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UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

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- [x] Project summary (final)
- [x] Work Comoleted analysis (final)
- All other material filed in chronological order including the following reports if checked:
- [x] Field Team Semi-Annual Report for Certified Project
- [x] Final Field Team Report (Tab)
- [x] Operator's Final Report (Tab)
- [x] Interim Field Team Reports
- [x] Operator's monthly reports and all attachments
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Additional Folders:

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Folders No. _____: Reports
- [ ] Analysis of Semi-Annual Inspection Reports
- [ ] Project Summary (Interim) by DMEA Engineers

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- [ ] Field Team Semi-Annual Report for Certified Project
- [ ] Field Team Interim Reports
- [ ] Operator's Monthly Reports with transmittal, narrative and maps.

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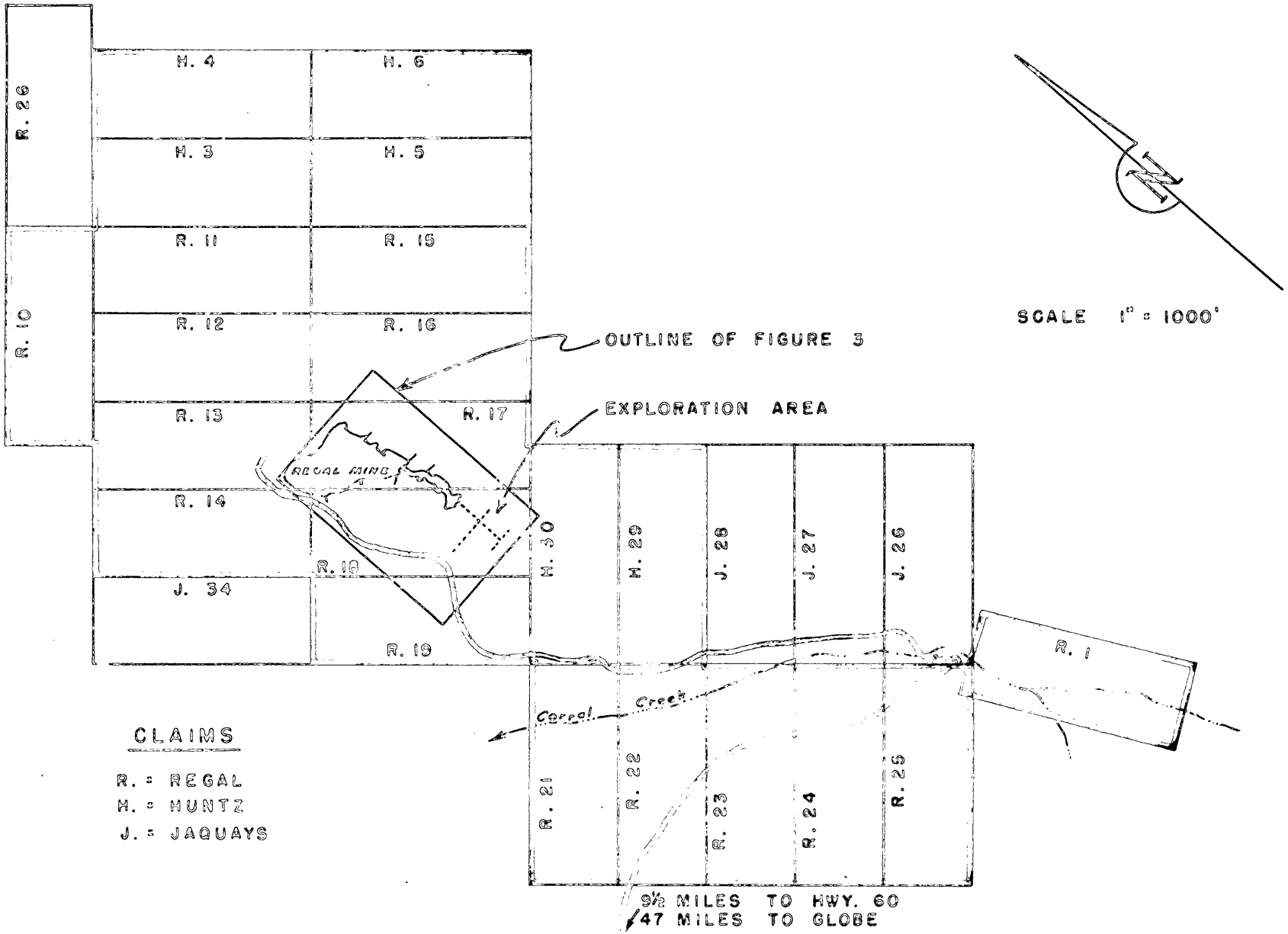
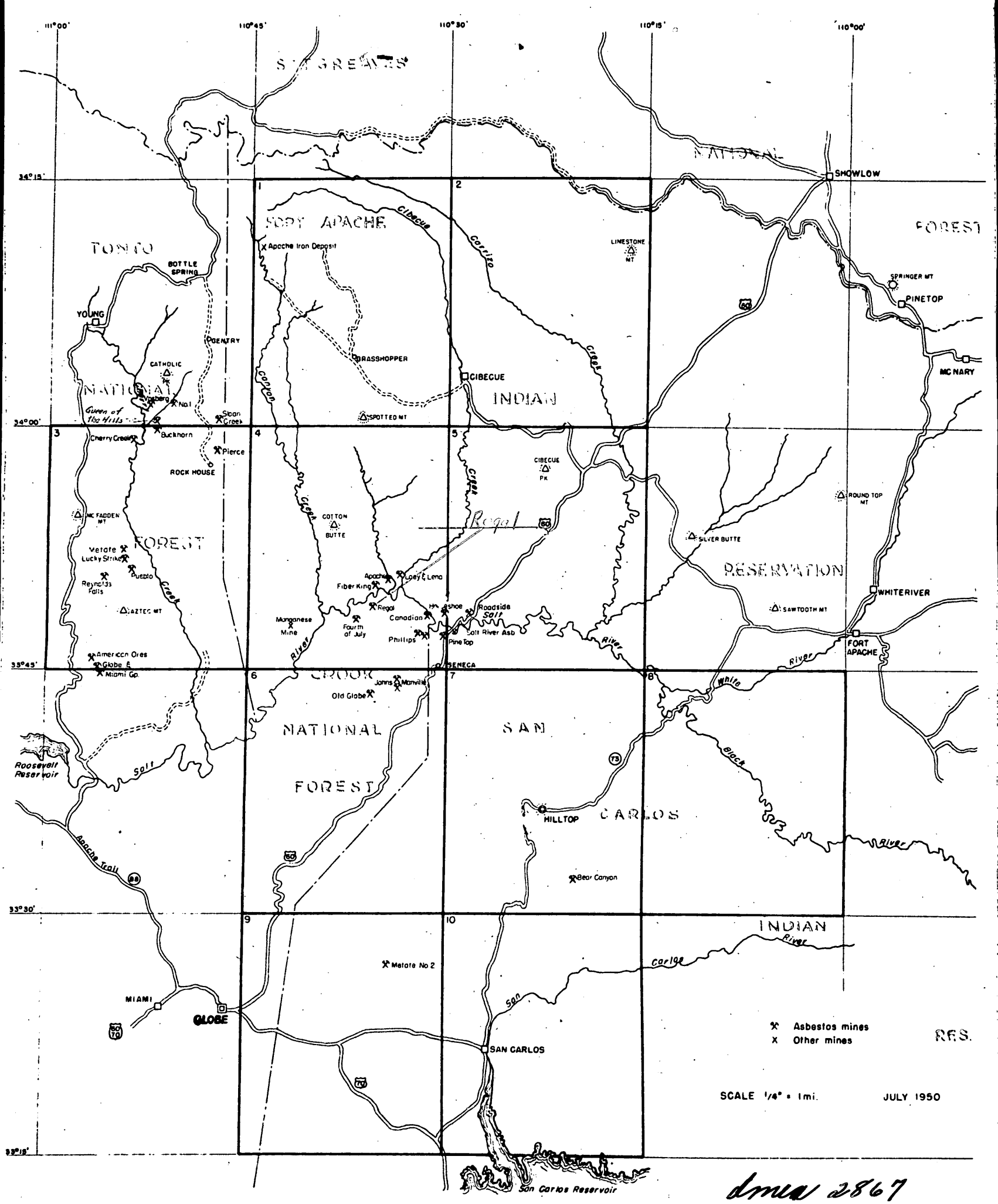



FIGURE 2. - CLAIM MAP - REGAL ASBESTOS MINE DMEA 2867

JAQUAYS MINING CORP. GILA COUNTY, ARIZONA

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Location map, Asbestos Deposits, Gila County, Arizona. (Index map of aerial photo sheets)

D.W. JAQUAYS
MAP No 3

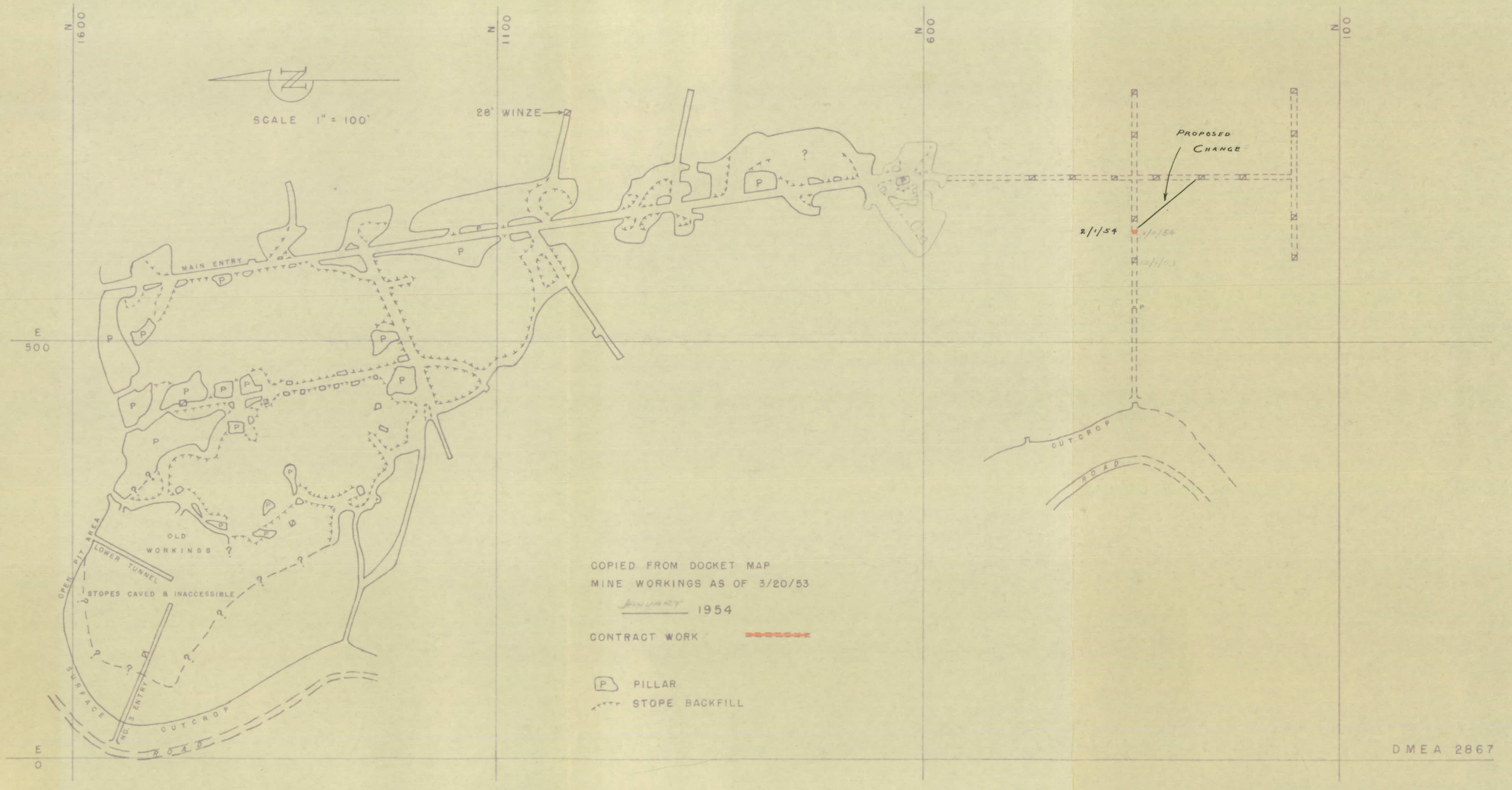


FIGURE 3. - MAP OF REGAL MINE, JAQUAYS MINING CORP., GILA COUNTY, ARIZONA

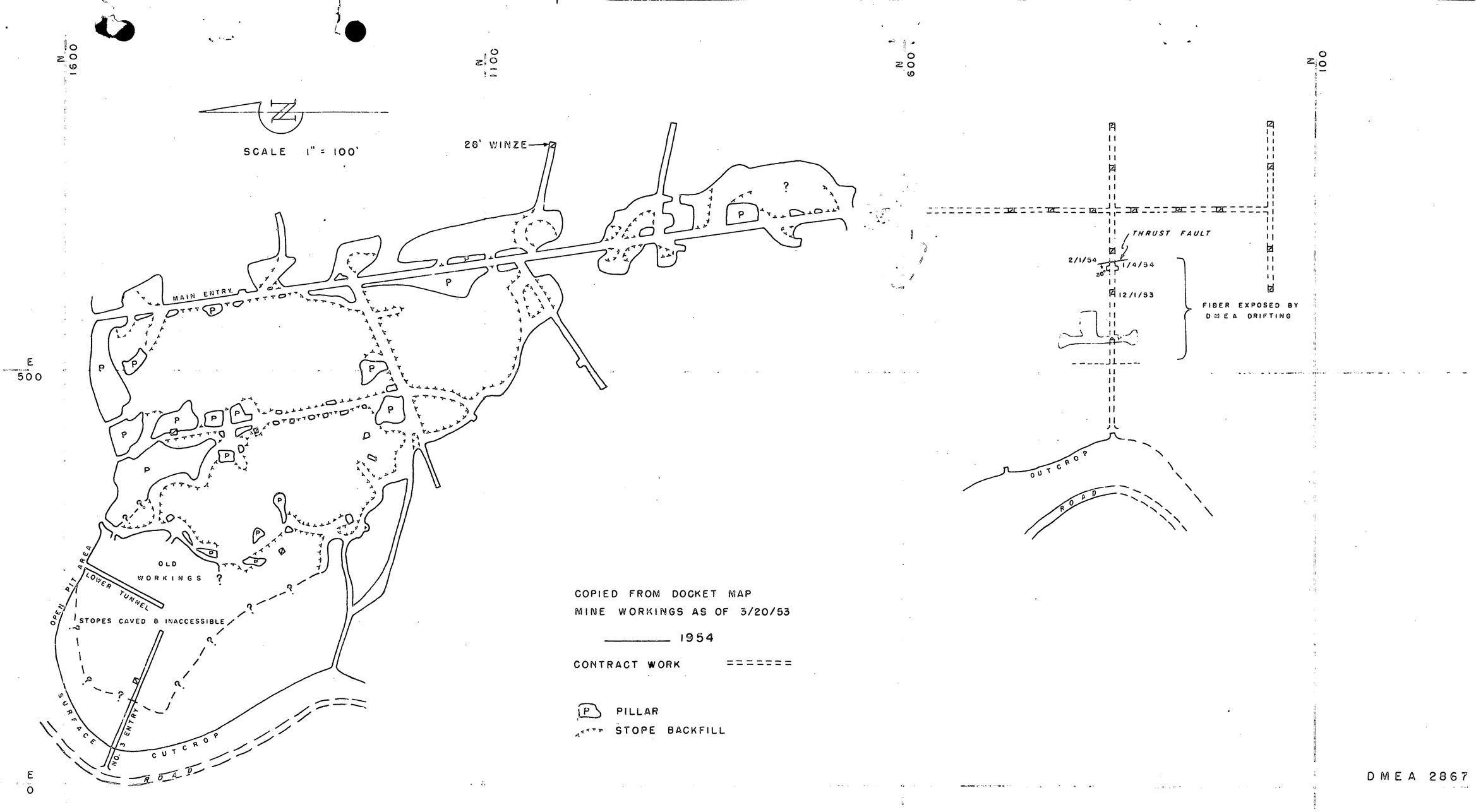


FIGURE 3. - MAP OF REGAL MINE, JAQUAYS MINING CORP., GILA COUNTY, ARIZONA

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# MINING METHODS AND COSTS, REGAL ASBESTOS MINE JAQUAYS MINING CORP., GILA COUNTY, ARIZ.

By L. A. Stewart

UNITED STATES DEPARTMENT OF THE INTERIOR
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(1961)

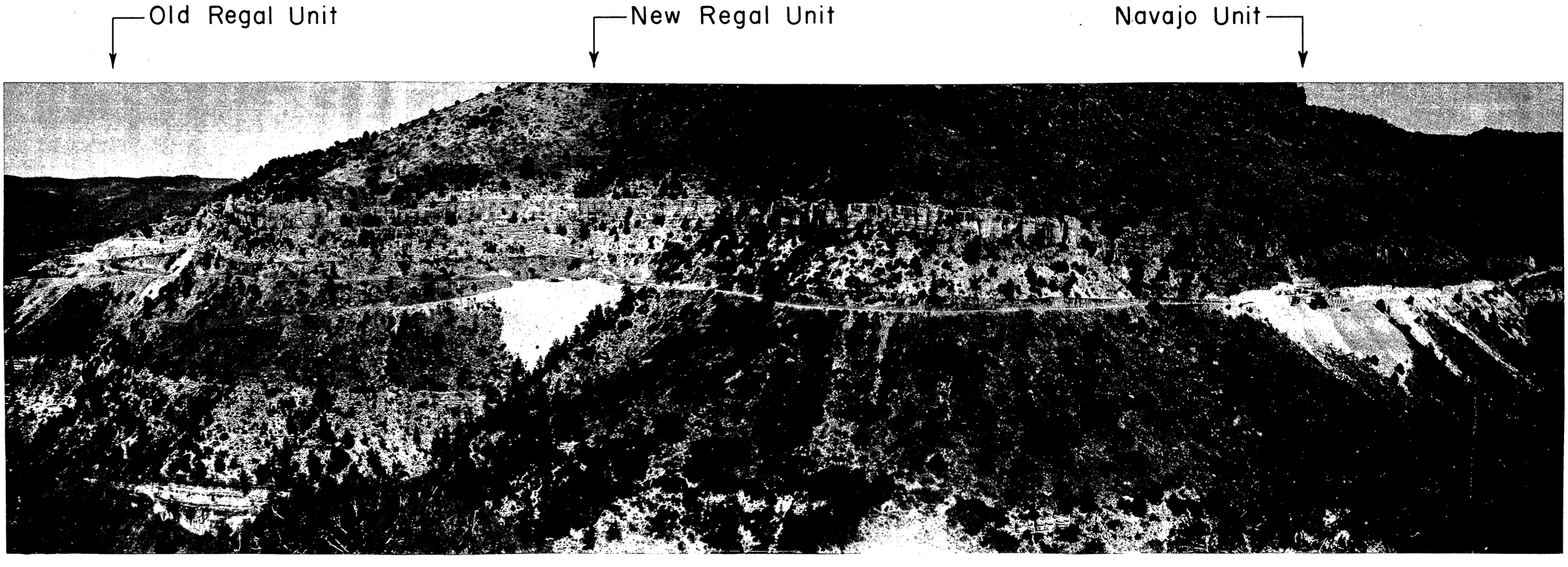


FIGURE 1. - Panorama of Regal Mine Area.

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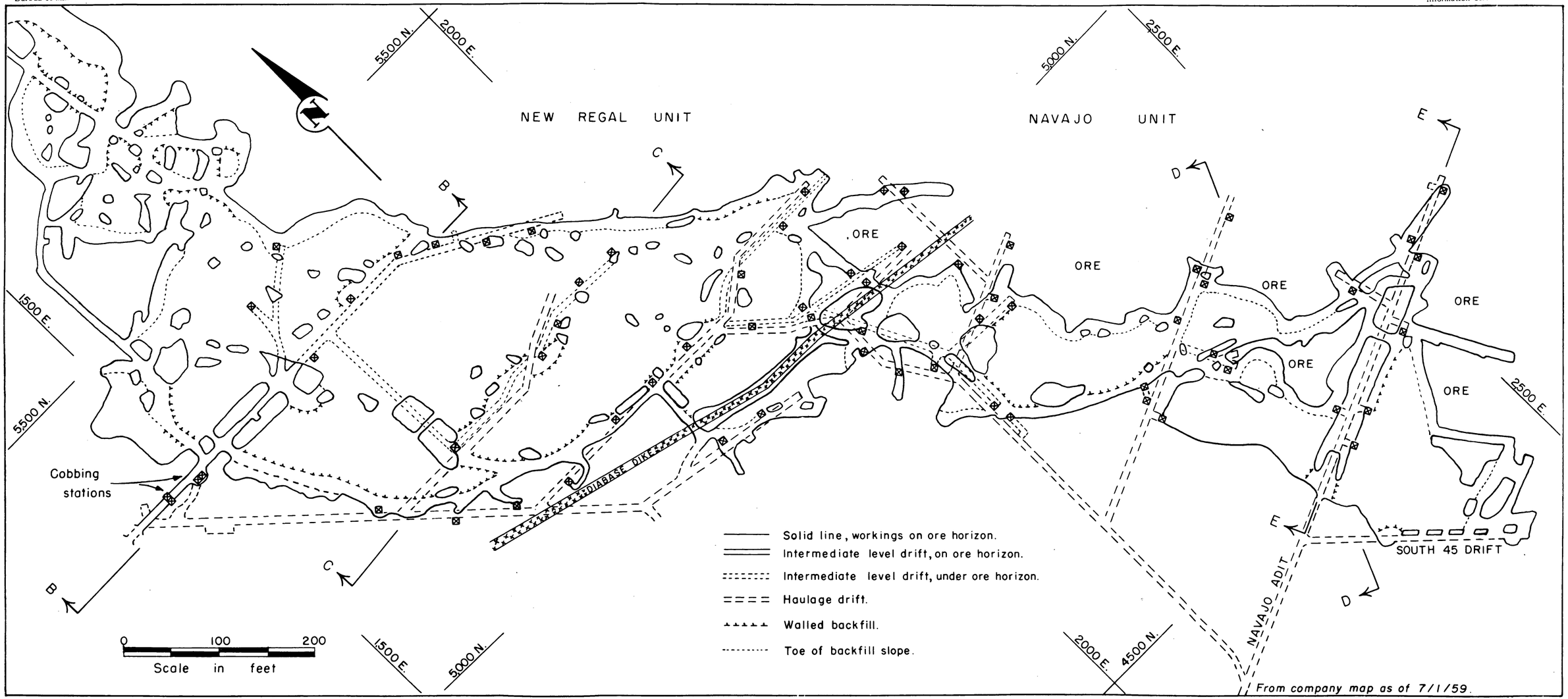


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FIGURE 6. - Map of New Regal and Navajo Units, Regal Mine.

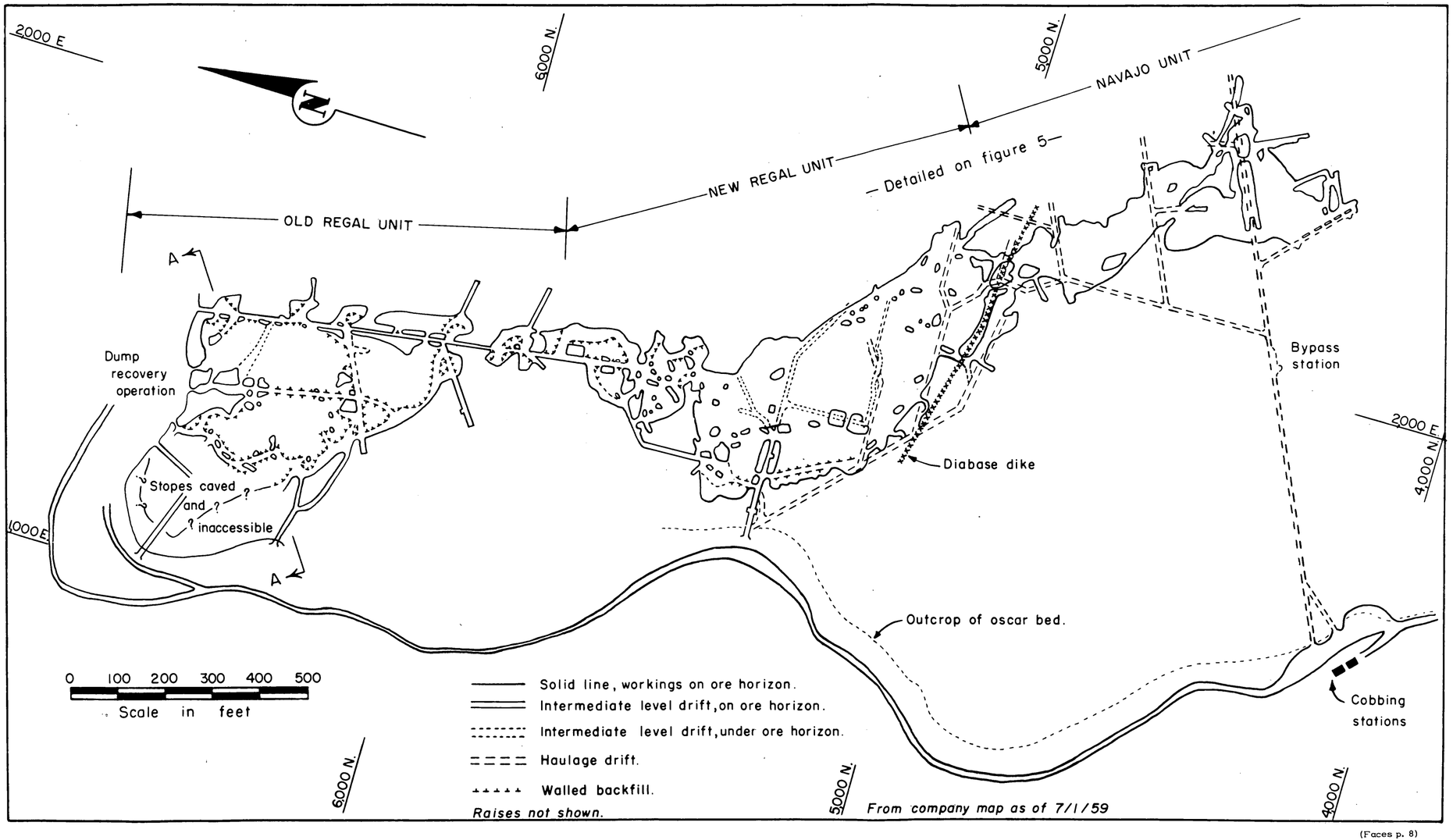


FIGURE 5. - Map of Regal Mine Workings.

(Faces p. 8)

# MINING METHODS AND COSTS, REGAL ASBESTOS MINE JAQUAYS MINING CORP., GILA COUNTY, ARIZ.

By L. A. Stewart

* * * * * * * * * * * information circular 7986

UNITED STATES DEPARTMENT OF THE INTERIOR
Stewart L. Udall, Secretary

BUREAU OF MINES
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# MINING METHODS AND COSTS, JAQUAYS MINING CORP., GILA COUNTY, ARIZ.[1]

by

L. A. Stewart[2]

## INTRODUCTION

This is one of a series of reports prepared by the Federal Bureau of Mines on mining methods, performance, and costs at individual mines in the United States. The primary purpose of these papers is to promote development and conservation of our mineral resources by disseminating technological information on methods, practices, and results that may be applied to the engineering analysis and solution of mining problems.

This report discusses the highly selective mining methods of the Jaquays Mining Corp. at the Regal asbestos mine, 45 road miles northeast of Globe, Ariz. The milling method at the Globe plant is discussed briefly, and the extraction ratios of the various grades of fiber are tabulated. The proposed flowsheet of a new mill under construction is shown.

The Jaquays Corp. purchased the Chrysotile property (old Johns-Manville mines) about May 1, 1959, and immediately started rehabilitation work. No detailed data are available to the author on work done by Johns-Manville in the 1940's or on that done by subsequent operators after the sale of the property in 1951. However, as a historical note, the operation in 1930-31 is briefly discussed and various operating costs are given.

Figure 1 is a panoramic view of the Regal mine area.

## ACKNOWLEDGMENTS

The author is indebted to D. W. Jaquays of the Jaquays Corp., for his cooperation and assistance in preparing this paper and for permission to publish the maps, data, and photographs contained herein. Acknowledgment also is due Alvin W. Gerhardt, general superintendent, and John Kleiner, mine superintendent, for their assistance.

---

1/ Work on manuscript completed July 1959.
2/ Mining engineer, Bureau of Mines, Tucson, Ariz.

## LOCATION AND PROPERTY

The Jaquays Mining Corp. owns three separate groups of mining claims situated in the Tonto National Forest northeast of Globe, Gila County, Ariz. (fig. 2).

The Regal group consists of 5 patented and 38 unpatented claims situated along Regal Canyon (formerly known as Corral Creek) on the south side of Salt River (figs. 3 and 4). The claims lie in unsurveyed land, Gila and Salt River base and meridian, in what probably will be sec. 36, T. 6 N. and sec. 1, T. 5 N., R. 16 E., when surveyed. The mine is at the end of a 9.5-mile graded road that branches off paved U.S. Highway No. 60, 1/2 mile north of Seneca (36 miles north of Globe).

The Chrysotile property consists of 76 claims, of which 22 are patented. The claims are situated in unsurveyed land along Ash Creek, mainly in what probably will be sec. 32, T. 5 N., R. 17 E., when surveyed. The property is at the end of a fair, graded 3-mile road that branches west from U.S. Highway No. 60, 32 miles north of Globe.

The Jaquays Corp. also owns five unpatented Asbestos King claims on which the old Canadian mine is situated. The claims lie in unsurveyed land, probably in what will be sec. 3, T. 5 N., R. 17 E., when surveyed. They are accessible by 1 mile of dirt road that branches north from the Regal mine road, 4 miles from U.S. Highway No. 60. Mining work was stopped here about 1957. Because the production by desultory work at various periods since 1951 has been small, no further mention will be made of this property in this report.

The three properties are accessible throughout the year, except for a few days after heavy rain or snow storms when the dirt access roads are virtually impassable.

The Globe mill is opposite the junction of U.S. Highways Nos. 60 and 70 on the east side of Globe, and a new mill under construction in June 1959 is situated between U.S. Highway No. 70 and the Southern Pacific railroad 2 miles southeast of Globe. The new mill hereafter will be referred to as the "Highway 70 mill".

## HISTORY AND PRODUCTION

The nucleus of the Regal property consisted of nine claims located in 1916 by J. A. Larson. In 1917 the Colorado-Arizona Asbestos Mining Co. mined small quantities of asbestos for testing purposes; in 1918 production was reported to be about 100 tons of crude Nos. 1 and 2. During 1919 the Denver Arizona Asbestos Mining Co. produced some fiber from this mine.

E. Schaaf-Regelman purchased the property in late 1919, relocated the claims, added many more to the group, and in 1921 reorganized as the Regal Asbestos Mines, Inc. The property, then consisting of 25 claims, was idle except for assessment work from April 1921 until 1925. During 1926 and 1927, lessees were its principal, but intermittent, operators, producing about 200 tons of crude No. 1. In June 1927 the company resumed regular development and production, erected a mill the following year, and continued operation until

June 1929, shipping approximately 10 cars of fiber. The mill was reported to have a capacity of 30 tons of mill rock per 8 hours for mechanically cobbing and grading crude fiber. The lower part of the mill was equipped to produce fiberized grades.

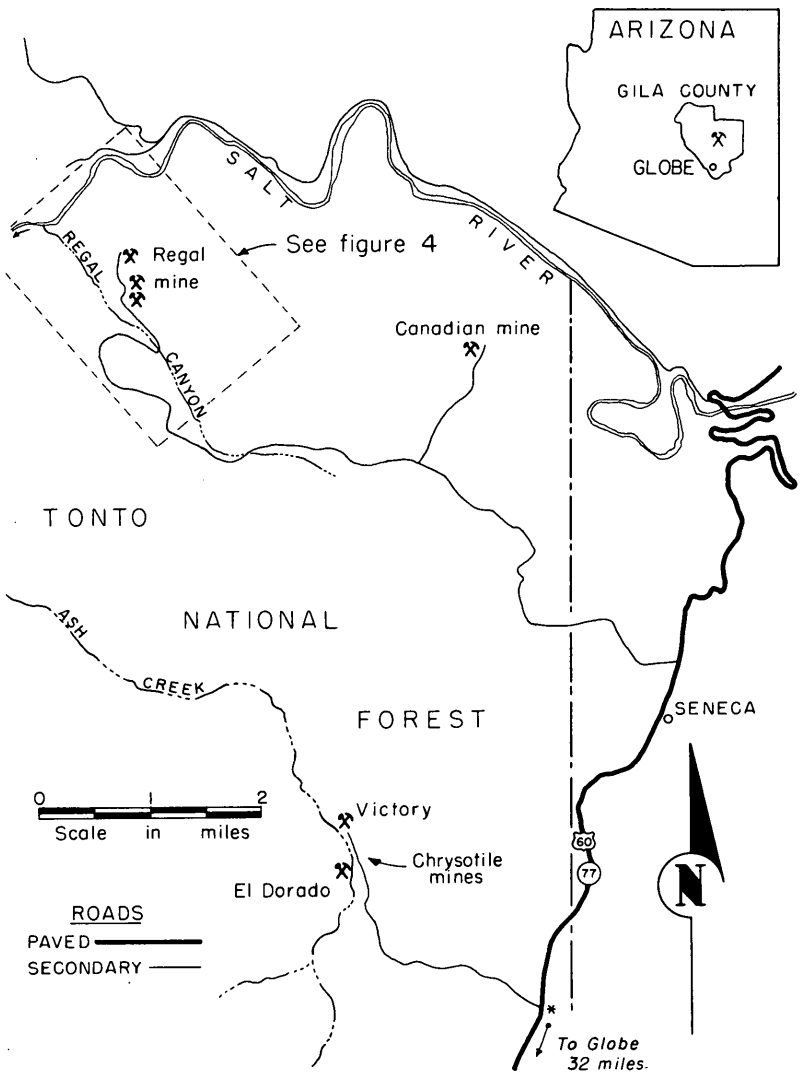


**FIGURE 2. - Location Map, Jaquays Mining Corp. Properties.**

In 1937 the Arizona Chrysotile Asbestos Co. acquired the property and made substantial yearly production under various managements through 1948, when the mill was destroyed by fire. Only desultory work was done by lessees the following year. Late in 1949 the company acquired an idle asbestos mill in Globe. This mill had been constructed with Defense Plant Corporation aid in 1943-44 by the Southwestern Asbestos Corp. In December 1950 the Arizona Chrysotile Asbestos Co. resumed operations of the mine and mill, under the management of D. W. Jaquays. It is estimated that the company produced about 3,400 tons, all grades of fiber, from 1937 to 1952.

In June 1952 the Jaquays Mining Corp. purchased the holdings of the Arizona Chrysotile Asbestos Co. and has maintained a constant production from that time, producing through 1958 a total of over 3,500 tons of fiber of all grades.

Although the foregoing figures are estimates in part, the total production of the Regal mine through 1958 was about 7,700 tons of fiber of all grades, making it the second largest producer in Arizona.

Historical data on methods and costs at the Chrysotile mine are presented later in this report for comparison with present day methods and costs at the Regal mine.

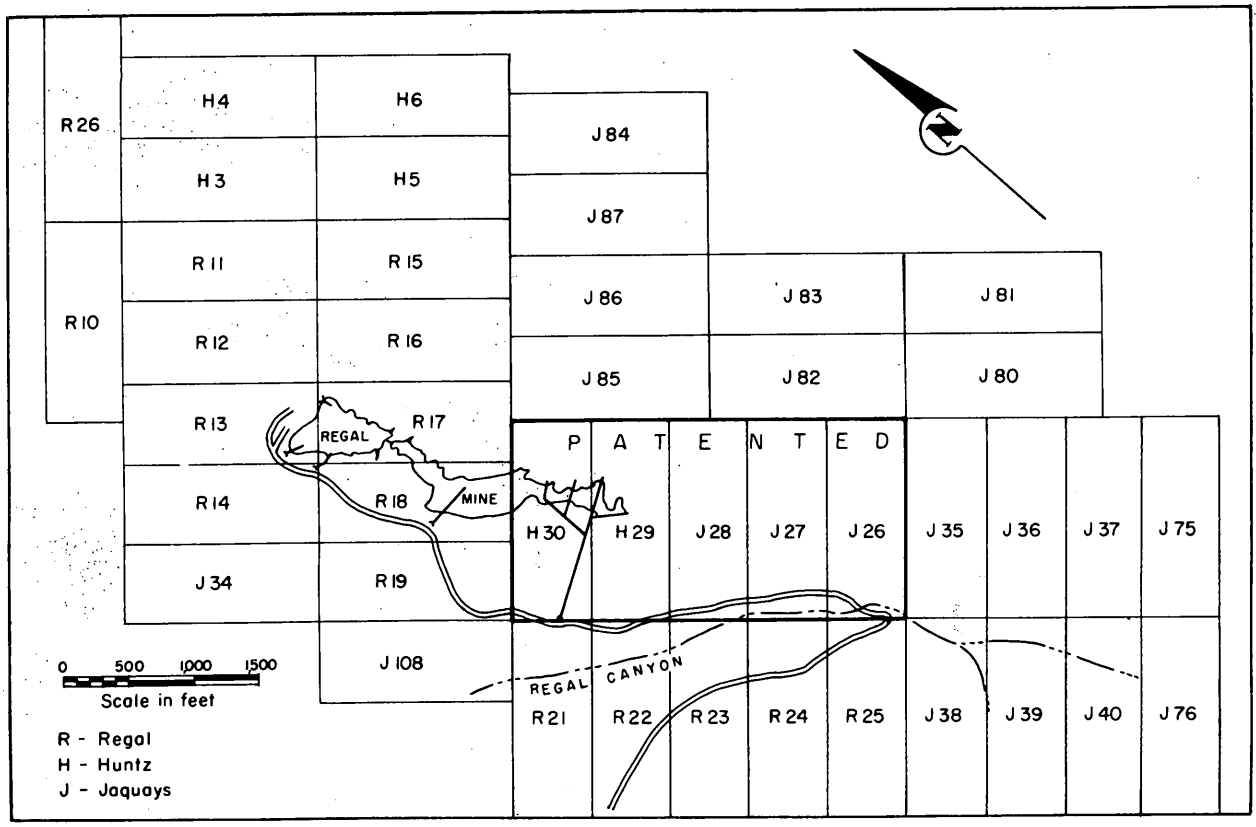


**FIGURE 3. - Claim Map of Regal Group, Jaquays Mining Corp.**

## DESCRIPTION OF THE DEPOSIT

A brief discussion of the general geology and mode of occurrence of asbestos is essential to an understanding of the mining methods employed.

The asbestos-bearing strata of central Arizona are in the Precambrian Mescal limestone formation of the Apache group. Dripping Spring quartzite underlies and Troy quartzite overlies the Mescal formation, which is divisible into three members: A lower member 175 to 200 feet thick; an algal-limestone member 80 to 100 feet thick; and an upper member 10 to 80 feet thick.

In the lower member, the individual beds range from 1 inch to 6 feet in thickness. The thin beds are impure dolomitic limestone; the thicker, more massive beds are relatively pure crystalline limestone and occur within the topmost 45 feet of this member; most of the asbestos deposits of the region are within this stratigraphic interval.

The algal-limestone member, which overlies the lower member, is massively bedded and usually is composed almost entirely of spheroidal masses that have a concentric, shell-like structure with a maximum diameter of several inches. It generally forms cliffs and is the most readily recognized horizon marker in the Mescal formation.

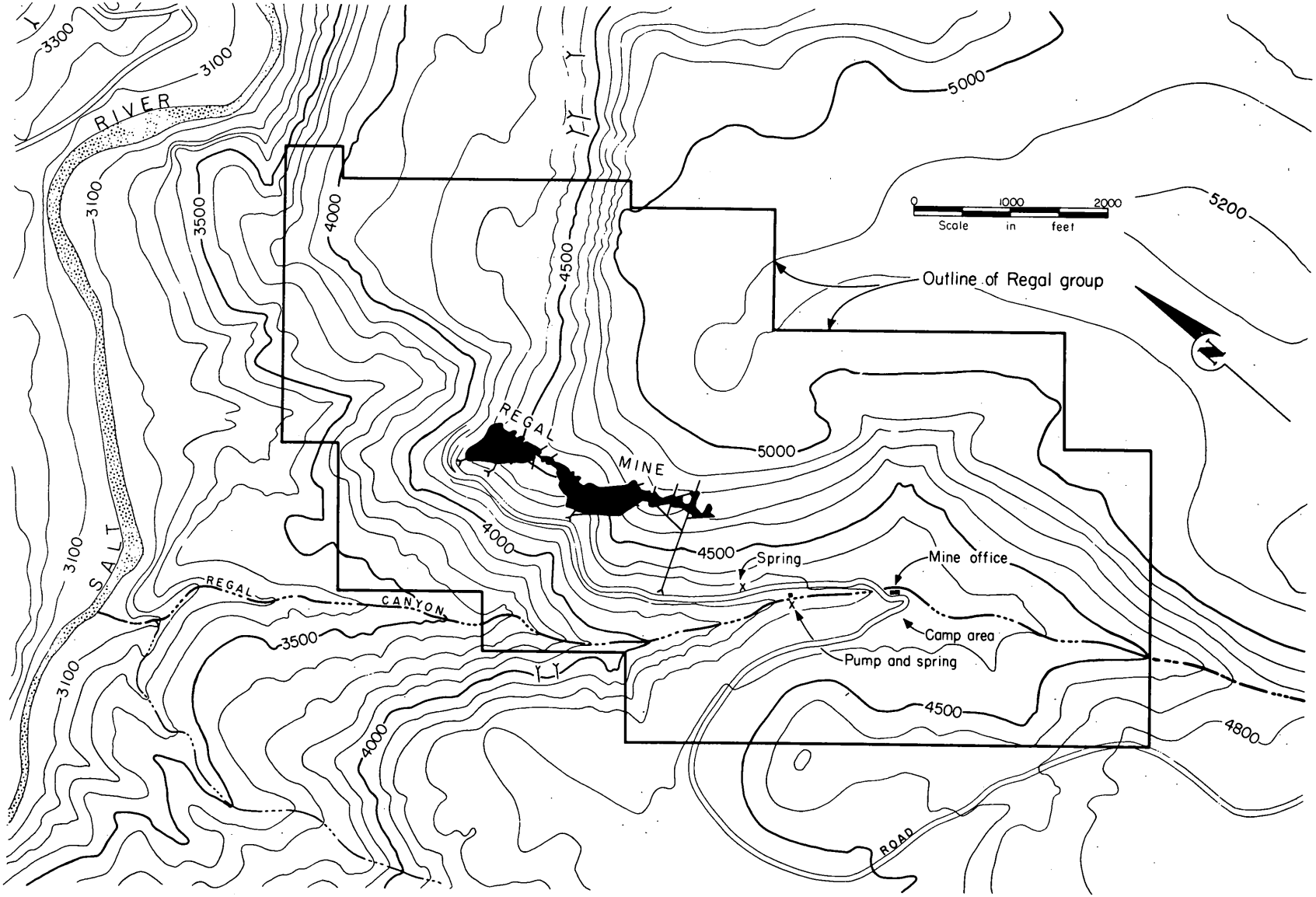


FIGURE 4. - Topography of the Regal Mine Area. (Adapted from map of the U. S. Geological Survey; outline of Regal Group as of April 1959.)

The upper member consists of layers of siltstone (usually brown to black), thin shale, and sandy or shaly limestone beds. This member is present only in a few places in the region.

The Apache group has been intruded by diabase sills a few inches to several hundred feet thick. The sills usually are found along bedding planes, but locally they may cut across the bedding. Diabase dikes, most of which are only a few feet wide, also have intruded the limestone.

Asbestos invariably is found in veins within bands of serpentine. The veins vary from a fraction of an inch to several inches thick and roughly parallel the border of the enclosing serpentine. This serpentine and associated asbestos were formed within favorable limestone beds that were adjacent to or relatively near a diabase intrusion. The greater the folding or fracturing of the beds caused by the intrusion, the larger the deposit is likely to be.

Arizona asbestos is of the chrysotile variety, a hydrous magnesium silicate with the same composition as serpentine. The fibers of chrysotile occur as cross fibers; that is, the fibers of which the material is composed and into which it may readily be separated lie approximately perpendicular to the walls of the vein.

Cross-fiber chrysotile occurs as two distinct types, harsh and soft. Soft fiber feels smooth or soapy and can be twisted and bent between the fingers. The individual fibers usually are extremely flexible and strong. Harsh fiber is splintery, prickly, and somewhat brittle, so a small bundle of it breaks if twisted a number of times. All gradations between the harsh, brittle fiber and the soft, silky fiber can be found in the region.

A more detailed discussion of the general geology and mode of occurrence is presented in "Chrysotile-Asbestos Deposits of Arizona".3/

In the vicinity of the Regal mine the three members of the Apache group are exposed.

The asbestos-bearing serpentine zones within the mine area occur at three horizons in the lower limestone member of the Mescal formation. One zone is immediately under the base of the algal member; the other two are 29 and 35 feet lower in the section. The lower two have been the most productive. The lower zone is 19 feet above the top of a concordant diabase sill that is at least 300 feet thick.

A persistent 1- to 3-inch band of impure dark bluish-green serpentine occurs along a bedding plane at 21 feet above the diabase contact. The lower ore band is about 1 foot below and the upper ore zone is 5 feet above this serpentine band. It is locally called the "oscar", is found in all parts of the mine and along the surface outcrop, and is a reliable marker that indicates the favorable beds. The location of the ore bands is very important to an understanding of the mining method now in use.

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3/ Stewart, L. A., Chrysotile-Asbestos Deposits of Arizona: Bureau of Mines Inf. Circ. 7706, 1955, 124 pp.

In the mine area, the predominant factor in the concentration of asbestos within the favorable beds has been the shattering and warping of these beds by a belt of thrust faults. The belt has a general course of S. 25° E. Structural deformation has been caused by the underlying diabase intrusion. Asbestos ore is present on the limbs of folds and flanks of domelike structures and occurs in greatest concentration where small thrust faults cut these dipping beds. As the beds flatten, the asbestos content decreases.

Although the mine workings are continuous along the mineralized Regal fault zone, production has been attained from three interconnected mine units, herein defined as the Old Regal, New Regal, and Navajo workings (figs. 5 and 6).

In the Old Regal workings, a network of faults associated with the thrusting formed a domelike structure (sec. A-A, fig. 7). Along the east side of the mine at the north end, the asbestos mineralization terminates when the underlying diabase sill cuts discordantly downward.

In the New Regal workings, the fault pattern consisted of several parallel thrusts that gradually stepped up the ore horizons into a monoclinal structure (sec. B-B, fig. 7). At the south end of the workings a postmineralization 7-foot vertical diabase dike was encountered. It strikes N. 72° W. and cuts the limestone and underlying diabase sill. Buckling of the limestone beds and the development of gouge along the dike walls indicate fault movement, but the slip is only a few inches. The only noticeable effect on the fiber zones is the increased harshness of the asbestos for a few feet on each side of the dike.

In the Navajo workings, an abrupt steepening in the moderately sloping beds is caused by a southeast-trending flexure that places about 20 feet of the ore zones in a nearly vertical attitude (fig. 7, sec. D-D).

Mining has been conducted southward along the course of the mineralized fault zone for 2,500 feet. The stopes at the south end of the mine are approximately 550 feet below the surface. The limestone formation west of the Regal fault zone lies relatively flat, and in the stratigraphic interval in which the mining operations are conducted the thickness of the individual beds varies from 6 inches to 3 or more feet. The limestone is compact, fine grained, and moderately hard, but drills fairly easily and breaks well. No supports are needed in drifts and raises.

The diabase encountered in development drifts and raises below the limestone section is a compact, homogeneous, fine- to medium-grained rock, somewhat harder than limestone, but the diabase drills, breaks, and stands about as well as the limestone. Because there are no bedding planes in the diabase, the back holes and lifters need to be drilled closer to the top and bottom of the drift.

The 6- to 12-inch serpentine-asbestos band of the upper ore zone is at the bottom of a 3- to 4-foot limestone bed. It is a competent member that forms an excellent stope back. Openings up to 50 feet wide have been left

unsupported during stoping operations, but usually the placing of backfill decreases the unsupported width to about 20 feet. As stoping progresses, the roof gradually flexes downward and settles on the backfill without fracturing. Pillars are left in areas that are intensely fractured.

The approximate weight in place of 1 cubic yard of the serpentine-asbestos material of the ore zones is 4,200 pounds; of limestone and diabase, 4,500 and 5,000 pounds respectively.

The degree of mineralization of the two fiber-bearing bands is not continuous; usually both are minable, but occasionally only one contains commercial asbestos. A peculiarity of the deposit is that if the asbestos content of one of the zones becomes insignificant, the other generally becomes better than average.

## METHODS OF PROSPECTING AND EXPLORATION

The prospecting phase on the Regal ore body was relatively simple, because asbestos-bearing serpentine cropped out in the limestone cliffs on the south rim of Salt River Canyon. The first prospectors soon delineated the 400 feet of asbestos-bearing strata with pits and opencuts and then extended drifts into the better parts of the ore body. Although the favorable beds can be traced nearly a mile along the hillside on the east side of Regal Canyon, the outcrops have no ore, and surface prospecting is useless.

Adits driven to intersect the ore body in advance of the underground workings are considered by the company to be development work rather than exploration work. When these development adits are extended under the ore zones in advance of stoping operations, occasional holes are drilled upward to check the asbestos content of the ore horizon. Holes up to 25 feet long are drilled with the same feed-leg machines used in drifting, except that 3-foot sectional steel is used.

When the diabase dike was encountered at what was then the south end of the mine, there was a question of continuity of the ore deposit south of the dike. Exploration to check the ore horizon in advance of the workings was accomplished by long-hole drilling from several setups. A 4-inch jumbo-mounted drifter drill with an 8-foot chain feed was used. The machine was capable of drilling up to 150 feet at an inclination of 30°. Eight-foot sections of 1-inch hexagonal steel were used with a 2-1/4-inch 4-point bit set with tungsten-carbide inserts. Drilling water from a nearby sump was recirculated with a pneumatic 3- by 2- by 3-inch duplex reciprocating piston pump mounted on the jumbo. The average drilling rate of this rig was 150 feet per shift.

At other places in the mine, exploratory drilling had been done with a small pneumatic diamond drill. Its use did not prove satisfactory, as the progress was slow and the asbestos fibers tended to plug the bit.

In 1958 it was decided to test the structure by drilling on the projected strike of the Regal fault zone, about one-half mile southeast of the Navajo

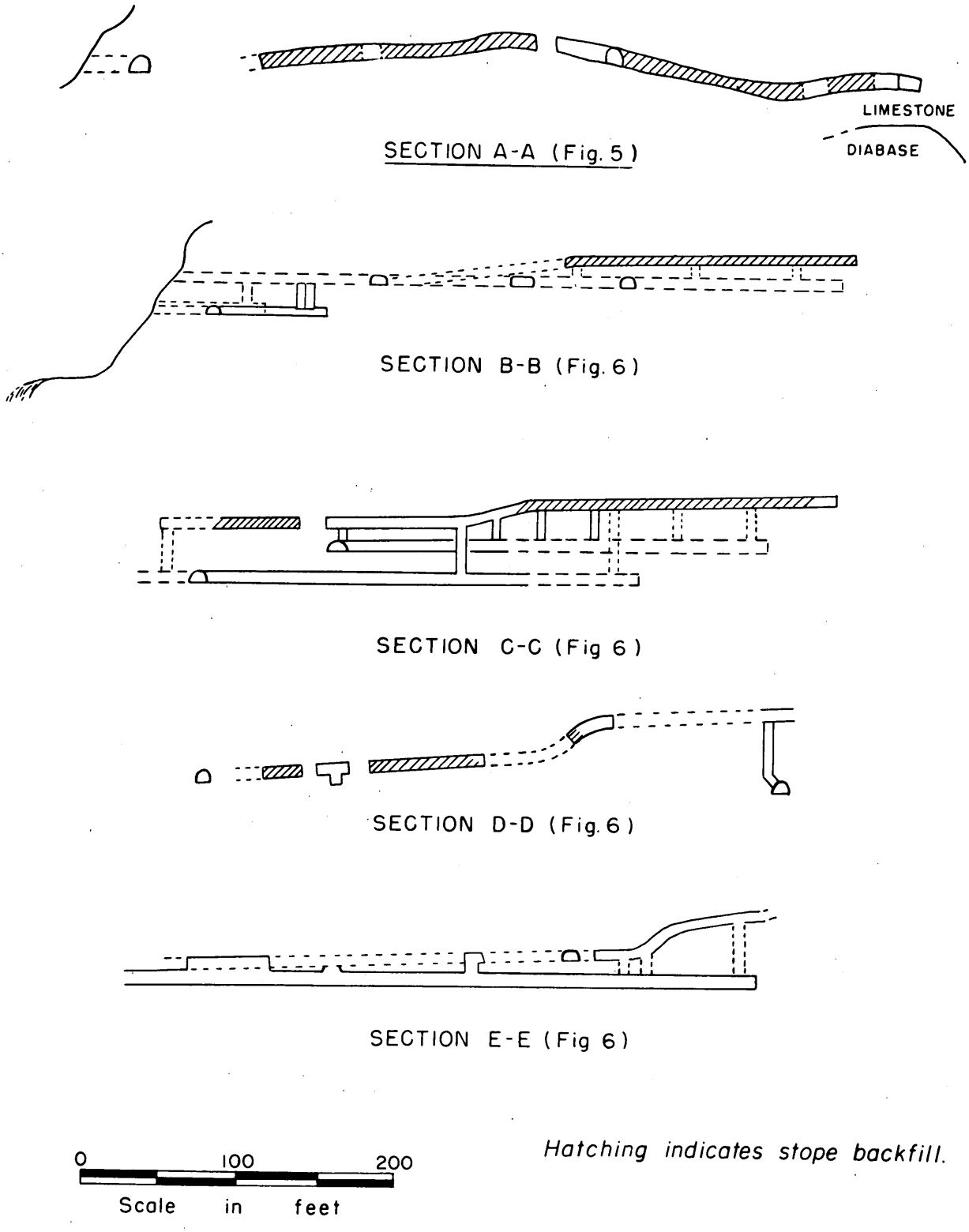


FIGURE 7. - Sections, Regal Mine.

adit site. A pilot road was constructed up the hillside to drilling sites northeast of the camp. A 4-1/2-inch pneumatic track-mounted drill was employed, using 10-foot sections of 1-1/4-inch hexagonal steel with 2-3/4-inch 4-point bits and tungsten-carbide inserts on the cutting edges. The limestone was found to be shattered and blocky, and after making several unsuccessful attempts to penetrate the formation this exploration program was discontinued. None of the holes was deep enough to encounter diabase.

## METHOD OF ESTIMATION OF TONNAGE VALUE

The cutting of face samples in an asbestos mine to determine the percentages of the various grades is considered impracticable.4/ Jaquays has devised a visual method of determining the face value of the headings. He estimates the average cumulative thickness in inches of all fiber veins in the heading and the fractional parts of the vein that represent each of the four crude grades.5/ For proportionate calculations, the value assigned to each inch unit in the discussion that follows is the average market value per ton of that grade: No. 1, $1,500; No. 2, $900; No. 3, $400; No. 4, $200.

As an example, there is an average cumulative thickness of 2 inches of fiber in the working face that has 1 inch of No. 1, 1/2 inch of No. 2, and 1/4 inch each of Nos. 3 and 4. The value per ton of such fiber is quickly estimated on the inch basis: 1 inch of No. 1 = $1,500 x 1 or $1,500; 1/2 inch of No. 2 = $900 x 1/2 or $450; 1/4 inch of No. 3 = $400 x 1/4 or $100; and 1/4 inch of No. 4 = $200 x 1/4 or $50, a total of $2,100-inches, or a fiber value of $1,050 per ton ($2,100-inches) ÷ (2 inches). Dividing $2,100-inches by 84 (the average height of the working face in inches) gives a value of $25 per ton of rock to be broken, or "face ton" as it is called at this mine.

By experience, Jaquays has determined that the cut-off point for profitable mining is $12 per face ton. He states,6/ "Bands of asbestos totaling only 1-1/2 to 2 inches of fiber may be mined profitably in a 7-foot-high heading, if at least half of the fiber is No. 2 grade or better." An example of near-minimum value would be 1-1/2 inches of fiber showing 3/4 inch No. 2 or better (about one-third of the fiber is No. 1), 1/2 inch of No. 3, and 1/4 inch of No. 4. The "dollar-inch" value would be: No. 1, $1,500 x 1/4 or $375; No. 2, $900 x 1/2 or $450; No. 3, $400 x 1/2 or $200; and No. 4, $200 x 1/4 or $50, giving a total of $1,075-inches. The face-ton value then would equal $1,075-inches divided by 84 inches (height of working face) or $12.80. The fiber value in this case would be $1,075-inches ÷ 1.5 inches, or $717 per ton.

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4/ Stewart, L. A., and Haury, P. S., Arizona Asbestos Deposits, Gila County, Ariz.: Bureau of Mines Rept. of Investigations 4100, 1947, p. 16.

5/ The Arizona standard classification of crude grades is given in the section "Milling and Grading," p. 46.

6/ Jaquays, D. W., and Gerhardt, Alvin W., How Low-Iron Chrysotile Asbestos is Mined and Milled in Central Arizona: Min. World, vol. 19, No. 8, July 1957, p. 54.

In this example, if there was no No. 1 fiber, the face-ton value would be $11, below the cut-off value for profitable mining although the fiber value is $616 per ton.

However, in cases where more than 1-1/2 inches of fiber shows, a lower dollar value fiber can be mined, as long as the face-ton value is over $12 per ton. As an example, 2 inches of $600 fiber or 3 inches of $400 fiber would give $1,200-inches, which is about average for the Regal mine.

## DEVELOPMENT AND MINING (GENERAL)

### Old Regal Workings

The Regal mine originally was developed by several adits along an outcrop that was exposed for about 400 feet along the cliff face. The adits eventually were connected as stoping progressed. Random pillars were left and as much waste as possible was hand shoveled into the backfill. Three raises were put up to test the ore horizon 30 feet above, but at that horizon only one small area at the north end of the deposit was productive. Except for the adit on the east side of the deposit, the entries have become inaccessible, as has the stoped area near the surface. A description of the mine in 1928 was published by the Arizona Bureau of Mines.7/

When the Jaquays Mining Corp. purchased the property in 1952, the mining area was about 1,000 feet from the portal of the east adit.

### New Regal Workings

In 1953 the New Regal adit was driven from a cliff face west of the ore body to intersect the mineralized area about 350 feet south of the old workings. The adit was situated 65 feet above the road and 2 feet above the oscar bed. Concurrently with this work, a haulage level was driven 20 feet beneath, and waste and ore transfer raises were put up to the adit above.

Commercial ore was encountered at floor level, 100 feet from the portal of the New Regal adit. Drift pillars, 75 feet long by 15 feet wide, were left, and stopes were developed north and south of the pillars. Figure 8 shows a block of ore that has been pried from the face. It represents the full thickness of the lower ore zone, the top of which is a 3-1/2-inch band of fiber. The oscar marker bed that overlies the ore zone can be seen in the wall.

Owing to the gradual rise of the ore horizon as the adit level progressed eastward on a tramming grade, the adit passed under the ore zone, and stope drifts were required to open the stope panels. Raises became necessary to transfer the ore from the stopes to the adit level, which in effect now had become an intermediate level and will be so-called hereafter (fig. 7, sec. C-C). A cobbing grizzly had been installed over a two-compartment raise, 50 feet inside the portal, and later it became necessary to install a second

7/ Wilson, Eldred D., Asbestos Deposits of Arizona: Arizona Bureau of Mines Bull. 126, 1928, pp. 48-55.

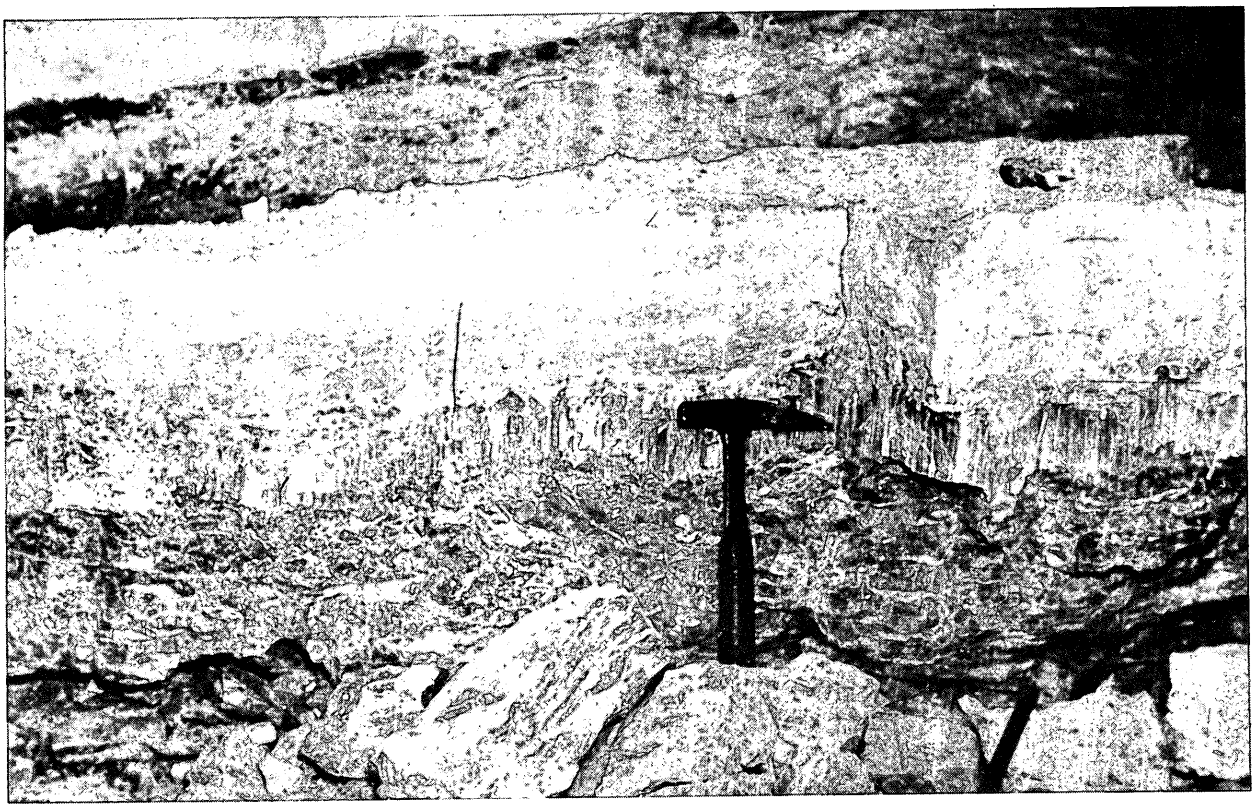


FIGURE 8. - A 3½-Inch Band of Fiber in Lower Ore Zone.

similar cobbing station nearby. From separate chutes on the haulage level below, the waste and the cobbed ore were trammed to the surface.

The haulage level was extended beneath the southwest fringe of the ore body, and laterals were extended eastward under the area to be mined. Raises were driven to the ore horizon for disposal of waste from the mining operations. Because the cobbing stations were situated on the intermediate level, tramming of ore necessarily was confined to that level.

When driving the intermediate and haulage drifts, the muck was loaded into cars by means of portable ramp loaders, on which were mounted double-drum, air-driven slusher hoists.

## Navajo Workings

In order to develop extensions of the ore body indicated in the advanced workings of the New Regal mine, the Navajo adit was started early in 1957. It was situated 1,200 feet farther to the south and driven on a bearing to intersect the mineralized area about 500 feet in advance of the New Regal workings. The elevation of the portal track was calculated to meet the interior grade of the New Regal haulage level. Fortuitously, this elevation was 8 feet below the marker bed, and, except for minor fluctuations, the bed was the back of the adit for 850 feet, at which point commercial ore was encountered.

On the assumption that the attitude of the ore horizon would be similar to that encountered in the New Regal workings, a more economical mining method was designed. The main drift was to serve for both waste and ore haulage; the latter was accomplished by placing the cobbing station outside the portal. When the ore horizon inclined above the haulage level, it was developed from raises and stope drifts, thus eliminating the intermediate level.

All drift and stope drilling is done with a 2-5/8-inch bore air-leg drill with a 3-foot feed, using one-piece, 7/8-inch hexagon steel with a 1-5/8-inch chisel bit set with tungsten-carbide inserts. Raising usually is done with the same type of drill, but it has a 3-foot telescopic feed lift. The operator stated that this particular combination of drilling equipment was selected after considerable experimentation.

Only 6- and 8-foot lengths of drill steel are purchased. Usable shorter lengths accumulate from steel breakage. When the break occurs near the shank end, the steel is re-shanked; if it occurs near the bit end the steel is upset and threaded for use with screw-type detachable bits, or tapered in the company shops for one-pass carbide bits. Any one of these repairs costs $2.25 each. Both chisel and 4-point detachable tungsten-carbide insert bits are available at the mine. The latter, attached to short steel, generally are used for drilling 1-foot pinholes for sheave anchors. For longer holes, the operator uses the chisel bit, which drills rock faster because of more efficient chip clearance and is superior to 4-point cross bits when drilling in fiber-bearing serpentine. The 1-5/8-inch hole provides ample room for the 1-1/8- by 8-inch dynamite cartridges.

Repair costs have been low, although 200 to 300 feet of drilling per machine is done each day. Chucks and water tubes require replacement approximately every 30 days, at a cost of not over 68 cents per operating shift. The average total life of the drills is not known; the oldest ones have been in use only 5 years.

In drilling with feed-leg machines, no steel changes are necessary; the hole is started and finished with one piece. The only bit sharpening done is touching up the cutting edges on a small pneumatic grinder.

When drilling the bottom ore holes at floor level, some miners prefer to use a conventional jackhammer. Two paving breakers also are available for hitch cutting in raises and for breaking pieces of ore too large to handle at the stope face; however, most of the ore sorters prefer sledging the pieces, as the ore is easily broken along planes of stratification.

All mine rail in the Navajo workings is 16-pound; the two older mines used 12-pound rails.

## Development Details

The Navajo adit was driven 125 feet on company account. After the portal sets had been installed, a mucking machine was used. Timbering was required for the first 50 feet because of the shattered, near-surface rock conditions.

The timbered section has a minimum width of 6 feet and a clearance of 7 feet above track level. In solid rock the minimum cross section is 6 by 8 feet. Standard 18-inch gage track, using 16-pound rails on 4- by 6-inch ties spaced at 36 inches, was laid on a 0.75-percent grade. Previous experience had shown this to be the optimum grade for hand-tramming 20- and 30-cubic-foot mine cars.

Beginning at 125 feet from the portal, where the bearing of the adit was to be changed, the work was contracted. The contractor worked 2 shifts daily and, according to company policy, on a 12-day-on and 2-day-off basis. Six-foot rounds were drilled, using a one-piece, 6-foot drill steel and a 3-foot feed leg.

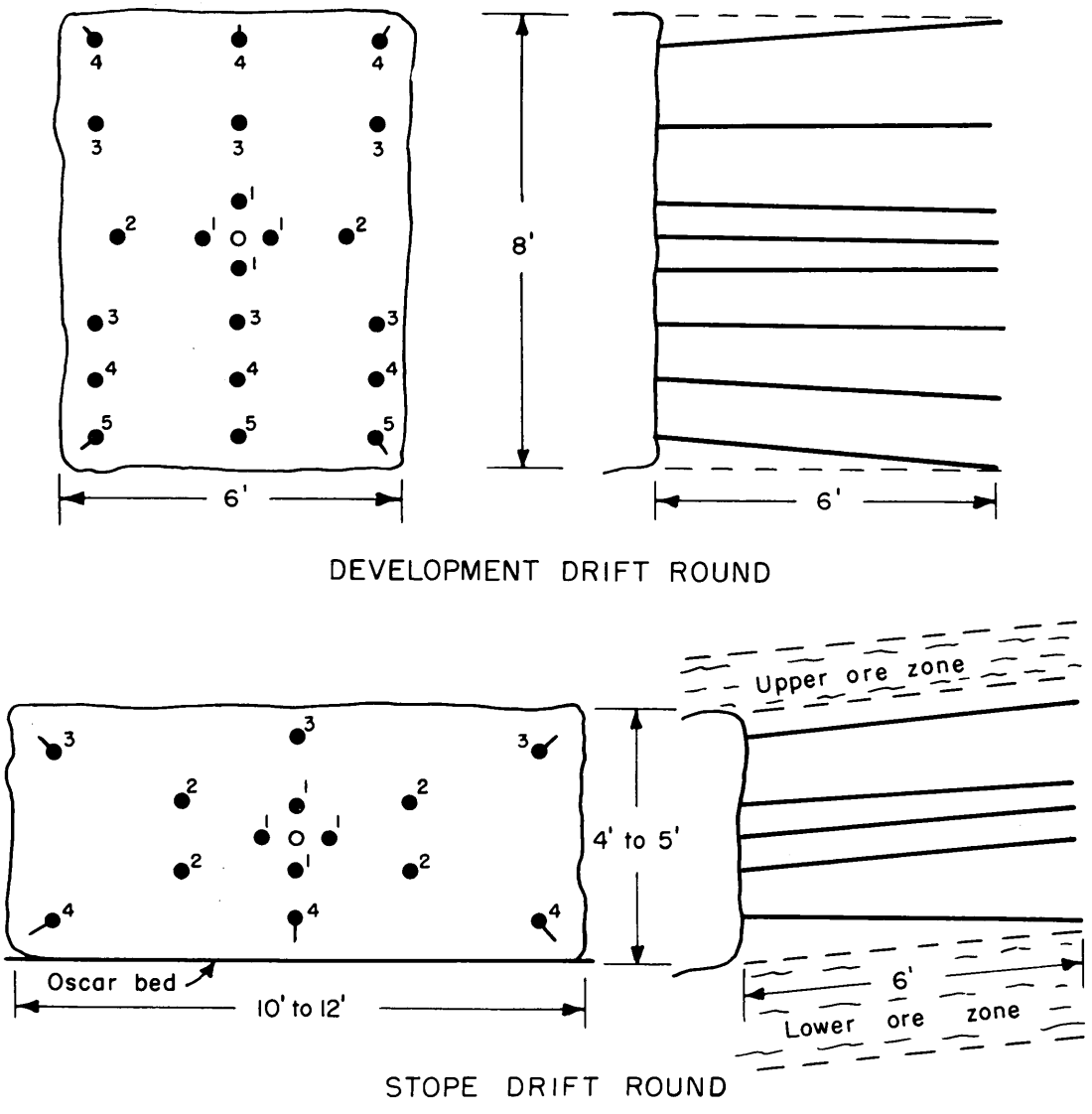
A standard development round, consisting of a total of 22 holes with a five-hole box-burn cut at the center, was used (see fig. 9). In this round the center burn hole is not loaded. Normally, the other four burn holes and the lifters are loaded with eight or nine sticks and the remainder each with six sticks of powder, all without stemming. Gelodyn No. 3, 45 percent semi-gelatin, redislit, 1-1/8- by 8-inch cartridges are used, detonated with fused No. 6 blasting caps ignited by a hot-wire fuse lighter; each round requires about a 50-pound box of powder. The round usually breaks to the bottom of the holes.

Electric blasting caps were used when driving through the water-saturated fold described under "Mine Drainage." With only one heading, two men were employed on each shift, the miner doubled as mucking-machine operator and driller and the other man as trammer and helper. The first half of the shift was devoted to cleaning the heading of muck from the previous blast, usually loading 15 or 16 30-cubic foot cars and laying track, air, and water lines. Drilling, loading, and blasting required an average of 3 hours 45 minutes; minimum time was 1 hour less. The night shift, coming on 3 hours later, repeated the same sequence of operations. No timbering was required.

