earned revenues payable to Owner by any smelter, refinery, or other purchaser of any and all Minerals produced from the Property less all penalties, assaying and sampling charges, whether or not deducted by the purchaser or paid or incurred by Owner in the first instance; provided, however, that any written contract for the sale of such Minerals to an affiliate of Owner on a basis not involving such a contract or any use by Owner shall not, without the prior written consent of Royalty Holder, be on a basis less favorable to Owner (including the terms thereof with respect to delivery and inventorying) at the time of such contract, sale, or use, as the case may be, than that which would have been applicable with respect to a comparable contract, sale, or use, as the case may be, to or by an unaffiliated third party.

(e) "Operating Costs" shall mean the sum of the following costs and expenses incurred by Owner in any Year;

(i) "Mining Costs" - which shall mean costs and expenses accrued or incurred in accordance with generally accepted accounting principles by Owner after the Conversion Date in exploring for, developing, mining, extracting, removing, and transporting to the Mill (as hereinafter defined) Minerals produced from the Property. Such costs and expenses shall include, without limitation, those incurred for labor, machinery operation, fuel, explosives and other materials, exploration drilling, developmental or ore delineation drilling, a reasonable allowance for depreciation and amortization of mining equipment and machinery acquired after the Conversion Date and after commencement of Commercial Production, and a reasonable allowance for future costs anticipated to be incurred by Owner in reclaiming the Property in accordance with applicable laws and regulations. Mining Costs shall not include depletion, income taxes, or royalties paid to Royalty Holder.

(ii) "Milling and Processing Costs" - which shall mean costs and expenses incurred after the Conversion Date and after commencement of Commercial Production by Owner in milling or processing minerals produced from the Property at Owner's mill or central processing facility utilized by Owner to process Minerals produced from the Property (hereinafter referred to as the "Mill", if any). Owner shall be entitled to a reasonable allowance for depreciation of Mill facilities and equipment acquired after commencement of Commercial Production; capital costs incurred after the Conversion Date and prior to the commencement of Commercial Production are subject to recoupment under the definition of "Exploration and Development Expenditures" set forth below.

- (iii) "General and Administrative Costs" - which shall mean costs and expenses incurred after the Conversion Date and by Owner and properly allocable to the administration of the Property and the production of Minerals therefrom, but not including any General and Administrative Costs incurred with respect to operations of Owner or its affiliates not directly related to the administration of the Property or the production of Minerals therefrom. General and Administrative Costs shall include, without limitation, any and all advance royalties, production royalties, or other payments of any nature whatsoever payable to third parties (i.e., other than Owner or Royalty Holder) having an interest in the Property. Indirect costs and expenses shall not exceed those chargeable under the Accounting Procedure.
- (iv) "Selling and Delivery Costs" - which shall mean costs and expenses incurred after the Conversion Date and by Owner in or in connection with the marketing of Minerals from the Property and the delivery of such Minerals to points of ultimate delivery to customers.
- (v) "Interest" - which shall mean any interest cost incurred after the Conversion Date and in any bona fide financing transaction directly related to the development, operation, or commercialization of the Property. In the event that such a financing transaction is with an affiliate of Owner, the terms of such transaction shall provide for a reasonable reduction of outstanding indebtedness and shall not be less favorable to Owner than that which would have been applicable with respect to a similar financing transaction with an unaffiliated third party and, in any event, at an interest rate not greater than that charged by Chase Manhattan Bank with respect to short-term loans to its most preferred commercial customers (commonly referred to as the "prime rate").
- (vi) "Taxes" - which shall mean all taxes levied against operations on the Property and/or levied against the Property after

the Conversion Date and, excluding income taxes imposed upon profits, but including government royalties and mining and severance taxes.

Where any Operating Costs are incurred with respect to the mining, milling, processing, selling, or delivering of Minerals produced from the Property in conjunction with the mining, milling, processing, selling, or delivering of Minerals produced from other properties controlled by Owner, such Operating Costs shall be allocated and apportioned in accordance with generally accepted practices in the mining industry.

- (f) "Exploration and Development Expenditures" for the purpose of this Schedule C shall mean Owner's total costs and expenses (if any) incurred with respect to examining, exploring, and developing the Property and all matters connected therewith incurred after the Conversion Date and prior to commencement of Commercial Production including, without limitation, costs and expenses incurred with respect to the construction of the Mill (if any) or related facilities, together with costs and expenses relating to geological, geochemical and geophysical studies, feasibility studies, exploration and developmental drilling, sampling and assaying, mine design and development, the cost of any mining equipment or machinery purchased after the Conversion Date and prior to commencement of Commercial Production, compliance with environmental and regulatory requirements (including attorneys' fees), pre-production stripping, the construction of roads connecting the Property to a central road system, and any other costs or expenses which would be included in the definition of Mining Costs and/or Milling and Processing Costs if such costs or expenses were incurred after the Conversion Date and after commencement of Commercial Production. It is the intention of the parties that, in calculating Net Profits, Owner shall be limited to a single recovery of capital, either by recoupment of Exploration and Development Expenditures or by depreciation of capital costs included within the definitions of Milling and Processing Costs and/or Mining Costs.

In the event that costs and expenses incurred with respect to construction of the Mill (if any) or other

Exploration and Development Expenditures benefit the development of other mineral properties controlled by Owner, such Exploration and Development Expenditures shall be allocated and apportioned by Owner in accordance with generally accepted accounting principles as applied in the mining industry for the purpose of computing the Net Profits Royalty pursuant to the terms hereof.

- (g) "Net Returns" in any Year means Gross Sales accrued in that Year less Operating Costs accrued in that Year.
- (h) "Operating Loss" in any Year means the excess of Operating Costs accrued in that Year over Gross Sales accrued in that Year.
- (i) "Net Profits" in any Year means Net Returns in that Year less the following amounts which shall be recovered from Net Returns in the order and in the manner set forth below:
 - (i) the aggregate amount, if any, of Operating Loss for any prior Year or Years which shall not have been deducted and recovered from Net Returns in prior Years;
 - (ii) the aggregate amount, if any, of Exploration and Development Expenditures which shall not have been deducted and recovered from Net Returns in prior Years;
- (j) "Year" or "Years" means the fiscal year established by owner for its operations upon the Property; provided, however, the first Year shall begin with the commencement of Commercial Production or the Conversion Date, whichever last occurs, and shall continue until the beginning of Owner's next fiscal year.

SCHEDULE D

To that Joint Venture Agreement dated _____, 199__
Between Norgold and Asarco

If, pursuant to Section 8.1 of the Exploration and Option Agreement effective as of January 30, 1989, Norgold elects or is deemed to have elected to enter into the 75%/25% Joint Venture Agreement, the form of Joint Venture Agreement to which this Schedule C is attached shall be modified as follows:

Article 1

A new Section 1.16 shall be added to read as follows:

1.16 "Payback" shall mean the recovery by Asarco of its Exploration Expenditures and Development and Capital Expenditures and, for one (1) year following commencement of Commercial Production, interest on the Development and Capital Expenditures at one-half (1/2) the rate quoted as "Prime" by the Chase Manhattan Bank at its head office.

New Sections 1.17 and 1.18 shall be added to read as follows:

1.17 "Exploration Expenditures" as used in this Agreement but not as used in Schedule "C" hereto, shall mean the total costs and expenses incurred by Asarco with respect to examining and exploring the Property and all matters connected therewith incurred after January 30, 1989 and prior to commencement of Commercial Production including, without limitation, costs and expenses relating to geological, geochemical and geophysical studies, feasibility studies, exploration and developmental drilling, sampling and assaying.

1.18 "Development and Capital Expenditures" shall mean Asarco's total costs and expenses incurred with respect to developing the Property and all matters connected therewith incurred after January 30, 1989 and prior to commencement of Commercial Production including, without limitation, costs and expenses incurred with respect to the construction of the Mill (if any) or related facilities, together with costs and expenses relating to developmental drilling, sampling and assaying, mine design and development, the cost of any mining equipment or machinery purchased prior to commencement of Commercial production, compliance with environmental and regulatory requirements (including attorney's fees), pre-production

stripping, the construction of roads connecting the Property to a central road system, the costs (if any) incurred by Asarco in acquiring outstanding mineral interests as provided in Section 21 of the Lease and any other costs or expenses which would be included in the definition of Mining Costs and/or Milling and Processing Costs if such costs or expenses were incurred after commencement of Commercial Production.

Article 2

Section 2.1 shall be amended to read as follows:

2.1 On the date on which Payback occurs and this Joint Venture Agreement becomes effective, Asarco shall be vested with a 75% initial Participating Interest in the Property and Norgold shall be vested with a 25% initial Participating Interest in the Property. The Initial Contribution of Asarco shall be equal to the amounts Asarco pays or incurs pursuant to Sections 2.1, 3.1, 3.2, 4.1, 4.2, 4.3, 6.2, 6.3 and 15.2 of the Exploration and Option Agreement until the date on which Norgold elected to enter this Joint Venture Agreement pursuant to Section 8.1 of the Exploration and Option agreement. The deemed and actual value of the Initial Contribution (X) of Norgold shall be determined as follows:

$$X = (Y \div 0.75) - Y$$

where X is the Initial Contribution of Norgold and Y is the Initial Contribution of Asarco. From and after Payback, Norgold may elect to contribute to the costs of further exploration and development work and maintain its Participating Interest at a level of 25% or it may elect to allow its interest to be reduced pursuant to Article 11 of this Agreement.

Article 4

Section 4.1 shall be modified by adding the following as the first sentence thereto:

The term of this Agreement shall commence on the date Payback occurs.

SCHEDULE E

To That Joint Venture Agreement Dated _____, 19__
Between Norgold and Asarco

The terms defined in Article 1 of the Joint Venture Agreement (the "Agreement") shall have the same meanings when used in this Schedule. The term "Code" as used herein shall mean the United States Internal Revenue Code of 1986, as amended.

Article One - Tax Matters Partner

1.1 Designation of Tax Matters Partner. The Operator is hereby designated tax matters partner. In the event of any change in Operator, the Party serving as Operator at the end of a taxable year shall continue as designated tax matters partner with respect to all matters concerning such year. The Operator and other Parties shall use their best efforts to comply with the responsibilities outlined in this Section and in Sections 6222 through 6233 of the Code (including any Treasury regulations promulgated thereunder) and in doing so shall incur no liability to any other Party.

1.2 Notice. The Parties shall furnish the Operator such information (including information specified in Section 6230(e) of the Code) as it may reasonably request to permit it to provide the Internal Revenue Service with sufficient information to allow proper notice to the Parties in accordance with Section 6223 of the Code. The Operator shall keep each Party informed of all administrative and judicial proceedings for the adjustment at the partnership level of partnership items in accordance with Section 6223(g) of the Code.

1.3 Inconsistent Treatment of Partnership Item. If an administrative proceeding contemplated under Section 6233 of the Code has begun, and the Operator so requests, the Parties shall notify the Operator of their treatment of any partnership item on their federal income tax return in a manner which is inconsistent with the treatment of that item on the partnership return.

1.4 Extensions of Limitation Periods. The Operator shall not enter into any extension of the period of limitations as provided under Section 6229 of the Code without first giving reasonable advance notice to all other Parties of such intended action. The written consent of all Parties shall be obtained for any such extension except in circumstances in which time constraints make the obtaining of such consent impracticable or in which a jeopardy assessment or other severe penalties could be imposed if such extension is not entered immediately.

1.5 Request for Administration Adjustments. No Party shall file, pursuant to Section 6227 of the Code, a request for an administrative adjustment of partnership items for any partnership taxable year without first notifying all other Parties. If

all other Parties agree with the requested adjustment, the Operator shall file the request for administrative adjustment on behalf of the partnership. If unanimous consent is not obtained within 30 days, or within the period required to timely file the request for administrative adjustment, if shorter, any Party, including the Operator, may file a request for administrative adjustment on its own behalf. The fees and expenses of any proceeding for administrative adjustment under this Section 1.5 shall be borne solely by the Party or Parties seeking the same.

1.6 Judicial Proceedings. Any Party intending to file a petition under Section 6226, 6228 or other Sections of the Code with respect to any partnership item, or other tax matters involving the partnership, shall notify the other Parties of such intention and the nature of the contemplated proceeding. If the Operator is the Party intending to file such petition, such notice shall be given within a reasonable time to allow the other Parties to participate in the choosing of the forum in which such petition will be filed. If the Parties do not agree on the appropriate forum, then the appropriate forum shall be decided by majority vote. Each Party shall have a vote in accordance with its Participating Interest. If any Party intends to seek review of any court decision rendered as a result of a proceeding instituted under the preceding part of this Section 1.6, such Party shall notify the other Parties of such intended action. The fees and expenses for any action brought under this Section 1.6 shall be borne solely by the Party or Parties bringing such action.

1.7 Settlements. The Operator shall not bind any other Party to a settlement agreement without first obtaining the written concurrence of such Party. Any other Party who enters into a settlement agreement with respect to any partnership items, as defined by Section 6231(a)(3) of the Code, shall notify the other Parties of such settlement agreement and its terms within 90 days from the date of settlement.

1.8 Fees and Expenses. The Operator shall not engage legal counsel, certified public accountants, or others without the prior written consent of the Parties except for such outside professional services provided to the joint venture in the ordinary course of business of the tax matters partner. Upon receipt of such consent, any reasonable item of expense, including but not limited to fees and expenses for legal counsel, certified public accountants, and others which the Operator incurs in connection with any audit, assessment, litigation, or other proceeding regarding any item on the partnership return, shall constitute a proper charge to the Joint Account and shall be borne by the Parties as any other time which constitutes a direct charge to the Joint Account pursuant to the Agreement. Any Party may engage legal counsel, certified public accountants, or others on its own behalf and at its sole cost and expense. Notwithstanding anything in this Schedule to the contrary, the Account allocation shall be borne by the Parties based upon a

daily weighted average of each Party's Participating Interest for the tax year in question.

1.9 Survival. The provisions of this Article One, including but not limited to the obligation to pay fees and expenses described in Section 1.8, shall survive the termination of the Agreement or the termination of any Party's interest in the Operations and shall remain binding on the Parties for a period of time necessary to resolve with the Internal Revenue Service or the Department of the Treasury any and all matters regarding the federal income taxation of the joint operations for the applicable tax years.

Article Two - Elections and Tax Allocations

2.1 Tax Elections. The Parties elect, for purposes of all income tax returns:

(a) To use the accrual method of accounting;

(b) To adopt the Operator's fiscal year as the annual accounting period;

(c) To deduct currently all development expenses to the maximum extent allowable under Sections 616 and 291 of the Code recognizing, however, that each Party shall be solely responsible for its elections and treatment under Section 617 of the Code;

(d) Unless the Parties unanimously agree otherwise, to compute the allowance for depreciation in respect of all eligible recovery property in accordance with the Accelerated Cost Recovery System. Allowances for depreciation will be computed using the maximum accelerated tax depreciation table and the shortest life permissible; and

(e) To treat advance royalties as deductions from gross income for the year paid or accrued to the extent permitted by law.

The Operator agrees to consult with the other Parties prior to making any other elections required by this Agreement.

2.2 Tax Partnership Election. It is understood and agreed that the Parties intend to create a partnership for United States federal and state income tax purposes, and unless otherwise agreed to hereafter by all Parties, no Party shall make an election to be, or have the arrangement evidenced hereby, excluded from the application of any provisions of Subchapter K of the Code, or any equivalent state income tax provision. It is understood and agreed that the Parties intend to create a partnership for federal and state income tax purposes only.

The Operator shall file with the appropriate office of the Internal Revenue Service a partnership income tax return covering

the Operations. The Parties recognize that this Agreement may be subject to state income tax statutes. The Operator shall file with the appropriate office of the state agencies any required partnership state income tax returns.

Each Party agrees to furnish to the Operator such information which it may have relating to Operations as shall be required for proper preparation of such returns. The Operator shall furnish to the other Party for its review a copy of each proposed income tax return at least two weeks prior to the date the return is filed.

2.3 Allocations to Parties. Allocations for tax purposes shall be in accordance with the following:

(a) Exploration expenses and development cost deductions shall be allocated among the Parties in accordance with their respective contributions to such expenses and costs.

(b) Depreciation and loss deductions with respect to a depreciable asset shall be allocated among the Parties in accordance with their respective contributions to the adjusted basis of the asset which gives rise to the depreciation or loss deduction.

(c) Production and operating cost deductions shall be allocated among the Parties in accordance with their respective contributions to such costs.

(d) Cost depletion and any loss deduction with respect to a depletable property (as defined in Section 614 of the Code) shall be allocated to the Parties in accordance with their respective contributions to the adjusted basis of the depletable property. Percentage depletion under Section 613 of the Code shall be allocated first, in the same manner as cost depletion to the extent it does not exceed cost depletion, and second, to the extent percentage depletion exceeds cost depletion, to the Parties in the same proportion as their distributive share of gross income from the depletable property (as determined under Section 613(c) of the Code) for the year in which such depletion is allowable.

(e) All deductions and losses which are not described in (a) through (d) above shall be allocated among the Parties in accordance with their respective contributions to the costs producing each such deduction or the adjusted basis of the asset producing each such loss.

(f) In the event that Section 12.1 of the Agreement is interpreted to mean only that a Party is authorized to direct the disposition of its share of Minerals by the Operator, all income, gains, or losses realized from such disposition shall be allocated to such Party and any deductions arising from

expenditures incurred by such Party in connection with such disposition (to the extent they are attributed to the joint Operations) shall also be allocated to such Party. If, pursuant to Section 12.1 of the Agreement, the Operator purchases a Party's share of Minerals for its own account, or sells such share of Minerals, the net proceeds from such sale (computed after taking into account the reasonable expenses incurred) shall be allocated to the Party.

(g) Any gain recognized on the sale or other disposition of a depreciable asset shall be allocated first, to the extent such gain does not exceed the amount of depreciation claimed with respect to such asset, to the Parties in proportion to the amount of such depreciation previously allocated to, or claimed by, them and second, to the Parties in accordance with their Participating Interests.

(h) Any gain recognized on the sale or other disposition of a depletable property (as defined in Section 614 of the Code) shall be allocated first, to the extent such gain does not exceed the total Recapturable Deduction (as defined below) with respect to such property, to the Parties in the proportion to the total Recapturable Deductions previously allocated to or claimed by them with respect to such property (adjusted for any recapture of such deductions previously allocated to or recognized by the Parties) and second, to the Parties in accordance with their Participating Interests. As used in the previous sentence, "Recapturable Deductions" shall mean depletion deductions (to the extent reflected in the capital accounts of the Parties), exploration expense deductions, and development expense deductions attributable to a depletable property, reduced (but not below zero) by any prior recapture of such deductions.

(i) Any recapture of exploration expenses under Section 617 (b)(1)(A) of the Code, and any increase in taxable income realized by reason of the disallowance of depletion under Section 617(b)(1)(B) of the Code, shall be allocated to the Parties in the same manner as the related exploration expenses were allocated.

(j) All other items of income and gain shall be allocated to the Parties in accordance with their Participating Interests.

(k) All tax credits shall be allocated to the Parties in proportion to the allocation of the item of income, gain, loss or deduction generated by the receipt or expenditure giving rise to the credit. Any credit recaptures shall be allocated to the Parties in the same proportion as the related credits were allocated.

(l) Notwithstanding the foregoing, in accordance with Section 704(c) of the Code, income, gain, loss, and deduction with respect to property contributed to the Account by a Party shall be shared among the Parties so as to take account of the

variation between the basis of the property to the Account and its fair market value at the time of contribution.

Note: Subparagraph (m) to be included in Schedule E only if Norgold elects or is deemed to have elected the 75%/25% Joint Venture Agreement:

(m) Notwithstanding the provisions of 2.2(a) through (l), the Parties agree that during Payback, Norgold will be deemed not to have contributed to depreciable assets and from and after Payback, Norgold's distributable share of the depreciation deduction for all depreciable assets shall be 25%, it being the intent of the Parties that Norgold's allocation of taxable income will reflect its share of such corresponding depreciation.

Article Three - Capital Accounts; Liquidation

3.1 Capital Accounts.

(a) A separate capital account shall be established and maintained for each Party, which shall be credited initially with the amounts of expenditure contributions and agreed value of other property contributed as set forth in Section 2.1 of the Agreement. Such capital account shall be increased by (i) the amount of money contributed by the Party to the Account (ii) the fair market value of property contributed by the Party to the Account (net of liabilities assumed or taken subject to), and (iii) allocations to the Party of income and gain (or items thereof), including income and gain exempt from tax; and shall be decreased by (iv) the amount of money distributed to the Party from the Account, (v) the fair market value of property distributed to the Party from the Account (net of liabilities secured by such distributed property that the Party is considered to assume or take subject to), (vi) allocations to the Party of expenditures from the Account not deductible in computing its taxable income and not properly chargeable to a capital account, and (vii) allocations of losses and deductions (or items thereof), excluding items described in (vi) above and percentage depletion to the extent it exceeds the adjusted tax basis of the depletable property to which it is attributable.

(b) In the event that the capital accounts of the Parties are computed with reference to the book value of any asset which differs from the adjusted tax basis of such asset, then the capital accounts shall be adjusted for depreciation, depletion, amortization, and gain or loss as computed for book purposes with respect to such asset in accordance with Treasury Regulations Section 1.704-1(b)(2)(iv)(g).

(c) In the event any interest in the Agreement is transferred in accordance with its terms, the transferee shall succeed to the capital account of the transferor to the extent it relates

to the transferred interest, except as provided in Treasury Regulation Section 1.704-1(b)(2)(iv)(1).

(d) The foregoing provisions, and the other provisions of the Agreement relating to the maintenance of capital accounts and the allocations of income, gain, loss, deduction, and credit, are intended to comply with Treasury Regulations Section 1.704-1(b), and shall be interpreted and applied in a manner consistent with such Regulations. In the event the Management Committee shall determine that it is prudent to modify the manner in which the capital accounts, or any debits or credits thereto, are computed in order to comply with such Regulations, the Management Committee may make such modification, provided that it is not likely to have a material effect on the amount distributable to any Party upon liquidation pursuant to Section 3.2 below.

