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the SMOKY VALLEY MEMO

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WELCOME NEVADA MINING ASSOCIATION!

This special edition of the "MEMO" contains a few pertinent facts about Smoky Valley Mining Division. We hope you enjoy your tour. Feel free to ask questions of your guides.

GOLD WAS DISCOVERED AT ROUND MOUNTAIN IN 1905. High-grade veins were mined underground until 1935. Placer gold was mined in the 1940's and 1950's.

Copper Range Company became involved with the property in the late 1960's. Investigation of additional placer reserves proved to be uneconomic but the potential for lode reserves was recognized. Based almost entirely on sampling of underground workings, a 12 million ton orebody, estimated to average 0.06 ounces gold per ton, was blocked out. Tests of heap leaching followed by carbon adsorption and electrowinning were favorable. A plant to treat 5,600 tons per day was constructed and mining started in 1976. First gold production was in April, 1977.

The basic flowsheet at SVMD is the same as originally planned with a few enhancements. Principal changes have been:

1. Increasing leach pad capacity from 250,000 to 575,000 tons.
2. Scalping screen to remove coarse material for leach pad base.
3. Upgraded solution handling system.
4. Leach solution heating system for winter operations.
5. Pressure stripping system for carbon.

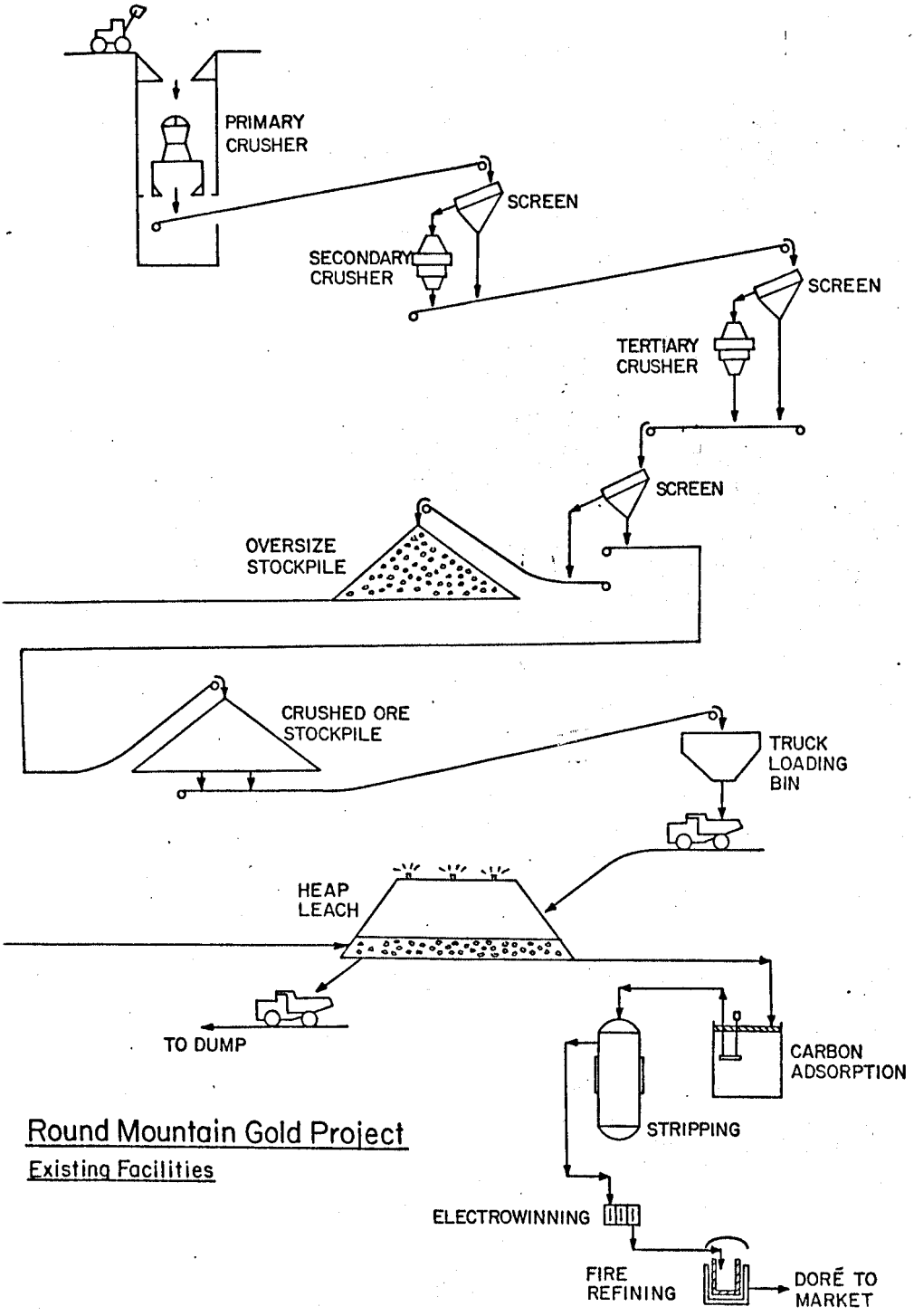
Following are some selected statistics:

	1978	1979	1980	1981	1982	Jan-Aug 1983	Plan 1984
Tons Leached/Day	3,988	4,839	6,094	6,430	7,693	9,775	12,000
Cost/Ton Leached	$5.73	$6.90	$7.90	$9.10	$8.36	$8.48	$7.54
Annual Gold Prod.	49,575	45,991	57,589	58,938	72,562	*93,000	100,000
No. of Employees	140	167	254	270	235	268	291

*Estimated Annual

Round Mountain's remote location has made involvement in community affairs mandatory. SVMD has assisted the County and Town of Round Mountain in upgrading the school and recreation facilities. The town has been expanded and the water system upgraded to support it. Other community support includes operation of a general store, a child care center, subsidizing twice weekly doctor visits, and total funding of a counseling service. Employee annual turnover rate has reduced from almost 100 percent in 1978 to 21 percent in 1982. Still a high number but improving.

In actual mining experience, we did not find the 12 million tons of 0.06 ounce gold material. What we did find was more than 200 million tons of 0.04 ounce gold. Low grade, but with simple metallurgy - free gold, no mercury, no arsenic - the deposit has great potential.



Round Mountain Gold Project

Existing Facilities

List of Major Mining Equipment

Loading Equipment
1 P&H 1600 Electric Power Shovel - 7 YD
2 992B Caterpillar Rubber Tired Loaders - 10 YD
6 992C Caterpillar Rubber Tired Loaders - 12 YD, 2 with Extended Arms

Haulage Trucks
10 50-ton Euclids
6 85-ton Wabcos

Dozers
3 D-8 Caterpillar Track Dozers
1 824 Caterpillar Rubber Tired Dozer

Graders
2 16G Caterpillar Graders

Drills
2 Reed SK-40 Track-type Diesel Hydraulic Drills
1 Bucyrus Erie 45R Track-type Diesel Electric Drill
1 Joy RT60 Truck Mounted Diesel Hydraulic Drill
1 Gardner Denver Hydra Track Drill

Explosives Handling
2 ANFO Explosives Trucks with Automatic Mixing and Dispensing of ANFO and Slurry Emulsion

Water Truck
1 6310 Caterpillar Magnum 10,000-gallon Water Truck

Crushing Plant
1 42x64 Allis Chalmers Hydroset Gyratory Primary Crusher
1 7-foot Symons Standard Cone Secondary Crusher
2 7-foot Symons Shorthead Cone Tertiary Crushers

Leach and Process Plant

Leaching System
Leach Pad - 7-foot asphalt base with Rubberized Asphalt Membrane
280 feet wide by 2,550 feet long

Solution Distribution
Polyethylene Piping with Senninger Wobbler Spray Heads for Application Rate of .004 GPM per sq. ft.

Plant Facilities
5 Carbon Reactor Tanks - 12 ft. diameter - 4-ton capacity
1 Envirotech Carbon Regeneration Kiln - Oil Fired, 17 in. diameter by 20 ft. long
Carbon Acid Treatment System - 1-ton capacity
Carbon Pressure Stripping System - 1-ton capacity
3 Electrowinning Cells - 2x3x4 ft. - 6 Steel Wool Cathodes
2 Refining Furnaces - Oil Fired
1 Casting Furnace - Oil Fired
Slag Treatment System

Operating Parameters
Leaching Reagents
NaCN - 1.4 lbs/ton of Solution - 0.4 lbs/per ton Ore
NaOH - Maintain 10.5 pH Solution Strength - 0.6 lbs/ton Ore
Solution Handling - 2000 gpm
Carbon Loading - 110 oz/ton of Carbon Loaded and 7 oz/ton of Stripped Carbon
Avg. Production Rate - 3000 ounces Dore' (2 Gold to 1 Silver)

Geology

The geology of Round Mountain is illustrated by the two accompanying cross sections A and B. Basicly there are six different mineralized units which are or will be mined. The one not shown is the placer upon which the existing plant is built and was last worked in the mid-1950's by Morison-Knudson. The extent of these reserves are unknown at this time and are not treatable in the existing plant.