As development proceeded, and two or more headings became available, the crew of each shift was increased to two miners, a mucking-machine operator, and two trammers.

Soon after passing under the uptilted ore body, the development drifts entered diabase. The drilling time, rate of advance, and amount of dynamite used were virtually unchanged. The only variation to the standard drilling pattern employed in limestone was to drill the top holes and lifters closer to the back and floor. The variation was due to rock structure; limestone easily breaks to bedding planes, but diabase is homogeneous.

The development-drift contract was continued until the north drift was connected with the New Regal workings and the main adit and a lateral were well under the ore body. The main adit then was extended to the surface from the bend near the portal, a distance of 135 feet. After the first 60 feet, timbering was required and the company completed drifting to surface. With this second entrance in operation, surface disposal of waste was independent of the ore-delivery trackage.




Numbers signify firing order.
Center burn hole not loaded.

FIGURE 9. - Blasting Rounds for Development Drift.

The contract work then was shifted to certain stope drifts that would extend the stope faces that had been opened by the company concurrently with the later contract development drifting.

Contract work in stope drifts was confined to removal of barren limestone between the two ore zones. Stope drifts, restricted to the height of the waste band (4 to 5 feet), were driven 10 to 12 feet wide, following the inclination of the limestone bedding. A 6-foot round was blasted and slusher scraped to the nearest raise. After two rounds had been driven, the ore from both ore zones was removed by company miners as described elsewhere in this paper.

From this clean face, now 6 or 7 feet high, the primary stope drift operation was repeated. Payment for contract work of this type was on a cubic-foot basis, as were slabbing rounds in the development drifts for turnouts or widening for track curves in the development drifts.

A typical 15-hole drill round for removal of barren limestone in a stope drift is shown in figure 9. The holes, drilled parallel to the stratification, are placed so that the oscar bed will be the floor and the bottom of the upper ore zone will be the back of the primary drift.

The average loading was one stick of dynamite per foot of hole, with two additional sticks in each of the four burn holes and the three lifters, or a total of 42 pounds of Gelodyn.

After development had produced several headings and sufficient stope faces, contracting was discontinued, but the company continued a decelerated development program. In July of 1959 one miner was employed exclusively on extending development drifts and putting up raises. He started his shift at noon and occasionally drilled and blasted two faces daily. A mucking machine operator devoted the first half of a regular day shift to clearing development waste ahead of the afternoon driller.

The lateral development drifts are driven parallel to the main adit and spaced at 200-foot intervals. Raises normally are 65 feet apart, except where the attitude and irregularities of the ore body require closer spacing.

Raises with a minimum cross section of 4 by 4 feet are centered in the side of the drift at roof elevation (fig. 10). The raises are driven two 5-foot rounds at an inclination of 45°, then vertically to the bottom ore band. A 13-hole box-burn minature drift round is used. The center burn hole is not loaded. The other four burn holes are loaded with eight sticks each and the remainder of the holes with six sticks each, or a total of approximately 30 pounds of Gelodyn No. 3. When the bottom of the lower ore horizon is reached, an additional round is drilled and only the burn cuts are blasted. This serves as a visual check on the ore zones without wasting the fiber that would have been broken by a complete raise round. The remainder of the round is blasted after provisions have been made to recover the ore. Raise drilling is done either with the same machine that is used in drifting or with a telescopic leg machine.

A second driller is used to drive the stope and fringe drifts utilized in stope preparation. Although the drifting is confined to the ore horizon and some production is made therefrom, it is considered as development work.

The amount of annual development work achieved is shown in table 1.

The characteristics of the explosives used and the loading data are summarized in table 2.

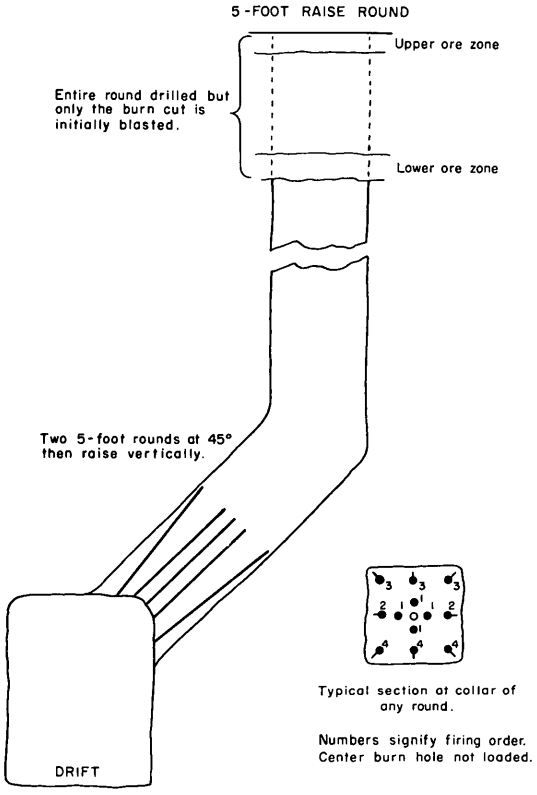



**FIGURE 10. - Blasting Round for Development Raise.**

## Stope Mining

A stope is prepared for full-scale mining by driving stope drifts 10 to 12 feet wide along the sides of the block to be removed and across the fringe or outer limit of commercial ore. The width of the block is determined by the alinement of raises from the haulage drifts, which usually are 200 feet apart. The method of driving the stope drift in the waste strata between the ore zones has been described. After two rounds of waste material have been removed, the asbestos-bearing bands are lightly shot and the broken material hand-sorted. The tenor of the ore in the two zones usually differs; therefore, blasting the upper and lower bands in separate operations allows the better ore to be sorted without excess dilution.

The lower ore zone usually is thicker and contains more fiber. Three 8-foot holes are drilled close to the bottom of the serpentine zone, spaced one at the center and one at each side of the drift about a foot from the wall. Some miners use the feed-leg machine, but others prefer the old "Finnish setup", which is drilling with a conventional jackhammer that slides on a board on the floor. Each of the holes is loaded with three sticks of 22 percent Amodyn No. 7, merely enough to shatter the serpentine without fine fragmentation. After the ore is hand-sorted to separate waste and ore, the top ore band is blasted with three similarly spaced 8-foot holes drilled close to the back. Two sticks of the same low-strength dynamite are used in each top hole.

After the stope has been prepared for full-scale mining, the working face is nearly 200 feet long. Slushers are set at each end of the face, usually mucking into raises by scraping parallel to the face. If the stope is at haulage level, slusher ramps are used.

Stoping is conducted up-dip along one side of the stope drift (fig. 11), following the same sequence of operations described in stope drifting. Until there is space for backfill, much of the muck must be scraped into raises in order to clear a 5-foot-wide working space against the face. As the stope face advances, the material from the waste band is blasted into the backfill by proper hole spacing and pointing. Experience has shown that a burden of 2 feet on a blasthole gives the best breaking and propulsion combination for placement in the backfill 20 or 30 feet away.

TABLE 1. - Development data, 1954-58, in feet

| | 1958 | 1957 | 1956 | 1955 | 1954 | 5-year total |
|---|---|---|---|---|---|---|
| Drifting in waste..... | 1,452 | 1,770 | 1,165 | 1,450 | 1,004 | 6,841 |
| Drifting in ore..... | 635 | 655 | 260 | 260 | 900 | 2,710 |
| Raising in waste..... | 255 | 315 | 320 | 210 | 120 | 1,220 |
| Total..... | 2,342 | 2,740 | 1,745 | 1,920 | 2,024 | 10,771 |
| Development work per ton of fiber produced..... | 4.1 | 4.8 | 2.5 | 3.5 | 4.0 | 3.7 |

TABLE 2. - Explosives characteristics and loading data

Explosives data1/

| | Waste rounds | Ore rounds |
|---|---|---|
| Type of explosive..... | Gelodyn No. 3 | Amodyn No. 7 |
| Stick count, per case..... | 146 | 210 |
| Bulk strength.....percent.. | 45 | 22 |
| Weight strength.....do.... | 60 | 65 |
| Rate of detonation..ft./sec. (confined).. | 1,500 | 8,000 |
| Cartridge diameter.....inches.. | 1-1/8 | 1-1/8 |
| Cartridge length.....do.... | 8 | 8 |
| Type of package..... | Semiplastic redislit | Semiplastic redislit |
| Water resistance..... | Good | Poor |

Loading data

| | Development drift | | Primary stope drift | |
|---|---|---|---|---|
| | Burn holes and lifters | Other face holes | Burn holes and lifters | Other face holes |
| Explosive/ft. of hole.....lb./ft.. | 0.50 | 0.33 | 0.43 | 0.33 |
| Explosives/hole.....do.... | 3 | 2 | 3.5 | 2.6 |
| Total explosives/6-ft. round.....lb.. | 50 | | 42 | |
| Kind of stemming..... | None | | None | |
| Point of detonation..... | 2d stick from bottom | | 2d stick from bottom | |
| Type of delay..... | Fuse timing | | Fuse timing | |
| Sequence of delays..... | 1 inch difference for timing | | 1 inch difference for timing | |

1/ Strength and rate of detonation from manufacturer's specifications.

Three methods of face drilling have been employed, as shown in figure 12. In each case, two rows of 6- to 8-foot holes are drilled. The upper row is 12 inches below the bottom of the upper ore zone and parallel to the bedding. The lower row is drilled 18 inches above the oscar and is pointed downward so that the end of the holes is within a few inches of that bed. Method A is a continuous series of holes along the face. Usually, eight pairs of holes are

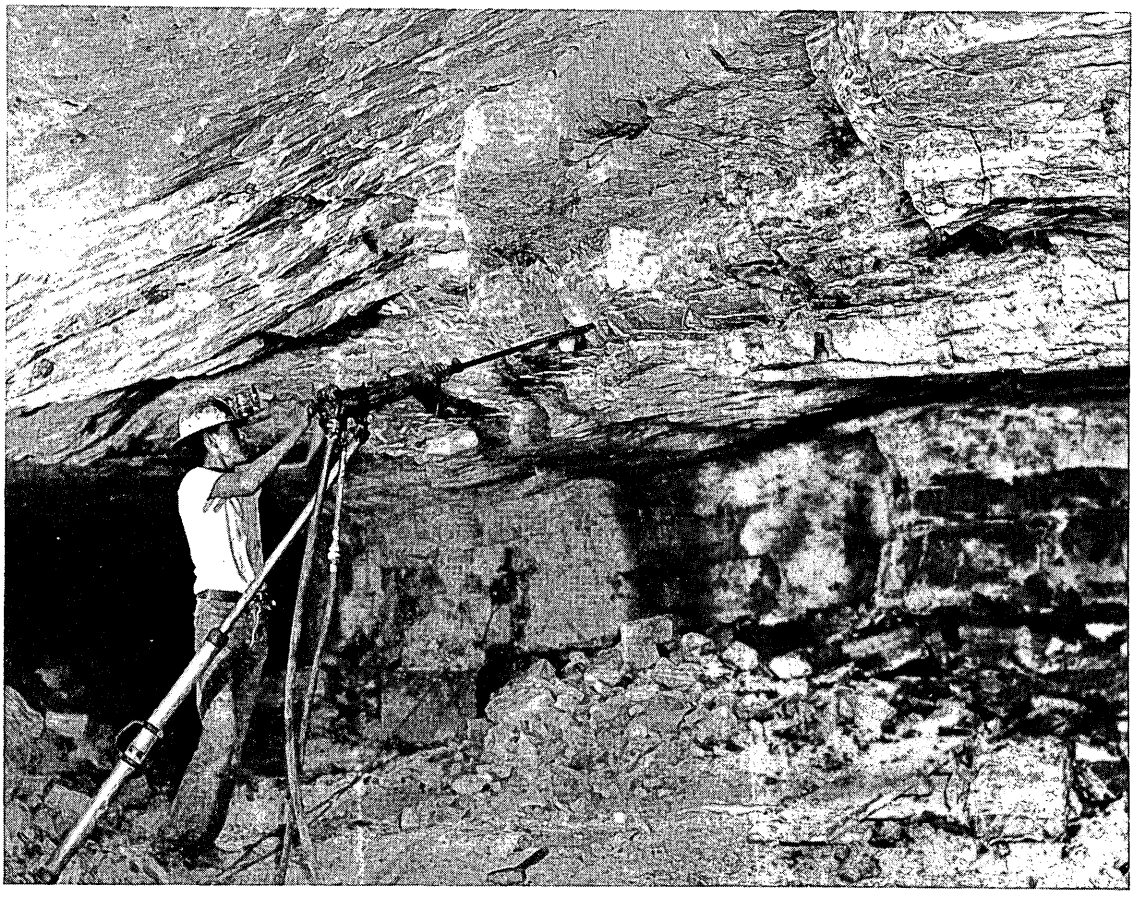


FIGURE 11. - Drilling of Upper Ore Zone in Stope in Thrust-Faulted Area.

blasted at a time. This method is considered the least efficient, as it gives poor return on hole footage and requires at least another drilling and blasting operation to clear a sufficient bench width for economical fiber removal.

In method B, the holes are drilled into a serrated stope face. The principal objection is that the re-entrants cannot be cleaned with the scraper.

Method C is the preferred method of stope advancement. The drill holes in the waste band are parallel to the gob pile, and the blast packs the backfill more efficiently than angle holes. Each round creates enough room for efficient fiber removal.

Each hole of the lower row in the waste band is loaded with eight sticks of 45 percent Geolodyn. This heavy charge blasts the waste tightly into the backfill. The upper row of holes are loaded with six sticks of the same dynamite and are timed to follow the hole immediately below it. Thus, much of the material broken by the upper holes is blasted into the backfill by the succeeding explosion in the lower so-called wiper hole.

A unit crew consists of one driller, one slusher operator, two ore pickers, and a trammer. The waste close to the working face is slushed with a

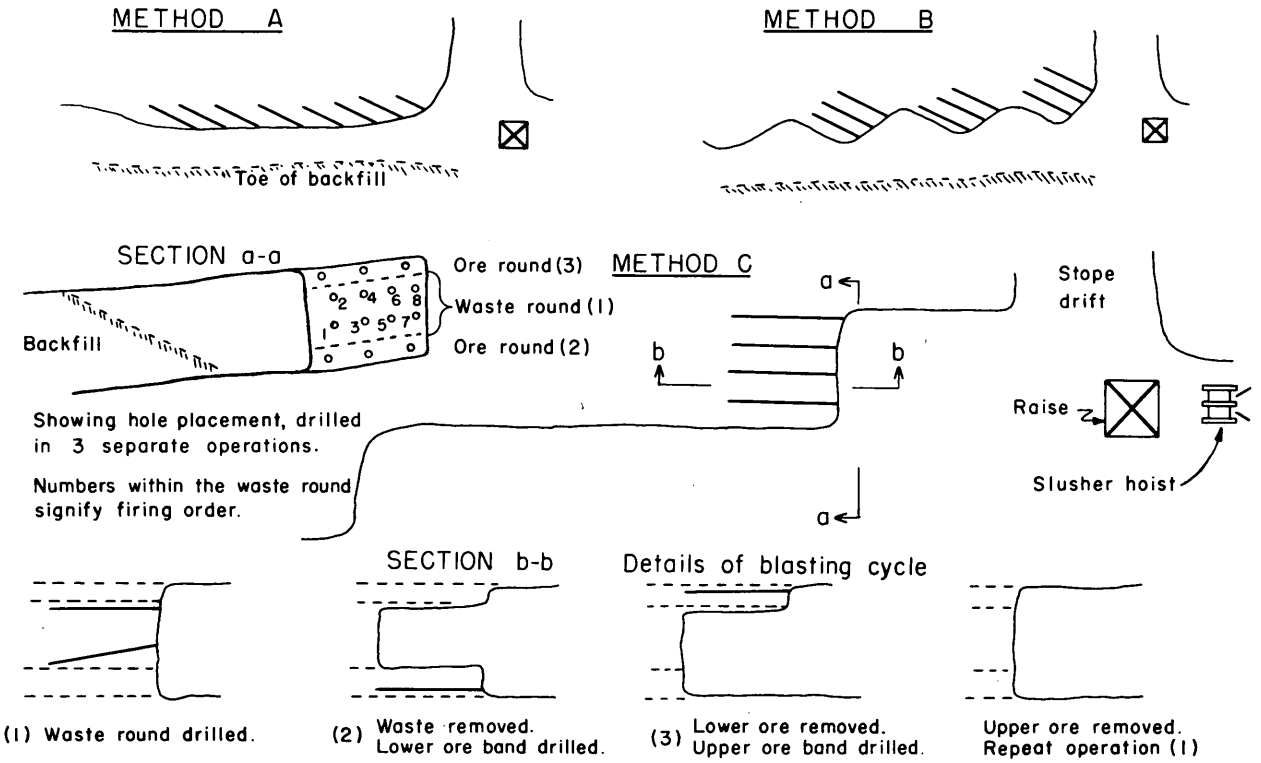



**FIGURE 12. - Three Methods of Advancing Stope Faces.**

reversible hoe-type scraper. When loading ore, the scraper is removed and a skid-mounted 1/2-ton car (ore boat) is attached to the slusher cable.

The ore pickers hand load the ore boat with fiber-bearing material, sorting out limestone and barren serpentine without resorting to cobbing, sledging only those pieces too large to be handled easily. The ore boat is pulled to the raise or to a slusher ramp for loading into regular mine cars.

Roof support in the Navajo and New Regal workings is accomplished primarily by tight backfilling. Pillars are necessary to support fractured areas where the roof is unstable and to protect the haulage drift where it is within the ore horizon. A pillar 30 feet wide also is left above the haulage drift when it passes below the ore zone. Pillars are not left where there is 15 or 20 feet of rock between the drift and the stope level.

Pillars near the haulage level are to be robbed on the retreat during the last stage of mining operations.

Random pillars are left where the ore tenor is submarginal. If these pillars are relatively small and are situated over haulage drifts, they are drilled for possible future blasting when signs of transmitted roof pressure become apparent in the drift below.

The limestone stratum overlying the ore horizon is relatively thick bedded and competent, but in time it tends to flex downward uniformly, adjusting the weight on the backfill. In general, pillars less than 10 or 12 feet in diameter are a detriment because they not only tend to be crushed, but also the resultant pressure that builds up around the periphery of the pillar cracks the overlying roof stratum. When the bed is broken, the roof in the immediate area becomes unstable and is apt to cave.

Although there are open stopes in the Regal mine up to 50 feet wide, supported only by posts, it is the present practice to keep the backfill within about 20 feet of the long-wall face.

As indicated previously, backfilling is accomplished by a method of properly spacing, pointing, and blasting the drill holes in the waste band. The blasting operation not only compacts the waste but tightly packs the material against the back of the open stope. Manual or mechanical backfilling leaves an irregular surface that is not in contact with the stope back. See figure 13 for a comparison of the two methods.

The management estimates that 50 percent of the material broken in the mining operation remains in the backfill. This retention of waste in the mine is higher than that of similar asbestos mines where the waste is placed in the backfill by scraper or hand shoveling.

A detailed study of the percentage of waste remaining as backfill at the El Dorado mine of the Arizona Asbestos Association was made by the author in 1931. Random carloads of waste were weighed to determine the average car loading. Hand cobbing of the crude Nos. 1 and 2 grades was done in the stopes, and only the sacked crudes of these grades and the excess waste were removed from the mine. Detailed stope surveys to determine the volume of rock broken were made of the advancing stopes, and cars of waste trammed to the surface dump were counted. Waste was hand shoveled into the backfill, gobbed as tightly as possible, but the top of the gob pile was always 1/2 to 1 foot from the back. Over a period of 4 months, in which more than 11,000 tons of rock was broken, 45.2 percent was backfilled. Thus, the estimated 50-percent retention of waste in the Navajo and New Regal workings is conservative.

Dry walls occasionally are built to maintain necessary passageways through or around backfilled areas. The walls are not intended for support but merely keep the waste from spilling into the passageways.

Because only double-drum slusher hoists are used, the direction of pull on the sheave anchors is variable and tends to crystallize the steel. After two near accidents due to broken anchors, the management decided to make its own sheave anchors. Each end of a 3-foot loop of 9/16-inch steel cable is brazed to a narrow 9-inch steel wedge (see fig. 14). When wedged, the semi-flexible corrugations of the cable and the brazed strips seat firmly against the sides of the pinhole, resisting loosening by vibration. The cable loop, which extends from the pinhole, flexes with the load.

FIGURE 13. - Comparison of Backfilling Methods: A, by Hand-Shoveling and B, by Blasting.

FIGURE 14. - Flexible Sheave Anchor.

Underground Transportation

The first operation involved in the transportation of ore and excess waste from the initial breaking point in the stope is movement by means of slusher hoists, regardless of whether the ore horizon is at or above the haulage level. If the ore horizon is at or within slushing distance (about 100 feet) of a haulage drift, mine cars are loaded from a ramp set over the track.

The portable ramp used is standard equipment at the Regal mine and is custom-built in the Phoenix shop of D. W. Jaquays & Co. at a cost of approximately $400. The entire ramp assemblage is illustrated in figure 15. Mobility is attained by supporting the rear end of the ramp on a mine car with a so-called spider that consists of 4-inch channel iron members welded in a right-angled cross and notched to fit the top of the car. The rear end of the ramp is lifted clear of the floor with a small screw jack built into the spider. The ramp then can be trammed to any desired place in the mine. The spider and jack are shown in place in figure 15.

Figure 16 shows the method of loading waste with a scraper, and figure 17 shows a skid-mounted ore boat ready to dump.

The reversible hoe-type scrapers are 30 or 36 inches wide. This type of scraper has been chosen for several reasons: (1) Its simple design makes it relatively cheap to build; (2) in case the scraper flips over, there is no lost time in manually righting the bucket, as the opposite blade digs equally well; (3) it was especially designed to use most efficiently with available

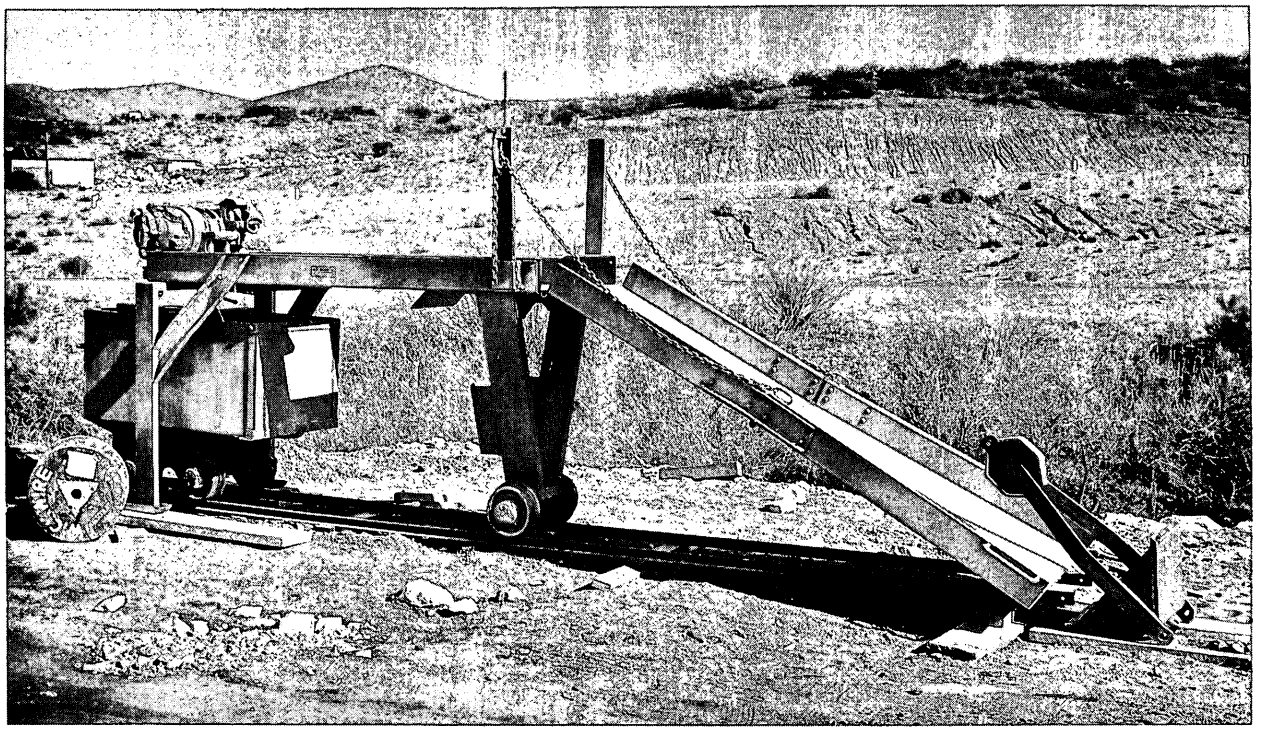


FIGURE 15. - Portable Ramp Assemblage.
*(Courtesy, Jaquays Mining Corp.)*

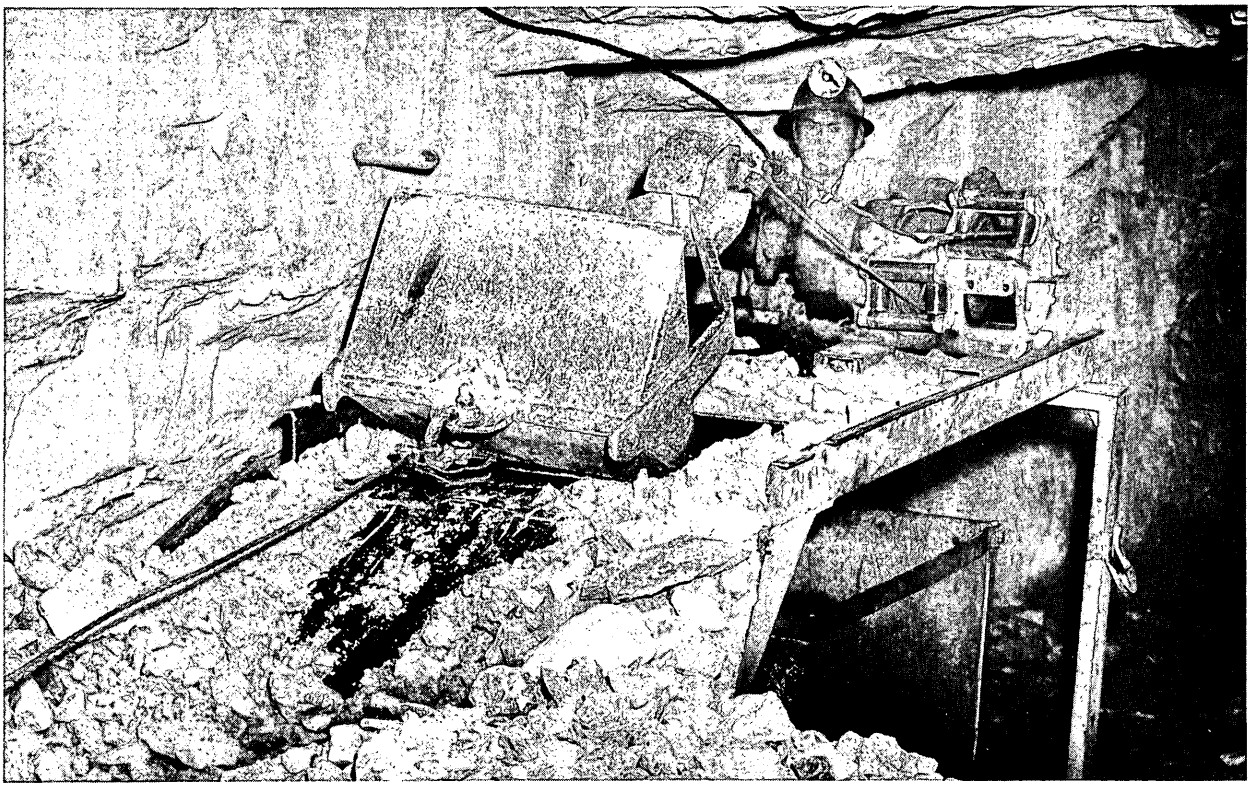


FIGURE 16. - Loading a Car With Portable Ramp and Slusher Hoist.
*(Courtesy, Jaquays Mining Corp.)*

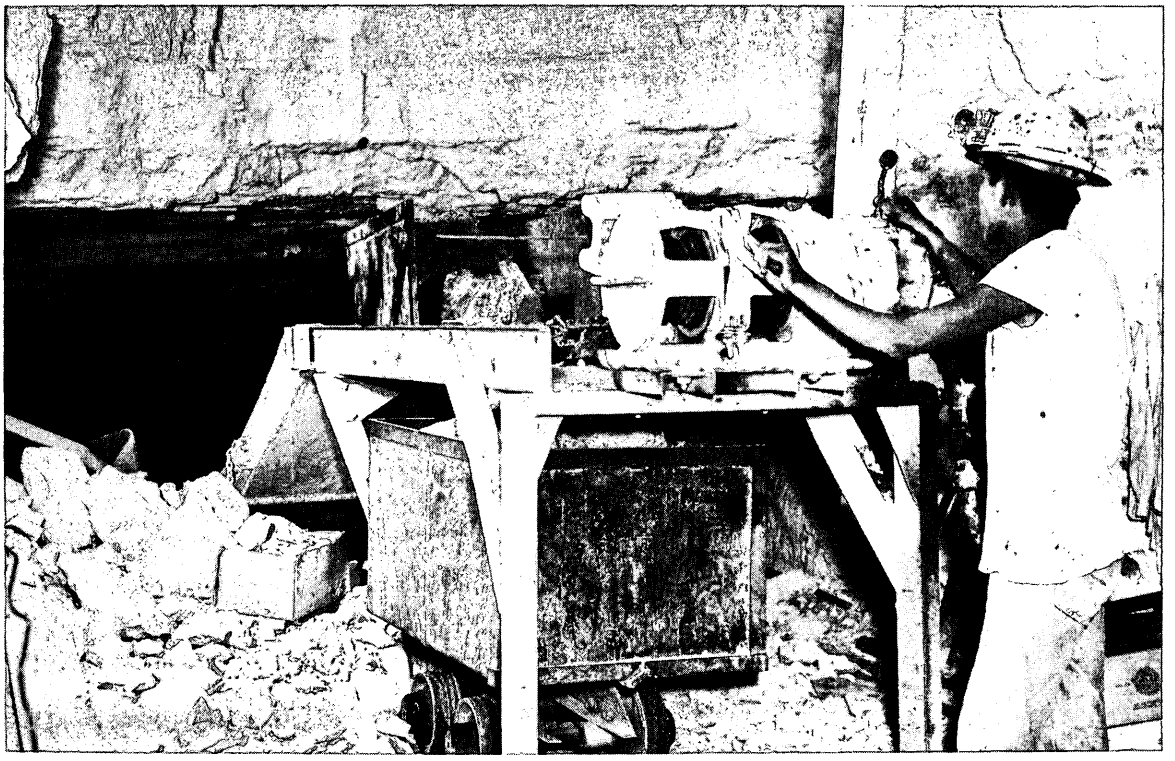


FIGURE 17. - Loading Ore on Haulage Level With a Skid-Mounted Ore Boat.

slusher motors; (4) it loses none of its load while sliding up the inclined ramp. Experiments to determine the optimum performance of the scraper were conducted by varying the weight of the bucket. One-inch plate construction gave the most efficient performance.

Figure 18 shows a 30-inch scraper, and figure 19 details the measurements of a 36-inch scraper.

The skid-mounted ore boats originally were made by removing the truck assemblage and door from old 20-cubic-foot mine cars, cutting down the sides to a height of 18 inches, and attaching a chain bridle to the upturned ends of two 4-inch channel-iron skids welded to the bottom. Now, ore boats are constructed in the shop with reinforced bodies of 3/16-inch steel plate (fig. 20).

From the stopes above the haulage level, the ore and waste goes into separate raises, or into the same raise in different cycles. The ore or waste is loaded into end-dump mine cars by the underground trammer and pushed to the bypass station, some 600 feet inside the portal. This station is double tracked for about 70 feet to accommodate 12 loaded cars on the main line and 12 empties on the switching track. Spring switches keep the loaded cars on the main track and bypass the incoming empty cars onto the switching track. On a plank between the tracks, 18-inch chains are attached at one end and can be kicked across one rail to keep the cars from rolling forward.

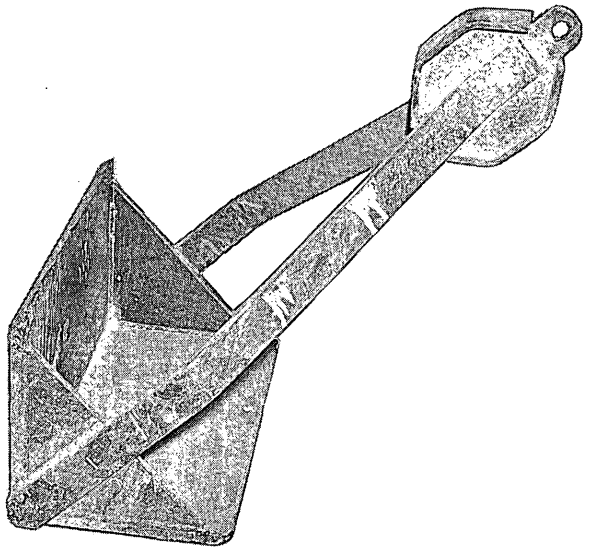


FIGURE 18. - Reversible Hoe-Type 30-Inch Scraper.

The underground trammer hangs a yellow metal tag on each car that contains ore, takes an empty, and returns for another load. The surface trammer kicks out the chain stop and pushes the car to the portal. Ore or waste cars are routed to their proper destination by a manually operated switch. Ore cars are either dumped onto the cobbing grizzly or sidetracked on the approach trestle for dumping as needed. As an ore car is dumped, the tag is taken off and placed on a spindle to be counted and recorded daily by the mine superintendent.

The waste cars are trammed over the other track to the dump. The trammer manually trips a car-counting meter installed inside the portal.

A car-retaining bumper that engages all four wheels is fastened to the end of each of the dumping tracks to prevent accidental derailment or loss of a car during dumping.

Chute construction is standardized in the Navajo workings. The chute floor is inclined about 40°, the overall width is 36 inches, and the chute lip is in line with and 50 inches above the inside rail of the track. Minimum clearance between posts and each side of the track is 12 inches, and the caps are at least 7 feet above the track level.

Because the users of asbestos products are becoming more critical of even small amounts of wood fiber in the milled asbestos, the operator uses steel-lined chutes. Prefabricated sectional steel liners and steel gates are placed in all new chutes; the old chutes are being relined with prefabricated steel sections as rapidly as possible. Rock flow is controlled with a modified overcutting arc gate and checked by two "drop boards" that are channel-iron members sliding between welded guides. Figure 21 shows a typical lined chute, and figure 22 gives the construction details. The slotted bolt holes in side and bottom plates allow for variation of chute width.

The gate arm originally was attached parallel to the chute floor. The rocks of the first load dumped into an empty chute had the tendency to bounce the chute gate open. Raising the pivot point of the gate arm 1 inch eliminated the trouble.

Normally, the smooth side of the channel-iron drop board is placed against the material in the chute for easier raising. However, when a chute is used intermittently and drawn empty, the impact of rocks against the drop boards

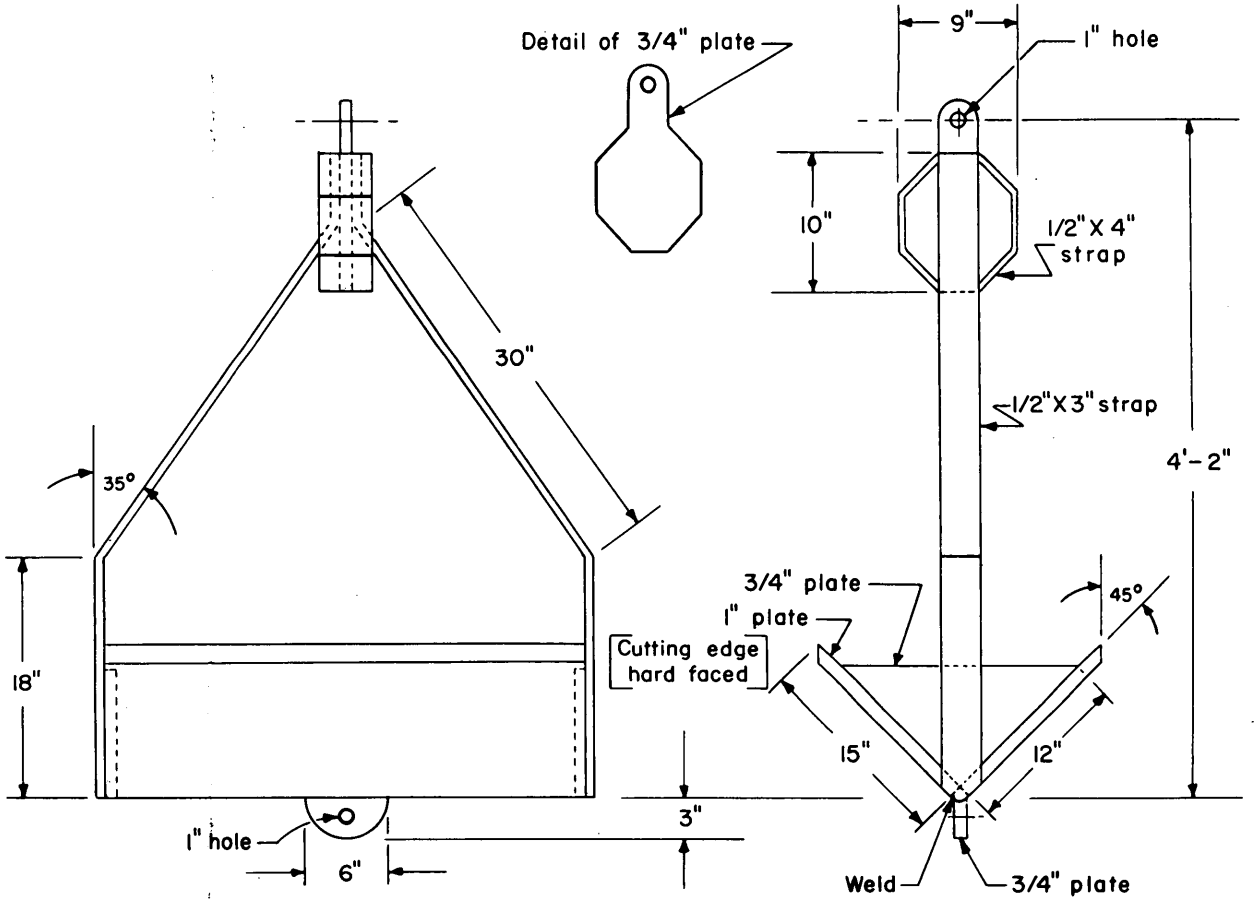



FIGURE 19. - Sketch of 36-Inch Scraper.

often bounce them out of the guides. This is overcome by reversing the channels so that the flange side faces inward.

## Auxiliary Operations

The surface layout of the Navajo workings is shown in figures 23 and 24. Minor equipment repairs are made at the portal where spare parts and small tools are available at the tool shed. Major repairs are made in the machine shop at the mill in Globe, or at the Phoenix plant of D. W. Jaquays & Co. in their large machine shop. At the Phoenix shop, the ore bins, belt conveyors, mine cars, slusher buckets, sectional steel chute liners, and other equipment are fabricated.

Compressed air is furnished by diesel-powered portable compressors. Three 500-c.f.m. and one 600-c.f.m. units are outside the Navajo portal and one 500-c.f.m. unit is at the New Regal portal. The four compressors at the Navajo workings are arranged in two tiers, back to back, directly connected to a 1,000-gallon fuel tank.

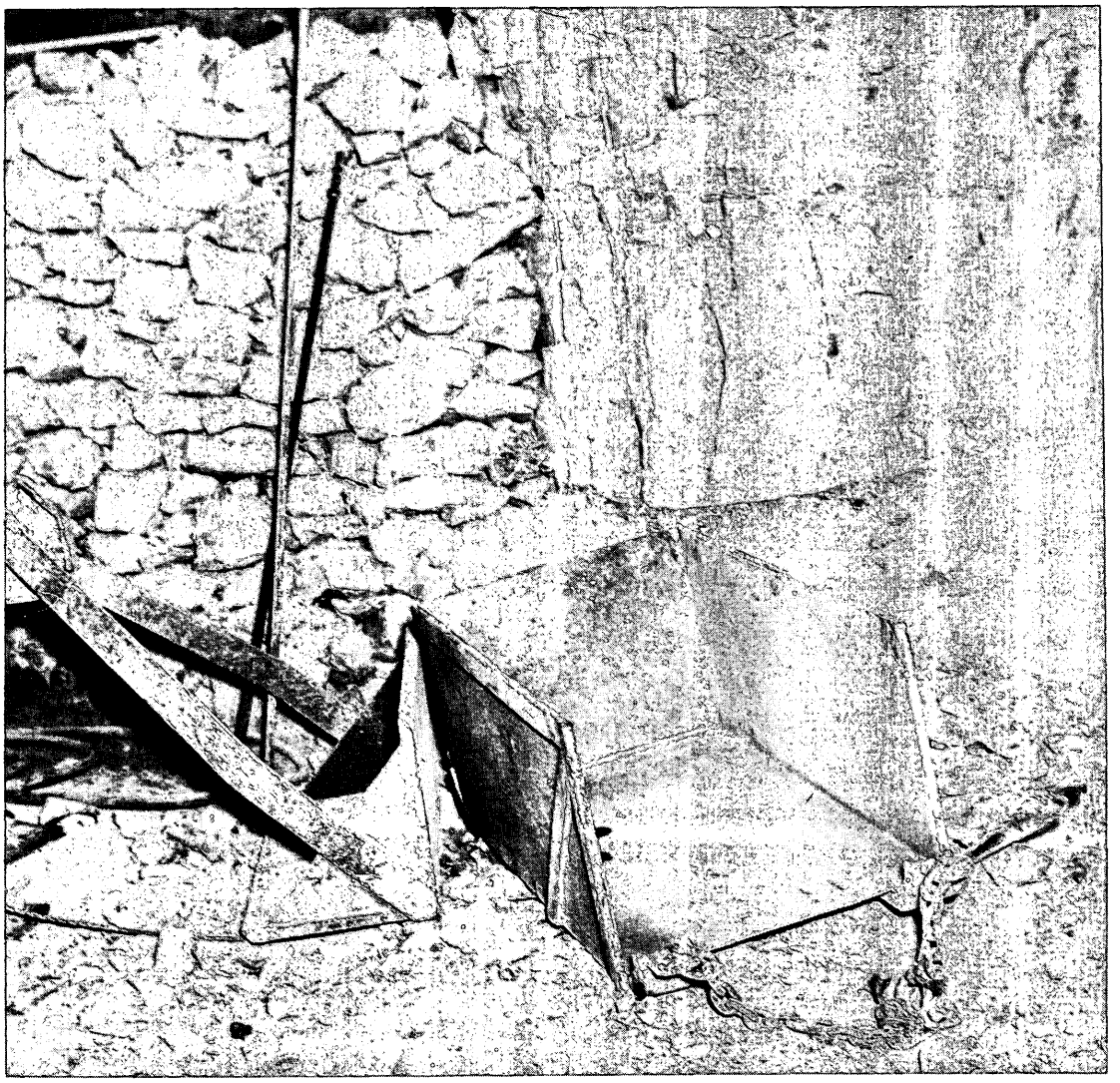


**FIGURE 20. - Skid-Mounted Ore Boat and 36-Inch Scraper. The Oscar Marker Bed Above Lower Ore Zone is Immediately Above Top of Ore Boat.**

Each of these four compressors is connected to a 4-inch air line feeding into a 3-1/2- by 14-foot receiver (fig. 25). From the receiver, a 4-inch air line on the side of the drift floor goes 850 feet along the main adit, branching to a 3-inch line in the south 45 fringe drift. Wherever necessary, 2-inch lines carry air to the working faces. One of these 2-inch lines is connected through the mine workings to the portal of the New Regal adit where the fifth compressor and a 3- by 5-foot receiver are located. Two or three of the compressors are operated as needed during the shift; the others are on a stand-by basis. No 1-inch air lines are used in the mine.

The compressors are set to deliver air to the receiver at 100 to 105 pounds, or approximately 90 pounds at the working faces.

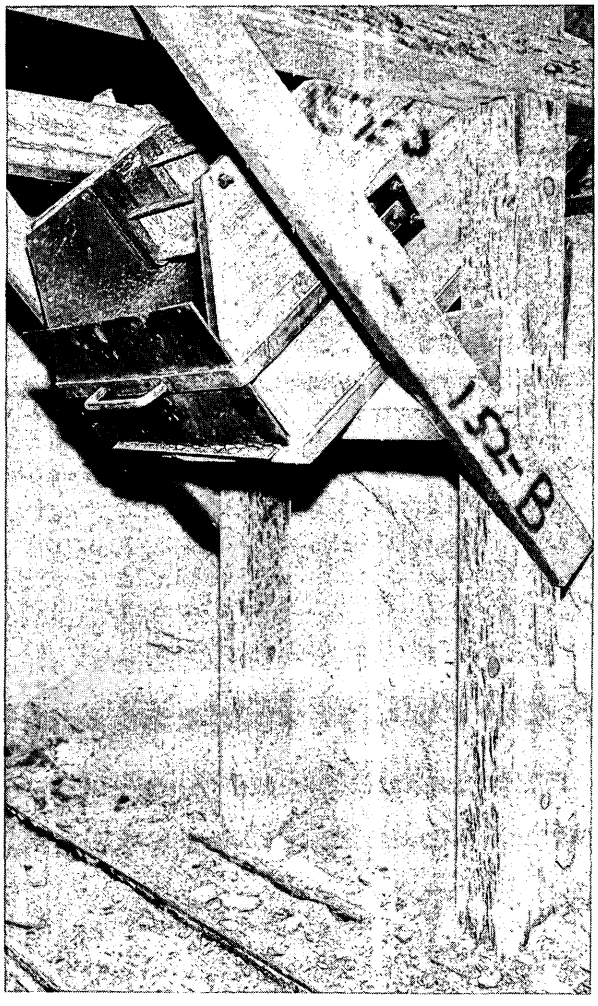



FIGURE 21. - Typical Steel-Lined Chute.

The cobbing platform, 8 feet wide by 20 feet long, consists of a longitudinal grizzly constructed of 12-pound mine rail set base up with 1/2-inch clearance between adjacent rails. A transverse 2-foot high V-shaped steel deflector divides the grizzly into two cobbing compartments, under each of which is a 10-ton bin. The whole assembly, constructed of steel, sets over a lower service road on the mine dump. The grizzly is 4 feet below the ore-haulage track and is covered with roof and siding of corrugated sheet iron (fig. 26).

The fines pass through the grizzly and the cobbed material is tossed through a 12-inch-wide aperture at the outer end of the grizzly rails into the bin below. Waste material is thrown or shoveled out of a slot in the side of the shed, and as it piles up occasionally is pushed off the dump.

A second and somewhat larger cobbing structure, now being installed, will be used for cobbing ore that is lime-free, the fiber of which will be used for specialized filtration products.

Prior to the start of the Navajo operation, the cobbing facilities at the New Regal workings were underground, near the portal of the intermediate level. Adjacent to and lower than the track, two separate 3- by 12-foot grizzlies each were placed over a two-compartment raise. Ore cars were dumped onto each grizzly from a short spur track. One of these installations is shown in figure 27. Cobbed ore and resultant waste were tossed into the respective chutes to be drawn and trammed on the haulage level below. The cobbed ore (mill rock) was dumped into a bin in the portal trestle, and the waste was dumped into a chute at the end of the trestle (fig. 28). Activity has virtually ceased in these workings, and the remainder of this section deals only with the operations at the Navajo unit.

A 10-cubic-yard, 10-wheel dump truck hauls the mill rock to Globe, usually making one trip per day. An 8-cubic-yard standby truck stationed at the mine is used for ore haulage if necessary.

The two entrances to the Navajo mine permit having separate tracks for ore and waste haulage at the surface. The waste is trammed across a trestle

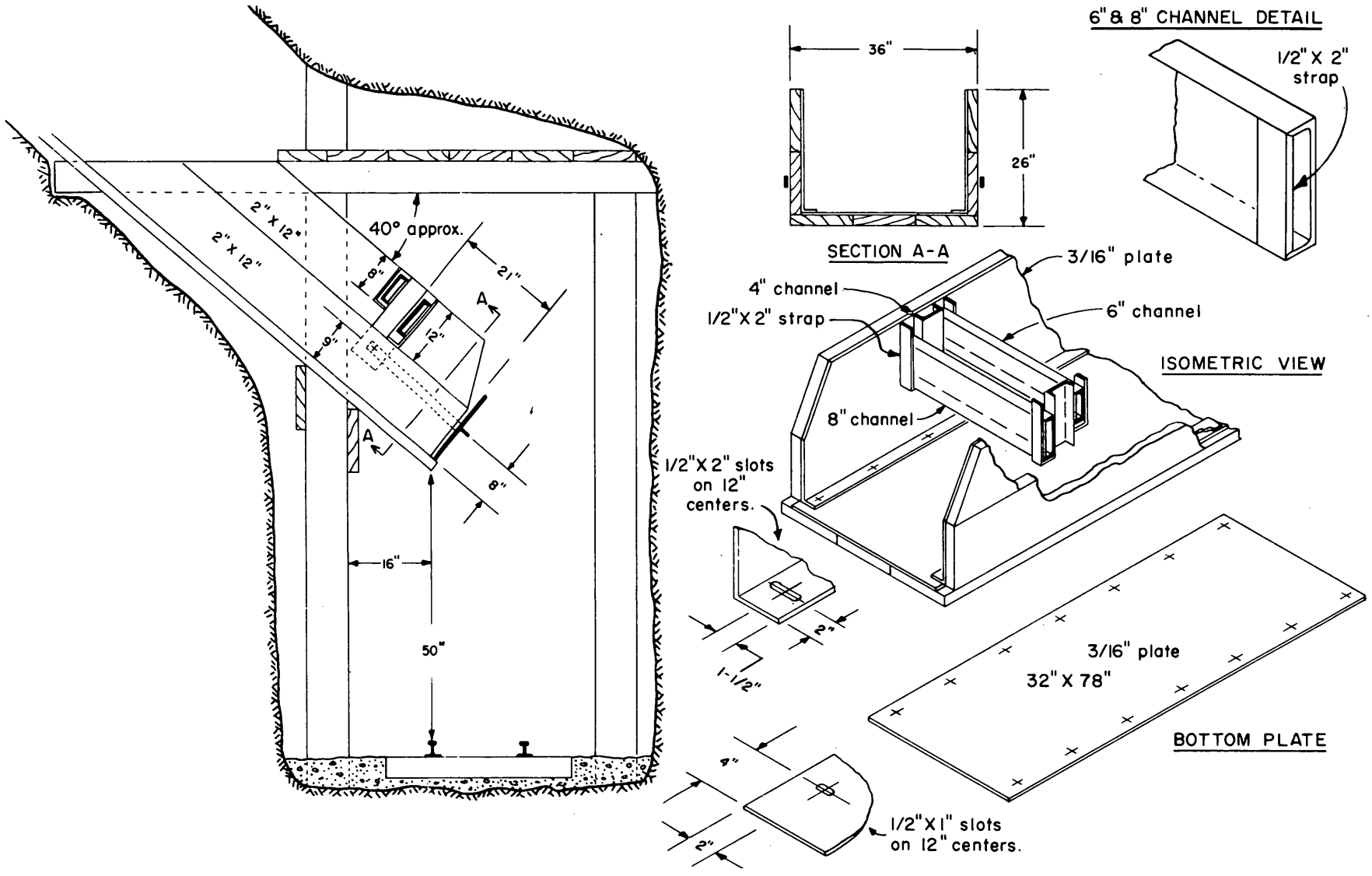



FIGURE 22. - Details of Steel-Lined Chute.

FIGURE 23. - Navajo Workings Across Regal Canyon.

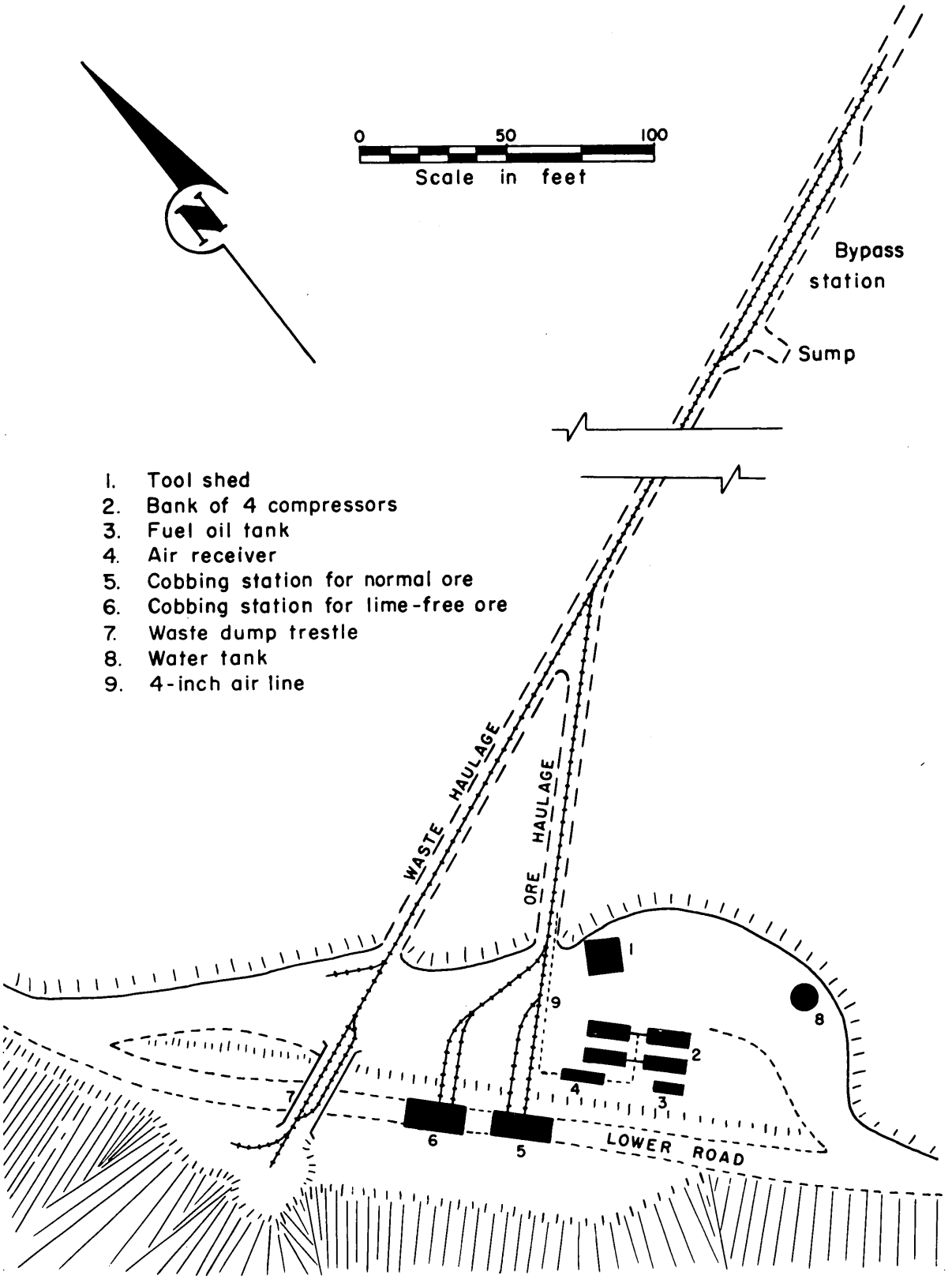



FIGURE 24. - Layout of Mine Plant at Navajo Workings.

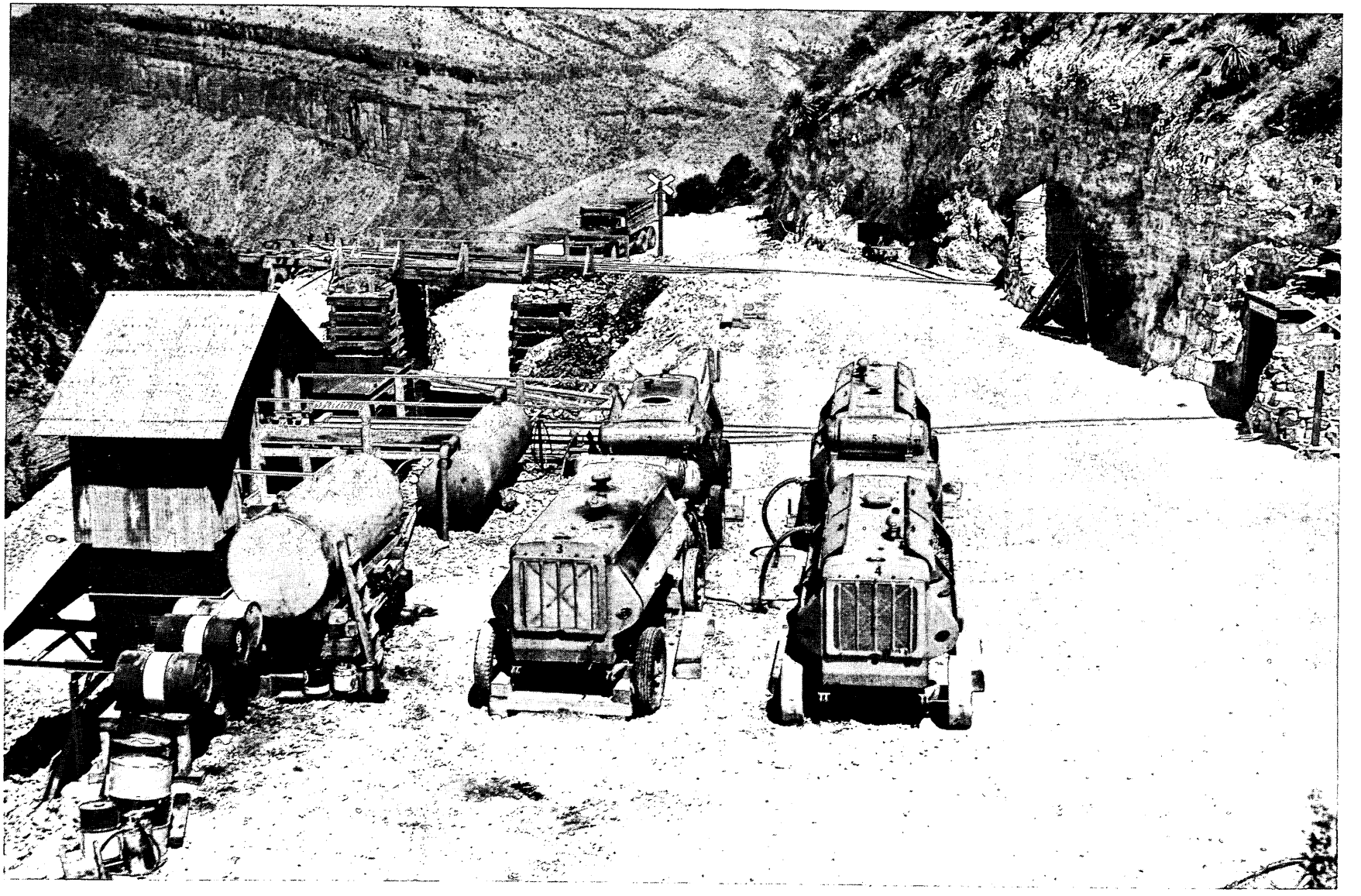


FIGURE 25. - Diesel Compressors at Portal of Navajo Unit.

FIGURE 26. - Ore Cobbing at the Navajo Unit.

over the lower service road and dumped into the canyon. Fine material for road surfacing can be emptied into a truck through a trapdoor on the trestle. It is planned to place a 10-ton storage bin under the trestle.

A 2,000-gallon water tank on the hillside near the mine portal and a 2,000-gallon tank at the camp are filled when necessary from a perennial spring in the canyon by a 1-1/2- by 2-inch duplex, single-action pump with a gasoline motor. The water supply is augmented by a small flow piped from another spring on the roadside above.

Water for mine use is piped from the supply tank to the mine sump in the adit. Two fountains along this pipeline provide the men with drinking water. A pneumatic 3- by 2- by 3-inch duplex reciprocating pump at the sump supplies drilling water to the working faces through 1-inch pipes.

A pneumatic timber saw is used in the mine to frame timbers at the chute locations.

There is no electric power at the mine, but a small Kohler plant located at the camp furnishes light and power for the two staff houses.

Explosives are bought in lots of 10 tons (400 cases) and are trucked to the mine and stored in an isolated underground magazine. Daily requirements of explosives are issued from the magazine and carried to the working places

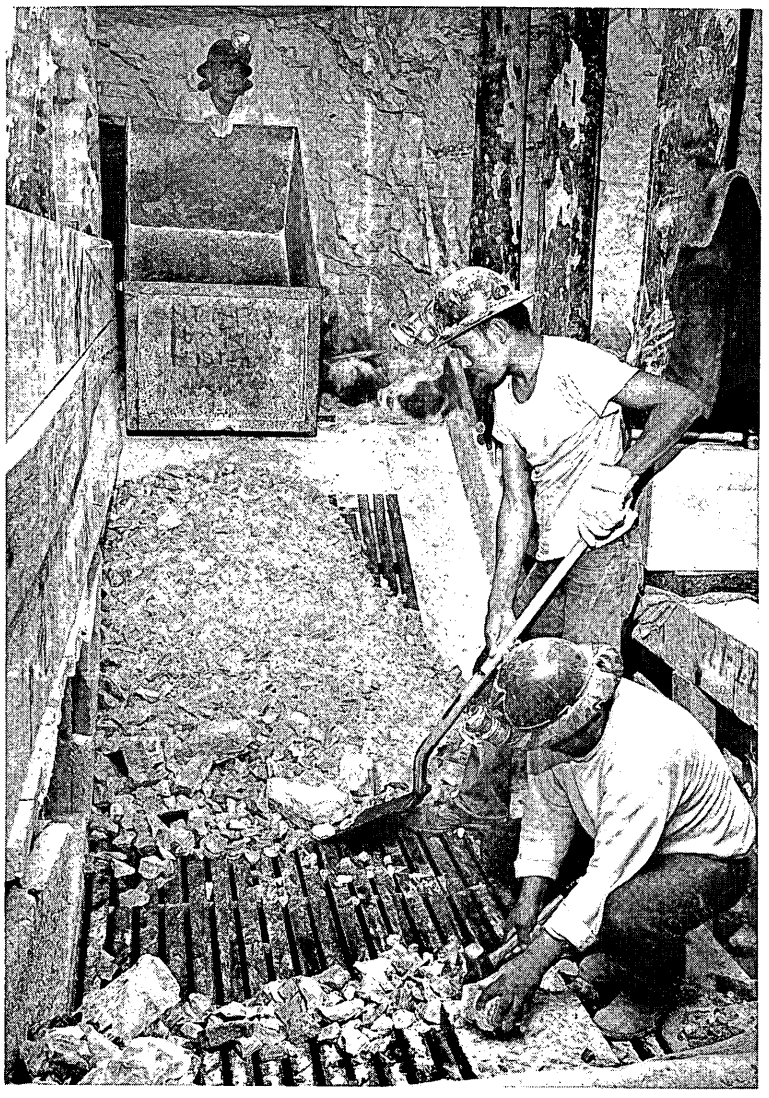


FIGURE 27. - Underground Cobbing Station in New Regal Unit.

*(Courtesy, the Jaquays Mining Corp.)*

by a powderman. Caps and fuse are stored in a separate magazine, and no more than 1,000 caps are on hand at any one time. No explosives are stored in the mine.

Construction of the new Highway 70 mill, with its increased capacity, established the possibility of reclaiming short fiber from the upper part of the Old Regal dump. This part of the dump was built up on a bench below a vertical diabase cliff during the early mining operations, when only the hand-cobbed Nos. 1 and 2 grades of fiber were recovered.

Consequently, equipment has been placed to reclaim the dump material. A trommel, 3 feet 8 inches in diameter and 8 feet long has been constructed, lined longitudinally with 12-pound rails. The openings between the rails, which are fastened bases inward, form 3/4-inch slots.

A gasoline-powered slusher with a 24-inch scraper drags the dump material to the trommel bin. Oversize material, passing through the trommel, is rejected on a transverse 17-foot by 18-inch belt conveyor. The undersize material drops onto a 30-foot by 20-inch belt conveyor, which loads an 8-cubic-yard truck (fig. 29). The trommel and waste conveyor are driven by a gasoline-powered 4-cylinder engine through a gear reduction box. The other conveyor is driven by a smaller engine.

The undersize material is transported about 2 miles to a stockpile beside the main access road. A bulldozer pushes the stockpiled material to a ramp, under which is a bin that feeds a 40-foot by 24-inch belt conveyor. The conveyor belt loads an end-dump semitrailer (fig. 30). The material is hauled to Globe where it is stockpiled for future treatment at the Highway 70 mill being constructed.

FIGURE 28. - View of Trestle at Portal of New Regal Unit. Haulage Level at Top of Trestle and Intermediate Level at Top of Ladder. A 500-c.f.m. Diesel-Powered Compressor.

Table 3 lists the major equipment used at the Regal mine.

## PERCENT EXTRACTION AND PRODUCTION RATES

Figure 31 is a flowsheet, representing the complete cycle of average daily ore production. Fifty percent of the material broken remains in the backfill or "gob pile", as it is termed locally. The backfilling method has been described previously.

A breakdown of production by tons per man shift during the first half of 1959 is shown in table 4.

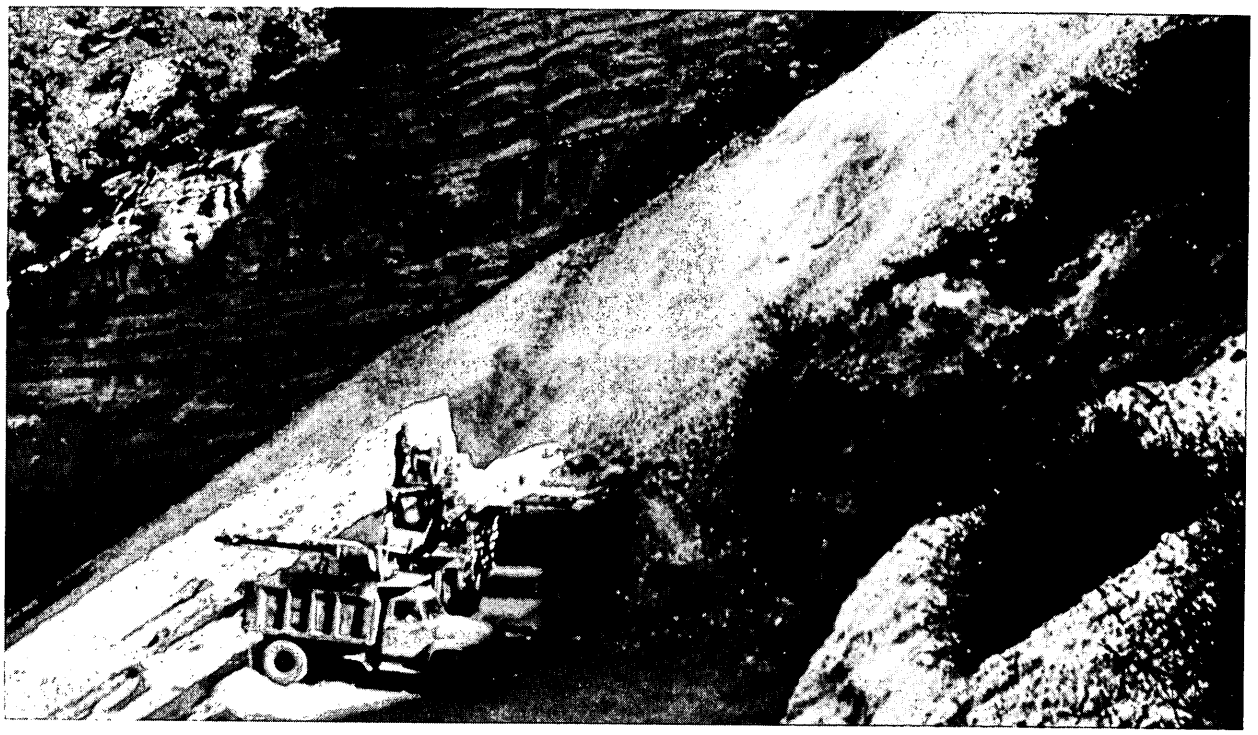


FIGURE 29. - View of Dump-Reclaiming Equipment. Discordant Contact of Limestone and Diabase East of Mine Is Visible Above Slope of Dump.

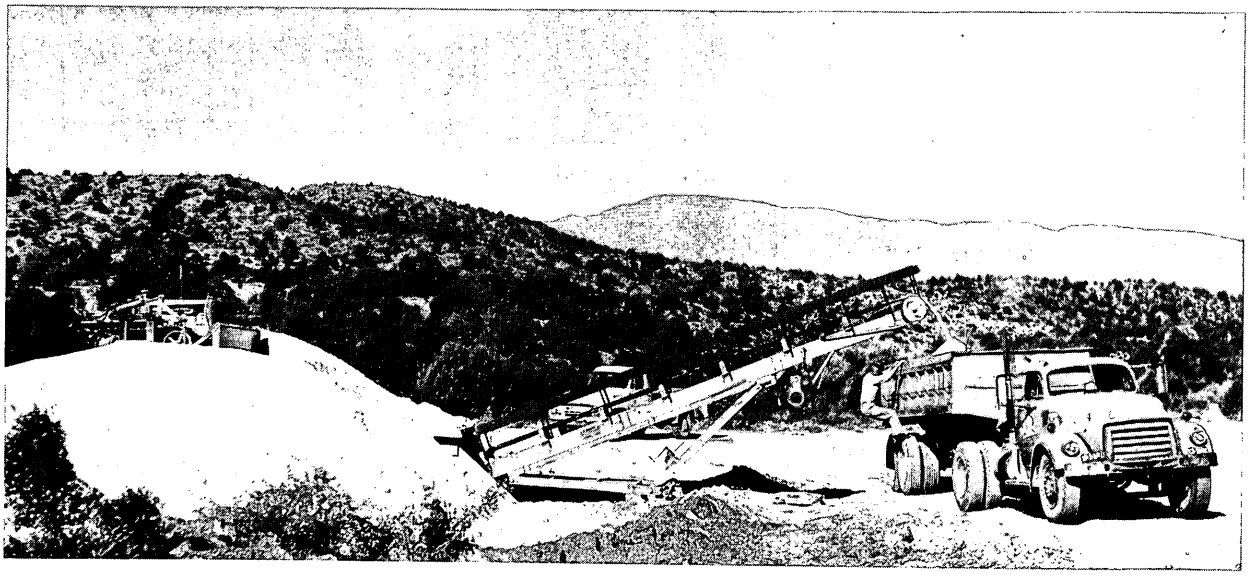


FIGURE 30. - Loading a Truck With Reclaimed and Screened Dump Material at Stockpile.