(e) For purposes of establishing the initial capital accounts of the Parties, the Parties agree that the fair market value of their contributions will be equal to the amount computed in Section 2.1 of the Joint Venture Agreement.

3.2 Liquidation. In the event the partnership is "liquidated" within the meaning of Treasury Regulations Section 1.704-1(b)-(2)(ii)(g) then, notwithstanding any other provision of the Agreement to the contrary, the following steps shall be taken:

(a) The capital accounts of the Parties shall be adjusted to reflect any gain or loss which would be realized and allocated to the Parties pursuant to the provisions of Article Two of this Schedule F as if the assets had been sold at their fair market value at the time of liquidation. The fair market value of the assets shall be determined by the Parties, provided, however, that in the event that the Parties fail to agree on the fair market value of any asset, its fair market value shall be determined by an independent engineering firm or other qualified independent engineering firm or other qualified independent party approved by all of the Parties.

(b) Following the adjustments described in paragraph (a) above, any Party with a negative balance in its capital account shall contribute an amount of cash to the Account sufficient to achieve a zero balance in its capital account. Such contribution shall be made by the end of the taxable year in which the liquidation occurs (or, if later, within ninety days after the date of such liquidation).

(c) Following the adjustments described in paragraphs (a) and (b) above, if the capital account balance of any Party (stated as a percentage of the capital account balances of all Parties) is not equal to the Party's Participating Interest, then any Party whose capital account balance is less than its Participating Interest shall have the option, but not the obligation, upon ten (10) days notice by the Operator to contribute a sufficient amount of cash to the Account to cause its capital account balance and Participating Interest to be in parity.

(d) Notwithstanding the provisions of this Section 3.2, either Party may, upon a sale of Account assets or upon liquidation, elect (prior to the due date plus extensions for filing the annual partnership tax return) to have income allocated to its capital account in order to restore a deficit in its capital account or to increase its capital account to the proportion of the total of the capital accounts of all of the Parties, that such Party's Participating Interest bears to the total of all of the Participating Interests.

(e) After making the foregoing adjustments and/or contributions, all remaining assets shall be distributed to the Parties in accordance with the balances in their capital accounts. Unless otherwise expressly agreed by all Parties, each Party shall receive an undivided interest in each and every asset determined by the ratio of the amount in each Party's capital account to the total of all the Parties' capital accounts. Assets distributed to the Parties shall be deemed to have a fair market value equal to the value assigned to them pursuant to 3.2(a) above.

Article Four - Sale or Assignment.

4.1 If a Section 708(b)(1)(B) termination is caused, the terminating Party will indemnify all nonterminating Parties and save them harmless on an after tax basis for any increase in taxes, interest, and penalties or decrease in credits to the nonterminating Parties caused by such termination.

JOINT VENTURE

AGREEMENT

THIS AGREEMENT is made and entered into as of the ____ day of _____, 19__, by and between NORGOLD RESOURCES (US) INC., a Nevada corporation (hereinafter referred to as "Norgold"), and ASARCO INCORPORATED, a New Jersey corporation (hereinafter referred to as "Asarco").

W I T N E S S E T H:

RECITALS

WHEREAS, pursuant to that certain Exploration and Option Agreement dated effective January 30, 1989 between Asarco and Norgold, Asarco has earned an undivided interest in and to the agreements, mineral leases, prospecting permits and patented and unpatented mining claims situated in the Martinez (Weaver, Yarnell) Mining District, Yavapai County, Arizona more particularly enumerated and described in Part One of Schedule "A" attached hereto and made a part hereof and, if acquired by Norgold and accepted by Asarco, in and to the patented lands described in Part Two of Schedule "A" hereto (hereinafter called the "Property");

WHEREAS, Norgold has elected, pursuant to Section 8.1 of the Exploration and Option Agreement, to enter this Agreement all on the terms and conditions hereinafter set forth; and

WHEREAS, Norgold and Asarco wish to participate in joint operations for the purpose of exploring, developing and mining the Property upon the terms and conditions hereinafter set forth;

EXHIBIT *b c*

ARTICLE 2

2.0 JOINT VENTURE INTERESTS

2.1 Asarco shall be vested with a 51% initial Participating Interest in the Property with a deemed and actual value of contribution equal to the amount of its Initial Contribution. The Initial Contribution of Asarco shall be equal to the amounts Asarco pays or incurs pursuant to Sections 2.1, 3.1, 3.2, 4.1, 4.2, 4.3, 6.2, and 6.3^{and 15.2} of the Exploration and Option Agreement until the date on which Asarco presents to Norgold the Feasibility Study referred to in Article III of Exploration and Option Agreement. Norgold shall have an initial Participating Interest of 49%. The deemed and actual value of the Initial Contribution (X) of Norgold shall be determined as follows:

$$X = (Y \div 0.51) - Y$$

where X is the Initial Contribution of Norgold and Y is the Initial Contribution of Asarco. Thereafter, Norgold may elect to contribute to the costs of further exploration and development work and maintain its interest at a level of 49% or it may elect to allow its interest to be reduced pursuant to Article 11 of this Agreement. This Article 2 shall be amended pursuant to Schedule "D" hereto if, pursuant to Section 8.1 of the Exploration and Option Agreement, Norgold elects or is deemed to have elected to enter into the Mining Lease and the 75%/25% Joint Venture Agreement.

ARTICLE 3

3.0 OWNERSHIP OF THE PROPERTY

3.1 The Property is to be held in trust by the Parties on behalf of the Parties hereto in accordance with the purposes and provisions of this Agreement. The Parties shall be deemed to own or possess fractional, undivided interests in the Property corresponding to their respective Participating Interests as set forth in Section 2.1 hereof and subject to adjustment or forfeiture pursuant to Article 11 hereof.

3.2 The Parties hereby agree to execute and file of record any necessary adjustments, conveyances, statements or documents acknowledging that title and interest in and to the Property are held for the benefit of the Parties to this Agreement.

ARTICLE 4

4.0 TERM AND TERMINATION PROCEDURES

4.1 If Operator has not commenced Commercial Production from the Property on or before July 1, 1994, this Agreement shall terminate on such date; provided that the date for commencement of Commercial Production (and the corresponding termination date hereof) shall be extended pursuant to Article 15 hereof and by the time corresponding to those periods (if any) after July 1, 1991 during which the price of gold posted in New York daily by Handy & Harmon or by a substitute equivalent posting is less than

\$350.00 per ounce. *Upon termination pursuant to this Section 4.1, Asarco shall execute and deliver to Norgold a special warranty deed and assignment, conveying and assigning to Norgold all of its interest in the Property, free and clear of all liens and encumbrances placed thereon by, or arising from, operations conducted by Asarco while this Agreement or the Exploration and Option Agreement is in effect.*

4.2 Subject to the right of surrender set forth in Article 11 hereof and to Section 4.1 hereof and unless sooner terminated or further extended by mutual agreement of the remaining Parties, this Agreement shall remain in full force and effect so long as both Parties retain a Participating Interest in the Property, and thereafter until the termination procedures hereinafter specified have been completed and a final accounting has been made between the Parties; provided that Asarco's obligation to pay a royalty to Norgold set out in Section 11.6 hereof shall survive any termination of this Agreement and shall continue so long as Asarco produces any Minerals from the Property. *other than pursuant to Section 4.1 above.*

4.3 Upon termination of this Agreement, unless otherwise agreed, all of the net assets subject thereto, including the Property, shall be distributed in kind or in undivided interests among the Parties on the basis of their then respective Participating Interests.

4.4 The Party serving as Operator shall be responsible for implementation of termination proceedings, and the Non-Operator shall take any and all reasonable actions to cooperate with and assist Operator, including specifically execution and delivery of recordable assignments, conveyances, quitclaims or other required documents. Promptly following the conclusion of termination proceedings, the Operator shall submit to Non-Operator a final accounting which, if desired by any of the Parties, shall be certified by a mutually acceptable certified public accounting firm.

part of the Property for all purposes of this Agreement immediately upon the notice of such other Participant's election to accept the proportionate interest therein. Such other Participant shall promptly pay to the acquiring Participant its proportionate share of the latter's actual out-of-pocket acquisition cost.

13.4 If the other Participant does not give such notice within the 60 day period set forth in Section 13.3 hereof, it shall have no interest in the acquired interest, and the acquired interest shall not be a part of the Property or be subject to this Agreement.

13.5 The Parties now anticipate that the Property may contain a single ore body to be developed as a surface, open pit, low grade, heap leachable gold deposit (the "Initial Surface Orebody"). In the event that a separate and distinct ore body (which shall not include any lateral extension of the aforesaid Initial Surface Orebody) is discovered within the Property or that a deep, higher grade, non-leachable ore body is discovered beneath the Initial Surface Orebody which can be mined only by underground mining methods, each such ore body shall constitute a separate "Additional Development Block" and shall be subject to Norgold's option to make the election to enter a separate agreement or agreements between the Parties for such Additional Development Block pursuant to Article VIII of the Exploration and Option Agreement. Following such discovery and the delineation of an Additional Development Block all expenditures within the Additional Development Block shall be conducted for the account of Asarco until such time as Asarco has prepared and delivered to

*Use Smith's
change -
attached*

possible, all other sections, terms, covenants and conditions of the Agreement shall remain in full force and effect in such jurisdiction, and the invalidity or unenforceability of any provision hereof in any jurisdiction shall not affect the validity or enforceability of any such provision in any other jurisdiction.

22.6 Currency. All monetary amounts expressed in this Agreement shall be in United States Dollars.

22.7 Time. Time is of the essence in this Agreement.

22.8 Succession. Subject to the provisions hereof, this Agreement shall be binding upon and inure to the benefit of the Parties and their respective successors, legal representatives and permitted assigns.

22.9 No Stock Purchase. So long as ^{this Agreement is in effect} Norgold ~~is in full~~ compliance ~~with all of its obligations hereunder~~, Asarco shall not buy, sell, offer to buy, offer to sell, or obtain any direct or indirect interest in the common stock issued by Norgold, whether through any option, warrant, voting trust or other agreement, from Norgold or any other holder of such common stock, without the express prior written consent of Norgold.

SCHEDULE D

To that Joint Venture Agreement dated _____, 199__
Between Norgold and Asarco

If, pursuant to Section 8.1 of the Exploration and Option Agreement effective as of January 30, 1989, Norgold elects or is deemed to have elected to enter into the 75%/25% Joint Venture Agreement, the form of Joint Venture Agreement to which this Schedule C is attached shall be modified as follows:

Article 1

A new Section 1.16 shall be added to read as follows:

1.16 "Payback" ^{Expenditures} shall mean the ^{and Capital} recovery by Asarco of its Exploration and Development Expenditures and, for one (1) year following commencement of Commercial Production, interest on the Exploration and Development Expenditures ^{and Capital} at one-half (1/2) the rate quoted as "Prime" by the Chase Manhattan Bank at its head office.

~~A~~ ^{and 1.18} New Section 1.17 shall be added to read as follows:

1.17 "Exploration and Development Expenditures" as used in this Agreement but not as used in Schedule "C" hereto, shall mean the total costs and expenses incurred by Asarco with respect to examining ^{and} exploring, and developing the Property and all matters connected therewith incurred after January 30, 1989 and prior to commencement of Commercial Production including, without limitation, costs and expenses incurred with respect to ~~the construction of a mill (if any) or related facilities together with costs and expenses relating to geological, geochemical and geophysical studies, feasibility studies, exploration and developmental drilling, sampling and assaying, mine design and development, the cost of any mining equipment on machinery purchased prior to commencement of Commercial Production, compliance with environmental and regulatory requirements (including attorney's fees), pre-production stripping, the construction of roads connecting the Property to a central road system, and any other costs or expenses which would be included in the definition of Mining Costs and/or Milling and Processing Costs (as defined in Schedule "C" hereto) if such costs or expenses were incurred after commencement of Commercial Production.~~

Article 2

Section 2.1 shall be amended to read as follows:

Insert from Smith's draft

2.1 On the date on which Payback occurs and this Joint Venture Agreement becomes effective, Asarco shall be vested with a 75% initial Participating Interest in the Property and Norgold shall be vested with a 25% initial Participating Interest in the Property. The Initial Contribution of Asarco shall be equal to the amounts Asarco pays or incurs pursuant to Sections 2.1, 3.1, 3.2, 4.1, 4.2, 4.3, 6.2, and 6.3^{and 15.2} of the Exploration and Option Agreement until the date on which Norgold elected to enter this Joint Venture Agreement pursuant to Section 8.1 of the Exploration and Option agreement. The deemed and actual value of the Initial Contribution (X) of Norgold shall be determined as follows:

$$X = (Y \div 0.75) - Y$$

where X is the Initial Contribution of Norgold and Y is the Initial Contribution of Asarco. From and after Payback, Norgold may elect to contribute to the costs of further exploration and development work and maintain its Participating Interest at a level of 25% or it may elect to allow its interest to be reduced pursuant to Article 11 of this Agreement.

Article 4

Section 4.1 shall be modified by adding the following as the first sentence thereto:

The term of this Agreement shall commence on the date Payback occurs.

RECEIVED

SEP 18 1989

EXPLORATION DEPARTMENT

DKK - JDS

1710-609 GRANVILLE ST.
P.O. Box 10363 STOCK EXCHANGE TOWER
VANCOUVER, B.C.
V7Y 1G5
(604) 683-7265
FAX (604) 683-5306

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SUBSCRIPTION RATE
\$300.00 PER YEAR
FAX (604) 683-5306

George Cross News Letter

"Reliable Reporting"

NO.177(1989)
SEPTEMBER 14, 1989

NO.177(1989)
SEPTEMBER 14, 1989

WESTERN CANADIAN INVESTMENTS

FROM: W. L. KURIZ

9/19

TO: *RL Brown*

*They did not change
The release as you indicated*

CC JDS

an approximate 6% net smelter return royalty until it receives US \$1,000,000, thereafter its royalty is reduced to 4.5%. A mining contractor has been engaged to operate the plant and full production is expected within 30 days. Initial production will come from the Lady Bryan pit, which has some 300,000 tons grading 0.05 oz.gold/ton and 0.5 oz.silver/t. All targets drilled to date are estimated to have potential reserves of 1,000,000 tons.

In addition, Miramar retains a 60% interest in the sulphide mineralized targets on the Flowery Mine property and approximate 75% interests in 6 active exploration properties in Nevada and Arizona. (SEE also GCNL No.151, 8Aug89; No.103, 30May89; and No.240, 14Dec88).

NORGOLD RESOURCES INC. (NGR-V)

PRELIMINARY RESERVE - Christopher S.Moat, president
ESTIMATES REPORTED reports Norgold Resources Inc.
estimated preliminary geological

reserves at its Yarnell mine project 30 miles NE of Wickenburg in Yavapai county, Arizona, of some 8,000,000 tons grading between 0.04 and 0.05 oz.gold/ton. Preliminary metallurgical tests indicated gold recovery of up to 80%. Asarco Inc. has an option to earn a 51% interest in the property (SEE GCNL No.84, 2May89 for option terms and assays from the first 10 hole drilling program).

Currently, detailed bench studies are being conducted on a 20,000 lb. bulk sample to determine the optimum crushing size amenable to heap leaching.

A reverse circulation drill program of 65 holes has defined a structurally controlled gold bearing zone 2,500 feet along strike and up to 800 feet down dip, averaging 60 feet in thickness. This structure is open in several directions and the stripping ratio is expected to be less than 3 tons waste to 1 ton ore. Additional drilling is ongoing and surface sampling and trenching has started along the northeast extension of the Yarnell Fault zone.

ESSO RESOURCES CANADA LIMITED

ESSO TO SELL SOME - Esso Resources Canada Limited, a OIL & GAS PROPERTIES 100% owned subsidiary of Imperial Oil Limited, is offering for sale selected oil and gas properties in western Canada. The properties include interests in the Swan Hills, Mitsue, Nipisi, Utikuma, and Waterton fields of Alberta. Proved reserves, before royalties, associated with the properties amount to about 115,000,000 barrels of crude oil and natural gas liquids and about 300 billion cubic feet of natural gas. The sales represent about 5% of the proved reserves of Imperial Oil.
In 1988, the average daily net production of crude

definition. The holes have extended the massive sulphides to an estimated 1,100 feet down dip from the lowest mine level. Drilling in 1988 had stopped with one deep hole approximately 650 feet down dip. The new holes are triggered over a strike length of approximately 750 feet.

Hole 17, was drilled up dip, but intersected, and stayed in a post-mineral dike through the mineralized area. These post-mineral dikes are known from previous drilling and mining activity. Hole 16 is nearing completion as a deeper step-out hole to the west and number 18 has just started. An immediate extension to this deep phase of drilling has been approved. (SEE GCNL NO.168,

September 14, 1989

J.D. Sell

Western Air Additional
Topography
Yarnell Project
Yavapai County, AZ

As requested by Don Crowell and discussed with you, we will be obtaining additional topographic mapping at 1" = 100' (5' contour interval) of the NW quarter of Section 23. We will also be obtaining mapping of a strip approximately 800' wide on the east side of Section 22 south to the quarter corner (at the same scale).

The new topographic mapping will be used in planning the location of the leach pads. Western Air will use our recent aerial photography to construct the additional topographic maps. Completion date will be 2-3 weeks after receipt of additional survey data which DAVA Engineering currently is doing for us.

MAM:mek

Mark A. Miller / mek
Mark A. Miller
Project Geologist

cc: W.L. Kurtz
F.T. Graybeal
D.E. Crowell
W.D. Gay

ASARCO

Exploration Department
Southwestern United States Division

September 15, 1989

Mr. Jack McPartland
McClelland Laboratories, Inc.
1016 Greg Street
Sparks, NV 89431

Dear Jack:

As we discussed on September 13, 1989, please proceed with the bottle roll testing of 1-J as indicated by the following intervals:

0 - 20'
20 - 40'
40 - 60'

The procedure you discussed and sent to us will be the one we will use.

Please keep us informed as the tests progress.

Respectfully,

Mark A. Miller
Mark A. Miller
Project Geologist *mek*

MAM:mek

cc: J.D. Sell
W.L. Kurtz
D.E. Crowell



McCLELLAND LABORATORIES, INC.

1016 Greg Street, Sparks, Nevada 89431 702 / 356-1300
FAX 702 / 356-8917

TO: JIM SELL
ASARCO INC

DATE: 9-13-89
FAX #: (602) 792-3934

FROM: JACK McPARTLAND
McCLELLAND LABORATORIES

ASARCO Inc. p...
SEP 13 1989
SW Exploration

SUBJECT: _____

MR SELL:

ATTACHED ARE OUR PROCEDURES FOR CONDUCTING BOTTLE ROLL TESTS. MARK MILLER ASKED ME TO SEND YOU A COPY OF THESE ALONG WITH THE FOLLOWING DESCRIPTION OF SAMPLE PREP. TO BE CONDUCTED ON THE DRILL HOLE 1-J CUTTINGS SAMPLES. EACH 5' INTERVAL WILL BE AIR DRIED, THOROUGHLY BLENDED AND SPLIT TO OBTAIN 1kg FOR COMPOSITING. THE 1kg SPLITS WILL BE COMBINED AS SHOWN BELOW, THOROUGHLY BLENDED, AND A SAMPLE WILL BE SPLIT FROM EACH COMP FOR A BOTTLE ROLL TEST.

COMP	INTERVAL, Ft.	WT. TO COMP, Kg
1	0-5	1.0
	5-10	1.0
	10-15	1.0
	15-20	1.0
	20-25	1.0
2	25-30	1.0
	30-35	1.0
	35-40	1.0

COMP	INTERVAL, Ft.	WT. TO COMP, Kg
3	40-45	1.0
	45-50	1.0
	50-55	1.0
	55-60	1.0

Jack McPartland
Page 1 of 2

BOTTLE ROLL TEST PROCEDURE

Bottle roll tests are conducted in our laboratory on ore charges ranging from 1 to 15 kilograms, and on feed sizes ranging from stage ground pulps to 2 inch crushed ore. The procedures for the bottle roll tests are the same for any ore charge or feed size. Attrition grinding occurs during rolling of the coarse ore sizes (\approx 1/2 inch and up). Consequently, the bottle roll tests results indicate a maximum obtainable recovery for that feed size. The results, however, are valuable for indicating the heap leach amenability of an ore. These tests are preliminary in nature.

Bottle roll tests are conducted by mixing the ore charge with water to achieve the desired weight percent solids (40%). Lime is added to adjust the pH of the pulp to about 11 before adding the cyanide. Sodium cyanide, equivalent to 2.0 pounds NaCN per ton of solution, is added to the alkaline pulp. (The cyanide concentration can be varied). The pulp/cyanide mixture is rolled in bottles on the laboratory rolls for usually 96 hours (time variable). After 2, 6, 12, 24, 48, and 72 hours rolling is suspended briefly to allow the pulp to settle so a sample of pregnant solution can be taken for gold and silver analysis, and subsequently establish the extraction rate. The volume of solution withdrawn is filtered, measured, and sampled. The pH and cyanide concentration are determined. Any solids filtered from the sample are returned to the leach. Make-up water, equivalent to that withdrawn, is added to the pulp. The pH and cyanide concentration are restored to the initial value. Rolling is then resumed. The quantity of dissolved precious metal withdrawn with the interim solution samples is accounted for and added back into the metallurgical balance calculations.

After leaching is complete, the pulp is filtered to separate liquids and solids. The final pregnant solution volume is measured and a sample is taken for analysis. The final pH and cyanide concentration are determined. The leached residue is thoroughly washed, dried, weighed, and assayed directly to determine residual precious metal content.

The incremental and final cumulative recoveries are based on the calculated head from the specific test. These recoveries can be compared with the head versus tail metallurgical balance, provided that the assay head agrees closely with the calculated head from the test.

ASARCO

Exploration Department
Western USA
W. L. Kurtz
Manager

VIA FAX 604-685-8045

September 15, 1989

Mr. Christopher Moat, President
NORGOLD RESOURCES INC.
Vancouver, B.C.