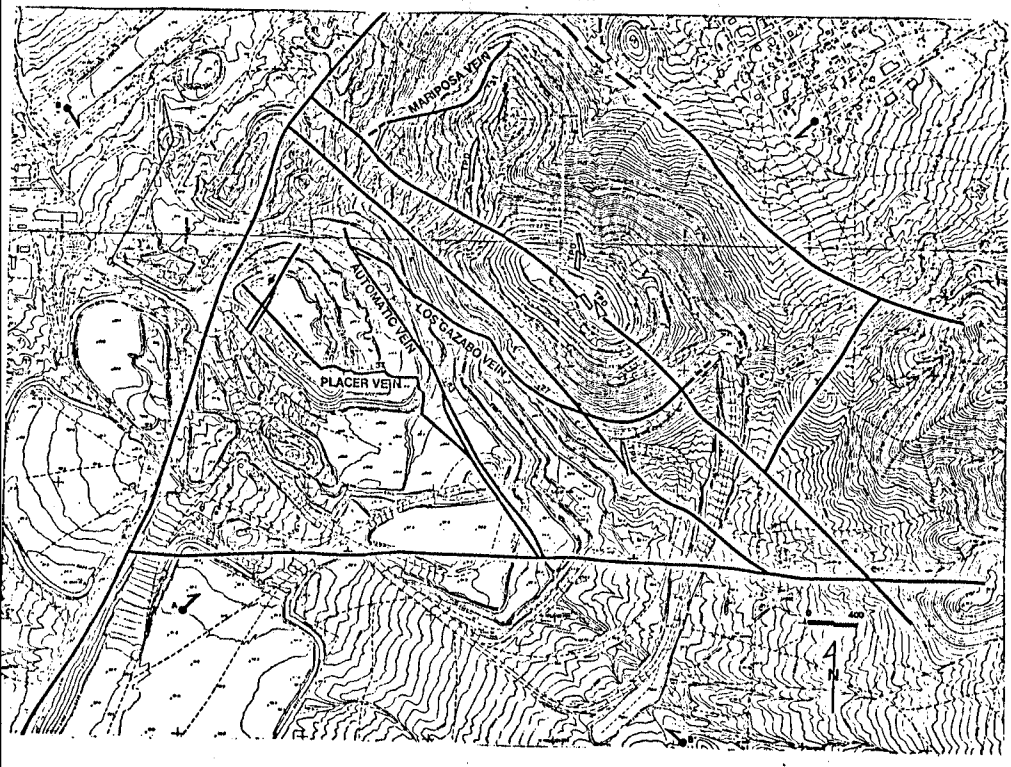
The uppermost bedrock until mined is the Tdkm, a densely welded tertiary rhyolitic ignimbrite, surficially similar in texture and composition to rhyolite, in which the gold is found on fracture faces and usually associated with minor amounts of clays. There are no significant accessory minerals which cause problems in leaching or recovery. The second bedrock unit is the Trm, a poorly welded tertiary rhyolitic ignimbrite and appears as a white porous rock with voids commonly of ½ inch, this is the unit in which the majority of the gold reserves occur. The nature of the Trm allowed gold to readily drop from solution mainly as native gold and to a lesser extent as gold bearing pyrites.

The third unit is the Tt, another densely welded unit which contains gold mainly on fracture faces and is only locally important. The basement rock is either Kg, a Cretacious granite or Ozs, an Ordivician shale, limestone, or quartzite which have quite limited impact on gold reserves.

The primary limits to ore grade mineralization at SVMD are a rather intense set of near vertical NW aligned joints along which current mining is taking place. As illustrated by the cross sections, the gold mineralization spread out laterally in the poorly welded material. Earlier mining in the 1910-1935's was along the named veins in addition to selected vertical NW joints.