TABLE 3. - Inventory of equipment

| | Quantity | Size or capacity | Model | Manufacturer | Remarks |
|---|---|---|---|---|---|
| Airplane | 1 | 4 passenger | 1957 | Piper Aviation Co. | Radio equipped. |
| Dozer | 1 | | D-8 | Caterpillar | |
| Do | 1 | | D-2 | do | |
| Mucking machine | 1 | Medium | G-10 | Gardner-Denver | |
| Slusher (double drum) | 12 | 30-in. scraper | HEE | do | Rope speed, 150 ft./min. |
| Do | 3 | 36-in. scraper | HKE | do | Rope speed, 132 ft./min. |
| Do | 1 | | | Essick | 15-hp. gasoline motor powered. |
| Slusher ramp | 8 | | | D. W. Jaquays & Co | Portable. |
| Compressor | 4 | 500 c.f.m. | | Gardner-Denver | Portable 4 wheel. |
| Do | 1 | 600 c.f.m. | | do | Do. |
| Drill (hand held) | 8 | | FL58 | do | Feedlift. |
| Do | 1 | | FL58 | do | Telescopic. |
| Do | 4 | 75 lb | | Thor | |
| Drill (drifter) | 1 | | | Gardner-Denver | Jumbo mounted. |
| Paving breaker | 2 | | 1L54 | Ingersoll-Rand | |
| Truck (dump) | 1 | 10 cu. yd | F-800 | Ford | 10 wheel. |
| Do | 1 | 8 cu. yd | F-800 | do | 6 wheel. |
| Do | 1 | 7 cu. yd | F-6 | do | Do. |
| Truck (pickup) | 2 | | F-350 | do | |
| Do | 2 | | F-100 | do | |
| Belt conveyor | 1 | 40 ft. x 24 in | Portable | D. W. Jaquays & Co | Gasoline motor powered. |
| Do | 1 | 30 ft x 20 in | do | do | Do. |
| Pump | 2 | 3- x 2- x 3-in. duplex reciprocating | | Gardner-Denver | Pneumatic. |
| Do | 1 | 1-1/2- x 2-in. duplex | KA | Worthington | Gasoline motor powered. |
| Lighting plant | 1 | 1.5 kw | | Kohler Co | Do. |

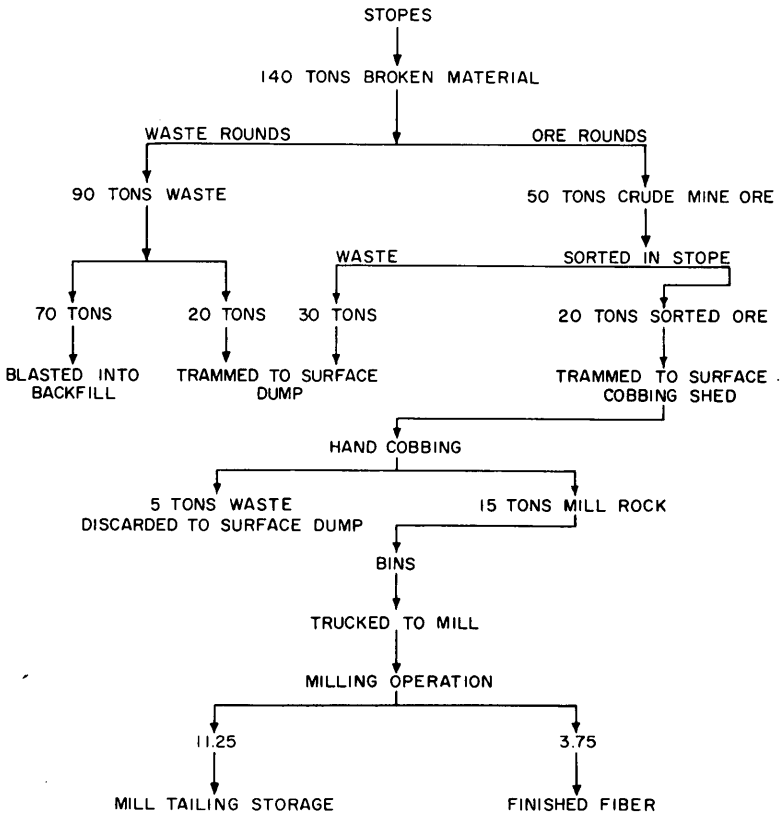



**FIGURE 31. - Flowsheet Showing Approximate Daily Production.**

## VENTILATION

Ventilation of the Regal mine presents no problem because throughout its length there are many openings to the surface. Natural flow of air through the main connecting passages is deflected by canvas brattices into the desired circulation pattern in the fringe workings.

Prior to connection with the interior workings, ventilation of the primary development drifts of the New Regal and Navajo units was accomplished by airflow from the end of the air line at the drift face.

## MINE DRAINAGE

While driving the Navajo adit, water was encountered 480 feet from the portal, where it flowed freely from the drill holes. A reservoir had been formed by a troughlike fold of the limestone bedding, some 200 feet in breadth with a maximum depth of 6 feet. By the time the adit was driven across the breadth of the fold, the accumulated water had drained off. A pumping station and a sump were cut near the outside switch of the bypass station. A trench cut across the drift diverts any mine water into the sump.

Normally, this source of water for mining operations is inadequate and must be supplemented by additional water drawn from the tank at the portal.

## SUPERVISION AND LABOR DISTRIBUTION

Under the supervision of the president-general manager, the general superintendent directs the activities of the mines and mills.

The Regal mining operation is supervised closely by the mine superintendent, who lives at the nearby camp. The mine is operated on a one-shift basis, 12 days on and 2 days off. The regular shift runs from 7 a.m. to 3.30 p.m. with a lunch break of 1 hour. A few men work on an overlapping afternoon shift, 11 a.m. to 7 p.m.

TABLE 4. - Mine production data, January-June, 1959[1]

| | |
|---|---|
| Labor: | |
| Man shifts available | 3,728 |
| Man shifts worked | 3,540 |
| Percent of absenteeism | 5.0 |
| Production: | |
| Sorted ore from mine to surface plant: | |
| Tons | 2,420 |
| Tons per man shift | 0.68 |
| Average tons per shift | 15.51 |
| Cobbed ore, from surface plant to mill: | |
| Tons | 1,657 |
| Tons per man shift | 0.47 |
| Average tons per shift | 10.6 |

1/ 156 working days; average normal crew of 24 men, excluding supervisors, but including cobbers.

Assuming the normal 5.5 cobbing man shifts per day, each man hand-cobs 2.82 tons of stope-sorted ore to produce 1.93 tons of mill rock per shift. The waste-car counter, in use during the second quarter of this period, indicates that for each ton of hand-cobbed mill rock that was produced 2.6 tons of waste was removed from the mine.

The average number of mine employees is 24, distributed according to the following classifications:

| Number | Underground employees |
|---|---|
| 5 | Miners. |
| 10 | Stopemen (duties include slusher operation, ore picking and loading, and tramming to the bypass station). |
| 1 | Stopeman-mucking machine operator. |
| 1 | Trammer (bypass station to surface). |
| | **Surface employees** |
| 5 | Ore cobbers. |
| 1 | Ore cobber-powderman. |
| 1 | General repairman. |

The five miners are distributed as follows:

| Number | Miners |
|---|---|
| 1 | Driller, development drifts and raises in waste (afternoon shift). |
| 1 | Driller, development, stope and fringe drifts, in ore zone. |
| 3 | Drillers, stoping ore. |

The combination stopeman-mucking machine operator spends the first half of the shift loading out waste from the development headings, and the remainder of the shift in the stope.

Four of the cobbers are on the day shift and two are on the afternoon shift. If there is not enough ore for the afternoon cobbers to work on during their shift, they go underground and draw more from an ore chute, or recover ore from the stope. If a compressor should not be running, there is enough air remaining in the receivers and 4-inch pipeline to operate a slusher for a limited time.

Three cobbers and one stopeman work on the 2 days that the other miners have off, in order that enough mill ore will be available to keep the trucks in use the morning after the general lay-off period. The repairman, who lives at the camp, also is on duty during this weekend and acts as supervisor.

The usual duties of repairman are varied; he is the handyman, mechanic, truckdriver around the mine area, pipeman, timberman, and bulldozer operator, as required. Occasionally he hauls ore to the mill and when necessary he spreads road ballast of fine waste on the access road.

The combination ore cobber-powderman works the first half of his shift in the cobbing shed. At noon he checks with each miner to see what caps, fuse, and powder he needs. He then makes up and delivers the supplies to the miners at the working faces.

Indian labor is used exclusively and is satisfactory. Ninety percent of the labor turnover occurs within a group of 25 percent of the employees; turnover decreased in 1959. Absenteeism during the first half was 5.0 percent.

The mine workers have a camp 0.6 mile from the Navajo unit and are transported to and from work in a truck. Living accommodations in concrete block houses and frame buildings, supplemented by tent houses and house trailers, are furnished by the company. Water is available from a nearby 2,000-gallon tank, and a company truck can be utilized for hauling wood.

There are two well-constructed frame houses for use of the resident staff employees.

The operation at the Chrysotile mines is supervised by a resident mine superintendent. Because of the recent acquisition of the property (May 1, 1959), only rehabilitation work is being done by the crew of eight Indian employees.

Eight men are employed at the Globe mill, supervised by a mill foreman. The plant operates on a one-shift basis, 6 days a week.

## WAGE CONTRACT RATES

The Regal mine normally has operated on a straight wage and salary basis at the prevailing rate paid in the local asbestos industry.

In 1957, a labor contract was given to expedite development of the Navajo unit, concurrently with company mining operations in the New Regal unit. The company furnished all equipment and supplies, and the contractor was paid $10.00 per foot of advance in the development haulage drifts and $8.00 per foot for raises. Cost of supplies and equipment was estimated at $10.50 per foot of advance.

The contractor was paid an additional 28.4 cents per cubic foot for slabbing rounds to widen drifts for switch turnouts and track curves and for primary stope-drift work.

## SAFETY PRACTICES

Supervisors of the mine are very safety conscious because both the general manager and the mine superintendent have been safety engineers. Safety suggestions of the State mine inspector are complied with at all times.

During 6 years of operation there have been no fatal accidents and very few lost-time accidents. Minor injuries can be treated at the portal, where first-aid facilities are available.

Except for portal sets and chutes, virtually no timber is used, hence fire hazard is negligible.

Several of the drifts that serve for ventilation could be used for secondary exits from the mine in case of emergency. The haulage drifts that connect the three mine portals are periodically checked to insure unobstructed passage to the surface, and numerous other escape routes are available through the stopes.

## THE CHRYSOTILE MINES

Aquisition of the Chrysotile mines by the Jaquays Mining Corp. has been so recent that no information about the operation is available. Considerable rehabilitation and exploratory work will be necessary before production can be attained from extensions of the old workings or from adjacent areas.

In general, the underlying diabase sill is in contact with a horizon of the lower member of the Mescal formation, approximately 40 to 60 feet below the base of the algal limestone. Asbestos-bearing zones occur in the bedding of the lower member at three constant intervals. The topmost zone is immediately under the base of the algal limestone, and two other zones occur 33 and 39 feet lower in the section. Thus the ore horizons are virtually in the same position as at the Regal mine. The oscar marker bed likewise is present in much of the area.

### Historical Data on Methods and Costs

The following discussion is historical in character but is included here to show operational costs at a large mine about 30 years ago.

The mining operations at the Victory mine of the Arizona Asbestos Association (a Johns-Manville subsidiary after 1916) began in 1914. A small experimental mill, which had a capacity of approximately 5 tons of millfeed per 8 hours, was built. Four grades of mill fiber were produced in addition to the Nos. 1 and 2 crude grades. Because the efficiency of the mill was unsatisfactory, it was closed in 1921 and the operator reverted to hand-cobbing the two longer fiber grades. This method of recovery was continued until the operation was stopped in May 1931. Intensive production from the El Dorado mine was started early in 1929. A breakdown of the average monthly operating costs during the first quarter of 1931 is shown in table 5.

TABLE 5. - Average monthly operating costs, January-March 1931, Chrysotile mines1/

Average monthly costs, first quarter

| | Cost per ton of fiber produced | |
|---|---|---|
| Development: | | |
| Drilling labor | $20.081 | |
| Mucking labor | 6.685 | |
| Tramming labor | 5.493 | |
| Timbering labor | 2.035 | |
| Miscellaneous labor | 2.426 | |
| Explosives | 24.184 | |
| Supplies and repairs | 4.203 | |
| Total development cost | | $65.107 |
| Production: | | |
| Lease labor | $80.998 | |
| Explosives | 9.073 | |
| Mucking, tramming, and timbering labor | 8.146 | |
| Power, shop and blacksmith labor | 14.052 | |
| Miscellaneous labor | 7.746 | |
| Supplies, freight, repairs, etc | 35.765 | |
| Total production cost | | 155.780 |
| Fixed expense: | | |
| Supervision and clerks | 31.332 | |
| Trucking fiber | 15.00 | |
| Insurance, taxes, depreciation and depletion | 23.413 | |
| Total fixed expense | | 69.745 |
| Total operating expense | | $290.632 |

1/ Approximately 70 employees were on the payroll during this period.

Production was accomplished under a so-called leaser system. The drifting and raising was done on company account, but the fiber was mined under the company's direction by lessees who were furnished all equipment and supplies and were paid by the pound.

After blasting the ore round, the lessees carefully sorted the rock and hammer-cobbed and graded the crude Nos. 1 and 2 fibers. Waste in excess of that required for backfilling was moved by wheelbarrows to the nearest raise to be trammed to surface on company account.

At semimonthly intervals the cobbed fiber of each lessee was moved to the warehouse where it was inspected, check graded, and weighed. It was then resacked into 102-pound units for shipment.

During 1930, an average of 36 lessees was employed, who produced approximately 75 pounds of fiber per leaser shift. Payment at the rate of 5 and 7 cents per pound for No. 1 and No. 2 grades respectively later was raised to 7 and 10 cents.

Most of the development work was done in the diabase under the ore horizon. Development drifts, with a minimum cross section of 5 by 7 feet, were drilled with drifters mounted on the arm of a 32-inch column, using 1-1/4-inch steel. A conventional 10-hole, 6-foot round was drilled using 2-1/4-inch starters and finishing the hole with 1-1/2-inch steel. The holes were loaded with 7- by 1-1/8-inch, 60 percent dynamite, using stemming. Raises of 4- by 5-foot cross section, inclined at 50°, were drilled with self-rotating stopers.

In 1930-31, the daily wage for development drillers was $4.75 and for muckers and trammers, $3.50.

During April 1931, the average advance for drifting and raising was approximately 4 and 3 feet per round, respectively. Development costs for the first 4 months of 1931 are given in table 6 for total footage of 1,744 (drifts 986.5, raises 757.5).

TABLE 6. - Mine development costs, January-April 1931, Chrysotile mines

| | Cost per foot | Percent of cost |
|---|---|---|
| Drilling labor..... | $1.675 | 30.10 |
| Mucking labor..... | .516 | 9.27 |
| Tramming labor..... | .442 | 7.95 |
| Timbering labor..... | .215 | 3.86 |
| Indirect labor..... | .205 | 3.69 |
| Explosives..... | 2.078 | 37.35 |
| Sundry supplies..... | .433 | 7.78 |
| Total..... | $5.564 | 100.00 |

Number of tons of asbestos produced was 161.685 at a total cost of $61.05 per ton of fiber. A detailed cost check of 675 feet of drifting and 345 feet of raising indicated that raising cost was approximately 18 cents per foot more than drifting.

Tramming at the El Dorado mine was done by hand; in the Victory mine a small storage battery-type locomotive was used. Comparative tramming costs are given in table 7.

TABLE 7. - Tramming costs, January-April 1931, Chrysotile mines

(Production and development tramming)

| | Hand tramming | Electric tramming | Total |
|---|---|---|---|
| Cars trammed | 10,436 | 996 | 11,432 |
| Man shifts | 450.87 | 28.75 | 479.62 |
| Cars per man shift | 23.15 | 34.64 | 23.84 |
| Tramming labor: | | | |
| Total cost | $1,583.43 | $104.36 | $1,687.79 |
| Cost per car | .152 | .105 | .147 |
| Track repair labor: | | | |
| Total cost | 252.76 | 32.91 | 285.67 |
| Cost per car | .024 | .033 | .025 |
| Sundry supplies: | | | |
| Total cost | 26.51 | 4.36 | 30.87 |
| Cost per car | .003 | .004 | .003 |
| Total cost | $1,862.70 | $141.63 | $2,004.33 |
| Total cost per car | .178 | .142 | .175 |

A total of 161.685 tons of asbestos was produced, and the tramming cost per ton of asbestos was $12.40.

The blacksmith shop had an electric-blown oil forge and a drill sharpener. During the first 4 months of 1931, 4,184 drills were sharpened and 261 were shanked, at a cost of 11.9 cents per drill steel.

In the powerplant were two diesel compressors with a capacity of 350 cubic feet per minute each, one semidiesel of 310-cubic foot capacity, and a 110-volt 60-cycle generator. During the 4-month period in 1931 the average cost of producing electricity and compressed air was 90.5 cents per operating hour.

To the early 1930's access to the property from Globe was by way of Rice (now San Carlos), a distance of 64 miles on dirt and gravel road. The sacked crude asbestos was transported by truck under contract at $15.00 per ton to the railroad at Rice, a distance of 42 miles. In the 1940's, when the Johns-Manville Products Co. resumed operations, paved U.S. Highway No. 60 had been completed and the distance to Globe had been reduced to 35 miles. The company, with their own trucks, reportedly could haul the fiber to Globe for $3.50 per ton.

## MILLING AND GRADING

Chrysotile is the fibrous form of serpentine, and in Arizona it is always associated with bands of massive serpentine. The ore-concentration process is unique in that it involves separation of a fibrous mineral from a massive form of the same mineral. Neither chemical composition nor specific gravity can therefore be used as a basis of separation. The property that makes mechanical separation possible is the fibrous structure. The gangue of the ore is serpentine and limestone. Because limestone is deleterious to the milling operation and to the ultimate uses of the fiber products, elimination of limestone in the millfeed is essential. This is done by hand-sorting and hand-cobbing at the mine.

The chrysotile asbestos of some of the Arizona deposits is soft, flexible, and of excellent quality; in others the fibers are semisoft; and in some mines the fibers are harsh. Most of the asbestos produced by the Regal mine has been of soft and semisoft quality, exhibiting high tensile strength. Fairly harsh fiber occasionally is encountered. All fiber now being mined is white and of soft quality.

Asbestos fibers fall into two main groups - crude and mill fibers. In the Regal mine, four crude grades have been established according to fiber length.

| Crude grade | Length of fiber |
|---|---|
| No. 1 | 3/4 inch or longer |
| No. 2 | 3/8 to 3/4 inch |
| No. 3 | 1/4 to 3/8 inch |
| No. 4 | Less than 3/8 inch |

The material that is fiberized--that is, mill fiber--is graded according to the Canadian classification, determined by tests made with the Canadian standard testing machine. Briefly, this machine consists of three screens (1/2-inch-mesh, 4-mesh, and 10-mesh) and a box for the shortest material. The four figures in the designation of the grade indicate the number of ounces from a total of 16 that is retained in each of the four receptacles. Thus a fiber designated 2-8-4-2 signifies that of the 16 ounces, 2 ounces remained on the top screen, 8 on the second, and 4 on the third, and 2 ounces passed through all the screens into the box.

Originally, the two longer crude grades were produced by hand-cobbing, that is, hammering off the rock adhering to fiber bundles. This method later was replaced by mechanical cobbing, which consists essentially of passing the ore through a jaw crusher and a set of rolls, then over a single-deck screening unit composed of three segments, each covered with screen of proper mesh size to produce the four crude grades. The flow of material over the screen was accomplished by longitudinal shaking or by bumping.

The crude asbestos produced by this separation method retains more or less of the natural solid form in which it occurs in the veins. The spinning-

grade products, Nos. 1 and 2 lengths, require more processing to separate and to open the fibers. This processing is done at the textile manufacturing plants.

In order to market the shorter grades of Arizona fiber more complex mills, designed to recover and process these grades further, gradually evolved. Recrushing in stages is followed by screening and air separation of the fiber from the rock.

At the Jaquays Mining Corp.'s Globe mill (fig. 32), the reject from the cruding section is fed to hammer mills where the shorts are fiberized or opened into a fluffy form. The enclosing rock, mostly brittle serpentine, pulverizes easily and is separated from the fiberized asbestos by fine-mesh shaking screens. The fiberized material is then air lifted from the screens and transferred as a finished product to the bagging room.

The fineness of the final fiberized product can be controlled by adjusting the fineness of the mill rock that is fed to the hammer mill, or by adjusting the retention period in the mill. These adjustments are made in order to furnish the particular grade desired by various customers.

The flowsheet of the Globe mill is shown in figure 33. The capacity of the plant for producing crude grades is 1-1/2 to 2 tons of mill rock per hour. The capacity of the fiberization equipment depends upon the grade of the product desired. For instance, the triple A (a blended grade) can be produced at

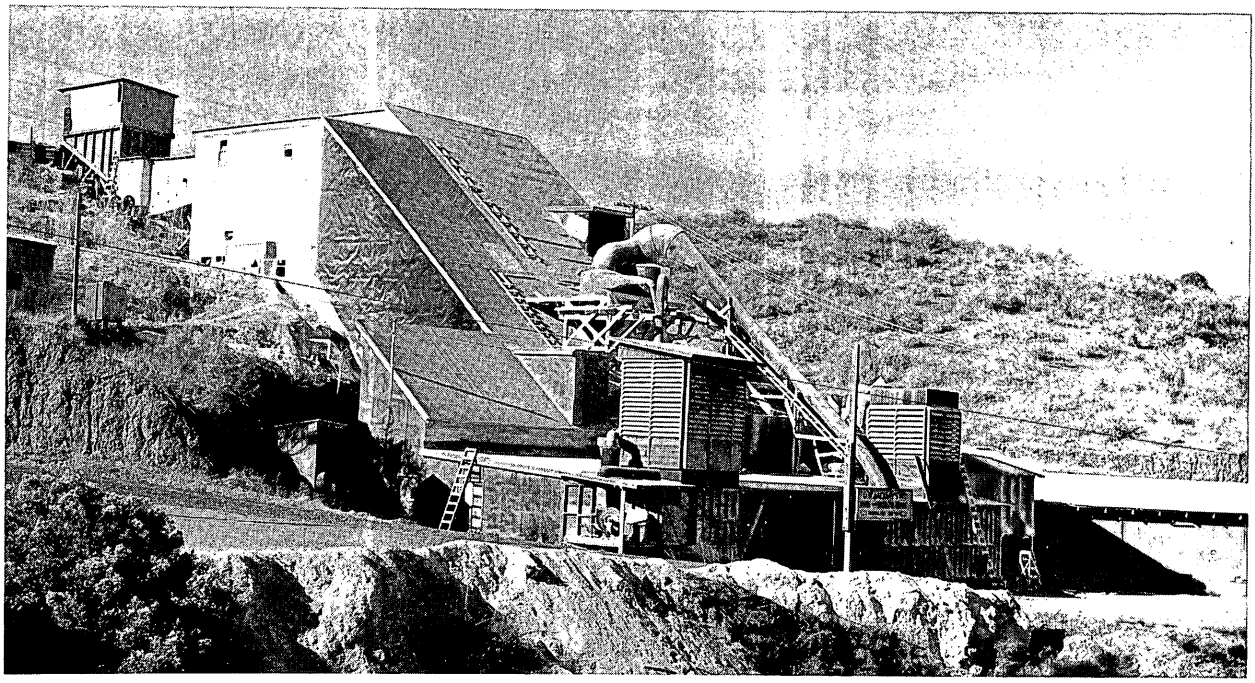


FIGURE 32. - Globe Mill of the Jaquays Mining Corp.

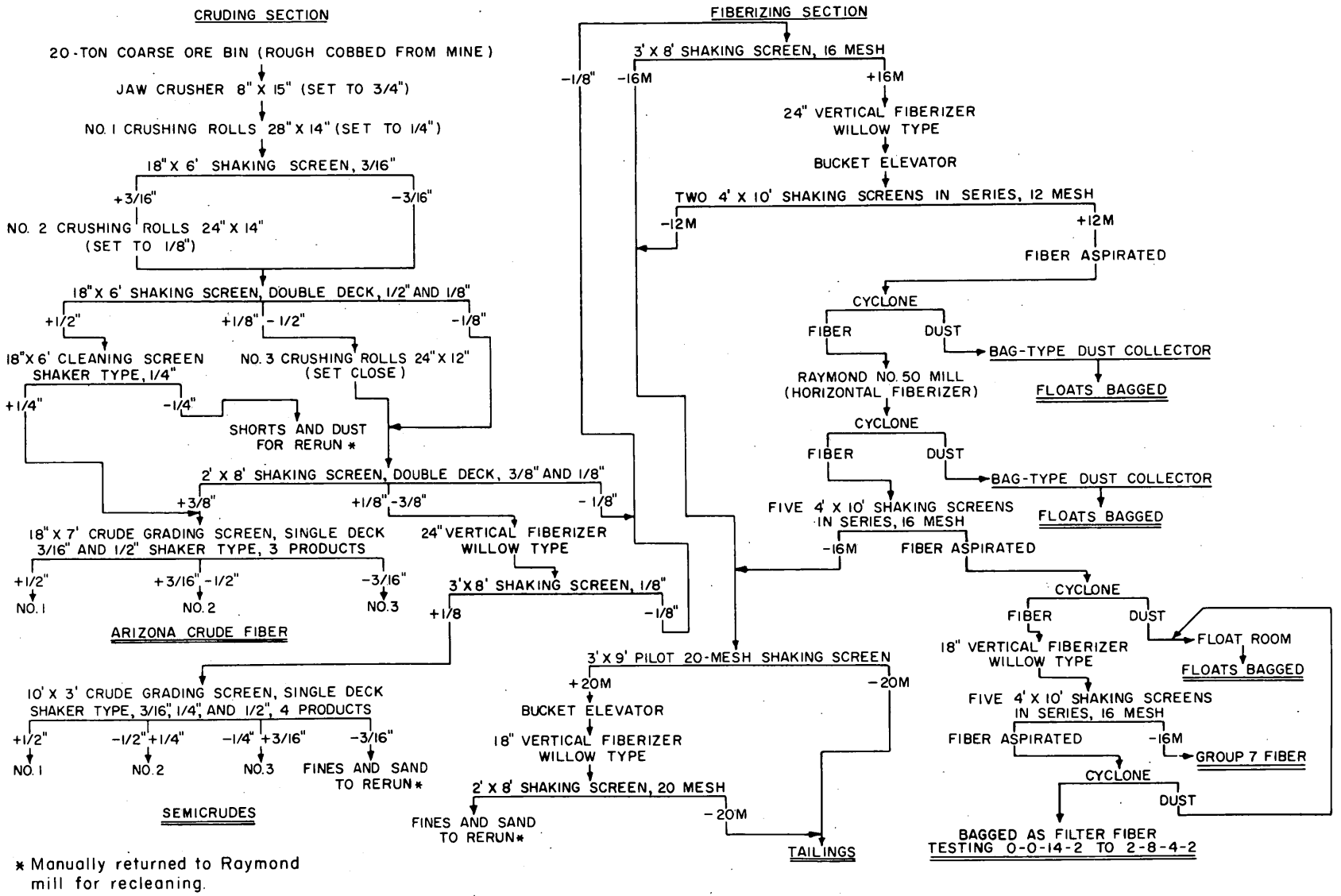



FIGURE 33. - Flowsheet of Globe Mill, Jaquays Mining Corp.

the rate of 1 ton per day; other filter fibers can be processed at the rate of 2 or 3 tons per day. One 8-hour shift per day suffices for efficient and balanced operation of both the mine and mill.

Each piece of equipment in the mill is driven by an individual 220-volt motor, ranging in size from 1 to 80 horsepower. The combined horsepower rating of the various motors totals 293, but the electrical consumption records indicate that an average of only 180 horsepower of electrical energy is consumed in the milling operations.

The production rate of the mine and mill for the 5-year period 1954-58 is shown in table 8. Also shown for 1958 are the percentages of crude grades and filter fiber in the total asbestos production, in the millfeed, and in the total rock mined.

During the period of 1952 through 1958 the General Services Administration, acting for the Defense Minerals Procurement Agency, authorized the establishment of an asbestos-purchasing depot at Globe for procuring the strategic grades of fiber. The Government purchase prices for the three crude grades were as follows: No. 1, $1,500; No. 2, $900; and No. 3, $400.

The purchase prices of the various grades of filter fiber are determined by negotiation between the buyer and seller, as are those of the crude grades, since the close of the Government purchase depot. The various fiber products are purchased by the spinning, wine, brewing, edible oils, electrical, and chemical industries.

The mill tailings are marketable to a west coast firm that processes the tailings into stucco material, water paint base, etc.

The Highway 70 mill, in construction in mid-1959 (fig. 34), will have a somewhat different flowsheet than the Globe mill, which it will replace. Figure 35 shows the construction phase of part of the mill. At the left is a bank of screens, beyond which is part of the cruding section. Its hourly production rate is expected to be double that of the Globe mill. The proposed flowsheet, shown in figure 36, provides for the use of more screens for elimination of dust from the fiber and for closer sizing of the products.

The company plans to install an acid-treatment unit in the new mill in order to eliminate calcium from its various grades of filter fiber. The unit is to be designed to handle about 2 tons of filter fiber a day.

Arizona is the only domestic source of natural low-iron chrysotile, which has great importance for electric insulation products, such as electrical tapes and cable covers. An iron analysis was made on several milled fiber samples that were available to the author. In the following tabulation, the $Fe_2O_3$ represents Fe dissolved by boiling HCl. The Feo is the Fe remaining in the asbestos after this treatment. Magnetic iron content was not determined.

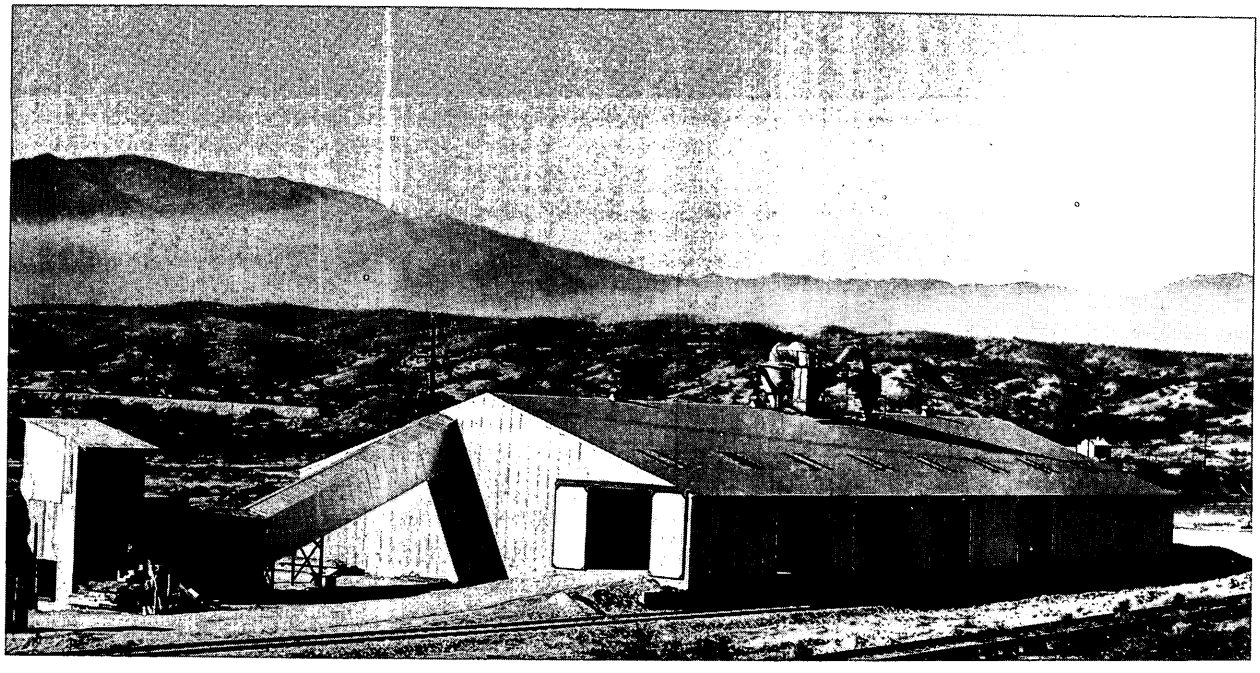


FIGURE 34. - Highway 70 Mill of the Jaquays Mining Corp.

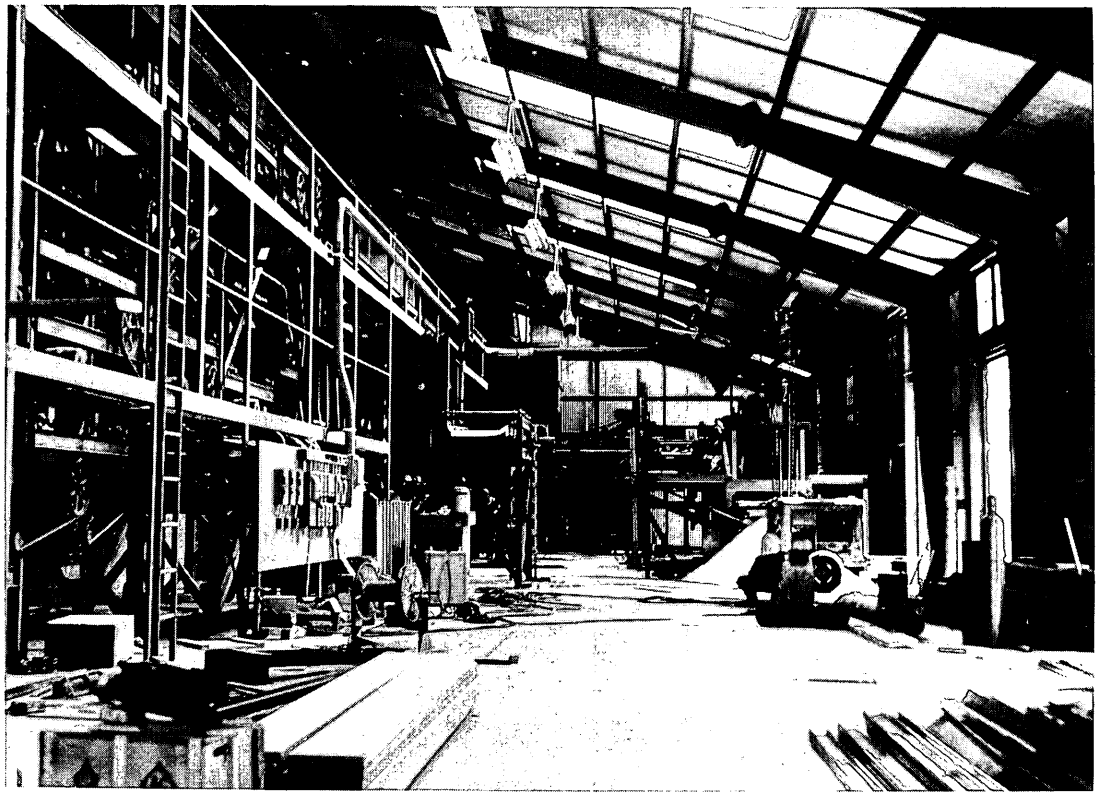


FIGURE 35. - Interior of Highway 70 Mill Being Constructed.

TABLE 9. - Iron content in asbestos from several countries, in percent

| Mill grade | Product | Source | Total Fe | FeO | $Fe_2O_3$ |
|---|---|---|---|---|---|
| Triple A.... | Semifiberized.. | Arizona..... | 0.40 | 0.05 | 0.51 |
| Triple A.... | ....do..... | Cassiar, British Columbia.... | 2.14 | .28 | 2.75 |
| C&G/2..... | Fiberized..... | Shabani, South Africa..... | 3.04 | .45 | 3.85 |
| 3R..... | ....do..... | Canada..... | 3.69 | .32 | 5.06 |

The Arizona sample was from the Regal mine; the low iron content is typical of the fiber from mines in the district.

## COSTS FOR YEAR OF 1957

The cost breakdown on a percentage basis for the year 1957 was:

| | Percent |
|---|---|
| Mining costs..... | 45.79 |
| Milling costs..... | 24.84 |
| General expense..... | 8.37 |
| Depreciation, taxes, profit, etc..... | 21.00 |
| Total..... | 100.00 |

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UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C. 600

Project Summary Report

By: Lawrence G. Houk November 30, 1954

1. DMEA Docket No. 2867 - Asbestos
Contract No. Idm-E589
Regal Mine
Gila County, Arizona

Operator: Jaquays Mining Corporation
1219 South 19th Avenue
Phoenix, Arizona

Operator's property rights: Agreement of sale of property dated June 1, 1952, to D. W. Jaquays by Asbestos Corporation of America (Formerly Arizona Chrysotile Asbestos Co.) Assignment of Agreement of Sale July 29, 1952 to Jaquays Mining Corporation.
Owner's Consent to Lien signed by Asbestos Corporation of America.

2. Contract - August 24, 1953 (MF-200 A, February 1952 - Short Form)

Work authorized:

| | |
|---|---|
| 1,000 feet of drifting and/or crosscutting at $20.00 per foot | $20,000.00 |
| 300 feet of raising at $20.00 per foot | 6,000.00 |
| Total estimated cost of project | $26,000.00 |
| Government participation 90% | $23,400.00 |

Amendments - none.

Work completed:

| | |
|---|---|
| 210 feet of drifting at $20.00 per foot | $ 4,200.00 |
| Government participation 90% | $ 3,780.00 |

Work began October 1, 1953, and was terminated by mutual agreement before completion on March 8, 1954, all work was terminated February 1, 1954.
Reserves of asbestos, as of March 1954, are estimated as follows:
Indicated 276 tons of all grades valued at $13,800.00
Inferred 497 tons of all grades valued at $24,850.00
Operator's Final Report received May 19, 1954. Field Team Final Report received June 17, 1954.

3. Audit - Report of Review in lieu of final audit issued June 24, 1954.

| | |
|---|---|
| Accepted cost | $4,200.00 |
| Government participation 90% | $3,780.00 |

The Finance Officer received the Operator's check for $3,780.00 on April 5, 1954.

4. Certification of discovery issued March 8, 1954.

5. Comments:

How conducted: The project was conducted in an efficient and satisfactory manner.

Operation: The Operation was considered very good.

Engineering: Engineering and reports were very satisfactory.

Geological premise: The premise that structural conditions in the limestone, favorable for asbestos concentration, would be found was substantiated by the project work.

Geological criteria upon which work was based: Exposures of Mescal limestone indicated the ore horizon would be quite productive upon encountering faulting and folding conditions. These criteria also indicated the eastward extension of the very productive Regal ore body.

Criteria developed during project: A thrust fault that strikes north-northeast and dips westerly and the west limb of the south trending anticipated anticline were encountered. These structures displaced the ore-bearing limestone upward.

Future possibilities: Excellent. It is not unreasonable to expect that extension of exploration workings from the DMEA sponsored adit may eventually result in discovering reserves of several times the magnitude predicted above.

Recommendations: The Nonmetallic Minerals Division agrees with the Field Team that a certification of discovery be issued. The Bureau of Mines and the Geological Survey also concur.

The total Government participation which amounted to $3,780.00 was repaid by the Operator and the Finance Officer received his check on April 5, 1954.

**DEFENSE MINERALS EXPLORATION ADMINISTRATION**
**CONTRACT ADMINISTRATION AND AUDIT DIVISION**

**REPORT OF REVIEW**

I have reviewed the Monthly Reports of:

Jaquays Mining Corporation
1219 South 19th Avenue
Phoenix, Arizona

pertaining to Exploration Project Contract No. Idm-E589, Docket No. DMEA 2867, for the months of October 1953 to January 1954 inclusive, and subsequent Termination Agreement dated March 8, 1954, covering a project for the exploration of Asbestos on property known as Regal Mine, located in Gila County, Arizona, 30 air miles northeast of Globe, Arizona.

My review included an examination of the Monthly Reports (Form MF-104) and supporting documents attached thereto, comparison of the costs claimed with the contract and pertinent schedules, conference with the Executive Officer of the Field Team in charge of the project, and a determination of the reasonableness and propriety of the costs.

This review was made in lieu of a final audit of the Operator's accounts and records for the following reasons:

When the Operator had completed only a small portion of the exploration work authorized by the contract, a significant discovery was made. The Operator requested termination of the contract and permission to repay the Government's participation in full. This request was granted by the Field Team in charge of the project. Total Government participation amounted to $3780.00. Finance Officer received Operator's check for $3780.00 on April 5, 1954.

The review disclosed the following facts in regard to the amount paid or to be paid the contractor:

Total cost as billed by Contractor: See above.

The contract calls for a 90 percent participation of exploration expenses by the United States Government. Therefore, payment to the contractor by the Government in the amount of -- see above explanation.

Date: June 24, 1954

Donald T. Finch

Donald T. Finch, Auditor

Claimed $4200.00
Net Paid 3780.00

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C. 600

**CERTIFICATION BY THE UNITED STATES OF AMERICA OF A DISCOVERY OR DEVELOPMENT UNDER AN EXPLORATION PROJECT CONTRACT**

To: Jaquays Mining Corporation
1219 S. 19th Ave.
Phoenix, Arizona

Pursuant to the provisions of Exploration Project Contract No. Idm-E589, dated August 24, 1953 (Docket No. DMEA-2867), hereinafter called the "contract" between you and the United States of America, hereinafter called the "Government"; to establish and fix the Government's percentage royalty on production and its lien thereon and on the land described in the contract, the Government considers and therefore certifies that discovery or development from which production may be made has resulted from the exploration work.

The nature of said discovery or development is described broadly or indicated as follows:

> The initial 210 feet of crosscutting performed under this partly completed contract has exposed asbestos for 120 feet. The chrysotile asbestos fiber is of strategic quality, and sufficient data were developed to infer reserves of strategic asbestos.

THE UNITED STATES OF AMERICA

By C O Mitteudorf
Administrator, Defense Minerals Exploration Administration

Dated: MAR 8 1954

LGHouk:gad 3/4/54
Copy to: Mr. Irving Gumbel, EPS, GSA
Mr. Thayer, 5216 GSA Bldg.
Mr. Hedges, 4604
Admr. R. File
Field Team, Region IV
Docket File
Operating Committee
Mr. Johnson
Mr. Chambers
Finance Office
Mr. Houk

Copy

AGREEMENT FOR TERMINATION OF EXPLORATION PROJECT CONTRACT
(Short Form)

It is agreed this 8th day of March, 1954, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and Jaquays Mining Corporation, an Arizona corporation, 1219 South 19th Avenue, Phoenix, Arizona, hereinafter called the "Operator," parties to that certain Exploration Project Contract Idm-2589, Docket No. DMEA-2867, dated August 24, 1953, that:

1. All work and operations provided for in said contract shall be terminated as of February 1, 1954.

2. The Operator shall promptly render to the Government a full and final report and a final accounting of units of work performed under the contract to and including February 1, 1954. Any units of work performed after February 1, 1954, shall be for the sole account of the Operator, without contribution by the Government.

3. The Operator hereby releases and agrees to save the Government harmless from all claims or demands under or arising out of said contract, except as herein otherwise provided.

4. All rights of the Government under the contract with respect to a percentage royalty and lien for its payment are preserved.

IN WITNESS WHEREOF, these parties have executed this agreement as of the day and year first above written.

THE UNITED STATES OF AMERICA

By C. W. Mitendorf
Administrator, Defense Minerals Exploration Administration

Boston
Hoffman
Chamberlin

JAQUAYS MINING CORPORATION

By R. H. Jaquays

MF-200 (A)
(February 1952)

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
AUG 28 1953

DOCKET No. DMEA 2867

COMMODITY Asbestos

Idm-E589

# UNITED STATES OF AMERICA
## DEPARTMENT OF THE INTERIOR
### DEFENSE MINERALS EXPLORATION ADMINISTRATION

DOCKET COPY

OK subject to 8/25/53
10/6/53

# EXPLORATION PROJECT CONTRACT[1]
(Short Form)

IT IS AGREED this 24th day of August, 1953, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] Jaguaye Mining Corporation, an Arizona Corporation
1219 South 19th Avenue
Phoenix, Arizona

hereinafter called the "Operator," as follows:

ARTICLE 1. *Authority for contract.*—This agreement is entered into under the authority of the Defense Production Act of 1950, as amended, pursuant to DMEA Order 1 entitled "Government Aid in Defense Exploration Projects."

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of Arizona, County of Gila, described as follows:[3]
Those certain unpatented lode mining claims known as the Regal Mine recorded in the Office of the County Recorder of Gila County as shown in Annex No. 1 attached.

the Operator represents and undertakes:[4]

(*a*) ~~That the Operator is the owner in possession and entitled to possession and has the exclusive right to explore and develop the mining claims, rights, or concessions described above, subject to the encumbrances, if any, to each of which the subordination agreement of the holder is attached.~~

(*b*) That the Operator is a lessee, in possession and entitled to possession, and the Owner's Consent to Lien is attached.

The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof.

ARTICLE 3. *Exploration project.*—The Operator, within sixty (60) days from the date of this contract shall commence work on a project of exploration for[5] Asbestos

in or upon the described land; and shall bring the project to completion within a period of 17 months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided. The work shall be performed by the Operator or by independent contractor or contractors efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmen's compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 4. *Costs of the project.*—The agreed, estimated costs of performing the work, expressed in terms of units of work to be performed (per foot of drifting, per foot of drilling, per cubic yard of material to be moved, etc.) are set forth in Exhibit "A," attached hereto. The Government will pay Ninety (90) percent of these agreed, estimated costs, as they accrue, for units of work actually performed that conform with the description or specifications for the work set forth in this contract, in an aggregate total amount not in excess of $23,400.00, which is Ninety (90) percent of $26,000.00, the agreed, estimated total cost of the project in which the Government will participate: *Provided,* That until the Operator's final report and final accounting have been rendered to the Government and any final check or auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract. The Government may, as it sees fit, make payments direct to the Operator's independent contractors, if any, for the account of the Operator, rather than to the Operator.

ARTICLE 5. *Reports, accounts, audits.*—(*a*) *Progress reports.* The Operator shall provide the Government with monthly reports of units of work performed under the contract, in quintuplicate (five copies), upon forms provided by the Government. These progress reports shall be certified by the Operator, and shall constitute both the Operator's invoice of units of work performed on the project during the period covered by the report and his voucher for repayment by the Government, unless the Government requires the use of a standard voucher form with invoice attached. Progress reports shall include surface and/or underground engineering-geological maps or sketches showing the progress of the exploration, with assay-reports on samples correctly with the advance in mineralized ground.

[1] If space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] Address, and nature of organization if any.
[3] Description or enough to identify the property, particularly excluding any land or interest therein to which the Government's lien is not to attach, and description from which is not to be subject to the Government's percentage royalty.
[4] Provision not applicable.
[5] Metal or minerals.

16—66329-1

(*b*) *Final report.*—Upon completion of the exploration work or termination of the contract the Operator shall provide the Government with an adequate geological and engineering report, in quintuplicate (five copies), including an estimate of ore reserves resulting from the exploration work.

(*c*) *Compliance with requirements.*—If, in the opinion of the Government, any of the Operator's reports are insufficient or incomplete, the Government may procure the making or completion of such reports and attachments as an expense of the exploration work; and the Government may withhold approval and payment of any vouchers depending upon insufficient or incomplete reports.

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of the units of work performed, which the Government may inspect and audit at any time. The Government may at any time require a check of the work performed and an audit of the Operator's records and accounts, by a certified public accountant or otherwise, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account and statement of work performed to accompany his final report.

ARTICLE 6. *Repayment by Operator.*—(*a*) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than 6 months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

(For instance: The percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(*b*) As here used, "net smelter returns," "net concentrator returns," and "other net amounts realized from the sale or other disposition," mean gross revenue from sales, or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be the gross income from mining operations for percentage depletion purposes in income-tax determination.

(*c*) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(*d*) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

ARTICLE 7. *Assignment, transfer, or loss of Operator's interest.*—Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder. The Operator shall not make any voluntary nor permit any involuntary transfer or conveyance of the Operator's rights in the land described in Article 2, without making suitable provision for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof; *Provided,* that mere failure by the Operator to maintain the Operator's rights in the land, without any consideration running to the Operator other than relief from the cost of maintaining such rights (as by surrender of a leasehold, failure to perform assessment work, or failure to exercise an option), coupled with complete abandonment by the Operator of all interest in or operations on the land for a period of 10 years from the date of this contract, shall not constitute such a transfer or conveyance. Should the Operator make or permit any transfer or conveyance in violation of this provision, the Operator shall be and remain liable for payment to the Government of the same amounts, at the same times, as would have been paid under the terms of the percentage royalty on production. If for any reason the net smelter returns, net concentrator returns, or other net amounts realized from the sale or other disposition of such production are not available as a means of measuring the amount of the Operator's liability, the amount thereof shall be estimated as well as may be, and in the event of dispute as to such estimates, the determination thereof by the Administrator of Defense Minerals Exploration Administration or by his successor shall be final and binding upon the Operator.

ARTICLE 8. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if, in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified.

ARTICLE 9. *Changes and added provisions* .....

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

Jaquays Mining Corporation
(Operator)

By D. W. Jaquays Pres.

By W. H. King
W.H. King, Executive Officer - DMEA
Field Team, Region IV

---

I, Ethelyn Jaquays, certify that I am the Acting secre of the corporation named as Operator herein; that D. W. Jaquays, who si this contract on behalf of the Operator, was then President of said that said contract was duly signed for and in behalf of said corporation by authority of its governing body, scope of its corporate powers.

Ethelyn Jaquays

U. S. GOVERNMENT PRINTING OFFICE 16—66329-1

DOCKET NO. DMEA 2867
Article 2, Exploration Project Contract Form MF-200(A)

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
AUG 28 1953

ANNEX NO. 1

| Claim | Book | Page |
|---|---|---|
| Regal #1 | 43 | 87 |
| Regal #10 | 35 | 436 |
| Regal #11 | 35 | 437 |
| Regal #12 | 35 | 438 |
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| Regal #14 | 35 | 440 |
| Regal #15 | 35 | 441 |
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| Regal #18 | 35 | 444 |
| Regal #19 | 35 | 445 |
| Regal #21 | 35 | 447 |
| Regal #22 | 35 | 448 |
| Regal #23 | 35 | 449 |
| Regal #24 | 35 | 450 |
| Regal #25 | 35 | 451 |
| Huntz #3 | 41 | 500 |
| Huntz #4 | 41 | 500 |
| Huntz #5 | 41 | 501 |
| Huntz #6 | 41 | 501 |
| Huntz #29 | 41 | 491 |
| Amended | 41 | 502 |
| Huntz #30 | 41 | 491 |

MF-203

OWNER'S CONSENT TO LIEN

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED

WHEREAS, the undersigned, as owner, co-owner, lessor, or seller has an interest in certain property in the State of Arizona, County of Gila, described as follows:1/

Those certain unpatented lode mining claims known as the Regal Mine, the names of which and the book and page number of recording in the office of the County Recorder of Gila County are shown on Annex I attached.

which is the subject of a proposed exploration project contract, hereinafter called the "contract", between the United States of America, hereinafter called the "Government", and

2/ Jacquays Mining Corporation
1219 South 19th Avenue
Phoenix, Arizona

hereinafter called the "Operator"; and

WHEREAS, under certain provisions of said contract which are set forth on the reverse side hereof, the Government is entitled to a percentage royalty on production and to certain other rights and equities which do or may conflict with or be adverse to the interest of the undersigned in said property;

NOW THEREFORE, the undersigned, in consideration of said contract and as an inducement to the Government to enter into same, undertakes and agrees as follows:

1. The Government's equity in and right to dismantle, sever, take possession of, and remove and dispose of facilities, buildings, fixtures, equipment, or other items as provided in the contract, or any amendment thereof, shall prevail over and be prior and superior to any conflicting or adverse rights of the undersigned, and the Government is authorized to enter upon the land for such purposes.

2. To secure the payment to the Government of the percentage royalty on production3/ provided for under the terms of said exploration project contract, or any amendment thereof which does not increase the maximum amount of the Government's claim here stated or alter the provisions for repayment, there is hereby granted to the Government a lien upon the land herein described and upon any production of minerals therefrom, until the royalty claim is fully paid in the amount of the Government's contribution, not in excess of 4/$ 23,400.00, or ten years have elapsed from the date of the contract.

3. The undersigned shall commit no act nor assert any claim that may contravene or conflict with the lien, claim, or rights of the Government under the provisions of said contract. This agreement shall be binding upon the heirs, executors, administrators, successors, and assigns of the undersigned.

Dated this 13th day of July, 1953.

ASBESTOS CORPORATION OF AMERICA Formerly Arizona Chrysotile Asbestos Co.

_____ [Seal]

Chas E Hurzeler, Pres [Seal]

_____ [Seal]

1/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease [or contract, deed, or other document] dated _____, and recorded in book _____ page _____ official records of said county." If (b) is used, the book and page of recordation cannot be dispensed with. If the space provided is insufficient, use an Annex, and refer to the Annex in the space.

2/ Insert the name of the Operator as it will appear in the exploration project contract.

3/ Mining or production from the land is not required, and in the absence of production there is no obligation to repay the Government.

4/ Insert the maximum amount of the Government's contribution.

RELEVANT CONTRACT PROVISIONS

Repayment by Operator. (a) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than six months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) per cent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) per cent of any such net amounts, plus one-half (½) per cent such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) per cent of such net amounts.

(For instance: the percentage royalty on a net amount of five dollars ($5.00) per ton, would be one and one-half (1½) per cent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) per cent.)

(b) As here used, "net smelter returns", "net concentrator returns", and "other net amounts realized from the sale or other disposition", mean gross revenue from sales; or if not sold, the market value, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income tax determination.

(c) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(d) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

Title to and disposition of property. All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

ANNEX I - to Owner's Consent to Lien
Form MF-203 attached

| NAME | BOOK | PAGE |
|---|---|---|
| Regal #1 | 43 | 87 |
| Regal #10 | 35 | 436 |
| Regal #11 | 35 | 437 |
| Regal #12 | 35 | 438 |
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DEPARTMENT OF THE INTERIOR
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# EXHIBIT "A"

## Description of the Work

A crosscut entry will be driven eastward from the surface approximately on the south 1225 coordinate to intersect the course of the Regal fault and continue eastward along the asbestos deposit. From the crosscut, a drift will be driven northward to connect with the old mine workings, and southward 200 feet from the crosscut and from this southernmost point drift east and west to determine the width of the deposit. This work is shown on Figures 2 and 3 which are attached and made a part of Exhibit A. This exploration work will be below a part of the ore zone. A maximum of 300 feet of raises is allowable only if the location, direction and extent of the raises have prior written approval of the DMEA representative.

## Estimated Costs of the Project

| | |
|---|---|
| 1000 feet of drifting and/or crosscutting at $20.00 per foot -- | $20,000.00 |
| 300 feet of raising at $20.00 per foot -- | 6,000.00 |
| Total estimated cost of project | $26,000.00 |
| Government participation 90% | $23,400.00 |

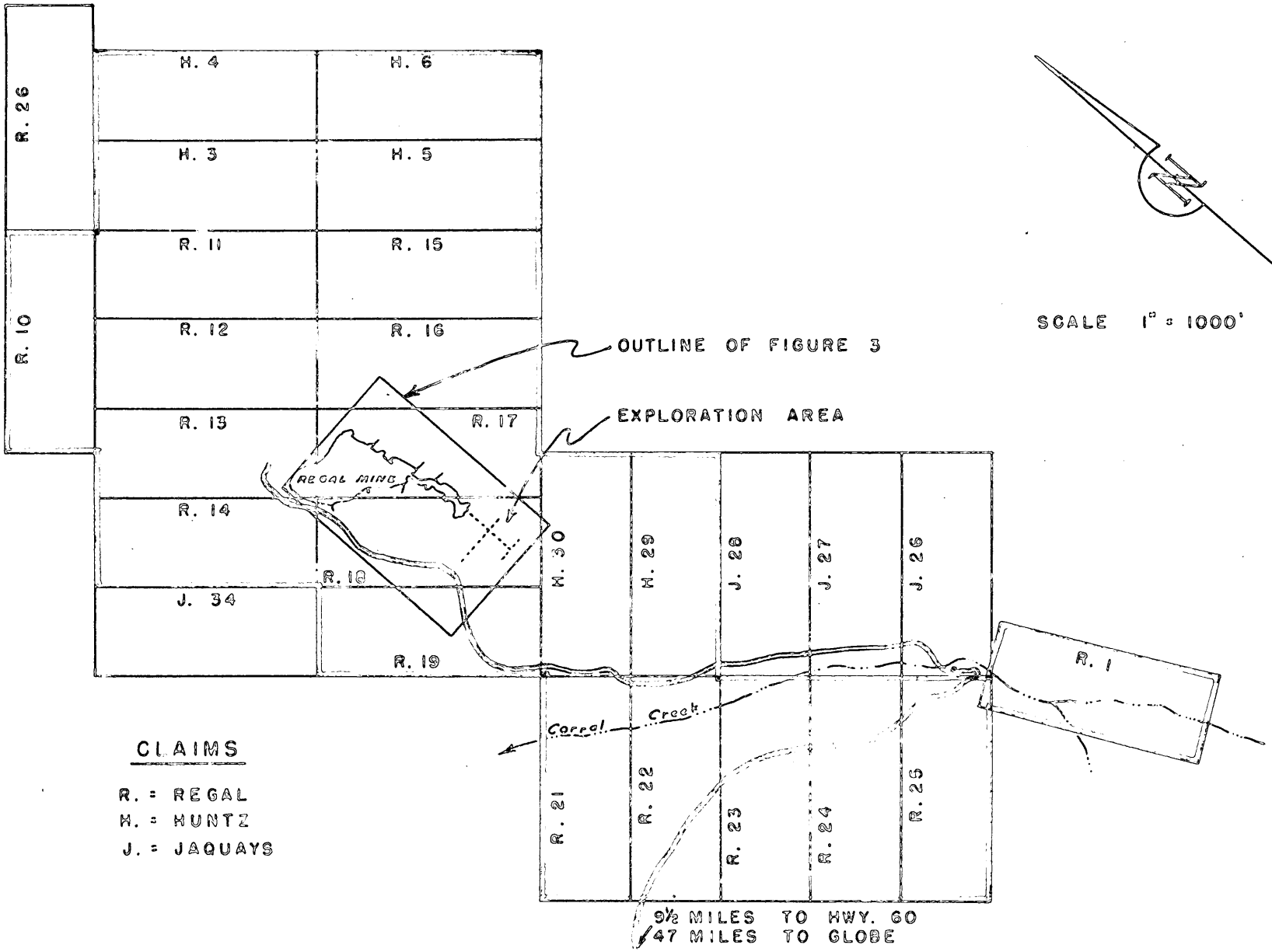


FIGURE 2. - CLAIM MAP - REGAL ASBESTOS MINE DMEA 2867

JAQUAYS MINING CORP. GILA COUNTY, ARIZONA

JAQUAYS MINING CORPORATION APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, TO ACCOMPANY FORM MF 103

Item 1 (a) Name of Applicant: Jaquays Mining Corporation
1219 S. 19th Avenue
Phoenix, Arizona

(b) Jaquays Mining Corporation, an Arizona Corporation

(c) D. W. Jaquays, President & Manager - 1219 South 19th Ave.
Phoenix, Arizona

Ethelyn Jaquays, Secretary - 132 W. Granada Rd.
Phoenix, Arizona

G. A. Jaquays, Vice-President - 3011 E. Saginaw Street
Lansing, Michigan

(d) DMA

Item 2 - General

Item 3 (a) The Regal Mine property is being purchased under contract from the Arizona Chrysotile Asbestos Company, 204 Twenty-First Ave., Paterson 3, New Jersey. A copy of the contract attached.

(b) This mine has always been known as the Regal Mine.

(c) The Regal Mine is being purchased under contract by the Jaquays Mining Corporation from the Arizona Chrysotile Asbestos Company.

(d) A copy of the contract between D. W. Jaquays and Arizona Chrysotile Asbestos Company attached with assignment of D. W. Jaquays contract to the Jaquays Mining Corporation.

(e) D.N.A.

(f) The location of the Regal Mine is shown on Map 3. The book and page numbers of the Regal Group of Mining Claims are as follows:

The Regal Mine property consists of 22 unpatented

mining claims as shown on Map 1 attached; all recorded at the Gila County Recorder, Globe, Arizona, as follows:

| Name | Book | Page |
|---|---|---|
| Regal No. 1 | 43 | 87 |
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| Regal No. 11 | 35 | 437 |
| Regal No. 12 | 35 | 438 |
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| Huntz No. 29 | 41 | 491 |
| Amended | 41 | 502 |
| Huntz No. 30 | 41 | 491 |

Item 4 (a) The Regal mine has been developed by some 3,000 feet of drifting over the past 35 years. The main haulage drifts and stope drifts are kept in good repair and are now being used for production from the area located on the south end of the workings. All of the active working places are open and accessible for examination. The mine workings are shown on Map 2 attached.

(b) Production since about 1918 is estimated to be about $3,000,000.00 in all grades of Chrysotile asbestos. The ore reserves at present are estimated to about 500 tons of asbestos fibre located in the southern end of the present workings.

(c) The principal asbestos bearing zone at the Regal Mine occurs in the Mescal Limestone and about 10 to 15 feet

Item 4 (c) continued:

above the Diabase. The ore occurs in a more or less horizontal plane with slight folds and some faults raising or lowering the ore zone from the plane shown on the accompanying map. Favorable areas for asbestos formation are found to be on the slight folds and along the Regal Fault which passes through the entire length of the present workings.

The area to be explored and for which D.M.E. assistance is desired is located some 400 feet to the south of the present workings and along the strike of the Regal Fault. Past experience has shown that it is reasonable to expect good ore in a zone at least 100 feet each side of the Regal Fault as long as the ore zone is near the crest of a fold. This condition exists in the south end of the present workings where excellent ore is now being found.

(d) The Regal Mine is accessible over a U. S. Forest Service Road turning off U.S. Highway 60 at a point 37 miles north of Globe, Arizona. It is nine miles over the Forest Service Road to the Regal Mine from Hwy. 60. Ore is being trucked over this road almost daily to the companies mill at Globe, Arizona.

All ore is hauled to Globe, Arizona for milling and the finished product is shipped by rail from Globe, Arizona.

Supplies are hauled to the mine by truck from either Globe or Phoenix, Arizona.

The company has ample housing on the property for the present crew and if necessary, will supply additional housing should the crew be increased.

Item 4 (e) Ample manpower is available for the projects planned. All supplies, material and equipment are in good supply. Water required for drilling and domestic use is available on the property.

Power for compressed air is supplied by Butane fueled compressors. The Butane fuel is hauled to the mine by the Butane dealer in Globe, Arizona.

Item 5 (a) The mineral for which the exploration is planned is Chrysotile Asbestos of low Iron spinning grade.

(b) The area for which D.M.E.A. exploration assistance is desired is located in the southernmost workings of the Regal Mine and would consist of driving a new x-cut entry at about the South 1225 corrodinate for 380 to 400 feet east, then drifts would be driven to explore the area along the Regal Fault for 200 feet north and south from the corrondinate S-1225 Crosscut. In addition to the 400 foot drift along the Regal Fault it is desired to drive exploration crosscuts East 100 feet at about South 1225, and at the South 1400 Corrondinate it is desired to explore an area at least 100 feet each side of the Regal Fault zone.

The feasibility and economics of driving a new crosscut to explore the area involved in this project may be questioned over the driving of a drift from inside the mine from the present workings. This has been carefully considered and the costs alone would recommend the new crosscut due to additional traming labor required for removing drift muck approximately 1000 feet to the old portal of the mine. In addition to the

Item 5 (b) continued:

long tram, the poor grade of the main haulage level, now requires two trammers to handle a one ton car of rock to the portal of main tunnel. Another item which must be considered in the choice between the inside project and the new crosscut project is that the present south end workings are now in production and this work would have to be stopped due to bad ventilation which will not permit 2 blasting shift operations.

A copy of the comparitive estimates for each of these projects is attached under Item 6 which shows that even though by driving an additional 200 feet in Plan 2 which is the new crosscut project the comparitive costs are $22,000.00 for Plan 1 and $20,000.00 for Plan 2, the difference being due to better working conditions and a shorter tram for the waste material.

As it is expected that in places the above exploration project will be in some places below the ore zone, it is desired that 300 feet of raises be included in the project. These raises are to be driven where required into the ore zone at 50 feet intervals along the proposed drifts. It is doubtful if any of these raises will be over 15 feet in height and most of them will probably be only 5 feet above the drift.

The costs of the above project using Plan 2 which includes the driving of the new crosscut from outside and the driving of short raises at 50 feet intervals into the ore as follows:

Item 5 (b) continued:

| | | |
|---|---|---|
| 1000 feet of Drift @ $20.00 | - | $ 20,000.00 |
| 300 " " Raises @ $20.00 | - | 6,000.00 |
| | | $ 26,000.00 |

(c) Work can be started on the above project within 15 days and completed within 12 months after start of contract.

(d) The operating experience of D. W. Jaquays, the President and Manager of the Jaquays Mining Corporation is as follows:

Born September 27, 1909, Pellston, Michigan

Graduated BSC. Metallurgy Michigan College of Mines 1931

1931 - 1933 - Sampler Machine man and Shift Boss at Lake Shore Mine, Kirkland Lake, Ontario

1934 - 1936 - Shift boss in 500-ton-a-day cyanide plant, Lamaque Gold Mines, Bourlamaque, Quebec.

1937 - - Property examination for Michigan interests in Colorado, Montana, Nevada and Arizona.

1938 - 1939 - Sampler, Engineer and Shift Boss at Miami Copper Co., Miami, Arizona.

1940 - 1942 - Manager Park View Gold Mine, Phoenix, Ariz.

1942 - 1946 - Engineer with Mineral Production Security Division of U. S. Bureau of Mines - Stationed at Phoenix, Arizona.

1946 to date Owner and operator of D. W. Jaquays Co. Dealers in Mining Machinery and Supplies and Diamond Drilling Contracters, Registered Arizona Mining Engineer.

1947 - 1950 - Engineer and manager for Arizona Chrysotile Asbestos Co., Globe, Arizona.

1951 to date Operator and manager Regal Asbestos Mine later taken over by Jaquays Mining Corp.

Item 6 - The estimated costs of the above project are as follows:

Plan One - 800' Drift from inside on Main Haulage Level of Regal Mine.

Costs per day:

| | | | |
|---|---|---|---|
| 1 Machineman | 12.00 | | |
| 3 Muckers @ 10.00 | 30.00 | | |
| 1/2 Supervision | 10.00 | | |
| Overtime 2 days in 12 | 5.20 | | |
| | 57.20 | | |
| Ins. OAB, etc. 15% | 7.60 | | |
| To Labor | | 64.80 | |
| Fuel - 2 shifts | 10.00 | | |
| Bits and steel | 5.20 | | |
| Driller and hose rental | 3.00 | | |
| Compressor rental | 10.00 | | |
| Carbide and oil | 1.00 | | |
| Pipe and rail | 6.00 | | |
| Camp & trucking expense | 2.00 | | |
| Engineering | 1.00 | 38.20 | |
| Costs per shift or round | | | 103.00 |
| Misc. Costs | | | 7.00 |
| | | | $ 110.00 |

Advance 4' per round
Cost per foot advance $ 27.50

Total cost of project 800' x $27.50 - $ 22,000.00

Completion time:

First 200 feet advance at 2 feet per day 100 days

Last 600 feet advance at 4 feet per day 150 days

250 working days

or approximately 11 months.

Item 6 - Continued:

Plan 2 for 1000 feet of drift to be driven from outside and covering same ground as Plan 1

| | | |
|---|---|---|
| 1 Machineman | 12.00 | |
| 2 Muckers @ $10.00 | 20.00 | |
| 1/2 Supervision | 10.00 | |
| Overtime 2 days in 12 | 4.00 | |
| | 46.00 | |
| Ins., & O.A.B. 15% | 7.00 | |
| To Labor | | $ 53.00 |
| Fuel - one shift | 5.00 | |
| Bits and steel | 5.00 | |
| Driller and Hose Rental | 3.00 | |
| Compressor Rental | 10.00 | |
| Carbide and oil | 1.00 | |
| Pipe and rail | 6.00 | |
| Camp & trucking expense | 2.00 | |
| Engineering | 1.00 | 33.00 |
| Misc. Expense | | 4.00 |
| | | 90.00 |

Cost per round $ 90.00
Advance 4.5 feet or $20.00 per ft.

Total cost of project 1000 feet x $20.00 - $20,000.00

Completion time 10 months.

Note: The above costs per foot would also apply to any raise work done.

(a) There will be no independent contracts.

(b) The wage scale for labor at the Regal Mine is as follows:

| | |
|---|---|
| Machinemen | $ 1.50 per hour |
| Muckers | 1.12½ " " |
| Trammers | 1.12½ " " |
| Mine Foreman | Salary $500.00 per month |

There will be no consultants and engineering will be done by the applicant. The engineering charge of $1.00 per day or $25.00 per month is charged against the ex-

Item 6 (b) Continued.

ploration project for part of the time devoted to the above project by the management.

(c) Operating supplies and costs:

| | |
|---|---|
| Explosives | $21.10 /C |
| Caps (Fuse) | 2.25 /C |
| Fuse | 13.10 /M |
| Butane | .20 /Gallon |
| Drill steel approximately 1.00 /foot for new steel | |
| Bits (Carbide) | 13.50 /each |

(d) Operating equipment required:

| | | |
|---|---|---|
| 1 - 160 CFM Compresser Rented | $180.00 | /Month |
| 2 - 55 lb. Wet Hammer & Hose Owned | 30.00 | /Month |
| 1 - Stoper | " | No charge |
| 2 - 1 ton Mine cars | " | " " |

(e) No Rehabilitation or repairs required to start the above project.

(f) No new buildings or structures required.

(g) Miscellaneous. No repairs required on operators equipment. Any accounting work connected with the above project will be absorbed by the operator. The Workmen's Compensation rate for the above type of work is $9.35 per $100.00 of payroll and the Arizona Unemployment charges are 2.7% of the payroll. Old Age Benefit charges are 1.5% of the payroll making a total of 13.55% charges on all payroll expenses on the mine.

(h) Contingencies. A miscellaneous charge was set up of $4.00 per day or about $100.00 per month to cover unforeseen charges. Any additional unforeseen charges that may come up will be absorbed by the operator.

Item 7 (a) The operator of the Jaquays Mining Corporation is prepared to furnish either in the form of cash or equipment rentals, the required 10% of the above project.

(b) The operator, Jaquays Mining Corp. will supply one 160 CFM. compressor at $190.00 per month and the necessary drilling equipment at $30.00 per month for a total of equipment supplied of $220.00 a month, any additional value required will be made up in the form of carrying the required amount of expenses through cash payments.

Signed _____
D. W. Jaquays, President
Jaquays Mining Corporation

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

Form Approved.
Budget Bureau No. 42-R1035.2.

FEB 2 1953

# APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

*Not to be filled in by applicant*

Docket No. dmea 2867
Metal or Mineral
Date Received 2-2-53
Estimated Cost
Participation (Government %)

## INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address:

Jimmy Mining Corporation and Arizona Corporation
1319 E. 19th Ave.
Phoenix, Arizona

(*b*) If other than an individual, add to your name above whether a corporation, partnership, etc., and the name of the State in which incorporated or otherwise organized.

(*c*) If a corporation, add to above statement, titles, names and addresses of officers.

(*d*) If a partnership, add to the above statement the names and addresses of all partners.

2. *General.*—Read DMEA Order 1, "Government Aid in Defense Exploration Projects," before completing this application. Submit this application and all accompanying papers in quadruplicate (four copies), with your name and address on each sheet of the application and on all accompanying papers. Where sufficient space is not provided on the form for all required information, state it on an accompanying paper, with a reference in each case to the instruction to which it refers by number. Comply with all applicable instructions; or, if not applicable, so state. File the application with Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest field executive officer thereof.

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract

See attached sheets

(*b*) State any mine name by which the property is known.

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise

(*d*) If you are not the owner, submit with this application a copy of the lease, contract, or other document under which you control the property. See attached sheets

(*e*) If you own the land, describe any liens or encumbrances on it

See attached sheets

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice.

4. *Physical description.*—(*a*) Describe in detail any mining or exploration operations which have been or now are being conducted upon the land, including existing mine workings and production facilities. State your interest, if any, in such operations. Also describe accessibility of mine workings for examination purposes.

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades.

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you.

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points.

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power.

5. *The exploration project.*—(a) State the mineral or minerals for which you wish to explore .....

(b) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc.

(c) The work will start within ..... days and be completed within ..... months from the date of an exploration project contract.

(d) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations.

6. *Estimate of costs.*—Furnish a detailed estimate of the costs of the proposed work (you will have to use a separate sheet), under the following headings. Add the totals under all headings to give the estimated total cost of the project:

(a) *Independent contracts.*—(Note.—If the applicant does not intend to let any of the work to contractors, write "none" after this item. To the extent that the work is to be contracted, do not repeat the cost of the contract-work in subsequent items.) State the cost of any proposed independent contracts for the performance of all or any part of the work, expressed in terms of units of work (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved, etc.).

(b) *Labor, supervision, consultants.*—Include an itemized schedule of numbers, classes and rates of wages, salaries or fees for necessary labor, supervision and engineering and geological consultants.