Yarnell Project
Weekly Information

Dear Mr. Moat:

We are FAXing you assay results on Holes 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, and 79, along with a map showing their location.

Sincerely,

W. L. Kurtz / mek
W. L. Kurtz

WLK:mek

cc: J.D. Sell

September 15, 1989

W.L. Kurtz

Corrections - Additions
 Drill Progress Map 6760
 Yarnell Project
Yavapai County, Arizona

I have identified changes I would make on the map mn 6760, WLK 08-30-89 of assays on the "B" or main zone of mineralization.

<u>Hole</u>	<u>Change</u>	<u>Reason</u>
1.	Assay .047 to .053	Use value on original sheet and assume 20' open stope at same value.
5.	Assay .044 to .041	As above, 35' open stope.
7.	Assay Footage 145' to 75'	Interval 155'-230' = 75' for assay, includes 5' open stope.
12.	Assay .037 to .039	As above (1), treated 180'-195' = 15' of open stope.
37.	Assay .043 to .036	
38.	Assay .026 to .028	
44.	Depth to 325' to 235' Assay .100 to .143	TD on hole = 310' used uncut values.
57.	Assay .034 to .037	
61.	Assay footage 50' to 120' Assay .040 to .037	Includes thicker interval and 15' open stope.

ADDITIONS

<u>Hole</u>	<u>Depth to Top</u>	<u>Assay Footage</u>	<u>Assay</u>	<u>Comments</u>
68.	--	--	--	Zip values.
69	250'	30'	.069	Less than 0.017 below.
70.	95'	40'	.031	
71.	45'	65'	.131	At 85-90', the original value was 1.024, recheck was 0.943 which I used as map is of uncut values.
72.	0'	35'	.084	
73.	0'	20'	.190	
74.	--	--	--	Zip values in zone projection.

<u>Hole</u>	<u>Depth to Top</u>	<u>Assay Footage</u>	<u>Assay</u>	<u>Comments</u>
75.	105'	65'	.066	This in "B" zone, could use both "A" & "B" footwall "A" and values would be 65' 135' .043
76.	75'	40'	.034	Actual values from 90'-115' = 25', but I included open stope 75'-90' = 15', to give 40' with same value.
77.	107'	73'	.048	Open stope 107'-120' included as same value as underlying samples to depth of 180'.
78.	215'	55'	.070	
79.	120'	50'	.046	

End of Assays 9-14-89.

JDS:mek

James D. Sell
James D. Sell

cc: D.A. Melhado

FROM: W. L. KURTZ

e/31

To: J. D. Sell

These figures should be
checked. If any
changes have Dan M
charge map

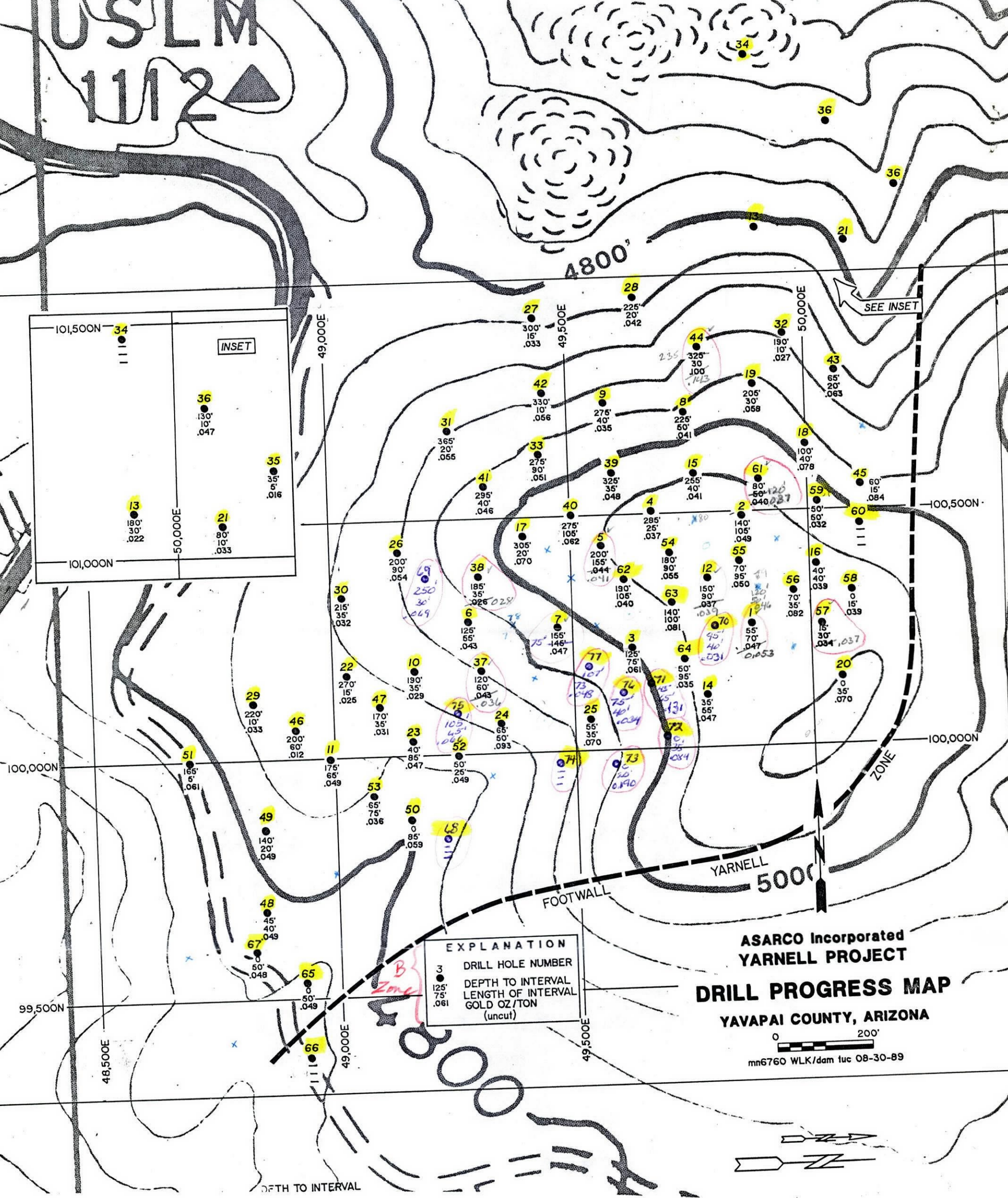
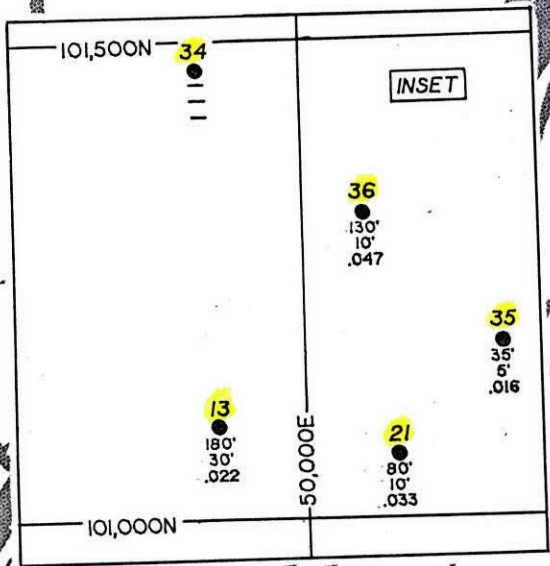
DUN M

Copy to
JDSel

ASSAY FOR INTERVAL MAP

ASSAY	FOR	INTERVAL	MAP
1	.047	40	.062
2	.049	41	.046
3	.061	42	.056
4	.037	43	.063
5	.044	44	.100
6	.043	45	.084
7	.047	46	.012
8	.041	47	.031
9	.035	48	.049
10	.029	49	.049
11	.049	50	.059
12	.037	51	.061
13	.022	52	.049
14	.047	53	.036
15	.041	54	.055
16	.039	55	.045 .05
17	.070	56	.082
18	.078	57	.034
19	.058	58	.039
20	.070	59	
21	.033	60	
22	.025	61	
23	.047	62	
24	.093	63	
25	.070	64	
26	.054	65	
27	.033	66	
28	.042	67	
29	.033		
30	.032		
31	.055		
32	.027		
33	.051		
34	.047		
35	.016		
36	.047		
37	.043		
38	.026		
39	.048		

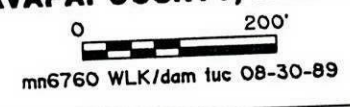
USLM
1112



EXPLANATION

3	DRILL HOLE NUMBER
125° 75' .061	DEPTH TO INTERVAL
75° 75' .061	LENGTH OF INTERVAL
75° 75' .061	GOLD OZ./TON (uncut)

ASARCO Incorporated
YARNELL PROJECT
DRILL PROGRESS MAP
YAVAPAI COUNTY, ARIZONA



DEPTH TO INTERVAL

To JD5
Date 9/15/89 Time 4:15

WHILE YOU WERE OUT

M. Joe Shearer

of _____

Phone 1-296-8837

Area Code Number Extension

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

RETURNED YOUR CALL

Message Joe believes he did the best

available from Court House records
and did not to research it to for
he then stated the lower tier. Subsequent
it was found the claim (file) was off &
have the VAR's need to be refiled &
check the claim.

Operator

RLB-

Map: Yarnell

land pt claims for discovery

T.E.S.

SEP 21 1989

S.W. MINING DEPT.

SEP 18 1989

TUCSON

M.C. AUBRY
A & A PROPERTIES

4435 S. Rural Road
Suite 5-339
Tempe, Arizona 85282
(602) 964-4847

S.L.L.

SEP 21 1989

September 15, 1989

T.E. Scartaccini
General Manager
ASARCO, Inc.
1150 N. 7th Avenue
Tucson, Arizona 85703
(602) 792-3010

RE: PATENTED MINING CLAIM SALE AND/OR JOINT VENTURE
IN YARNELL, ARIZONA

Dear Mr. Scartaccini:

We own the property contiguous to the property your firm is currently mining in Yarnell, Arizona. Our property consist of fourteen (14) acres and is a Patented Mining Claim. We are interested in discussing the possibilities of either joint venturing the mining of our property and/or a direct sale of the property to your firm.

I will telephone you in the next few days to discuss this proposal.

Cordially,

A & A PROPERTIES


M.C. AUBRY
CEO

cc: E. Albright

MCA:mg

*Handed to MAM + DWG
on Sep 25th !*

ASARCO

Exploration Department
Southwestern United States Division
James D. Sell
Manager

September 17, 1990

Mr. Steven C. Potter, President
Norgold Resources Inc.
210-475 Howe Street
Vancouver, B.C. V6C 2B3
Canada

R. Schwarz Check Scheme
4 Samples
Yarnell Project
Yavapai County, Arizona

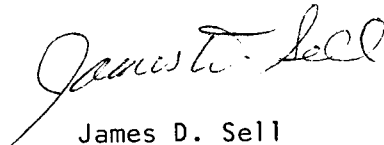
Dear Mr. Potter:

Attached is the correspondence between Skyline Labs and Asarco concerning the scheme of R. Schwarz in sampling drill cuttings for gold values (memo by E.V. Post, July 27, 1990).

Asarco submitted four samples (the "B" samples from the split at the drill site), two high-grade samples, and two average grade samples (memo by M.A. Miller, August 16, 1990).

The Skyline results of the multiple sample splits are given in E.V. Post's memo of September 14, 1990.

Sincerely,



James D. Sell

JDS:mek
Atts.

cc: R.L. Brown
W.L. Kurtz

ASARCO

Exploration Department
Southwestern United States Division

August 16, 1990

Mr. C.E. Thompson/Mr. W.L. Lehbeck
Skyline Labs, Inc.
1775 W. Sahuaro Drive
Tucson, Arizona 85703

Yarnell Samples
Rick Schwarz Study

Gentlemen:

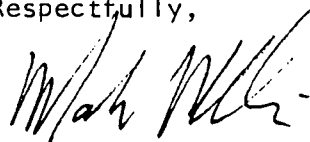
We have delivered to you four reject drill samples for evaluation by the Rick Schwarz scheme (per your attached flyer). Per discussion with Ed Post and Jim Sell, Asarco and Skyline will share the cost of the study. The four delivered samples are:

		<u>Tread</u>
YM-90	- 145-150	0.044
	195-200	0.126
	200-205	0.298
YM-88	245-250	0.050

These are the splitter rejects at the drill site and have not been through the assay lab.

Thank you for your help.

Respectfully,



Mark A. Miller

MAM:mek

~~cc: J.D. Sell~~

SKYLINE LABS, INC.

SPECIALISTS IN EXPLORATION GEOCHEMISTRY
12090 WEST 50TH PLACE • WHEAT RIDGE, COLORADO 80033 • TEL.: (303) 424-7718

July 27, 1990

Mr. Mark Miller
ASARCO, INC.
P.O. Box 5747
Tucson, Arizona 85703

ASARCO Incorporated

JUL 30 1990

SW Exploration

Dear Mark:

Charles Thompson of our Tucson office has requested that I send you the enclosed copy of Rick Schwarz's paper on minimizing errors in drill sampling for gold.

Rick followed this paper with a shorter one in the Association of Exploration Geochemists newsletter EXPLORE. A copy of this second article also is enclosed.

Rick has taken a couple of short courses in sampling and sample prep for gold that I also attended -- one by Francis Pitard of Broomfield, Colorado (formerly with AMAX and now a sampling consultant) and the other by Professor Allan Royles of the University of Leeds, England. The course manuals for both of these are, I'm sure, in the library at the University of Nevada in Reno. These two gentlemen convinced me of the importance of sample prep prior to sampling for gold -- hence the blurb on sampling error that Skyline recently distributed.

We don't profess to be masters of the statistical treatment of sampling and assay data, but we'll sure try to produce representative pulps!

Best wishes...

Sincerely,
SKYLINE LABS, INC.



Edwin V. Post
President

EVP/hs

MINIMIZING ERRORS IN DRILL SAMPLING FOR GOLD

by

Frederick P. Schwarz
Senior Supervisory Geologist

Freeport-McMoRan Gold Company
Elko, Nevada

Abstract: Sample preparation and analysis can impose devastating errors on assay data. Minimizing these errors by testing and procedural redesign may be critical to assure representative assays and project success. Replicate samples, taken at any volume-reduction and/or analytical step in a sampling procedure, generate replicate assay values whose relative differences constitute a set of data. Variance of this data judges the addition to total sampling error imposed by the step generating the replicates. A variance more than $(11.5\%)^2$ is excessive for a single step. Sample volume increase and/or comminution at a step will reduce variance for that step. Rejects from well mineralized intercepts can provide bulk samples for testing.

EFFECT OF ERROR

Sampling procedures introduce errors into the reliability of an assay value at every step in sample preparation and analysis. These cumulative errors cannot be totally eliminated, but they can be controlled. Control of error is critical to a project since less error in data generates more reliability in a resource estimate based on that data.

Sample splitting steps generally impose the worst procedural errors. The most serious splitting errors are commonly generated at the drillsite. Analytical procedures can also impose significant errors. Errors not from splitting or analytical steps are usually trivial... unless processing is carelessly done.

A single sampling procedural step can generate so much error, especially in gold exploration, that a reported assay value does not reflect true assay value for the sample. Such error is excessive. Excessive error can unmeasurably modify a given sample so that, notwithstanding the effect on the sample of any subsequent subsampling, assaying, and/or

extrapolation, the sample and its assay are ineradicably non-representative.

Non-representative data which results from excessive error is characterized by an assay value distribution dependent only on sample inhomogeneity. This distribution is in effect superimposed on the true distribution of assay values. Combined true and superimposed distributions can not be characterized reliably by classical statistics. In extreme cases, geostatistics may not help.

A common type of superimposed assay value distribution in gold deposits causes most assay values to report lower than true, and a very few to report much higher than true. Thus, deposit grade above cutoff tends to be underestimated.

Assays from a non-representative data set are individually meaningless. Since these assays can indicate fluctuations of grade which are not real, reasonably accurate zoning of the deposit by grade may be impossible. Thus, with excessive error, the true assay distribution and a reasonable characterization of the orebody might never be known.

MINIMIZING ERROR

For a single step of a sampling procedure, a practical limit for excessive error is considered to be when that step generates a data set of relative assay differences whose variance (the conventional statistic) exceeds $(11.5\%)^2$. With this limit in mind, the explorationist can test, judge, and minimize error.

A careful examination of sampling procedure is desirable early in the drilling stage of property evaluation. Such examination will reveal those procedural steps which may cause unacceptable error and, therefore, problems in assay reliability. These steps can be redesigned so that error is minimized. Minimizing

error will improve accuracy of project evaluation work, including: geologic conclusions, grade estimates, economic studies, and, eventually, mine planning.

ESTIMATING ERROR USING VARIANCE OF REPLICATE ASSAYS

Assays of replicate samples isolated at any sample processing or analytical step can provide a data set comprised of relative differences between replicate sample assay values. Variance of this data set can be used to judge the magnitude of error which is generated by the step. Replicates from sample splitting of ore-grade mineralization usually are most useful for testing, since volume-reduction steps commonly generate highest variances.

The population of relative differences between replicate assays is a data set which shows a normal (Gaussian) distribution of values. A data population of actual assay values usually does not show a normal distribution. Thus, estimating error by use of the variance of a population of relative differences avoids many problems associated with the statistics of non-normal distributions.

The relative difference between assay values is shown by the relationship:

$$\% \text{ difference} = 100 \frac{(O-R)}{(O+R)} \quad (1)$$

for original (O) and replicate (R) assay values. Thus, variance of a population of relative differences is expressed in units of percentage-squared (or $(\%)^2$).

TESTING AN ESTABLISHED PROCEDURE

Goals and General Approach

A drillhole sampling procedure is tested to discover if any processing step generates an excessive variance (more than $(11.5\%)^2$ for replicate assays), so that the step can be modified. Also, if variance of a step is substantially less than $(11.5\%)^2$, the procedure might be redesigned to reduce processing cost.

Once a sampling procedure has been optimized, reliability of data from later drilling is insured, and earlier samples from critical intervals, reprocessed and reassayed, become more useful. Thus, all the drillholes will provide reasonably representative assay data. The practical goal of testing an established procedure is to assure that reasonably representative assay data is generated routinely at reasonably minimized cost.

In the beginning stages of a drill evaluation program, samples for testing come from bulk reject drillhole cuttings. Assay values from these cuttings have confirmed interest in the project by returning "ore-grade" intercepts. Considering the value at risk in decisions which depend on reliable assay values, temporarily saving all bulk rejects from exploration drilling can be justified.

Example Procedure

For the first few holes in a drilling program, sampling procedure is typically based on convenient logistics, standard laboratory procedures, company tradition, etc.. After substantial and continuing interest is confirmed, initially expedient procedure should be validated.

Figure 1 shows an example procedure which begins with 56 kg of sample, the material from a typical 5 ft run of rotary reverse circulation drilling. The sample is split 50-50 on each pass through riffle splitters, and reject material is set aside. Retained material is comminuted at various stages. Finally, a pulp provides the analytical sample.

Figure 2 illustrates a test of the sampling procedure from Figure 1. Reject drill cuttings, saved from the original process, supply replicate samples at several splitting steps as follow:

- [A] at 50 kg of cuttings;
- [B] at 12.5 kg of cuttings;
- [C] at 3120 g of -10 mesh material;
- [D] at 780 g of -80 mesh material;
- [E] at 32 g (or 1 assay ton (AT)) of -200 mesh pulp.

In practice, every sample splitting step of the established procedure could be similarly tested. At a minimum, several 50 kg samples should be tested.

Samples from each pair of procedurally equivalent "branches" in Figure 2 are treated independently. It is important to carefully document sample lineage, thus allowing comparisons of appropriate replicate assays. Assays resulting from testing the procedure are as follows:

- a) The 50 kg of material is split, at [A], into a pair of replicate samples leading to assay #1 along one branch and assays #2, #3, #4, #5, and #6 along other, procedurally equivalent branches.

b) The 12.5 kg of material is split similarly, at [B], leading to assay #2 along one branch and assays #3, #4, #5, and #6 along others.

c) The 3.12 kg of material is split similarly, at [C], leading to assay #3 along one branch and assays #4, #5, and #6 along others.

d) The 780 g of material is split similarly, at [D], leading to assay #4 along one branch and assays #5 and #6 along others.

e) Analytical samples, run on -200 mesh pulp, are selected at [E], leading to assays #5 and #6.

Errors generated by the selected procedural steps of Figure 2 are judged by variances of populations of differences between replicate assay values. These variances are calculated, per formulation (1) discussed above, for pairs of values considered as follows:

a) Assay #1 versus assays #2, #3, #4, #5, and #6 produce variance [A]

b) Assay #2 versus assays #3, #4, #5, and #6 produce variance [B].

c) Assay #3 versus assays #4, #5, and #6 produce variance [C].

d) Assay #4 versus assays #5 and #6 produce variance [D].

e) Assay #5 versus #6 produces variance [E], the analytical error.

REDUCING THE VARIANCE

Reduction of excessive variance in part depends on available equipment and other logistical considerations, budgets, and project objectives. However, in order to avoid potentially devastating problems, a troublesome sample preparation step can be replaced with a step which reduces sample grain size, increases sample volume, and/or both. (Analytical variance might be reduced by using 2 or 3 AT; ie: "increasing volume".)

A minimum of several samples can be reprocessed, using the modified procedure. After accumulating paired replicate assay values from modified steps, the general approach as described above is repeated. Variance for differences between replicate assay values generated by volume-reduction steps should not exceed $(11.5\%)^2$. Establishing this fact will test if modifications have effectively optimized sampling procedures. The optimized sampling procedure should spread increments of error more-or-less

evenly among the several steps of sample preparation and analysis.

