

0420 0027 AWAKENING

THE ALABAMA MINE

AWAKENING MINING DISTRICT

Humboldt County, Nevada

March, 1973

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APPENDICES:

I.

PROPERTY

1. LOCATION & ACCESSIBILITY:

The Alabama Mine is located in Section 5, T 39 N, R 36 E, the Awakening Mining District, Humboldt County, Nevada. It is in the Slumbering hills on the west flank of Silver State Valley. The mine and its attendant area can best be reached by driving 30 miles north on U. S. Highway 95 from Winnemucca, Nevada to Cane Springs, thence 14 miles west and south on improved county road to DaveyTown. The mine itself is approximately one and one-half miles west of DaveyTown on a graded dirt road.

2. GEOGRAPHY & CLIMATE:

The area is a typical Nevada Basin and Range with rolling hills and occasional peaks. The valley floor is 4,000' MSL with the mine at 4,800', the higher peaks reach an elevation of 6,400' MSL. Vegetation is sparse with sage and prairie grass predominating as cover. The main industry of the area other than mining is cattle with potato farming being developed five miles to the south in Silver State Valley.

The relatively arid conditions of Nevada's Basin and Range Plateau persist with no perennial streams but ample sub-surface water in the valley. The altitude and the latitude insure great swings in night and day temperatures as well as extremes in seasonal highs and lows. Precipitation and snow accumulation may be favorably compared to both Salt Lake City, Utah, and Denver, Colorado. The following generalized statistics provided by the U. S. Weather Bureau from their Winnemucca, Nevada station represent an estimate of the conditions to be expected.

Summer				Winter			
Month	Maximum Temp.		Precip/Mo.	Month	Min. Temp.		Average Precip.(Snow)/Mo.
	Avg.	Max.			Avg.	Min.	
June	80.3	101	0.76"	Dec.	16.2	-16	0.94"
July	92.4	106	0.27"	Jan.	14.7	-36	1.05"
August	89.7	104	0.15"	Feb.	19.7	- 9	0.94"

3. HISTORY & OWNERSHIP:

Actual records of the mine and its production are not available, probable production is reported by previous owners in the neighborhood of two to three million dollars. The original discovery of the Alabama Mine took place in 1908 by a Mr. Scott, it was operated by a Mr. Barber from 1911 to 1933 when it was sold to a Mr. B. L. Davis. Mr. Davis operated the mine successfully through 1941 to the closing order of WW II. The mine

has had intermittent operations since but nothing of significance in regards to production although the main shaft and levels have been maintained along with the machinery that is still in place. Mr. Harold Kramer of Denver, Colorado, obtained full ownership in 1972 by locating 22 lode claims over the mine and the adjacent area. The claims are unpatented mining lode claims duly recorded at the Humboldt County Courthouse with all requirements completed and up to date.

4. LIMITING CONDITIONS:

A) AIR POLLUTION:

No problems are anticipated with the mining methods planned and the chemical operations envisioned.

B) WATER POLLUTION:

A large percentage of any process water is planned to be recirculated, therefore, losses by evaporation and/or lost to ground water from tailings ponds, heaps, etc., are expected to be insignificant and thus no threat to the ground water table.

C) HEALTH HAZARDS:

A well designed and monitored safety program is expected to effectively avoid any of the normal industrial hazards of this mining and concentrating operation.

D) EFFECT ON NEIGHBORING AREAS:

No established communities exist in the vicinity (+20 mile radius); and since the operation itself will not be visible from the highways that traverse the area, it is expected that state and county groups will offer encouragement and assistance in support of any plan to move to the operational stage.

II.

GEOLOGY

1. GENERAL FEATURES:

The rocks forming the Slumbering Hills are, in order of age: (1) a thick sedimentary formation, which has been moderately metamorphosed; (2) quartz monzonite intrusive into this formation; (3) lacustrine beds, of small areal extent; (4) lava flows. The old sedimentary beds are carved into mature erosion forms of moderate steepness; the granitic intrusive, on the whole, less resistant to erosion and topographically is the lowest. The lacustrine beds are soft, deeply eroded and poorly exposed. The most rugged erosion forms, including prominent buttes on the summits and slopes on the hills, are carved from the lavas.