(c) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel.

(d) *Operating equipment.*—Furnish an itemized list of any operating equipment to be rented, purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or suggested use-allowance based on present value, as the case may be.

(e) *Rehabilitation and repairs.*—Furnish a detailed list showing the cost of any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and which will be devoted to the exploration project.

(f) *New buildings, improvements, installations.*—Furnish a detailed list showing the cost of any necessary buildings, fixed improvements, or installations to be purchased, installed or constructed for the benefit of the exploration project.

(g) *Miscellaneous.*—Furnish a detailed list showing the cost of repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance, and payroll taxes.

(h) *Contingencies.*—Give an estimate of any necessary allowances for contingencies not included in the costs stated above.

NOTE.—No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes), or any other indirect costs, or work performed or costs incurred before the date of the contract, should be included in the estimate of costs.

7. (a) Are you prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation (Sec. 7, DMEA No. 1)?

(b) How do you propose to furnish your share of the costs?

☐ Money ☐ Use of equipment owned by you ☐ Other

Explain in detail on acompanying paper.

## CERTIFICATION

The undersigned, whether as an individual, corporate officer, partner, or otherwise, both in his own behalf and acting for the applicant, certifies that the information set forth in this form and accompanying papers is correct and complete, to the best of his knowledge and belief.

Dated ....., 195...

January 24, 1953

(Applicant)

By [illegible] President

Secretary

**Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.**

U. S. GOVERNMENT PRINTING OFFICE 16—66551-1

## AGREEMENT OF SALE

THIS AGREEMENT, entered into as of the 1st day of June, 1952, between ASBESTOS CORPORATION OF AMERICA, an Arizona corporation, (formerly Arizona Chrysotile Asbestos Company), herein termed Seller, and D. W. JAQUAYS, herein termed Buyer,

W I T N E S S E T H :

1. Property. Seller agrees to sell to Buyer and Buyer agrees to purchase from Seller, on and subject to the terms and conditions hereinafter set forth, the following described property:

(a) Regal Mine. Those certain unpatented lode mining claims in the McMillan Mining District, Gila County, Arizona, known as the Regal Mine, the names of which and the book and page number of Records of Mines in the office of the County Recorder of Gila County, Arizona, in which the United States patent thereto is located being as follows:

| Name | Book | Page |
|---|---|---|
| Regal #1 | 43 | 87 |
| Regal #10 | 35 | 436 |
| Regal #11 | 35 | 437 |
| Regal #12 | 35 | 438 |
| Regal #13 | 35 | 439 |
| Regal #14 | 35 | 440 |
| Regal #15 | 35 | 441 |
| Regal #16 | 35 | 442 |
| Regal #17 | 35 | 443 |
| Regal #18 | 35 | 444 |
| Regal #19 | 35 | 445 |
| Regal #21 | 35 | 447 |
| Regal #22 | 35 | 448 |
| Regal #23 | 35 | 449 |
| Regal #24 | 35 | 450 |
| Regal #25 | 35 | 451 |
| Huntz #3 | 41 | 500 |
| Huntz #4 | 41 | 500 |
| Huntz #5 | 41 | 501 |
| Huntz #6 | 41 | 501 |
| Huntz #29 | 41 | 491 |
| Amended | 41 | 502 |
| Huntz #30 | 41 | 491 |

together with all improvements, buildings, structures, fixtures, machinery, equipment and tools thereon.

DWJ 6-2-52
CEH 6-6-52

(b) Mill. That certain asbestos milling property known as the Globe Mill and described as follows:

All and singular that certain tract of land situated, lying and being in the Northeast quarter of the Northwest quarter of Section Thirty-four (34), Township One (1) North of Range Fifteen and one-half (15 1/2), East of the Gila and Salt River Base and Meridian, Gila County, State of Arizona, and more particularly described as follows, to wit:

Beginning at a point on the East side line of said Northeast quarter (NE 1/4) of the Northwest quarter (NW 1/4) of Section Thirty-four (34), Township One (1) North of Range Fifteen and one-half (15 1/2) East of the Gila and Salt River Base and Meridian, Gila County, Arizona, which lies South 00° 03' East a distance of Four Hundred Fifty-eight and Sixty-seven Hundredths (458.67) feet from the North quarter corner of said Section Thirty-four (34) and at the intersection of the previous centerline of U. S. Highway 70, as shown on the map of said Highway on file in the office of the State Engineer of the Arizona State Highway Department; thence South 00 3' East 465.64 feet; thence North 89° 51' West 379.70 feet; thence North 49° 40' West 490 feet; thence North 40° 20' East 600 feet; thence South 49° 40' East 478.74 feet along the said centerline of U. S. Highway 70 to point of beginning, containing 8.28 acres more or less,

subject to the easements for rights-of-way of all public roads and highways of record,

together with all improvements, buildings, structures, fixtures, machinery tools and equipment thereon.

2. Purchase Price. The agreed purchase price for said property shall be Forty-five Thousand Dollars ($45,000.00), plus the amount of the unpaid principals of the mortgage on the aforesaid Globe Mill and the conditional sales contract on certain of the equipment thereon, together with all interest accrued thereon until such principals are paid, payable as follows: Five thousand dollars ($5,000.00) upon execution of this agreement, ten thousand dollars ($10,000.00) on or before sixty (60) days from the date of this Agreement, and the balance of said $45,000.00 in six (6) equal semi-annual installments of Five Thousand Dollars ($5,000.00) each, to be paid on or before the expiration of each six (6) month period from and after the date of this Agreement, and the amount of all principal and interest payments to be made in installments determined by the installments due under said mortgage and conditional sales contract and made thirty (30) days prior to the due date of such installments under said mortgage and conditional sales contract. All payments on the purchase price shall be made by



DWJ 6-2-52
CEVA 6-6-52

Buyer, at Paterson, New Jersey.

3. Possession. Buyer shall be entitled to possession of said property upon making the initial payment on the purchase price and shall be entitled to hold and retain possession so long as Buyer fully performs all and singular the terms and conditions of this Agreement.

4. Covenants of Buyer. Buyer, from and after the date upon which he shall take possession of said property, shall do and perform the following:

(a) Perform all annual assessment work required upon said mining claims during each assessment year and file all affidavits provided by law to establish proof of performance of such work.

(b) Pay all ad valorem taxes becoming a lien on said property or any thereof from and after January 1, 1952.

(c) Maintain all improvements, buildings, structures, fixtures, machinery and equipment on said property in as good condition as the same is now in, reasonable wear and loss by fire and windstorm excepted.

(d) Maintain fire and windstorm insurance on all improvements, buildings, structures, fixtures, machinery, equipment, and tools located on said property in the full insurable value thereof and with an insurance carrier acceptable to Seller, the insurance to be payable to the parties hereto as their interests may appear, any insurance so paid to Seller to be applied against aforesaid purchase price.

(e) Pay before delinquent to the General Service Administration all amounts becoming due on the mortgage covering the mill property and the conditional sales contract covering the machinery, equipment and tools.

(f) Pay all costs for labor and materials used or expended on the property and post and maintain on the property, in the manner provided by law, notice of non-liability on the part of Seller for such labor and material.

(g) Perform all mining and milling operations in a good and workmanlike manner and in accordance with good mining and milling practice.

(h) Allow Seller access to the property at all times for the purpose of inspection.



DWJ 6-2-52
CEH 6-6-52

(i) Hold Seller harmless from any and all obligations and liabilities of whatsoever nature arising out of or by virtue of Buyer's operations or acts hereunder.

5. Asbestos Supply. Buyer, during a period not longer than six and one-half (6 1/2) years from and after the date of this Agreement, will furnish and deliver to Seller, such quantity or quantities of asbestos fiber as Seller ~~may~~ will DWJ 6-2-52 CCH 6-6-52 from time to time designate in writing, but not to exceed a total of six hundr ed and fifty (650) tons during said period of 6 1/2 years, Seller to be obligated to purchase not less than 100 tons in any annual period from and after the date hereof. Said asbestos fiber shall be clean white soft fiber testing 0-0-14-2 by Canadian shake test standards. Seller shall pay Buyer for all asbestos fiber furnished and delivered to Seller hereunder at the rate of Three Hundred Fifty Dollars ($350.00) per ton, f. o. b. railroad cars, Globe, Arizona, payment to be made either in cash within ten (10) days after delivery, or by crediting the amount of such payment upon the next installment becoming due from Buyer to Seller on the purchase price of the property.

6. Transfer of Title. Upon payment in full of the purchase price for said property, and the full performance by Buyer of his obligations under paragraph 5 hereof, Seller will execute and deliver to Buyer good and sufficient instruments of conveyance of the purpose of transferring title to the property described in Clause 1 hereof, free and clear of all liens, charges and encumbrances, subject only to the paramount title of the United States in and to the mining claims; the balance, if any, remaining due the United States (General Services Administration) on the mortgage covering the mill property and the conditional sales contract covering the machinery, equipment and tools located on said mill property; any liens, charges or encumbrances resulting from acts or omissions of Buyer; and easements and rights of way of record.

7. Covenants of Seller. Seller warrants, covenants and agrees as follows:

DWJ 6-2-52
CCH 6-6-52

(a) That it is the owner of said property and has full right, power and authority to sell the same.

(b) That it will indemnify and hold harmless Buyer, and the interest of Buyer in the property covered hereby, from any claims, demands, liens, charges or encumbrances arising from any past act of Seller, except only the lien of the aforementioned mortgage and conditional sales contract.

(c) That the principal balance of the mortgage held by the United States (General Services Administration) covering the mill property is $10,950.70 with interest from April 30, 1952, and the principal balance of the conditional sales contract is $4,049.45, with interest from April 30, 1952.

8. Default It is fully understood that time is of the essence of this Agreement and that in the event Buyer shall default in the prompt and complete performance of any term, covenant and provision of this Agreement, Seller, at its option and without notice, may declare the full balance of the purchase price immediately due and payable. If seller exercises its option under this paragraph Buyer shall also pay Seller an amount equal to 10% of the gross proceeds received by Buyer from the sale of fiber sold by Buyer during his operation hereunder, provided however, the Buyer shall not pay said 10% upon the amount of fiber sold and supplied under paragraph 5 hereof.

IN WITNESS WHEREOF, the parties have executed these presents as of the date first herein written.

ASBESTOS CORPORATION OF AMERICA

By ) Chas S Hurzeler
Its PRESIDENT

SELLER

D W Gleyzer A

BUYER

State of New Jersey)
) ss.
County of Passaic )

On this, the 23rd day of May, 1952 before me, Joseph Gaito, Jr., the undersigned officer, personally appeared Chas. E. Hunziker, who acknowledged himself to be the President of Asbestos Corporation of America, an Arizona corporation, and that he, as such President, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by himself as President.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Joseph Gaito, Jr.
Notary Public

My commission expires _____

State of Arizona )
Maricopa ) ss.
County of ~~Gila~~ )

On this, the 2nd day of June, 1952, before me, Alice J. Fitch, the undersigned officer, personally appeared D. W. Jaquays, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same for the purpose therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Alice J. Fitch
Notary Public

My commission expires March 4, 1956.

## ASSIGNMENT OF AGREEMENT OF SALE

DATE: JULY 29, 1952.

ASSIGNORS: D. W. JAQUAYS and ETHELYN JAQUAYS, his wife.

ASSIGNEE: JAQUAYS' MINING CORPORATION, an Arizona corporation.

### RECITALS

Heretofore, to-wit, on June 1, 1952, ASBESTOS CORPORATION OF AMERICA, an Arizona corporation (formerly Arizona Chrysotile Asbestos Company), as Seller, and D. W. JAQUAYS, one of ASSIGNORS herein, as Buyer entered into a certain Agreement of Sale covering those certain unpatented lode mining claims in the McMILLAN MINING DISTRICT, Gila County, Arizona, known as the REGAL MINE, the names of which and the book and page number of Records of Mines in the office of the County Recorder of Gila County, Arizona, in which the United States patent thereto is located being as follows:

| NAME: | BOOK: | PAGE: |
|---|---|---|
| Regal #1 | 43 | 87 |
| Regal #10 | 35 | 436 |
| Regal #11 | 35 | 437 |
| Regal #12 | 35 | 438 |
| Regal #13 | 35 | 439 |
| Regal #14 | 35 | 440 |
| Regal #15 | 35 | 441 |
| Regal #16 | 35 | 442 |
| Regal #17 | 35 | 443 |
| Regal #18 | 35 | 444 |
| Regal #19 | 35 | 445 |
| Regal #21 | 35 | 447 |
| Regal #22 | 35 | 448 |
| Regal #23 | 35 | 449 |
| Regal #24 | 35 | 450 |
| Regal #25 | 35 | 451 |
| Huntz #3 | 41 | 500 |
| Huntz #4 | 41 | 500 |

| NAME: | BOOK: | PAGE: |
|---|---|---|
| Huntz #5 | 41 | 501 |
| Huntz #6 | 41 | 501 |
| Huntz #29 | 41 | 491 |
| (Amended) | 41 | 502 |
| Huntz #30 | 41 | 491 |

together with all improvements, buildings, structures, fixtures, machinery, equipment and tools thereon, and the GLOBE MILL described as follows:

> All and singular that certain tract of land situated, lying and being in the Northeast Quarter of the Northwest Quarter of Section Thirty-four (34), Township One (1) North of Range Fifteen and one-half (15½) East of the Gila and Salt River Base and Meridian, Gila County, State of Arizona, and more particularly described as follows, to-wit:
>
> Beginning at a point on the East side line of said Northeast Quarter of the Northwest Quarter (NE¼NW¼) of Section Thirty-four (34), Township One (1) North of Range Fifteen and one-half (15½) East of the Gila and Salt River Base and Meridian, Gila County, Arizona, which lies South 00 degrees 03 minutes East a distance of four hundred fifty-eight and sixty-seven hundredths (458.67) feet from the North Quarter corner of said Section Thirty-four (34) and at the intersection of the previous centerline of U. S. Highway 70, as shown on the map of said Highway on file in the Office of the State Engineer of the Arizona State Highway Department; thence South 00 degrees 3 minutes East 465.64 feet; thence North 89 degrees 51 minutes West 379.70 feet; thence North 49 degrees 40 minutes West 490 feet; thence North 40 degrees 20 minutes East 600 feet; thence South 49 degrees 40 minutes East 478.74 feet along the said centerline of U. S. Highway 70 to the point of beginning, containing 8.28 acres, more or less; SUBJECT to the easements for rights-of-way of all public roads and highways of record, together with all improvements, buildings, structures, fixtures, machinery tools and equipment thereon.

It is the desire of ASSIGNORS herein to sell, transfer, set over and assign to the ASSIGNEE all of their right, title and interest in and to said Agreement of Sale, as well as ASSIGNORS' interest and right and title in and to the above-described mining claims and millsite.

## COVENANTS

NOW, THEREFORE, for and in consideration of the sum of TEN DOLLARS, and other good and valuable consideration, paid by ASSIGNEE to ASSIGNORS, the receipt whereof is hereby acknowledged, ASSIGNORS do hereby sell, transfer, set over and assign to ASSIGNEE, its successors and assigns, all of their right, title and interest in and to said Agreement of Sale, the ASSIGNORS hereby selling, transferring and assigning, as well, to the ASSIGNEE, all of their right, title and interest in and to the aforedescribed mining claims and millsite.

IT IS UNDERSTOOD AND AGREED by and between the ASSIGNORS and the ASSIGNEE that the ASSIGNEE assumes and agrees to pay the unpaid balance of the purchase price of FORTY-FIVE THOUSAND DOLLARS, plus any amount of the unpaid principals of the mortgage on the aforedescribed millsite and the conditional sales contract on certain of the equipment thereon, together with all interest accrued thereon until such principals are paid, ASSIGNEE assuming as well all other obligations according to the terms and conditions of the above-mentioned Agreement of Sale.

AND THE ASSIGNORS fully authorize and empower the ASSIGNEE, upon performance of the said conditions and covenants, to demand and receive of the said ASBESTOS CORPORATION OF AMERICA, an Arizona corporation (formerly ARIZONA CHRYSOTILE ASBESTOS COMPANY), the deed covenanted to be given in the said Agreement of Sale, and all preceding deeds or conveyances necessary to complete title in the ASSIGNORS, in the same manner to all intents and purposes as the ASSIGNORS might or could do, were these presents not executed.

IN WITNESS WHEREOF, the parties hereto have caused these presents to be executed the day and year first above written.

ASSIGNORS

JAQUAYS' MINING CORPORATION
ASSIGNEE

By _____
President

ATTEST:

Secretary

STATE OF ARIZONA )
COUNTY OF MARICOPA ) SS.

ON THIS, the 29th day of July, 1952, before me, the undersigned Notary Public, personally appeared D. W. JAQUAYS and ETHELYN JAQUAYS, his wife, known to me to be the persons whose names are subscribed to the within instrument as ASSIGNORS, and who acknowledged themselves to be the President and Secretary, respectively, of JAQUAYS' MINING CORPORATION, an Arizona corporation, ASSIGNEE, and that they, as such President and Secretary, being authorized so to do, executed the foregoing instrument on behalf of the ASSIGNEE in the capacity therein stated and individually for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

My commission expires: MY COMMISSION EXPIRES JUNE 13, 1954

NOTARY PUBLIC

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION

224 New Customhouse
Denver 2, Colorado
Sept. 23, 1958

RECEIVED SEP 29 19

| DATE | INITIALS | CODE |
|---|---|---|
| 9-29 | C | 220 |
| 9/29 | | 100 |
| " | | 110 |
| 9/30 | | 800 |
| 10/3 | | 600 |

Memorandum

To: Office of Minerals Exploration, Washington D.C.

From: Office of Minerals Exploration, Region III

Subject: Semiannual Report of Certified Project for the period January 1, 1958 through June 30, 1958.

DMEA Docket 2867 - (Asbestos) Jaquay's Mining Corp., Contract Idm-E589, (Regal mine) Gila County, Arizona

Enclosed are the original and three copies of the subject report prepared in conformance with instructions contained in memorandum of January 6, 1956, from this office, Memorandum 29, and Special Notice in Minutes of Operating Committee Meeting No. 692.

E. N. Harshman

E. N. Harshman

Enclosures

Investment data

# Semiannual Report of Certified Projects

Reporting Period - January 1, 1958 through June 30, 1958

Docket and Contract Number - DMEA 2867, Contract Idm-E589

Operator - Jaquay's Mining Corp.,

Commodity - Asbestos

Mine Name - Regal mine

County and State - Gila County, Arizona

Date of Contract - August 24, 1953

Date of Certification - March 6, 1954

Expiration Date of Royalty Payments - August 24, 1963

Date of Examination for this Report - August 8, 1958

Total Amount of Contract - $26,000.00

Total Expenditures under Contract - $4200.00

Amount of Government Participation at 90 % $3780.00

Royalty Payments this Period - $0.00

Previous Royalty Payments - $3780.00

Total Royalty Payments to Date - $3780.00

% Loan Repayment Completed - 100.00%

Amount of Royalty Due - None

Royalty Remarks -------

DMEA 2867 (Asbestos) Idm-E589
Jaquay's Mining Corp. (Royal Mine)
Gila County, Arizona

January 1, to June 30, 1958

| | Tons | Analysis |
|---|---|---|
| Original Estimate of DMEA Reserves (Field Team Final Report) Mines [ ] Survey [ ] Joint [X] | 773 | Fiber (all grades) |
| Revised Estimate of DMEA Reserves (Field Team) Mines [ ] Survey [ ] Joint [ ] | | |
| Increase of Reserves by work performed subsequent to DMEA project work | | |
| Production DMEA {conc / ore} (This period) | 0.0 | |
| (Previous) | 2.5 | No. 1 |
| (To Date) | 2.5 | No. 1 |
| " Operator's {conc / ore} (This period) | 2418 | All grades |
| (Previous) | 280 | " |
| (To Date) | 2698 | " |

Percent Revised Reserves Mined _____

(For Uranium Ores Only)

Initial Production Bonus:
Status Operator: Ineligible [ ] Not Applied [ ] Applied [ ] Rec'ing pmt [ ] Pd up [ ]
Pounds $U_3O_8$ produced this period eligible for Bonus _____
Amount of Bonus paid to Operator this period $_____
Total pounds $U_3O_8$ produced to date eligible for Bonus _____
Total amount of Bonus paid to Operator to date $_____
Bonus Royalty Paid $_____
Bonus Royalty Due $_____

## Investment Data

| Shafts Size | Shafts Feet | Shafts Cost | Winzes Size | Winzes Feet | Winzes Cost | Drifts & Crosscuts Size | Drifts & Crosscuts Feet | Drifts & Crosscuts Cost |
|---|---|---|---|---|---|---|---|---|
| | | | | | | 5' x 7' | 7100 | $150,000 |

| Raises Size | Raises Feet | Raises Cost | Rehabilitation Description | Rehabilitation Cost | Type & Size | Drilling Feet | Drilling Cost |
|---|---|---|---|---|---|---|---|
| 5' x 5' | 1000 | $19,200 | | | L.H. | 2760 | $5,320 |

## Facilities

| Mine Plant Description | Mine Plant Cost | Mill Description | Mill Cost | Roads Description | Roads Cost |
|---|---|---|---|---|---|
| | $104,200 | | $75,000 | 6670 ft. access Mainly graded dirt. | $28,200.00 |

Remarks

Data obtained from A. Gerhardt, Supt. 8/8/58 at Corp.'s Globe, Ariz. office. Investment data for period: 600'' drifts & X-cuts - $12,500; 120' raises - $2400; 600' roads-$1500. Ore reserves increased materially this period to total of well over 2600 tons. Employees - 26 at mine includes 5 men of development contractors crew. 6 men employed at Globe mill.

Original signed by
T. M. Romslo
Signed _____ (Engineer)

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

March 12, 1958

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 17 1958

| DATE | | CODE |
|---|---|---|
| 3/17 | C | 220 |
| 17 | | 100 |
| " | | 110 |
| 3/18 | | 800 |
| | | 600 |
| | | |
| | | |

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Semiannual Report of Certified Project for the period July 1 - December 31, 1957

DMEA Docket 2867
Contract Idm-E 589
Jaquay's Mining Co. (Regal mine)
Gila County, Arizona

Enclosed are the original and three copies of the subject report prepared in conformance with instructions contained in memorandum of January 6, 1956 from this office, Memorandum 29, and Special Notice in Minutes of Operating Committee Meeting No. 692.

W S King
Executive Officer, DMEA
Field Team, Region III

Enclosures

MHM:dp
cc: Semiannual Report File E 589
Emerick
DMEA/TUC.
Chron.

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 17 1958

| DATE | | CODE |
|---|---|---|
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Semiannual Report of Certified Projects

Reporting Period - July 1, 1957 - December 31, 1957

Docket and Contract Number - DMEA 2867 Idm E589

Operator - Jaquay's Mining Co.

Commodity - Asbestos

Mine Name - Regal Mine

County and State -- Gila County, Arizona

Date of Contract - August 24, 1953

Date of Certification - March 6, 1954

Expiration Date of Royalty Payments - August 24, 1963

Date of Examination for this Report - September 30, 1957

Total Amount of Contract - $26,000.00

Total Expenditures under Contract - $4,200.00

Amount of Government Participation at 90% - $3780.00

Royalty Payments this Period - $ 0.00

Previous Royalty Payments - $3780.00

Total Royalty Payments to Date - $3780.00

% Loan Repayment Completed - $100.00 %?

Amount of Royalty Due - None

Royalty Remarks

Docket DMEA-2867, Contract Idm-E589
Jaquays Mining Corp. (Regal Mine)
Gila County, Ariz.

| | Tons | Analysis |
|---|---|---|
| Original Estimate of DMEA Reserves (Field Team Final Report) Mines ☐ Survey ☐ Joint ☐ | 773 | All grades |
| Revised Estimate of DMEA Reserves (Field Team) Mines ☐ Survey ☐ Joint ☐ | | |
| Increase of Reserves by work performed subsequent to DMEA project work | *2,645 | " " |
| Production DMEA {conc / ore} (This period) | 0.0 | |
| (Previous) | 2.5 | No. 1 |
| (To Date) | 2.5 | No. 1 |
| " Operator's {conc / ore} (This period) | 268.0 | All grades |
| (Previous) | 2,150.0 | " " |
| (To Date) | 2,4180 | " " |

Percent Revised Reserves Mined _____

(For Uranium Ores Only)

Initial Production Bonus:
Status Operator: Ineligible ☐ Not Applied ☐ Applied ☐ Rec'ing pmt ☐ Pd up ☐
Pounds $U_3O_8$ produced this period eligible for Bonus _____
Amount of Bonus paid to Operator this period $_____
Total pounds $U_3O_8$ produced to date eligible for Bonus _____
Total amount of Bonus paid to Operator to date $_____
Bonus Royalty Paid $_____
Bonus Royalty Due $_____

## Investment Data

| Shafts Size | Shafts Feet | Shafts Cost | Winzes Size | Winzes Feet | Winzes Cost | Drifts & Crosscuts Size | Drifts & Crosscuts Feet | Drifts & Crosscuts Cost |
|---|---|---|---|---|---|---|---|---|
| | | | | | | 6' x 8' | 400 | $10,000 |

| Raises Size | Raises Feet | Raises Cost | Rehabilitation Description | Rehabilitation Cost | Drilling Type & Size | Drilling Feet | Drilling Cost |
|---|---|---|---|---|---|---|---|
| 5' x 5' | 80 | $800.00 | | | L.H. | 200 | $200.00 |

## Facilities

| Mine Plant Description | Mine Plant Cost | Mill Description | Mill Cost | Roads Description | Roads Cost |
|---|---|---|---|---|---|
| Belt conveyor and trommel | $5,000 | | | | |

## Remarks

All information obtained Feb. 20, 1958 from D. W. Jaquays, owner, and Al Gerhardt, Supt. at corporation's office in Globe, Ariz.

*Based on total production plus estimated present reserves of 1,000 tons, Average number of Employees was 26, 20 at mine and 6 at mill.

Signed T M Romslo (Engineer)

CC W. H. King (Orig.)
DMEA-2867
Cert. File
DF
TMRomslo:frj

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

March 12, 1958

EXTRA COPY
DMEA
RECEIVED MAR 17 1958

| DATE | INITIALS | CODE |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Semiannual Report of Certified Project for the period July 1 - December 31, 1957

DMEA Docket 2867
Contract Idm-E 589
Jaquay's Mining Co. (Regal mine)
Gila County, Arizona

Enclosed are the original and three copies of the subject report prepared in conformance with instructions contained in memorandum of January 6, 1956 from this office, Memorandum 29, and Special Notice in Minutes of Operating Committee Meeting No. 692.

Original signed by
W. H. KING

Executive Officer, DMEA
Field Team, Region III

Enclosures

WHM:dp
cc: Semiannual Report File E 589
Emerick
DMEA/TUC.
Chron.

## Semiannual Report of Certified Projects

Reporting Period - July 1, 1957 - December 31, 1957

Docket and Contract Number - DMEA 2867 Idm E589

Operator - Jaquay's Mining Co.

Commodity - Asbestos

Mine Name - Regal Mine

County and State -- Gila County, Arizona

Date of Contract - August 24, 1953

Date of Certification - March 6, 1954

Expiration Date of Royalty Payments - August 24, 1963

Date of Examination for this Report - September 30, 1957

Total Amount of Contract - $26,000.00

Total Expenditures under Contract - $4,200.00

Amount of Government Participation at 90% - $3780.00

Royalty Payments this Period - $ 0.00

Previous Royalty Payments - $3780.00

Total Royalty Payments to Date - $3780.00

% Loan Repayment Completed - $100.00 P

Amount of Royalty Due - None

Royalty Remarks

| | Tons | Analysis |
|---|---|---|
| Original Estimate of DMEA Reserve (Field Team Final Report) Mines ☐ Survey ☐ Joint ☐ | 773 | All grades |
| Revised Estimate of DMEA Reserves (Field Team) Mines ☐ Survey ☐ Joint ☐ | | |
| Increase of Reserves by work performed subsequent to DMEA project work | *2,645 | " " |
| Production DMEA ore (This period) | 0.0 | |
| (Previous) | 2.5 | No. 1 |
| (To Date) | 2.5 | No. 1 |
| " Operator's ore (This period) | 268.0 | All grades |
| found subsequent (Previous) | 2,150.0 | " " |
| to DMEA work (To date) | 2,418.0 | " " |

Percent Revised Reserves Mines _____

(For Uranium Ores Only)

Initial Production Bonus:

Status of Operator: Ineligible ☐ Applied for ☐ Rec'ing pmt ☐ Paid up ☐

Pounds $U_3O_8$ produced this period eligible for Bonus _____

Amount of Bonus paid to Operator this period $_____

Total pounds $U_3O_8$ produced to date eligible for Bonus _____

Total amount of Bonus paid to Operator to date $_____

Bonus Royalty Paid $_____

Bonus Royalty Due $_____

## Investment Data

| Shafts Size | Shafts Feet | Shafts Cost | Winzes Size | Winzes Feet | Winzes Cost | Drifts & Crosscuts Size | Drifts & Crosscuts Feet | Drifts & Crosscuts Cost |
|---|---|---|---|---|---|---|---|---|
| | | | | | | 6' x 8' | 400 | $10,000 |

| Raises Size | Raises Feet | Raises Cost | Drilling Type & Size | Drilling Feet | Drilling Cost | Rehabilitation Description | Rehabilitation Cost |
|---|---|---|---|---|---|---|---|
| 5' x 5' | 80 | $800.00 | L.H. | 200 | $200.00 | | |

## Facilities

| Mine Plant Description | Mine Plant Cost | Mill Description | Mill Cost | Roads Description | Roads Cost |
|---|---|---|---|---|---|
| Belt conveyor and trommel | $5,000 | | | | |

## Remarks

All information obtained Feb. 20, 1958 from D. W. Jaquays, owner, and Al Gerhardt, Supt. at corporation's office in Glove, Ariz.

*Based on total production plus estimated present reserves of 1,000 tons, Average number of Employees was 26, 20 at mine and 6 at mill.

Original signed by
Signed T. M. Romslo (Engineer)

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

October 8, 1957

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Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Semiannual Report of Certified Project for the period January 1, 1957 through June 30, 1957

DMEA Docket 2867 (Asbestos)
Contract Idm-E 589, Jaquays Mining Corporation (Regal Mine), Gila County, Arizona

Enclosed are the original and three copies of the subject report prepared in conformance with instructions contained in memorandum of January 6, 1956 from this office, Memorandum 29, and Special Notice in Minutes of Operating Committee Meeting No. 692.

E. M. Harshman

Acting Executive Officer, DMEA
Field Team, Region III

Enclosures

MHM/vj
cc: Semiannual Report File E 589
DMEA/TUC
Harshman
Emerick
Chron.

## Semiannual Report of Certified Projects

| | |
|---|---|
| Reporting Period | January 1, 1957 through June 30, 1957 |
| Docket and Contract Number | DMEA 2867, Idm-E589 |
| Operator | Jaquay's Mining Corporation |
| Commodity | Asbestos |
| Mine Name | Regal Mine |
| County and State | Gila County, Arizona |
| | |
| Date of Contract | August 24, 1953 |
| Date of Certification | March 8, 1954 |
| Expiration Date of Royalty Payments | August 24, 1963 |
| Date of Examination for this Report | September 30, 1957 |
| | |
| Total Amount of Contract | $26,000.00 |
| Total Expenditures under Contract | $4,200.00 |
| Amount of Government Participation at 90 % | $3,780.00 |
| | |
| Royalty Payments this Period | $0.00 |
| Previous Royalty Payments | $3,780.00 |
| Total Royalty Payments to Date | $3,780.00 |
| % Loan Repayment Completed | 100% |
| | |
| Amount of Royalty Due | None |
| Royalty Remarks | ---- |

Docket DMEA-2867, Contract Idm-E589
Jaquays Mining Corp. (Regal M[illegible]e)
Gila County, Ariz.

| | Tons | Analysis |
|---|---|---|
| Original Estimate of DMEA Reserves (Field Team Final Report) Mines ☐ Survey ☐ Joint ☐ | 773 | All grades |
| Revised Estimate of DMEA Reserves (Field Team) Mines ☐ Survey ☐ Joint ☐ | | |
| Increase of Reserves by work performed subsequent to DMEA project work | *2577 | " " |
| Production DMEA ore (This period) Approx. 2.5 Tons No. 1 | 0.0 | " " |
| (Previous) @ $1500/T represents | 2.5 | No. 1 |
| (To date $3780.00 royalty | 2.5 | No. 1 |
| " Operator's ore (This period) | 300.0 | All grades |
| found subsequent (Previous) (rounded to) | 1850.0 | " " |
| to DMEA work (To date) | 2150.00 | " " |

Percent Revised Reserves Mines _____

(For Uranium Ores Only)

Initial Production Bonus:
Status of Operator: Ineligible ☐ Applied for ☐ Rec'ing pmt ☐ Paid up ☐
Pounds $U_3O_8$ produced this period eligible for Bonus _____
Amount of Bonus paid to Operator this period $_____
Total pounds $U_3O_8$ produced to date eligible for Bonus _____
Total amount of Bonus paid to Operator to date $_____
Bonus Royalty Paid $_____
Bonus Royalty Due $_____

## Investment Data

**Shafts**

| Size | Feet | Cost |
|---|---|---|

**Winzes**

| Size | Feet | Cost |
|---|---|---|

**Drifts & Crosscuts**

| Size | Feet | Cost |
|---|---|---|
| 6'x8' | 1500 | $37,500 ✓ |

**Raises**

| Size | Feet | Cost |
|---|---|---|
| 5' x 5' | 170 | $1700.00 |

**Drilling**

| Type & Size | Feet | Cost |
|---|---|---|
| L.H. | 560 | $1,120.00 |

**Rehabilitation**

| Description | Cost |
|---|---|

**Facilities**

**Mine Plant**

| Description | Cost |
|---|---|

**Mill**

| Description | Cost |
|---|---|

**Roads**

| Description | Cost |
|---|---|
| 5,000 ft. | |

**Remarks**

All information from letter of Sept. 30, 1957 by Al Gerhardt, Supt. of corporation's operation.

Average number of employees was 26, 20 at mine and 6 at mill.

*based on total production plus estimated present reserves of 1200 tons.

Signed T M Romslo (Engineer)
T. M. Romslo

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

May 8, 1957

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DATE | INITIALS | CODE
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" | | 100

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Semiannual Report of Certified Project for the period July 1, 1956 through December 31, 1956
DMEA Docket 2867 (Asbestos)
Contract Idm-E 589, Jaquay's Mining Corporation (Regal Mine), Gila County, Arizona

Enclosed are the original and three copies of the subject report prepared in conformance with instructions contained in memorandum of January 6, 1956 from this office, Memorandum 29, and Special Notice in Minutes of Operating Committee Meeting No. 692.

E. M. Harshman

XXXXXXXXXXXXXX
Acting Executive Officer, DMEA
Field Team, Region III

MHM/vj
Enclosures

cc: Semiannual Report File E 589
W. R. Storms
Harshman
Emerick
Chron.

DMEA
DEPARTMENT OF THE INTERIOR
MAY 8 - 1957
REGION III
DENVER, COLORADO

May 6, 1957

Memorandum

To: E. N. Harshman, Acting Executive Officer, DMEA Field Team, Region III

From: Superintendent, Southwest Experiment Station

Subject: Revised Semi-Annual Report of Certified Project, Contract I&m-E509 (Asbestos), Docket DMEA-2867, Jequays Mining Corp. (Regal Mine), Gila County, Ariz.

As requested, we are submitting another semi-annual report by T. M. Romalo on the above property.

Signed by Walter R. Storms

Walter R. Storms

CC Exec. Off. (8)
DMEA-2867
RF

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WRStorms:frj

# Semi-Annual Report of Certified Projects

| | |
|---|---|
| Reporting Period | July 1 to December 31, 1956 |
| Docket and Contract Number | DMEA-2867, Idm-E589 |
| Operator | Jaquay's Mining Corp. |
| Commodity | Asbestos |
| Mine Name | Regal Mine |
| County and State | Gila County, Ariz. |
| Date of Contract | August 24, 1953 |
| Date of Certification | March 8, 1954 |
| Expiration Date of Royalty Payments | March 8, 1964 |
| Date of Examination for this Report | January 29, 1957 |
| Total Amount of Contract | $26,000.00 |
| Total Expenditures under Contract | $4,200.00 |
| Amount of Government Participation at 90 % | $3,780.00 |
| Royalty Payments this Period | $0.00 |
| Previous Royalty Payments | $3,780.00 |
| Total Royalty Payments to Date | $3,780.00 |
| % Loan Repayment Completed | 100 |
| Amount of Royalty Due | None |
| Royalty Remarks | |

| | Tons | Analysis |
|---|---|---|
| Original Estimate of DMEA Reserves (Field Team Final Report) Mines [x] Survey [ ] Joint [ ] | 773 | all grades |
| Revised Estimate of DMEA Reserves (Field Team) Estimate of this report Mines [ ] Survey [ ] Joint [ ] | *2915 | " " |
| Increase of Reserves by work performed subsequent to DMEA project work | 2142 | " " |
| Production DMEA ore (This period) Approx. 2.5 T No. 1 | 0.0 | |
| (Previous) @ $1500 T represents | 2.5 | " " |
| (To date) $3780 royalty | 2.5 | " " |
| " Operator's ore (This period) | 527.0 | " " |
| found subsequent (Previous) | 1322.5 | " " |
| to DMEA work (To date) | 1849.5 | " " |

Percent Revised Reserves mined $\frac{2915 \times 100}{1852}$ equal 63.5 percent

(For Uranium Ores Only)

Initial Production Bonus:

Status of Operator: Ineligible [ ] Applied for [ ] Rec'ing pmt [ ] Pd up ____

Pounds $U_3O_8$ produced this period eligible for Bonus ____

Amount of Bonus paid to Operator this period $____

Total pounds $U_3O_8$ produced to date eligible for Bonus ____

Total amount of Bonus paid to Operator to date $____

Bonus Royalty Paid $____

Bonus Royalty Due $____

Investment Data for Jaquay's operation since 10/22/52

| Shafts Size | Shafts Feet | Shafts Cost | Winzes Size | Winzes Feet | Winzes Cost | Drifts & Crosscuts Size | Drifts & Crosscuts Feet | Drifts & Crosscuts Cost |
|---|---|---|---|---|---|---|---|---|
| | | | | | | 5'x7' | 4,000 | $100,000 |

| Raises Size | Raises Feet | Raises Cost | Drilling Type & Size | Drilling Feet | Drilling Cost | Rehabilitation Description | Rehabilitation Cost |
|---|---|---|---|---|---|---|---|
| 5'x5' | 800 | $16,000 | long-hole | 2,000 | $4,000 | | |

Facilities

| Mine Plant Description | Mine Plant Cost | Mill Description | Mill Cost | Roads Description | Roads Cost |
|---|---|---|---|---|---|
| 3 compressors, 8 slushers 2 trucks, 1 bulldozer 6 jackleg drills, 12 mine cars, 4 loading ramps & 7 houses | $90,000 | Addition to crushing and screening plant | $75,000 | 5,000 ft. | $15,000 |

Remarks - See attached sheet

*1852 tons (production 1954, 1955 & 1956) plus present reserves believed to be 1063 tons (same as 1954 and 1955 production)

Additional remarks on attached sheet

Signed T. M. Romslo (Engineer)
T. M. Romslo

Jaquays in a letter of February 12, 1957 to Mr. Traver, said that his company had decided to withdraw the request for work provided by contract Idm-E1043. He said the request was made after preliminary testing of the area by his company had encountered ore. On March 8, 1957, when I made a final attempt to secure ore reserve and production data, I was informed that exploration of the area continues. Results of the work were not available.

Reliable information obtained from various individuals is that the Metate and other mines containing harsh fiber have closed down. Production from these mines will be renewed if the Government buying program is extended. If the program is not extended, the Regal mine probably will continue to operate as its ores are essentially all soft fiber material that industry will purchase. Sales probably will be made at a price a little lower than the Government's.

During the field investigations, Jaquays said he would furnish me with data on production and ore reserves at a later date. On March 8, 1957 I was informed by the company's engineer that Jaquays did not wish to release reserve data and that production data could be obtained from his annual report to the Bureau's statistical office at Denver.

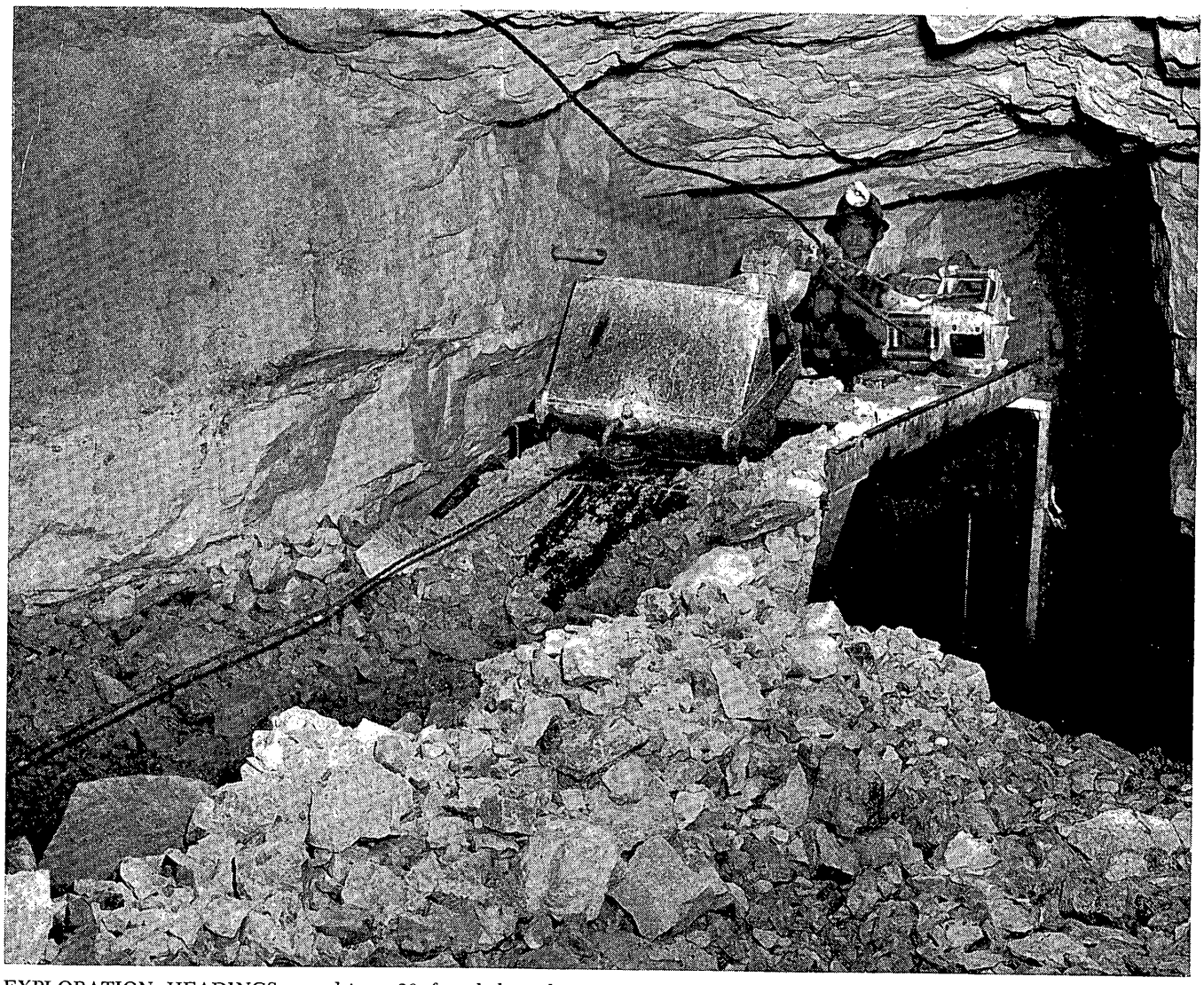
According to the following Bureau of Mines records, 1852 short tons of asbestos has been produced from the Regal mine since the approximate date of the exploratory project.

| | Short Tons | | | |
|---|---|---|---|---|
| Fiber Grade | 1954 | 1955 | 1956 | Total |
| No. 1 | 143 | 86 | 91 | 320 |
| No. 2 | 88 | 90 | 100 | 278 |
| No. 3 | 12 | 109 | 166 | 287 |
| No. 4 and above | 254 | 281 | 432 | 967 |
| Totals | 497 | 566 | 789 | 1852 |

17
15
15
52
79

$\frac{600}{1800} = \frac{1}{3}$

$\frac{598}{1852}$



EXPLORATION HEADINGS are driven 20 feet below the stoping level at the Regal mine. Broken muck is removed and loaded into cars by portable ramp loaders on which are mounted double-drum Gardner-Denver air driven slushers.

# How Low-Iron Chrysotile Asbestos Is

## This unique mineral is given special consideration in the Long-Range Minerals Program outlined on page 59

**By D. W. JAQUAYS and ALVIN W. GERHARDT**

One of Arizona's most important small mines produces low-iron chrysotile asbestos. It is the Regal mine of the Jaquays Mining Corporation located on the south rim of the Salt River Canyon, 30 air miles north of Globe, in Gila County. This small operation with only 20 underground employees mines and hand sorts the ore to a value of $164.40 per ton before it is milled at Globe. Average value of the fiber (concentrate) from the mill in 1956 was $573.00 per ton.

While numerous varieties of asbestos occur throughout the United States, only in Vermont and Arizona are commercial deposits of chrysotile asbestos being mined. Only Arizona is noted for its naturally low-iron chrysotile fiber that is used as a filtering medium in chemical plants and meets the United States Navy specifications for use in covering electrical cables. The total United States production of this special type fiber is from Gila County.

Among the numerous deposits and small mines there are relatively few developed which contain commercial deposits of soft and semi-soft fibers of spinning grade. Total production of crude fiber from the area is approximately 1,000 tons per year of crudes and perhaps 2,000 tons of short fiberized grades. Less than 1( mines and four major producers ar active in the area. The Regal min

**Mr. Jaquays is president and general manager of the Jaquays Mining Corporation and has been active in producing Arizona asbestos since 1950. Mr. Gerhardt is general superintendent.**

the tabulating division, and he is able to combine his knowledge of mining with the specialized nature of business machine operation for rapid assembly of these reports. A key punch machine is located at the mine office for his use, and he serves as a liaison man between the mine and the tabulating department.

He is responsible for preparing several different reports which are described below. At the end of the month he prepares the drill reports mentioned earlier. One report goes to the drill engineer and is organized by machine number; this shows the contract or job number, the holes drilled, the hours drilled, and the total feet drilled. This data is obtained from the daily and weekly footage drilled cards. Another report of total footage by contract is sent to the mine timekeeper's office. A third report shows monthly footage by type of machine (stoper, airleg, etc.), and is necessary to prepare maintenance costs of mine rock drills. The actual maintenance costs must be determined from several sources of information such as replacement parts, labor involved in making repairs, etc. These data are contained in the month's accumulation of punched cards but machine card-sorting and reassembly rapidly extracts the needed information. The monthly maintenance report shows the number of units repaired, the footage drilled, cost of replacement parts, labor cost, total cost (labor plus parts), the average cost of maintenance, and the cost per foot drilled. Hose usage and ventilation tube data is also included on this report by totalling the data compiled on these units from punched cards. In a fourth report, using the monthly summary cards, total footage by type of mining is obtained and is entered on the basic contract data report.

Still another type of report which this liaison employee may be called upon to prepare is of specialized nature. For instance a rock drill manufacturer, who has developed a new piston for rock drills, may furnish a [illegible]y of the new units to Homestake [illegible]a trial basis. Of course this is the [illegible]way to test equipment, but unless [illegible]ess machines were employed, a [illegible]d study would be too time-[illegible]ing. The data collected are in-[illegible] both to Homestake and the [illegible]ufacturer.

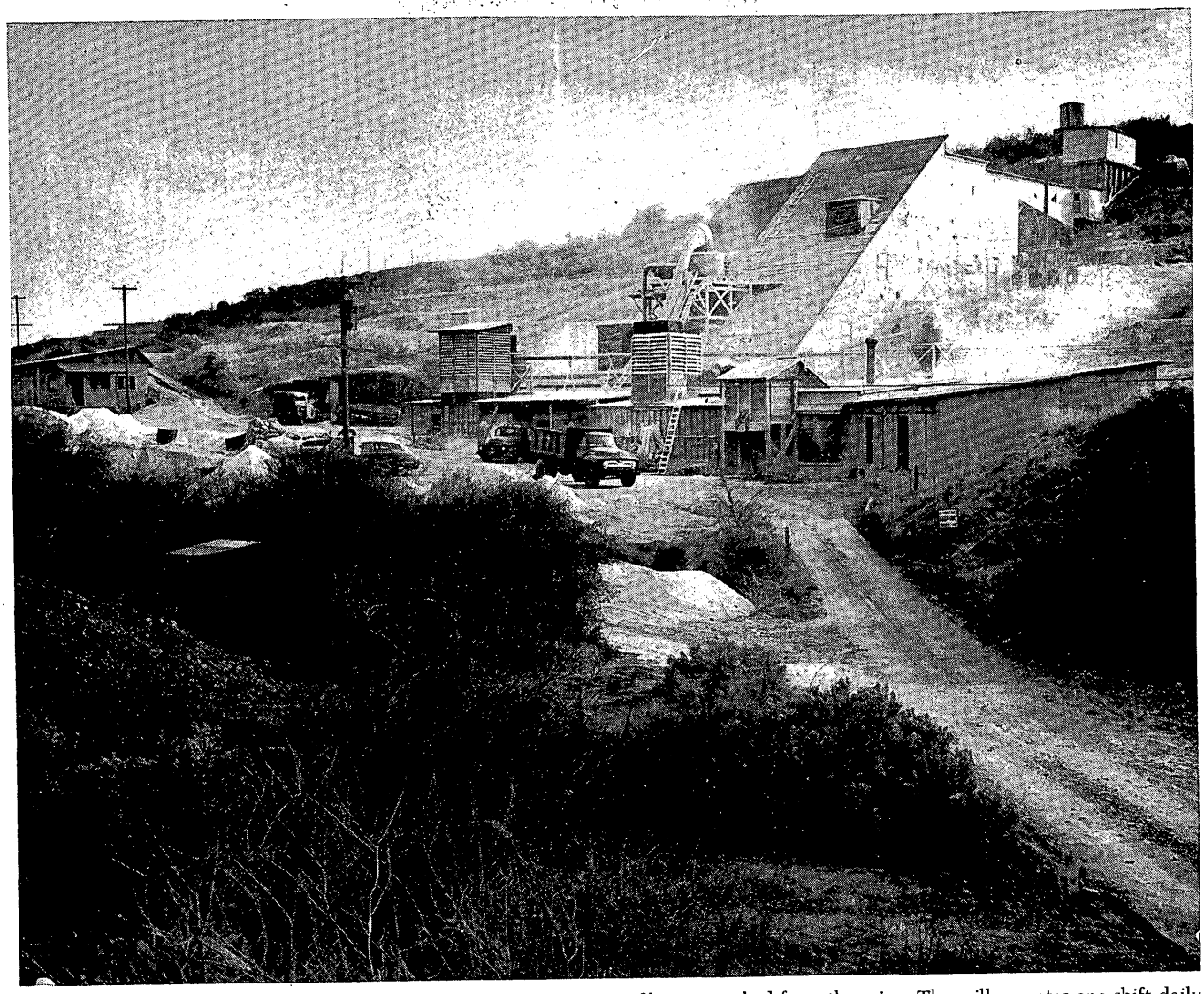
[illegible] function of this specialized mine clerk is preparation of haulage reports. Data from the motormen's time slips of course is the basic source; but by sorting out daily ore cards and weekly summary cards with these data, he rapidly prepares the haulage report showing the number of cars of waste hauled and the number of cars of sand (for backfill) hauled. This is broken down by type of locomotive, air or battery, and also includes ore hauled by these units. The haulage report goes to the accounting department and is included in a basic monthly cost report. From the daily ore cards, a monthly ore report goes to the mine for the contract operations report prepared by the mine clerks. Another monthly ore report is organized according to the type of work involved—drifting, raising, type of stoping—and still another is assembled by the ore-body classification.

Other specialized reports can be prepared by the tabulating department. Using a hypothetical example, suppose a mine manager, during labor negotiations, wanted to get a grouping of employees by length of service. This would ordinarily require a great deal of file searching by several people to produce the result. However, by using punched cards for record keeping, these data can be readily assembled in one to two hours.

It may not be a pleasant thought, but it takes a lot of paper work and a great many calculations to keep a mine running on an even keel. Certainly punched card accounting is one of the quickest and surest short-cuts to obtaining the greatest amount of detail with the least amount of effort.

THE END

INTERPRETER is a machine which reads the holes in the punched cards. It decodes the information and prints the data on the face of the card as though it were done with a typewriter. The interpreter automatically prints 100 cards per minute.



COBBED ORE IS MILLED at Globe, Arizona by a crushing and screening process. Mill feed, containing 20 to 40 percent fiber, is trucked from the mine. The mill operates one shift daily to treat 15 tons of ore.

# Mined and Milled in Central Arizona

produces about one-third of total output. Since 1952, production has been stimulated by the government buying program under the Defense Minerals Procurement Agency. A buying station under the General Services Administration was established in Globe as part of the program.

Asbestos was first discovered in the district in 1872. The rising market during World War I led to much activity and production. Since 1933, production there has been fairly continuous. The first claims in Regal mine area were located in 1915. Several companies owned the claims and worked the mine intermittently until the property was acquired by the Arizona Chrysotile Asbestos Company in 1937. This company made substantial yearly production until 1948 when the mill was destroyed by fire. Following this, little mining was done until an asbestos mill, which was standing idle in Globe, was acquired about a year later. This mill had been built with Defense Plant Corporation aid in 1943-1944 by the Southwestern Asbestos Corporation.

In 1950 the Arizona Chrysotile Asbestos Company turned the management of mine and mill over to D. W. Jaquays, mining engineer and consultant. In June 1952, the Jaquays Mining Corporation purchased the properties. Since acquisition of mine and mill by the present company, mill capacity, ore reserves, and production have been increased. Mr. Jaquays attributes much of the increased efficiency and production to capable assistants: Alvin W. Gerhardt, general superintendent; F. H. Padgett, mine superintendent; and W. Myers, mill foreman.

### General Geology

The geological occurrence of asbestos in central Arizona is similar for the entire area. It occurs in bands paralleling the strata in the lower member of the Mescal limestone. This is part of the Apache group which has been tentatively determined as Cambrian.

The Mescal formation is composed of three members: The Lower Member (175 to 200 feet thick) in which the asbestos occurs is a thin bedded impure dolomitic limestone. Overlying it is the readily recognizable massive bedded algal (Middle Member) of relatively pure limestone (80 to

**Value and Production of Asbestos Mined from 1954 through 1956 at the Regal Mine of Jaquays Mining Corporation, Gila County, Arizona**

| *Item* | *1954* | *1955* | *1956* |
|---|---|---|---|
| Square feet mined | 26,000 | 35,900 | 37,000 |
| Value per square foot | $15.10 | $7.50 | $10.66 |
| Tons ore mined | 13,500 | 17,950 | 18,500 |
| Value per ton ore in face | $24.24 | $15.00 | $21.34 |
| Tons ore milled | 1,677 | 2,400 | 2,400 |
| Value per ton milled | $234.12 | $112.50 | $164.40 |
| Tons fiber recovered | 500.1 | 550.27 | 690.0 |
| Average value per ton of fiber | $785.25 | $500.00 | $573.00 |
| Value of total production | $392.625 | $273,309 | $395,765 |

150 feet thick) which is composed almost entirely of spheroidal masses or nodules that have a concentric shell-like structure often several inches in diameter. The Upper Member (10 to 80 feet thick) is composed of siltstone, shales, and shaly limestone. The thin bedded and dolomitic Lower Member of the Mescal limestone has been intruded with numerous diabase dikes and sills.

Most mines in the district have been opened by adits on flat or nearly flat lying zones of asbestos and serpentine paralleling the limestone bedding planes. There are a few exceptions where the limestone beds have been faulted and tilted to such an angle that a shaft is necessary.

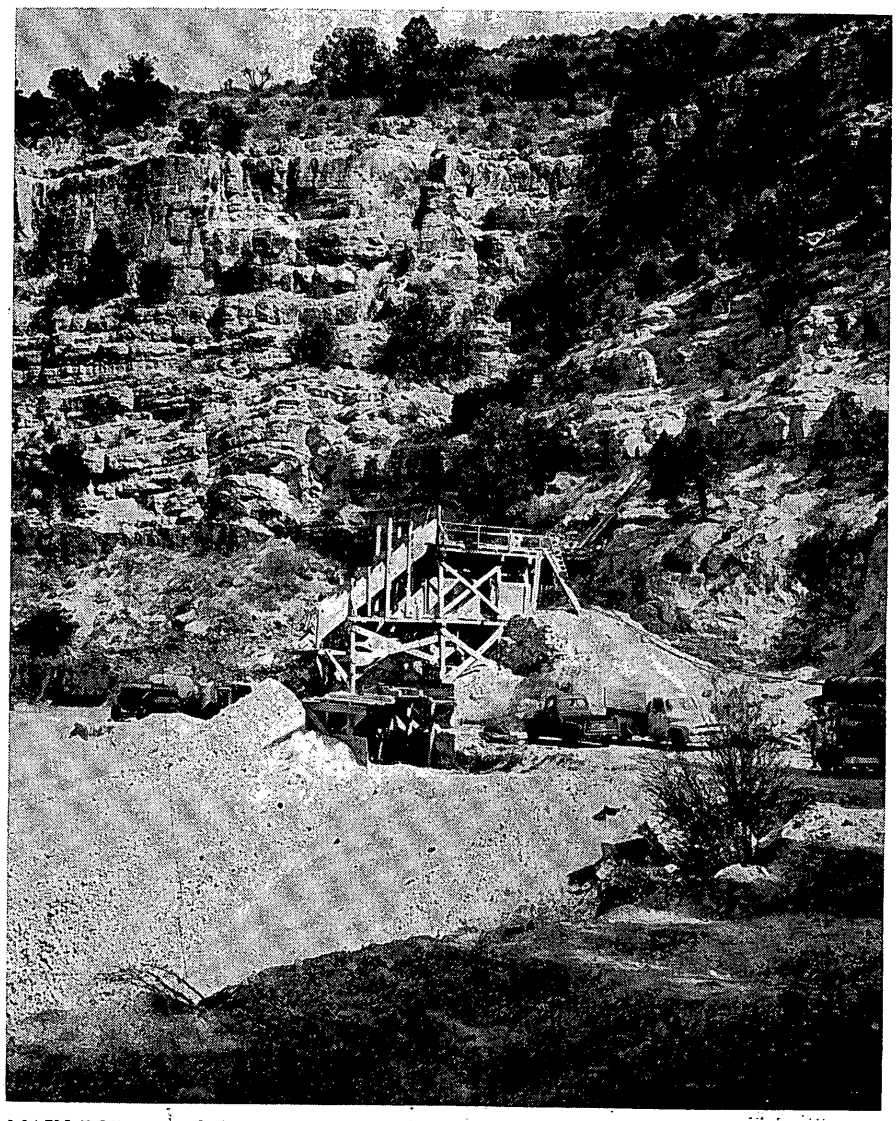
### Geology of The Regal Mine

Regal mine geology is fairly typical of the area. The three members of the Mescal limestone, as well as the overlying Troy quartzite and underlying Dripping Spring quartzite, are exposed along the south side of the Salt River Canyon. Diabase intrusions may be seen which have cut and split the formations, merely pushing the beds apart with no assimilation of the limestone. The asbestos deposits are related to these diabase intrusions (either sills or dikes) and irregularities in diabase-limestone contacts which have warped or slightly folded the limestone beds. The proximity of the diabase to the dolomitic Mescal limestone is an important factor in the localization of asbestos deposits.

One structural feature at the Regal mine which seems to be an important factor in the concentration of asbestos has been the shattering and warping of the favorable beds by a belt of thrust faulting striking approximately S. 25° E. Mineralization is present on limbs of folds and flanks of a domed structure but concentration is greatest where small thrust faults meet the dipping beds. As the beds flatten, mineralization decreases.

Here, as elsewhere in the area, most asbestos deposits and serpentine veins are within the top 45 feet of the Lower Member of the Mescal. Asbestos-bearing serpentine zones occur at many horizons in the Regal mine. Only two are of major importance. These two serpentine-asbestos zones vary in thickness from a few inches to over two feet. The lower zone is approximately 35 feet below the algal limestone or 19 feet above the top of a thick concordant diabase sill. The other zone is about four feet higher. In the bedding, about one foot above the lower zone is a persistent band of dark green serpentine one to three inches thick, which is locally known as the "Oscar." It is found in all parts of the mine and is a reliable marker that indicates the favorable beds even when no fiber is present.

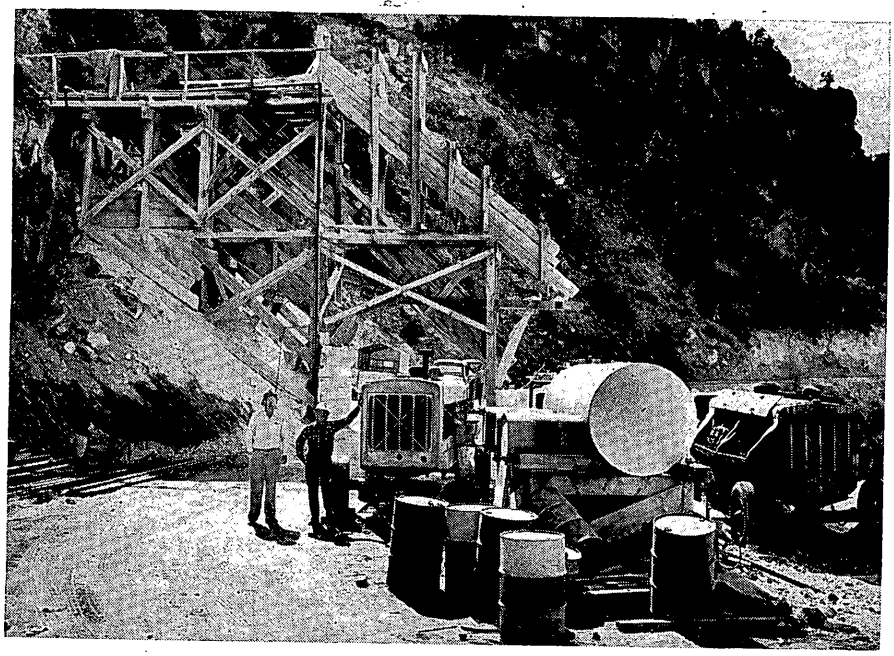
The asbestos is found in veins up to several inches in width within the bands of serpentine. These veins roughly parallel the serpentine bands but are seldom uniform in width or length. Larger veins of asbestos often split into small veins, or smaller veins coalesce to form larger veins, or either may pinch out completely. This tendency of veins to pinch out or swell makes probable ore reserves difficult to predict without considerable development.



MAIN PORTAL of the Regal mine on the south side of the Salt River Canyon north of Globe. Asbestos is found in veins up to several inches in thickness in bands of serpentine above a thick diabase sill.

### The Regal Mine

Original discoveries at the Regal were made on an outcrop where asbestos was exposed for about 400 feet along the cliffs which overlook the Salt River. Several adits were driven, and eventually were connected as stoping of ore progressed. Only one of these, known as the main adit, has remained open and usable up to the



AUTHORS POSE AT PORTAL: D. W. Jaquays (left) and F. H. Padgett. Mr. Jaquays, president of the Jaquays Mining Corporation, has been mining in the area since 1950. Mr. Padgett is mine superintendent.

development and haulage drifts are driven each year.

Annual stoping averages 36,000 square feet of ore or 18,000 tons to produce 2,400 tons of cobbed mill ore. From this mill ore 600 tons of fiber of all grades is recovered.

### Equipment Used

Until 1953 all ore and waste in the mine was moved by hand shoveling. Today over 90 percent of all rock moved is done by mechanical means. Twenty men, today, stope three to four times as much area as the same number of men did three years ago and, in addition, drive haulage drifts, development drifts, and numerous transfer raises.

In order to accomplish this amount of work and to maintain high production, good equipment requiring minimum upkeep has been an important factor. Two, 500-cubic-foot, Gardner-Denver portable compressors are required during most of the working shift.

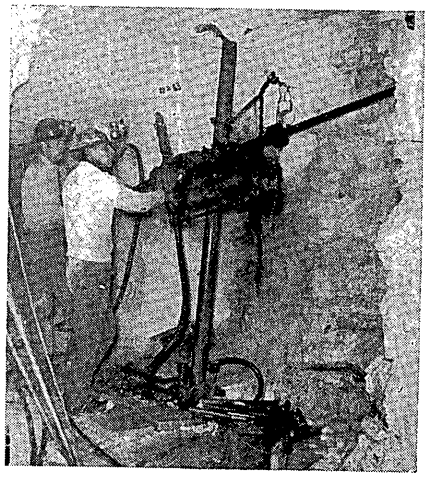
A third compressor, a 600-cubic-foot unit, is kept in readiness at all times as a standby and for any additional surface drilling. After considerable experimentation, the Gardner-Denver FL 58 feedleg jackhammer was selected to do the drilling. Five FL 58's are used and repair costs have been exceptionally low even though 200 to 300 feet of drilling per machine is done each day.

In the stopes three HEE and three HKE Gardner-Denver double-drum air slushers are used to drag waste into the backfill and for moving ore to loading points. Waste from development drifts is removed by four HEE Gardner-Denver slushers mounted on portable loading ramps.

### Milling at Globe

Cobbed ore which contains 25 to 40 percent fiber is transported by truck to the company owned mill in Globe. This mill has a capacity of about 1½ tons of cobbed ore per hour and operates 8 hours per day. One shift per day is sufficient for an efficient and balanced operation of both mine and mill.

The milling of asbestos ore is essentially a process of crushing and screening. The rock crushes easily and will pass through a screen with square openings, whereas the asbestos material crushes into elongated bundles of fibers which pass over the screen. Thus a separation is accomplished. Rock containing shorter fibers requires additional crushing with subsequent separation using finer mesh screens.



DIAMOND DRILLING from main haulage level to prospect the favorable asbestos horizon 22 feet higher.

The fiber products recovered from only a crushing and screening operation are known as crude fiber and are graded according to length: e.g.

| *Crude Grade* | *Length of Fiber* |
|---|---|
| No. 1 | ¾ inch or longer |
| No. 2 | ⅜ to ¾ inch |
| No. 3 | 3/16 to ⅜ inch |
| No. 4 | less than ⅛ inch |

Fiber which is too short to be recovered as a clean crude product is fiber-

[redacted]

pendent on length alone; quality is a very important point. A premium over market prices may be obtained for very soft fiber of good tensile strength. Although all known deposits of asbestos in Arizona are of the chrysotile variety, there is much difference in the quality of the fiber in the individual mines—even a difference in quality of fibers in the same mine and in the same serpentine zone.

There are two distinct types of chrysotile fiber dependent on the quality of softness and harshness. Soft fiber feels smooth and can be twisted and bent between the fingers; the individual fibers usually are extremely flexible and strong. Harsh fiber has poor tensile strength; when a small bundle of it is twisted a few times it will break. Harsh fiber is splintery, prickly, and somewhat brittle.

Most of the asbestos produced from the Regal mine has been of a soft and semi-soft quality which exhibits high tensile strength. This fiber is very white and is purchased for use by the spinning, winery, brewery, edible oils, electrical, and chemical industries.

THE END.

present time. In 1950, a portion of the cliff near the main adit caved and prevented shipments of ore until a new adit (No. 9) was driven almost at right angles to the main adit on the western slope of the mountain.

Most of the main ore body had been mined out by 1950 in a dome-shaped area some 500 feet wide by 400 feet long.

As the main drift was continued to the south, the bedding planes began to rise and the mineralized area began to widen. At about 800 feet from the portal, the drift encountered folded and faulted portions of the main Regal fault. The fiber lengthened and the stoping area widened into what was the beginning of an entirely new ore structure.

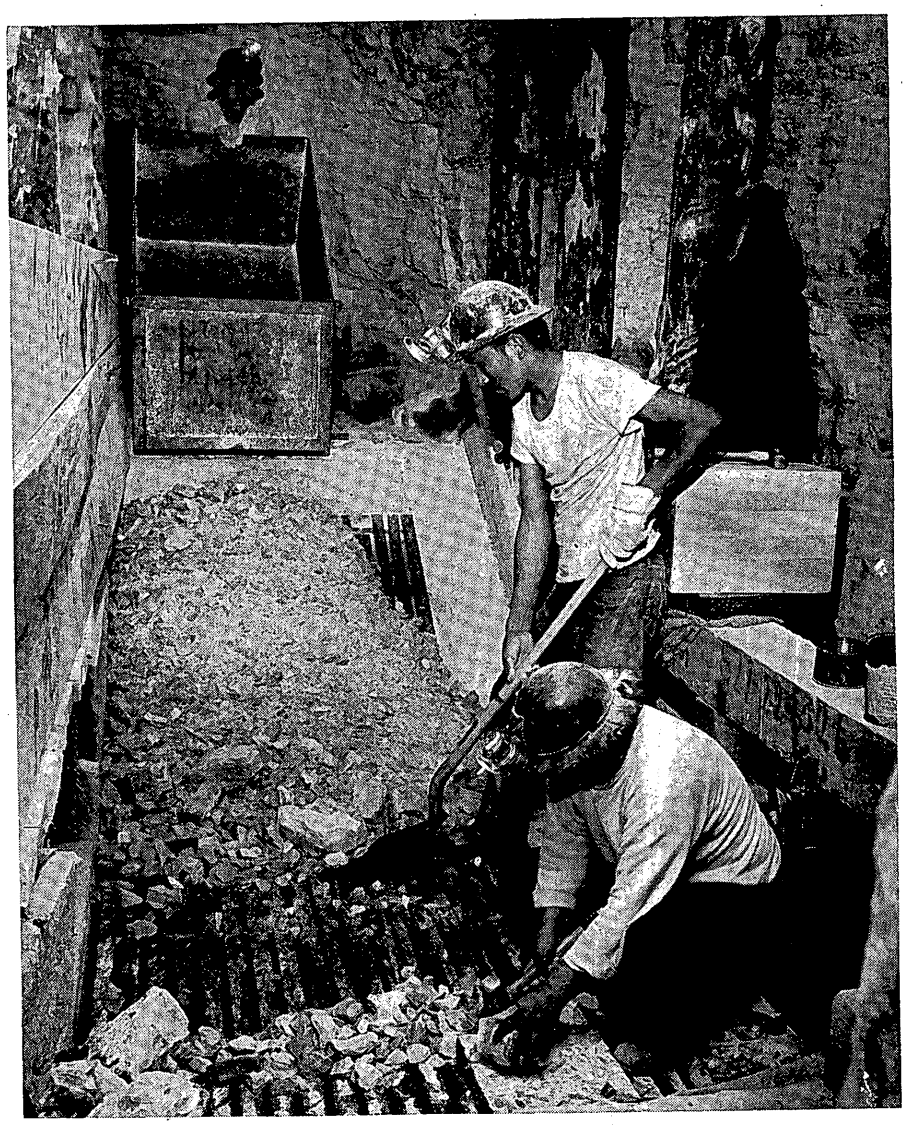
Mining at the Regal is carried on by a combination of modified room and pillar method, and long wall stoping and back filling. Pillars are left along the sides of the drifts and near loading chutes, where roof conditions are bad. Areas as big as 150 feet square have been stoped without leaving a single pillar.

Asbestos mining is a selective mining operation, combined with sorting in stopes and hand cobbing at ore pockets. Bands of asbestos totaling only 1½ to 2 inches of fiber may be mined profitably in a 7-foot-high heading if at least half of the fiber is No. 2 grade or better. As the ore zones are narrow, approximately 50 tons of rock are mined to one ton of recovered fiber. Stope drifts 10 to 12 feet wide are first driven in the ore along the fringe of the block to be removed. In these stope drifts the ore is mined selectively as in regular stoping operations. As the ore occurs in two serpentine bands about 4 feet apart, one or two drill rounds of the waste between the ore bands is blasted and the waste removed. The asbestos-bearing serpentine bands are then shot lightly and the broken materials hand sorted. The tenor of ore in the two zones usually differs; therefore, blasting the upper and lower bands in separate operations allows the better ore to be sorted without excess dilution.