After establishing an effective procedure, sample preparation and analysis should be routinely monitored for precision and accuracy during the drilling program. Excessive error from careless personnel, laboratory mistakes, changed ore characteristics, etc., otherwise may flaw assay data unexpectedly.

CONCLUSION

In preparation and analytical procedures for drillhole samples, ineradicable errors can destroy representativity of a sample. Such errors, which may fatally flaw a project, typically come from sample volume reduction and from assay procedures. Drillsite splitting steps commonly cause very substantial errors.

The key to optimizing sampling procedure and reasonably minimizing error resides with an explorationist who understands the sampling process. Comparison of procedurally identical replicate samples from bulk rejects of ore-grade intercepts provides a way to examine error.

Replicate samples, taken at a volume-reduction step in a drillhole sampling procedure, generate replicate assay values whose relative differences constitute a population of data. The variance of this population of differences can be used to judge error generated by the step which inaugurated the pair. A variance of more than $(11.5\%)^2$ for such data from any single step is considered excessive.

A procedural step can be redesigned if it generates non-representative assay data due to excessive variance. For a sample, excessive variance is minimized by increasing volume or by reducing particle size at a troublesome step. The modified procedure is tested for effectiveness and routinely monitored throughout the program to ensure continuing reliability of assay data.

An explorationist should avoid the unpleasant consequences of discovering, at the end of a drilling program, that assay data does not reasonably reflect samples taken. It may then be too late to solve the problem.

Acknowledgments: Thanks are due to Freeport McMoRan Gold Company for permission to publish this paper, and to Francis Pitard of Lakewood, Colorado, for teaching that a procedural step which increases variance of the assay value population by more than $(16\%)^2$ can lead to non-representative data.

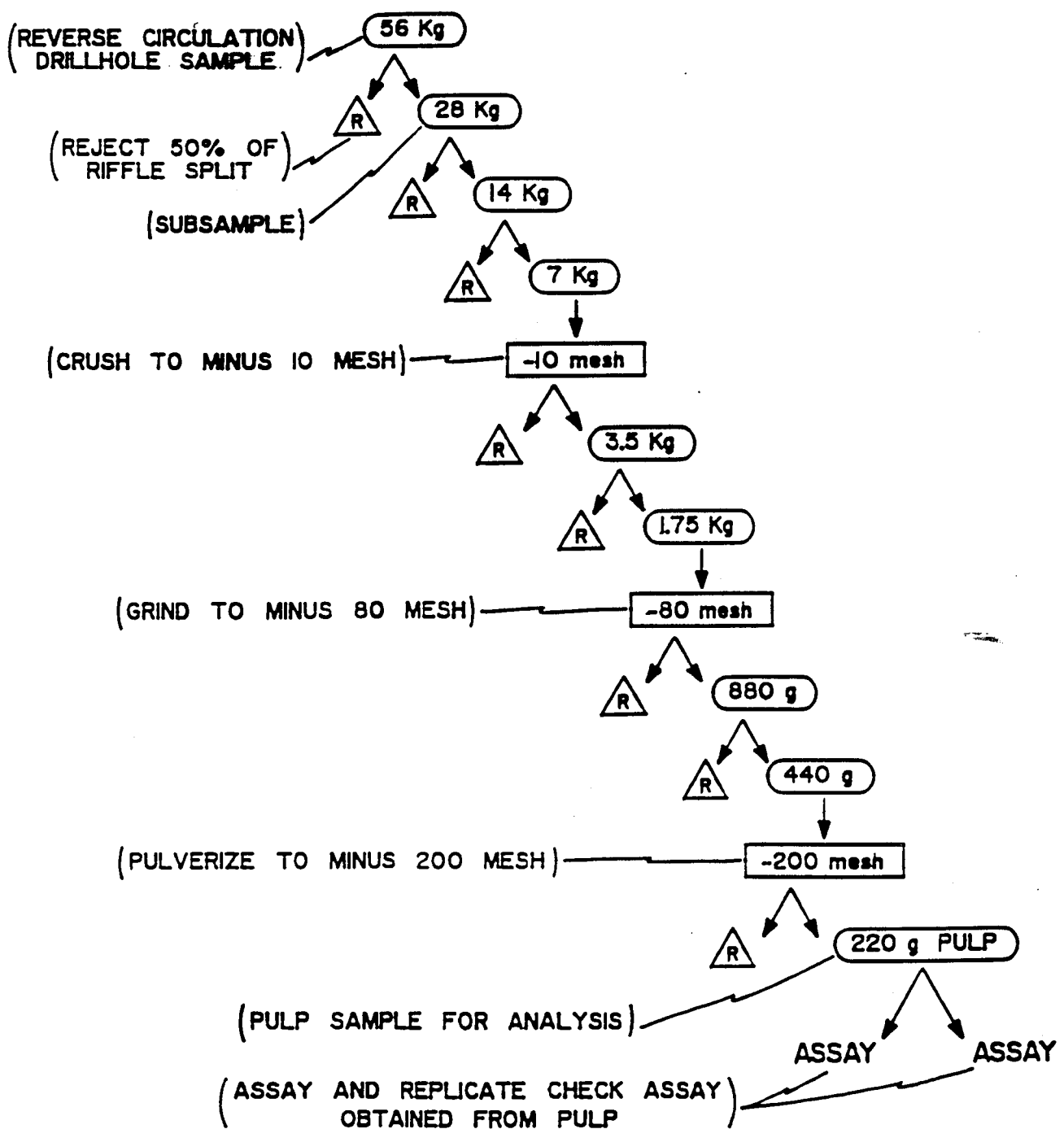


Figure 1. REVERSE CIRCULATION DRILLHOLE SAMPLING and ANALYTICAL PROCEDURE

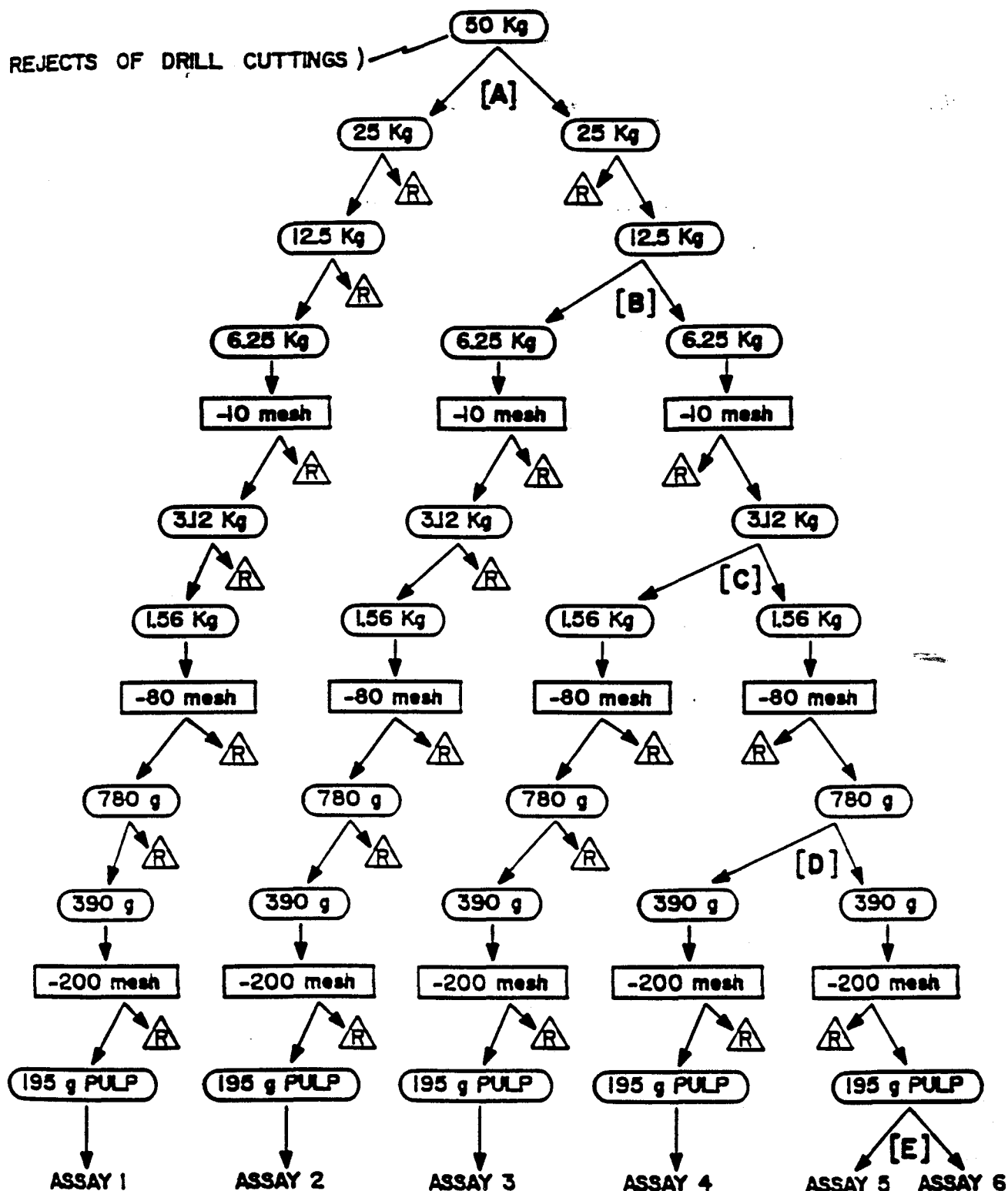


Figure 2. ASSAY STUDY OF REVERSE CIRCULATION DRILLHOLE SAMPLING and ANALYTICAL PROCEDURE

tered lense from below in the form of diminished amplitude and a downward bending of the lower event. This downward bending suggests lower velocity which equates with less competent rock suggesting more intense alteration. The area of low amplitude signal immediately below the large amplitude events is a function of AGC (automatic gain control) and is not directly related to the geology. For interpretation purposes, it is useful in comparing this anomaly to others such as the section to the right.

In the left section, the AGC exerted a great deal of suppression to the signals originating from the altered zone, thus the area of low amplitude immediately below the amplitude anomaly. The right section depicts events of much lesser amplitude and coherence in the same region, but without the suppressed signal below the events. These lesser events originate along strata in proximity to an unmineralized portion of the thrust fault. No drilling data have been released at the time this paper was written, however strong circumstantial evidence indicates the above observations to be valid.

James W. Cooksley
Peter H. Kendrick
Cooksley Geophysics, Inc.
Redding, California, U.S.A.
Phone 913-241-3167

References
 Barnes, H. L., 1979. *Geochemistry of hydrothermal ore deposits*, second edition: John Wiley & Sons
 Bonham, H. F., Jr., Tingley, J. V., eds. 1986. *Sediment-hosted precious metal deposits of northern Nevada*: Nevada Bureau of Mines and Geology, Report 40, 11 authors, 103 pp.
 Radtke, A. S., 1985. *Geology of the Carlin gold deposit*: U. S. Geologic Survey Professional Paper 1267, 124 pp.

A Check for Error in Drill Hole Sampling Using Paired Assays

Introduction

In advanced stages of exploration, check assays are commonly run on analytical samples, but the many steps which ready a sample for assay are not often checked. This situation invites unpleasant problems with data quality. Inappropriate sample processing can fatally flaw resource investigations and mine planning.

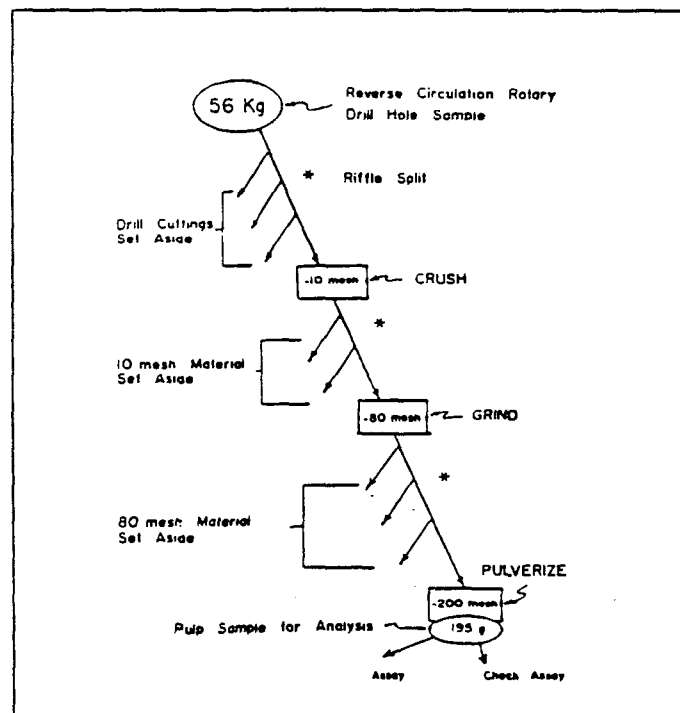


Figure 1. An expedient sampling procedure for drill cuttings in gold exploration.

Error in Assay Values

Every splitting, comminution, and analytical procedure in sampling introduces an increment of error into assay values. Splitting steps, including selection of the assay charge, typically impose the worst sampling errors, but the worst *splitting* errors often involve drill cuttings. As only minor errors accrue from careful comminution, digestion, dilution, instrumental analysis, etc., only sample splitting will be considered here.

Subsample inhomogeneity caused by inappropriate splitting procedures creates a subsample distribution which no longer represents the true sample distribution. What in effect is created is an inseparable combination of true and artificial distributions which can not be adequately characterized by either statistics or geostatistics. Since most assay values in distributions of this sort typically report lower than true, and a few much higher than true, and since high "erratic" assays are often cut, ore grades above cutoff can be underestimated. Consequently, grade boundaries tend not to be realistic.

Thus, an expedient sampling procedure - used for the first few holes in a continuing project - must be checked. Sampling steps which generate non-representative assays and excessive error must be redesigned so that subsequent drilling and sample processing can provide reliable assays for resource estimation and mine planning. A relative variance of $(11.5\%)^2$ to $(16\%)^2$ (Schwarz, 1989) measures the maximum tolerable limit for error from a single sampling step.

Estimating Error

Error generated at any volume-reduction step is investigated by use of paired assays. Replicate samples from several ore-grade intercepts are isolated at the splitting step in question and processed in the same way as the original samples. Resulting assay values are transformed as follows:

$$\% \text{ difference} = 100 \times (O - R) \div (O + R) \quad (1)$$

for original *O* and replicate *R* assays. Relative variance of "% difference", calculated by the usual formulation, estimates error in units of percentage² for a given splitting step. If the sigma key of a pocket calculator is used to tabulate values from (1) above, tedious mathematical manipulations are avoided, and the relative variance is easily calculated.

Material selected from a narrow range of assay values will avoid problems with sample value distribution. If the project geologist

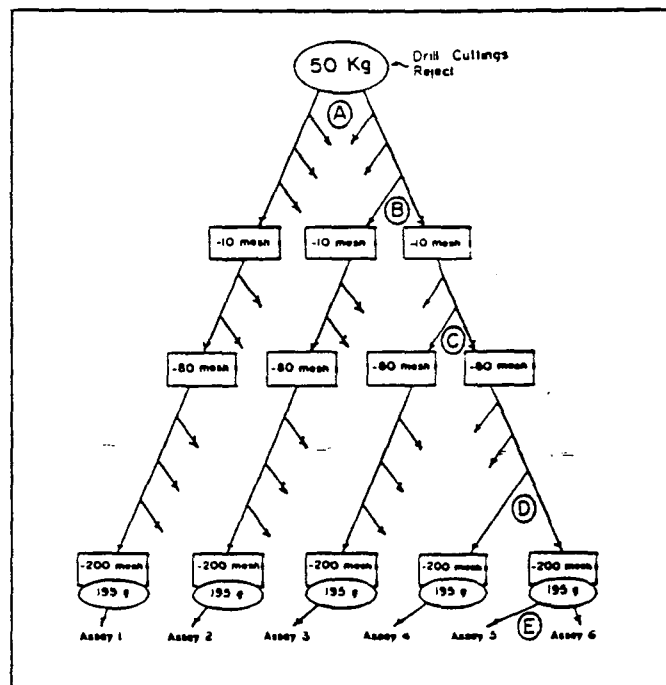


Figure 2. Paired samples isolated from several splitting steps of an expedient procedure for a check of sampling error using paired assays. Resulting paired assays can check sampling error.

checks samples which report ore grades near cutoff, the critical ore/waste boundary is also examined. If several intercepts in a narrow range of assay values are not available, a broader range may be used after logarithmic conversion. These can substitute for original and replicate values in (1) above.

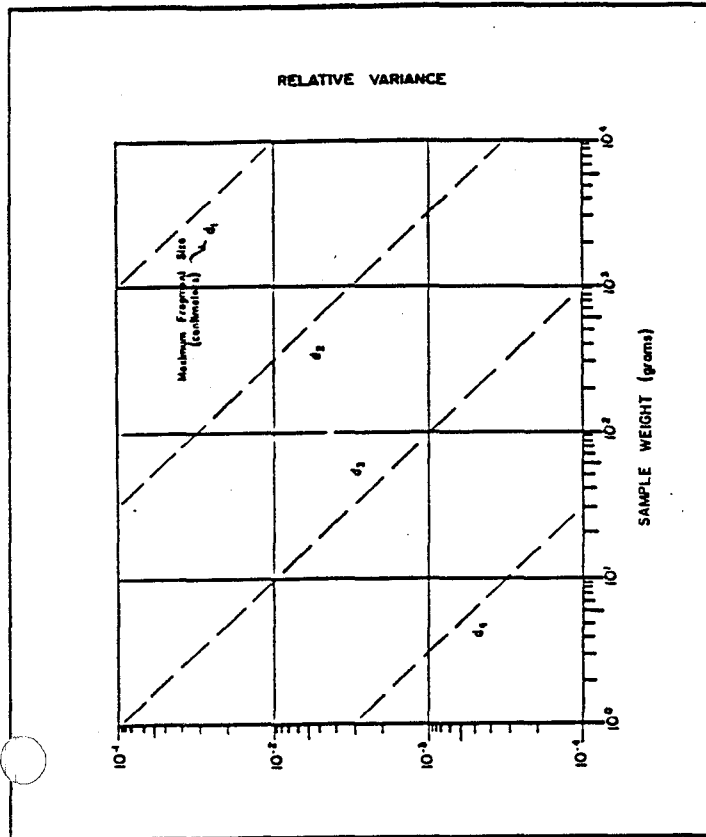


Figure 3 An example sampling nomograph (modified from Gy and Pitard, 1989)

Example Procedure

Figure 1 shows an expedient sampling procedure used at start-up of a rotary reverse circulation drilling program. The initial sample, 56 kg of material, comes from a 5-ft drill intercept. This material is riffle-split to convenient subsamples which are crushed, ground, and pulverized to provide the analytical sample. Since the worst errors typically come from splits of coarse materials, uncrushed cuttings and laboratory rejects must be temporarily stored to later provide replicate samples for procedural checking.

Figure 2 shows several splitting steps isolated for checking. The splitting step at A provides replicate Assay #1 paired with original Assay #5. Assay #1 can also be paired with #2, #3, and #4. These assays generate an estimate of variance at A. Similarly, splits at B, C, D, and at the analytical check E, provide replicate/original assay pairs which generate a variance for each splitting step.

Checking can conveniently begin with splitting steps immediately preceding comminution - B and then C in Figure 2, and so forth. (If B does not generate excessive error, splitting steps above B are O.K. Similarly, at C, etc.) Either reprocessed or stored material can be used.

design

Modification of potentially devastating sample splitting steps is easily justified for an ongoing project. Considering that redesign depends on logistics, budgets, and project objectives, the project geologist can minimize error by replacing problem steps with procedures which reduce grain size at a larger sample volume.

The project geologist can simply replace a troublesome step and test the modified procedure. Since such iterative work is te-

dious and expensive, it is preferable to work the problem on paper.

When relative variance at several sampling steps is determined, these data characterize not only the sampling procedure, but also the material itself. Thus, any similar method for processing this material can also be characterized.

Several variances calculated at different sample volumes and various particle sizes are used to construct a "sampling nomograph" (Gy et al, 1989). The nomograph uses the general relationship:

$$\log \text{variance is proportional to } 3 \log d - \log m \quad (2)$$

where variance is the decimal % relative variance, d is the centimeter screen size passing 95% of material, and m is sample weight in grams.

A calculated variance at known m , a variance/ m point, is plotted on the nomograph (Figure 3). The known d at each variance/ m point also defines a nomograph line with a slope of negative one (see (2) above). This line shows the range of possible variance/ m points for the given d . Alternate d 's can be extrapolated from plotted lines representing known d 's.

At a comminution step, m holds constant while d and variance decrease; at a sample splitting step, d holds constant while variance and m decrease. Graphical manipulation of m and d can consider and weigh: logistics and budgets; the limit of an acceptable variance $(15\%)^2$, for example, plotted as .0225 decimal % difference; and the advisability of spreading increments of error more-or-less evenly among the splitting steps. Thus, the nomograph can predict variance, D , and m and suggest design modifications without the need to iterate sampling procedures.

After redesign, the modified procedure should be checked for excessive error. As the project continues, sampling should be continually and routinely monitored. Even in the best programs, carelessness, changed ore characteristics, equipment problems, etc. can flaw assay data unexpectedly and increase data variance.

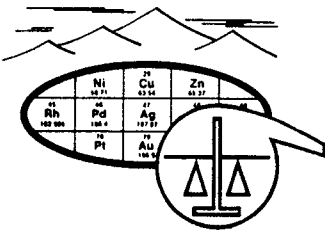
A project geologist should avoid the consequences of discovering, at the end of an advanced drilling program, that assay data for which he is responsible does not reasonably reflect samples taken. It may then be too late to resolve this very unpleasant situation.

Thanks to Freeport McMoRan Gold Company for permission to share these thoughts.

Frederick P. Schwarz, Jr.
Freeport McMoRan Gold Co.
Mountain City Star Route
Elko, Nevada 89801

References Cited

- Gy, Pierre, and Pitard, Francis, 1989. Sampling of gold, theory and practice: Colorado School of Mines short course, October 1988.
- Schwarz, F. P., 1989. Minimizing errors in drill sampling for gold: Proceedings, SME/AusIMM Gold '89 symposium, pp 33-37.