2. LITHOLOGY:

The formation of most interest consists of Mesozoic sedimentary strata, which were originally dark muds, and lighter colored sands. These sediments are now so much altered that their character approaches that of slate or (schist) or quartzite, for they contain visible secondary mica and show cleavage that is commonly inclined to the bedding. The average strike of the bedding in the immediate area of the mine is north-south with a prominent westerly dip. The folding within the general dip is nearer north-south than other and they pitch and overturn with axial planes dipping westward, such as might be associated with eastward overthrusting, this was seen in the walls of the Alabama Mine.

The Mesozoic rocks are intruded and in contact with a quartz monzonite. The sedimentary beds are strongly effected by contact metamorphism at the contact giving them a knotty texture characteristic of metamorphism. The intrusive has a coarse even texture with quartz the abundant mineral followed by feldspar and biotite.

3. ORE DEPOSIT:

The ore occurs associated with quartz veins striking north-south and dipping west. The main vein that the incline shaft was sunk on strikes N 15 degrees W and dips about 40 degrees west. The shaly country rock beneath the vein is thrown into small folds that are inclined eastward; the rock above the vein is similarly but less intensely crumpled. This crumpling suggests that the vein lies in a thrust fault. The main vein of quartz is about three feet thick at the collar of the principle incline and six feet about fifty feet further south. The surface shows multiple parallel veins and at one point approximately 3,000 feet to the south from the incline a vein has been crosscut via a bulldozer cut measuring over one hundred feet in width. The gold appears to lie in veinlets of quartz ramifying through the country rock, rather than in the

main body of the quartz. Some of the fragments taken at random underground are rich in gold, which forms thin scales on the cleavage planes of slate adhering to quartz.

4. ORE RESERVES:

Due to the lack of a comprehensive development program either underground or by surface drilling the subject of ore reserves is chiefly in the possible and probable columns. There does exist, though, a record of a very good sampling program carried out by a Mr. Stanley W. Johnson, Registered Mining Engineer #2115, State of New Mexico, in November of 1960 with the following results:

Blocked Ore:	Ore which is visible and sampled on four sides. 2,212 Tons at 0.59 oz/ton
Indicated Ore:	Ore which is visible and sampled on one side. 1,015 Tons at 0.67 oz/ton
Probable Ore:	Ore which is visible and sampled at points and geologic data substantiates the existence. 6,086 Tons at 0.57 oz/ton

The above is believed to be conservative with only the rock actually sampled being counted, much of the underground workings were inaccessible at the time.

More recent sampling on the surface in cuts and exposures:

<u>Date</u>	<u>Location</u>	<u>Au, oz/ton</u>
9-26-72	120' channel cut South end of claims	0.24
10-12-72	Seven samples on hillside, indiscriminate	trace
	Outcrop, 1,000 feet South of incline	1.88
	Vein exposure, 800' South of incline	2.99
2-27-73	Trench, 1200 feet South of shaft	0.04
	100' channel cut in cut South end of property	0.16
	Vein exposure in draw 800' South of shaft	0.92
	Outcrop, quartz, 1,000' South of shaft	1.12

Little sampling has been done underground because of the obvious need of development work in the form of cross cuts and drifting, two samples taken on January 17th, 1972, tend to exemplify the "high grade" nature of the ore, reporting 2.76 and 2.48 ounces of gold per ton.

Possible Ore Reserves have not been computed but should prove to be considerable as indicated by the geology and the nature of the mineralization. The grade appears to be holding to depth with the incline shaft now at over 400 feet. Continuity is excellent with continuous stopes from the 300 level to the surface. Surface samples and geology show promise for an open pit mining program upon completion of a successful development program.

III.

MINE PLANT

1. HISTORY & PRESENT:

Since the original discovery of the mine in 1908 nearly 100% of all mining effort, exploration, and mine development has been on the one vein in the one area of the present ore shoot. Past mining has been of high grade nature exclusively, the majority of the ore mined being direct shipping ore or else to small gravity plants necessitating a grade of ore in the better than an ounce per ton range, in fact, it is reported there were shipments of select ore running as high as 86 ounces per ton. This, quite naturally, led to selective mining with both drifting and stoping being accomplished via air slushers.