After the stope drift has been driven, the mining operation continues much the same as the drifting operations except that as much waste as possible is used as backfill. Ten Gardner-Denver air slushers are used in back filling, for removing excess waste, and for pulling skid-mounted, ½-ton cars of sorted ore to chutes or loading stations. Blast holes are placed in the waste so that the heavily loaded shots will drive the rock against the backfill packing it to the roof. Over a period of time, the strong limestone back will sag and rest on the backfill. This gradual sagging is observed by noting the squeezing of stulls placed at intervals along the periphery of the stopes.

When folding or faulting causes the ore horizon to rise above the level of the adit, raises are used to transfer the ore and waste from the stopes above.

Exploration is carried on by advancing a drift located 20 feet below the main level. The muck from these drifts is removed by portable ramp loaders on which are mounted Gardner-Denver slushers. Four of these loader-ramps are often in use at one time. Drifting on this exploration level can be carried on without interferring with ore production. Drill holes 20 to 25 feet deep are drilled upward at intervals to check the ore in the ore horizon. Gardner-Denver 200 series sectional steel is used in a Gardner-Denver FL58 for these test holes. Where longer test holes are needed, a Gardner-Denver SF93, automatic drifter using 400 series 1-inch sectional steel in 4-foot changes is used to drill long holes as deep as 120 feet. An average of 2,000 feet of new



HAND SORTING AND COBBING are especially important to maintain a high-grade mill feed. Annual stoping produces 18,000 tons of ore which is carefully cobbed as shown above to produce 2,400 tons of mill feed.

DMEA Form 7
(12-56)

Mailed after hours

600

MAY 3 - 1957

OFFICIAL FILE COPY

| Date | Surname | Code |
|---|---|---|
| 5/3 | Mitchell | 100 |
| 5-7 | C | 220 |
| | | 225 |
| | | |
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| | | |
| | | |
| | | |
| | | |

Mr. D. W. Jaquays
President, Jaquays Mining Corporation
1219 South 19th Avenue
Phoenix, Arizona

Dear Mr. Jaquays:

I have had an exchange of correspondence recently with Mr. George O. Argall, Jr., Editor of the Mining World, who desires to publish an article in the nature of a review of some significant achievements of the DMEA program. He expresses his thoughts as follows:

> "I am thinking that a series of five or six case histories might prove exceptionally interesting to the entire geological and mining world. The examples should be carefully selected, perhaps one from each of the major regions, to illustrate how good geologic mapping or careful company analysis of structures, or an interpretation of geology on a district basis and applied to one deposit, contributed to major ore discoveries.
>
> "The purpose of this article would be to indicate that the DMEA has been worthwhile, that properly directed exploration is warranted, and that opportunity for exploration continues."

Mr. Argall hoped that my staff, together with a key engineer and key geologist in each of the regions would cooperate with him in writing the article.

I have explained to Mr. Argall that it would be contrary to our policy to disclose any information about individual participants in the DMEA program. We do, of course, disclose the identity of a contract recipient at the time the contract is executed. After a contract is executed we conceal the percentage of committed funds actually spent, the results of the work accomplished, and whether a certification of discovery or development was issued. Likewise, we do not reveal the identity of those who have been denied DMEA assistance or of the applicants generally. I know you will readily appreciate the wisdom of this policy.

8623

I also told Mr. Argall that we of DMEA would like to see more articles of the type he has in mind, but that they must be initiated by the publishing medium and the individual operator working in cooperation with each other. He has expressed his willingness to proceed on that basis and appears anxious to get started as soon as possible.

One approach to the project would be to have Mr. Argall send out a fairly lengthy questionaire to all of the 1013 operators who have received DMEA contracts, requesting certain specific information. The names, as you know, have already been made public through our regular press releases issued over the years. Such an approach would entail a long and tedious screening expedition with doubtful end results.

The general idea could be more effectively implemented if I furnished the Mining World with the names of several operators who have participated with DMEA in projects which I thought might provide interesting subject matter for case histories. In this connection it occurs to me that your project, DMEA-2867, Regal Mine, might be of special interest to the mining industry, but, of course, I would not even suggest your name without your prior approval. If granted, then I would expect the editorial staff of Mining World to assume responsibility for working up the details of the story, in cooperation with you or your representatives. I should appreciate your early reactions to this idea, and if favorable I will do no more than mention your name to Mr. Argall as one whom he might contact. If you do not approve, your reply will be kept confidential in my personal files.

Incidentally, Mr. Argall indicates to me that he will keep the name of the operator and the identity of the property confidential, by referring to case "A" or case "B", if the operator so desires.

With kindest personal regards,

Sincerely yours,

C. O. Mittendorf (for)

Administrator

COMittendorf/gad
5/3/57

cc: Mails & Files
Admr. Reading File
Administrator
Field Team, Reg. III

OFFICIAL FILE COPY
DMEA
RECEIVED MAY 2 1957

| DATE | INITIALS | CODE |
|---|---|---|
| 5/2 | C | 220 |
| 5/3 | [illegible] | 800 |
| | | 225 |

224 New Customhouse
Denver 2, Colorado

April 30, 1957

Memorandum

To: W. R. Storms

From: Acting Executive Officer, DMEA Field Team, Region XII

Subject: Docket DMEA 2867 (Asbestos), Contract Idm-E589, Jaquays Mining Corporation (Regal Mine), Gila County, Arizona

Listed below are the asbestos production figures by fiber grade for the Regal Mine during the calendar years 1954, 1955 and 1956, which are to be incorporated in the revised semiannual report now in preparation:

Asbestos Production - Regal Mine

| Fiber Grade | Year 1954 | Year 1954 | Year 1954 |
|---|---|---|---|
| No. 1 | 143 | 86 | 91 |
| No. 2 | 88 | 90 | 100 |
| No. 3 | 12 | 109 | 166 |
| No. 4 & above | 254 | 281 | 432 |

When received, the revised report will be forwarded to the Washington Office, DMEA, accompanied by Mr. Romalo's memorandum of April 24, 1957 and its transmittal by you of same date.

Original signed by
E. N. HARSHMAN

E. N. Harshman

MEH/vj

cc: Semiannual Report File E589
Royalty File E589
Chair. Opr. Comm. (2)
Marshall
Chron.

OFFICIAL FILE COPY
DMEA
RECEIVED APR 24 1957

| DATE | INITIALS | CODE |
|---|---|---|
| 4/24 | C | 220 |
| 4/24 | [illegible] | 800 |
| | | 225 |

224 New Customhouse
Denver 2, Colorado

April 22, 1957

Memorandum

To: W. R. Storms

From: Acting Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 2867 (Asbestos), Contract Idm-E589, Jaquays Mining Corporation (Regal Mine), Gila County, Arizona

Enclosed is a copy of a letter dated April 17, 1957 from the Chairman, Operating Committee, DMEA, which is self explanatory.

In view of the amount of revision and additional information desired, a semiannual report for the second half of 1956 to supercede the report already submitted may be warranted.

Production data from the Regal mine will be verified by this office with the Division of Mineral Industries, USBM, in conformance to the instructions of the Chairman.

Original signed by
E. N. HARSHMAN

E. N. Harshman

Enclosure

MHM/vj

cc: Royalty File E589
Semiannual Report File E589
Chair. Opr. Comm. (2)
Marshall
Chron.

DMEA Form 7
(12-56)

OFFICIAL FILE COPY

| Date | Surname | Code |
|---|---|---|
| 3/15 | Houk | 600 |
| 3/17 | Selfridge | 130 |
| " | Johnson | 110 |
| " | Rattendorf | 100 |
| 4/18 | C | 220 |
| | | 225 |
| | | |
| | | |
| | | |

600

APR 17 1957

Mr. E. N. Harshman
Acting Executive Officer
DMEA Field Team, Region III
224 New Customhouse Bldg.
Denver 2, Colorado

Re: Docket No. DMEA-2367-Asbestos
Jaquays Mining Corporation
Regal Mine
Gila County, Arizona
Contract No. Idm-E589

Dear Mr. Harshman:

Reference is made to the semi-annual report for the second half of 1956, by T. M. Romslo.

Please have Mr. Romslo complete the reserve data figures, and have the production data verified by the Bureau of Mines, Denver Office. The arithmetic in the penultimate paragraph should be checked, and the period during which the total production was made should be given.

Is the investment data total since DMEA contract or the total Jaquays' investment in the property. See Memorandum No. 29, Supplement 1, dated November 14, 1956.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (HB)

Approved:

Frank D. Lamb (HB)
Member, Bureau of Mines

Thor H. Kiilsgaard (HB)
Member, Geological Survey

LGHouk:gad 4/15/57
Copy to: Admr. R. File
Operating Committee
Mr. Kiilsgaard, 5222
Mr. Kennedy, 3524
Mr. Houk

8623

DEFENSE MINERALS EXPLORATION ADMINISTRATION

N. M. Division Date 3/20/57

Semi-Annual Report - Certified Project Date

DMEA No. Operator Contract No. Idm-E

## Ore Reserves

| Ore Estimates | Tons | Analysis |
|---|---|---|
| Original (DMEA) | 773 | ore grades 1-2-3-4 & 5 |
| Increase (Operator) | 2827 | ore grades |
| Total | 3600 | |
| @ To Dec 31, 1956 Decrease (Production) | 1852 | $1,140,100 |
| Net Available | 1748 | |

## Investment

### Shafts

| Size | Feet | Cost |
|---|---|---|

### Winzes

| Size | Feet | Cost |
|---|---|---|

### Drifts & Crosscuts

| Size | Feet | Cost |
|---|---|---|
| 5x7 | 4000 | $100,000 |

### Raises

| Size | Feet | Cost |
|---|---|---|
| 5 x 5 | 800 | $16,000 |

### Drilling

| Type & Size | Feet | Cost |
|---|---|---|
| Longhole | 2000 | $4000 |

### Rehabilitation

| Description | Cost |
|---|---|

## Facilities

### Mine Plant

| Description | Cost |
|---|---|

### Mill

| Description | Cost |
|---|---|
| additional Crushing equipment | $25,000 |

### Roads

| Description | Cost |
|---|---|
| 5000 feet | $15,000 |

## Remarks

1852 Tons 1-2-3+4 + at $1.140.100 = $615.60

100338

ACTION ON REPORT
OF FEDERAL FIELD REPRESENTATIVE
Date 3-21

Referred to:

1. ~~[illegible]~~
2. ~~Mr. [illegible]~~
3. ~~Mr. [illegible]~~
4. Docket Control Mails and Files
5. _____ Division
6. Docket Control Mails and Files

Note comments in report regarding:

1. This guy has
2. spent some dough
3. & seems to be doing - OK

4.

and take appropriate action.

Action taken by Division:

Robert E. Adams

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
224 New Customhouse
Denver 2, Colorado

March 18, 1957

OFFICIAL FILE COPY
DMEA
RECEIVED MAR 21 1957

| DATE | INITIALS | CODE |
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| 3/21 | C | 220 |
| 3/22 | COW | 100 |
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Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Semiannual Report of Certified Project for the period July 1, 1956 through December 31, 1956
DMEA Docket 2867 (Asbestos)
Contract Idm-E 589, Jaquays Mining Corporation (Regal Mine), Gila County, Arizona

Enclosed are the original and three copies of the subject report prepared in conformance with instructions contained in memorandum of January 6, 1956 from this office, Memorandum 29, and Special Notice in Minutes of Operating Committee Meeting No. 692.

E. M. Harshman

for W. M. Traver
Executive Officer, DMEA
Field Team, Region III

Enclosures

MHM/vj

cc: Semiannual Report File E 589
S. R. Wilson
Harshman
Chron.

DMEA
DEPARTMENT OF THE INTERIOR
MAR 18 1957
REGION III
DENVER, COLORADO

March 15, 1957

Memorandum

To : E. E. Harshman, Acting Executive Officer, DMEA Field Team, Region III

From : Superintendent, Southwest Experiment Station

Subject : Semi-annual Report of Certified Project, July 1-December 31, 1956, Contract Ide-2500 (Asbestos), Budget DMEA-2007, Johnson Mining Corp. (Regal Mine), Gila County, Ariz.

Enclosed are original and 2 copies of the above report by T. K. Sample of the Bureau of Mines.

The amount of Government participation under this contract has been fully repaid.

Signed by Walter R. Storms

Walter R. Storms

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RECEIVED MAR 21 1957

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cc Exec. Off. (2)
DMEA-2007
WF

WRStorms:fr

# Semiannual Report of Certified Projects

| | |
|---|---|
| Reporting Period | July 1 to December 31, 1956 |
| Docket and Contract Number | DMEA-2867, Idm-E589 |
| Operator | Jaquay's Mining Corp. |
| Commodity | Asbestos |
| Mine Name | Regal |
| County and State | Gila County, Ariz. |
| Date of Contract | August 24, 1953 |
| Date of Certification | March 8, 1954 |
| Expiration Date of Royalty Payments | March 8, 1964 8-24-63 |
| Date of Examination for this Report | January 29, 1957 |

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DMEA
RECEIVED MAR 21 1957

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| | |
|---|---|
| Total Amount of Contract | $26,000.00 |
| Total Expenditures under Contract | $4,200.00 |
| Amount of Government Participation at 90 % | $3,780.00 |
| Royalty Payments this Period | $0.00 |
| Previous Royalty Payments | $3,780.00 |
| Total Royalty Payments to Date | $3,780.00 |
| % Loan Repayment Completed | 100 ✓ |
| Amount of Royalty Due | None |
| Royalty Remarks | |

| | Tons | Analysis |
|---|---|---|
| Original Estimate of DMEA Reserves (Field Team Final Report) Mines [ ] Survey [ ] Joint [x] | 773 | All grades |
| Revised Estimate of DMEA Reserves (Field Team) Mines [ ] Survey [ ] Joint [ ] | | |
| Increase of Reserves by work performed subsequent to DMEA project work | | |
| Production DMEA ore (This period) | | |
| (Previous) | | |
| (To date) | | |
| " Operator's ore (This period) | | |
| found subsequent (Previous) | | |
| to DMEA work (To date) **Sales to G.S.A.** | 799.175 | grades 1,2 & 3 |

Percent Revised Reserves mined _____

(For Uranium Ores Only)

Initial Production Bonus:

Status of Operator: Ineligible [ ] Applied for [ ] Rec'ing pmt [ ] Pd up ____

Pounds $U_3O_8$ produced this period eligible for Bonus _____

Amount of Bonus paid to Operator this period $_____

Total pounds $U_3O_8$ produced to date eligible for Bonus _____

Total amount of Bonus paid to Operator to date $_____

Bonus Royalty Paid $_____

Bonus Royalty Due $_____

## Investment Data (Totals to Jan. 1, 1957)

**Shafts**

| Size | Feet | Cost |
|---|---|---|

**Winzes**

| Size | Feet | Cost |
|---|---|---|

**Drifts & Crosscuts**

| Size | Feet | Cost |
|---|---|---|
| 5'x7' | 4,000 | $100,000 |

**Raises**

| Size | Feet | Cost |
|---|---|---|
| 5'x5' | 800 | $16,000 |

**Drilling**

| Type & Size | Feet | Cost |
|---|---|---|
| long-hole | 2,000 | $4,000 |

**Rehabilitation**

| Description | Cost |
|---|---|

## Facilities

**Mine Plant**

| Description | Cost |
|---|---|
| 2 compressors, 8 slushers 2 trucks, 1 bulldozer 6 jackleg drills, 12 mine cars, 4 loading ramps & 7 houses | $90,000 |

**Mill**

| Description | Cost |
|---|---|
| Addition to crushing and screening plant | $75,000 |

**Roads**

| Description | Cost |
|---|---|
| 5000 ft. | $15,000 |

Remarks - See attached sheet

Signed T M Romslo (Engineer)
T. M. Romslo

Jaquays in a letter of February 12, 1957 to Mr. Traver, said that his company had decided to withdraw the request for work provided by contract Idm-E1043. He said the request was made after preliminary testing of the area by his company had encountered ore. On March 8, 1957, when I made a final attempt to secure ore reserve and production data, I was informed that exploration of the area continues. Results of the work were not available.

Reliable information obtained from various individuals is that the Metate and other mines containing harsh fibre have closed down. Production from these mines will be renewed if the Government buying program is extended. If the program is not extended, the Regal mine probably will continue to operate as its ores are essentially all soft fibre material that industry will purchase. Sales probably will be made at a price a little lower than the Government's.

During the field investigations, Jaquays said he would furnish me with data on production and ore reserves at a later date. On March 8, 1957 I was informed by the company's engineer that Jaquays did not wish to release reserve data and that production data could be obtained from his annual report to the Bureau's statistical office at Denver.

Data available to the writer indicates that Jaquay's total production from the Regal mine is near 1,800 tons of fiber. Of the 1,800 tons approximately 800 tons of grades 1, 2 and 3 were sold to G.S.A. and the remaining 1,200 tons of principally grades 4 and 5 was sold to domestic and foreign industry.

Ore reserves are believed to total about 1,600 tons of all grades of fiber.

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DMEA
RECEIVED MAR 21 1957

| DATE | INITIALS | CODE |
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UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
Washington 25, D. C.

RECEIVED
OCT 9 1956

224 New Customhouse
Denver 2, Colorado

Date: October 5, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Semiannual Report of Certified Project for the period January 1, 1956 through June 30, 1956
DMEA Docket -2867 (Asbestos)
Contract Idm-E 589
Jaquays Mining Corporation (Regal Mine)
Gila County, Arizona

Enclosed are the original and three copies of the subject report prepared in conformance with instructions contained in memorandum of January 6, 1956 from this office and Memorandum 29.

W. M. Traver
W. M. Traver
Executive Officer, DMEA
Field Team, Region III

Enclosures
MHM:bh

cc: Semiannual Report File E -589 w/copy report
W. R. Storms " "
E. N. Harshman " "
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
BOX 4097
TUCSON 5, ARIZONA

DMEA
DEPARTMENT OF THE INTERIOR
SEP 26 1956
REGION III
DENVER, COLORADO

RECEIVED
OCT - 9 1956

September 24, 1956

Memorandum

To : W. M. Traver Executive Officer, DMEA Field Team

From : Superintendent, Southwest Experiment Station

Subject : Semi-Annual Report of Certified Project, January 1 - June 30, 1956, Docket DMEA-2867 (Asbestos), Contract Idm-E589, Jaquays Mining Corp. (Regal Mine), Gila County, Ariz.

Enclosed are original and 8 copies of the above report by T. M. Romslo.

Walter R. Storms

Walter R. Storms

CC W. M. Traver (8)
DMEA-2867
Cert. File
DF

WRStorms:frj

## Semiannual Report of Certified Projects

RECEIVED
OCT - 9 1956

| | |
|---|---|
| Reporting Period | January 1 to June 30, 1956 |
| Docket and Contract Number | Docket DMEA-2867, Contract Idm-E589 |
| Operator | Jaquays Mining Corp. |
| Commodity | Asbestos |
| Mine Name | Regal |
| County and State | Gila County, Ariz. |

| | |
|---|---|
| Date of Contract | August 24, 1953 |
| Date of Certification | March 8, 1954 |
| Expiration Date of Royalty Payments | March 8, 1954 |
| Date of Examination for this Report | July 11, 1956 |

| | |
|---|---|
| Total Amount of Contract | $26,000.00 |
| Total Expenditures under Contract | 4,200.00 |
| Amount of Government Participation at 90 % | 3,780.00 |
| Royalty Payments this Period | 0.00 |
| Previous Royalty Payments | 3,780.00 |
| Total Royalty Payments to Date | 3,780.00 |
| % Loan Repayment Completed | 100 |
| Amount of Royalty Due | None |

Royalty Remarks

CC W. M. Traver, (Orig. & 8)
W. L. Emerick
DMEA-2867
Cert. File
DF

TMRomslo:frj

RECEIVED
OCT - 9 1956

Original Estimate of Reserves
(from Final Engr.-Geol. Report): Tons Fibre of all grades 773

Increase of Reserves by work performed subsequent to expiration or termination of contract: 2461

Revised Estimate of Reserves: 3234

| | Tons Fibre of all grades |
|---|---|
| Production this Period (Ore or Concentrates) | 262* |
| Amount of Previous Production (since date of contract) | 1,355 |
| Total DMEA Production to date | 1,617 |
| % of Revised Reserves Mined | 50 |

Production Remarks:

Note: On Uranium projects check with AEC to assure that our records are in agreement with theirs.

*Estimate based on recorded sales to Government and stockpiled material to be marketed when purchases of Government Buying Program are renewed probably in July 1956. How much $?

The above total production does not include an estimated 60 tons of Nos. 1 and 2 fibers that has been sold in 3 to 5 ton lots to various foreign countries. How much? $

Other Remarks: Employment is furnished for 22 laborers at the mine and 6 at the mill. Average daily wages previously reported at $12.00 per day are actually close to $10.00.

On June 30, 1955, DMEA denied the corporations's request for additional exploration under Docket DMEA-3707, but held the application in abeyance for a possible revised exploratory program. The revised proposal was not submitted during period of this report.

Signed T M Romslo (Engineer)
T. M. ROMSLO

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

RECEIVED
JUN 25 1956

June 22, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Supplemental Semiannual Report, Docket DMEA 2867 (Asbestos), Contract Idm-E589, Jaquay's Mining Corporation (Regal mine), Gila County, Arizona

Enclosed are the original and three copies of the supplement to the regular semiannual report for the period July 1, 1955 through December 31, 1955, requested by your letter of April 20, 1956.

W. M. Traver

Enclosure

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
BOX 4097
TUCSON 5, ARIZONA

DMEA
Date Rec'd.
JUN 21 1956

RECEIVED
JUN 25 1956
BUREAU OF MINES
Denver, Colorado

June 18, 1956

Memorandum

To : Walter R. Storms, Superintendent, Southwest Experiment Station, Region III

From : T. M. Romslo, Mining Engineer, Tucson, Arizona

Subject : Supplemental Semi-Annual Report of Certified Project, July 1-December 31, 1955, DMEA Contract Idm-E589, Docket DMEA-2867 (Asbestos), Jaquays Mining Corp. (Regal Mine), Gila County, Ariz. (Ref. - George A. Selfridge's letter of April 20, 1956 to W. M. Traver)

The requested information is contained in the following revision of page 2 of 2 of my original report:

Original Estimate of Reserves (from Final Eng.-Geol. Report, 1/31/54): 773 tons of which much will be of spinning grade.

Increase of Reserves by work performed subsequent to expiration or termination of contract:

| | No. 1 | No. 2 | No. 3 | Filter Fiber | Total Tons |
|---|---|---|---|---|---|
| Production '54 & '55 (tons) | 231.58 | 178.695 | 133.50 | 700 | 1243.755 |
| Present Ore Reserve (1/56) - 60,000 sq. ft. of ground (same as mined during 1954 and 1955) | | | | | 1243.755 |
| | | | | | 2487.51 |
| Less original reserve estimate | | | | | 773.00 |
| Increase in reserves | | | | | 1714.51 |

Production this period (tons) 7/24/55 to 1/25/56

| No. 1 | No. 2 | No. 3 | Filter Fiber | Total |
|---|---|---|---|---|
| 55.75 | 45.5 | 73.5 | 180 est. | 354.75 |

CC W. M. Traver (Orig. & 8)
DMEA-2867
Cert. file
DF

TMRomslo:frj

Amount of Previous ~~Previous~~ Production (Since Date of Contract)

| Period | No. 1 | No. 2 | No. 3 | Filter Fiber | Total |
|---|---|---|---|---|---|
| | 175.83 | 133.195 | 60.0 | 520 est. | 889.025 |

Total DMEA production to Date: Tons and type of fiber representing $3,780.00 royalty payment are unknown.

Production Remarks:

Source of information: (1) Conversation with D. W. Jaquays on June 7, 1956 at corporation's office in Globe, Ariz.; and (2) Asbestos Production Records maintained by Lincoln Stewart, Mining Engineer, U. S. Bureau of Mines.

Total and present monthly production from the Regal mine by Jaquays is shown in the following table:

| | Tons | | | |
|---|---|---|---|---|
| | No. 1 | No. 2 | No. 3 | Total |
| 10/22/52 thru 7/24/55 | 238.13 | 155.045 | 102.5 | 500.675 |
| 8/23/55 | 10.50 | 6.000 | 18.00 | 34.500 |
| 9/20/55 | 7.00 | 8.000 | 9.00 | 24.000 |
| 11/1/55 | 13.00 | 7.000 | 8.00 | 28.000 |
| 12/19/55 | 11.00 | 11.000 | 11.00 | 33.000 |
| 1/25/55 | 11.00 | 10.500 | 13.50 | 35.000 |
| 10/22/52 thru 1/25/55 | 290.63 | 197.545 | 167.00 | 655.175 |

All of the above fiber is believed to have been sold to the Government through the Domestic Arizona Buying Program at the following per ton prices: No. 1, $1,500.00; No. 2, $900.00; and No. 3, $400.00. Additional production was 700 tons of filter fiber of which 300 tons was sold during 1954 and 1955, probably to the Arizona Chrysotile Asbestos Co., at $350.00 per ton. The remaining 400 tons were stockpiled at the mill.

The value of all production from 10/22/52 through 1/25/55 has been estimated at $767,535.50.

Jaquays said 10 percent of Nos. 1, 2 and 3 fibers is believed to be eligible for the National stockpile.

## EXPENDITURES

The major expenditures include: (1) 3,000 feet of exploratory headings (2,000 in waste and 1,000 in ore), $75,000.00; mill equipment $25,000.00; and $71,250.00 for compressors, slushers, trucks, bulldozers, drills, mine cars, loading ramps and 7 houses at the mine camp.

Laborers employed are 22 men at the mine and 6 at the mill. Average daily wages are believed to be about $12.00.

Other Remarks:

Sales problems - Termination of the Domestic Arizona Buying Program would be expected to result in closing down of the mines since there are no potential markets for the principal products, Nos. 1, 2 and 3 fiber.

Sales of filter fiber show a gradual increase from 15 tons a month in 1955 to 20 tons a month for April and May 1956. Price of the filter has increased from $350.00 to $400.00 per ton.

Efficiency of operations: Both the mining and milling operations appear to be running smoothly under the supervision of D. W. Jaquays and Al Gerhardt, formerly metallurgist, U. S. Bureau of Mines.

Hme.

Proposed explorations: Jaquays applied for additional aid in exploration of the mine early in 1955. The application was docketed as DMEA-3707. The property was examined by a 2-man team that submitted separate reports during May 1955. On June 30, 1955, DMEA notdified Jaquays by letter that processing of the application would be held in abeyance until results of the company's program were received. On April 18, 1956, the DMEA again wrote Jaquays and told him that the application would be finalized unless the previously requested information was received within 30 days. ?

Mr. Jaquays said the letter of June 30, 1955 was not answered because he thought the application had been denied and that the requested data was to be used for other purposes than reconsideration of the application. Shortly after receiving the letter of April 18, 1956, he reportedly wrote to the DMEA and said

he still wanted aid in exploration of a portion of the mine. A reply to his letter reportedly stated that the application had not been finalized and that the Field Team, Region III, would be asked to re-examine the proposal.

To expedite a probable reappraisal of the application, I obtained a current map of the mine that included sketched-in proposed exploratory headings.

T. M. Romslo, Mining Engineer
Southwest Experiment Station

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

RECEIVED
JUN 18 1956

224 New Customhouse
Denver 2, Colorado

June 13, 1956

2867

Memorandum

To: W. R. Storms

From: Executive Officer, DMEA Field Team, Region III

Subject: Supplemental information requested per our memo of May 8, 1956 for semiannual report on Contract Idm-#587

We have not received the information requested in the enclosed copy of our memo of May 8, 1956. Please submit the supplemental report in memorandum form with eight copies to this office for transmittal to Washington before July 1.

W. M. TRAVER
W. M. Traver

Enclosure

MMM/vj

cc: Semiannual Report File - General
Semiannual Report File #587
Sec. Opr. Comm. (2) w/encls.
Marshall
Chron.

RECEIVED
JUN 18 1956

224 New Customhouse
Denver 2, Colorado

May 8, 1956

Memorandum

To: W. R. Storms

From: Executive Officer, DMEA Field Team, Region III

Subject: Semiannual Report of Certified Project, July 1, 1955 through December 31, 1955, Docket DMEA 2867 (Asbestos) Contract Idm-E587, Jaquays Mining Corporation (Regal mine) Gila County, Arizona

Enclosed is a copy of Washington Office letter of April 20, 1956 requesting additional information for the subject report. Please have an engineer from your office prepare a supplemental report in memorandum form furnishing all additional requested information. As usual, the original and eight copies of the supplement are required.

W. M. Traver

Enclosure

RDB:jy

cc: Semiannual Report File E587 w/Orig.
Semiannual Report File - General
J. F. Shaw (2) w/copy (2) - For information only.
Sec. Op. Comm. (2)
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

RECEIVED
MAY 11 1956

224 New Customhouse
Denver 2, Colorado

May 8, 1956

Memorandum

To: W. R. Storms

From: Executive Officer, DMEA Field Team, Region III

Subject: Semiannual Report of Certified Project, July 1, 1955 through December 31, 1955, Docket DMEA 2867 (Asbestos) Contract Idm-E587, Jaquays Mining Corporation (Regal mine) Gila County, Arizona

Enclosed is a copy of Washington Office letter of April 20, 1956 requesting additional information for the subject report. Please have an engineer from your office prepare a supplemental report in memorandum form furnishing all additional requested information. As usual, the original and eight copies of the supplement are required.

W. M. TRAVER

W. M. Traver

Enclosure

RDB:jy
cc: Semiannual Report File E587 w/Orig.
Semiannual Report File - General
J. F. Shaw (2) w/copy (2) - For information only.
Sec. Op. Comm. (2)
Chron.

Docket Copy
Surname:
Hawk
Selfridge
Jenn
Mittendorf

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

600 APR 20 1956

Mr. W. M. Traver
Executive Officer, DMEA
Field Team, Region III
Bureau of Mines
224 New Customhouse Building
Denver 2, Colorado

Subject: Docket No. DMEA-2867
Asbestos
Jaquays Mining Corporation
Regal Mine
Gila County, Arizona
Contract No. Idm-E589

Docket No. DMEA-3707
Asbestos
Jaquays Mining Corporation
Regal Mine
Gila County, Arizona

Dear Mr. Traver:

Reference is made to the subject Semi-Annual Report of Certified Project for the period July 1, 1955, through December 31, 1955, by T. M. Romslo, and Docket No. DMEA-3707.

The Semi-Annual Report on the subject property is essentially complete in many details; however, a number of points should be expanded to give this office a better picture of the net effect of the program and its encouragement to Jaquays Mining Corporation to develop this property. Our plans to revise the ore reserve estimates cannot be made effectively unless the reporting under the outline is complete and in detail. The use of "Other remarks" on the second page of the report to answer specific questions should be avoided. The second page of the report integrated with "Other remarks" contains some of the essential information, but here again it would be well to follow the suggested outline.

Our prime objective is to have an up-to-date ore reserve figure for the amount of ore remaining in the ground as of the date of the report. Production remarks should include, if possible, such information as number of men employed at the mine, at the mill, average monthly production, efficiency of management, sales problems (the effect of filling the stockpile quota for the Domestic Arizona Buying Program), and potential commercial markets that may be available. It is noted under "Other remarks" that approximately 3,000 feet of drifting have been performed by the Jaquays Mining Corporation. Can we convert this to a dollar value of say $100,000? Would this represent the total expenditure by the Jaquays Mining Corporation or have additional funds been

RCG

expended for mine plant and facilities? The note on the second page of the outline which refers to but is not confined to uranium projects is applicable in this case. The reporting engineer should check with the Buying Depot at Globe or with the Regional Office at San Francisco and determine the amount of asbestos of grades #1, #2, and #3 sold by the Operator to the depot, the value of each grade and, if possible, the amount of the material that is eligible to go into the National Stockpile. It would be interesting to know the relative proportion of his asbestos that is going into the Arizona Asbestos Stockpile and that which has been sold to industry as filter fiber or other grades.

No mention is made in the Semi-Annual Report of Docket No. DMEA-3707 which, at the present time, is in the pending category awaiting information from the Applicant. On June 30, 1955, we wrote Mr. Jaquays asking him to supply us with the results of his exploration work on the near target area. No reply has been received. On April 18, 1956, we sent Mr. Jaquays a 30-day letter in order to finalize DMEA-3707.

It is understood that Mr. C. R. Neal of the Metate Asbestos Corp., Inc., has made a sizable discovery at the Apache Mine (DMEA-2005). While our work there did not result in a discovery we would appreciate any information you could supply us on the size of the orebody, development expenditures, etc. This need not be a formal report.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee

Approved:

/s/ Robert W. Geehan
Member, Bureau of Mines

Thor H. Kiilsgaard
Member, Geological Survey

LGHouk:gad 4/19/56

Copy to: Admr. R. File
Docket (2)
Operating Committee
Mr. Kiilsgaard, 5222
Dr. Bowles, 3516
Mr. Houk (2)
Mr. Chambers

RECEIVED
APR 13 1956

U. S. DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration

224 New Customhouse
Denver 2, Colorado

Date: April 10, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Royalty payments, DMEA Docket2867 (Asbestos), Contract Idm-E589, Jaquays Mining Corporation - Arizona

Period: March, 1956

During the above month the following royalty payments were received for ore or concentrates shipped from the subject property:

| Lot No. | Dry Tons | Royalty Due | Royalty Pd. |
|---|---|---|---|

GOVERNMENT PARTICIPATION PAID IN FULL

Totals:

| | |
|---|---|
| Past Due Royalties Collected | ----- |
| Total Dry Tons (Ore or Cons.) Shipped to Date | ----- |
| Expiration Date of Royalty Repayment | Paid in full |
| Amount of Government Participation | $3,780.00 |
| Total Royalty Payments to Date | $3,780.00 |
| Percent of Loan Repayment | 100.00% |

W. M. Traver

vj
cc Royalty File E 589 w/Settlement Sheets
Monthly Royalty Payment File
~~T. A. Christensen~~
W. R. Storms
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
Defense Minerals Exploration Administration
Washington 25, D. C.

224 New Customhouse
Denver 2, Colorado

Date: March 27, 1956

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Semiannual Report of Certified Project for the period July 1, 1955 through December 31, 1955
DMEA Docket 2867 (Asbestos)
Contract Idm-E 589, Jaquays Mining Corporation, (Regal Asbestos Mine), Gila County, Arizona

Enclosed are the original and three copies of the subject report prepared in conformance with instructions contained in memorandum of January 6, 1956 from this office and Memorandum 29.

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

Enclosures

cc: Semiannual Report File E 589
W. R. Storms
E. N. Harshman
J. N. Faick
Chron.

Berk

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
BOX 4097
TUCSON 5, ARIZONA

DMEA
Date Rec'd.
MAR 26 1956
BUREAU OF MINES
Denver, Colorado

March 22, 1956

Memorandum

To : W. M . Traver, Executive Officer, DMEA Field Team, Region III

From : Superintendent, Southwest Experiment Station

Subject : Semi-Annual Report of Certified Project, July 1-December 31, 1955, DMEA Contract Idm-E589, Docket DMEA-2867, Jaquays Mining Corp.'s Regal Asbestos Mine, Gila County, Ariz.

Enclosed are original and 8 copies of a semi-annual report on the above property by T. M. Romslo of the Bureau of Mines. As the operator has repaid the Government's share of the expenditures, Jaquays was somewhat reluctant to give out much information about the operation.

Walter R. Storms

Walter R. Storms

CC W. M. Traver (8)
DMEA-2867
Cert. File
DF

WRStorms:frj

## Semi-Annual Report of Certified Projects

Reporting Period July 1 to December 31, 1955

Docket and Contract Number Docket DMEA-2867, Contract Idm-E589

Operator Jaquays Mining Corporation

Commodity Asbestos

Mine Name Regal

County and State Gila County, Arizona

Date of Contract August 24, 1953

Date of Certification March 8, 1954

Expiration Date of Royalty Payments March 8, 1964

Date of Examination for this Report February 29, 1956

| | |
|---|---|
| Total Amount of Contract | $26,000.00 |
| Total Expenditures under Contract | $4,200.00 |
| Amount of Government Participation at 90% | $3,780.00 |
| | |
| Royalty Payments this period | $0.00 |
| Previous Royalty Payments | $3,780.00 |
| Total Royalty Payments to Date | $3,780.00 |
| % Loan Repayment Completed | 100 |
| Amount of Royalty Due | None |
| Royalty Remarks | |

| | |
|---|---|
| Original Estimate of Reserves (from Final Engr.-Geol. Report): | 773 tons of which much will be of spinning grade |
| Increase of Reserves by work performed subsequent to expiration or termination of contract: | See other Remarks |
| Revised Estimate of Reserves: | " " " |
| Production this Period (Ore or Concentrates) | " " " |
| Amount of Previous Production (since date of contract) | " " " |
| Total DMEA Production to Date | " " " |
| % of Revised Reserves Mined | " " " |

Production Remarks:

Note: On Uranium projects check with AEC to assure that our records are in agreement with theirs.

Other Remarks: The following data was obtained from D. W. Jaquays, president of the Jaquays Mining Corporation. Production since April 1, 1954: Approximately 1,000 tons of fiber of all grades sold for $750,000.00. Present reserves: approximately 1,000 tons of fiber of all grades has been largely developed. Exploration since termination of contract: Approximately 3,000 feet of drifting.

T. M. Romslo, Mining Engineer
U. S. Bureau of Mines

Docket Copy
Surname:

Hopkins
Houk
Talbott
Selfridge
Jeffries

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C. 600

DEC - 7 1954

Mr. Irving Gumbel, Acting Director
Materials Division
Emergency Procurement Service
General Services Administration
Washington 25, D. C.

INTERIOR DEPT.
NOV 30 1954
SOLICITOR

Re: Docket No. DMEA-2867 - Asbestos
Jaquays Mining Corporation
Regal Mine
Gila County, Arizona
Contract No. Idm-E589

Dear Mr. Gumbel:

I am enclosing one copy of a certification of discovery or development relating to the subject contract.

The exploration contract was signed August 24, 1953, with the Government participating to the extent of 90% of $26,000.00 or $23,400.00.

The project was started on October 1, 1953, and was terminated by mutual agreement before completion on March 8, 1954, after the expenditure of $4,200.00 which is the total net accepted cost according to the Audit Review. The Government paid 90% of the total accepted cost or $3,780.00. The Operator refunded this amount by check to the Finance Officer April 5, 1954.

The work performed on this project consisted of 210 feet of drifting in the ore horizon in Pre-Cambrian (Mescal) limestone. Significant quantities of asbestos were exposed over a distance of 120 feet in the drift until interrupted by a thrust fault. Veins of asbestos averaged 2½ inches wide. It is estimated that indicated reserves of 276 tons and inferred reserves of 497 tons of asbestos of all grades resulted from this exploration program.

The DMEA concurs with the field team's evaluation of the work performed and has certified that a discovery or development has resulted from the work under this contract.

Sincerely yours,

C. O. Mittendorf

Administrator

Enclosure

JHopkins:gad 11/30/54

Copy to: Admr. R. File
Docket
Mr. Johnson
Mr. Chambers
Mr. Houk

Operating Committee
Field Team, Region IV
Mr. Kiilsgaard, 5222
Mr. Hedges, 4604

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

November 22, 1954

Memorandum

To: Chairman of the Operating Committee

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket No. DMEA 2867 (Asbestos), Contract Idm-E589, Jaquays Mining Corporation, Regal Asbestos Mine, Gila County, Ariz.

In compliance with the request in your letter of November 1, 1954, for information regarding ore reserves, we are enclosing the original and three copies of a memorandum dated November 12, 1954, from Lincoln A. Stewart, Mining Engineer, Tucson, Arizona, and transmittal thereof dated November 15, 1954, from the Chief, Mining Methods Branch, Mining Division, Region IV.

John F. Shaw
for W. H. King

Enclosures

Mining Division
Date Rec'd.
NOV 17 1954
BUREAU OF MINES
Denver, Colorado

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Office of the Secretary
Minerals Administration
RECEIVED
NOV 24 1954

SOUTHWEST EXPERIMENT STATION
Box 4097
UNIVERSITY STATION

TUCSON, ARIZONA

November 15, 1954

Memorandum

To : W. H. King, Chief, Mining Division, Region IV

From : Chief, Mining Methods Br., Mining Div., Region IV

Subject : Docket DMEA-2867, Contract Idm-E589, Jaquays Mining Corp's Regal Asbestos Mine, Gila County, Ariz.

In answer to your memorandum of November 4 with copy of a memorandum from the Chairman of the DMEA Operating Committee, asking about ore reserves at the Regal asbestos mine, I am attaching a memorandum report by L. A. Stewart of this office. I believe A. F. Shride of the Geological Survey estimated ore reserves for this property in his final report, but R. W. Ageton of the Bureau of Mines failed to do so. Stewart's memorandum gives the estimate of reserves as of March 1954.

Walter R. Storms

Walter R. Storms

CC W. H. King (8)
J. N. Faick
DMEA-2867
DF

WRStorms:frj

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

SOUTHWEST EXPERIMENT STATION
BOX 4097
UNIVERSITY STATION

TUCSON, ARIZONA

November 12, 1954

Memorandum

To : Walter R. Storms, Chief, Mining Methods Br., Mining Div., Region IV, Tucson, Ariz.

From : Lincoln A. Stewart, Mining Engineer, Tucson, Ariz.

Subject : Docket DMEA-2867 (Asbestos), Contract Idm-E589, Jaquays Mining Corp.'s Regal Mine, Gila County, Ariz.

In the following discussion of reserves developed by the DMEA work south of the Regal mine, I have used as a basis only the information available to the examining engineers in March 1954, at which time a cancellation of the contract was requested by Jaquays.

Because Arizona asbestos bodies commonly terminate abruptly, it usually is not reasonable to indicate or infer ore except for a nominal distance from the workings in which the asbestos appears. However, in the case of the Regal mine where the ore habit is well known over extensive workings, the inferences can be reasonably extended.

The fact that the contract was terminated when the DMEA work had encountered a thrust fault was merely coincidental. This fault had raised the ore zones above the adit level. Such faulting was expected; in fact the better parts of the Regal deposit have been within thrust-faulted areas.

From the report of the examiners, it appears that the average thickness of the asbestos can be taken at $2\frac{1}{2}$ inches and is so used throughout the following calculations. The ore blocks are shown on the attached map.

Indicated ore.

Ore is indicated for 50 feet on each side of the adit and for 50 feet in advance of the face. This gives a block 100 feet wide by 170 feet long, or 17,000 square feet. A thickness of 1 inch of asbestos throughout an area of 1,000 square feet will produce 6.5 tons of fiber, all grades. Therefore, 6.5 x 2.5 x 17 is 276 tons of total indicated ore (Block A).

CC W. H. King (Orig, & 8)
J. N. Faick
DMEA-2867
DF

LAStewart:frj

Inferred ore

Because the thrust fault at the face of the adit probably is one of several that may be encountered, ore can be inferred (block B)for 50 feet east of Block A. As the south end of the Regal mine is productive, minable ore can be expected to exist between the stope faces and the DMEA adit, a distance of 220 feet. However, as part of this ore will be mined from the old workings, only an inference of 100 feet north of block A seems justified. This inferred ore (block C) would thus have a length of 100 feet and an average width of 200 feet.

Because of the fact that nothing is known of geologic conditions south of the adit, an inference of only 25 feet in width is used for block D which has a length of 220 feet.

The calculations are as follows:

| | | |
|---|---|---|
| Block B. | Area is 50 x 100 or 5,000 square feet<br>6.5 x 2.5 x 5 or | 81 tons |
| Block C. | Area is 100 x 200 or 20,000 square feet<br>6.5 x 2.5 x 20 or | 325 tons |
| Block D. | Area is 25 x 220 or 5,500 square feet<br>6.5 x 2.5 x 5.5 or | 91 tons |
| | Total inferred ore | 497 tons |

Thus the estimate of total reserves is:

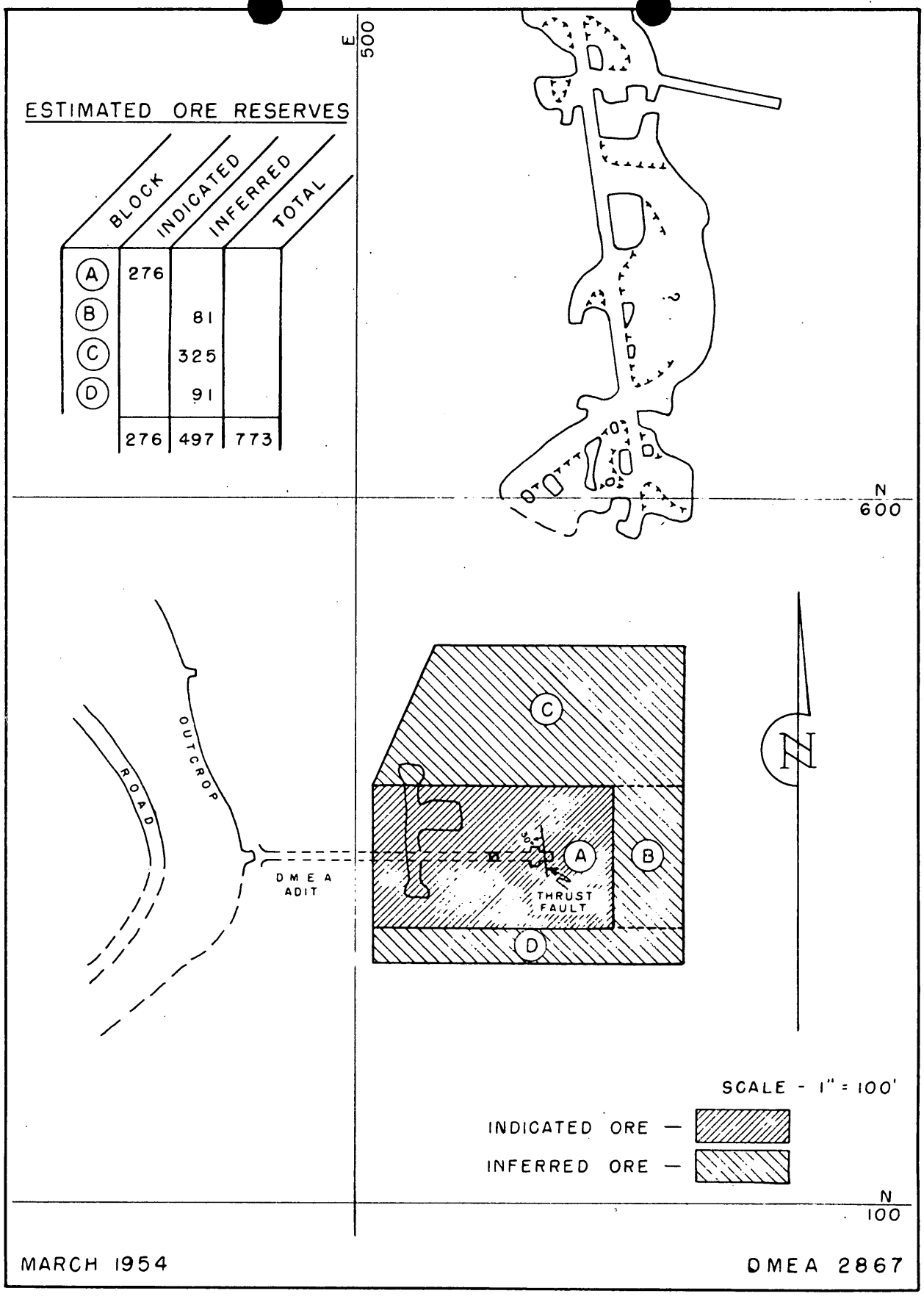
| | |
|---|---|
| Indicated ore | 276 tons |
| Inferred ore | 497 |
| Total | 773 tons |

It is likely that much of this tonnage will be of spinning grades.

These ore reserve estimates are a conservative expression of the order of magnitude, and if geological conditions remain favorable, then the inferred reserves may be a few times greater than estimated. This report was reviewed by A. F. Shride and J. N. Faick of the U. S. Geological Survey who concur in the data presented.

Lincoln A Stewart

Lincoln A. Stewart




MAP OF SOUTH END OF REGAL MINE
JAQUAYS MINING CORPORATION GILA COUNTY, ARIZONA

Docket copy
Surname:
Chambers
Houk
Johnson

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

NOV 19 1954

Mr. D. W. Jaquays, President
Jaquays Mining Corporation
1219 South 19th Avenue
Phoenix, Arizona

Re: Docket No. DMA-2667 (Asbestos)
Regal Mine
Gila County, Arizona
Contract No. Ida-[illegible]989

Dear Mr. Jaquays:

Under the contract cited above the Government allotted a total of $26,000.00 for exploration for asbestos and agreed to share 90 percent of the cost as approved and accepted by this Administration. The Contract Administration and Audit Division of this Administration in its final audit report of June 24, 1954, determined the total allowable cost of the project to be $4,200.00 and the Government's share at 90 percent participation to be $3,780.00.

If the exploration work resulted in a discovery, the Jaquays Mining Corporation was to pay to the Government a royalty at the rate of 5 percent over a period of 10 years, or until the amount advanced by the Government was liquidated, whichever occurred first. After a discovery was made the corporation decided to repay the Government's advance without waiting for royalty on production to do so. I wish to thank you for closing this small account in this manner.

Sincerely yours,

C. O. Mittendorf (fw)

Administrator

JLChambers/wb 11-18-54

Copy to: Docket
Admr. Reading File
F. T. Region IV
Administrator
Mr. Johnson
Mr. Killagnerd
Mr. Bowles, 3516
Mr. Houk
Mr. Chambers

R.C.B.

Docket Copy
Surname:
Hopkins
Houk
Selfridge
Mitchenby

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C. 600

NOV 1 - 1954

Mr. W. H. King
Executive Officer, DMEA
Field Team, Region IV
Bureau of Mines
224 New Customhouse Bldg.
Denver 2, Colorado

Subject: Docket No. DMEA-2867 - Asbestos
Jaquays Mining Corporation
Regal Mine
Gila County, Arizona
Contract No. Idm-E589

Dear Mr. King:

Reference is made to the final report on the subject exploration project, and in particular to the reserves that were found as a result of the project.

We will greatly appreciate receiving the actual dimensions of the area and the average thickness of asbestos veins that have been used in your calculations of reserves; and, also, a breakdown of these reserves into "indicated" or "inferred" reserves by the Bureau of Mines and the Geological Survey. Our estimate of indicated reserves of asbestos fiber resulting from the work under the contract is made from the area limited to 120 feet along the adit and 50 feet on each side of the adit. Because the ore horizon was interrupted by a thrust fault in the adit we have not assumed an extension of the ore beyond the fault. We have used 2½ inches as the average thickness of the asbestos veins and allowed 12 cubic feet of ore in place to equal one ton. With these data we have calculated the reserves to be 204 tons. Kindly advise if you agree with this estimate.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (JLB)

Approved:

J. H. Hedges (JLB)
Member, Bureau of Mines

Thor H. Kiilsgaard (JLB)
Member, Geological Survey

JHopkins:gad 10/28/54
Copy to: Admr. R. File
Docket
Operating Committee
Dr. Bowles, 3516
Mr. Kiilsgaard, 5223
Mr. Houk

R.C.S.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

June 25, 1954

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket DMEA 2867 (Asbestos), Contract Idm-E589, Jaquays Mining Corporation, Regal Asbestos Mine, Gila County, Arizona

Reference is made to the final Field Team report dated June 10, 1954, relative to work performed under the subject contract.

Your attention is directed to a typographical error in the next to the last line of the last paragraph of the memorandum. The figures $2780.00 should be changed to read $3780.00.

W H King
W. H. King

800

Talbert

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

JUN 16 1954

Mr. W. H. King
Executive Officer
DMEA Field Team, Region IV
224 New Customhouse Building
Denver 2, Colorado

Re: DMEA Docket 2867 (Asbestos)
Contract Idm-E589
Jacquays Mining Corporation
Regal Asbestos Mine
Gila County, Arizona

Dear Mr. King:

Reference is made to Schedule of Collections No. DMA-54-C-119, dated April 5, 1954, covering the collection represented by a check in the amount of $3,780.00 received from the subject Operator upon the termination of his contract.

In reconciling our records of royalty receipts with the total amount as reported by your Region to the Budget and Finance Branch, Bureau of Mines, for the months of April and May, it has been noted that the total collections as reported are short from the amount shown on our records by the amount of this Schedule of Collections. It is presumed, therefore, that you have taken this collection up on your records as a refund rather than a royalty repayment, which is what this Administration considers it to be.

Accordingly, it is requested that you make the proper accounting adjustment during the month of June.

Sincerely yours,

(Signed) E. D. Talbert

E. D. Talbert, Acting Chief
Contract Administration
and Audit Division

EDTalbert/ama
June 16, 1954
Copy to: Docket
Admr. Reading File
Mr. Johnson
Mr. Kenfield Bailey
Mr. Chambers

R.C.B.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

June 10, 1954

Memorandum

To: Secretary to the Operating Committee, DMEA

From: DMEA Field Team, Region IV

Subject: Docket DMEA 2867 (Asbestos), Contract Idm-E589, Jaquays Mining Corporation, Regal Asbestos Mine, Gila County, Arizona

In conformance with advice contained in a teletype dated April 8, 1954 from the Administrator, DMEA, we are enclosing the following final reports pertaining to work completed under the subject contract:

1. Original and one copy of the operator's final report.

2. Original and three copies of the final geologic report by the U.S. Geological Survey.

3. Original and three copies of the final engineering report by the Bureau of Mines.

Work completed under the contract consisted of 210 feet of drifting at a total reported cost of $4200.00 in which the Government participated to the extent of 90% or an amount of $3780.00.

The exploration work completed, which was only a small portion of that authorized by the contract, resulted in a discovery of asbestos ore, therefore the operator requested authorization to repay the amount of Government participation to date and terminate the contract in that status. Authorization was given to the operator as requested and he has rendered a check in the amount of $2780.00 in full repayment of the amount of Government participation in the exploration work.

Enclosures

W. H. King
W. H. King

Reviewed by
DMEA OPERATING COMMITTEE

E. N. Hauschman
for A. H. Koschmann

(date)

Operator's Final Rept

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

SOUTHWEST EXPERIMENT STATION
Box 4097
UNIVERSITY STATION

Mining Division
Data Rec'd.
1954
BUREAU OF MINES
Denver, Colorado

TUCSON, ARIZONA

June 2, 1954

Memorandum

To : W. H. King, Chief, Mining Division, Region IV

From : Chief, Mining Methods Br., Mining Div., Region IV

Subject : Operator's Final Report, DMEA Contract Idm-E589, Docket DMEA-2867, Jaquays Mining Corp.'s Regal Asbestos Mine, Chrysotile Mining District, Gila County, Ariz.

Enclosed are original and 5 copies of the operator's final report for DMEA contract No. Idm-E589. This report was received on May 19, but has been in the hands of A. F. Shride of the Geological Survey until today, hence the delay. I believe Mr. Shride was using Jaquays map while writing the Survey's final report.

This report seems adequate.

Walter R. Storms

Walter R. Storms

CC W. H. King (5)
DMEA-2867
DF

WRStorms:frj

Regal Mine Globe Mill Canadian Mine

JAQUAYS MINING CORP.
Producers of Fine Arizona Asbestos
1219 South 19th Avenue
PHOENIX, ARIZONA

RECEIVED JUN 7 1954
U. S. BUREAU OF MINES MINING DIVISION MAY 19 1954 TUCSON, ARIZONA

May 18, 1954.

Final Report:
REGAL MINE - I.D.M -E589.

An Exploration contract No. IDM - E589, Docket No. DMEA - 2867, was entered into between the JAQUAYS MINING CORPORATION and the U. S. GOVERNMENT on Aug. 4, 1953. Under this contract, a maximum of 1000 ft. of drifting and 300 feet of raising was approved for exploration ot the REGAL MINE.

The DMEA exploration work was begun October 1, 1953, after the preliminary work of building a trestle, driving a short haulage drift and raising for ore and waste pockets. The accompanying map shows the exploratory drifting to have begun at Coordinates N.347'-E.426' and headed dur East. At this point the elevation of the floor of the drift above an assumed zero plane was 4 483 feet. The blue marker ( a dark serpentine streak about 2 inches thick) which usually lies between two ore zones at the REGAL MINE, was about 2 feet below the floor of the drift at its beginning.

During October, an advance of 65 feet of drifting was made. The blue serpentine marker had raised to form the bottom of the drift.

In November, 1953, an additional 100 feet of drifting was completed, keeping the blue marker in the bottom of the drift. The grade of the drift was approximately 3 percent. Test Holes drilled in the bottom of the drift showed good fibres about a foot below the blue marker for the last last 100 feet.

The drift was continued for another 35 feet in the first two weeks of December. At that time drifting was suspended in order to take up bottom to a one per centgrade and to build ore and waste pockets.

In January, 1954, ore and waste chutes and regrading of track was completed and another 10 feet of drift was driven bringing the total to 210 feet. After removal of the drift bottom to the desired grade, an average of 2 to 3 inches of chrysotile asbestos fibre was certified by the Government March 8, 1954.

As any further work on the proposed program would constitute development, a 90 day recess of work was requested in order to determine the desirability of amending the contract for exploration at a new location.

On March 30, 1954, a cancellation of the contract was asked for by the JAQUAYS MINING CORPORATION and copies of the cancellation of the contract agreement were mailed to W. R. Storms, Engineer in Charge, U.S. Bureau of Mines, Tucson, Arizona. Also on this date, a check for $3,780.00 was sent to Mr. W. H. King, Defense Minerals Exploration Ad., 224 New Custom House Bldg., Denver 2, Colorado. The amount was payment in full to cover all obligations of the JAQUAYS MINING CORPORATION to date under DMEA Contract No. L.D.M.- E589 on the REGAL MINE.

**JAQUAYS MINING CORP.**
*Producers of Fine Arizona Asbestos*
1219 South 19th Avenue
PHOENIX, ARIZONA



Final Report: continued.
REGAL MINE

Inasmuch as payment in full of all money advanced by DMEA on this contract has been made, it does not seem necessary to go into figures on ore production.

The accompanying plan map of the REGAL MINE shows in color the work completed under the DMEA Contract and also the area considered to be positive ore reserves at the time of completion.

Respectfully submitted,

JAQUAYS MINING CORPORATION

By D. H. Jaquays.

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Defense Minerals Exploration Administration
Denver Federal Center
Denver 2, Colorado

Defense Minerals
JUN 7 1954

June 8, 1954

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 2867, Contract Idm-E589, Regal mine (asbestos), Jaquays Mining Corporation, Gila County, Arizona.

Enclosed are 9 copies of the final geologic report by A. F. Shride of the U. S. Geological Survey covering the above docket.

Although the exploration program authorized in the contract was not completed, ore was discovered and the contract was cancelled at the request of the applicant. A check for $3,780 was submitted to the Defense Minerals Exploration Administration by the applicant as reimbursement to the Government for its share of the program.

E. M. Hawkman
for A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (9)

File
F.T. Rept.

Reviewed by
DMEA OPERATING COMMITTEE
6-21-54
(date)

IN REPLY REFER TO:

Defense Minerals
Received
JUN 7 1954

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Box 4126 University Station

Tucson, Arizona

June 4, 1954

Memorandum

To: A. H. Koschmann

From: A. F. Shride

Subject: Completion report, Contract Idm-E589 Docket DMEA-2867, Regal mine (asbestos), Jaquays Mining Corp., Gila County, Arizona

Enclosed are the original and 8 copies of the above report by A. F. Shride of the Geological Survey.

This project has resulted in partly defining reserves that are a significant portion of the reserves known for the district. Had the project been carried to completion the reserves would possibly be much larger.

A. F. Shride

A. F. Shride

AFS:ms

c.c. Koschmann (8)
Storms

Reviewed by
DMEA OPERATING COMMITTEE
6-21-54
(date)

REGAL MINE
(JAQUAYS MINING CORP.)
GILA COUNTY, ARIZONA
DMEA 2867 Idm-E589

ASBESTOS

Completion Report
Geology

By
A. F. Shride
Geologist, U. S. Geological Survey

Reviewed by
DMEA OPERATING COMMITTEE
6-21-54
(date)

REGAL MINE
(JAQUAYS MINING CORP.)
GILA COUNTY, ARIZONA
DMEA 2867 Idm-E589

ASBESTOS

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## INTRODUCTION

Exploratory work under Contract Idm-E589 was started October 1, 1953 and was to have consisted of 1,000 feet of drifting and 300 feet of raising to probe a likely extension of the Regal ore body. On March 20, 1954 the contract was cancelled at the request of the applicant after an adit 210 feet in length had been completed. A check for $3,780. was submitted to the Defense Minerals Exploration Administration as reimbursement to the Government for expenses of exploration paid by the Government. This money was forwarded before mining of the ore discovered was completed. As noted in the following description, asbestos ore in good quantity and quality was discovered as a result of this exploration, but the potential of the asbestos-bearing area has not yet been sufficiently tested. A map is not included with this report because the mine workings are well depicted on a map which the operator will soon submit with his final report.

## GEOLOGY AND EXPLORATION

The asbestos of the Regal deposit is in two zones, 29 and 35 feet respectively below the top of the lower member of the pre-Cambrian Mescal limestone. At the time of the application the four factors favorable to localization of concentrations of asbestos (competent limestone beds, proximity to diabase, pre-mineral low angle faulting, and pre-mineral folding) were readily predictable for the area to be explored. An adit was to be driven in an easterly direction to intersect a south-trending anticlinal fold and

an associated belt of thrust faults; after this fold and belt of faulting were exposed, crosscuts from the adit were to be driven to determine the north-south extent of the orebody that was expected.

Before termination of the contract only 210 feet of the proposed 380-foot adit was completed, and none of the cross-cutting was done. The east-bearing adit was started in limestone barren of serpentine and asbestos. The initial 75 feet of the adit was in barren, essentially horizontal limestone. Seventy-five feet from the portal of the adit serpentine with traces of asbestos was exposed in the zone 35 feet below to top of the lower member. At a point 130 feet east of the portal of the adit the first significant quantities of asbestos (veins totaling $1\frac{1}{2}$ inches in thickness in an 8-inch serpentine zone) were exposed. From this point eastward the asbestos content of the zone increased; through the next 70 feet of the adit a serpentine zone 8 to 12 inches thick includes veins of asbestos totaling $1\frac{1}{2}$ to $2\frac{1}{2}$ inches. Ten feet from the end of the adit a thrust fault that strikes north-northwest and dips westerly and the west limb of the anticipated south-trending anticline were encountered. These structures displaced the ore-bearing limestone upward above the back of the adit so that the ore horizons cannot be examined to the east in the area in which geologic criteria suggest the greatest concentrations of asbestos are to be expected. The thrust fault cut by the adit should be the most westerly fault in the belt of faults that was anticipated.

At the time of the writer's examination on May 20 the adit had been extended an additional 35 feet and a raise was being driven to intersect the displaced ore beds. Mr. Jaquays reported that asbestos had been penetrated in one drill hole at an elevation approximately 12 feet above the back of the adit. After the contract was terminated a drift was driven northeasterly from the end of the DMEA-sponsored adit to connect with the old workings of the Regal mine. One hundred and fifteen feet east of the portal of the DMEA adit a 120-foot crosscut bearing due north and a 75-foot crosscut bearing due south have also been driven at the operator's expense. A small amount of stoping has been done from these crosscuts (see map with operator's final report). The DMEA adit, these additional workings and the old mine workings define moderately well the western and northern boundaries of an extension of the Regal orebody. The eastern and southern boundaries of the orebody are unknown. The exploration originally proposed would have determined the extent of the orebody very well. The geologic structures well exposed in new and old workings suggest that asbestos in ore quantity may be found for several tens of feet and possibly a few hundreds of feet to the east of the end of the DMEA adit.

## RESERVES AND CONCLUSIONS

Because Arizona asbestos orebodies, of like habit to that of the Regal deposit, commonly terminate abruptly it is not reasonable to predict reserves except between the known mine exposures to the north of the DMEA adit and for about 50 feet to the east and south beyond the mine workings. In the workings adjacent to the DMEA adit asbestos exists only in the lower zone; only at the north end of the north crosscut from the adit is any fiber exposed in the top (29-foot) zone. Veins of asbestos totaling 1 to $4\frac{1}{2}$ inches in thickness, and averaging $2\frac{1}{2}$ inches, are exposed in the lower zone in the workings adjunct to the DMEA adit. From these exposures it is reasonable to predict that 800 to 1000 tons of mineable asbestos of all grades resulted from this exploration program. The fiber tends to be slightly harsh but is of acceptable quality for strategic uses. Although the results of mill runs are not available to suggest the percentages of the various grades that will be recovered, from visual examination of the ore in place it is predictable that a large part of the fiber will be of textile length. The value of the above reserves should be on the order of $40,000-$50,000.

The upper zone was probably the more important in the old part of the mine; it is likely that future development will show significant amounts of asbestos in this zone also. This exploration also proved that geologic structures favorable to the localization of concentrations of asbestos persist further south than previously known. Therefore, it is not unreasonable to expect that extension of exploration workings from the DMEA-sponsored

adit may eventually result in discovering reserves of several times the magnitude predicted above.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Mining Division
Date Rec'd
APR 15 1954
BUREAU OF MINES
Denver, Colorado

SOUTHWEST EXPERIMENT STATION
Box 4097
UNIVERSITY STATION
TUCSON, ARIZONA

April 13, 1954

Memorandum

To : W. H. King, Chief, Mining Division, Region IV

From : Chief, Mining Methods Br., Mining Div., Region IV

Subject : Final Engineering Report, Contract Idm-E589, Docket DMEA-2867, Jaquays Mining Corp.'s Regal Asbestos Mine, Chrysotile Mining District, Gila County, Ariz.

Enclosed are original and 8 copies of the final engineering report for DMEA Exploration Project Contract No. Idm-E589.

Walter R. Storms

Walter R. Storms

CC W. H. King (8)
J. N. Faick
DMEA-2867
DF

WRStorms:frj

Reviewed by
DMEA OPERATING COMMITTEE
6-21-54
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

# Final Engineering Report

DMEA-2867, Contract Idm-E589

# Jaquays Mining Corporation's Regal Asbestos Mine

Chrysotile Mining District

Gila County, Arizona

Walter R. Storms, Supervising Mining Engineer
and
William R. Hardwick, Mining Engineer
U. S. Bureau of Mines

April 1954

Reviewed by
DMEA OPERATING COMMITTEE
6-21-54
(date)

DMEA-2867, Contract Idm-E589
JAQUAYS MINING CORPORATION'S REGAL ASBESTOS MINE
CHRYSOTILE MINING DISTRICT
GILA COUNTY, ARIZONA

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## SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Late in 1952, or early in 1953, the Jaquays Mining Corp., D. W. Jaquays, President, 1219 South 19th Ave., Phoenix, Ariz., applied under the Defense Production Act of 1950, as amended, to the Defense Minerals Exploration Administration for assistance in exploring an asbestos deposit adjacent to the Regal mine in the Chrysotile Mining District of Gila County, Ariz. This application was docketed as DMEA-2867. It requested assistance to explore the deposit by driving a crosscut 400 feet easterly through the deposit, then by 400 feet of drifting, 200 feet of additional crosscutting, and 300 feet of raises at a total cost of $26,000.00.

In March 1953, the property was visited by DMEA examiners [1/], who recommended that the requested assistance be given the company. Therefore, Exploration Project Contract No. Idm-E589 was signed on August 24, 1953, providing for 1,000 feet of drifting and crosscutting, and 300 feet of raising for a total cost of $26,000.00.

Work of crosscutting eastward across the deposit started on October 1, 1953 and was completed on January 31, 1954 after only 210 feet of crosscut had been driven. Good asbestos ore was discovered by the crosscut, and as enough ore had been found to repay the Government's share of the loan funds that had been used, the operator asked that the contract be terminated. This was done

1/ Stewart, L. A. and Ageton, R. W., mining engineers, U. S. Bureau of Mines; Shride, A. F. and Robinson, R. F., geologists, U. S. Geological Survey.

by the Administrator of the Defense Minerals Exploration Administration on March 8, 1954.

The total cost of the project was $4,200.00 and the Government's share (90 percent) was $3,780.00. On March 8, 1954, a "Certification of Discovery or Development" was issued by the DMEA Administrator. On March 30, 1954, the Jaquays Mining Corp. repaid the amount of $3,780.00 to the Government, thus repaying all funds furnished by the Government under the contract.

Asbestos ore, containing a large proportion of No. 1 crude, was discovered across a distance of 120 feet in the crosscut. This indicates a substantial quantity of asbestos ore reserves in this locality.

No further Government assistance for exploration seems needed at this time.

## INTRODUCTION

Late in 1952, or early in 1953, the Jaquays Mining Corp. of Phoenix, Ariz. applied to the Defense Minerals Exploration Administration for Governmental assistance to explore an asbestos deposit adjacent to the Regal mine in the Chrysotile Mining District of Gila County, Ariz. This application was docketed as DMEA-2867. The proposed work was to consist of 1,000 feet of drifts and crosscuts and 300 feet of raises for a total cost of $26,000.00.

In March 1953, the property was visited by DMEA examiners and an exploration loan was recommended. In August 1953, Exploration Project Contract No. Idm-E589 was signed, providing for the above mentioned work. Work under the contract was started on October 1, 1953 and was completed on January 31, 1954.

The Regal asbestos mine is situated in the Crook National Forest on the south rim of Salt River canyon in Sec. 36, T. 6 N. and sec. 1, T. 5 N., R. 16 E. at an altitude of 4,250 feet (figure 1). It may be reached by traveling northward from Globe on paved U. S. Highway 60 for 37 miles to a point one-fourth mile north of Seneca, thence westward over a dirt road for 9.6 miles to the mine.

The property consists of 27 unpatented claims as shown on figure 2,[2] all owned by the Jaquays Mining Corp.

## DESCRIPTION OF GEOLOGY

In his original report,[3] Stewart describes the geology of the Regal deposit as follows:

"The Regal deposit outcrops high on the cliffs of the south side of the Salt River canyon at an altitude of 4,250 feet. The main veins are in the lower pre-Cambrian Mescal limestone, about 30 feet below the base of the algal member of this formation, and approximately 15 feet above a thick diabase sill that locally has warped the bedding. The 2 most productive veins are 5.5 feet apart and are usually carried at the roof and near the floor of the drifts and stopes. A less important vein was found in the near-surface workings 2 feet under the lower vein. Another important vein is sometimess found at the base of the algal member, 30 feet above the main vein system.

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2/ Figures 1 and 2 are from original report by L. A. Stewart, "DMEA-2867, Regal Asbestos Mine, Jaquays Mining Corp., Gila County, Ariz.", report by U. S. Bur. of Mines for DMEA April 1953.

3/ Previously mentioned in footnote 2.