SKYLINE LABS, INC.

1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

September 14, 1990

ASARCO, Inc.
Attention: Mark Miller
Jim Sell
P. O. Box 5747
Tucson, Arizona 85703

ASARCO Incorporated

SEP 17 1990

SW Exploration

Gentlemen:

Enclosed are the results of our evaluation of sample preparation procedures following Rick Schwarz' approach on four samples of drill cutting rejects from your Yarnell project submitted by Mark Miller.

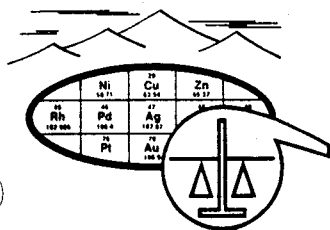
Following the sample preparation procedure, which is outlined below, each resulting pulp was fire assayed for gold by standard procedures using a 1 assay-ton portion of the sample. The prep procedure involved successive stages of size reduction through:

1. a Morse Bros. jaw crusher to produce a nominal minus 1/2 inch product
2. a TM jaw crusher to produce a nominal minus 10 mesh product
3. a Braun disc pulverizer to produce a nominal minus 60 mesh product (which is difficult to do)
4. a Labtechnics "Big Bowl" ring mill with a "flying saucer"-shaped pulverizing element utilized to produce a homogeneous assay pulp.

The product of each device was subjected to screen analysis, the results of which are enclosed.

I have calculated the variance of the relative differences between the various assays from each comminution stage and have reported these results adjacent to the assay results for gold. You may wish to re-evaluate the raw data and perform your own statistical study.

My review of the results brought the following thoughts to mind:



SKYLINE LABS, INC.

1775 W. Sahuaro Dr. • P.O. Box 50106

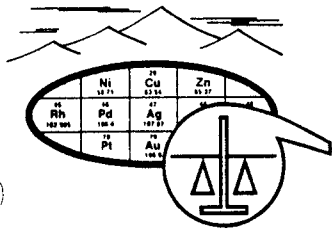
Tucson, Arizona 85703

(602) 622-4836

1. The use of the Morse Bros. crusher probably was not necessary on this material; the TM crusher was quite capable of handling the initial size reduction.
2. The two higher grade samples had acceptable variances (<11.5% squared) at the split of the original reject material, whereas the two lower grade samples initially were unacceptable by Rick Schwarz' criterion. The first stage of crushing improved the variance of sample YM 90 145-150, but the variance of YM 88 245-250 did not improve until it had passed through the disc pulverizer.
3. A product sized somewhere between the fine jaw crusher product (<10 mesh) and the present disc pulverizer product (<100 mesh) probably would provide acceptable splits on all samples, high grade and low grade. The challenge is: how to prepare a product in the range of a nominal 60 mesh. Disc pulverizers score plates and bind up when operated at that setting. Perhaps a continuous ring mill (as built by Labtechnics in New Zealand) would do the job.
4. Although the Braun disc pulverizer produced a fine product, this pulverizer does not produce as homogeneous a product as the ring mill, and it is recommended that all assay pulps be prepared with a ring mill.
5. The low weight percent of material reported in the -80+100 mesh product of the screen analyses was an artifact of the screen size used -- 80 mesh instead of a preferable 60 mesh screen, which was unavailable.
6. The higher grade samples had acceptable variances to begin with, whereas the two lower grade samples were unacceptable (by Schwarz' criterion of 11.5% squared as a limit). Inasmuch as the reliability of assays near the cutoff grade probably impact decision making more than the reliability of high-grade assays, all samples should be prepared to provide acceptable variances for the low grade samples, or alternatively, rejects of the lower grade samples should be checked to determine if the reliability of their assays could be improved.

Please give us a call if we can provide any additional details.

Sincerely,
SKYLINE LABS, INC.



SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. TAJ 668
September 14, 1990
PROJECT NO.: YARNELL
PAGE 1 OF 2

ASARCO INCORPORATED
Attn: Mr. Mark A. Miller
Southwestern Exploration
P.O. Box 5747
Tucson, AZ 85703

ASARCO Incorporated

SEP 17 1990

S. Exploration

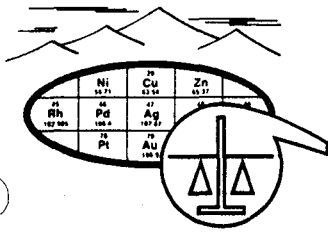
Analysis of 28 Sample Splits

ITEM	SAMPLE NUMBER	FIRE ASSAY		Variance* (%)
		Au (oz/t) ORIG	Au (oz/t) DUP	
2	YM-90 145-150 A	.064	.055	23.02
3	YM-90 145-150 B1	.062		7.74
4	YM-90 145-150 B2	.051		2.11
5	YM-90 145-150 B3	.052		.72
6	YM-90 145-150 B4A	.048	.042	
7	YM-90 145-150 B4B	.055		
9	YM-90 195-200 A	.138		5.54
10	YM-90 195-200 B1	.140		5.51
11	YM-90 195-200 B2	.143		5.74
12	YM-90 195-200 B3	.141	.146	12.55
13	YM-90 195-200 B4A	.157		
14	YM-90 195-200 B4B	.142		
16	YM-90 200-205 A	.175		6.83
17	YM-90 200-205 B1	.160		7.15
18	YM-90 200-205 B2	.140	.147	.65
19	YM-90 200-205 B3	.158		.21
20	YM-90 200-205 B4A	.153		
21	YM-90 200-205 B4B	.155		

Charles E. Thompson
Arizona Registered Assayer No. 8427

William L. Lehmbeck
Arizona Registered Assayer No. 8425

James A. Martin
Arizona Registered Assayer No. 11122



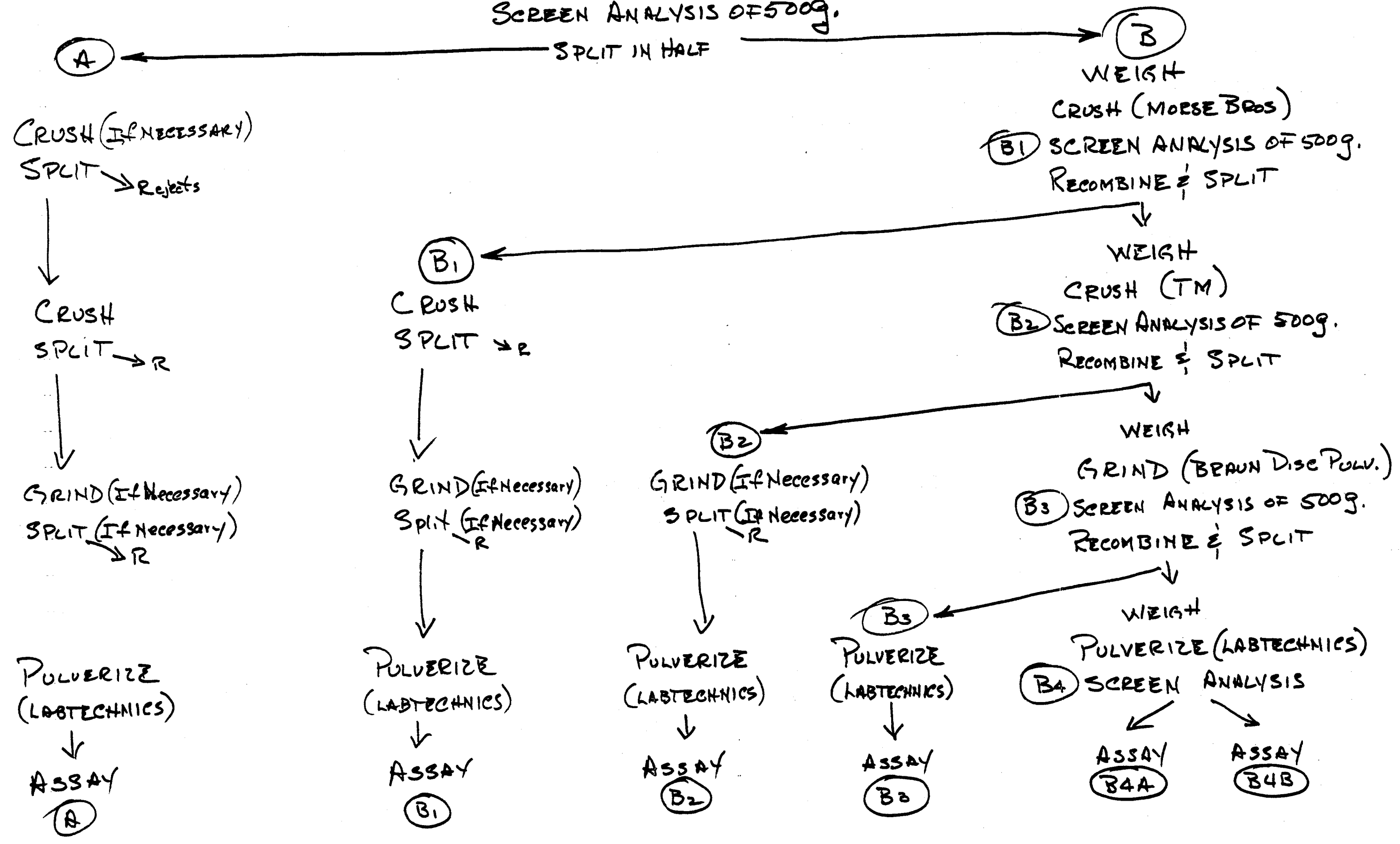
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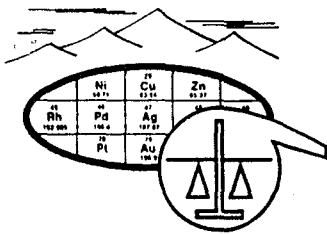
JOB NO. TAJ 668
September 14, 1990
PAGE 2 OF 2

ITEM	SAMPLE NUMBER	FIRE ASSAY		Variance*
		Au (oz/t) ORIG	Au (oz/t) DUP	
23	YM-88 245-250 A	.067		68.63
24	YM-88 245-250 B1	.061		85.04
25	YM-88 245-250 B2	.103		20.84
26	YM-88 245-250 B3	.081		1.04
27	YM-88 245-250 B4A	.070	.078	
28	YM-88 245-250 B4B	.068		

*NOTE: Variance reported in percent squared.

DRILL CUTTING REJECTS WEIGHT SCREEN ANALYSIS OF 500g.





SKYLINE LABS, INC.
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 (602) 622-4836

ASARCO Incorporated

SEP 17 1990

SW Exploration

SCREEN ANALYSIS

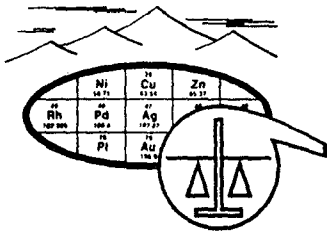
JOB NUMBER: TAJ 668

DATE: 9-1-90

SAMPLE NO.: YM90 145-150

PRODUCT OF: ORIGINAL

	GRAMS	(%)	Cumulative(%)
+1/2	<u> </u>	<u> </u>	<u> </u>
-1/2+1/4	<u> 16 </u>	<u> 3.0 </u>	<u> 3.0 </u>
-1/4+5	<u> 25 </u>	<u> 4.7 </u>	<u> 7.7 </u>
-5+10	<u> 62 </u>	<u> 11.6 </u>	<u> 19.3 </u>
-10+20	<u> 83 </u>	<u> 15.5 </u>	<u> 34.8 </u>
-20+40	<u> 68 </u>	<u> 12.7 </u>	<u> 47.5 </u>
-40+80	<u> 71 </u>	<u> 13.3 </u>	<u> 60.8 </u>
-80+100	<u> 19.9 </u>	<u> 3.7 </u>	<u> 64.5 </u>
-100+200	<u> 61.6 </u>	<u> 11.5 </u>	<u> 76.0 </u>
-200	<u> 129 </u>	<u> 24 </u>	<u> 100. </u>
TOTAL	<u> 535.5 </u>	<u> 100.1 </u>	



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SCREEN ANALYSIS

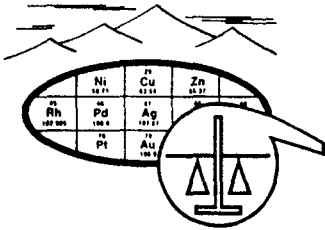
JOB NUMBER: TAJ 668

DATE: 9-1-90

SAMPLE NO.: YM90 145-150

PRODUCT OF: Morse Bros. Jaw

	GRAMS	(%)	Cumulative(%)
+1/2	<u> </u>	<u> </u>	<u> </u>
-1/2+1/4	<u> 17 </u>	<u> 3.0 </u>	<u> 3.0 </u>
-1/4+5	<u> 31.8 </u>	<u> 5.7 </u>	<u> 8.7 </u>
-5+10	<u> 67.6 </u>	<u> 12.1 </u>	<u> 20.8 </u>
-10+20	<u> 85.1 </u>	<u> 15.2 </u>	<u> 36.0 </u>
-20+40	<u> 71.1 </u>	<u> 12.7 </u>	<u> 48.7 </u>
-40+80	<u> 74. </u>	<u> 13.2 </u>	<u> 61.9 </u>
-80+100	<u> 21. </u>	<u> 3.8 </u>	<u> 65.7 </u>
-100+200	<u> 64. </u>	<u> 11.4 </u>	<u> 77.1 </u>
-200	<u>128.1 </u>	<u> 22.9 </u>	<u> 100. </u>
TOTAL	<u>559.7 </u>	<u> 100. </u>	



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SCREEN ANALYSIS

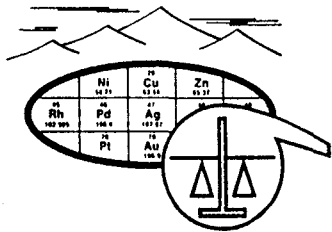
JOB NUMBER: TAJ 668

DATE: 9-1-90

SAMPLE NO.: YM 90 145-150

PRODUCT OF: TM JAW CRUSHER

	GRAMS	(%)	Cumulative(%)
+1/2	_____	_____	_____
-1/2+1/4	_____	_____	_____
-1/4+5	<u>2.2</u>	<u>0.4</u>	<u>0.4</u>
-5+10	<u>49</u>	<u>8.7</u>	<u>9.1</u>
-10+20	<u>105.1</u>	<u>18.7</u>	<u>27.8</u>
-20+40	<u>85.1</u>	<u>15.1</u>	<u>42.9</u>
-40+80	<u>83.1</u>	<u>14.8</u>	<u>57.7</u>
-80+100	<u>21.1</u>	<u>3.7</u>	<u>61.4</u>
-100+200	<u>66.1</u>	<u>11.7</u>	<u>73.1</u>
-200	<u>151</u>	<u>26.8</u>	<u>99.9</u>
TOTAL	<u>562.7</u>	<u>99.9</u>	



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SCREEN ANALYSIS

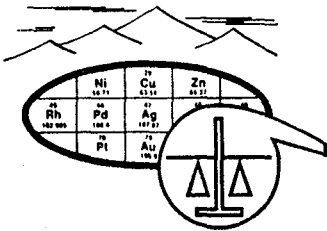
JOB NUMBER: TAT 668

DATE: 9-1-90

SAMPLE NO.: YM90 145-150

PRODUCT OF: BRAUN DISC

	GRAMS	(%)	Cumulative(%)
+1/2	_____	_____	_____
-1/2+1/4	_____	_____	_____
-1/4+5	_____	_____	_____
-5+10	_____	_____	_____
-10+20	_____	_____	_____
-20+40	_____	_____	_____
-40+80	<u>2</u>	<u>0.4</u>	<u>0.4</u>
-80+100	<u>5.6</u>	<u>1.1</u>	<u>1.5</u>
-100+200	<u>292.1</u>	<u>55.5</u>	<u>57.0</u>
-200	<u>226.6</u>	<u>43.0</u>	<u>100.</u>
TOTAL	<u>526.3</u>	<u>100</u>	



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SCREEN ANALYSIS

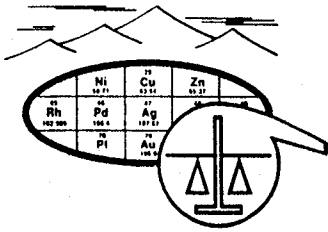
JOB NUMBER: TAJ 668

DATE: 9-1-90

SAMPLE NO.: YM90 145-150

PRODUCT OF: LABTECHNICS

	GRAMS	(%)	Cumulative(%)
+1/2	_____	_____	_____
-1/2+1/4	_____	_____	_____
-1/4+5	_____	_____	_____
-5+10	_____	_____	_____
-10+20	_____	_____	_____
-20+40	_____	_____	_____
-40+80	_____	_____	_____
-80+100	_____	_____	_____
-100+200	<u>1</u>	<u>0.2</u>	<u>0.2</u>
-200	<u>400</u>	<u>99.8</u>	<u>100</u>
TOTAL	<u>401</u>	<u>100</u>	



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SCREEN ANALYSIS

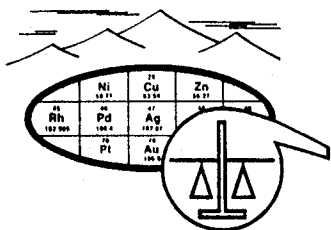
JOB NUMBER: TAT 668

DATE: 9-5-90

SAMPLE NO.: YM90 195-200

PRODUCT OF: ORIGINAL

	GRAMS	(%)	Cumulative(%)
+1/2	<u>21</u>	<u>3.4</u>	<u>3.4</u>
-1/2+1/4	<u>51.3</u>	<u>8.4</u>	<u>11.8</u>
-1/4+5	<u>69.6</u>	<u>11.3</u>	<u>23.1</u>
-5+10	<u>107.8</u>	<u>17.6</u>	<u>40.7</u>
-10+20	<u>105.7</u>	<u>17.2</u>	<u>57.9</u>
-20+40	<u>81.3</u>	<u>13.2</u>	<u>71.1</u>
-40+80	<u>73</u>	<u>11.9</u>	<u>83.0</u>
-80+100	<u>20.9</u>	<u>3.4</u>	<u>86.4</u>
-100+200	<u>42.4</u>	<u>6.9</u>	<u>93.3</u>
-200	<u>40.9</u>	<u>6.7</u>	<u>100.</u>
TOTAL	<u>613.9</u>	<u>100.</u>	



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SCREEN ANALYSIS

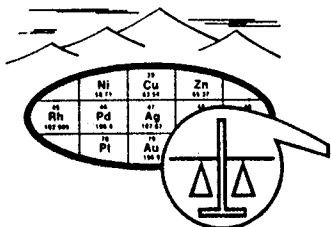
JOB NUMBER: TAJ 668

DATE: 9-5-90

SAMPLE NO.: YM90 195-200

PRODUCT OF: Morse Bros. Jaw

	GRAMS	(%)	Cumulative(%)
+1/2	<u>6.3</u>	<u>1.1</u>	<u>1.1</u>
-1/2+1/4	<u>46.7</u>	<u>7.9</u>	<u>9.0</u>
-1/4+5	<u>69.7</u>	<u>11.8</u>	<u>20.8</u>
-5+10	<u>101.2</u>	<u>17.1</u>	<u>37.9</u>
-10+20	<u>106.8</u>	<u>18.1</u>	<u>56.0</u>
-20+40	<u>83.6</u>	<u>14.1</u>	<u>70.1</u>
-40+80	<u>75.</u>	<u>12.7</u>	<u>82.8</u>
-80+100	<u>21.8</u>	<u>3.7</u>	<u>86.5</u>
-100+200	<u>42.7</u>	<u>7.2</u>	<u>93.7</u>
-200	<u>37.4</u>	<u>6.3</u>	<u>100.</u>
TOTAL	<u>591.2</u>	<u>100.</u>	



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SCREEN ANALYSIS

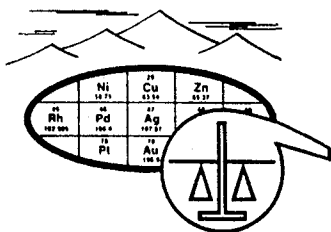
JOB NUMBER: TAJ 668

DATE: 9-5-90

SAMPLE NO.: YM90 195-200

PRODUCT OF: TM JAW CRUSHER

	GRAMS	(%)	Cumulative(%)
+1/2	_____	_____	_____
-1/2+1/4	_____	_____	_____
-1/4+5	<u>2.5</u>	<u>0.5</u>	<u>0.5</u>
-5+10	<u>43.8</u>	<u>8.5</u>	<u>9.0</u>
-10+20	<u>90.1</u>	<u>17.4</u>	<u>26.4</u>
-20+40	<u>95.8</u>	<u>18.5</u>	<u>44.9</u>
-40+80	<u>100.7</u>	<u>19.4</u>	<u>64.3</u>
-80+100	<u>33.5</u>	<u>6.5</u>	<u>70.8</u>
-100+200	<u>77.</u>	<u>14.9</u>	<u>85.7</u>
-200	<u>74.6</u>	<u>14.4</u>	<u>100.1</u>
TOTAL	<u>518.0</u>	<u>100.1</u>	



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SCREEN ANALYSIS

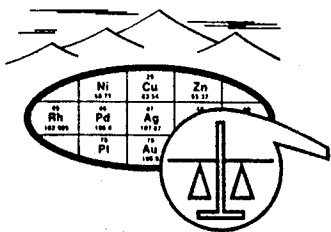
JOB NUMBER: TAT 668

DATE: 9-5-90

SAMPLE NO.: YM90-195-200

PRODUCT OF: BRAUN Disc

	GRAMS	(%)	Cumulative(%)
+1/2	_____	_____	_____
-1/2+1/4	_____	_____	_____
-1/4+5	_____	_____	_____
-5+10	_____	_____	_____
-10+20	_____	_____	_____
-20+40	_____	_____	_____
-40+80	_____	_____	_____
-80+100	_____	_____	_____
-100+200	<u>4.3</u>	<u>1.2</u>	<u>1.2</u>
-200	<u>353.</u>	<u>98.8</u>	<u>100.</u>
TOTAL	<u>357.3</u>	<u>100.</u>	