The present incline shaft is fully operational to the 400 foot level complete with rail, air and water lines, ladderways, hoist, and the timber is in good condition. Levels have been established on the 50, 100, 150, 200, 300, and the 400. There is approximately 2,000 feet of drifting divided amongst the six levels, some of which is now caved but most still accessible. Only the lower two levels are equipped with pipe and rail. The known ore shoot is approximately 300 feet long and all of the above work is contained in this area.

2. PLANNED:

Two approaches should be made in conjunction with each other but are totally separate; underground off the present workings, open pit testing and surface work:

A) UNDERGROUND:

Additional development work is needed on the known ore reserves as well as opening up new working areas. The present hoisting facilities will prove to be adequate for this preliminary development work and all entry will be from the present incline shaft. The following plan is utilizing 3 miners, 3 helpers, hoistman (topman) and the superintendent:

- a) Crosscut to the east on the 300' North level.
- b) Extend the 400' South level to the South.
- c) Crosscut to the west on the 400' South level.

A complete transit survey of the shaft and levels is a must with a brunton and tape survey done on the stopes, winzes, etc. A complete sampling program will be initiated coinciding with the above work and development.

The above initial development work may well be accomplished utilizing the past methods of jackleg drills and slushers, hand tramming to the thirty ton skip loading pockets now established on the 300 and 400 levels. As ore is developed of any larger tonnage consideration should be given to converting the mining method over to draw point loading with trackless equipment.

B) SURFACE:

The surface, as mentioned prior, is virtually untouched with occasional prospect pits, trenches and sampling areas only. Utilizing a dozer of suitable weight and power to rip and doze the sediments exposed on the property, this should well expose the parallel vein system and special attention should be given the southern portion of the claim area reflecting the .16 to .24 oz/ton assays over large widths. Air track drilling down to fifty and sixty feet is called for as well as drilling to a depth of near 500 feet.

There is an abandoned well on the property with a history of flow that should be developed for drill water as well as future beneficiation plans. Once again, it is a necessity for a complete transit or plane table survey of the property detailing the geology as well as forming the basis for the extensive sampling and development program called for.

IV.

TREATMENT PLANT

All ores from both surface operations as well as from underground will be separated into two categories depending upon grade; mill ore and heap leach ore. Presently there is good background information from the past operations to calculate the contemplated recovery from the conventional mill.

Mr. Harold Kramer owns a complete 50 ton per day gravity and flotation plant at Cane Springs, Nevada. This location is approximately 12 road miles distant and very accessible and should be utilized. It is complete with power, water, assay facilities, shop, bins, buildings, etc. It presently is set up for a gravity or flotation beneficiation process and can readily be rearranged to fit the needs of the Alabama ore. The flow sheet consists of truck unloading, grizzly, coarse ore bin, crushing, fine ore bin, grinding, jigs, classification, flotation, and tables. There is considerable renovation to be done but it could be accomplished in approximately 6 weeks time.

The present recovery on the plant shows to be approximately 80% and with a cyanide test on the tails it could well bring this recovery up into the nineties as all the gold observed at the Alabama Mine has been of the Free Milling nature.

V.

HEAP LEACHING OF GOLD

The U. S. Bureau of Mines has successfully introduced the heap leaching of gold to the western United States. Presently this method is being practiced with extremely successful results at three properties: Newmont at Carlin, Nevada, Earth Sciences at Cripple Creek, Colorado, and Amex at Cortez, Nevada. The method is one of simplicity and basically one of wedding two known, heap leaching technique as developed on oxide copper and uranium ores and the cyanidization of gold and silver.

The simplified process consists of percolating a weak basic cyanide solution through the heap of ore, taking the pregnant run-off solution bearing the gold and silver through an ion exchange column of charcoal, and then reintroducing the stripped barren solution back to pile for a continuous circulation. Numerous tests and actual working practices have proven the great majority of the values are, in this way, transferred from the ore to the charcoal. The charcoal is then stripped via a hot caustic solution and the gold and silver is recovered in bullion form via electrolysis in a most simple straight forward manner.