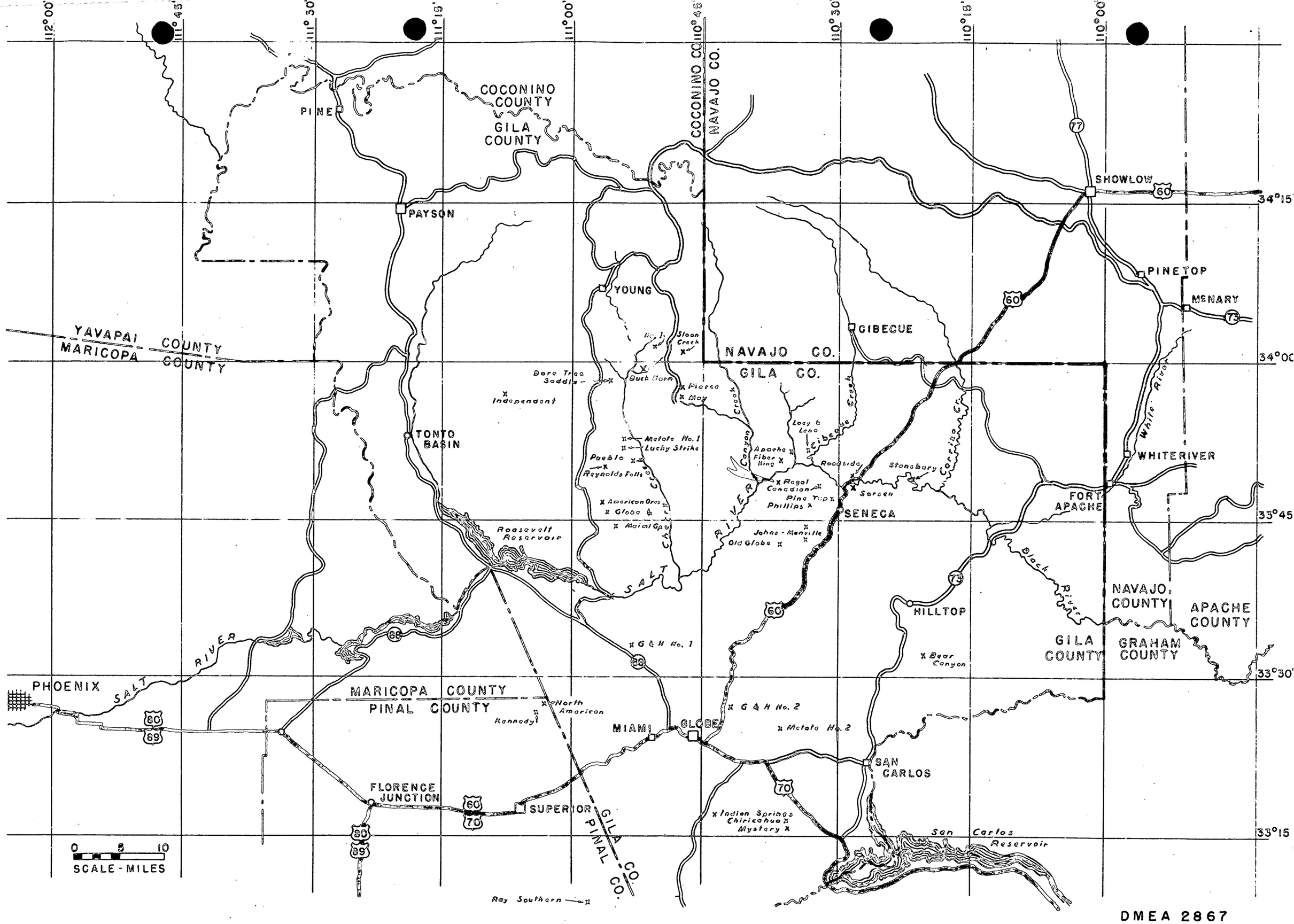


FIGURE I. - LOCATION MAP - ASBESTOS DEPOSITS - CENTRAL ARIZONA

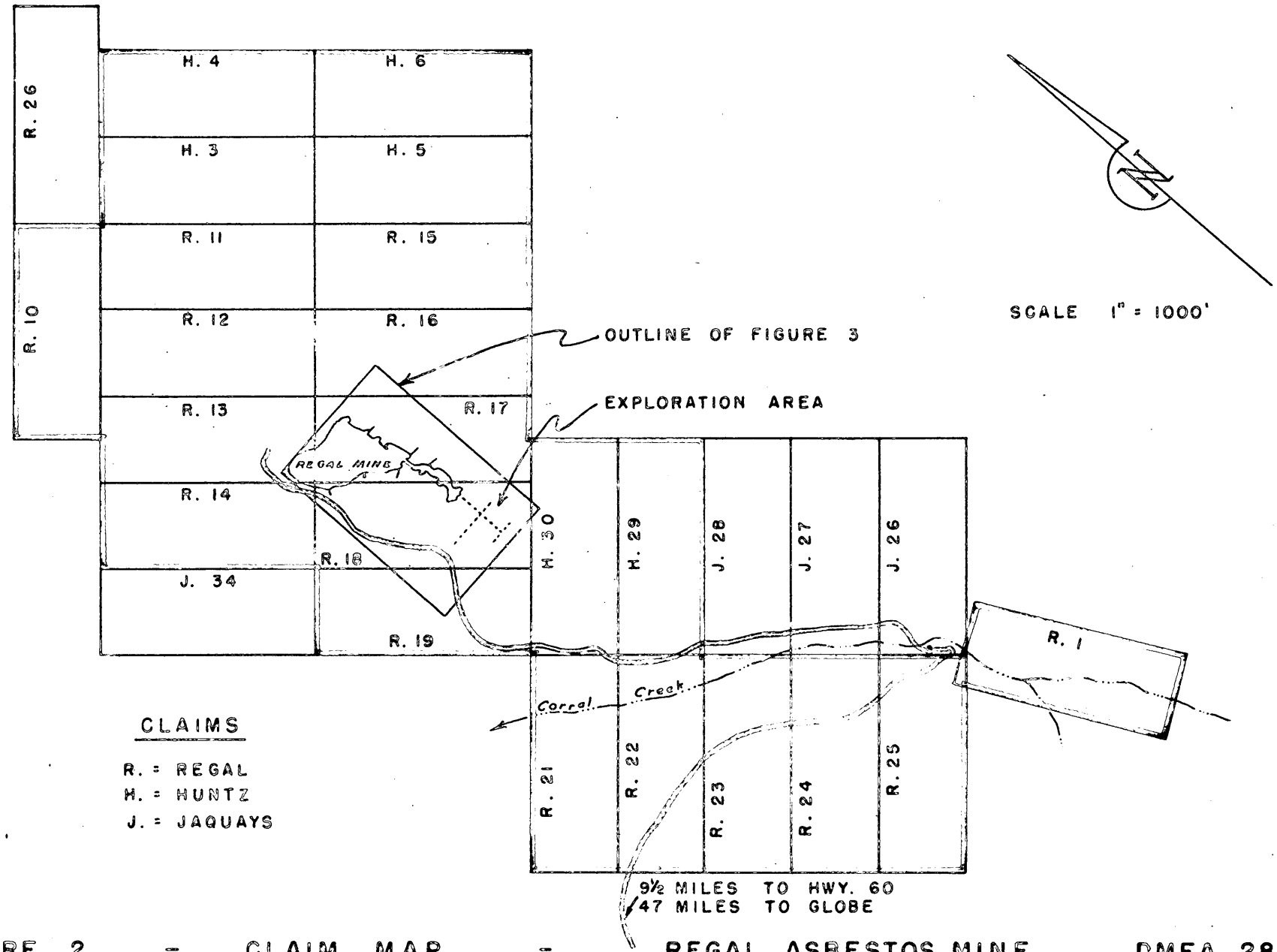


FIGURE 2. - CLAIM MAP - REGAL ASBESTOS MINE DMEA 2867

JAQUAYS MINING CORP. GILA COUNTY, ARIZONA

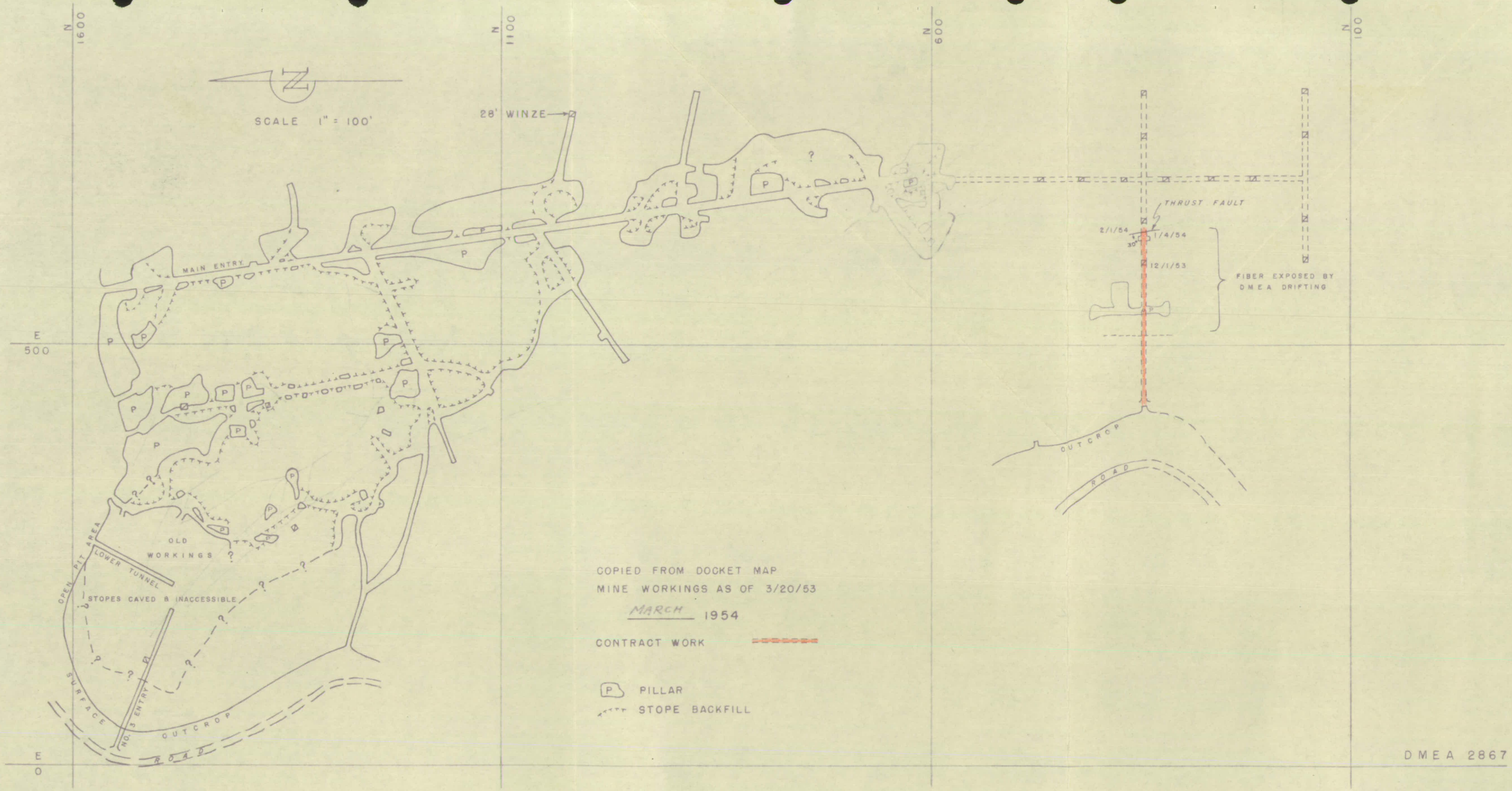


FIGURE 3. - MAP OF REGAL MINE, JAQUAYS MINING CORP., GILA COUNTY, ARIZONA

"The greatest concentrations of ore have been found in the warped areas that have been shattered by the Regal thrust fault and its branches. Near the surface the stoped areas are 500 feet wide, gradually decreasing to a width of 100 to 150 feet at about 600 feet in depth. This average width of ore persists to the present working depth of 1,000 feet (see figure 3).

"The ore is found along the limbs of the folds. Where certain areas along the fault are relatively flat-lying, no concentrations of fiber are present. About 1943, this condition existed at the then south end of the mine and it was considered virtually worked out. Additional work since that time has indicated the existence of another ore-bearing structure along the fault zone and this area is now being worked by the applicant. The 2 main ore zones exhibit an average aggregate fiber length of 3 to 5 inches.

"A persistent band of green serpentine, 1 to 2 inches thick, occurs in the bedding between the two main ore zones. It is locally called "the oscar" and is found in all parts of the mine and along the surface outcrops. It is a reliable marker that indicates the favorable beds even when no fiber is present. The beds that contain the "oscar", outcrop on a canyon wall about 250 feet west of the interior mine workings. The outcrop there contains only traces of asbestos, but this is to be expected as the beds are relatively level and undisturbed."

As mentioned by Stewart, the "oscar" outcropped on the Canyon wall west of the old mine workings (see figure 3). The exploration project proposed to follow this marker from the cliff face across the deposit. It originally was thought that the beds would rise above the crosscut so raises would have to be driven to reach the ore zone when the crosscut reached that area. However, the crosscut was driven 210 feet in a westerly direction, after having been started above the "oscar" marker, and the lower ore bed remained near floor level for the entire distance.

The ore horizon was tested by drill holes drilled into the crosscut floor every 10 feet for the first 100 feet. From about 80 to 100 feet, these holes encountered good asbestos fiber below the crosscut. From 100 to 210 feet the ore zone was in the crosscut. This ore zone containing a large percentage of No. 1 crude.

In February, after the contract work had been stopped, drifts to the north and south of the main project crosscut exposed good asbestos fiber 5 feet above the "oscar", or about 6 feet above the lower fiber zone. This zone also contained a large amount of No. 1 crude.

## ORE RESERVES

It is difficult to estimate asbestos ore reserves but a substantial tonnage seems indicated by the project work.

## DESCRIPTION OF WORK COMPLETED

On October 1, 1953, the crosscut across the deposit was started. However, as the crosscut portal was to be on the cliff face some 65 feet above the mine road, the operator drove a short crosscut into the cliff from above the road, then raised up about 30 feet to the crosscut level. This work was at company expense. The project crosscut then was driven (easterly) until it broke out into the open and (westerly) for a total distance of 210 feet. As good asbestos fiber of strategic grade was found by this crosscut, the operator decided that he would not need the remainder of the project footage, so asked that the contract be terminated. This was done.

westerly
easterly

The total reported advance under the contract was as follows:

| MONTH | CROSSCUT ADVANCE |
|---|---|
| October 1953 | 65 feet |
| November | 100 feet |
| December | 35 feet |
| January 1954 | 10 feet |
| Total | 210 feet |

Total cost was 210 feet at $20.00 per foot or $4,200.00. The Government's share of this cost (90 percent) was $3,780.00.

## EXPENDITURES

Expenditures during the life of the contract were $4,200.00 for 210 feet of crosscut at $20.00 per foot.

| | |
|---|---|
| Total approved by contract ----- | $26,000. |
| Total cost of project ---------- | 4,200. |
| Government's share of cost ----- | 3,780 |
| Government's share unexpended -- | 19,620 |

## EFFICIENCY OF OPERATIONS

All operations were conducted in an efficient manner. D. W. Jaquays, president of the Jaquays Mining Corp., is a graduate mining engineer who has had many years of mining experience.

## EQUIPMENT AND SUPPLIES

This contract was on a short form, or unit cost basis, so there was no Government participation in the cost of equipment or supplies.

File Copy
Surname:
Houk
Martin
Hoffmann
Kingsmore

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

Houk X-2971
Room 4637

Interior

APR 8 1954

DMEA

14X4401(01)Revolving Fund,
Defense Production Act, Interior (Allocated
Working Fund to the Office of the Sey.)

TELETYPE

To: W. H. King, Executive Officer, DMEA Field Team, Region IV, Bureau of Mines
224 New Customhouse Bldg., Denver 2, Colorado

Subject: DMEA-2867, Contract Idm-E589, Jaquays Mining Corp., Gila County, Arizona
Asbestos

Reurmemo April 5, 1954, the usual final reports by the Operator, the Examining Team, and Field Team are a requisite and should be forwarded at your earliest convenience.

C. O. Mittendorf (fw)

C. O. Mittendorf, Administrator
Defense Minerals Exploration Administration

LGHouk:gad 4/7/54
Copy to: Admr. R. File
Docket File
Confirmation
Dr. Bowles, 3516
Mr. Larrabee, G-232 GSA Bldg.
Mr. Houk

SENT
APR 8 1954
Clerical Service Section

R.C.B.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

April 5, 1954

Memorandum

To: C. O. Mittendorf, Administrator, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket DMEA 2867 (Asbestos), Contract Idm-E589, Jaquays Mining Corp., Gila County, Arizona

Enclosed are the Government, Division, and Docket copies of "Agreement for Termination of Exploration Project Contract (Short Form)" which was prepared in Washington and executed by you for the Government to effect termination of the contract as of February 1, 1954. Copies of the termination agreement have been given to the operator, the Fiscal Officer, Region IV, and a copy has been retained for our files.

Also enclosed is a copy of the operator's letter of March 30, 1954, forwarding a check in the amount of $3,780.00 as payment in full for the amount of Government participation in the costs of work performed under the contract through January 1954, and a copy of a memorandum to T. A. Christensen forwarding the check for Finance Office disposition.

Inasmuch as the operator has reimbursed the Government in full for the amount of the Government's participation in the costs of the work, are the usual final reports by the operator, the examining team, and Field Team necessary in this instance? We will appreciate advice by teletype in this matter.

W H King
W. H. King

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

April 2, 1954

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region IV

Subject: DMEA Docket 2867 (Asbestos), Contract Idm-E589, Jaquays Mining Corporation, Regal Asbestos Mine, Gila County, Ariz.

Enclosed for your disposition is a check in the amount of $3,780.00 from the Jaquays Mining Company made payable to the Treasurer of the United States, and a copy of their letter of transmittal dated March 30, 1954.

The check rendered constitutes the Operator's payment in full for the amount of Government participation in the costs of work performed under Contract Idm-E589.

Also enclosed is your copy of "Agreement for Termination of Exploration Project Contract (Short Form)", which has been executed as an agreement to terminate the work as of February 1, 1954.

John F. Shaw
For W. H. King

Enclosures

JWT:es

cc: Royalty File
Mittendorf (2)
Shride
Koschmann
Storms
Townsend
Chron.

Regal Mine  Globe Mill  Canadian Mine

Mining Division
Date Rec'd

# JAQUAYS MINING CORP.

*Producers of Fine Arizona Asbestos*

1319 South 19th Avenue
PHOENIX, ARIZONA

March 30, 1954

Mr. W. H. King
Defense Minerals Exploration Ad.
224 New Custom House Bldg.
Denver 2, Colorado

Dear Mr. King:

Enclosed [illegible] check for $[illegible] to cover all obligations to date under D.M.E.A. contract No. IDM-E589 on the Regal Mine for Jaquays Mining Corp. In as much as this is payment in full of all money advanced by D.M.E.A. on this contract I do not believe it necesary to go into the figures on production.

A cancellation of contract agreement has been mailed to Mr. C. O. Mittendorf through Mr. W. R. Storms of the Tucson office.

Very truly yours

D. W. Jaquays Pres.
Jaquays Mining Corp.

C.c. to R. W. Storms

Standard Form No. 1044—Revised
Form approved by Comptroller General U. S.
June 25, 1936

# SCHEDULE OF COLLECTIONS

(14-23-040)

Schedule No. DMA-54-C-119

Sheet No. _____

Department of the Interior (Department or Establishment)

Defense Minerals Exploration Administration (Bureau or Office)

Received by C. E. Evans, Regional Disbursing Officer (Name) (Title) at Denver, Colo. (Station)

Period April 1954 (Month or quarter ended)

D. O. Symbol No. 413

| Date Received | Receipt Number | Name of Remitter | Detail Description of Purpose for Which Collections Were Received | Amount | Fund to be Credited (Symbol and title in full) |
|---|---|---|---|---|---|
| 4/2/54 | | Jaquay's Mining Company Check No. 1999, drawn on First National Bank of Arizona, Phoenix, Ariz. | Refund of payments made under Contract Idm-E 589, Contract to be rescinded | $3,780.00 | 14X4401 Revolving Fund Defense Production Act, Interior. |
| | | | Total, | $3,780.00 | |

Received _____, subject to collection.

(Disbursing clerk or accountable officer)

By _____

Forwarded April 5, 1954

By _____
Naomi E. Stokes (Name)
Title ~~Authorized Certifying Officer.~~

Certificate of Deposit No. 1724 dated April 12, 1954

U. S. GOVERNMENT PRINTING OFFICE 10—1790

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

March 11, 1954.

Memorandum

To: Chairman of the Operating Committee

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket DMEA-2867 (Asbestos), Contract Idm-E589, Jaquays Mining Corporation, Regal Asbestos Mine, Gila County, Arizona.

Enclosed for your information in conjunction with the Termination Agreement forwarded by your memorandum of March 8, 1954 and the Certification of Discovery or Development issued by the Administrator dated March 8, 1954 are the original and three copies of an Interim Report by R. W. Ageton, Mining Engineer, Mining Methods Branch, Mining Division, Region IV of the same date.

W. H. King

Enclosures

Mining Division
Date Rec'd
MAR 10 1954
BUREAU OF MINES
Denver, Colorado

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

SOUTHWEST EXPERIMENT STATION
Box 4097
UNIVERSITY STATION
TUCSON, ARIZONA

March 5, 1954

Memorandum

To : W. H. King, Chief, Mining Division, Region IV

From : Chief, Mining Methods Br., Mining Div., Region IV

Subject : Interim Report, Contract Idm-E589, Docket DMEA-2867, Jaquays Mining Corp.'s Regal Asbestos Mine, Gila County, Ariz.

Enclosed are original and 6 copies of an interim report by R. W. Ageton of the Bureau of Mines on recent work done at the Regal mine.

It is reported that Jaquays already has shipped 15 tons of fiber from the project crosscut to the Government stockpile in Globe and has received some $22,500 for this shipment.

Walter R. Storms

Walter R. Storms

CC W. H. King (6)
DMEA-2867
DF

WRStorms:frj

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

SOUTHWEST EXPERIMENT STATION
BOX 4097
UNIVERSITY STATION

TUCSON, ARIZONA

March 5, 1954

Memorandum

To : W. R. Storms, Chief, Mining Methods Br., Mining Div., Region IV, Tucson, Ariz.

From : R. W. Ageton

Subject : Interim Report, Docket DMEA-2867, Contract Idm-E589, Jaquays Mining Corporation, Regal Asbestos Mine, Gila County, Ariz.

In accordance with your request the subject property was visited on March 4, 1954. W. R. Hardwick, mining engineer, Bureau of Mines, accompanied the writer. In a memorandum dated February 26, 1954, R. W. Ageton stated the intentions of the operator in regard to the termination of Contract Idm-E589. This examination was made to determine the status of the operation.

Additional work in the crosscut entry exposed a thrust fault approximately 2.0 feet beyond the face as reported on February 2, 1954. The thrust fault strikes north to N. 10° W. and dips 30° to 40° westerly. At the face, fiber veinlets are exposed in the "Oscar" and the productive zone (usually 1 to 1.5 feet below the "Oscar" ) is not present. However, drifting ahead may again expose chrysotile below the ore marker.

Crosscutting northerly and southerly has exposed asbestos fiber 6.0 feet above the lower fiber horizon or 5.0 feet above the "Oscar". Generally, the fiber in the 2 horizons contains a high percentage of No. 1 Crude.

As stated previously, the operator is not satisfied with the terms of Contract Idm-E589. The unsatisfactory part of the contract is the subordination of the entire group of claims. It is likely that a request will be made for consideration of Government assistance in exploring the virgin area a few hundred feet south of the crosscut entry. The request will probably delimit the portion of the ground to be made subject to Government lien. If a request is made, it would merit consideration.

According to the operator, a total of 15 tons of No. 1 Crude fiber was submitted to the Government stockpile at Globe, Gila County, Ariz. It is estimated that the gross value of the tonnage is $22,500.00. As indicated on the plan map of the mine workings, a systematic method of mining the chrysotile deposit, that was discovered by the DMEA contract work, has been started.

Robert W. Ageton

Robert W. Ageton, Mining Engineer
Mining Methods Branch
Mining Division, Region IV

CC W.H.King (Orig. & 6)
DMEA-2867
DF RWAgeton:fri

File Copy
Surname:

Houk
Chambers
Orbin
Gottlund
Hamilton
Hedges
Gerald
Selbridge
Johnson

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C. 600

MAR 8 1954

Jaquays Mining Corporation
1219 South 19th Ave.
Phoenix, Arizona

Re: Docket No. DMEA-2867 - Asbestos
Regal Mine
Gila County, Arizona
Contract No. Idm-E589

Gentlemen:

Transmitted herewith is a Certification of Discovery or Development on Contract No. Idm-E589 on the Regal Mine, Gila County, Arizona.

By the terms of the Exploration Project Contract and of the Certification, all production from the property from the date of the Exploration Project Contract, August 24, 1953, is subject to the Government's percentage royalty as set forth in the contract until the sum of $3,780.00, subject to audit, is paid or until August 24, 1963, whichever occurs first.

Payments should be made to Mr. W. H. King, Executive Officer, Defense Minerals Exploration Administration Field Team, Region IV, 224 New Customhouse Building, Denver 2, Colorado. Checks should be drawn payable to the Treasurer of the United States. The purchaser should be advised to deduct the royalties from the amount due on each shipment and forward check direct to the Executive Officer.

Royalty payments to the Government should be accompanied by suitable evidence, such as copies of settlement sheets showing quantity and grade of ore sold, the name of the purchaser, and the price and charges certified to be correct by the purchaser.

You are requested to notify Mr. King of any changes in ownership or production rights that may have any effect on the Government's right to its percentage royalty. Also, if production ceases at any time for any extended period, please notify Mr. King at six-month intervals that no production has been made.

Sincerely yours,

C. O. Mittendorf (fw)

Administrator

Enclosure

LGHouk:gad 3/3/54

Copy to: Admr. R. File
Docket File
Mr. Johnson
Mr. Hedges
Mr. Chambers
Mr. Houk
Field Team, Region IV
Mr. Thayer, 5216 GSA Bldg.
Operating Committee

R.C.G. 3-8-54

File Copy
Surname: Houk
Selfridge
Wednesday

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C. 600

MAR 8 1954

Mr. W. H. King
Executive Officer, DMEA
Field Team, Region IV
Bureau of Mines
224 New Customhouse Bldg.
Denver 2, Colorado

Subject: Docket No. DMEA-2867 - Asbestos
Jaquays Mining Corporation
Regal Mine
Gila County, Arizona
Contract No. Idm-E589

Dear Mr. King:

Please find herewith the original and five copies of Agreement for Termination of Exploration Project Contract covering the subject exploration contract which have been signed by the Government.

If this termination agreement meets with your approval kindly make the usual distribution of copies.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)

Approved:

J. H. Hedges (GCS)
Member, Bureau of Mines

Philip W. Guild (GCS)
Member, Geological Survey

Enclosures 6

LGHouk:gad 3/4/54
Copy to: Admr. R. File
Docket File
Operating Committee
Dr. Bowles, 3516
Mr. Larrabee, G-232 GSA Bldg.
Mr. Houk

R.C.S. 3-8-54

File Copy
Surname: Houk

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C. 600

March 4, 1954

Memorandum

To: Mr. C. O. Mittendorf

From: Lawrence G. Houk

Subject: Docket No. DMEA-2867 - Asbestos
Jaquays Mining Corporation
Regal Mine
Gila County, Arizona
Contract No. Idm-E589

Transmitted herewith is termination of exploration project contract for your signature.

The Jaquays Mining Corporation has completed 210 feet of crosscutting and exposed a zone of serpentine containing chrysotile asbestos for 120 feet of continuous length. The discovery disclosed by this small amount of work (less than 17% of the funds allocated) will, no doubt, lead to a substantial production of asbestos as the crosscut was just entering the target area. Jaquays Mining Corporation requested termination and desire to make a lump sum payment. A certification of discovery has been prepared and is in the Operating Committee for execution. The Nonmetallic Minerals Division concurs in certification and termination of this project as recommended by the field team.

LGHouk:gad 3/4/54
Copy to: Admr. R. File
Docket File
Mr. Houk

R.C.B. 3-8-54

File Copy
Surname:
Lawrence G. Houk

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C. 600

March 3, 1954

Memorandum

To: Chief Counsel

From: Chief, Nonmetallic Minerals Division

Subject: Termination - Jaquays Mining Corporation
Docket No. DMEA-2867 - Asbestos
Regal Mine
Gila County, Arizona
Contract No. Idm-E589

The certification of discovery has been prepared on the subject contract and we desire to terminate the contract by mutual agreement after the certification has been executed.

Jaquays Mining Corporation have requested contract termination as of February 1, 1954. This request has been forwarded to us without comment from the field team on their feelings in the matter. However, since a discovery has been made, it is felt that no formal recommendation for termination is necessary from the field team. Please prepare the necessary copies of a termination by mutual agreement after commencement but before completion of the work.

LGHouk:gad 3/3/54

Copy to: Admr. R. File
Docket File
Mr. Houk

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 3 - 1954

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

March 1, 1954

AIRMAIL

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket DMEA 2867 (Asbestos), Contract Idm-E589, Jaquays Mining Corp., Regal Asbestos Mine, Gila County, Arizona

In conjunction with matter discussed in our teletype of February 26, 1954, we are enclosing the following material:

1. Three copies of a letter from the operator, dated February 15, 1954, requesting a 90 day recess of operations and advising that they desire to repay the total amount of Government participation to date, and transmittal of the above from the Chief, Mining Methods Branch, Mining Division, Region IV, dated February 15, 1954.

2. Three copies of a memorandum report by R.W. Ageton, dated February 26, 1954, and transmittal thereof from the Chief, Mining Methods Branch, Mining Division, Region IV, of the same date, wherein it is stated that the operator no longer desires a recess of operations but desires to terminate the contract as of February 1, 1954, and repay the amount of Government participation to that date.

Please advise us of the steps we should take in resolving the matter.

W. H. King

W. H. King

Enclosures

DEPARTMENT OF THE INTERIOR
Bureau of Mines Minerals Administration
RECEIVED
FEB 3 - 1954

February 26, 1954

Memorandum

Air Mail

To : W. H. King, Chief, Mining Division, Region IV

From : Chief, Mining Methods Br., Mining Div., Region IV

Subject : Contract Idm-2589, Docket DGSA-2067, Jaquays Mining Corp.'s Regal Asbestos Mine, Gila County, Ariz.

In answer to your teletype of January 24, asking for information about the operator's intentions to repay the total Government contribution to contract Idm-2589 and terminate the contract, R. W. Agsten of the Bureau of Mines went to Globe, Ariz. yesterday and contacted Jaquays. Jaquays told Agsten that he now would like to have the contract terminated as of February 1 and that he would repay the Government's share of funds spent under the contract up to that date.

Attached is a copy of Agsten's memorandum. No written statement was obtained from Jaquays. He merely told Agsten that he now doesn't want a 90-day recess, that he would like to terminate the contract, and that he would repay the Government, as mentioned in Agsten's report.

Walter R. Storms

Walter R. Storms

CC W. H. King (6)
DGSA-2067
MF

WRStorms:frj

Minerals Administration
RECEIVED
3 - 1954

February 26, 1954

Memorandum

To : W. R. Storms, Chief, Mining Methods Br., Mining Div., Region IV, Tucson, Ariz.

From : R. W. Agston, Mining Engineer, Tucson, Ariz.

Subject : Interim Report, Docket BMEA-2867, Contract Idm-8589, Jaquays Mining Corporation, Regal Asbestos Mine, Gila County, Ariz.

In accordance with your request, D. W. Jaquays, president, Jaquays Mining Corporation, 1219 S. 19th Ave., Phoenix, Ariz., was contacted at Globe, Ariz., by the examiner on February 25, 1954.

Jaquays was asked to clarify his intentions regarding the following items:

1. The payment of royalties due from the Regal mine;

2. His intention regarding a recent request for a recess;

3. Whether or not he desires to terminate the contract.

Jaquays' statements regarding these three questions are as follows:

1. Jaquays intends to repay Government contribution to February 1, 1954. Repayment will be made during March 1954.

2. No recess is desired.

3. Jaquays would like to terminate the contract after total repayment of Government contribution has been made.

Jaquays was not satisfied with the terms of Contract Idm-8589. He feels that only ground which may be benefited by an exploration program should be subject to Government lien. Therefore, he may at some future date submit an application for exploration of the virgin area to the south of the crescent entry.

R. W. Agston, Mining Engineer
Mining Methods Branch
Mining Division, Region IV

CC W. H. King (Orig. & 6)
BMEA-2867
RF

RWAgston:frj

February 15, 1954

Memorandum

To : W. H. King, Chief, Mining Division, Region IV

From : Chief, Mining Methods Br., Mining Div., Region IV

Subject : Requested 90-day Recess, Contract Idm-E569, Docket DMEA-2867, Jaquays Mining Corp.'s Regal Asbestos Mine, Chrysotile Mining District, Gila County, Ariz.

Enclosed are original and 5 copies of a request from the above company for a 90-day recess of work under DMEA Contract Idm-E569. We assume that Mr. B. W. Jaquays, company president, wants this recess to start on February 1; we have asked him to write directly to you if he wants it to begin on March 1.

The Jaquays Mining Corp. discovered commercial asbestos fiber in the DMEA contract crosscut entry, so now wants a 90-day recess in order to take up the crosscut floor and mine asbestos fiber from beneath it. This production work interferes with contract work in the crosscut face, hence the request for a recess.

I recommend that the Jaquays Mining Corp. be granted a 90-day recess, beginning February 1, or March 1 if the operator requests the latter date. Mr. A. F. Shride of the Geological Survey concurs with this recommendation.

We have recommended that a certification of discovery be issued.

Walter R. Storms

Walter R. Storms

CC W. H. King (6)
DMEA-2867
DF

WRStorms:frj

*Regal Mine* *Globe Mill* *Canadian Mine*

# JAQUAYS MINING CORP.

*Producers of Fine Arizona Asbestos*

1219 South 19th Avenue

**PHOENIX, ARIZONA**

DEPARTMENT OF THE INTERIOR
Bureau Mines Minerals
RECEIVED
MAR 3 - 1954

Feb. 16, 1954

Mr. Walter H. Storms
Engineer in Charge
U. S. Bureau of Mines
Tucson, Arizona

Dear Mr. Storms:

The Jaquays Mining Corp. wishes to be allowed a 90 day recess of further D.M.E.A. work on the Regal Mine exploration contract IDM E-580 Docket 0567. This is being requested in order that the company can prepare the present area explored for mining and evaluation.

As discussed with Mr. Aston of your office it is our intention to pay off the amount of the loan to date in one lump sum within the next 30 days as we have now opened enough ore warrant doing this and eliminate a lot of bookkeeping on where the ore came from.

Very truly yours

D. W. Jaquays

D. W. Jaquays Pres.
Jaquays Mining Corp.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

February 15, 1954.

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region IV

Subject: DMEA Docket 2867 (Asbestos), Contract Idm-E589, Jaquays Mining Corp.'s Regal Asbestos Mine, Gila County, Arizona. Operator's Monthly Progress Report for the period January 1954.

Enclosed are the original and four copies of Form MF-104 and MF-104A, Narrative Report, and Engineer's Report for the above period.

Work has been completed as authorized by the contract. No documentation is required for work performed under contracts prepared on Form MF-200A, therefore we recommend that payment be made for 90 percent of the amount reported by the Operator on Form MF-104, contingent on your verification of arithmetical accuracy within the report.

Remarks:

| | |
|---|---|
| Date of Report | February 9, 1954. |
| Date Received in Field Office | February 10, 1954. |
| Date Received in Region Office | February 15, 1954. |

W. H. King

Enclosures

RDB:cwm

cc: Contract
Secretary to the Oper. Comm. (2)
WRStorms
Chron.

February 10, 1954

Memorandum

To : W. H. King, Chief, Mining Division, Region IV

From : Chief, Mining Methods Br., Mining Div., Region IV

Subject : January 1954 Progress Report, Contract Idm-E599, Docket DMEA-2867, Jaquays Mining Corp.'s Regal Asbestos Mine, Gila County, Ariz.

Enclosed in quintuplicate are the following:

(1) Bureau of Mines engineer's report with map;

(2) Operator's narrative report;

(3) Forms MF-104 and MF-104A.

Also enclosed are 2 extra copies of our engineer's report.

As all work is in accordance with the terms of the contract, I recommend that the Government's share of the costs be paid.

Walter R. Storms

Walter R. Storms

CC W. H. King (6)
DMEA-2867
DF

WRStorms:frj

Regal Mine Globe Mill Canadian Mine

JAQUAYS MINING CORP.
Producers of Fine Arizona Asbestos
1219 South 19th Avenue
PHOENIX, ARIZONA

RECEIVED

February 9, 1954

Narrative Report to Accompany
Forms MP 104 and 104-A
For January 1954
Regal Mine

Drifting was continued East in the New Regal Tunnel for an additional 10 feet to a point 210 feet from the starting point.

The balance of the work in the new Regal Tunnel was done company time on regrading the tunnel and the installation of waste and ore passes so that ore from drifting in the future may be properly handled.

Work to date in the New Regal Tunnel has exposed about 120 feet in the east end of the tunnel which shows better than 2 inches of soft asbestos so as indicated from this showing, D.M.E.A. work has accomplished it's intended purpose. It is desired that if further work is to be done under this contract we would like to change the location of some of the drifting to as follows:

Instead of drifting due east on the South 1350 coordinate to the East 700 coordinate before drifting south we would like to drift Southeast 100 feet from the east end of the New Regal Tunnel to a point approximately at South 1325 East 700 as shown on the original maps. This 100 feet of diagonal drift would accomplish what would require 150 feet of drift if the work was to be done on eastwest and northsouth coordinates. It is also desired to that once the drift is at the east 700 coordinate that the balance of the D.M.E.A. work be done in drifting approximately due south or parralell to the Regal Fault. The closure work as set up in the original D.M.E.A. contract between the New Regal Tunnel and the old workings will be done company time as no D.M.E.A. work will be done north of the New Regal Tunnel.

Very truly yours

D. W. Jaquays President
Jaquays Mining Corp.

George C. Selfridge
2-26-54
5:34 PM (unattended service)

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 1 - 1954

DN 235 BUREAU MINES 2-26-54 3-34 PM

GEORGE C SELFRIDGE, DMEA

REURTT FEBRUARY 24, REFERENCE DOCKET DMEA 2867, CONTRACT IDM-E589 JAQUAYS MINING CORPORATION, REGAL MINE, GILA COUNTY, ARIZONA. OPERATOR DESIRES TO REPAY GOVERNMENT,S SHARE OF COSTS TO FEBRUARY 1,1954 AND TERMINATE CONTRACT EFFECTIVE THAT DATE.

3XXX

W H KING

Denver, Colo.

MAR 1 8 23 AM '54

BUREAU OF MINES
MAIL ROOM
WASHINGTON, D. C.

File Copy
Surname:

Houk
~~Guild~~
~~Hedges~~
~~Selfridge~~
~~Schmuck~~

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

Ext:2971 Rm.4637

Department of the Interior
Defense Minerals Exploration
Administration

14x3923.970 Working Fund,
Interior, Defense Minerals Exploration
Administration

**TELETYPE**

February 24, 1954

To: Mr. W. H. King, Executive Officer, DMEA Field Team, Region IV, Bureau of Mines, 224 New Customhouse Bldg., Denver 2, Colorado

Subject: Docket No. DMEA-2867, Contract No. Idm-E589, Jaquays Mining Corporation, Regal Mine, Gila County, Arizona.

Reurtel February 23. Does reimbursement of total Government contribution to date indicate operator desires to terminate contract? Recess amendment unnecessary if termination is recommended. Recess simply to prepare area for mining not encouraged. Certification being prepared.

George C. Selfridge (245)
George C. Selfridge
Chairman, Operating Committee, DMEA

LGHouk:gad 2/24/54

Copy to: Admr. R. File
Docket File
Confirmation copy
Operating Committee
Dr. Bowles, 3516
Mr. Larrabee, G-232 GSA Bldg.
Mr. Houk

SENT
FEB 24 1954
Clerical Service Section

R.C.B. 2-24-54

Mr. C. O. Mittendorf
Feb. 24, 1954
8:08 A.m.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 24 1954

DN 235 BUREAU MINES 2-23-54 3-58 PM

C O MITTENDORF

REFERENCE DOCKET 2867, CONTRACT IDM-E589, JAQUAYS MINING CORPORATION. OPERATOR REQUESTS AUTHORIZATION FOR 90 DAY RECESS BEGINNING FEBRUARY 1,1954 TO ENABLE PREPARATION OF EXPLORATION AREA FOR MINING. OPERATOR INIXXX INDICATES THAT THEY WILL REIMBURSE THE GOVERNMENT FOR TOTAL CONTRIBUTION TO DATE IN LUMP SUM WITHIN THE NEXT 30 DASXXX DAYS. GOVERNMENT HAS CONTRIBUTED $3780.00 TO JANUARY 31,1954. IS RECESS AMENDMENT NECESSARY UNDER THESE CIRCUMSTANCES/Q/. RECOMMENDATIONS RELATIVE TO CERTIFICATION FORWARDED FEBRUARY 18,1954.

W H KING

Denver, Colo.

FEB 24 8 29 AM '54

BUREAU OF MINES
MAIL ROOM
WASHINGTON, D. C.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

February 18, 1954

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket DMEA 2867 (Asbestos), Contract Idm-E589, Jaquays Mining Corp., Regal Asbestos Mine, Gila County, Arizona

Enclosed are the original and three copies of a memorandum dated February 15, 1954 from the Chief, Mining Methods Branch, Mining Division, Region IV, recommending a certification of discovery under the subject contract. Also enclosed are the original and five copies of a proposed certification describing the nature of the discovery or development.

This office concurs in the above recommendation and further recommends that a certification of discovery or development be issued.

W. H. King

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

SOUTHWEST EXPERIMENT STATION
Box 4097
UNIVERSITY STATION

TUCSON, ARIZONA

Mining Division
Denver
1954
BUREAU OF MINES
Denver, Colorado

February 15, 1954

Memorandum

To : W. H. King, Chief, Mining Division, Region IV

From : Chief, Mining Methods Br., Mining Div., Region IV

Subject : Contract Idm-E589, Docket DMEA-2867, Jaquays Mining Corp.'s Regal Asbestos mine, Gila County, Ariz.

As the Jaquays Mining Corp. has discovered good asbestos fiber of strategic grade in the crosscut entry which is being driven at the Regal mine under Exploration Project Contract No. Idm-E589, John Shaw suggests that we recommend a certification of discovery before completion of the project in order that royalty may be collected by the Government. As you may remember, Jaquays mined fiber from the Canadian Asbestos mine (Contract Idm-E479, Docket DMEA-2338) and even though a certification of discovery was issued, no royalty has been paid.

Work to date at the Regal mine has exposed asbestos fiber of a length from 3/4 to 2 inches over a crosscut length of 120 feet. No drifting has been done on the deposit as yet. However, drifting is authorized under contract terms. Visual inspection by Bureau of Mines engineers of the fiber produced from the crosscut indicates a high percentage of No. 1 crude.

Because asbestos fiber of commercial grade has been discovered by work under the exploration project contract, I recommend that a certification of discovery be issued before completion of all contract work.

Walter R. Storms

Walter R. Storms

CC W. H. King (6)
A. F. Shride
DMEA-2867
DF

WRStorms:frj

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

CERTIFICATION BY THE UNITED STATES OF AMERICA
OF A DISCOVERY OR DEVELOPMENT UNDER
AN EXPLORATION PROJECT CONTRACT

To: Jaquays Mining Corp.
1219 S. 19th Ave.
Phoenix, Ariz.

Pursuant to the provisions of Exploration Project Contract No. Idm-E589, dated August 24, 1953 (Docket DMEA-2867), hereinafter called the "contract", between you and the United States of America, hereinafter called the "Government", to establish and fix the Government's percentage royalty on production and its lien thereon and on the land described in the contract, the Government considers and therefore certifies that discovery or development from which production may be made, has resulted from the exploration work.

The nature of said discovery or development is described broadly or indicated as follows: Up until January 31, 1954, a total of 210 feet of crosscut entry had been driven under terms of the contract, and asbestos fiber of commercial grade had been discovered by this work for a crosscut length of at least 120 feet. It is anticipated that further crosscutting and drifting will uncover additional substantial amounts of commercial asbestos fiber. The claims, listed in the contract under Annex No. 1 where royalty must be paid if ore is mined, are located in section 36, Township 6 North, Range 16 East and section 1, Township 5 North, Range 16 East, in the Crook National Forest, Chrysotile Mining District, Gila County, Arizona.

Dated:_____ THE UNITED STATES OF AMERICA

BY:_____
Administrator, Defense
Minerals Exploration
Administration

February 10, 1954

Memorandum

To : W. R. Storms, Chief, Mining Methods Br., Mining Div., Region IV, Tucson, Ariz.

From : Robert W. Ageton, Mining Engineer, Tucson, Ariz.

Subject : Monthly progress report, January 1954, Docket DMEA-2967, Contract Idu-8388, Jaquays Mining Corporation, Regal Asbestos Mine, Gila County, Ariz.

In accordance with your request the subject property was visited on February 2, 1954. During the month of January, the crosscut entry was advanced 10.0 feet, or a total of 210 feet from the starting point.

Work to date has exposed 3/4 inch to 2 inches of total fiber along a drift length of 120 feet. The ore horizon remains 10 to 18 inches below the "Oscar". January exploration has shown that the "Oscar" has an up-dip inclination slightly greater than the track grade. Visual inspection of the deposit indicates that a high percentage of the fiber will test No. 1 Crude grade. Based upon the information to date, the examiner believes that sufficient ore has been exposed to justify the issuance of a Certificate of Discovery.

The operator has been advised orally several times that in order to modify the exploration program he should submit a request for an amendment with supporting data. Since the operator does not understand or was unable to make a proper request for an amendment, he has again been advised of the proper procedure.

As the 10 feet of drifting has been performed in accordance with the terms of the contract, it is recommended that the Government's share of the cost be paid.

Robert W. Ageton

Robert W. Ageton, Mining Engineer
Mining Methods Branch
Mining Division, Region IV

CC W. H. King (Orig. & 6)
DMEA-2967
MF

RWAgeton:frj

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

March 3, 1954.

Memorandum

To: Secretary to the Operating Committee

From: Executive Officer, DMEA Field Team, Region IV

Subject: DMEA Docket 2867 (Asbestos), Contract Idm-E589, Jaquays Mining Corp.'s Regal Asbestos Mine, Gila County, Arizona.

Enclosed are two copies of the Operator's Monthly Progress Report, Form MF-104 and MF-104A, Operator's Narrative Report, Inspecting Engineer's Narrative Report, and other supporting data pertaining to work under the subject contract for the month of January 1954.

W. H. King

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

February 15, 1954.

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region IV

Subject: DMEA Docket 2867 (Asbestos), Contract Idm-E589, Jaquays Mining Corp.'s Regal Asbestos Mine, Gila County, Arizona. Operator's Monthly Progress Report for the period January 1954.

Enclosed are the original and four copies of Form MF-104 and MF-104A, Narrative Report, and Engineer's Report for the above period.

Work has been completed as authorized by the contract. No documentation is required for work performed under contracts prepared on Form MF-200A, therefore we recommend that payment be made for 90 percent of the amount reported by the Operator on Form MF-104, contingent on your verification of arithmetical accuracy within the report.

Remarks:

| | |
|---|---|
| Date of Report | February 9, 1954. |
| Date Received in Field Office | February 10, 1954. |
| Date Received in Region Office | February 15, 1954. |

W. H. King

Enclosures

RDB:cwm

cc: Contract
Secretary to the Oper. Comm. (2)
WRStorms
Chron.

February 10, 1954

Memorandum

To : W. H. King, Chief, Mining Division, Region IV

From : Chief, Mining Methods Br., Mining Div., Region IV

Subject : January 1954 Progress Report, Contract Idm-E589, Docket DMEA-2867, Jaquays Mining Corp.'s Regal Asbestos Mine, Gila County, Ariz.

Enclosed in quintuplicate are the following:

(1) Bureau of Mines engineer's report with map;

(2) Operator's narrative report;

(3) Forms MF-104 and MF-104A.

Also enclosed are 2 extra copies of our engineer's report.

As all work is in accordance with the terms of the contract, I recommend that the Government's share of the costs be paid.

Walter R. Storms

Walter R. Storms

CC W. H. King (6)
DMEA-2867
DF

WRStorms:frj

Regal Mine Globe Mill Canadian Mine

JAQUAYS MINING CORP.
Producers of Fine Arizona Asbestos
1219 South 19th Avenue
PHOENIX, ARIZONA

February 9, 1954

Narrative Report to Accompany
Forms MP 104 and 104-A
For January 1954
Regal Mine

Drifting was continued East in the New Regal Tunnel for an additional 10 feet to a point 210 feet from the starting point.

The balance of the work in the new Regal Tunnel was done company time on regrading the tunnel and the installation of waste and ore passes so that ore from drifting in the future may be properly handled.

Work to date in the New Regal Tunnel has exposed about 120 feet in the east end of the tunnel which shows better than 2 inches of soft asbestos so as indicated from this showing, D.M.E.A. work has accomplished it's intended purpose. It is desired that if further work is to be done under this contract we would like to change the location of some of the drifting to as follows:

Instead of drifting due east on the South 1250 coordinate to the East 700 coordinate before drifting south we would like to drift Southeast 100 feet from the east end of the New Regal Tunnel to a point approximately at South 1325 East 700 as shown on the original maps. This 100 feet of diagonal drift would accomplish what would require 150 feet of drift if the work was to be done on eastwest and northsouth coordinates. It is also desired to that once the drift is at the east 700 coordinate that the balance of the D.M.E.A. work be done in drifting approximately due south or parralell to the Regal Fault. The closure work as set up in the original D.M.E.A. contract between the New Regal Tunnel and the old workings will be done company time so no D.M.E.A. work will be done north of the New Regal Tunnel.

Very truly yours

D. W. Jaquays President
Jaquays Mining Corp.

Form MF-104 (Rev.)
(April, 1952)

Budget Bureau No. 42-R1036.4
Approval expires 6-30-53.

# UNITED STATES
## DEPARTMENT OF THE INTERIOR
### DEFENSE MINERALS EXPLORATION ADMINISTRATION

# OPERATOR'S MONTHLY REPORT AND VOUCHER

Month of January 4 Docket No. DMEA 2867 Contract No. IDM E-569
Operator's Name Jaquays Mining Corp. Minerals Asbestos
Address 1219 S. 19th Ave. Phoenix, Arizona
Contract Amount, $ 26,000.00 Government Participation: 90 % Amount, $ 23,400.00

| ITEMS OF COSTS | FOR OPERATOR'S USE | | | FOR GOVERNMENT USE ONLY | | |
|---|---|---|---|---|---|---|
| | Monthly Total | Totals Previously Reported | Totals To Date | Approved Monthly Total | Approved Totals Previously Reported | Approved Totals To Date |
| (1) Independent Short Form Contracts: | | | | | | |
| Drilling | | | | | | |
| Bulldozing | | | | | | |
| Crosscutting | | | | | | |
| Drifting | 200.00 | 4,000.00 | 4,200.00 | | | |
| (2) Labor and Supervision: | | | | | | |
| Labor | | | | | | |
| Supervision | | | | | | |
| Technical Services | | | | | | |
| (3) Operating Mat'ls. and Supplies: | | | | | | |
| Timber | | | | | | |
| Explosives | | | | | | |
| Pipe | | | | | | |
| Track | | | | | | |
| (4) Operating Equipment: | | | | | | |
| Rental | | | | | | |
| Purchase | | | | | | |
| Depreciation | | | | | | |
| (5) Initial Rehabilitation and Repairs | | | | | | |
| (6) New Bldgs., Improvements, etc. | | | | | | |
| (7) Miscellaneous: | | | | | | |
| Repairs to Equipment | | | | | | |
| Sampling and Analysis | | | | | | |
| Payroll Taxes | | | | | | |
| Liability Insurance | | | | | | |
| (8) Contingencies (specify): | | | | | | |
| TOTALS | 200.00 | 4,000.00 | 4,200.00 | 200.00 | 4,000.00 | 4,200.00 |

I certify that the above bill is correct and just and that payment therefor has not been received.
Date 1-9-54 *Payee Jaquays Mining Corp.
Per [signature] Title President

*When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary," or "Treasurer," as the case may be.

NOTE.—Title 18, U. S. Code (Crimes), section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

(Instructions on reverse)

Pursuant to authority vested in me, I certify that this account is correct and proper for payment in the amount of:

$ 180.00

Signature [signature]
(Authorized Certifying Officer)
Date 2/24/54 Vou. No. DMA 54-84
(See other side)

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. Idm-E569 in accordance with the terms of the contract.

Signature Robert H. Ogden WRH Title Mining Engineer Date 2/10/54

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE: R.N.B.

Signature W S Ring Title Executive Officer Date FEB 15 1954

# MONTHLY REPORT OF OPERATOR

The Operator (Contractor) of an exploration project is required to make a monthly report to the Government through the Regional Executive Officer. This report consists of three parts as follows:

(a) *Form MF-104—Operator's Monthly Report and Voucher.*—This form details expenditures and constitutes a voucher for reimbursing the Operator for the Government's share of costs;

(b) *Form MF-104A—Operator's Unit Cost and Progress Report.*—This is a statistical report of expenditures which shows costs for the various types of operation; and

(c) *Narrative.*—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered must be furnished as an attachment to this Report and Voucher. Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

The Monthly Report of Operator should be prepared in an original and four copies all of which must be sent to the Executive Officer of the Region not later than the 15th of the month following.

*Preparation of Form MF-104—Operator's Monthly Report and Voucher.*—All the applicable spaces in Form MF-104 should be filled in by the Operator, and the Operator or his agent should sign the certification in the lower left corner of the form.

The items of costs are arranged in the order they appear in Article 6 (a) of Form MF-200 (Revised February 1952), however, this form is readily adaptable for use in reporting activities under other contract forms.

Under Item (1) delete words "Short Form" if the contract is a sub-contract under Form MF-200; and delete word "Independent" if the contract reported is on Form MF-200 (A). Also, report work paid for on a unit basis under contract Form MF-200 as though it were performed under an independent contract.

Under Item (2) include labor, supervision and technical services incurred for the exploratory operations. Do not include labor, supervision and technical services used for work performed under items (5) and (6).

Under Item (3) include the costs of material and supplies used in the project other than that used under items (5) and (6).

Under Item (4) appear the three types of operating equipment expenditures, that is, rental, purchase and depreciation. The expenditures made for renting equipment belonging to a third party will be reported under "Rental". The amount paid or duly obligated for payment for the purchase of equipment will be reported under "Purchase". The amount of expenditures due the Operator to reimburse him for depreciation of equipment owned will be reported under "Depreciation".

Item (5) comprises costs of labor, supervision, technical services, materials, etc., which are used in the initial rehabilitation and repair of existing buildings, installations, fixtures, and equipment. These costs, therefore, should not be reported under items (2) and (3).

Item (6) includes the labor, supervision, technical services, materials, etc., used in the installation or construction of new buildings, fixed improvements, etc., necessary for the project. These costs, therefore, should not be reported under items (2) and (3).

Item (7) covers miscellaneous types of expenditure such as payroll taxes, liability insurance, workmen's compensation insurance, repairs to equipment and sampling and analysis. Only that part of payroll taxes, liability insurance and workmen's compensation which are paid by the operator should be reported under item (7). The share paid by the employee as a payroll deduction is to be included under item (2) as labor costs.

Item (8) includes any unforeseen costs not included in the other seven categories.

The original of Form MF-104 when submitted for reimbursable expenses incurred under contract Form MF-200 must be supported by original documentation or by certified copies of purchase orders, payrolls or transcripts of payrolls, unless such documentation has been waived by the Regional Executive Officer. This certification may be stated thus, "Certified True Copy (or Transcript)", followed by appropriate signature. If the Executive Officer of the Region determines that a contract under Form MF-200 should have an "on-site" audit, that is, a Government auditor should make an audit of the Operator's books and records of account, the Operator need not support his monthly voucher with original or certified documents except in cases of equipment purchases whose individual costs exceed $50.00. In these cases the original or a certified copy of the purchase order or invoice should be attached to the Monthly Voucher. N. B.—Only the *original* of Form MF-104 is required to be documented. The four copies of Form MF-104 are not to be thus supported.

Form MF-104 submitted for reimbursement under fixed price contracts on Form MF-200 (A), however, are not required to be supported by documentation of any kind. The Operator will submit his claim under item (1) of Form MF-104 by deleting as stated above the word "Independent" and by showing the number of feet or other units immediately after the appropriate descriptive word, such as, drilling, bulldozing, crosscutting, drifting, etc., and giving the "Monthly Total" amount due. "Totals Previously Reported", and "Totals to Date" columns should also be filled in.

GPO 83-38476

Form MF-104A
(April 1952)

Budget Bureau No. 42-R1151.1
Approval expires 6-30-53.

# UNITED STATES
# DEPARTMENT OF THE INTERIOR

## DEFENSE MINERALS EXPLORATION ADMINISTRATION

## OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of January 195 4 Docket No. DMEA 2867 Contract No. IDM E-569

Operator's Name Jaquays Mining Corp.

Minerals Asbestos

Address 1219 S. 19th Ave. Phoenix, Arizona

| OPERATION | UNIT | COSTS THIS MONTH | UNITS THIS MONTH | COSTS TO DATE | UNITS TO DATE | UNIT COSTS TO DATE | AUTHORIZED BY CONTRACT Units | AUTHORIZED BY CONTRACT Unit Costs |
|---|---|---|---|---|---|---|---|---|
| Drifting | feet | 200.00 | 10 | 4,200.00 | 210 | $20.00 | 1000 | $20.00 |
| Crosscutting | | | | | | | | |
| Raising | | | | | | | 300 | $20.00 |
| Shafts | | | | | | | | |
| Winzes | | | | | | | | |
| Drilling: Core | | | | | | | | |
| Churn | | | | | | | | |
| Auger | | | | | | | | |
| Stripping | | | | | | | | |
| Trenching | | | | | | | | |
| Test Pits | | | | | | | | |
| Roads and Trails | | | | | | | | |
| TOTAL DISTRIBUTED COSTS | | 200.00 | 10 | $4,200.00 | | | | TOTAL COSTS AUTHORIZED BY CONTRACT |
| Operating Equipment Purchased | | | | | | | | |
| Initial Rehabilitation and Repairs | | | | | | | | |
| New Buildings, Improvements, etc. | | | | | | | | |
| TOTAL COSTS | | 200.00 | | $4,200.00 | | | | 26,000.00 |

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this report is correct and complete to the best of their knowledge and belief.

REMARKS:

Date January 9, 1954 Operator Jaquays Mining Corp.

Per [signature] Title President

NOTE.—Title 18, U. S. Code (Crimes), section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

(Instructions on reverse)

(For Government use only)

## INSTRUCTIONS

*Preparation of Form MF–104A—Operator's Unit Cost and Progress Report.*—Applicable places on Form 104A should be filled in by the Operator. The purpose of this form is twofold as follows: (1) to furnish the supervising engineers and other administrators with statistical information necessary to better determine the progress of the project; and (2) to furnish more permanent information on mining costs for future use. The more important phases of operation on which permanent information is desired have been outlined in the form. There are blank lines, however, for those unusual phases which may need to be reported for a particular project. It will be necessary for the Operator to distribute his costs among the applicable phases reported with the exception of three items the costs of which are not to be distributed by the Operator. These three items are: "Operating Equipment Purchased", "Initial Rehabilitation and Repairs", and "New Buildings, Improvements, etc." The reason for not distributing these items on a monthly basis is doubtless clear to the Operator, since such distribution might well overstate the cost for any one month or period short of the entire contract period.

Form MF–104A has been designed to tie in with Form MF–104 for both monthly and cumulative costs. The "Total Costs" on Form MF–104A for each month should equal the monthly "Total Costs" as reported on Form MF–104. This is also true of the "Total Costs To Date".

In preparing Form MF–104A, it will be necessary frequently to distribute certain costs over a number of items. For instance, supervisory and engineering costs may have to be distributed over several phases, such as, drifting, crosscutting, raising, etc., provided that these items were reported active for the month. Such distributions should be made on the basis of time spent on the various phases, on man days of labor charged to such phases, or on some other equitable basis. "Operating Equipment", "Initial Rehabilitation and Repairs", and "New Buildings Improvements, etc.", will be distributed to the several phases of the project by the Washington Office of DMEA at the close of the project if determined necessary. The last two columns headed "Authorized by Contract" will be filled in by the Operator if such information is found in the contract. This information is usually a part of Exhibit "A" of the contract. A space for remarks has been provided for the use of the Operator to call attention to any unusual circumstances causing excessive or disproportionate unit costs.

GPO 83-38475

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

January 26, 1954

Memorandum

To: Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket DMEA 2867 (Asbestos), Contract Idm-E589, Jaquays Mining Company, Regal Mine, Gila County, Arizona

Reference is made to your letter of January 14, 1954, relative to the necessity for agreement for a suspension of operations under the subject contract.

In conjunction therewith we are enclosing three copies of a memorandum from Walter R. Storms, Chief, Mining Methods Branch, Mining Division, Region IV, dated January 21, 1954, which we believe clarifies the matter relative to the suspension of operations.

W H King
W. H. King

Enclosure

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB - 1 1954

January 21, 1954

Memorandum

To : W. H. King, Chief, Mining Division, Region IV

From : Chief, Mining Methods Br., Mining Div., Region IV

Subject : Contract Idm-8589, Docket DMEA-2867, Jaquays Mining Co.'s Bagal Asbestos Mine, Gila County, Ariz.

In answer to your memorandum of January 19 with copy of a letter from the DMEA Operating Committee in Washington, D. C., regarding the possible suspension of drifting under Contract Idm-8589 while the drift bottom is being lowered, you will note from our December Progress Report that the operator is continuing to drift, having advanced the crosscut 35 feet during December. The operator told our Messrs. L. A. Stewart and R. W. Ageton early in January that he would continue to drive the crosscut as provided by the terms of the contract, but would take up the crosscut bottom at his own expense at the same time.

This makes it unnecessary to obtain a request for a recess from the operator at this time.

Walter R. Storms

Walter R. Storms

Cc W. H. King (6)
DMEA-2867
DF

WRStorms:frj

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

January 28, 1954.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB -1 1954

Memorandum

To: Secretary to the Operating Committee

From: Executive Officer, DMEA Field Team, Region IV

Subject: DMEA Docket 2867 (Asbestos), Contract Idm-E589, Jaquays Mining Corp.'s Regal Asbestos Mine, Gila County, Arizona.

Enclosed are two copies of the Operator's Monthly Progress Report, Form MF-104 and MF-104A, Operator's Narrative Report, Inspecting Engineer's Narrative Report, and other supporting data pertaining to work under the subject contract for the month of December 1953.

W. H. King

W. H. King

Enclosures

DOCKET COPY

January 21, 1954

Memorandum

To : W. H. King, Chief, Mining Division, Region IV

From : Chief, Mining Methods Br., Mining Div., Region IV

Subject : Contract Ida-2589, Docket DMEA-2067, Jaquays Mining Co.'s Bagal Asbestos Mine, Gila County, Ariz.

In answer to your memorandum of January 19 with copy of a letter from the DMEA Operating Committee in Washington, D. C., regarding the possible suspension of drifting under Contract Ida-2589 while the drift bottom is being lowered, you will note from our December Progress Report that the operator is continuing to drift, having advanced the crosscut 36 feet during December. The operator told our Messrs. L. A. Stewart and R. W. Agston early in January that he would continue to drive the crosscut as provided by the terms of the contract, but would take up the crosscut bottom at his own expense at the same time.

This makes it unnecessary to obtain a request for a recess from the operator at this time.

Walter R. Storms

Walter R. Storms

Cc W. H. King (6)
DMEA-2067
RF

WRStorms:frj

FILE COPY
SURNAME:

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

600

JAN 14 1954

Mr. W. H. King
Executive Officer, DMEA
Field Team, Region IV
224 New Customhouse Building
Denver 2, Colorado

Subject: Docket No. DMEA-2867 - Asbestos
Jaquays Mining Corporation
Regal Mine
Gila County, Arizona
Contract No. Idm-[illegible]

Dear Mr. King:

Reference is made to your memorandum of January 4, 1954, transmitting Operator's Monthly Progress Report, Operator's Narrative Report, and Inspecting Engineer's Narrative Report for November, 1953.

It is noted that the Operator states "It is planned to stop drifting and remove the floor and ore to grade as soon as an ore chute can be constructed." It will be necessary to provide a recess in this case. See Memorandum No. 18, to All Field Teams from the Operating Committee, dated March 9, 1953. The recess agreement should state that the Government will not participate in any costs incurred during the recess.

The agreement for suspension of operations should provide for a fixed time for resumption of operations and any necessary time for completion of the work, together with the inclusion of the annex to provide for the payment of royalty for ore produced during the life of the contract.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (JHB)

Approved:

J. H. Hedges (JHB)
Member, Bureau of Mines

T. P. Thayer (JHB)
Member, Geological Survey

LGHouk:gad 1/12/54
Copy to: Admr. R. File
Docket File
Operating Committee
Dr. Bowles, 3516
Mr. Larrabee, G-232 GSA Bldg.
Mr. Houk

R.C.S. 1-14-54

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

January 11, 1954

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region IV

Subject: DMEA Docket 2867 (Asbestos), Contract Idm-E589, Jaquays Mining Corp's. Regal Asbestos Mine, Gila County, Arizona-Operator's Monthly Progress Report for the period December, 1953.

Enclosed are the original and four copies of Form MF-104 and MF-104A, Narrative Report, and Engineer's Report for the above period.

Work has been completed as authorized by the contract. No documentation is required for work performed under contracts prepared on Form MF-200A, therefore we recommend that payment be made for 90 percent of the amount reported by the Operator on Form MF-104, contingent on your verification of arithmetical accuracy within the report.

Remarks:

Date of Report----------January 4, 1954
Date Received in Field Office--January 5, 1954
Date Received in Region Office-January 11, 1954

W H King
W. H. King

Enclosures

RDB:es

cc: Contract
Sec. to the Oper. Comm. (2)
Chron.
Storms

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB - 1 1954

January 8, 1954

Memorandum

To : W. H. King, Chief, Mining Division, Region IV

From : Chief, Mining Methods Br., Mining Div., Region IV

Subject : December 1953 Progress Report, Contract Idm-K589, Docket DMEA-2867, Jaquays Mining Corp.'s Regal Asbestos Mine, Gila County, Ariz.

Enclosed in quintuplicate are the following:

(1) Bureau of Mines engineer's report with map;

(2) Operator's narrative report;

(3) Forms MF-103 and MF-103A.

Also enclosed are 2 extra copies of our engineer's report.

As all work is in accordance with the terms of the contract, I recommend that the Government's share of the costs be paid.

Walter R. Storms

Walter R. Storms

CC W. H. King (6)
DMEA-2867
DW

WRStorms:frj

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB -1 1954

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB - 1 1954

January 8, 1954

Memorandum

To : Walter R. Sterns, Chief, Mining Methods Br., Mining Div., Region IV, Tucson, Ariz.

From : Robert W. Ageton, Mining Engineer, Tucson, Arizona

Subject : Monthly Progress Report, December 1953, Docket DMEA-2067, Contract Lds-E300, Jaguays Mining Corporation, Regal Asbestos Mine, Gila County, Ariz.

In accordance with your request, the subject property was visited on January 7, 1954. During the month of December, the crosscut entry was advanced 35 feet, or a total of 200 feet from the starting point.

The crosscut entry has been driven over an ore marker called the "Oscar". Test drilling of the fiber zone below the "Oscar" during November indicated that the vein was approximately 18 inches below the drift floor, and that the total fiber content ranges from 3/4 inch to 1½ inches. Examination of fiber from the ore zone indicates that some of the material mined will be of No. 1 Crude grade. After ore and waste chutes have been installed, the floor of the crosscut entry will be lowered and the fiber in the ore horizon will be shipped to the Jaguays Mill at Globe, Arizona.

Since the 35 feet of drifting is in accordance with the terms of the contract, it is recommended that the Government's share of the cost be paid.

Robert W. Ageton, Mining Engineer
Mining Methods Branch
Mining Division, Region IV

CC W.H.King (Orig. & 6)
DMEA-2067
DF

RWAgeton:frj

Regal Mine Globe Mill Canadian Mine

JAQUAYS MINING CORP.

*Producers of Fine Arizona Asbestos*

1219 South 19th Avenue

PHOENIX, ARIZONA

January 4, 1954

NARRATIVE REPORT TO ACCOUNTANT
Forms MP 104 and 104-A
For December 1953
Regal Mine

Drifting was continued due East in the New Regal Tunnel to a point 200 feet east of the starting point for an advance of 53 feet for December 1953.

The drift was continued over the ore and about the 10th of the month drifting was stopped in order to remove bottom to grade and install waste and ore chutes on surface. The removal of the vein material to grade and installation of chutes will be completed in January and at that time drifting east in the new drift will be resumed.

Jaquays Mining Corp.

By D. H. Jaquays President

Form MF-104 (Rev.)
(April 1952)

Budget Bureau No. 42-R1036.3.
Approval expires 6-30-53.

# UNITED STATES
# DEPARTMENT OF THE INTERIOR
## DEFENSE MINERALS EXPLORATION ADMINISTRATION
# OPERATOR'S MONTHLY REPORT AND VOUCHER

Month of December, 1953 Docket No. DMEA 2367 Contract No. [illegible]-569
Operator's Name Jaquays Mining Corp. Minerals Asbestos
Address 1219 E. 19th Ave., Phoenix, Arizona
Contract Amount, $ 26,000.00 Government Participation: 90 % Amount, $ 23,400.00

| ITEMS OF COSTS | FOR OPERATOR'S USE | | | FOR GOVERNMENT USE ONLY | | |
|---|---|---|---|---|---|---|
| | Monthly Total | Totals Previously Reported | Totals To Date | Approved Monthly Total | Approved Totals Previously Reported | Approved Totals To Date |
| (1) Independent Short Form Contracts: | | | | | | |
| Drilling | | | | | | |
| Bulldozing | | | | | | |
| Crosscutting | | | | | | |
| Drifting | 700.00 | 3,300.00 | 4,000.00 | | | |
| (2) Labor and Supervision: | | | | | | |
| Labor | | | | | | |
| Supervision | | | | | | |
| Technical Services | | | | | | |
| (3) Operating Mat'ls. and Supplies: | | | | | | |
| Timber | | | | | | |
| Explosives | | | | | | |
| Pipe | | | | | | |
| Track | | | | | | |
| (4) Operating Equipment: | | | | | | |
| Rental | | | | | | |
| Purchase | | | | | | |
| Depreciation | | | | | | |
| (5) Initial Rehabilitation and Repairs | | | | | | |
| (6) New Bldgs., Improvements, etc. | | | | | | |
| (7) Miscellaneous: | | | | | | |
| Repairs to Equipment | | | | | | |
| Sampling and Analysis | | | | | | |
| Payroll Taxes | | | | | | |
| Liability Insurance | | | | | | |
| (8) Contingencies (specify): | | | | | | |
| TOTALS | 700.00 | 3,300.00 | 4,000.00 | 700.00 | 3,300.00 | 4,000.00 |

I certify that the above bill is correct and just and that payment therefor has not been received.

Date Jan. 4, 1954 Payee Jaquays Mining Corp.

Per [signature] Title President

*When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary," or "Treasurer," as the case may be.

**NOTE.—Title 18, U. S. Code (Crimes), section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.**

**(Instructions on reverse)**

Pursuant to authority vested in me, I certify that this account is correct and proper for payment in the amount of:

$ 630.00

Signature [signature]
(Authorized Certifying Officer)

Date 1/20/54 Vou. No. DMEA 54-72

**(See other side)**

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. Idm-E589 in accordance with the terms of the contract.

Signature [illegible] Title Mining Engineer Date 1/8/54

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE: R.D.B.

Signature W H King Title Executive Officer Date JAN 11 1954

# MONTHLY REPORT OF OPERATOR

The Operator (Contractor) of an exploration project is required to make a monthly report to the Government through the Regional Executive Officer. This report consists of three parts as follows:

(a) *Form MF-104—Operator's Monthly Report and Voucher.*—This form details expenditures and constitutes a voucher for reimbursing the Operator for the Government's share of costs;

(b) *Form MF-104A—Operator's Unit Cost and Progress Report.*—This is a statistical report of expenditures which shows costs for the various types of operation; and

(c) *Narrative.*—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered must be furnished as an attachment to this Report and Voucher. Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

The Monthly Report of Operator should be prepared in an original and four copies all of which must be sent to the Executive Officer of the Region not later than the 15th of the month following.

*Preparation of Form MF-104—Operator's Monthly Report and Voucher.*—All the applicable spaces in Form MF-104 should be filled in by the Operator, and the Operator or his agent should sign the certification in the lower left corner of the form.

The items of costs are arranged in the order they appear in Article 6 (a) of Form MF-200 (Revised February 1952), however, this form is readily adaptable for use in reporting activities under other contract forms.