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SCREEN ANALYSIS

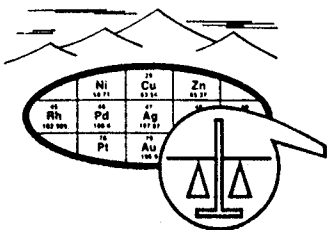
JOB NUMBER: TAJ 6/68

DATE: 9-5-90

SAMPLE NO.: YM90 195-200

PRODUCT OF: LABTECNICS

	GRAMS	(%)	Cumulative(%)
+1/2	_____	_____	_____
-1/2+1/4	_____	_____	_____
-1/4+5	_____	_____	_____
-5+10	_____	_____	_____
-10+20	_____	_____	_____
-20+40	_____	_____	_____
-40+80	_____	_____	_____
-80+100	_____	_____	_____
-100+200	<u>0.3</u>	<u>0.1</u>	<u>0.1</u>
-200	<u>348.</u>	<u>99.9</u>	<u>100.</u>
TOTAL	<u>348.3</u>	<u>100.</u>	



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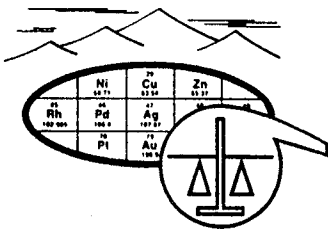
JOB NUMBER: TAJ 668

DATE: 9-5-90

SAMPLE NO.: YM90 200-205

PRODUCT OF: ORIGINAL

	GRAMS	(%)	Cumulative(%)
+1/2	<u> </u>	<u> </u>	<u> </u>
-1/2+1/4	<u>16</u>	<u>3.4</u>	<u>3.4</u>
-1/4+5	<u>26.7</u>	<u>5.6</u>	<u>9.0</u>
-5+10	<u>56.5</u>	<u>11.9</u>	<u>20.9</u>
-10+20	<u>72.9</u>	<u>15.4</u>	<u>36.3</u>
-20+40	<u>73.4</u>	<u>15.5</u>	<u>51.8</u>
-40+80	<u>73.7</u>	<u>15.6</u>	<u>67.4</u>
-80+100	<u>18.8</u>	<u>4.0</u>	<u>71.4</u>
-100+200	<u>48.7</u>	<u>10.3</u>	<u>81.7</u>
-200	<u>86.</u>	<u>18.2</u>	<u>99.9</u>
TOTAL	<u>472.7</u>	<u>99.9</u>	



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SCREEN ANALYSIS

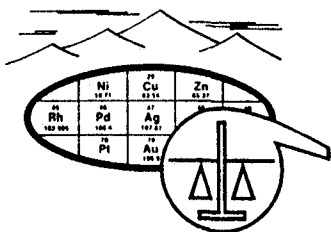
JOB NUMBER: TAT 668

DATE: 9-6-90

SAMPLE NO.: YM90 200-205

PRODUCT OF: MORSE BROS JAW

	GRAMS	(%)	Cumulative(%)
+1/2	<u> </u>	<u> </u>	<u> </u>
-1/2+1/4	<u>27.5</u>	<u>5.8</u>	<u>5.8</u>
-1/4+5	<u>28.6</u>	<u>6.0</u>	<u>11.8</u>
-5+10	<u>58.5</u>	<u>12.3</u>	<u>24.1</u>
-10+20	<u>73.</u>	<u>15.3</u>	<u>39.4</u>
-20+40	<u>70.9</u>	<u>14.9</u>	<u>54.3</u>
-40+80	<u>71.5</u>	<u>15.0</u>	<u>69.3</u>
-80+100	<u>18.2</u>	<u>3.8</u>	<u>73.1</u>
-100+200	<u>46.6</u>	<u>9.8</u>	<u>82.9</u>
-200	<u>82.2</u>	<u>17.2</u>	<u>100.1</u>
TOTAL	<u>477.</u>	<u>100.1</u>	



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SCREEN ANALYSIS

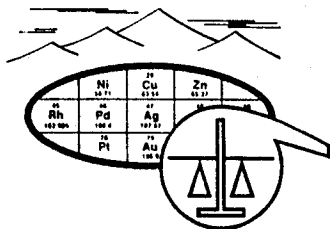
JOB NUMBER: TAJ 668

DATE: 9-6-90

SAMPLE NO.: YM90 200-205

PRODUCT OF: TM JAW CRUSHER

	GRAMS	(%)	Cumulative(%)
+1/2	_____	_____	_____
-1/2+1/4	_____	_____	_____
-1/4+5	_____	_____	_____
-5+10	<u>33.2</u>	<u>5.9</u>	<u>5.9</u>
-10+20	<u>92.6</u>	<u>16.3</u>	<u>22.2</u>
-20+40	<u>102.3</u>	<u>18.0</u>	<u>40.2</u>
-40+80	<u>103.3</u>	<u>18.2</u>	<u>58.4</u>
-80+100	<u>26.8</u>	<u>4.7</u>	<u>63.1</u>
-100+200	<u>65.8</u>	<u>11.6</u>	<u>74.7</u>
-200	<u>143.3</u>	<u>25.3</u>	<u>100.</u>
TOTAL	<u>567.3</u>	<u>100.</u>	



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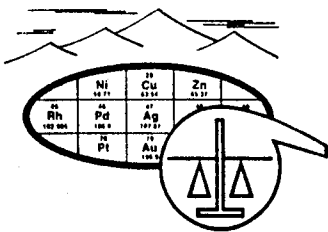
JOB NUMBER: TAT 668

DATE: 9-6-90

SAMPLE NO.: YM90 200-205

PRODUCT OF: BRAUN DISC

	GRAMS	(%)	Cumulative(%)
+1/2	_____	_____	_____
-1/2+1/4	_____	_____	_____
-1/4+5	_____	_____	_____
-5+10	_____	_____	_____
-10+20	_____	_____	_____
-20+40	_____	_____	_____
-40+80	_____	_____	_____
-80+100	<u>3.3</u>	<u>1.2</u>	<u>1.2</u>
-100+200	<u>12.7</u>	<u>4.5</u>	<u>5.7</u>
-200	<u>26.7</u>	<u>94.3</u>	<u>100.</u>
TOTAL	<u>283</u>	<u>100.</u>	



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SCREEN ANALYSIS

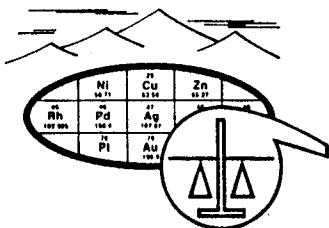
JOB NUMBER: TAJ 668

DATE: 9-6-90

SAMPLE NO.: YM90 200-205

PRODUCT OF: LABTECHNICS

	GRAMS	(%)	Cumulative(%)
+1/2	_____	_____	_____
-1/2+1/4	_____	_____	_____
-1/4+5	_____	_____	_____
-5+10	_____	_____	_____
-10+20	_____	_____	_____
-20+40	_____	_____	_____
-40+80	_____	_____	_____
-80+100	_____	_____	_____
-100+200	<u>0.9</u>	<u>0.3</u>	<u>0.3</u>
-200	<u>280</u>	<u>99.7</u>	<u>100.</u>
TOTAL	<u>280.9</u>	<u>100.</u>	



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SCREEN ANALYSIS

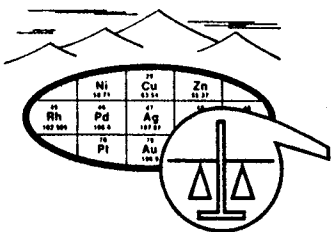
JOB NUMBER: TAJ 668

DATE: 9-7-90

SAMPLE NO.: YM 88 245-250

PRODUCT OF: ORIGINAL

	GRAMS	(%)	Cumulative(%)
+1/2	<u>3</u>	<u>0.5</u>	<u>0.5</u>
-1/2+1/4	<u>46.7</u>	<u>8.4</u>	<u>8.9</u>
-1/4+5	<u>54.5</u>	<u>9.8</u>	<u>18.7</u>
-5+10	<u>92.3</u>	<u>16.7</u>	<u>35.4</u>
-10+20	<u>94.4</u>	<u>17.1</u>	<u>52.5</u>
-20+40	<u>69.8</u>	<u>12.6</u>	<u>65.1</u>
-40+80	<u>59.1</u>	<u>10.7</u>	<u>75.8</u>
-80+100	<u>15.5</u>	<u>2.8</u>	<u>78.6</u>
-100+200	<u>42.2</u>	<u>7.6</u>	<u>86.2</u>
-200	<u>75.9</u>	<u>13.7</u>	<u>99.9</u>
TOTAL	<u>553.4</u>	<u>99.9</u>	



SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

SCREEN ANALYSIS

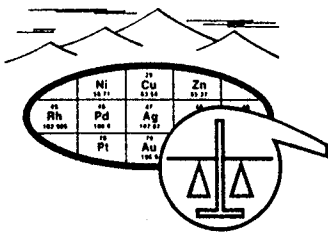
JOB NUMBER: TAJ 668

DATE: 9-7-90

SAMPLE NO.: YM88 245-250

PRODUCT OF: Morse Bros Jaw

	GRAMS	(%)	Cumulative(%)
+1/2	<u>8</u>	<u>1.7</u>	<u>1.7</u>
-1/2+1/4	<u>30.8</u>	<u>6.6</u>	<u>8.3</u>
-1/4+5	<u>36</u>	<u>7.7</u>	<u>16.0</u>
-5+10	<u>72.6</u>	<u>15.5</u>	<u>31.5</u>
-10+20	<u>80.2</u>	<u>17.2</u>	<u>48.7</u>
-20+40	<u>63.6</u>	<u>13.6</u>	<u>62.3</u>
-40+80	<u>54.5</u>	<u>11.7</u>	<u>74.0</u>
-80+100	<u>14.6</u>	<u>3.1</u>	<u>77.1</u>
-100+200	<u>39.1</u>	<u>8.4</u>	<u>85.5</u>
-200	<u>67.4</u>	<u>14.4</u>	<u>99.9</u>
TOTAL	<u>466.8</u>	<u>99.9</u>	



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SCREEN ANALYSIS

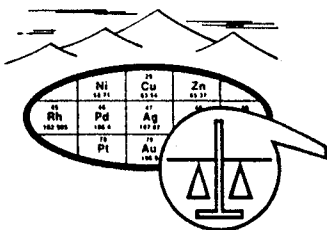
JOB NUMBER: TAJ 668

DATE: 9-7-90

SAMPLE NO.: YM 88 245-250

PRODUCT OF: TM JAW CRUSHER

	GRAMS	(%)	Cumulative(%)
+1/2	_____	_____	_____
-1/2+1/4	_____	_____	_____
-1/4+5	<u>5.5</u>	<u>1.0</u>	<u>1.0</u>
-5+10	<u>69</u>	<u>12.5</u>	<u>13.5</u>
-10+20	<u>114.9</u>	<u>20.8</u>	<u>34.3</u>
-20+40	<u>90.7</u>	<u>16.4</u>	<u>50.7</u>
-40+80	<u>79.4</u>	<u>14.4</u>	<u>65.1</u>
-80+100	<u>24.3</u>	<u>4.4</u>	<u>69.5</u>
-100+200	<u>66.1</u>	<u>12.0</u>	<u>81.5</u>
-200	<u>101.6</u>	<u>18.4</u>	<u>99.9</u>
TOTAL	<u>551.5</u>	<u>99.9</u>	



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SCREEN ANALYSIS

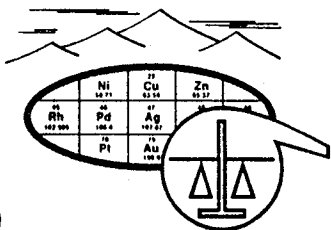
JOB NUMBER: TAJ 668

DATE: 9-7-90

SAMPLE NO.: YM 88 245-250

PRODUCT OF: BRAUN DISC

	GRAMS	(%)	Cumulative(%)
+1/2	_____	_____	_____
-1/2+1/4	_____	_____	_____
-1/4+5	_____	_____	_____
-5+10	_____	_____	_____
-10+20	_____	_____	_____
-20+40	_____	_____	_____
-40+80	_____	_____	_____
-80+100	_____	_____	_____
-100+200	<u>43.5</u>	<u>8.5</u>	<u>8.5</u>
-200	<u>467.</u>	<u>91.5</u>	<u>100.</u>
TOTAL	<u>570.5</u>	<u>100.</u>	



SKYLINE LABS, INC.
 1775 W. Sahuaro Dr. • P.O. Box 50106
 Tucson, Arizona 85703
 (602) 622-4836

SCREEN ANALYSIS

JOB NUMBER: TAT 668

DATE: 9-7-90

SAMPLE NO.: YM 88 245-250

PRODUCT OF: LABTECHNICS

	GRAMS	(%)	Cumulative(%)
+1/2	_____	_____	_____
-1/2+1/4	_____	_____	_____
-1/4+5	_____	_____	_____
-5+10	_____	_____	_____
-10+20	_____	_____	_____
-20+40	_____	_____	_____
-40+80	_____	_____	_____
-80+100	_____	_____	_____
-100+200	<u>1.5</u>	<u>0.4</u>	<u>0.4</u>
-200	<u>343</u>	<u>99.6</u>	<u>100.</u>
TOTAL	<u>344.5</u>	<u>100.</u>	

September 18, 1989

M.A. Miller

Yarnell Clean-up
Yavapai County, AZ

As the drilling is tapering off I hope you are preparing an update of the drilling report on the Project. This should include all the drill logs and assay results.

A report on all the drill hole check assays (Asarco Standards) and the further re-check assays should also be prepared on the project.

JDS:mek


James D. Sell

cc: W.L. Kurtz

September 18, 1989

W.L. Kurtz

Column Leach Tests
Very Preliminary Results
Yarnell Project
Yavapai County, Arizona

D.E. Crowell has passed on the very preliminary results from the column leach tests.

No hard conclusions can be made at this early date, but it appears that the 6" or mine run material will end up at a very low recovery percentage, and thus crushing will be one of the options as per the 3/8" and 2" results.

As we do not have the head assay on the 3/8" and 2" material, the early percent recovery can only be guessed at and with the short 14 day leach cycle (actually less as the first several days were spent in wetting the column before the cyanide leach water was put on the column) the percentage recovery is very speculative and the results should not be considered at this time.

JDS:mek
Att.


James D. Sell

cc: R.L. Brown

Received 9/18/59 from R.E. Cowell

137B-P2

POUNDS	966.67																oz/ton	
ASSAY TONS	15033.	NaCN added	273 g	LIME	0 lb/t												Tail	0.000 0.000
	0.483	NaCN Con.	0.27 lbm/t	CEMENT	10 lb/t												head assay	
																	head screen	

DAILY COLUMN LEACH DATA: HIGH GRADE/LOW GRADE COMP.
-3/8" FEED SIZE

Days leached	Preg. Solution			Solution Analysis				Au Ext.		Ag Ext.		Au		Ag	
	Vol.	NaCN Conc.	pH	preg		barren		Au	Au	Ag	Ag	Au	Au	Ag	Ag
				Au ppm	Ag ppm	Au ppm	Ag ppm	Cum. oz/t	Cum. %	Cum. oz/t	Cum. %	ag	cum. ag	ag	cum. ag
1	0.00	0.0	0.0	0.00	0.00	0.00	0.00	0.0000	0.0	0.0000	0.0	0	0	0	0
2	0.00	0.0	0.0	0.00	0.00	0.00	0.00	0.0000	0.0	0.0000	0.0	0	0	0	0
3	0.00	0.0	0.0	0.00	0.00	0.00	0.00	0.0000	0.0	0.0000	0.0	0	0	0	0
4	21.64	1.3	12.0	4.76	0.24	0.00	0.00	0.0069	0.0	0.0003	0.0	103.00	103.00	5.194	5.194
5	20.40	1.5	11.8	3.60	0.16	0.00	0.00	0.0117	0.0	0.0006	0.0	73.44	176.44	3.264	8.458
6	19.80	1.6	11.8	2.72	0.12	0.00	0.00	0.0153	0.0	0.0007	0.0	53.856	230.30	2.376	10.834
7	15.36	2.0	11.7	2.72	0.12	0.00	0.00	0.0181	0.0	0.0008	0.0	41.779	272.08	1.843	12.677
8	22.90	2.0	11.5	2.20	0.12	0.00	0.00	0.0214	0.0	0.0010	0.0	50.38	322.46	2.748	15.425
9	21.52	1.7	11.8	1.52	0.08	0.00	0.00	0.0236	0.0	0.0011	0.0	32.71	355.17	1.722	17.147
10	20.54	1.5	11.7	1.12	0.08	0.00	0.00	0.0252	0.0	0.0012	0.0	23.005	378.17	1.643	18.79
11	19.68	1.8	11.7	1.00	0.04	0.00	0.00	0.0265	0.0	0.0013	0.0	19.68	397.85	0.787	19.577
12	20.40	2.1	11.7	0.84	0.04	0.00	0.00	0.0276	0.0	0.0014	0.0	17.136	414.99	0.816	20.393
13	20.78	1.7	11.8	0.52	0.04	0.00	0.00	0.0283	0.0	0.0014	0.0	10.806	425.79	0.831	21.224
14	21.00	2.0	11.5	0.72	0.04	0.00	0.00	0.0293	0.0	0.0015	0.0	15.12	440.91	0.84	22.064

Very preliminary results - 14 day test

recovery:
47% if head is 0.063 oz } we do not know what the head assay is at this time.
61% if head is 0.048 oz

POUNDS	2093.1																		oz/ton
ASSAY TONS	32551.	NaCN added	429 g	LIME	10 lb/t					Tail	0.000	0.000							Au Ag
		1.047 NaCN Con.	0.29 lbm/t	BASE	0-lb/t					head assay									
										head screen									

DAILY COLUMN LEACH DATA: HIGH GRADE/LOW GRADE COMP.
2° FEED SIZE

Days leached	Preg. Solution			Solution Analysis				Au Ext.		Ag Ext.		Au		Ag	
	Vol.	NaCN Conc.	pH	Au preg	Ag preg	Au barren	Ag barren	Cum. oz/t	Cum. %	Cum. oz/t	Cum. %	Au ag	Au cum. ag	Ag ag	Ag cum. ag
1	0.00	0.0	0.0	0.00	0.00	0.00	0.00	0.0000	0.0	0.0000	0.0	0	0	0	0
2	0.00	0.0	0.0	0.00	0.00	0.00	0.00	0.0000	0.0	0.0000	0.0	0	0	0	0
3	0.00	0.0	0.0	0.00	0.00	0.00	0.00	0.0000	0.0	0.0000	0.0	0	0	0	0
4	0.00	0.0	0.0	0.00	0.00	0.00	0.00	0.0000	0.0	0.0000	0.0	0	0	0	0
5	0.00	0.0	0.0	0.00	0.00	0.00	0.00	0.0000	0.0	0.0000	0.0	0	0	0	0
6	20.94	1.6	12.1	3.24	0.08	0.16	0.00	0.0021	0.0	0.0001	0.0	67.846	67.846	1.675	1.675
7	28.14	2.1	12.1	2.92	0.08	0.04	0.00	0.0045	0.0	0.0001	0.0	78.818	146.66	2.251	3.926
8	33.12	2.3	11.9	2.64	0.08	0.04	0.00	0.0072	0.0	0.0002	0.0	86.311	232.97	2.65	6.576
9	33.36	1.8	12.2	2.20	0.04	0.04	0.00	0.0094	0.0	0.0002	0.0	72.067	305.04	1.334	7.91
10	30.14	1.8	12.0	1.96	0.08	0.00	0.00	0.0111	0.0	0.0003	0.0	57.74	362.78	2.411	10.321
11	27.88	1.7	12.1	1.68	0.04	0.12	0.04	0.0126	0.0	0.0004	0.0	46.838	409.62	1.115	11.436
12	31.30	2.1	12.0	1.64	0.04	0.00	0.00	0.0141	0.0	0.0004	0.0	47.986	457.60	0.137	11.573
13	33.54	2.0	12.1	1.32	0.04	0.00	0.00	0.0154	0.0	0.0004	0.0	44.273	501.87	1.342	12.915
14	32.04	2.1	12.0	1.16	0.04	0.00	0.00	0.0166	0.0	0.0004	0.0	37.166	539.04	1.282	14.197

recovery
 26% if head is 0.063 oz
 or 35% if head is 0.048 oz
) we do not know what the head assay really is.