It is the absolute simplicity and the extremely low capital cost of the process that makes the U. S. Bureau of Mines process so attractive. Prior to this process proving itself worthwhile the doubling of the prices of gold and silver had little significance, mining costs have more than doubled the past few years and capital costs have nearly tripled. The leaching process drastically cuts down on the need for extensive development work enabling production to commence in weeks in place of the usual months or years. The return via bullion sales is realized quickly with the first off solutions being the richest and steady downward effluent being experienced until total extraction takes place. In short it puts the smaller mining company back in business.

Although a heap leaching program is not projected in this report, the property does have a large potential for developing this type of ore, therefore justifying a testing program with the U. S. Bureau of Mines to determine the feasibility of this type of operation at a future date.

SCOTT L. SMITH
Geological Engineer

3-31-73

SCOTT L. SMITH - University of Washington Graduate Geological Engineer with twenty years experience in mining and related business with the majority in a management status. Has operated, managed and directed mining activities in Central America, Mexico, United States and Canada. Experienced in underground and open pit mining methods and all phases of the industry including milling, refining and marketing.

ESTIMATED EXPENDITURES

1. MINING:a) UNDERGROUND:

Mobilization: Compressor (advance rental & frt.), air and water lines, receiver tank, hose, steel, jack legs, etc.	\$ 3,000.00
Supply Items; Pipe, rail, small tools, timber, warehouse items, spare parts, dynamite, etc.	4,000.00
Water; Well cleanout, pump, pipe, etc.	3,000.00
Survey and Sampling Program.	2,000.00
In place equipment rental (four month advance)	6,000.00
Monthly Operations:	
Labor, including fringe \$5,000/month	
Equipment Rental. 2,000	
Supplies. 1,500	
Two Months Operations.	17,000.00
Total Underground Development Program.	<u>\$35,000.00</u>

b) SURFACE:

Mobilization; D8 Tractor-Dozer with Ripper (\$3,000/mo.), Rubber Tired 3½ yd. Front End Loader (\$1,500/mo.), Pickup Truck (\$125/mo.), total \$4,625/mo, Four months.	\$18,500.00
Survey and Sampling.	2,000.00
Pitting and Trenching.	3,000.00
Roadwork and Drill Sites	2,000.00
Drilling	10,000.00
Total Surface Development Program.	<u>\$35,500.00</u>