Under Item (1) delete words "Short Form" if the contract is a sub-contract under Form MF-200; and delete word "Independent" if the contract reported is on Form MF-200 (A). Also, report work paid for on a unit basis under contract Form MF-200 as though it were performed under an independent contract.

Under Item (2) include labor, supervision and technical services incurred for the exploratory operations. Do not include labor, supervision and technical services used for work performed under items (5) and (6).

Under Item (3) include the costs of material and supplies used in the project other than that used under items (5) and (6).

Under Item (4) appear the three types of operating equipment expenditures, that is, rental, purchase and depreciation. The expenditures made for renting equipment belonging to a third party will be reported under "Rental". The amount paid or duly obligated for payment for the purchase of equipment will be reported under "Purchase". The amount of expenditures due the Operator to reimburse him for depreciation of equipment owned will be reported under "Depreciation".

Item (5) comprises costs of labor, supervision, technical services, materials, etc., which are used in the initial rehabilitation and repair of existing buildings, installations, fixtures, and equipment. These costs, therefore, should not be reported under items (2) and (3).

Item (6) includes the labor, supervision, technical services, materials, etc., used in the installation or construction of new buildings, fixed improvements, etc., necessary for the project. These costs, therefore, should not be reported under items (2) and (3).

Item (7) covers miscellaneous types of expenditure such as payroll taxes, liability insurance, workmen's compensation insurance, repairs to equipment and sampling and analysis. Only that part of payroll taxes, liability insurance and workmen's compensation which are paid by the operator should be reported under item (7). The share paid by the employee as a payroll deduction is to be included under item (2) as labor costs.

Item (8) includes any unforeseen costs not included in the other seven categories.

The original of Form MF-104 when submitted for reimbursable expenses incurred under contract Form MF-200 must be supported by original documentation or by certified copies of purchase orders, payrolls or transcripts of payrolls, unless such documentation has been waived by the Regional Executive Officer. This certification may be stated thus, "Certified True Copy (or Transcript)", followed by appropriate signature. If the Executive Officer of the Region determines that a contract under Form MF-200 should have an "on-site" audit, that is, a Government auditor should make an audit of the Operator's books and records of account, the Operator need not support his monthly voucher with original or certified documents except in cases of equipment purchases whose individual costs exceed $50.00. In these cases the original or a certified copy of the purchase order or invoice should be attached to the Monthly Voucher. N. B.—Only the *original* of Form MF-104 is required to be documented. The four copies of Form MF-104 are not to be thus supported.

Form MF-104 submitted for reimbursement under fixed price contracts on Form MF-200 (A), however, are not required to be supported by documentation of any kind. The Operator will submit his claim under item (1) of Form MF-104 by deleting as stated above the word "Independent" and by showing the number of feet or other units immediately after the appropriate descriptive word, such as, drilling, bulldozing, crosscutting, drifting, etc., and giving the "Monthly Total" amount due. "Totals Previously Reported", and "Totals to Date" columns should also be filled in.

GPO 83-38476

Form MF-104A
(April 1952)

Budget Bureau No. 42-R1151
Approval expires 6-30-53.

# UNITED STATES
# DEPARTMENT OF THE INTERIOR

## DEFENSE MINERALS EXPLORATION ADMINISTRATION

# OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of December 1953 Docket No. DMEA 2067 Contract No. [illegible]-509
Operator's Name Jaquays Mining Corp. Minerals Asbestos
Address 1219 N. 12th Ave. Phoenix, Arizona

| OPERATION | UNIT | COSTS THIS MONTH | UNITS THIS MONTH | COSTS TO DATE | UNITS TO DATE | UNIT COSTS TO DATE | AUTHORIZED BY CONTRACT | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Units | Unit Costs |
| Drifting | Foot | 700.00 | 35 | 4,000.00 | 200 | [illegible] | 1000 | [illegible] |
| Crosscutting | | | | | | | | |
| Raising | | | | | | | 300 | [illegible] |
| Shafts | | | | | | | | |
| Winzes | | | | | | | | |
| Drilling: Core | | | | | | | | |
| Churn | | | | | | | | |
| Auger | | | | | | | | |
| Stripping | | | | | | | | |
| Trenching | | | | | | | | |
| Test Pits | | | | | | | | |
| Roads and Trails | | | | | | | | |
| TOTAL DISTRIBUTED COSTS | | 700.00 | 35 | 4,000.00 | | | | TOTAL COSTS AUTHORIZED BY CONTRACT |
| Operating Equipment Purchased | | | | | | | | |
| Initial Rehabilitation and Repairs | | | | | | | | |
| New Buildings, Improvements, etc. | | | | | | | | |
| TOTAL COSTS | | 700.00 | | 4,000.00 | | | | 26,000.00 |

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this report is correct and complete to the best of their knowledge and belief.

REMARKS:

Date Jan. 4, 1954 Operator Jaquays Mining Corp.

Per [signature] Title President

NOTE.—Title 18, U. S. Code (Crimes), section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

(Instructions on reverse)

(For Government use only)

## INSTRUCTIONS

*Preparation of Form MF–104A—Operator's Unit Cost and Progress Report.*—Applicable places on Form 104A should be filled in by the Operator. The purpose of this form is twofold as follows: (1) to furnish the supervising engineers and other administrators with statistical information necessary to better determine the progress of the project; and (2) to furnish more permanent information on mining costs for future use. The more important phases of operation on which permanent information is desired have been outlined in the form. There are blank lines, however, for those unusual phases which may need to be reported for a particular project. It will be necessary for the Operator to distribute his costs among the applicable phases reported with the exception of three items the costs of which are not to be distributed by the Operator. These three items are: "Operating Equipment Purchased", "Initial Rehabilitation and Repairs", and "New Buildings, Improvements, etc." The reason for not distributing these items on a monthly basis is doubtless clear to the Operator, since such distribution might well overstate the cost for any one month or period short of the entire contract period.

Form MF–104A has been designed to tie in with Form MF–104 for both monthly and cumulative costs. The "Total Costs" on Form MF–104A for each month should equal the monthly "Total Costs" as reported on Form MF–104. This is also true of the "Total Costs To Date".

In preparing Form MF–104A, it will be necessary frequently to distribute certain costs over a number of items. For instance, supervisory and engineering costs may have to be distributed over several phases, such as, drifting, crosscutting, raising, etc., provided that these items were reported active for the month. Such distributions should be made on the basis of time spent on the various phases, on man days of labor charged to such phases, or on some other equitable basis. "Operating Equipment", "Initial Rehabilitation and Repairs", and "New Buildings Improvements, etc.", will be distributed to the several phases of the project by the Washington Office of DMEA at the close of the project if determined necessary. The last two columns headed "Authorized by Contract" will be filled in by the Operator if such information is found in the contract. This information is usually a part of Exhibit "A" of the contract. A space for remarks has been provided for the use of the Operator to call attention to any unusual circumstances causing excessive or disproportionate unit costs.

GPO 83-38475

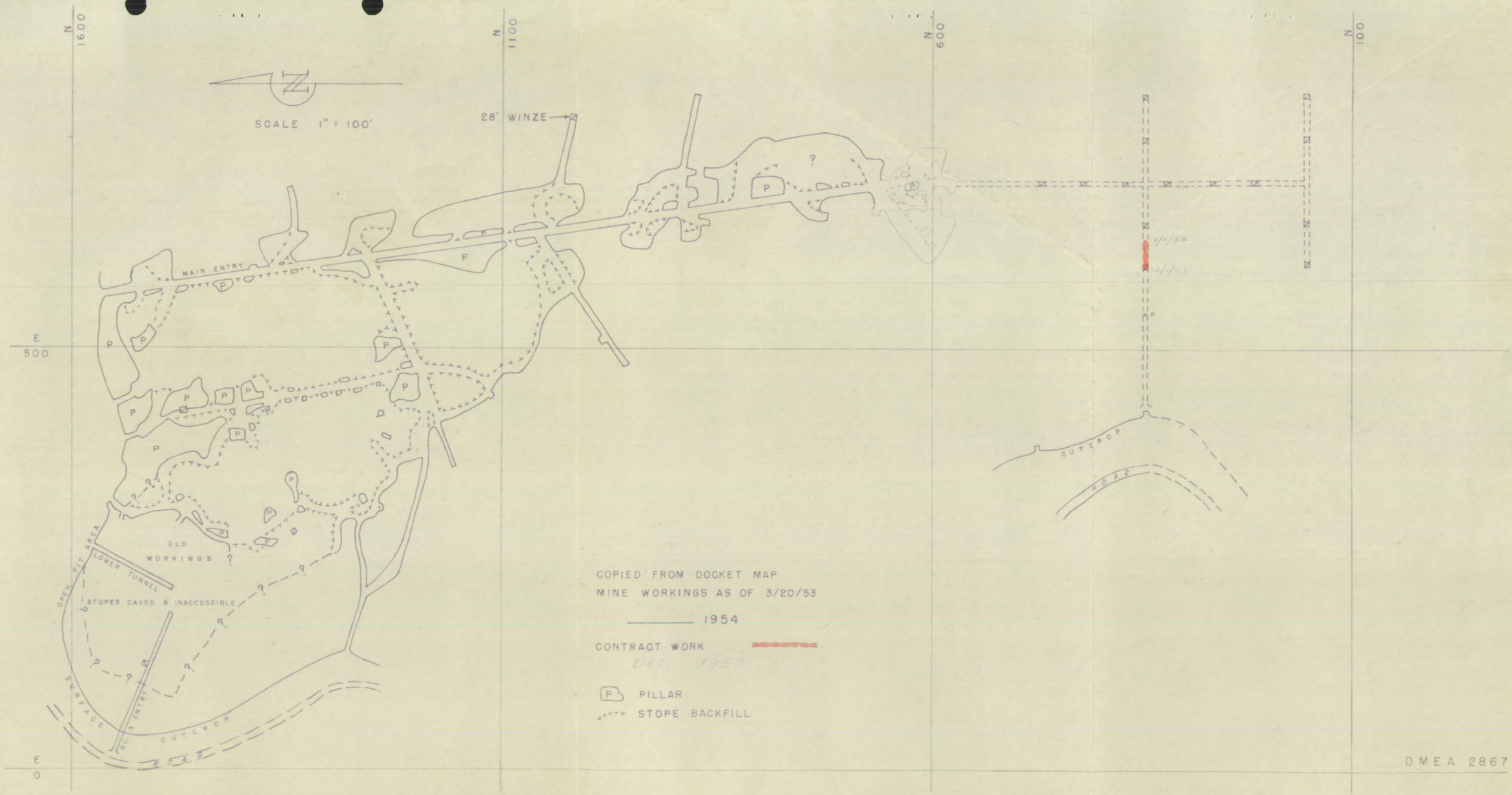


FIGURE 3. - MAP OF REGAL MINE, JAQUAYS MINING CORP., GILA COUNTY, ARIZONA

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

January 11, 1954

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region IV

Subject: DMEA Docket 2867 (Asbestos), Contract Idm-E589, Jaquays Mining Corp's. Regal Asbestos Mine, Gila County, Arizona-Operator's Monthly Progress Report for the period December, 1953.

Enclosed are the original and four copies of Form MF-104 and MF-104A, Narrative Report, and Engineer's Report for the above period.

Work has been completed as authorized by the contract. No documentation is required for work performed under contracts prepared on Form MF-200A, therefore we recommend that payment be made for 90 percent of the amount reported by the Operator on Form MF-104, contingent on your verification of arithmetical accuracy within the report.

Remarks:

Date of Report----------January 4, 1954
Date Received in Field Office--January 5, 1954
Date Received in Region Office-January 11, 1954

W. H. King

W. H. King

Enclosures

RDB:es

cc: Contract
Sec. to the Oper. Comm. (2)
Chron.
Storms

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB -1 1954

January 8, 1954

Memorandum

To : W. H. King, Chief, Mining Division, Region IV

From : Chief, Mining Methods Br., Mining Div., Region IV

Subject : December 1953 Progress Report, Contract Idm-R589, Docket DMEA-2067, Jaquays Mining Corp.'s Regal Asbestos Mine, Gila County, Ariz.

Enclosed in quintuplicate are the following:

(1) Bureau of Mines engineer's report with map;

(2) Operator's narrative report;

(3) Forms MF-103 and MF-103A.

Also enclosed are 2 extra copies of our engineer's report.

As all work is in accordance with the terms of the contract, I recommend that the Government's share of the costs be paid.

Walter R. Storms

Walter R. Storms

CC W. H. King (6)
DMEA-2067
BF

WRStorms:fvj

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB -1 1954

January 8, 1954

Memorandum

To : Walter R. Storms, Chief, Mining Methods Br., Mining Div., Region IV, Tucson, Ariz.

From : Robert W. Ageton, Mining Engineer, Tucson, Arizona

Subject : Monthly Progress Report, December 1953, Docket DMEA-2867, Contract IdM-8889, Jaquays Mining Corporation, Regal Asbestos Mine, Gila County, Ariz.

In accordance with your request, the subject property was visited on January 7, 1954. During the month of December, the crosscut entry was advanced 35 feet, or a total of 200 feet from the starting point.

The crosscut entry has been driven over an ore marker called the "Oscar". Test drilling of the fiber zone below the "Oscar" during November indicated that the vein was approximately 18 inches below the drift floor, and that the total fiber content ranges from 3/4 inch to 1½ inches. Examination of fiber from the ore zone indicates that some of the material mined will be of No. 1 Crude grade. After ore and waste chutes have been installed, the floor of the crosscut entry will be lowered and the fiber in the ore horizon will be shipped to the Jaquays Mill at Globe, Arizona.

Since the 35 feet of drifting is in accordance with the terms of the contract, it is recommended that the Government's share of the cost be paid.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 1 1954

Robert W. Ageton, Mining Engineer
Mining Methods Branch
Mining Division, Region IV

CC W.H.King (Orig. & 6)
DMEA-2867
DF

RWAgeton:frj

Regal Mine Globe Mill Canadian Mine

JAQUAYS MINING CORP.
*Producers of Fine Arizona Asbestos*
1219 South 19th Avenue
PHOENIX, ARIZONA

January 4, 1954

NARRATIVE REPORT TO ACCOMPANY
Forms MF 104 and 104-A
For December 1953
Regal Mine

Drifting was continued due East in the New Regal Tunnel to a point 300 feet east of the starting point for an advance of 55 feet for December 1953.

The drift was continued over the ore and about the 15th of the month drifting was stopped in order to remove bottom to grade and install waste and ore chutes on surface. The removal of the vein material to grade and installation of chutes will be completed in January and at that time drifting east in the new drift will be resumed.

Jaquays Mining Corp.

By W. W. Jaquays President

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB - 1 1954

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

221 New Customhouse
Denver 1, Colorado

January 1, 1954

Memorandum

To: Secretary to the Operating Committee
Defense Minerals Exploration Administration

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket DMEA 2867 (Asbestos), Contract Idm-E589, Jaquays Mining Corporation, Regal Asbestos Mine, Gila County, Arizona - Operator's Monthly Progress Report for the period November, 1953

Enclosed are two copies of the Operator's Monthly Progress Report Form DF-104, Operator's Narrative Report, Inspecting Engineer's Narrative Report, and other supporting data for the period November, 1953, pertaining to Docket DMEA 2867, Contract Idm-E589, Jaquays Mining Corporation.

W. H. King

Enclosures

1d

Copy to: Atomic, Comp. of report
sub
Sum.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

December 11, 1953

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region IV

Subject: DMEA Docket 2667 (Asbestos), Contract Idm-E589, Jaquays Mining Corporation, Regal Asbestos Mine, Gila County, Arizona - Operator's Monthly Progress Report, for the period November 1953.

Enclosed are the original and four copies of Form MF-104 and MF-104A, Narrative Report, and Engineer's Report for the above period.

Work has been completed as authorized by the contract. No documentation is required for work performed under contracts prepared on Form MF-200A, therefore we recommend that payment be made for 90 percent of the amount reported by the Operator on Form MF-104, contingent on your verification of arithmetical accuracy within the report.

Remarks:

| | |
|---|---|
| Date of Report | December 4, 1953 |
| Date Received in Field Office | December 8, 1953 |
| Date Received in Region Office | December 10, 1953 |

W H King
W. H. King

Enclosures

RDB:fwo

cc Sec.Oper.Comm.
WRStorms
Contract
Chron

MINING DIVISION
REGION IV

December 8, 1953

Memorandum

To : W. H. King, Chief, Mining Division, Region IV

From : Chief, Mining Methods Br., Mining Div., Region IV

Subject : November 1953 Progress Report, Contract Ida-8500, Docket DMEA-2067, Jaquays Mining Corp.'s Regal Asbestos Mine, Gila County, Ariz.

Enclosed in quintuplicate are the following:

(1) Bureau of Mines engineer's report with map;

(2) Operator's narrative report;

(3) Forms MF-104 and MF-104A.

Also enclosed are 2 extra copies of our engineer's report.

As all work is in accordance with the terms of the contract, I recommend that the Government's share of the costs be paid.

Walter R. Storms

Walter R. Storms

CC W. H. King (6)
DMEA-2067
MF

WRStorms:frj

MINING DIVISION
REGION IV

December 8, 1953

To : Walter R. Stearns, Chief, Mining Methods Br., Mining Div., Region IV, Tucson, Ariz.

From : Robert W. Agnew, Mining Engineer, Tucson, Ariz.

Subject : Monthly progress report, November 1953, Docket BMKA-2867, Contract Ida-8889, Jaquays Mining Corporation, Regal Asbestos Mine, Gila County, Ariz.

In accordance with your request, the subject property was visited on December 2, 1953, the writer accompanying A. F. Shride, geologist, Geological Survey. During the month of November the crosscut entry was advanced 100 feet.

It was anticipated that the ore marker (the "Oscar") would be exposed in the drift walls at this distance from the outcrop. However, the ore marker has remained in the floor of the drift. The operator has tested the fiber zone below the "Oscar" by drilling test holes spaced at 10-foot intervals along the floor of the drift. This test drilling has indicated that the vein is approximately 18 inches below the drift floor, and that the total fiber content of this ore horizon ranges from 3/4 inch to 1½ inches.

Since the 100 feet of drifting is in accordance with the terms of the contract, it is recommended that the Government's share of the cost be paid.

Robert W. Agnew

Robert W. Agnew, Mining Engineer
Mining Methods Branch
Mining Division, Region IV

CC W. H. King (Orig. & 6)
BMKA-2867
RF

RWAgnew:frj

*Regal Mine* *Globe Mill* *Canadian Mine*

# JAQUAYS MINING CORP.

*Producers of Fine Arizona Asbestos*

1219 South 19th Avenue

**PHOENIX, ARIZONA**

Dec. 6, 1953

[illegible] [illegible] [illegible]
Forms DP 104 and 104-A
For December, 1953
Regal Mine

Drifting was continued due East at the new tunnel site to a point 100 feet east of the measuring point for an advance of 100 feet of new drift for December 1953.

The drift has been driven over the veinfor the total length of the new drift. Test holes have been drilled in the floor to test the vein which to date has remained at about 18 inches below the drift floor. Test drillings show good fibre indications for the last 100 feet of drift. It is planned to stop drifting and remove the floor and ore to grade as soon as an ore chute can be constructed.

Jaquays Mining Corp.

By D. H. Jaquays President

Form MF-104 (Rev.)
(April 1952)

Budget Bureau No. 42-R1036.4
Approval expires 6-30-53.

RECEIVED

# UNITED STATES
# DEPARTMENT OF THE INTERIOR
## DEFENSE MINERALS EXPLORATION ADMINISTRATION
# OPERATOR'S MONTHLY REPORT AND VOUCHER

Month of November, 1953 Docket No. DMEA 2007 Contract No.
Operator's Name Jaquays Mining Corp. Minerals [illegible]
Address 1019 E. 10th Ave. Phoenix, Arizona Advances
Contract Amount, $ [illegible] Government Participation: 90 % Amount, $ [illegible]

| ITEMS OF COSTS | FOR OPERATOR'S USE: Monthly Total | Totals Previously Reported | Totals To Date | FOR GOVERNMENT USE ONLY: Approved Monthly Total | Approved Totals Previously Reported | Approved Totals To Date |
|---|---|---|---|---|---|---|
| (1) Independent Short Form Contracts: | | | | | | |
| Drilling | | | | | | |
| Bulldozing | | | | | | |
| Crosscutting | | | | | | |
| Drifting | [illegible] | | [illegible] | | | |
| | | | | | | |
| (2) Labor and Supervision: | | 1,300.00 | | | | |
| Labor | | | | | | |
| Supervision | | | | | | |
| Technical Services | | | | | | |
| (3) Operating Mat'ls. and Supplies: | | | | | | |
| Timber | | | | | | |
| Explosives | | | | | | |
| Pipe | | | | | | |
| Track | | | | | | |
| | | | | | | |
| | | | | | | |
| (4) Operating Equipment: | | | | | | |
| Rental | | | | | | |
| Purchase | | | | | | |
| Depreciation | | | | | | |
| (5) Initial Rehabilitation and Repairs | | | | | | |
| (6) New Bldgs., Improvements, etc. | | | | | | |
| (7) Miscellaneous: | | | | | | |
| Repairs to Equipment | | | | | | |
| Sampling and Analysis | | | | | | |
| Payroll Taxes | | | | | | |
| Liability Insurance | | | | | | |
| | | | | | | |
| | | | | | | |
| (8) Contingencies (specify): | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| TOTALS | [illegible] | 1,300.00 | [illegible] | 2,000.00 | 1,300.00 | 3,300.00 |

I certify that the above bill is correct and just and that payment therefor has not been received.

Date [illegible] *Payee Jaquays Mining Corp.

Per [illegible] Title [illegible]

*When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary," or "Treasurer," as the case may be.

NOTE.—Title 18, U. S. Code (Crimes), section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

(Instructions on reverse)

Pursuant to authority vested in me, I certify that this account is correct and proper for payment in the amount of:

$1800.00

Signature [illegible]
(Authorized Certifying Officer)

Date 12/16/53 Vou. No. DMA 54-59

(See other side)

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. Idm-E589 in accordance with the terms of the contract.

Signature Robert H. Agta WRB Title Mining Engineer Date 12/8/53

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE: R.D.B.

Signature W. L. Ring Title Executive Officer Date DEC 11 1953

# MONTHLY REPORT OF OPERATOR

The Operator (Contractor) of an exploration project is required to make a monthly report to the Government through the Regional Executive Officer. This report consists of three parts as follows:

(a) *Form MF-104—Operator's Monthly Report and Voucher.*—This form details expenditures and constitutes a voucher for reimbursing the Operator for the Government's share of costs;

(b) *Form MF-104A—Operator's Unit Cost and Progress Report.*—This is a statistical report of expenditures which shows costs for the various types of operation; and

(c) *Narrative.*—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered must be furnished as an attachment to this Report and Voucher. Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

The Monthly Report of Operator should be prepared in an original and four copies all of which must be sent to the Executive Officer of the Region not later than the 15th of the month following.

*Preparation of Form MF-104—Operator's Monthly Report and Voucher.*—All the applicable spaces in Form MF-104 should be filled in by the Operator, and the Operator or his agent should sign the certification in the lower left corner of the form.

The items of costs are arranged in the order they appear in Article 6 (a) of Form MF-200 (Revised February 1952), however, this form is readily adaptable for use in reporting activities under other contract forms.

Under Item (1) delete words "Short Form" if the contract is a sub-contract under Form MF-200; and delete word "Independent" if the contract reported is on Form MF-200 (A). Also, report work paid for on a unit basis under contract Form MF-200 as though it were performed under an independent contract.

Under Item (2) include labor, supervision and technical services incurred for the exploratory operations. Do not include labor, supervision and technical services used for work performed under items (5) and (6).

Under Item (3) include the costs of material and supplies used in the project other than that used under items (5) and (6).

Under Item (4) appear the three types of operating equipment expenditures, that is, rental, purchase and depreciation. The expenditures made for renting equipment belonging to a third party will be reported under "Rental". The amount paid or duly obligated for payment for the purchase of equipment will be reported under "Purchase". The amount of expenditures due the Operator to reimburse him for depreciation of equipment owned will be reported under "Depreciation".

Item (5) comprises costs of labor, supervision, technical services, materials, etc., which are used in the initial rehabilitation and repair of existing buildings, installations, fixtures, and equipment. These costs, therefore, should not be reported under items (2) and (3).

Item (6) includes the labor, supervision, technical services, materials, etc., used in the installation or construction of new buildings, fixed improvements, etc., necessary for the project. These costs, therefore, should not be reported under items (2) and (3).

Item (7) covers miscellaneous types of expenditure such as payroll taxes, liability insurance, workmen's compensation insurance, repairs to equipment and sampling and analysis. Only that part of payroll taxes, liability insurance and workmen's compensation which are paid by the operator should be reported under item (7). The share paid by the employee as a payroll deduction is to be included under item (2) as labor costs.

Item (8) includes any unforeseen costs not included in the other seven categories.

The original of Form MF-104 when submitted for reimbursable expenses incurred under contract Form MF-200 must be supported by original documentation or by certified copies of purchase orders, payrolls or transcripts of payrolls, unless such documentation has been waived by the Regional Executive Officer. This certification may be stated thus, "Certified True Copy (or Transcript)", followed by appropriate signature. If the Executive Officer of the Region determines that a contract under Form MF-200 should have an "on-site" audit, that is, a Government auditor should make an audit of the Operator's books and records of account, the Operator need not support his monthly voucher with original or certified documents except in cases of equipment purchases whose individual costs exceed $50.00. In these cases the original or a certified copy of the purchase order or invoice should be attached to the Monthly Voucher. N. B.—Only the *original* of Form MF-104 is required to be documented. The four copies of Form MF-104 are not to be thus supported.

Form MF-104 submitted for reimbursement under fixed price contracts on Form MF-200 (A), however, are not required to be supported by documentation of any kind. The Operator will submit his claim under item (1) of Form MF-104 by deleting as stated above the word "Independent" and by showing the number of feet or other units immediately after the appropriate descriptive word, such as, drilling, bulldozing, crosscutting, drifting, etc., and giving the "Monthly Total" amount due. "Totals Previously Reported", and "Totals to Date" columns should also be filled in.

GPO 83-38476

Form MF-104A
(April 1952)

Budget Bureau No. 42-R1151.1
Approval expires 6-30-53.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN - 6 1954

# UNITED STATES
# DEPARTMENT OF THE INTERIOR

## DEFENSE MINERALS EXPLORATION ADMINISTRATION

# OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of November 1953 Docket No. DMEA 2507 Contract No.
Operator's Name Jaquays Mining Corp. Minerals [illegible]
Address [illegible]

| OPERATION | Unit | Costs This Month | Units This Month | Costs to Date | Units to Date | Unit Costs to Date | Authorized by Contract: Units | Authorized by Contract: Unit Costs |
|---|---|---|---|---|---|---|---|---|
| Drifting | feet | 3,000.00 | | | | | | |
| Crosscutting | | | 100 | 3,000.00 | 168 | 20.00 | 1000 | 20.00 |
| Raising | | | | | | | 500 | 20.00 |
| Shafts | | | | | | | | |
| Winzes | | | | | | | | |
| Drilling: Core | | | | | | | | |
| Churn | | | | | | | | |
| Auger | | | | | | | | |
| Stripping | | | | | | | | |
| Trenching | | | | | | | | |
| Test Pits | | | | | | | | |
| Roads and Trails | | | | | | | | |
| Total Distributed Costs | | 3,000.00 | 100 | 3,000.00 | | | | Total Costs Authorized by Contract |
| Operating Equipment Purchased | | | | | | | | |
| Initial Rehabilitation and Repairs | | | | | | | | |
| New Buildings, Improvements, etc. | | | | | | | | |
| Total Costs | | 3,000.00 | | 3,000.00 | | | | 30,000.00 |

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this report is correct and complete to the best of their knowledge and belief.

Remarks:

Date Dec. 4, 1953 Operator Jaquays Mining Corp.

Per [signature] Title President

NOTE.—Title 18, U. S. Code (Crimes), section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

(Instructions on reverse)

(For Government use only)

## INSTRUCTIONS

*Preparation of Form MF–104A—Operator's Unit Cost and Progress Report.*—Applicable places on Form 104A should be filled in by the Operator. The purpose of this form is twofold as follows: (1) to furnish the supervising engineers and other administrators with statistical information necessary to better determine the progress of the project; and (2) to furnish more permanent information on mining costs for future use. The more important phases of operation on which permanent information is desired have been outlined in the form. There are blank lines, however, for those unusual phases which may need to be reported for a particular project. It will be necessary for the Operator to distribute his costs among the applicable phases reported with the exception of three items the costs of which are not to be distributed by the Operator. These three items are: "Operating Equipment Purchased", "Initial Rehabilitation and Repairs", and "New Buildings, Improvements, etc." The reason for not distributing these items on a monthly basis is doubtless clear to the Operator, since such distribution might well overstate the cost for any one month or period short of the entire contract period.

Form MF–104A has been designed to tie in with Form MF–104 for both monthly and cumulative costs. The "Total Costs" on Form MF–104A for each month should equal the monthly "Total Costs" as reported on Form MF–104. This is also true of the "Total Costs To Date".

In preparing Form MF–104A, it will be necessary frequently to distribute certain costs over a number of items. For instance, supervisory and engineering costs may have to be distributed over several phases, such as, drifting, crosscutting, raising, etc., provided that these items were reported active for the month. Such distributions should be made on the basis of time spent on the various phases, on man days of labor charged to such phases, or on some other equitable basis. "Operating Equipment", "Initial Rehabilitation and Repairs", and "New Buildings Improvements, etc.", will be distributed to the several phases of the project by the Washington Office of DMEA at the close of the project if determined necessary. The last two columns headed "Authorized by Contract" will be filled in by the Operator if such information is found in the contract. This information is usually a part of Exhibit "A" of the contract. A space for remarks has been provided for the use of the Operator to call attention to any unusual circumstances causing excessive or disproportionate unit costs.

GPO 83-38475

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

Defense Minerals Administration
RECEIVED
NOV 23 1953

224 New Customhouse
Denver 2, Colorado

November 18, 1953.

Memorandum

To: Secretary to the Operating Committee

From: Executive Officer, DMEA Field Team, Region IV

Subject: Form MF-104 - DMEA Docket 2867, Contract Idm-E589 (Asbestos), Jaquays Mining Corp.'s Regal Asbestos Mine, Gila County, Arizona.

Enclosed are two copies of the Operator's Monthly Progress Report, Form MF-104 and MF-104A, Operator's Narrative Report, Inspecting Engineer's Narrative Report, and other supporting data for the month of October 1953, pertaining to DMEA Docket 2867, Contract Idm-E589 (Asbestos), Jaquays Mining Corp.'s Regal Asbestos Mine, Gila County, Arizona.

J. W. Townsend
For W. H. King

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

November 10, 1953.

Memorandum

To: T. A. Christensen

From: Executive Officer, DMEA Field Team, Region IV

Subject: DMEA Docket 2867, Contract Idm-E589 (Asbestos), Jaquays Mining Corp.'s Regal Asbestos Mine, Gila County, Arizona. Operator's Monthly Progress Report for the period October 1953.

Enclosed are the original and four copies of Form MF-104 and MF-104A, Narrative Report, and Engineer's Report for the above period.

Work has been completed as authorized by the contract. No documentation is required for work performed under contracts prepared on Form MF-200A, therefore we recommend that payment be made for 90 per cent of the amount reported by the Operator on Form MF-104, contingent on your verification of arithmetical accuracy within the report.

Remarks:

| | |
|---|---|
| Date of Report | November 1, 1953. |
| Date Received in Field Office | November 2, 1953. |
| Date Received in Region Office | November 9, 1953. |

W. H. King

W. H. King

Enclosures

RDB:cwm

cc: Contract
Secretary to the Oper. Comm. (2)
WRStorms
Chron.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 23 1953

MINING DIVISION
REGION IV

November 6, 1953

Memorandum

To : W. H. King, Chief, Mining Division, Region IV

From : Chief, Mining Methods Br., Mining Div., Region IV

Subject : October 1953 Progress Report, Contract Idm-E589, Docket DMEA-2867, Jaquays Mining Corp.'s Regal Asbestos Mine, Gila County, Ariz.

Enclosed in quintuplicate are

(1) Bureau of Mines engineer's report;

(2) Operator's narrative report with map;

(3) Forms MF-104 and MF-104A.

Also enclosed are two extra copies of our engineer 's report.

As all work is in accordance with the terms of the contract, I recommend that the Government's share of the costs be paid.

Walter R. Storms

Walter R. Storms

CC W. H. King (6)
DMEA-2867
DF

WRStorms:frj

MINING DIVISION
REGION IV

November 6, 1953

Memorandum

To : Walter R. Storms, Chief, Mining Methods Br., Mining Div., Region IV, Tucson, Ariz.

From : Robert W. Ageton, Mining Engineer, Tucson, Ariz.

Subject : Monthly progress report, October 1953, Docket RMEA-2867, Contract Idm-E589, Jaquays Mining Corporation, Regal Mine, Gila County, Ariz.

In accordance with your request, the subject property was visited on November 4, 1953. Work under the contract started on October 1, 1953. During the month the crosscut entry was advanced 65 feet. To date the ore marker (locally called the "Oscar") has not appeared in the drift, but it may be exposed within the next 50 feet of advance. So far, as was expected in this area, only one thin discontinuous fiber veinlet has been exposed by the exploration work.

Since the 65 feet of advance is in accordance with the terms of the contract, it is recommended that the Governments share of the cost of this work be paid.

Robert W. Ageton, Mining Engineer
Mining Methods Branch
Mining Division, Region IV

CC W. H. King (Orig. & 6)
RMEA-2867
BF

RWAgeton:frj

*Regal Mine* *Globe Mill* *Canadian Mine*

# JAQUAYS MINING CORP.

*Producers of Fine Arizona Asbestos*

1219 South 19th Avenue

PHOENIX, ARIZONA

Bureau of Mines
RECEIVED
NOV 23 1953

November 1, 1953

NARRATIVE REPORT TO ACCOMPANY
Forms MF 104 and 104-A
For October, 1953
Regal Mine

Drifting due East at the new tunnel site was started October 1,1953. The drift was started at an elevation of 483 feet or about 2 feet above the blue ore marker. It is expected from the indicated dip of the ore zone that the ore will raise into the floor of the drift at about 100 feet from the start of the drift.

During the month of October 65 feet of new drifting was done on the D.M.E.A. contract. It is expected that well over 100 feet of new drift will driven each month from now on.

Jaquays Mining Corporation

By D. W. Jaquays
D. W. Jaquays President

Form MF-104 (Rev.)
(April 1952)

Budget Bureau No. 42-R1036.3.
Approval expires 6-30-53.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

# OPERATOR'S MONTHLY REPORT AND VOUCHER

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 23 1953

Month of Oct., 1953 Docket No. DMEA 2867 Contract No. IDM 2-5453
Operator's Name Jaquays Mining Corp. Minerals Asbestos
Address 1219 S. 19th Ave. Phoenix, Arizona
Contract Amount, $ 26,000.00 Government Participation: 90 % Amount, $ 23,400.00

| ITEMS OF COSTS | FOR OPERATOR'S USE | | | FOR GOVERNMENT USE ONLY | | |
|---|---|---|---|---|---|---|
| | Monthly Total | Totals Previously Reported | Totals To Date | Approved Monthly Total | Approved Totals Previously Reported | Approved Totals To Date |
| (1) Independent Short Form Contracts: | | | | | | |
| Drilling | | | | | | |
| Bulldozing | | | | | | |
| Crosscutting | | | | | | |
| Drifting | $1300.00 | None | 1300.00 | | | |
| (2) Labor and Supervision: | | | | | | |
| Labor | | | | | | |
| Supervision | | | | | | |
| Technical Services | | | | | | |
| (3) Operating Mat'ls. and Supplies: | | | | | | |
| Timber | | | | | | |
| Explosives | | | | | | |
| Pipe | | | | | | |
| Track | | | | | | |
| (4) Operating Equipment: | | | | | | |
| Rental | | | | | | |
| Purchase | | | | | | |
| Depreciation | | | | | | |
| (5) Initial Rehabilitation and Repairs | | | | | | |
| (6) New Bldgs., Improvements, etc. | | | | | | |
| (7) Miscellaneous: | | | | | | |
| Repairs to Equipment | | | | | | |
| Sampling and Analysis | | | | | | |
| Payroll Taxes | | | | | | |
| Liability Insurance | | | | | | |
| (8) Contingencies (specify): | | | | | | |
| TOTALS | 1300.00 | None | 1300.00 | 1300.00 | - | 1300.00 |

I certify that the above bill is correct and just and that payment therefor has not been received.

Date Nov. 1, 1953 *Payee Jaquays Mining Corp.
Per [signature] Title President

*When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary," or "Treasurer," as the case may be.

NOTE.—Title 18, U. S. Code (Crimes), section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

(Instructions on reverse)

Pursuant to authority vested in me, I certify that this account is correct and proper for payment in the amount of:

$ 1170.00

Signature [signature]
(Authorized Certifying Officer)

Date 11/13/53 Vou. DMA 54-47
(See other side)

(For Government use only)

CERTIFICATION BY GOVERNMENT REPRESENTATIVE:

I certify that to the best of my knowledge and belief the contractor submitting this voucher is operating a Defense Minerals Exploration Administration project under Contract No. Idm-4589 in accordance with the terms of the contract.

Signature Robert L. Clifton WRF Title Mining Engineer Date 11/5/53

APPROVAL BY DMEA EXECUTIVE OFFICER OR ALTERNATE: R.D.B.

Signature W. H. King Title Executive Officer Date NOV 10 1953

# MONTHLY REPORT OF OPERATOR

The Operator (Contractor) of an exploration project is required to make a monthly report to the Government through the Regional Executive Officer. This report consists of three parts as follows:

(a) *Form MF-104—Operator's Monthly Report and Voucher.*—This form details expenditures and constitutes a voucher for reimbursing the Operator for the Government's share of costs;

(b) *Form MF-104A—Operator's Unit Cost and Progress Report.*—This is a statistical report of expenditures which shows costs for the various types of operation; and

(c) *Narrative.*—A concise narrative description of progress made, results accomplished, and any unusual difficulties encountered must be furnished as an attachment to this Report and Voucher. Wherever possible, the narrative is to be illustrated with maps or sketches showing formations penetrated and location and assays of samples taken as well as advances in workings. In the case of diamond drilling or churn drilling, the location and inclination of holes is to be shown on a map; logs and assays also are to be submitted.

The Monthly Report of Operator should be prepared in an original and four copies all of which must be sent to the Executive Officer of the Region not later than the 15th of the month following.

*Preparation of Form MF-104—Operator's Monthly Report and Voucher.*—All the applicable spaces in Form MF-104 should be filled in by the Operator, and the Operator or his agent should sign the certification in the lower left corner of the form.

The items of costs are arranged in the order they appear in Article 6 (a) of Form MF-200 (Revised February 1952), however, this form is readily adaptable for use in reporting activities under other contract forms.

Under Item (1) delete words "Short Form" if the contract is a sub-contract under Form MF-200; and delete word "Independent" if the contract reported is on Form MF-200 (A). Also, report work paid for on a unit basis under contract Form MF-200 as though it were performed under an independent contract.

Under Item (2) include labor, supervision and technical services incurred for the exploratory operations. Do not include labor, supervision and technical services used for work performed under items (5) and (6).

Under Item (3) include the costs of material and supplies used in the project other than that used under items (5) and (6).

Under Item (4) appear the three types of operating equipment expenditures, that is, rental, purchase and depreciation. The expenditures made for renting equipment belonging to a third party will be reported under "Rental". The amount paid or duly obligated for payment for the purchase of equipment will be reported under "Purchase". The amount of expenditures due the Operator to reimburse him for depreciation of equipment owned will be reported under "Depreciation".

Item (5) comprises costs of labor, supervision, technical services, materials, etc., which are used in the initial rehabilitation and repair of existing buildings, installations, fixtures, and equipment. These costs, therefore, should not be reported under items (2) and (3).

Item (6) includes the labor, supervision, technical services, materials, etc., used in the installation or construction of new buildings, fixed improvements, etc., necessary for the project. These costs, therefore, should not be reported under items (2) and (3).

Item (7) covers miscellaneous types of expenditure such as payroll taxes, liability insurance, workmen's compensation insurance, repairs to equipment and sampling and analysis. Only that part of payroll taxes, liability insurance and workmen's compensation which are paid by the operator should be reported under item (7). The share paid by the employee as a payroll deduction is to be included under item (2) as labor costs.

Item (8) includes any unforeseen costs not included in the other seven categories.

The original of Form MF-104 when submitted for reimbursable expenses incurred under contract Form MF-200 must be supported by original documentation or by certified copies of purchase orders, payrolls or transcripts of payrolls, unless such documentation has been waived by the Regional Executive Officer. This certification may be stated thus, "Certified True Copy (or Transcript)", followed by appropriate signature. If the Executive Officer of the Region determines that a contract under Form MF-200 should have an "on-site" audit, that is, a Government auditor should make an audit of the Operator's books and records of account, the Operator need not support his monthly voucher with original or certified documents except in cases of equipment purchases whose individual costs exceed $50.00. In these cases the original or a certified copy of the purchase order or invoice should be attached to the Monthly Voucher. N. B.—Only the *original* of Form MF-104 is required to be documented. The four copies of Form MF-104 are not to be thus supported.

Form MF-104 submitted for reimbursement under fixed price contracts on Form MF-200 (A), however, are not required to be supported by documentation of any kind. The Operator will submit his claim under item (1) of Form MF-104 by deleting as stated above the word "Independent" and by showing the number of feet or other units immediately after the appropriate descriptive word, such as, drilling, bulldozing, crosscutting, drifting, etc., and giving the "Monthly Total" amount due. "Totals Previously Reported", and "Totals to Date" columns should also be filled in.

GPO 83-38476

Form MF-104A
(April 1952)

Budget Bureau No. 42-R1151
Approval expires 6-30-53.

DEPARTMENT OF DEFENSE MINERALS REC. NOV 23 1953

# UNITED STATES
# DEPARTMENT OF THE INTERIOR

## DEFENSE MINERALS EXPLORATION ADMINISTRATION

# OPERATOR'S UNIT COST AND PROGRESS REPORT

Month of October 1953 Docket No. DMEA 2867 Contract No. DM E-589
Operator's Name Jaquays Mining Corp. Minerals Abestos
Address 1219 S. 19th Ave., Phoenix, Arizona

| OPERATION | UNIT | COSTS THIS MONTH | UNITS THIS MONTH | COSTS TO DATE | UNITS TO DATE | UNIT COSTS TO DATE | AUTHORIZED BY CONTRACT Units | AUTHORIZED BY CONTRACT Unit Costs |
|---|---|---|---|---|---|---|---|---|
| Drifting | Feet | 1300.00 | 65 | $1300.00 | 65 | $20.00 | 1000 | $20.00 |
| Crosscutting | | | | | | | | |
| Raising | | | | | | | 300 | $20.00 |
| Shafts | | | | | | | | |
| Winzes | | | | | | | | |
| Drilling: Core | | | | | | | | |
| Churn | | | | | | | | |
| Auger | | | | | | | | |
| Stripping | | | | | | | | |
| Trenching | | | | | | | | |
| Test Pits | | | | | | | | |
| Roads and Trails | | | | | | | | |
| TOTAL DISTRIBUTED COSTS | | 1300.00 | 65 | 1300.00 | | | | TOTAL COSTS AUTHORIZED BY CONTRACT |
| Operating Equipment Purchased | | | | | | | | |
| Initial Rehabilitation and Repairs | | | | | | | | $26,000.00 |
| New Buildings, Improvements, etc. | | | | | | | | |
| TOTAL COSTS | | 1300.00 | | 1300.00 | | | | |

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this report is correct and complete to the best of their knowledge and belief.

Date Nov. 1, 1953 Operator Jaquays Mining Corp.

Per D. H. Jaquays Title President

NOTE.—Title 18, U. S. Code (Crimes), section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

REMARKS:

(Instructions on reverse)

(For Government use only)

## INSTRUCTIONS

*Preparation of Form MF-104A—Operator's Unit Cost and Progress Report.*—Applicable places on Form 104A should be filled in by the Operator. The purpose of this form is twofold as follows: (1) to furnish the supervising engineers and other administrators with statistical information necessary to better determine the progress of the project; and (2) to furnish more permanent information on mining costs for future use. The more important phases of operation on which permanent information is desired have been outlined in the form. There are blank lines, however, for those unusual phases which may need to be reported for a particular project. It will be necessary for the Operator to distribute his costs among the applicable phases reported with the exception of three items the costs of which are not to be distributed by the Operator. These three items are: "Operating Equipment Purchased", "Initial Rehabilitation and Repairs", and "New Buildings, Improvements, etc." The reason for not distributing these items on a monthly basis is doubtless clear to the Operator, since such distribution might well overstate the cost for any one month or period short of the entire contract period.

Form MF-104A has been designed to tie in with Form MF-104 for both monthly and cumulative costs. The "Total Costs" on Form MF-104A for each month should equal the monthly "Total Costs" as reported on Form MF-104. This is also true of the "Total Costs To Date".

In preparing Form MF-104A, it will be necessary frequently to distribute certain costs over a number of items. For instance, supervisory and engineering costs may have to be distributed over several phases, such as, drifting, crosscutting, raising, etc., provided that these items were reported active for the month. Such distributions should be made on the basis of time spent on the various phases, on man days of labor charged to such phases, or on some other equitable basis. "Operating Equipment", "Initial Rehabilitation and Repairs", and "New Buildings Improvements, etc.", will be distributed to the several phases of the project by the Washington Office of DMEA at the close of the project if determined necessary. The last two columns headed "Authorized by Contract" will be filled in by the Operator if such information is found in the contract. This information is usually a part of Exhibit "A" of the contract. A space for remarks has been provided for the use of the Operator to call attention to any unusual circumstances causing excessive or disproportionate unit costs.

GPO 83-38475

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

Defense Minerals Administration
RECEIVED
OCT - 8 1953

224 New Customhouse
Denver 2, Colorado

October 5, 1953

Memorandum

To: Chairman, Operating Committee
Defense Minerals Exploration Administration

From: Executive Officer, DMEA Field Team, Region IV

Subject: Contract Idm-E589, Docket DMEA 2867, Jaquays Mining Corporation, Regal Asbestos Mine, Gila County, Arizona

Enclosed are two copies of a memorandum dated September 29, 1953, from the Chief, Mining Methods Branch, Mining Division, Region IV, in reply to your letter dated September 21, 1953.

W. H. King

W. H. King

Enclosures

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
OCT - 8 1953

MINING DIVISION
REGION IV

September 29, 1953

Memorandum

To : W. H. King, Chief, Mining Division, Region IV

From : Chief, Mining Methods Br., Mining Div., Region IV

Subject : Contract Idm-8589, Docket DMEA-2867, Jaquays Mining Corp.'s Regal Asbestos Mine, Gila County, Ariz.

In answer to your memorandum of September 25, with copy of a letter from the DMEA Operating Committee, asking for reasons why a crosscut was proposed to reach the ore zone instead of drifting from the present mine, I believe this is explained very fully in the Engineering Report by L. A. Stewart on pages 5 to 10, inclusive. As explained by Stewart, two methods of exploration were suggested, one to drift southward from the present mine workings with crosscuts at two places, and the other to crosscut into the hill on the ore zone, then drift as shown on figure 3 of the Engineering Report. Both Stewart of the Bureau of Mines and A. F. Shride of the Geological Survey favored the latter, or crosscutting plan, as it was cheaper, safer, and thought to be better. As explained by Stewart on page 8, the present mine haulageway is poorly graded with one drop in grade of seven feet in 260 feet, making it necessary to use two trammers to push a car. The ventilation also is very bad in the south end of the mine. The applicant and the Bureau engineer estimated that costs for drifting from the present workings would be $27.50 a foot, with a total cost for the project of $30,250, compared with a cost of $20 a foot for the crosscut plan, with a total cost of $26,000. On page 11, Stewart states: "The examiners favor Plan 2, ie, starting the exploration drift from the surface. If a sizable deposit is found, it can be considered as a new mine unit. Proper tramming grades can be established and ventilation will not be a serious problem, particularly after connection is made to the old workings. The saving in cost, as well as safety considerations, favor this plan. Workers within the mine will have an additional exit of escape".

Walter R. Storms

Walter R. Storms

CC W. H. King (6)
DMEA-2867
DF

WRStorms:frj

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

October 5, 1953

Memorandum

To: Chairman, Operating Committee
Defense Minerals Exploration Administration

From: Executive Officer, DMEA Field Team, Region IV

Subject: Jaquays Mining Corporation, Docket DMEA 2867, Contract Idm-E589; U. S. Metals Corporation, Docket DMA 1870, Contract Idm-E309

A letter dated August 3, 1953, from the Chairman of the Operating Committee relative to Contract Idm-E309, contains the following:

"There are certain objections to the work program as proposed by the Operator. If the drifting was carried out to point "K" in the manner suggested, the tramming distance from point "K" to portal would be some 3,500 feet, with four right angle turns. Tramming would inevitably be laborious and costly. Furthermore, since all drifting would be done in shear zones, it is expected that work of level maintenance would be a major item. Truly, such an extended drifting program, though without a definite target except for the Blackstone and Lark ore zones, might have a certain exploratory value of a blind nature, yet we cannot feel justified in subscribing to a program of this size in view of its indefinite character."

A letter dated September 21, 1953, from the Chairman of the Operating Committee relative to contract Idm-E589 contains the following:

"The work outlined in the contract appears to be more development and preparation for mining rather than exploration. Would the driving of the south face south 200 feet to explore the possible target instead of crosscutting approximately 300 feet, and then drifting north 200 feet to make a connection be more feasible? The proposed work is well planned from the operating point of view but it is generally better in exploratory programs to ignore the future usefulness of crosscuts in barren rock and locate the exploratory openings in the ore zone. Primarily the objective should be to obtain the maximum information

at a minimum of cost even though new openings may have to be excavated later for efficient mining operation. It is suggested that you consult with the applicant in order to keep exploratory work in the ore horizon as much as possible."

In the case of Contract Idm-E309 we advocated drifting in the shear zones because the ore would be in the shear zones. For the most part, these shear zones are silicified and stand without support. Maintenance would be the responsibility of the operator.

In the case of Contract Idm-E589, it would be impossible to drift in the ore horizon because the limestone bedding is distorted and the transverse and longitudinal undulations would make tramming exceedingly difficult if not impossible. It was therefore decided that the exploratory drifts should be driven below the ore horizon, and supplemented with raises.

W. H. King

W. H. King

Copy to: A. H. Koschmann
J. F. Shaw

140

FILE COPY
SURNAME:

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

Houk
Chambers
AEKane
Rubin
Chamberlin
Selfridge
Hofflund

Rewritten by:

OCT - 5 1953

Mr. W. H. King
Executive Officer, DMEA
Field Team, Region IV
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-2867
(Asbestos)
Jaquays Mining Corporation
Regal Mine
Gila County, Arizona
Contract No. Idm-E589

Dear Mr. King:

Reference is made to your letter of September 25, 1953, regarding amending the contract to include the annex for payment of royalty to the Government during the period of the exploration contract.

As the contract has been executed without the annex, we should not attempt to amend the contract now to include it. However, on the first occasion the contract is amended for any other reason, then the annex should be made a part thereof.

We shall be pleased to receive the field office comments on the work outline.

Sincerely yours,

George C. Selfridge

Chairman, Operating Committee (GCS)

Approved:

J. H. Hedges (GCS)
Member, Bureau of Mines

T. P. Thayer (GCS)
Member, Geological Survey

LGHouk:HCRubin:ep 10-2-53

Copy to: Mails & Files
Admr. Reading File
Operating Committee
Dr. Bowles, B/M Rm.3520
Mr. Larrabee, USGS, G-232 GSA Bldg.
Mr. Houk
Mr. Hofflund
Mr. Rubin
Chron
Pending

R. C. G. 10-5-53

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

Department of the Interior
Defense Minerals Administration
RECEIVED
SEP 28 1953

224 New Customhouse
Denver 2, Colorado

September25, 1953

Memorandum

To: Chairman of the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket No. DMEA 2867, Contract No. Idm-E589, Jaquays Mining Corp.

Reference is made to your letter dated September 21, 1953, regarding Contract Idm-E589. This contract was forwarded to the Operator for signature on August 3, 1953. This was prior to our receiving the letter dated August 3, 1953 from the Operating Committee to which you referred in your letter.

We were not notified that this annex was in effect at the time this contract was submitted to the Operator for signature. In view of this, please advise us if you still believe it desirable to amend the contract to include this annex.

Your question regarding the work outlined in the contract has been referred to our Field Office for their comments.

W. H. King

W. H. King

FILE COPY
SURNAME 913

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

600

SEP 21 1953

Houk
G. Selfridge
J. Gardner

Mr. W. H. King
Executive Officer, DMEA
Field Team, Region IV
Bureau of Mines
224 New Customhouse Bldg.
Denver 2, Colorado

Subject: Docket No. DMEA-2867 - Asbestos
Jaquays Mining Corporation
Regal Mine
Gila County, Arizona
Contract No. Idm-E589

Dear Mr. King:

Reference is made to the subject contract executed in Region IV.

Please note the letter of August 3, 1953, from the Operating Committee to you on attaching the annex which gives the Government the right to royalty on all production during the life of the contract. In our copy of the subject contract you have neglected to add this annex. Please take steps to rectify this omission, if the annex has not been attached to all copies of the contract.

The work outlined in the contract appears to be more development and preparation for mining rather than exploration. Would the driving of the south face south 200 feet to explore the possible target instead of crosscutting approximately 300 feet, and then drifting north 200 feet to make a connection be more feasible? The proposed work is well planned from the operating point of view but it is generally better in exploratory programs to ignore the future usefulness of crosscuts in barren rock and locate the exploratory openings in the ore zone. Primarily the objective should be to obtain the maximum information at a minimum of cost even though new openings may have to be excavated later for efficient mining operation. It is suggested that you consult with the applicant in order to keep exploratory work in the ore horizon as much as possible.

Please forward copies of field team reports with the copies of contracts executed by you when sending such contracts to Washington.

Sincerely yours,

George C. Selfridge (2/B)
Chairman, Operating Committee

Approved:

Noted: J. H. Hedges (2/B)
Member, Bureau of Mines

A. R. Kinkel, Jr. (2/B)
Member, Geological Survey

LGHouk:gad 9/16/53
Copy to: Admr. R. File
Docket File
Operating Committee
Mr. Larrabee, G-232 GSA Bldg.
Dr. Bowles, 3520
Mr. Houk

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 8 - 1953

224 New Customhouse
Denver 2, Colorado

September 3, 1953

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Final Report, Docket No. DMEA 2867 (Asbestos)
Contract Idm-E589, Jaquays Mining Corporation,
Regal Asbestos Mine, Gila County, Arizona

Enclosed are four copies of the final report on Docket No. DMEA 2867. A contract has been prepared and is in effect.

W. H. King
W. H. King

Enclosures

913

On-Site Exam Rpt.

Reviewed by
DMEA OPERATING COMMITTEE
9-11-53
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 8 - 1953

Mining Division
Region IV

June 4, 1953.

Memorandum

To: Field Team, Region IV

From: Chief, Mining Division, Region IV

Subject: Final Report, DMEA Docket 2867 (Asbestos), Jaquays Mining Corporation, Gila County, Arizona.

Enclosed are nine copies of the final engineering report on the subject docket.

The applicant submitted two proposals at a total cost of $30,250.00 and $26,000.00 respectively. The examining engineer is in agreement with the plan to explore the south end of the mine and recommends drifting and crosscutting in the amount of $26,000.00, Government participation $23,400.00.

We concur in this recommendation.

W. H. King
W. H. King

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
9-11-53
(date)

MINING DIVISION
REGION IV

April 7, 1953

Memorandum

To : W. H. King, Chief, Mining Division, Region IV

From : Chief, Mining Methods Branch, Mining Div., Region IV

Subject : Docket DMEA-2367, Regal Asbestos Mine, Jaquays Mining Corp., Gila County, Ariz.

Enclosed are original and 3 copies of the section on Summary, Conclusions and Recommendations by L. A. Stewart of the Bureau of Mines and A. F. Shride of the Geological Survey, and the section on Engineering by Stewart for the above report. A separate section on Geology will be submitted by the Geological Survey.

As there seems an excellent chance of discovering additional asbestos of strategic grade by this exploration work, the DMEA examiners recommend a loan. I concur with their recommendations.

Brochure ~~xxxxxxxxxx~~ will be submitted by the Geological Survey.

Walter R. Storms

Walter R. Storms

CC: W. H. King (8)
A. F. Shride
DMEA-2367
DF

WRStorms:als

Reviewed by
DMEA OPERATING COMMITTEE
9-11-53
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

200 New Customhouse
Denver 2, Colorado

June 1, 1953

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 2867, Regal Mine, Jaquays Mining Corporation, Gila County, Arizona. Asbestos.

Enclosed are the original and 8 copies of the geologic report by A. F. Shride of the U. S. Geological Survey covering the above docket.

It has been recommended that the application be approved with some modifications dealing with the exploration program. The second paragraph of Mr. Robinson's transmittal letter should be noted.

The brochure is enclosed.

A. H. Koschmann
A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (10)

Reviewed by
DMEA OPERATING COMMITTEE
9-11-53
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P.O.Box 4126, University Station
Tucson 5, Arizona

May 29, 1953

Memorandum

To: A. H. Koschmann, Denver, Colorado

From: Raymond F. Robinson, Tucson, Arizona

Subject: Geologic Report, DMEA 2867, Regal Mine, Jaquays Mining Corporation, Gila County, Arizona (Asbestos)

Enclosed are the original and 8 copies of the above report by A. F. Shride of the Geological Survey.

The exploration proposed is for one of the most likely areas for asbestos known to the Geological Survey. The exploration plan requires, because of geologic factors, some modification. Therefore, your attention is called to the section of this report entitled "Exploration Plan."

In connection with DMEA 2338 (Contract Idm-8479) a confidential memorandum concerning this applicant was prepared. The validity of this memorandum has been demonstrated by the applicant's management in connection with the above contract. A like memorandum would be justified for DMEA 2867.

The brochure is enclosed.

Raymond F. Robinson
Raymond F. Robinson
Acting District Supervisor
Arizona-New Mexico

Enclosures 10

Reviewed by
DMEA OPERATING COMMITTEE
9-11-53
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

# DMEA-2867, Regal Asbestos Mine, Jaquays Mining Corporation

## Gila County, Arizona


Lincoln A. Stewart, Mining Engineer
U. S. Bureau of Mines

A. F. Shride, Geologist
U. S. Geological Survey


Reviewed by
DMEA OPERATING COMMITTEE

9-11-53
(date)

April 1953

## SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

By Lincoln A. Stewart[1] and A. F. Shride[2]

An application was made to the Defense Minerals Exploration Administration by the Jaquays Mining Corp. for a $26,000 loan to explore for an asbestos deposit in an area south of its Regal mine. This application, docketed as DMEA-2867, proposed 1,000 feet of drifting and 300 feet of raising.

The Regal group of 22 unpatented claims is in the Crook National Forest about 30 airmiles northeast of Globe, Gila County, Ariz. The Regal mine has produced from 4,000 to 5,000 tons of fiber, all grades, since 1918, and is the second or third largest mine in the district.

The Regal asbestos deposit is in a geologic environment known to be eminently favorable for the localization of considerable quantities of asbestos. The stratigraphic units to be explored are the most favorable in the district. Favorable folding and a considerable concentration of pre-mineral bedding-plane and thrust faulting furnish favorable loci for asbestos deposition.

The applicant, as lessee and later as owner, has operated the property since 1950 and is currently producing about 30 tons of finished fiber monthly.

The course of the Regal fault, at 200 feet in advance of the mine workings, can be intersected by a crosscut from the surface in a distance of 250 to 300 feet. The outer limits of potential ore-bearing

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1/ Mining Engineer, Bureau of Mines
2/ Geologist, U. S. Geological Survey

beds may be within half this distance. It is proposed to explore an area ahead of the old mine workings, 400 feet long and 200 feet wide, by means of 1,000 feet of drifts and crosscuts. Numerous short raises for a total of 300 feet are specified, but may or may not be required, depending on the attitude of the favorable beds. Applicant has estimated the work at $20 per foot for a total project cost of $26,000.

It is the opinion of the examiners that the proposed exploration is justified. It is thought that there are good possibilities of finding extensions of the deposit or new favorable extensions in the area south of the present workings. The fiber produced by the Regal mine has virtually all been of strategic quality and there always has been considerable quantities of the spinning grades. It is possible that this exploration work will expose significant quantities of similar fiber.

It is recommended that an exploratory loan be granted the Jaquays Mining Corp. for $26,000.

REGAL MINE
JAQUAYS MINING CORPORATION
GILA COUNTY, ARIZONA
DMEA 2867

ASBESTOS

Geology

By
A. F. Shride
Geologist, U. S. Geological Survey

REGAL MINE
JAQUAYS MINING CORPORATION
GILA COUNTY, ARIZONA
DMEA 2867

ASBESTOS

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| Figure 4 | Map of Regal Mine showing geologic structure, distribution of asbestos and proposed exploration | 1 |
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## INTRODUCTION

The Regal deposit has been one of the 6 principal asbestos producing deposits of the Arizona district. The asbestos-bearing zones parallel the beds of the host limestone as is usual for the Arizona deposits. The four principal geologic features essential to asbestos localization were well developed in the area. The stratigraphic units mineralized at the Regal mine are the units most favorable to asbestos localization. The underlying concordant diabase sill is 19 feet below the lowest favorable limestone host, thus satisfying the known requirement that diabase be in close proximity to the favorable stratigraphic units. Folds are prominent in the mineralized area; the major fold features are a dome of 40 foot vertical closure (see northern part of fig. 4), a minor syncline (see section B-B', fig. 5), and the nost of an anticline or dome (see southern part of fig. 4). The premineral bedding-plane and thrust faulting necessary to extensive deposits caused little to much small-scale shattering of the limestone adjacent to bedding planes in an area of approximately 10 acres. As geologic factors in the Regal area are very favorable to an extensive deposit, recommendations for the exploration proposal are dependent only on an appraisal as to the possible persistence of the favorable geologic factors and the feasibility of the proposed exploration plan.

The writer mapped the Regal deposit in detail in 1943 as part of a study of asbestos localization controls and periodically has observed the development of this deposit as operations progressed, so is possibly more familiar with the deposit than is the applicant, who is a recent operator in the district. Figure 4 represents a generalized version of the writer's map revised to 1946, with additions for the southern part of the deposit roughly sketched on that part of the applicant's mine map, and based on examination for the DMEA proposal.

The asbestos occurs at 3 horizons in the Regal area. One asbestos-bearing zone at the top of the lower member of the pre-Cambrian Mescal limestone is not proposed for exploration. It is proposed to explore stratigraphic units 29 and 35 feet below the top of the lower member of the limestone. These two zones, 6 feet apart, have been the most productive. The structure contours shown on figure 4 are on a marker bed $1\frac{1}{2}$ feet above the lowest zone; this marker bed is shown on the cross-sections of figure 5. Sections A-A' and B-B', figure 5, are included in this report to show the geologic structure that has been exposed by present mine workings, and details of the type of folds that might be expected in exploration.

## REGAL ASBESTOS DEPOSIT

Asbestos was particularly concentrated in the most sharply folded massive limestones of the area. Premineral bedding-plane and thrust faulting was particularly effective in causing minor shattering of the limestones in the areas of greatest folding. The major dome area of the Regal deposit and the minor synclinal area have been essentially mined out, so need no further consideration in this report.

The northern nose of an anticline or dome is exposed by the southernmost workings of the mine (see figure 4). It is this favorable structure that the applicant justifiably proposes to explore. Thrusting from the southwest caused considerable shattering of the limestones in a belt along the west and southwest flanks of the dome of the older portion of the mine. The thrust faults shown on figure 4 roughly encompass the belt of shattering and this belt coincides approximately with the zone of highest asbestos concentration. The belt of thrust faulting is known to persist south-southeast into the area proposed for exploration. If the limbs of the southern arch steepen appreciably, the belt of thrust faulting can be expected to

broaden and outline an area of considerable premineral limestone shattering favorable to a "bonanza" ore shoot of several hundred tons asbestos content. If the fold continues southward with the moderate degree of folding now observable in the southernmost mine workings - the only place the arch can be seen - a moderate degree of mineralization comparable to that seen in the present southern stope faces can be expected. In either case, exploration will likely expose significant reserves of strategic quality asbestos. If the limestone beds to the south flatten and show essentially no fold structure the ore zones now exposed in the southernmost stopes can be expected to thin to non-minable widths. From the geologic structures observed in the present exposures it can be reasonably expected that asbestos in moderate (and minable) quantities will persist for 100-150 feet south of the present workings. Therefore, even the most pessimistic appraisal would indicate that exploration of the area proposed (see fig. 4) is warranted. Abrupt termination of the asbestos-bearing limestones, without predictable indication in adjacent exposures, by a discordant diabase intrusion is always possible - as shown in many of the Arizona deposits. This possibility is not commonly predictable and should not deter exploration.

## EXPLORATION PLAN

The applicant's basic plan of exploring, by drifts, an area 400 feet long (in north-south dimension) and approximately 200 feet wide (in east-west dimension) is good. This work will explore the extension of the fold that is penetrated by the southernmost workings of the mine. The applicant's Plan 2 (his preferred plan), which entails an adit through 100 to 300 feet of barren limestone from a surface starting point should be accepted because, as outlined in the engineering report, it is technically

more feasible than the applicant's Plan 1, which would require a starting point at the southernmost mine face.

Although, from geologic criteria, the applicant's plan is basically good and well warranted, several difficulties caused by unpredictable geologic features can, and probably will, seriously impede successful completion of the exploration program, if not anticipated. Any exploration contract should be worded to allow considerable modification of the exploration program. Otherwise, much amendment of the contract may be necessary. However, because of the applicant's lack of technical discretion, a contract must not be so worded that the applicant has latitude to modify the plan to some "crackpot" scheme. Figure 4 and Section D-D', figure 5, show the most likely interpretation of the geologic structure in the area to be explored; Section C-C', figure 5, shows alternatives of structure that are reasonably expectable.

Difficulties likely to arise, dependent on the geologic structure, are:

(1) The belt of thrust faulting, which was probably the most significant factor in localizing the asbestos, trends S. 25° E. If the arch now visible is a part of a dome, the highest point of which is a few tens of feet south of the present workings (Alternative 3, section C-C', fig. 5), the belt of fracturing may "wrap-around" the south end of the dome, as for the north dome (see fig. 4). In this case as much as 550 feet (instead of 380 feet) should be allowed for the adit length.

(2) If the S. 25° E. trend of the faulted zone continues as extrapolated on figure 4, the 400 feet of drifting proposed to

the south of the adit may in large part be out of the well mineralized area. Alternative plans for drifting which would avoid this difficulty are shown on figure 4. Drifting definitely should not be started until the adit has exposed the width of the ore zones.

(3) The applicant's plan of raising to test the ore horizons is not the most satisfactory proposal. The altitude of the ore horizons, in the area to be explored, is impossible to predict from present exposures. If the adit is started at too high an altitude, it may be necessary to sink winzes to expose the ore horizons. If the adit is started too low, a large part of the adit and the drifts may be through the chilled border of the underlying diabase sill; this chilled zone is difficult to drill and break and would hinder progress of the work. The applicant proposes to start the adit in the underlying diabase sill and 60 to 100 feet from the outcrop raise through the ore horizons, then carry the adit on a normal track grade to the area most likely to contain ore. The interior part of the adit is expected by the applicant to again cross through the ore horizons about where asbestos mineralization is expected to become significant. To the east of this crossing the applicant expects to raise to the ore horizons (see section D-D'). In the fault belt, particularly, the raise method of testing the ore zones will not be as satisfactory as a continuous exposure of the zones because the asbestos content of the ore zones is likely to be extremely variable. The writer would suggest that at the point that the

interior part of the adit intersects the ore horizons the adit grade be changed to follow the ore horizons. This method is feasible as is shown by the workings around the dome at the north end of the mine, where the attitudes of the host limestones are steeper and therefore reasonable track grades more difficult to maintain than expected in the area proposed for exploration. If the adit is driven to follow the favorable horizons, drifts from this adit can be driven more effectively than on the basis of a few exposures in raises, because the geologic structure that would affect the location and direction of the drifts would be more apparent to the applicant. This is important because the applicant's understanding of the geologic structure of his mine is poor; as a result he is prone to do unnecessary "dead work."

The above problems have been discussed with the applicant. Unfortunately, the applicant cannot visualize the difficulties that might be encountered. Somewhat similar difficulties are existent in the southern part of the mine -- the mine faces active at present. As a result the applicant's poor understanding of his problems, mining efficiency is much lower than under previous management. To avoid mining problems and less effective exposure of the ore zones, the writer would strongly suggest that raising not be allowed; instead, exploration by drifting should be done in the ore zones.

## CONCLUSIONS

In view of the exceedingly favorable geologic factors the general plan proposed for the south end of the Regal mine can be enthusiastically recommended. However, the details of exploration plan are dependent on geologic structure unpredictable from present exposures. Therefore, a contract

should be written that will insure adequate exploration and will keep the exploration, which will be inadequately supervised, on a reasonable basis.

# DMEA-2867, REGAL ASBESTOS MINE, JAQUAYS MINING CORPORATION
# GILA COUNTY, ARIZONA

Engineering Report

By Lincoln A. Stewart
Mining Engineer
U. S. Bureau of Mines

April 1953

DMEA-2867, REGAL ASBESTOS MINE, JAQUAYS MINING CORPORATION
GILA COUNTY, ARIZONA

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## INTRODUCTION

An application was submitted to the Defense Minerals Exploration Administration for a $26,000 exploration loan by the Jaquays Mining Corp. for its Regal mine. This application, docketed as DMEA-2867, was received by the Tucson office of the Defense Minerals Exploration Administration on February 2, 1953. The purpose of the proposed exploration was to prospect for an ore body along a possible favorable structure about 400 feet in advance of the present mine face.

The mine has been visited by the writer at various times since 1930. The current examination was made by the writer and Robert Ageton[1/] on March 19 and 26, 1953. The last visit was made with A. F. Shride and R. F. Robinson, geologists of the Geological Survey. D. W. Jaquays was present during both visits.

For reasons to be explained later, the application has been prepared to show estimates for exploration from within the mine, and an alternative method of reaching the same goal from the surface (see Appendix). The former, called by the applicant Plan 1, specifies 800 feet of drifting and 300 feet of raising, each at $27.50 per foot for a total of $30,250. The latter alternative, Plan 2, would require 1,000 feet of drifting and 300 feet of raising, each at $20.00 per foot, for a total of $26,000.

## LOCATION AND ACCESSIBILITY

The Regal property is situated in the Creek National Forest on the south rim of Salt River Canyon about 30 airmiles northeast of Globe,

---

1/ Mining Engineer, Bureau of Mines

Gila County, Ariz. (figure 1). The mine is at an altitude of 4,250 feet, or about 1,250 feet above the river. According to the Crook National Forest map, the Regal property is in sec. 36, T. 6 N., and sec. 1, T. 5 N., of R. 16 E.

The mine is at the end of a 9.6-mile graded dirt road that branches west off paved U. S. Highway 60 at a point one-fourth mile north of Seneca (37 miles north of Globe). It is accessible throughout the year except for a few days after heavy rain or snow storms, when the dirt access road is virtually impassable.