POUNDS 4800
 ASSAY TDMS 74648. NaCN added 1760 g LIME 10 lb/t
 2.4 NaCN Con. 0.33 lbs/t BASE 0 lb/t
 Tail 0.000 0.000
 head assay 0.063 0.000
 head screen

DAILY COLUMN LEACH DATA: HIGH GRADE/LOW GRADE COMP.
 6" FEED SIZE

Days leached	Preg. Solution NaCN			Solution Analysis				Au Ext.		Ag Ext.		Au		Ag	
	Vol.	Conc.	pH	preg		barren		Au	Au	Ag	Ag	Au	Au	Ag	Ag
	1. lb/ton			Au ppm	Ag ppm	Au ppm	Ag ppm	Cum. oz/t	Cum. %	Cum. oz/t	Cum. %	ag	ng	ag	ng
1	0.00	0.0	0.0	0.00	0.00	0.00	0.00	0.0000	0.0	0.0000	0.0	0	0	0	0
2	0.00	0.0	0.0	0.00	0.00	0.00	0.00	0.0000	0.0	0.0000	0.0	0	0	0	0
3	0.00	0.0	0.0	0.00	0.00	0.00	0.00	0.0000	0.0	0.0000	0.0	0	0	0	0
4	0.00	0.0	0.0	0.00	0.00	0.00	0.00	0.0000	0.0	0.0000	0.0	0	0	0	0
5	66.82	0.8	11.3	1.64	0.08	0.04	0.04	0.0015	0.0	0.0001	0.0	109.58	109.58	5.346	5.346
6	78.64	1.6	11.7	1.44	0.08	0.00	0.00	0.0029	0.0	0.0001	0.0	110.56	220.15	3.618	8.964
7	73.48	1.7	12.0	1.08	0.04	0.00	0.00	0.0040	0.0	0.0002	0.0	79.358	299.51	2.939	11.903
8	74.62	2.0	12.0	0.84	0.04	0.00	0.00	0.0049	0.0	0.0002	0.0	62.681	362.19	2.985	14.888
9	77.74	2.2	12.0	0.88	0.04	0.04	0.00	0.0058	0.0	0.0002	0.0	68.411	430.60	3.11	17.998
10	76.50	2.0	12.0	0.80	0.04	0.04	0.00	0.0065	0.0	0.0003	0.0	58.09	488.69	3.06	21.058
11	77.44	2.0	12.0	0.72	0.04	0.00	0.00	0.0073	0.0	0.0003	0.0	52.697	541.39	3.098	24.156
12	79.32	2.0	12.1	0.68	0.04	0.00	0.00	0.0080	0.0	0.0004	0.0	53.938	595.32	3.173	27.329
REST	0.00	0.0	0.0	0.00	0.00	0.00	0.00	0.0080	0.0	0.0004	0.0	0	595.32	0	27.329
14	55.48	2.0	12.2	0.56	0.04	0.00	0.00	0.0084	0.0	0.0004	0.0	31.069	626.39	2.219	29.548
15	76.06	2.0	12.1	0.56	0.04	0.00	0.00	0.0090	0.0	0.0004	0.0	42.594	668.99	3.042	32.59
16	73.18	1.9	12.0	0.56	0.04	0.04	0.00	0.0095	0.0	0.0005	0.0	40.981	709.97	2.927	35.517
17	72.42	2.2	12.0	0.56	0.04	0.04	0.04	0.0100	0.0	0.0005	0.0	37.628	747.60	2.897	38.414
18	78.88	2.2	12.0	0.52	0.04	0.04	0.04	0.0105	0.0	0.0005	0.0	38.121	785.72	0.258	38.672
19	67.18	1.8	12.2	0.52	0.04	0.08	0.04	0.0110	0.0	0.0005	0.0	31.778	817.5	-0.468	38.204
20	78.90	1.9	12.1	0.48	0.04	0.00	0.00	0.0114	0.0	0.0005	0.0	32.498	849.99	0.469	38.673
21	76.88	2.0	12.1	0.40	0.04	0.08	0.04	0.0118	0.0	0.0006	0.0	30.752	880.75	3.075	41.748
22	79.14	2.1	12.1	0.44	0.04	0.00	0.00	0.0122	0.0	0.0006	0.0	28.671	909.42	0.09	41.838
23	77.84	2.0	11.7	0.36	0.04	0.00	0.00	0.0126	0.0	0.0006	0.0	28.022	937.44	3.114	44.952
24	72.40	2.1	12.0	0.32	0.04	0.00	0.00	0.0129	0.0	0.0006	0.0	23.168	960.61	2.896	47.848

24 day test.

recovery
 20% at 0.063 head

Not too swift at "mine run"

September 18, 1989

F.T. Graybeal
New York Office

August 1989
Yarnell Progress Report
Yarnell Project
Yavapai County, Arizona

Attached are copies of the Yarnell Project EA-0444 Activity sheets.

Mr. Miller and J. Malusa are keeping up on the daily site preparation, drilling, and assaying of the current holes which will continue through September.

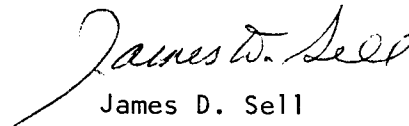
Mr. W. Gay has kept up the drill hole survey locations as well as completed the bulk of the immediate area claims and has started the control for the underground surveys.

Mr. Miller is coming along on the surface mapping and interpretation and vows it will be completed by late September.

The core drilling will also start in late September.

The column leach tests are in progress.

JDS:mek
Att.


James D. Sell

cc: W.L. Kurtz
M.A. Miller
W.D. Gay
S.L. Lakosky

YARNELL PROJECT EA-0444

Yavapai County, Arizona

AREA OF ACTIVITY	PERSONNEL	1989									
		JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	1990		
									JAN.		
Geol. Mapping/Alteration Studies - Claim Area	MAM	███X									
Sampling for discovery - Claim Area	MAM	XXXX	X								
Permits, Drilling, as needed	MAM	███	███	███							
Rotary Drilling, sites, logging	JJM-MAM	███	███	███	XXXX						
Drill Hole Location Survey	WDG	███	███	███	XXXX						
Claim Survey, Clean-up	WDG	███	X								
Re-Tuned ROI, Preliminary	SWMD	XXXX									
Base-Line Water Survey	WDG-MAM	XXXX	XXXX	XXXXX	XXXX	XXXX	XXXXX	XXXX			
Open-cut Sampling, Metallurgical	JJM-MAM	███									
Aerial Survey Control Points	WDG	███			X						
Permits - Establish Guidelines/Time Table	SWMD	███									
Mapping/Sampling - Outside Claims	MAM	X	XXXX								
Claim Staking Anomalous Areas	MAM-WDG	X	XXXX								
Local Demography (Yarnell/Glen Iah)	JDS-Consultant	XX						XX			
Core Drilling, 4holes, sites, logging, Metallurgy			XXXX								
Photography, Aerial	WDG-Contractor		███								
Blasting & Removal of Open-cut Metallurgical Sample	SWMD-Contractor		███								
Topography Map, Mine Area/Photography Total Area	WDG-Contractor		███								
Underground Surveying	WDG-Contractor		███	XX							
Underground Sampling	WDG-JJM		X	X							
Final Drilling/Geology/Ore Reserve Est. Report	MAM-JDS			███							
Permits for Mining/Metallurgical Operations	SWMD			XXXXX	XXXX	XXXX	XXXXX	XXXX	XXXXX		
Column Leach Tests	MBD-McC		███	XXXXX	XXXX						
Ore Reserve	SWMD-SWED			XXXX							
Water Supply Evaluation/Recommendations	MAM-WDG-SWMD				XXXX						
Development/Condemnation Drilling	MAM-SWMD					XXXX	XXXXX	XXXX	XXXXX		
Metallurgical Reports/Recommendations	MBD-McC					XXXX					
Feasibility Report	SWMD					XXXX					
Removal of Microwave Towers	WDG-Contractor					XXXX					
Mine/Metallurgical Plant Planning/Development	SWMD-MBD					XXXX	XXXXX	XXXX	XXXXX		

PERSONNEL:

JDS, James D. Sell
JJM, John J. Malusa, geologist, temporary
MAM, Mark A. Miller, project supervisor, geolgoist
MBD, Mineral Beneficiation Dept.
McC, McClelland Laboratories, Inc.

SWED, Southwestern Exploration Division
SWMD, Southwestern Mining Department
WDG, William D. Gay, land engineer

J.D. Sell /1/89

FROM: W. L. KURTZ

TO: JDSell

9/14/84

Yarnell

JDS

Yarnell will be formally turned over to
MNH OCTOBER 11 at meeting (5:15 PM)
Tues. day.

ExPL will still:

- 1) finish land work
- 2) complete Mosgold agreement
- 3) " Santa Fe purchase
- 4) " good geologic map
- 5) " current drill program (rotary - PD)
- 6) " reserve estimate (hand + computer)
- 7) finish claim work

September 20, 1989

FILE MEMORANDUMYarnell Project
Metallurgical Testwork Status

1. The specific gravity tests are underway and we should have results faxed to Tucson by the end of next week.
2. The low-grade underground samples have been composited and the bottle roll tests started.
3. The current status of the leach columns at Day 24 for 6-inch rock and Day 14 for 2-inch and 3/8-inch has been circulated. It is too early to make any judgments except that the 6-inch size results are not encouraging at only $\pm 20\%$ recovery with the leach rate slowing down.
4. The fines fraction of the low-grade underground sample was assayed separately by taking two separate bulk samples and assaying each in triplicate. Results:

	<u>Sample A</u>	<u>Sample B</u>
	0.013 opt	0.013 opt
	0.008 opt	0.029 opt
	<u>0.015 opt</u>	<u>0.012 opt</u>
Individual Average	0.012 opt	0.018 opt
Overall Average	0.015 opt	(compares with 0.008 opt for coarse fraction)


D. E. Crowell

DEC:brw

cc: T. E. Scartaccini
S. L. Lakosky
J. D. Sell/M. A. Miller
W. L. Kurtz

JDS

ASARCO

Exploration Department
Southwestern United States Division

September 21, 1989

Mr. C. Moat, President
NORGOLD RESOURCES (US) Inc.
2380 Harbour Centre
P.O. Box 12122
555 W. Hastings Street
Vancouver, B.C. V6B-4N6
Canada

Accounting
Yarnell Project
Yavapai County, AZ

Dear Mr. Moat:

As you have requested, I attach a copy of the Yarnell Expenses through the end of August 1989.

All charges, other than the Option Payments and Mineral Property-Rental, are charges on the project by outside contractors and the Asarco personnel. The two General Charges are the cumulative taxes, insurance, etc. on the personnel and charges by miscellaneous sources, such as charges by the county and BLM in recording fees which are chargeable to each project.

Sincerely,


James D. Sell

JDS:mek
Att.

cc: W.L. Kurtz
C.L. Snow

MINE EXAMINATION & DEVELOPMENT EXPENSE
SOUTHWEST EXPLORATION DIVISION

PROJECT - Yarnell Project

MONTH - August 1989

DEPT./ COST CENTER (30-33)	EXP. NO. (34-36)	EXPLANATION (54-71)	MONTH (43-53)	YEAR	TO DATE
502	950	Option Payments	0	55,000	55,000
503	950	Bonus Payments on Mineral Land	0	0	0
504	950	Minimum Royalties Deductible	0	0	0
505	950	Minimum Royalties Non-Deductible	0	0	0
506	950	Mineral Property - Rental	1,000	7,000	7,000
507	950	Staking Claims	0	0	0
512	750	Underground Excavating	0	0	0
521	400	Drilling Supplies	0	0	0
521	750	Surface Drilling	23,499	128,495	128,495
522	750	Underground Drilling	0	0	0
530	400	Geologic Supplies and Expenses	3,566	7,046	7,046
540	750	Sampling, Assay, Lab.	12,234	45,115	45,115
550	750	Geophysics	0	0	0
570	750	Engineering	1,990	2,161	2,161
580	750	Construction - Temporary	0	0	0
581	750	Road Maintenance	0	0	0
590	750	Construction - Permanent	0	0	0
610	400	Field Camp Expense	0	0	0
620	100	Salaries - Geologic Admin.	10,843	47,395	47,395
620	130	Additional Compensation	0	0	0
620	150	Labor Wages - General	2,544	6,553	6,553
620	200	Overhead from General & Others	3,562	15,180	15,180
620	220	Social Security Tax	0	0	0
620	230	Group Life Insurance	0	0	0
620	240	Retirement Annuity	0	0	0
620	270	Savings Plan	0	0	0
620	300	Medical and Surgical	0	84	84
620	310	ASARCO Health Plan	0	0	0
620	320	ASARCO Dental Plan	0	0	0
620	330	ASARCO Vision Plan	0	0	0
620	350	Equipment Rental	285	485	485
620	390	Repairs and Maintenance	0	0	0
620	440	Office Supplies & Expenses	7,785	10,178	10,178
620	500	Telephone & Communications	500	912	912
620	530	Postage and Box Rent	0	20	20
620	550	Express and Freight	806	806	806
620	600	Travel Expense	705	2,550	2,550
620	601	Travel Expense - 80% Limit	1,273	4,398	4,398
620	680	Insurance	0	0	0
620	710	Memberships & Donations	0	0	0
620	720	Newspapers, Periodicals	0	0	0
620	750	Accounting	0	0	0
620	753	Legal Expense	6,418	16,919	16,919
620	754	Outside Professional Services	7,792	20,323	20,323
620	755	Permits	0	0	0
620	780	Fuel, Power, Water	163	1,851	1,851
620	790	Rent of Building and Grounds	0	81	81
620	800	Taxes - Sales, Property, Etc.	691	1,655	1,655
620	950	Environmental Expense	0	0	0
620	951	General Administration - Other	0	295	295
641	400	Automobile, Vehicle Expense	2,771	7,751	7,751
641	662	Depreciation - Automobile	0	0	0
509	660	Depreciation - Equipment	0	0	0
650	950	Partners' Share	0	0	0
Total expenses through 12/31/87					
Total			88,427	382,253	382,253

TOTAL AUTHORIZED

570,000

AUTHORIZATION ASSIGNED BY N.Y.O.:

UNEXPENDED BALANCE

187,747

NUMBER	DATE	AMOUNT
0444-00	01/25/89	20,000
0444-01	03/07/89	70,000
0444-02	05/25/89	250,000
0444-03	08/14/89	230,000

RJO'K RLB RJK ADC TES JDS CLS File

To WLK/JDS

Date 9/19 Time _____

WHILE YOU WERE OUT

M Chris Moot

of _____

Phone 604-681-5566

Area Code Number Extension

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

RETURNED YOUR CALL

Message End of August

Did this get sent??

[Signature]

Operator

MINE EXAMINATION AND DEVELOPMENT EXPENSE

DATE: SEPTEMBER 08, 1989

MONTH: AUGUST, 1989

444.02 ^{only} YARNELL PROJECT

	MONTH	YEAR	TO-DATE
502 OPTION PAYMENTS ON MINERAL PRO			
950 OTHER	0.0	30000.00	30000.00
506 RENTAL PAYMENTS			
790 RENT	1000.00	4000.00	4000.00
521 DRILLING - SURFACE			
754 OUTSIDE PROFESSIONAL SERVICES	0.0	90215.26	90215.26
801 TAXES - STATE & CITY SALES	0.0	429.86	429.86
530 GEOLOGY			
400 MATERIALS AND SUPPLIES	3566.02	6362.39	6362.39
801 TAXES - STATE & CITY SALES	39.56	82.26	82.26
540 SAMPLING, ASSAYING, LAB.			
754 OUTSIDE PROFESSIONAL SERVICES	10648.98	32077.98	32077.98
570 ENGINEERING			
754 OUTSIDE PROFESSIONAL SERVICES	1990.00	2161.00	2161.00
520 ADMIN., GENERAL			
100 SALARIES	10842.78	34227.84	34227.84
150 PAYROLL LABOR	2544.88	6554.26	6554.26
210 OVERHEAD FROM GENERAL	3562.00	11099.00	11099.00
300 MEDICAL & SURGICAL	0.0	83.89	83.89
350 RENTAL EQUIPMENT	285.00	385.00	385.00
400 MATERIALS AND SUPPLIES	634.77	1999.57	1999.57
500 COMMUNICATIONS	500.51	913.10	913.10
530 POSTAGE	0.0	13.90	13.90
550 FREIGHT AND EXPRESS	805.70	805.70	805.70
600 TRAVELING EXPENSE	704.82	1583.85	1583.85
601 TRAVELING EXP-80% LIMIT	1272.68	3520.33	3520.33
753 LEGAL EXPENSE	38.44	10263.91	10263.91
754 OUTSIDE PROFESSIONAL SERVICES	4287.20	4287.20	4287.20
780 FUEL, POWER, AND WATER	162.78	1850.78	1850.78
790 RENT	0.0	80.78	80.78
801 TAXES - STATE & CITY SALES	62.96	202.21	202.21
802 TAXES - STATE USE	132.25	176.52	176.52
950 OTHER	0.0	285.00	285.00
641 DISTRIB. ACCOUNTS - AUTOS			
400 MATERIALS AND SUPPLIES	2770.60	5932.32	5932.32
801 TAXES - STATE & CITY SALES	323.31	406.09	406.09

TOTALS: 46175.24 250000.00 250000.00

AUTHOR. NUMBER	AMOUNT AUTHORIZED	MONTH	YEAR TO-DATE	TOTAL TO-DATE	BALANCE UNEXPENDED
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444.02	250000.00	46175.24	250000.00	250000.00	0.0
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ORIG: RLBROWN

MINE EXAMINATION AND DEVELOPMENT EXPENSE

DATE: SEPTEMBER 08, 1989

MONTH: AUGUST, 1989

444.03 YARNELL PROJECT

		<u>MONTH</u>	<u>YEAR</u>	<u>TO-DATE</u>
521	DRILLING - SURFACE			
	754 OUTSIDE PROFESSIONAL SERVICES	23498.51	23498.51	23498.51
	801 TAXES - STATE & CITY SALES	133.02	133.02	133.02
540	SAMPLING, ASSAYING, LAB.			
	754 OUTSIDE PROFESSIONAL SERVICES	1584.52	1584.52	1584.52
620	ADMIN., GENERAL			
	400 MATERIALS AND SUPPLIES	7150.00	7150.00	7150.00
	753 LEGAL EXPENSE	6380.12	6380.12	6380.12
	754 OUTSIDE PROFESSIONAL SERVICES	3505.66	3505.66	3505.66

TOTALS: 42251.83 42251.83 42251.83

AUTHOR. NUMBER	AMOUNT AUTHORIZED	MONTH	YEAR TO-DATE	TOTAL TO-DATE	BALANCE UNEXPENDED
444.03	230000.00	42251.83	42251.83	42251.83	187748.17

ORIG: RLBROWN
 CC: RJD, RJK, ADC,
 TES, JDS, FILE - 2

APPROVED BY: CSH

ASARCO

JDS

Exploration Department
Southwestern United States Division
James D. Sell
Manager

September 21, 1989


Mr. Christopher Moat, President
NORGOLD RESOURCES (US) INC.
2380 Harbour Centre
P.O. Box 12122
555 W. Hastings Street
Vancouver, B.C. V6B-4N6
Canada

Mylar Base
Topography - Drill Holes
- Patented Claims
Yarnell Project
Yavapai County, Arizona

Dear Mr. Moat:

Under separate tube, I am sending you a mylar copy, at the scale of 1" = 100 feet, which has the topography, drill holes, and the patented claim locations covering the Yarnell Project, Arizona. This map includes drill holes through YM-80.

Sincerely,


James D. Sell

JDS:mek

cc: W.L. Kurtz

ASARCO

JDS

Exploration Department
Southwestern United States Division
James D. Sell
Manager

FEDERAL EXPRESS

September 22, 1989

Mr. Christopher Moat, President
Norgold Resources (US) Inc.
2380 Harbour Centre
P.O. Box 12122
555 West Hastings Street
Vancouver, B.C., V6B 4N6
Canada

Yarnell Project
Yavapai County, AZ

Dear Mr. Moat:

Enclosed is Asarco's check for \$15,000 payment due October 1, 1989 as stated in the signed January 25, 1989 letter agreement.

Sincerely,

ORIGINAL SIGNED BY
JAMES D. SELL

James D. Sell

JDS:mek
Enc.

cc: R.L. Brown
W.L. Kurtz
M.A. Miller
C.L. Snow

Payee No. Month Voucher No.

ASARCO Incorporated 180 Maiden Lane New York, N.Y. 10038

Sept 1989 9-228

October 1, 1989 payment

\$15,000.00

Detach Before Depositing

ASARCO

ASARCO Incorporated
180 Maiden Lane
New York, N.Y. 10038

50-937
213

Check No. **45003943**

To The Chase Manhattan Bank, N.A.
Syracuse, New York

New York September 22, 1989

Pay The sum of \$15,000 and 00 Cts Dollars \$ 15,000.00

ASARCO Incorporated

To the Order Of NORGOLD RESOURCES (US) INC.
P. O. Box 12122
Vancouver, BC V6B4N6

S. H. Myers
Mildred C. Koeppe

⑈45003943⑈ ⑆021309379⑆ 601⑈2⑈98458⑈

ASARCO

Southwestern Exploration Division

JDS

September 22, 1989

F.T. Graybeal
New York Office

Yarnell Open-Cut
Relationship to Santa Fe
Yarnell Project
Yavapai County, Arizona

The survey points on the Santa Fe-Maricopa holdings have now been secured and transferred to the Open-Cut Survey of last July.

I attach a copy of the open-cut with the nearby Santa Fe - Maricopa corners.

See file copy

JDS:mek
Att


James D. Sell

cc: W.L. Kurtz

ASARCO

FILE
JDS

Exploration Department
Frederick T. Graybeal
Chief Geologist

July 31, 1989

Mr. J. D. Sell
Tucson Office

ASARCO Incorporated

AUG 2 1989

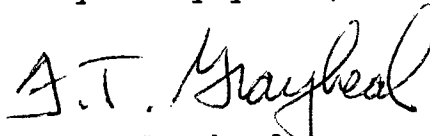
SW Exploration

Yarnell Open-Cut Survey
Yarnell Project, Arizona

Dear Mr. Sell:

Mr. Brown advises (see attached handwritten note) that the purpose of the open-cut survey was to determine where mineralization lay with regard to the patented claims. By patented claims I presume is meant not only those claims obtained from the prospector, but also the patented claim held by Santa Fe. Would you please have these claim boundaries plotted on the open-cut survey map dated July 14, 1989 and forward that completed map to New York.

Very truly yours,


F. T. Graybeal

FTG:mc
Att.

cc: W. L. Kurtz (w/att.)

From: R. L. Brown

To: FTG

The object of this survey was to determine where the open cut lay with in the patented claim. Where are the claim corners?

F. T. G.

JUL 31 1989

ASARCO

JDS

Exploration Department
Southwestern United States Division
James D. Sell
Manager

CERTIFIED MAIL
RETURN RECEIPT

September 22, 1989

Mr. A.J. Roman, President
Western Building & Mining Co., Inc.
P.O. Box 4006
Reading, PA 19606

Western Building
Monthly Payment
Yarnell Project
Yavapai Co., AZ

Dear Mr. Roman:

Enclosed is Asarco's check of \$1,000 U.S. for the monthly payment of October 1, 1989, due Western Building as per Article 4 of the Norgold Resources, Inc. - Western Building and Mining Co., Inc. Agreement dated December 30, 1988.