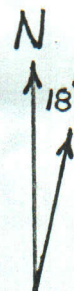
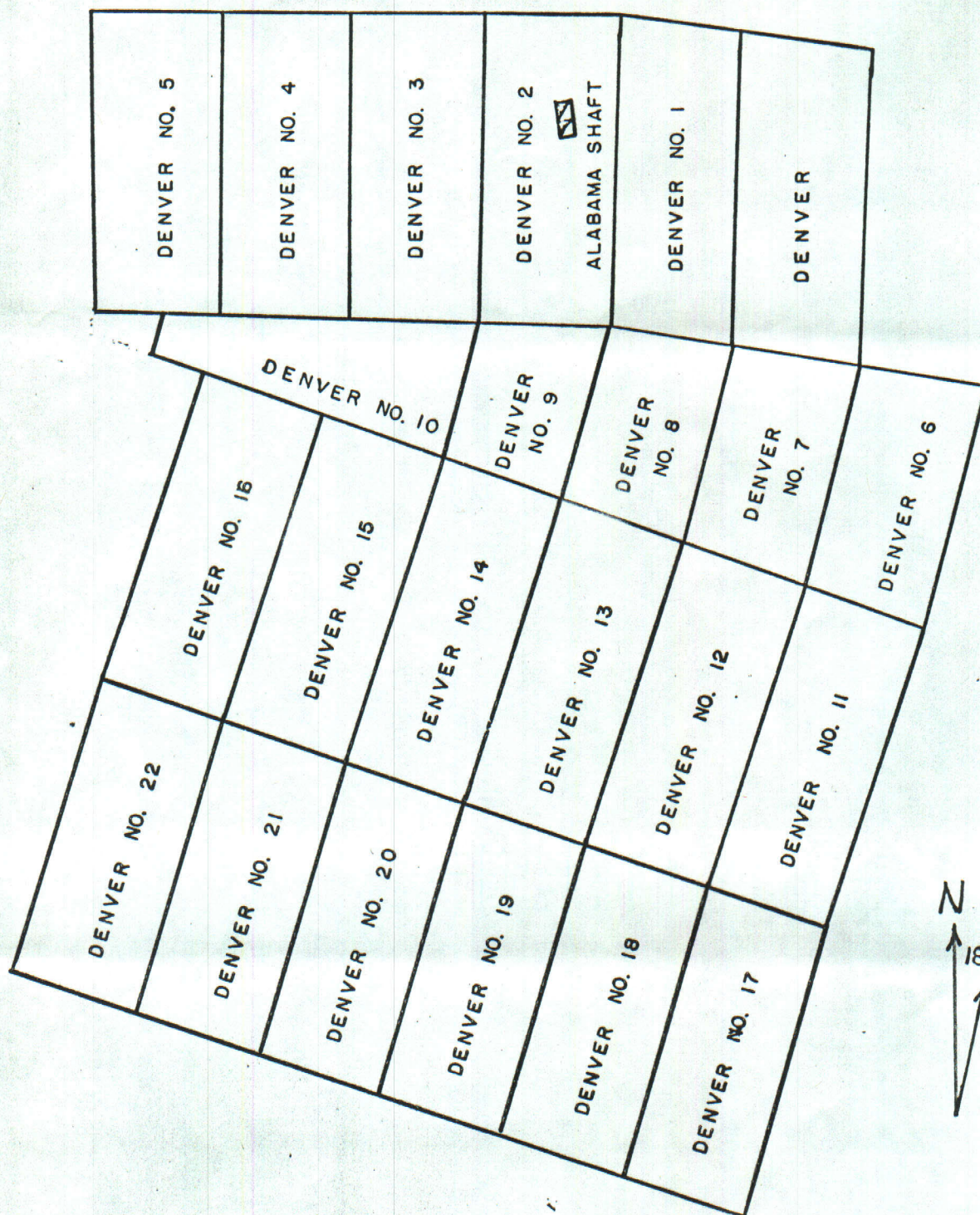
2. TREATMENT:a) CANE SPRINGS MILL:

Renovation and Additions	\$10,000.00
Rental (\$3.00/ton with \$1,500/mo. min.) 4 months	6,000.00
Supplies; small tools, whse. inventory, assay equipment, pipe and fittings, etc.	4,000.00
Start Up Expenses	6,000.00
	<u>\$26,000.00</u>

3. GENERAL AND ADMINISTRATION:

a) Engineering Services 4 months @ \$1,500.00.	\$ 6,000.00
b) Accounting 6 months @ \$ 500.00.	3,000.00
c) Administrative & Management. 6 months @ \$1,500.00.	9,000.00
d) Insurance - NIE deposit, etc	1,500.00
e) General Contingency Factor	11,500.00
Sub Total.	<u>\$127,500.00</u>

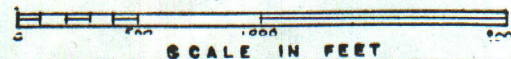
4. <u>ORGANIZATION AND COMMISSION EXPENSE.</u>	<u>22,500.00</u>
TOTAL.	<u>\$150,000.00</u>



GOLD RESOURCES, INC.

THE ALABAMA MINE
HUMBOLDT COUNTY, NEVADA

CLAIM MAP
MARCH, 1973 SS



SCALE IN FEET

THE ALABAMA NINE SKETCH MAP ORE RESERVES

SIDE VIEW

PLAN

ORE RESERVES
STOPPED ORE
BLOCKED ORE
INDICATED ORE
PROBABLE ORE
DATE: NOV. 2, 1960
DRAWN BY SLL