## OWNERSHIP AND EXTENT

The property consists of 27 unpatented claims. The 22 claims, bought June 1, 1952 by Jaquays from the Asbestos Corporation of America, are recorded at the Gila County Court House, Globe, Ariz., as follows:

| Name | Book | Page |
|---|---|---|
| Regal No. 1 | 43 | 87 |
| Regal No. 10 | 35 | 436 |
| Regal No. 11 | 35 | 437 |
| Regal No. 12 | 35 | 438 |
| Regal No. 13 | 35 | 439 |
| Regal No. 14 | 35 | 440 |
| Regal No. 15 | 35 | 441 |
| Regal No. 16 | 35 | 442 |
| Regal No. 17 | 35 | 443 |
| Regal No. 18 | 35 | 444 |
| Regal No. 19 | 35 | 445 |
| Regal No. 21 | 35 | 447 |
| Regal No. 22 | 35 | 448 |
| Regal No. 23 | 35 | 449 |
| Regal No. 24 | 35 | 450 |
| Regal No. 25 | 35 | 451 |
| Huntz No. 3 | 41 | 500 |
| Huntz No. 4 | 41 | 500 |
| Huntz No. 5 | 41 | 501 |
| Huntz No. 6 | 41 | 501 |
| Huntz No. 29 | 41 | 491 |
| Amended | 41 | 502 |
| Huntz No. 30 | 41 | 491 |

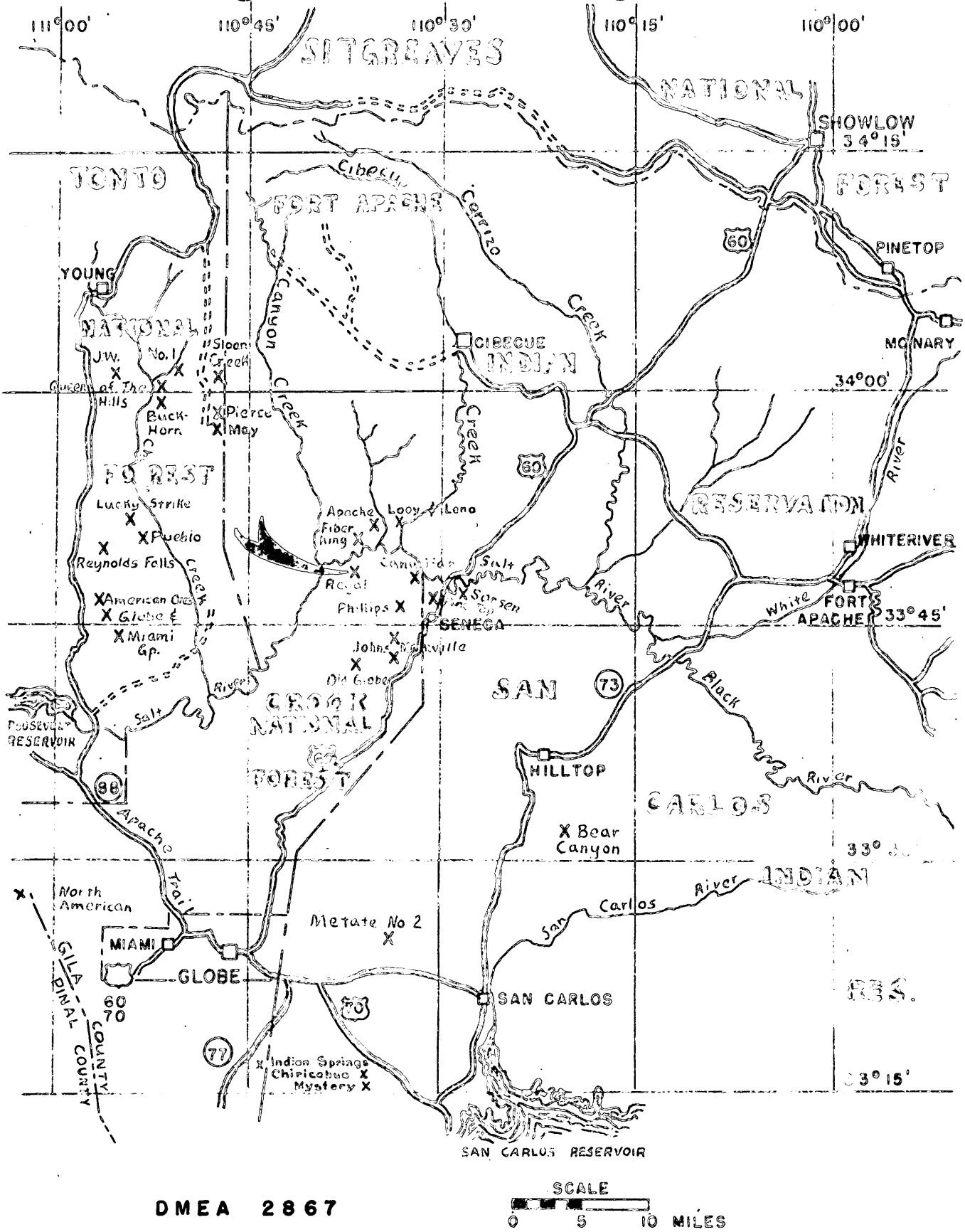


**Figure 1.-** Location Map, Asbestos Deposits, Gila County, Arizona

The book and page numbers of the 5 additional claims located by Jaquays have not been specified for the reason that they were located merely to round out the parcel and have no significance in relation to this application. These are Regal No. 10, Jaquays Nos. 26, 27, 28, and 34 (Figure 2).

## HISTORY AND PRODUCTION

The nucleus of this group of claims consisted of about 10 claims that were located prior to 1917. During 1918 the property was being developed by the Colorado-Arizona Asbestos Mining Co., and a small production was reported. The Denver Arizona Asbestos Co. produced some fiber from the property in 1919. The claims were purchased by E. Schaaf-Regelman in 1919, who relocated the claims and added many more to the group. By the end of 1921, the Regal Asbestos Mines, Inc., of which E. Schaaf-Regelman was president, had taken over the property. It was left idle, except for assessment work, from April 1921 until 1925. During 1925 and 1926, lessees were its principal, but intermittent operators. In June, 1927, the company resumed regular development and production.[2/] The following year a mill was constructed, said to have a capacity of 30 tons of mill rock per 8 hours.

About 1937 the Arizona Chrysotile Asbestos Co. took over the property and made substantial yearly production under various managements through 1948, although the mill was destroyed by fire in August 1945. In December 1950, Jaquays became the manager of the company, operated the mine for company account and from a surface lease, produced fiber

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2/ Wilson, Eldred D., Asbestos deposits of Arizona, Ariz. Bur. of Mines Bul. 126, 1928.

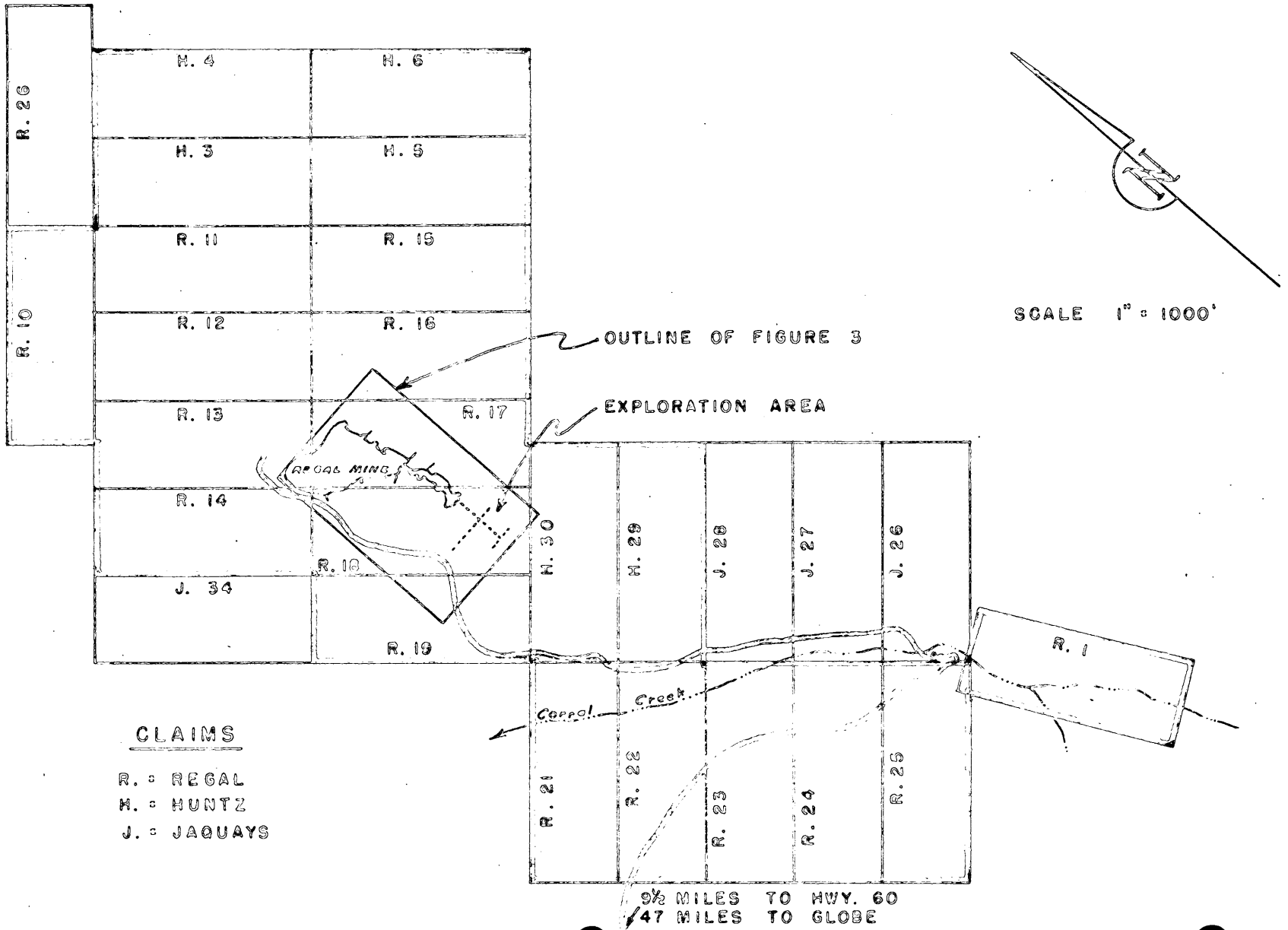



FIGURE 2. - CLAIM MAP - REGAL ASBESTOS MINE DMER 2867

JAQUAYS MINING CORP. GILA COUNTY, ARIZONA

by open-pit methods for himself. In June 1952 Jaquays bought the property and now operates it under the Jaquays Mining Corp. The present monthly production is about 30 tons of finished fiber.

The total production of the Regal mine has been on the order 4,000 to 5,000 tons of fiber, all grades. Thus this mine is the second or third largest producer of the district.

## DESCRIPTION OF THE DEPOSIT

The Regal deposit outcrops high on the cliffs of the south side of the Salt River canyon at an altitude of 4,250 feet. The main veins are in the lower pre-Cambrian Mescal limestone, about 30 feet below the base of the algal member of this formation, and approximately 15 feet above a thick diabase sill that locally has warped the bedding. The 2 most productive veins are 5.5 feet apart and are usually carried at the roof and near the floor of the drifts and stopes. A less important vein was found in the near-surface workings 2 feet under the lower vein. Another important vein is sometimes found at the base of the algal member, 30 feet above the main vein system.

The greatest concentrations of ore have been found in the warped areas that have been shattered by the Regal thrust fault and its branches. Near the surface the stoped areas are 500 feet wide, gradually decreasing to a width of 100 to 150 feet at about 600 feet in depth. This average width of ore persists to the present working depth of 1,000 feet (see figure 3).

The ore is found along the limbs of the folds. Where certain areas along the fault are relatively flat-lying, no concentrations of fiber are

present. About 1943, this condition existed at the then south end of the mine and it was considered virtually worked out. Additional work since that time has indicated the existence of another ore-bearing structure along the fault zone and this area is now being worked by the applicant. The 2 main ore zones exhibit an average aggregate fiber length of 3 to 5 inches.

A persistent band of green serpentine, 1 to 2 inches thick, occurs in the bedding between the two main ore zones. It is locally called "the oscar" and is found in all parts of the mine and along the surface outcrops. It is a reliable marker that indicates the favorable beds even when no fiber is present. The beds that contain the "oscar", outcrop on a canyon wall about 250 feet west of the interior mine workings. The outcrop there contains only traces of asbestos, but this is to be expected as the beds are relatively level and undisturbed.

PROPOSED EXPLORATION AND COSTS

The applicant states: "The area to be explored and for which DMEA assistance is desired is located some 400 feet to the south of the present workings and along the strike of the Regal fault. Past experience has shown that it is reasonable to expect good ore in a zone at least 100 feet each side of the Regal Fault as long as the ore zone is near the crest of a fold. This condition exists in the south end of the present workings where excellent ore is now being found".

The applicant presents a preferred and an alternate plan to reach the same objective.

Plan 2. The preferred proposal is to drive a crosscut entry eastward from the surface approximately on the south 1,225 coordinate to intersect the course of the Regal fault and continue eastward to the limit of the deposit; from the crosscut, drift along the Regal fault northward and connect with the mine workings; drift southward 200 feet from the crosscut and from this southernmost point drift east and west to determine the width of the deposit. Quoting from the application: "As it is expected that in places the above exploration project will be in some places below the ore zone, it is desired that 300 feet of raises be included in the project. These raises are to be driven where required into the ore zone at 50-foot intervals along the proposed drifts. It is doubtful if any of these raises will be over 15 feet in height and most of them will probably be only 5 feet above the drift".

The estimated footage and cost of Plan 2 is as follows:

| | |
|---|---|
| 1,000 feet of drift at $20.00 per foot ..... | $20,000 |
| 300 feet of raises at $20.00 per foot ..... | 6,000 |
| Total ..... | $26,000 |

Plan 1. Under the impression that the DMEA might take exception to Plan 2 as having a suggestion of development work, the applicant has submitted this alternative method of exploring the same area.

To drift southward from the present end of the mine for 400 feet along the Regal fault, then crosscut the deposit 100 feet east and west from the midpoint, and also from the end of this drift. Raises to be the same as in the previous plan.

The estimated footage and cost of Plan 1 is as follows:

| | |
|---|---|
| 800 feet of drift at $27.50 per foot ..... | $22,000 |
| 300 feet of raises at $27.50 per foot .... | 8,250 |
| Total ..... | $30,250 |

A copy of the complete application and proposal is appended to this report.

## DISCUSSION OF THE PROPOSALS AND COSTS

The favorable structures that have formed the Regal ore deposit have been strong and persistent. The Regal fault and the numerous related branching and cross faults have broken and distorted the limestone bedding so the enclosed veins wedge and dip irregularly. Undulation of the formations occurs both longitudinally and transversely. In an attempt to keep the ore in the drifts, the existing track level has considerable lengths of adverse grades that present tramming difficulties.

Indications at the south end of the mine suggest that the favorable structure along the Regal fault may continue for a considerable distance beyond the present mine workings. Therefore, justification exists for exploration to the south.

The two plans suggested by the applicant are identical in scope, differing only in the method of reaching the objective. Plan 1 is to drive ahead from the end of the mine. Plan 2 is to reach the center of the exploration area by crosscutting from the surface. The former plan was suggested by the applicant for the reason that he feared DMEA would suspect a tinge of development in the alternate plan of making a new opening to the deposit, when an entry already existed.

Starting an exploration drift from the end of the mine, although feasible, has many disadvantages. At the very start of the project, a 1,000-foot tram would be necessary for muck disposal, increasing to 1,500 feet by completion. The present haulageway track is poorly graded. In one 260-foot length there is a drop in grade of 7 feet, requiring 2 men to return an empty mine car to the face. Ventilation is so poor that it would not support both the present mining operations and the exploration work. Production from the south end of the mine would have to be curtailed or suspended while exploration work was in progress. The starting elevation of the exploratory drift would be fixed by the present track level. If, as is possible, the structure should plunge even moderately to the south, the ore zone would be below track level. As shown by applicants' estimates, the cost of this interior drifting will be $27.50 per foot. The total estimated cost of this Plan 1 is $4,250 greater than Plan 2, although the total length of drifting is 200 feet less.

By operating under Plan 2, starting from the surface, the elevation of the exploratory drift can be established to allow for downward variations of the structure. Portions of the ore zone that are above drift level can be reached by short raises. Disposal of muck, through properly graded entries, will be rapid and economical; the maximum haul will be only 600 feet. There will be no ventilation problem after breaking through to the present mine workings on the north side of the exploration area.

Due to the more favorable working conditions, the applicant has estimated the cost of the work at $20 per foot. Thus the same area can be explored under Plan 2 for a cost of $4,250 under that of the other plan.

The writer has studied the estimated detailed costs furnished by the applicant and discussed with him various phases of the plans. Although some items appear slightly high, the overall stated performance costs are considered reasonable. The conditions under which work would be done from the present end of the mine definitely would effect an increased cost over the same work done from surface. Both drifting and raising costs are increased primarily on account of the long tram and poor track grades. It would be necessary to run the compressor an extra shift to clear the gas for the following day. Current mining would be retarded on account of doubling the hazards of poor ventilation.

The elimination of these problems in operating from the surface under Plan 2 is reflected in the estimated cost of $20 per foot, which may be slightly low. However, the applicant has stated that he is willing to absorb any difference.

It is granted that the exploration plan portrayed by figure 3 is ideally presented. There is no means of predicting the trend or shape of the postulated deposit, but the exploration is expected to follow this general pattern.

The ore zone at the end of the mine is approximately 27 feet higher than at the barren outcrop near the proposed crosscut portal. The dip usually is greater in the vicinity of the axis of the fault, flattening

out toward the surface. Applicant intends starting the drift at 12 feet above the outcrop. Theoretically, the drift should pass through the favorable beds at about 100 to 150 feet, and be a few feet below them under the axis of the fault.

The crosscut portal will be on the cliff face about 65 feet above the mine road. The problem of waste disposal, whether by a surface chute or by an underground transfer chute, will be at the expense of the applicant.

## CONCLUSIONS

It is the opinion of the examiners that the proposed exploration to the south of the Regal mine is justified. A favorable locality for ore deposition is where the thrust faulting has intensely fractured the favorable beds on the limbs of the arches or domes. Several of these structures have been found along the Regal fault system. It is thought that there are good possibilities of finding extensions of the deposit, or new favorable structures in the area several hundred feet southward from the end of the present workings.

The fiber produced by the Regal mine has virtually all been of strategic quality, and there always have been considerable quantities of the spinning grades. It is probable that this exploration will expose significant quantities of similar fiber.

The 2 plans of exploring the identical area are here summarized for comparison:

Plan 1. From inside the mine.

| | |
|---|---|
| 800 feet of drifting @ $27.50 per foot ..... | $22,000 |
| 300 feet of raising @ $27.50 per foot ..... | 8,250 |
| Total cost of Plan 1 ..... | $30,250 |

Plan 2. From outside the mine.

| | |
|---|---|
| 1,000 feet of drifting @ $20.00 per foot .... | $20,000 |
| 300 feet of raising @ $20.00 per foot ..... | 6,000 |
| Total cost of Plan 2 ..... | $26,000 |

The examiners favor Plan 2, ie, starting the exploration drift from the surface. If a sizable deposit is found, it can be considered as a new mine unit. Proper tramming grades can be established and ventilation will not be a serious problem, particularly after connection is made to the old workings. The saving in cost, as well as safety considerations, favor this plan. Workers within the mine will have an additional exit of escape.

## RECOMMENDATIONS

It is recommended that the Defense Minerals Exploration Administration enter into a contract with the Jaquays Mining Corp. to explore an area south of the present Regal mine workings. It is further recommended that the exploration be conducted under Plan 2. This consists of driving a crosscut from the surface through the potential ore-bearing structure, then to further explore the area by drifting north and south along the strike of the deposit, and if found advisable, to crosscut the structure at the south end of the exploration area. A number of short raises may be necessary, as the structure that contains the ore zones is warped and broken.

Plan 2 as proposed consists of a total of 1,000 feet of drifting and crosscutting and 300 feet of raising, each at $20 per foot, for a total project cost of $26,000. It is impossible to forecast the variable undulations of the ore zone, so the actual footage of required raising is indefinite; it might be more, and could possibly be less than the stated 300 feet. It is suggested that the contract be flexible on this point, possibly stating a maximum total of 1,300 feet of work, without detailing the specific footage of raising.

Applicant states that work can be started 15 days after notification to proceed, and can be finished in 10 months. As this will be a short form contract, it is suggested that 15 months be allowed for completion, to allow for any unforeseen difficulties.

# APPENDIX

## DMEA-2867, REGAL MINE, JAQUAYS MINING CORPORATION

## GILA COUNTY, ARIZONA

APRIL 1953

JAQUAYS MINING CORPORATION APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, TO ACCOMPANY FORM MF 103

Item 1 (a) Name of Applicant: Jaquays Mining Corporation
1219 S. 19th Avenue
Phoenix, Arizona

(b) Jaquays Mining Corporation, an Arizona Corporation

(c) D. W. Jaquays, President & Manager - 1219 South 19th Ave.
Phoenix, Arizona
Ethelyn Jaquays, Secretary - 132 W. Granada Rd.
Phoenix, Arizona
G. A. Jaquays, Vice-President - 3011 E. Saginaw Street
Lansing, Michigan

(d) DNA

Item 2 - General

Item 3 (a) The Regal Mine property is being purchased under contract from the Arizona Chrysotile Asbestos Company, 204 Twenty-First Ave., Paterson 3, New Jersey. A copy of the contract attached.

(b) This mine has always been known as the Regal Mine.

(c) The Regal Mine is being purchased under contract by the Jaquays Mining Corporation from the Arizona Chrysotile Asbestos Company.

(d) A copy of the contract between D. W. Jaquays and Arizona Chrysotile Asbestos Company attached with assignment of D. W. Jaquays contract to the Jaquays Mining Corporation.

(e) D.N.A.

(f) The location of the Regal Mine is shown on Map 3. The book and page numbers of the Regal Group of Mining Claims are as follows:

The Regal Mine property consists of 22 unpatented mining claims as shown on Map 1 attached; all recorded at the Gila County Recorder, Globe, Arizona, as follows:

| Name | Book | Page |
|---|---|---|
| Regal No. 1 | 43 | 87 |
| Regal No. 10 | 35 | 436 |
| Regal No. 11 | 35 | 437 |
| Regal No. 12 | 35 | 438 |
| Regal No. 13 | 35 | 439 |
| Regal No. 14 | 35 | 440 |

| Name | Book | Page |
|---|---|---|
| Regal No. 15 | 35 | 441 |
| Regal No. 16 | 35 | 442 |
| Regal No. 17 | 35 | 443 |
| Regal No. 18 | 35 | 444 |
| Regal No. 19 | 35 | 445 |
| Regal No. 21 | 35 | 447 |
| Regal No. 22 | 35 | 448 |
| Regal No. 23 | 35 | 449 |
| Regal No. 24 | 35 | 450 |
| Regal No. 25 | 35 | 451 |
| Huntz No. 3 | 41 | 500 |
| Huntz No. 4 | 41 | 500 |
| Huntz No. 5 | 41 | 501 |
| Huntz No. 6 | 41 | 501 |
| Huntz No. 29 | 41 | 491 |
| Amended | 41 | 502 |
| Huntz No. 30 | 41 | 491 |

Item 4 (a) The Regal mine has been developed by some 3,000 feet of drifting over the past 35 years. The main haulage drifts and stope drifts are kept in good repair and are now being used for production from the area located on the south end of the workings. All of the active working places are open and accessible for examination. The mine workings are shown on Map 2 attached.

(b) Production since about 1918 is estimated to be about $3,000,000.00 in all grades of Chrysotile asbestos. The ore reserves at present are estimated to about 500 tons of asbestos fibre located in the southern end of the present workings.

(c) The principal asbestos bearing zone at the Regal Mine occurs in the Mescal Limestone and about 10 to 15 feet above the Diabase. The ore occurs in a more or less horizontal plane with slight folds and some faults raising or lowering the ore zone from the plane shown on the accompanying map. Favorable areas for asbestos formation are found to be on the slight folds and along the Regal Fault which passes through the entire length of the present workings.

The area to be explored and for which D.M.E.A. assistance is desired is located some 400 feet to the south of the present workings and along the strike of the Regal Fault. Past experience has shown that it is reasonable to expect good ore in a zone at least 100 feet each side of the Regal Fault as long as the ore zone is near the crest of a fold. This condition exists in the south end of the present workings where excellent ore is now being found.

(d) The Regal Mine is accessible over a U. S. Forest Service Road turning off U. S. Highway 60 at a point 37 miles north of Globe, Arizona. It is nine miles over the Forest Service Road to the Regal Mine from Hwy. 60. Ore is being trucked over this road almost daily to the companies mill at Globe, Arizona.

All ore is hauled to Globe, Arizona for milling and the finished product is shipped by rail from Globe, Arizona.

- Supplies are hauled to the mine by truck from either Globe or Phoenix, Arizona.

The company has ample housing on the property for the present crew and if necessary, will supply additional housing should the crew be increased.

Item 4 (e) Ample manpower is available for the projects planned. All supplies, material and equipment are in good supply. Water required for drilling and domestic use is available on the property.

Power for compressed air is supplied by Butane fueled compressors. The Butane fuel is hauled to the mine by the Butane dealer in Globe, Arizona.

Item 5 (a) The mineral for which the exploration is planned is Chrysotile Asbestos of low Iron spinning grade.

(b) The area for which D.M.E.A. exploration assistance is desired is located in the southernmost workings of the Regal Mine and and would consist of driving a new x-cut entry at about the South 1225 corrodinate for 380 to 400 feet east, then drifts would be driven to explore the area along the Regal Fault for 200 feet north and south from the corrondinate S-1225 Crosscut. In addition to the 400 foot drift along the Regal Fault it is desired to drive exploration crosscuts East 100 feet at about South 1225, and at the South 1400 Corrondinate it is desired to explore an area at least 100 feet each side of the Regal Fault Zone.

The feasibility and economics of driving a new crosscut to explore the area involved in this project may be questioned over the driving of a drift from inside the mine from the present workings. This has been carefully considered and the costs alone would recommend the new crosscut due to additional traming labor required for removing drift muck approximately 1000 feet to the old portal of the mine. In addition to the long tram, the poor grade of the main haulage

level, now requires two trammers to handle a one ton car of rock to the portal of main tunnel. Another item which must be considered in the choice between the inside project and the new crosscut project is that the present south end workings are now in production and this work would have to be stopped due to bad ventilation which will not permit 2 blasting shift operations.

A copy of the comparitive estimates for each of these projects is attached under Item 6 which shows that even though by driving an additional 200 feet in Plan 2 which is the new crosscut project the comparitive costs are $22,000.00 for Plan 1 and $20,000.00 for Plan 2, the difference being due to better working conditions and a shorter tram for the waste material. As it is expected that in places the above exploration project will be in some places below the ore zone, it is desired that 300 feet of raises be included in the project. These raises are to be driven where required into the ore zone at 50 feet intervals along the proposed drifts. It is doubtful if any of these raises will be over 15 feet in height and most of them will probably be only 5 feet above the drift.

The costs of the above project using Plan 2 which includes the driving of the new crosscut from outside and the driving of short raises at 50 foot intervals into the ore as follows:

| | | |
|---|---|---|
| 1000 feet of Drift @ $20.00 | - | $ 20,000.00 |
| 300 " " Raises @ $20.00 | - | 6,000.00 |
| Total Plan 2 | | $ 26,000.00 |

(c) Work can be started on the above project within 15 days and completed within 12 months after start of contract.

(d) The operating experience of D. W. Jaquays, the President and Manager of the Jaquays Mining Corporation is as follows:

Born September 27, 1909, Pellston, Michigan
Graduated BSc. Metallurgy Michigan College of Mines 1931
1931 - 1933 - Sampler Machine man and Shift Boss at Lake Shore Mine, Kirkland Lake, Ontario
1934 - 1936 - Shift boss in 500-ton-a-day cyanide plant, Lamaque Gold Mines, Bourlamaque, Quebec.
1937 - - Property examination for Michigan interests in Colorado, Montana, Nevada and Arizona.
1938 - 1939 - Sampler, Engineer and Shift Boss at Miami Copper Co., Miami, Arizona
1940 - 1942 - Manager Park View Gold Mine, Phoenix, Ariz.
1942 - 1945 - Engineer with Mineral Production Security Division of U. S. Bureau of Mines - Stationed at Phoenix, Arizona

Item 5 (d) continued:

| | |
|---|---|
| 1946 to date | Owner and operator of D. W. Jaquays Co. Dealers in Mining Machinery and Supplies and Diamond Drilling Contractors, Registered Arizona Mining Engineer. |
| 1947 to 1950 | Engineer and manager for Arizona Chrysotile Asbestos Co., Globe, Arizona. |
| 1951 to date | Operator and manager Regal Asbestos Mine later taken over by Jaquays Mining Corp. |

Item 6 - The estimated costs of the above project are as follows:

Plan One - 800' Drift from inside on Main Haulage Level of Regal Mine.

Costs per day:

| | | | |
|---|---|---|---|
| 1 Machineman | 12.00 | | |
| 3 Muckers @ 10.00 | 30.00 | | |
| 1/2 Supervision | 10.00 | | |
| Overtime 2 days in 12 | 5.20 | | |
| | 57.20 | | |
| Ins. OAB, etc. 15% | 7.60 | | |
| To Labor | | 64.80 | |
| Fuel - 2 shifts | 10.00 | | |
| Bits and steel | 5.20 | | |
| Drill and hose rental | 3.00 | | |
| Compressor rental | 10.00 | | |
| Carbide and oil | 1.00 | | |
| Pipe and rail | 6.00 | | |
| Camp & trucking expense | 2.00 | | |
| Engineering | 1.00 | 38.20 | |
| Costs per shift or round | | | 103.00 |
| Misc. Costs | | | 7.00 |
| | | | $ 110.00 |

Advance 4' per round
Cost per foot advance $27.50

The above cost per foot would also apply to raise work done.

Total cost of project:

| | |
|---|---|
| 800 feet of drift @ $27.50 | $22,000 |
| 300 feet of raises @ $27.50 | 8,250 |
| Total Plan 1 | $30,250 |

Item 6 - Continued:

Completion time:

| | |
|---|---|
| First 200 feet advance at 2 feet per day | 100 days |
| Last 600 feet advance at 4 feet per day | 150 days |
| | 250 working days |
| | or approximately 11 months. |

Plan 2 for 1000 feet of drift to be driven from outside and covering same ground as Plan 1

| | | |
|---|---|---|
| 1 Machineman | 12.00 | |
| 2 Muckers @ $10.00 | 20.00 | |
| 1/2 Supervision | 10.00 | |
| Overtime 2 days in 12 | 4.00 | |
| | 46.00 | |
| Ins., & O.A.B. 15% | 7.00 | |
| To Labor | | $ 53.00 |
| Fuel - one shift | 5.00 | |
| Bits and steel | 5.00 | |
| Drill and Hose Rental | 3.00 | |
| Compressor Rental | 10.00 | |
| Carbide and oil | 1.00 | |
| Pipe and rail | 6.00 | |
| Camp & trucking expense | 2.00 | |
| Engineering | 1.00 | 33.00 |
| Misc. Expense | | 4.00 |
| | | $ 90.00 |

Cost per round $90.00
Advance 4.5 feet or $20.00 per ft.

| | |
|---|---|
| Total cost of project 1000 feet x $20.00 - | $20,000.00 |
| 300 feet raises @ $20.00--------- | 6,000.00 |
| Completion time 10 months. | $26,000.00 |

Note: The above costs per foot would also apply to any raise work done.

(a) There will be no independent contracts.

(b) The wage scale for labor at the Regal Mine is as follows:

| | |
|---|---|
| Machinemen | $1.50 per hour |
| Muckers | 1.12½ " " |
| Trammers | 1.12½ " " |
| Mine Foreman | Salary $500.00 per month. |

Item 6 (b) continued:

There will be no consultants and engineering will be done by the applicant. The engineering charge of $1.00 per day or $25.00 per month is charged against the exploration project for part of the time devoted to the above project by the management.

(c) Operating supplies and costs:

| | |
|---|---|
| Explosives | $21.10 /C |
| Caps (Fuse) | 2.25 /C |
| Fuse | 13.10 /M |
| Butane | .20 /Gallon |
| Drill steel approx. | 1.00 /foot for new steel |
| Bits (Carbide) | 13.50 /each |

(d) Operating Equipment required:

| | | |
|---|---|---|
| 1 - 160 CFM Compressor Rented | | $190.00 /Month |
| 2 - 55 lb. Wet Hammer & Hose Owned | | 30.00 /Month |
| 1 - Stoper | " | No charge |
| 2 - 1 ton Mine cars | " | " " |

(e) No Rehabilitation or repairs required to start the above project.

(f) No new buildings or structures required.

(g) Miscellaneous: No repairs required on operators equipment. Any accounting work connected with the above project will be absorbed by the operator. The Workmen's Compensation rate for the above type of work is $9.35 per $100.00 of payroll and the Arizona Unemployment charges are 2.7% of the payroll. Old Age Benefit charges are 1.5% of the payroll making a total of 13.55% charges on all payroll expenses on the mine.

(h) Contingencies. A miscellaneous charge was set up of $4.00 per day or about $100.00 per month to cover unforeseen charges. Any additional unforeseen charges that may come up will be absorbed by the operator.

Item 7 (a) The operator of the Jaquays Mining Corporation is prepared to furnish either in the form of cash or equipment rentals, the required 10% of the above project.

(b) The operator, Jaquays Mining Corp. will supply one 160 CFM. compressor at $190.00 per month and the necessary drilling equipment at $30.00 per month for a total of equipment supplied of $220.00 a month, any additional value required will be made up in the form of carrying the required amount of expenses through cash payments.

Signed _____

D. W. Jaquays, President

FILE COPY
SURNAME:

Houk

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
600
WASHINGTON 25, D. C.

September 1, 1953

Memorandum

Docket No. DMEA-2867 - Asbestos
Jaquays Mining Corporation
Regal Mine
Gila County, Arizona
Contract No. Idm-E589

To: Mr. C. O. Mittendorf

From: Lawrence G. Houk

Subject: A review of Contract No. Idm-E589, a Region IV delegation.

The contract as written is not exploration but development and preparation for mining. The writer talked with Mr. Jaquays in Globe last year and stated that this type of contract was not acceptable to the Nonmetallic Minerals Division. However, Region IV has seen fit to write a contract totally ignoring our instructions. This Division cannot concur with the method of exploring this deposit and recommends that the attached letter be sent to Region IV.

LGHouk:gad 9/1/53

Copy to: Admr. R. File
Docket File
Mr. Houk

R.C.G.
9.21.53

Docket No. DMEA 2867

Commodity ~~Asbestos~~

DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION

STRATEGIC AND CRITICAL MINERALS EXPLORATION PROGRAM

TO: Chief, Finance Section, Budget and Finance Branch, Bureau of Mines

Please enter on the records of the Defense Minerals Exploration Administration, under the Strategic and Critical Minerals Exploration Program, the following contract, or amendment to contract.

Contract No. Idm-E 589

Date of Contract ~~or Amendment~~: August 24, 1953

Name and Address of Operator:

Jaquays Mining Corporation
1219 South 19th Avenue,
Phoenix, Arizona

Amount of Government participation ____ $ 23,400.00

Percent of Government participation 90 %

Region: IV State: Arizona

(Name)

J. L. Chambers,
Chief, Contract Administration and Audit Division

(Title)

Date Delivered to Bureau of Mines, Washington. Aug. 24, 1953

13908

file

SURNAME COPY

Adams

Defense Minerals Exploration Administration
Robert E. Adams
2017

14X3923.970, Working Fund, Interior, DMEA
August 24, 1953
3:00 p.m.

W.H.King, Executive Officer, Region IV, 224 New Customhouse Bldg., Denver 2, Colorado

Assignment of Contract Number

REURTEL 8-24-53, DOCKET NO. DMEA 2867, JAQUAYS MINING CORP. PROPERTY IN GILA COUNTY, ARIZONA, COMMODITY ASBESTOS, CONTRACT NUMBER IDM-E589 ASSIGNED THIS CONTRACT.

cal 8-24

C. O. Mittendorf

ADMINISTRATOR

REAdams/meb
cc to: Adm.Reading File
Mails & Files Br.
Bu. of Mines Audits Div., Rm. 2509
Miss Curtin

Mr. C. O. Mittendorf
8-24-53
12:30 P.M.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
AUG 24 1953

Reg IV

DN 235 BUR MINES 8-24-53 9-15 AM

C O MITTENDORF DMEA

PLEASE ASSIGN A NUMBER TO CONTRACT COVERING DOCKET NO. DMEA 2867, JAQUAYS MINING CORPORATION, AN ARIZONA CIROIXXX CORPORATION, 1219 SOUTH 19 TH AVENUE, PHOENIX, ARIZONA. COMOXXX COMMODITY ASBESTOS. PROPERTY LOCATED IN GUXXX GILA COUNTY, ARIZONA. DATE OF CONTRACT AUGUST 24,1953. TTXXX TOTAL AMOUNT OF CONTRACT $26,000.00. GOVERNMENT-S PARTICIPATION $23,400.00.

W H KING

90%

IDM-E 589

Denver, Colo.

AUG 24 12 34 PM '53

BUREAU OF MINES
MAIL ROOM
WASHINGTON, D. C.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

June 4, 1953.

Memorandum

To: Administrator, Defense Minerals Exploration Administration
Attention: 200

From: Field Team, Region IV

Subject: Final Report, DMEA Docket 2867 (Asbestos), Jaquays Mining Corporation, Gila County, Arizona.

Exploration aid in the amount of $26,000.00 has been approved and the contract will be prepared by this office. Four copies of the final report will be forwarded you when the contract is executed. Two copies of Form 3b are attached.

W. H. King
W. H. King

A. H. Koschmann
A. H. Koschmann

Enclosures

Jun 9 1953

Mr. W. H. King
Executive Officer, DMEA
Field Team, Region IV
224 New Courthouse Building
Denver 2, Colorado

Re: Docket No. DMEA-2338 (Asbestos)
Docket No. DMEA-2867 (Asbestos)
Jaquays Mining Corporation
Gila County, Arizona

Dear Mr. King:

Reference is made to your memorandum of May 28, 1953, addressed to the Administrator concerning inspection of the properties under the referenced projects.

In this regard, please note Article 3 of Contract Idm-E479 (DMEA-2338), next to the last sentence, which states that: "The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so." Under this provision, inspection by the Government of the Operator's work at all reasonable times is a matter of right and does not depend upon permission from the Operator. Of course, as a matter of courtesy, it might be well to inform the Operator that you are going to make an inspection.

It is suggested that you notify the Operator that an engineer will be on the property on a certain day to make the examination with or without the Operator being present. It also might be well to call Mr. Jaquays' attention to Article 3 of his contract and explain to him that the Government inspects the work to determine the monthly advance so that payments may be certified, and also to determine whether the work is being carried on in accordance with the provisions of the contract.

The inspection reports are for the Government's use. The Operator may be notified in writing of any delinquencies under the contract in addition to verbal notices.

Sincerely yours,

/s/ George C. Selfridge
Chairman, Operating Committee

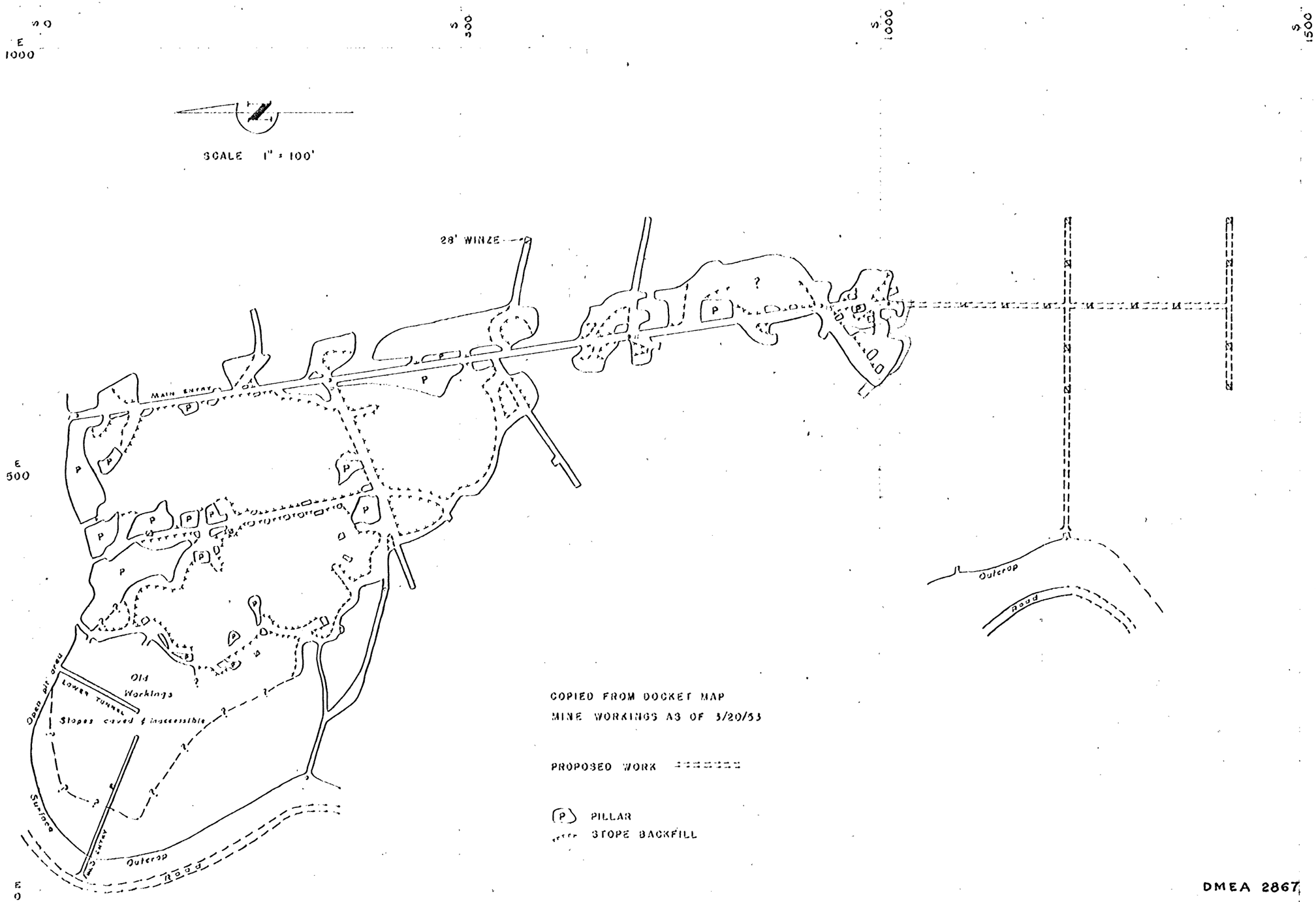
Approved:
/s/ J. H. Hedges
Member, Bureau of Mines

/s/ A. R. Kinkel, Jr.
Member, Geological Survey

Mr. Hofflund
Mr. Rubin
Chron
Pending

Oper. Comm.
Mr. Thayer
Mr. Hedges
Mr. Houk

Mails & Files
Admr. R. File




DMEA 2867

FIGURE 3.- MAP OF REGAL MINE, JAQUAYS MINING CORP., GILA COUNTY, ARIZONA

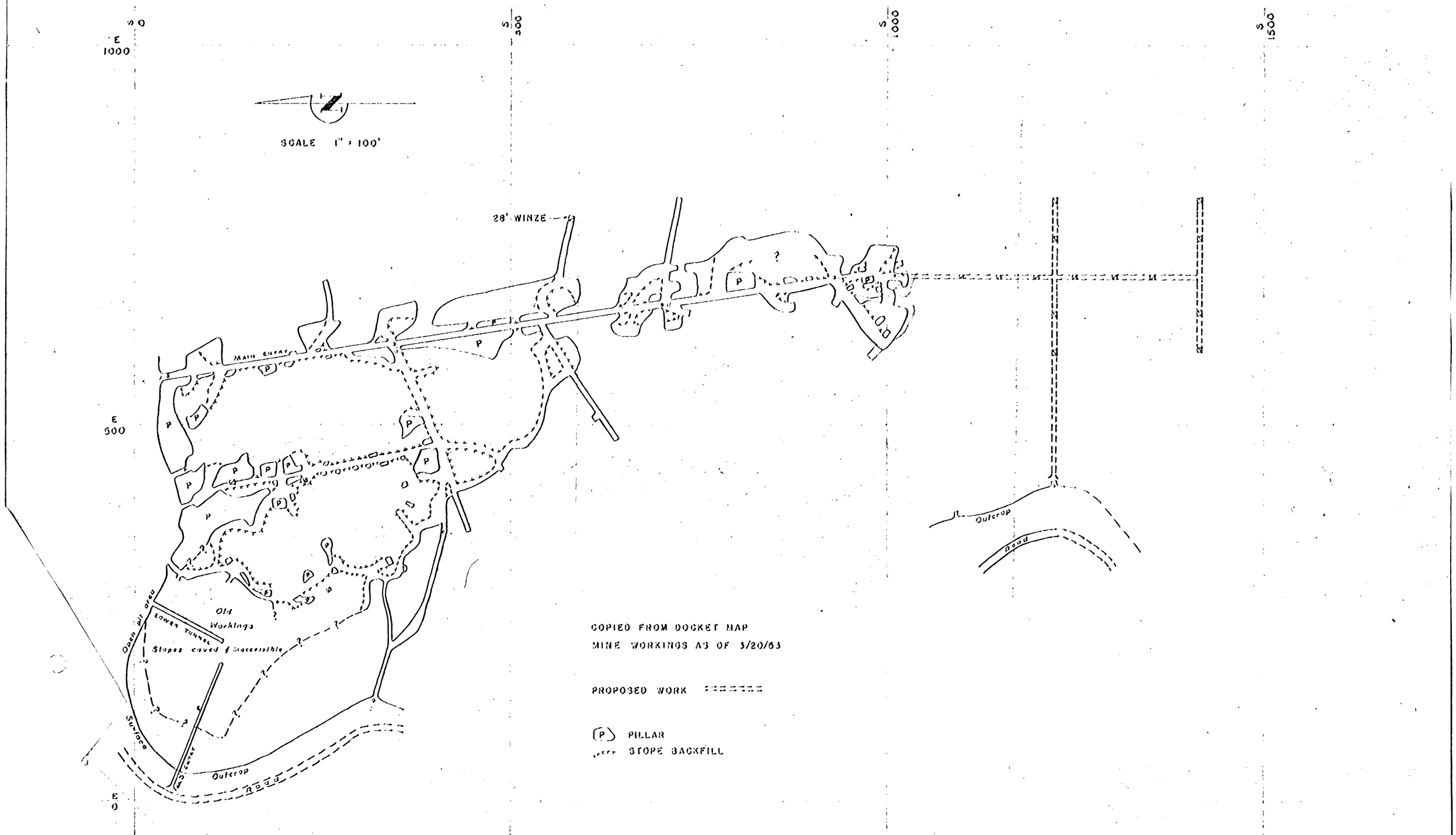
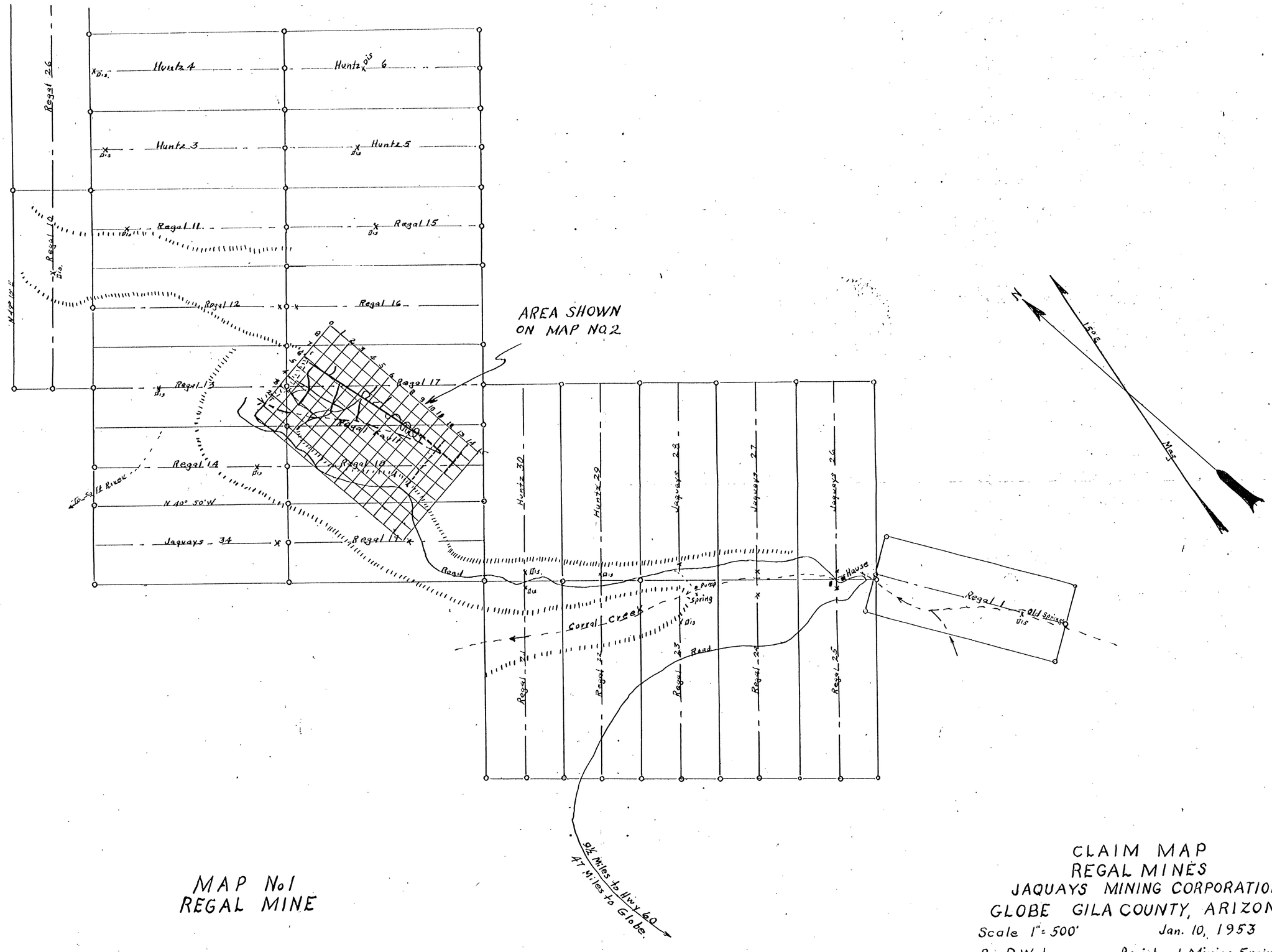


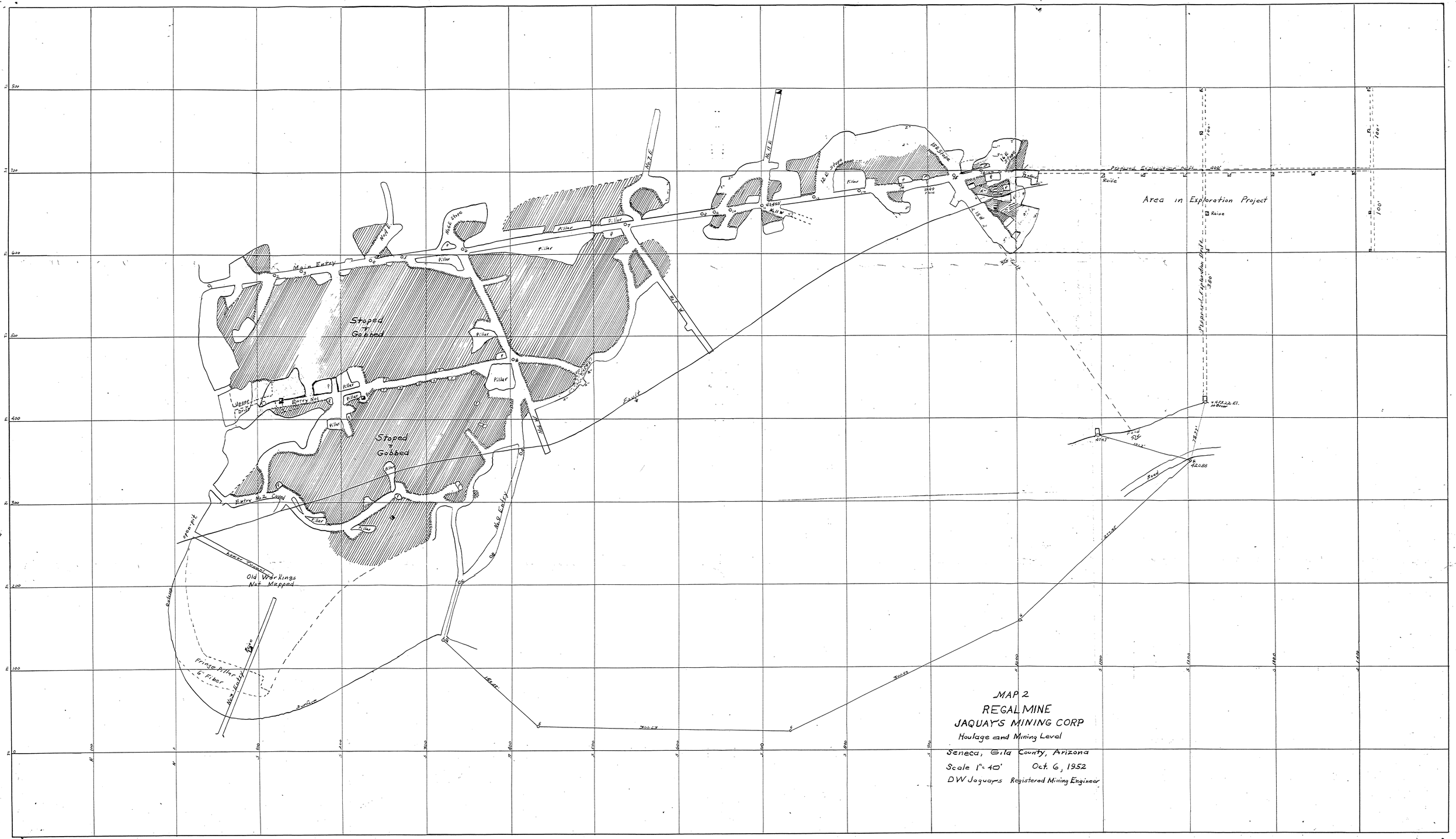

FIGURE 3. - MAP OF REGAL MINE, JAQUAYS MINING CORP., GILA COUNTY, ARIZONA DMEA 2867

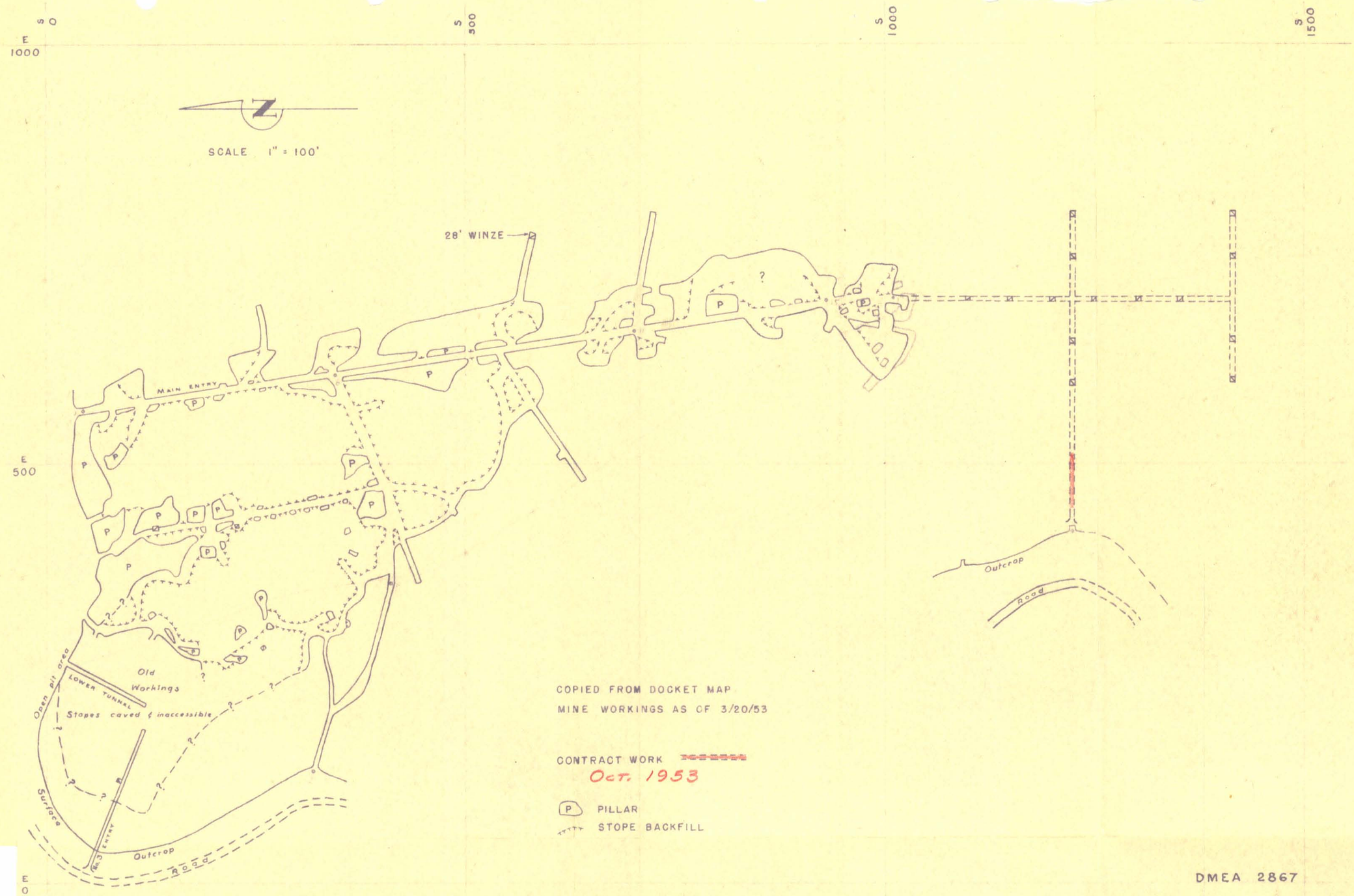



MAP No 1
REGAL MINE

CLAIM MAP
REGAL MINES
JAQUAYS MINING CORPORATION
GLOBE GILA COUNTY, ARIZONA
Scale 1" = 500' Jan. 10, 1953
By D.W. Jaquays Registered Mining Engineer

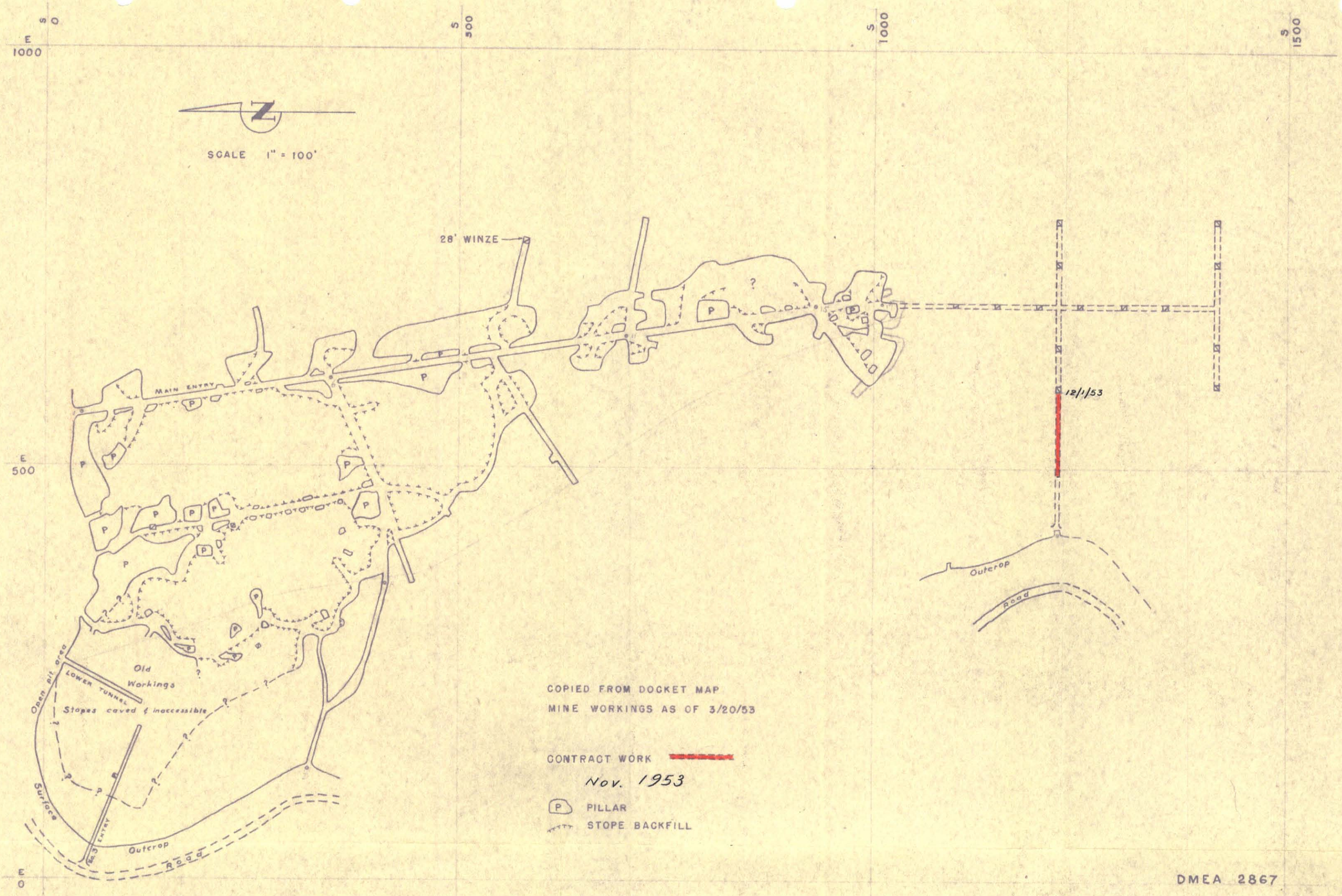
Amea 2867


Main Entry
Stoped & Gobbed
Pillar
Entry No 1
Entry No 2
Entry No 3
Old Workings Not Mapped
Fringe Pillar 6' Fiber
Fault
Proposed Exploration Drift
Raise
Area in Exploration Project
Proposed Exploration Drift
Road
MAP 2
REGAL MINE
JAQUAY'S MINING CORP
Haulage and Mining Level
Seneca, Gila County, Arizona
Scale 1" = 40'
Oct. 6, 1952
D W Jaquays Registered Mining Engineer



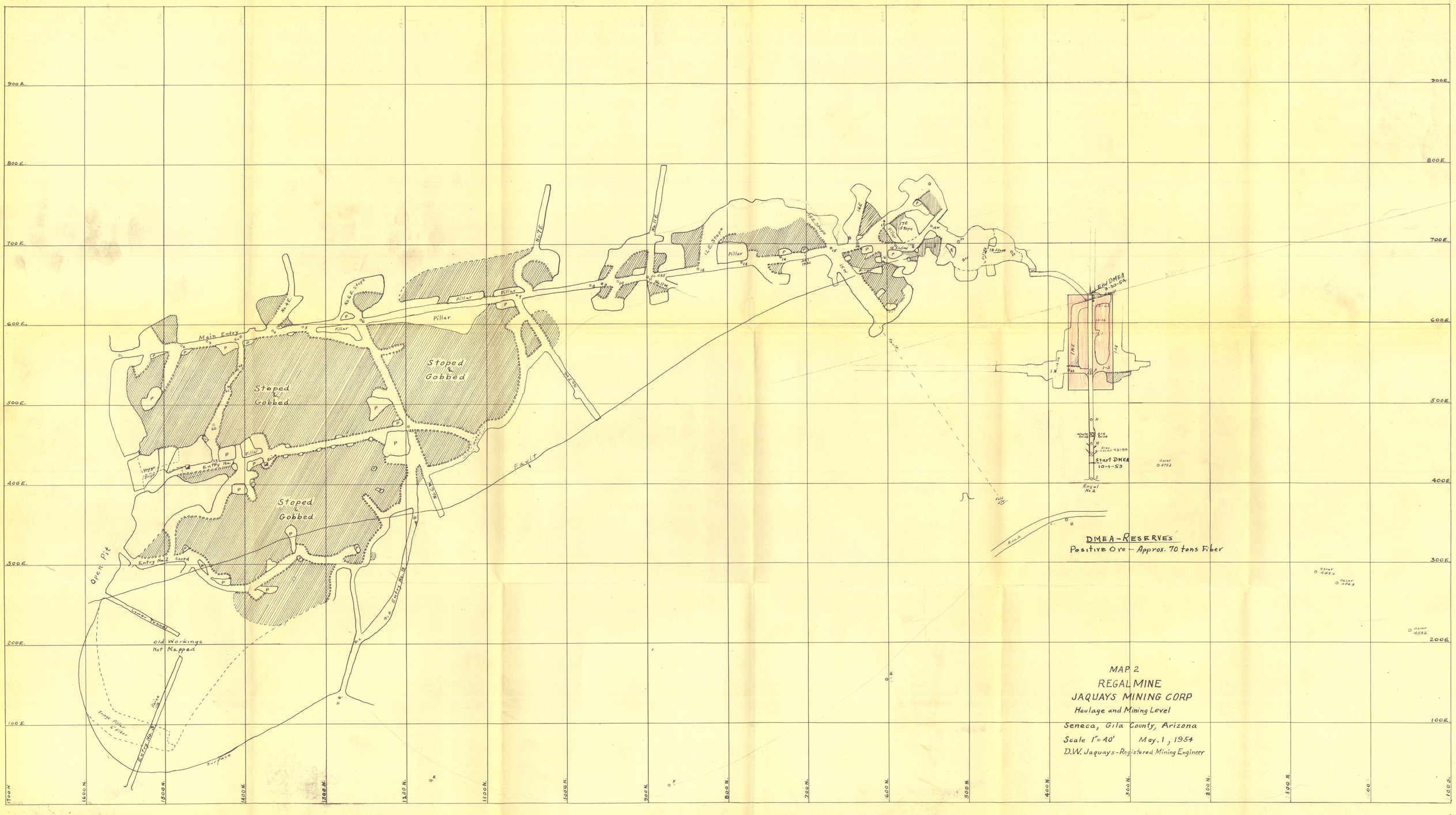

DMEA 2867

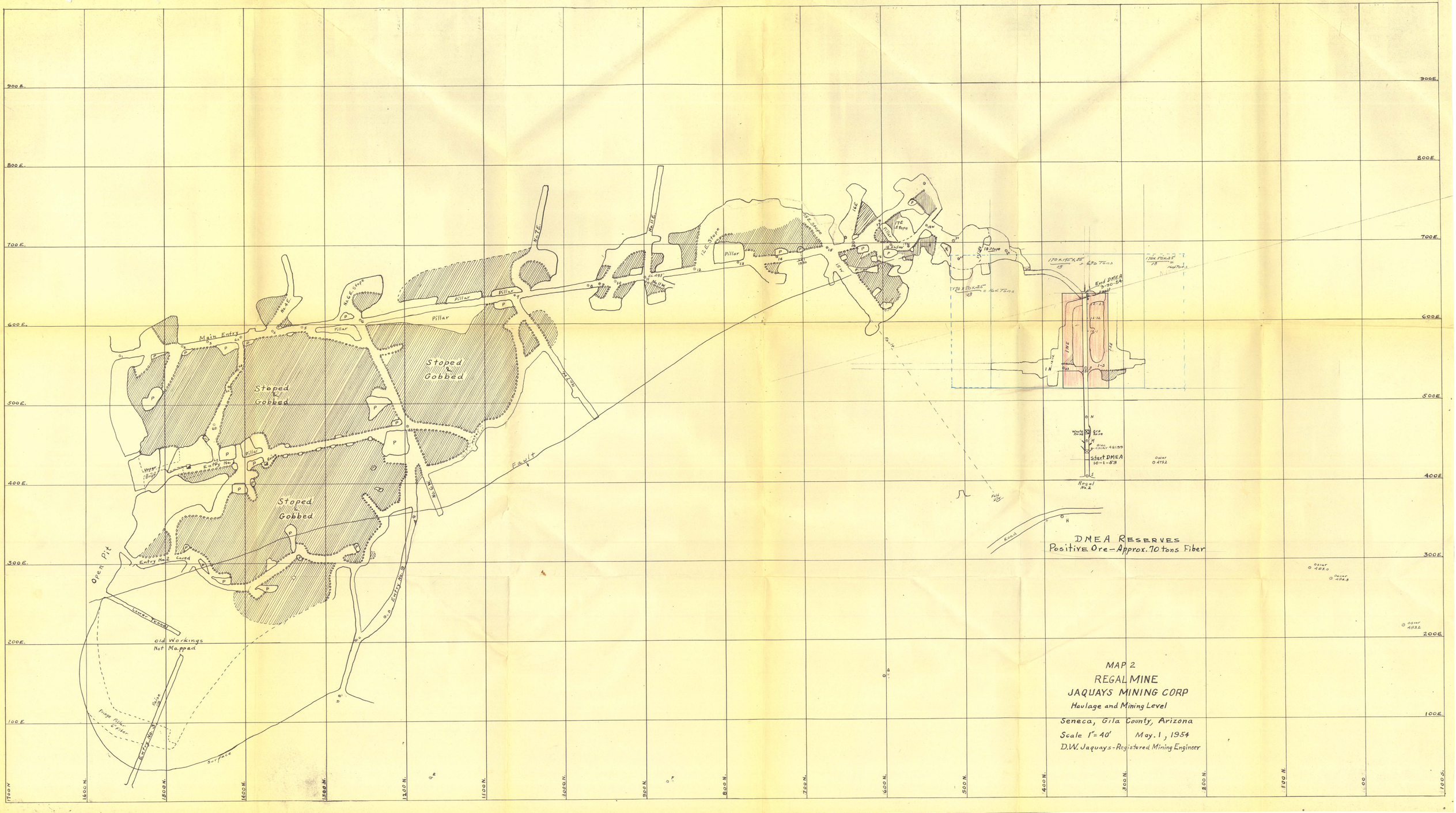
FIGURE 3.- MAP OF REGAL MINE, JAQUAYS MINING CORP., GILA COUNTY, ARIZONA




DMEA 2867

FIGURE 3.- MAP OF REGAL MINE, JAQUAYS MINING CORP., GILA COUNTY, ARIZONA


900 E.
800 E.
700 E.
600 E.
500 E.
400 E.
300 E.
200 E.
100 E.
1700 N.
1600 N.
1500 N.
1400 N.
1300 N.
1200 N.
1100 N.
1000 N.
900 N.
800 N.
700 N.
600 N.
500 N.
400 N.
300 N.
200 N.
100 N.
00
100 S.
Main Entry
Stoped & Gobbed
Stoped & Gobbed
Stoped & Gobbed
Pillar
Open pit
Entry No. 2 Caved
Old Workings Not Mapped
Surface
Fault
Start DMEA 10-1-53
End DMEA 9-30-54
Regal No. 2
DMEA-RESERVES
Positive Ore — Approx. 70 tons Fiber
MAP 2
REGAL MINE
JAQUAYS MINING CORP
Haulage and Mining Level
Seneca, Gila County, Arizona
Scale 1" = 40'  May. 1, 1954
D.W. Jaquays - Registered Mining Engineer


MAP 2
REGAL MINE
JAQUAYS MINING CORP
Haulage and Mining Level
Seneca, Gila County, Arizona
Scale 1" = 40'  May. 1, 1954
D.W. Jaquays - Registered Mining Engineer
DNEA RESERVES
Positive Ore - Approx. 70 tons Fiber
Stoped & Gobbed
Pillar
Main Entry
Open Pit
Entry No. 2
Caved
Lower Tramway
Old Workings Not Mapped
Upper Drift
Entry No. 1
Entry No. 3
Ore Entry No. 3
Surface
Fault
Road
Regal No. 2
Start DNEA 10-1-53
End DNEA 3-30-54
170 x 15 x .25 / 13 = 630 Tons
170 x 50 x .25 / 13 = 1417 Tons
170 x 50 x .25 / 13 = 1417 Tons
Oscar 4792
Oscar 4820
Oscar 4843
Oscar 4832
900 E.
800 E.
700 E.
600 E.
500 E.
400 E.
300 E.
200 E.
100 E.
1700 N.
1600 N.
1500 N.
1400 N.
1300 N.
1200 N.
1100 N.
1000 N.
900 N.
800 N.
700 N.
600 N.
500 N.
400 N.
300 N.
200 N.
100 N.
0
100 S.