Sincerely,

ORIGINAL SIGNED BY
JAMES D. SELL

JDS:mek

James D. Sell

cc: W.L. Kurtz
C.L. Snow
C. Moat - Norgold

VOUCHER NO. 9-244 DATE Sept 1989

ASARCO INCORPORATED
TUCSON OFFICE
TUCSON, ARIZONA 85703

Monthly payment of 10/01/89

\$1,000.00

DETACH BEFORE PRESENTING FOR PAYMENT

ASARCO

ASARCO INCORPORATED
TUCSON OFFICE
TUCSON, ARIZONA 85703

91-2/1221

No. 0031867

DOWNTOWN OFFICE
THE VALLEY NATIONAL BANK
TUCSON, ARIZONA

The sum of \$1,000 and 00 cts

September 22, 1989
\$1,000.00

PAY
TO THE ORDER OF

WESTERN BUILDING & MINING CO., INC.
P O Bx 4006
Reading, PA 19606

ASARCO INCORPORATED
TUCSON OFFICE

SH Myers
Mildred C. Koeppen

⑈031867⑈ ⑆122100024⑆

2000⑈0673⑈

ASARCO

Exploration Department
Western USA

W. L. Kurtz
Manager

VIA FAX 604-685-8045

September 22, 1989

Mr. Christopher Moat, President
NORGOLD RESOURCES (US) INC.
Vancouver, B.C.

Yarnell Project
Weekly Information

Dear Mr. Moat:

We are FAXing you assay results on Holes YM-80, 81, 82, 83, and 85, along with a map showing their location, and a list of coordinates for drill holes YM-1 thru YM-80.

Sincerely,



W. L. Kurtz

WLK:mek

cc: J.D. Sell

ASARCO

Exploration Department
Southwestern United States Division

September 25, 1989

Mr. Eric Cenovic
Western Air Maps Inc.
13001 W. 95th St.
Lenexa, Kansas 66215

Yarnell Project
Yavapai Co., AZ

Dear Eric:

This will confirm our phone conversation of September 25, 1989 in which I requested additional topographic mapping on the NW quarter of Section 23, T10N, R5W, and a strip approximately 800' wide on the east side of Section 22 to the quarter corner at 1" = 100' scale. DAVA Engineering has indicated that additional control has been sent for the SW and SE corners of Section 23.

If you require additional information, please let us know.

I understand that the time frame for this additional mapping will be approximately three weeks.

Respectfully,

Mark A. Miller, mek

Mark A. Miller
Project Geologist

MAM:mek

cc: W.L. Kurtz
J.D. Sell
D.E. Crowell
L.J. Jansen
S.L. Lakosky

FTG:

Diamond drill holes

12 stops

~~150-180 = 30'~~

however A 40-150 = 110' @ 0.013

B 150-180 = 30' @ 0.051

stop 180-195 1/5

B 195-240 = 45' @ 0.031

Others & started today

40' thick section hi grade

56 35' - 0.032

FINAL

8
40
63
75

9-25-89

R/B
seed
100%
Needed

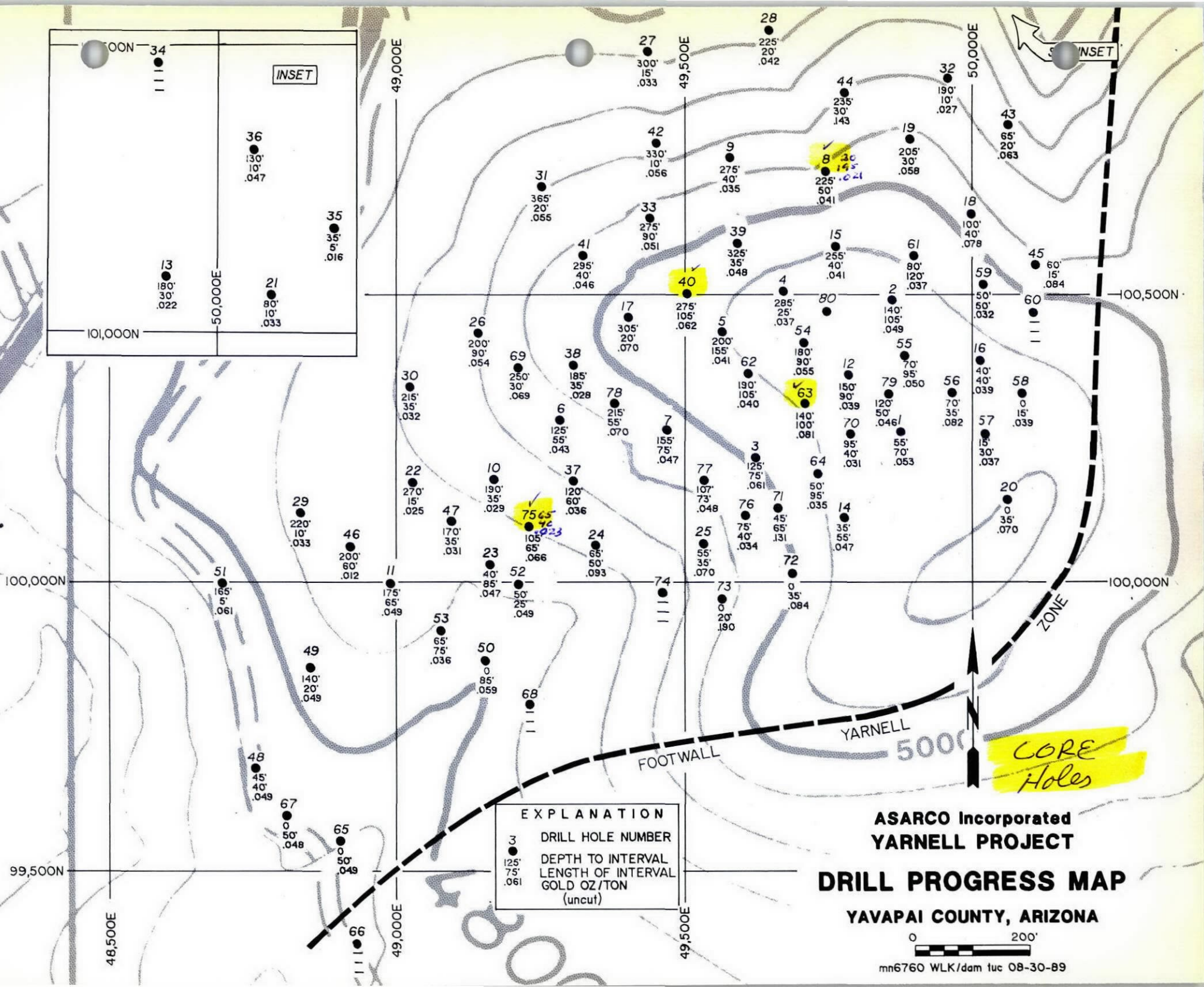
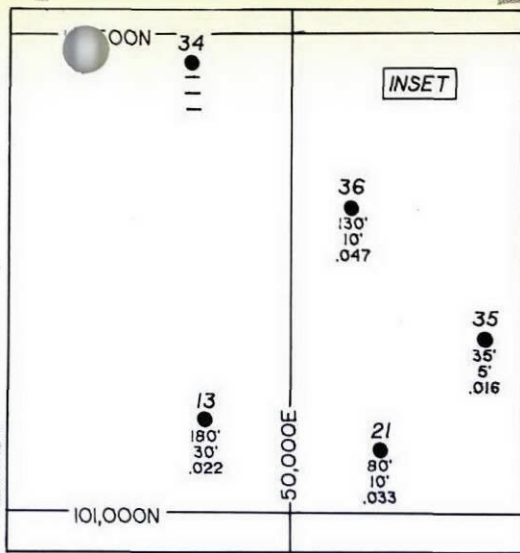
turn core
down

85
~~85~~
20-0.01

85
seed

② U of A Dept Mining & Geol Eng (seed)

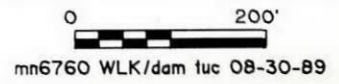
③ Terminato plan walepa, End (detailed - dec 1989)
" Jan Kasperman, mid-Dec, prot relis und Jan.



EXPLANATION

3	DRILL HOLE NUMBER
●	DEPTH TO INTERVAL
○	LENGTH OF INTERVAL
○	GOLD OZ/TON
(uncut)	

ASARCO Incorporated
YARNELL PROJECT
DRILL PROGRESS MAP
YAVAPAI COUNTY, ARIZONA



New York, N.Y., September 8, 1989

To: W. L. Kurtz
J. D. Sell

RECEIVED

SEP 8 1989

Diamond Drilling
Yarnell Project, Arizona

EXPLORATION DEPARTMENT

Being unable to get either of you by phone and having a hectic travel schedule (you will get my itinerary), I write instead. Please arrange as soon as possible to diamond drill 4 holes at Yarnell. These should twin existing RC holes (10 ft. spacing) which have reasonable lengths of ore grade mineralization and fair variations in grade. One hole should cut either the low grade 0.01-0.02 oz Au hangingwall or enough barren hangingwall +100 ft. to give the engineers some idea of rock strength for pit slope design purposes. I recall we talked of twinning 4 of the 5 holes which were being reassayed for reject homogeneity. Please confirm hole locations with me before the holes are collared.

Logging should be fully quantitative and the Mining Department should be invited to log for rock strength before splitting. We discussed core size which I recall was HQ, NQ, or NC; in any case large diameter exploration core, but not 6 inch core. Core should be split or sawed for assay. I prefer to select assay intervals which coincide with geological features which in any case should not exceed 10 ft. One or the other of you two must approve the intervals selected for assay before core is split. Involve as many people as you wish.

No doubt you will revise some of the above and add other thoughts. Important are start now, twin, large diameter, and Mining Department review before splitting. Also important is that we pay close attention to detail on everything regardless of how technically simple this project may look. Treat it as if this were a \$500 million development decision, because too many others are treating it as a toy. If we foul it up it might be very difficult to get a big one going. When things look simple, it's often because we don't understand them.

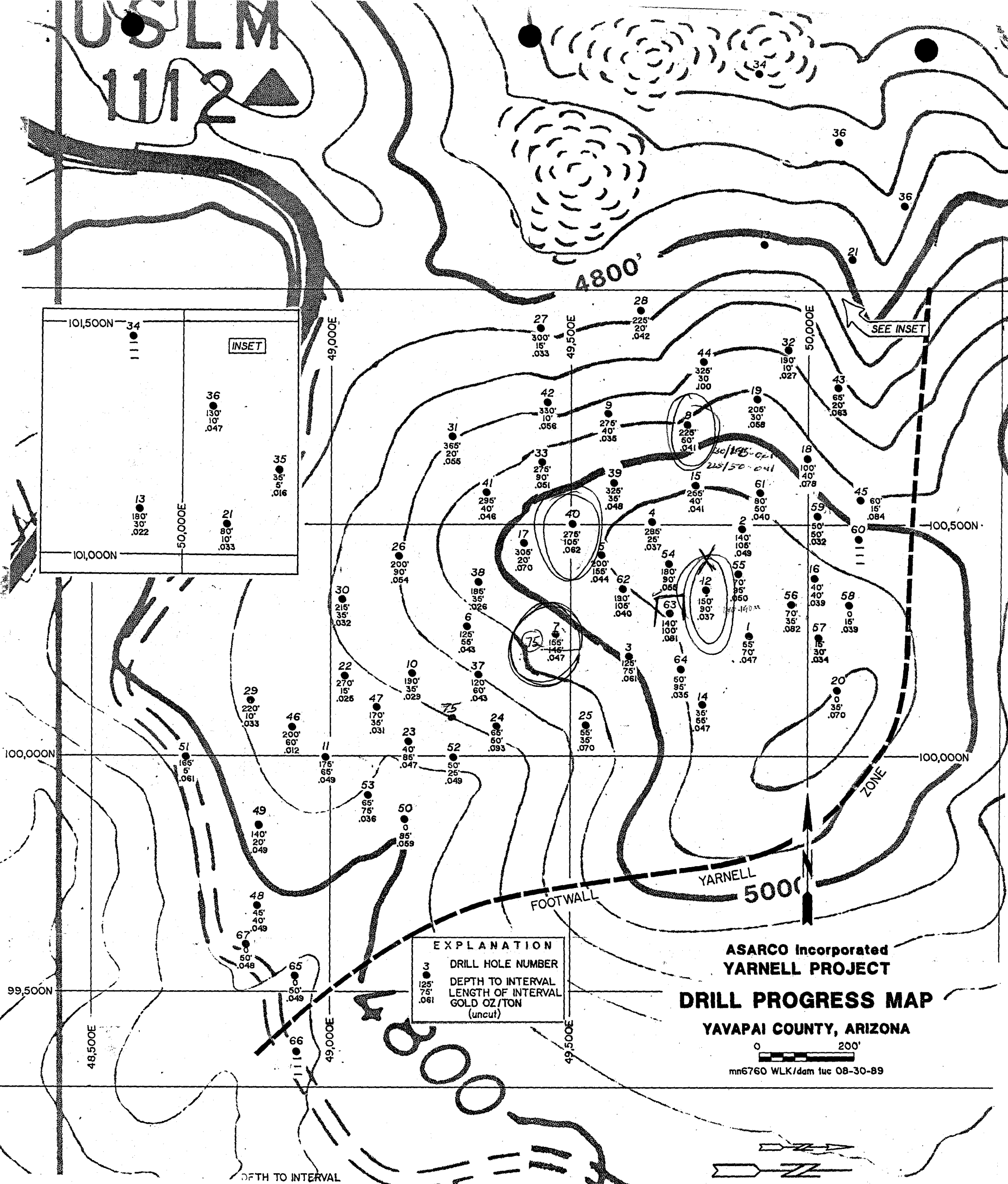
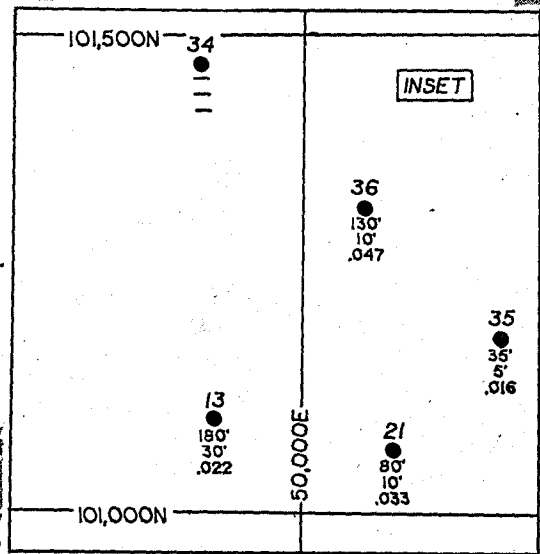
F. T. Graybeal
F. T. Graybeal

FTG:mc

cc: S. A. Anzalone

MA Miller

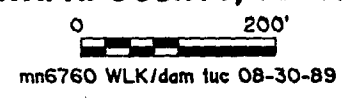
USLM
1112



EXPLANATION

●	DRILL HOLE NUMBER
○	DEPTH TO INTERVAL
○	LENGTH OF INTERVAL
○	GOLD OZ./TON
(uncut)	

ASARCO Incorporated
YARNELL PROJECT
DRILL PROGRESS MAP
YAVAPAI COUNTY, ARIZONA



DEPTH TO INTERVAL

L. Jansen

9-25-89

No reason

By Lakerby

Shape number

tonnage factor cubic ft/ton

12.5

Opening costs

Leach recoveries

⌘

Capital cost

By Lakerby
to etc

Value of ton of rock

Recovery

Costs

mining

Miller

pad etc

mining

(Waste mining
the mining

cut off grade - break even cost

September 25, 1989

R.L. Brown
New York Office

Microwave Tower Letters
Yarnell Project
Yavapai County, Arizona

You have received a FAX of the two letters from the Santa Fe Railroad Company and the Maricopa County Highway groups.

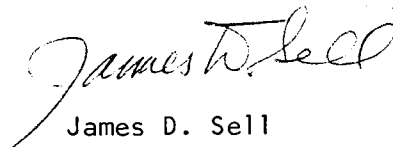
As noted, Santa Fe now thinks its "...past policy has not been to sell mineral rights..." (!!). Plus, note the now suggested minimum cost of \$300,000 to move their tower.

The Maricopa Highway doesn't state a price, but obviously it might well be in the same ball park.

As was stated in earlier thoughts, it may be that at Yarnell, Asarco could live with moving the Santa Fe material and giving it to them and let them do what they want, as only a small portion of the mineralization is under the Santa Fe ground.

What to do about re-negotiating the cost of reestablishing the buildings/equipment/towers is open for much discussion.

JDS:mek
Att.


James D. Sell

cc: F.T. Graybeal
W.L. Kurtz
M.A. Miller
S.L. Lakosky



The Atchison, Topeka and Santa Fe Railway Company

5770 South Eastern Avenue
Los Angeles, California 90040

213/889-7777

September 18, 1989

File: 11014405-3

Mr. Christopher Moatt, President
Norgold Resources, Inc.
2380 Harbour Centre
P. O. Box 12122
555 W. Hastings Street
Vancouver, B.C. V6B-4N6

Dear Mr. Moatt:

Reference your August 23 letter regarding possible relocation of our micro tower at Yarnell, Arizona, and telephone calls on the same subject.

Our communications people say it will cost a minimum of \$300,000 as of September 1 to relocate the tower. This estimate is subject to the CPI cost inflator. In addition, they would need a minimum of nine months to order material and schedule the work.

I will need to run your proposal by our contract and mining people because our past policy has not been to sell mineral rights. We should be able to respond to this aspect within two weeks.

Sincerely,


Q. W. Torpin
Asst. Vice President &
General Manager

MARICOPA COUNTY HIGHWAY DEPARTMENT



3325 West Durango Street
Phoenix, Arizona 85009

(602) 233-8600

September 15, 1989

Norgold Resources (U.S.) Inc.
2380 Harbour Centre
P. O. Box 12122
555 West Hastings Street
Vancouver, B.C. V6B-4N6

Attention Mr. Chris Moat, President

Gentlemen:

RE YARNELL MOUNTAIN MICROWAVE STATION

We are replying to your letter/agreement dated August 23, 1989. After discussion with Mr. Joseph L. DeRoulhac, Manager, Radio Microwave Department, we submitted your proposed agreement to Mr. E. Eugene Neil, Deputy County Attorney. He studied the agreement and informed us that the only practical way to accomplish what you seek is an exchange of sites.

Mr. Neil suggested that your company purchase the replacement site which Mr. DeRoulhac has inspected with your representative and approved. We could then enter into an agreement similar to the one which you proposed with the addition of exchange language providing for conveyance of the sites from one party to the other and the reverse.

Mr. DeRoulhac did note that he would ask that language as follows be added: "fees to coordinate radio and microwave frequencies for relicensing by the F.C.C. be paid by Norgold and "approval of the contractor to do the replacement construction by Maricopa County."

We trust that this letter will clarify the position of Maricopa County in this matter and that we can proceed to a satisfactory conclusion for all concerned.

Sincerely,

A. W. COLLINS, P.E.
ACTING ASSISTANT COUNTY MANAGER,
PUBLIC WORKS DIRECTOR & COUNTY ENGINEER

A handwritten signature in cursive script, appearing to read "Matt Hartman".

Matt Hartman, Director of Real Estate Services
Real Estate Division

MH:nc

A.W. COLLINS, P.E.
ACTING COUNTY ENGINEER

D.C. BLACK, P.E.
ACTING DEPUTY COUNTY ENGINEER

→ Sell
w handle
CWR

Canadian Gravity Recovery Inc.



#920 - 625 Howe Street
Vancouver, B.C., Canada, V6C-2T6
Fax: (604)685-8045 Phone: (604)685-8730

ASARCO Incorporated

SEP 25 1989

SW Exploration

FACSIMILE TRANSMISSION

To: ASARCO
ATTN: JIM SELL
FROM: MICHAEL PHILPOT
DATE: Sept 25/89

IF YOU DO NOT RECEIVE ALL 3 PAGES (INCLUDING COVER PAGE)
PLEASE FAX: (604) 685-8045
OR PHONE: (604) 685-8730.
THANK-YOU.

MESSAGE: Please send floppy disk(s)
for data on drill holes 45-80
as soon as possible.
TXS

Canadian Gravity Recovery Inc.



#920 - 625 Howe Street
Vancouver, B.C., Canada, V6C-2T6
Fax: (604) 685-8045 Phone: (604) 685-8730

FACSIMILE TRANSMISSION

To: ASARCO
ATTN: Jim SELL
FROM: MICHAEL PHILPOT
DATE: Sept 25/89

IF YOU DO NOT RECEIVE ALL 3 PAGES (INCLUDING COVER PAGE)
PLEASE FAX: (604) 685-8045
OR PHONE: (604) 685-8730.
THANK-YOU.

MESSAGE: Please send floppy disk(s)
for data on drill holes 75-80
as soon as possible.
TXS

ASARCO

Exploration Department
Southwestern United States Division

September 25, 1989

Arizona Department of Water Resources
Operations Division
15 South 15th Avenue
Phoenix, Arizona 85007

Registration No. 55-524750

Gentlemen:

Please amend Registration No. 55-524750 from 75 holes to 125 holes.
These holes are being drilled for mineral exploration in Section 14,
T10N, R5W.

Thank you.

Very truly yours,

Mark A. Miller / mek

Mark A. Miller
Project Geologist

MAM:mek

cc: J.D. Sell
S.L. Lakosky
W.D. Gay

J D Sell
Date 9/5 Time 12:14 AM PM

WHILE YOU WERE OUT

M. F. Graybeal
of _____

Phone (____) _____
Area Code Number Extension

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

RETURNED YOUR CALL

Message Before Dick Brown
comes in October be
sure to bring the Yarnell
core to Fredson.

NOV May
Operator



REORDER #23-000