SMOKY VALLEY COMMON OPERATION

GENERALIZED STRUCTURE MAP



SMOKY VALLEY MINE
X–SECTION A–A'

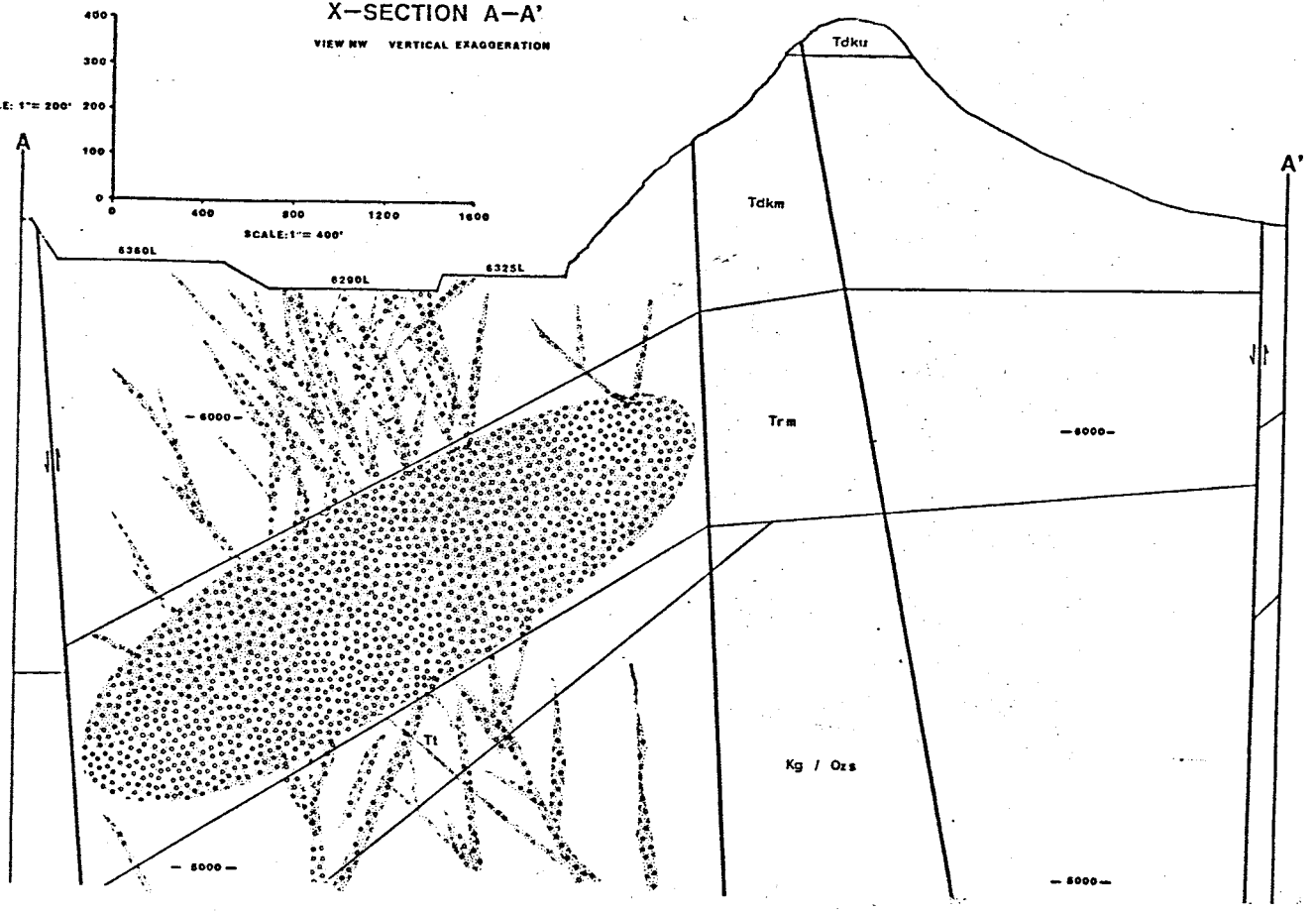
VIEW NW VERTICAL EXAGGERATION

SCALE: 1"= 200'

400
300
200
100
0

0 400 800 1200 1600

SCALE: 1"= 400'



SMOKY VALLEY MINE
X–SECTION B–B'

VIEW NE VERTICAL EXAGGERATION