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A. KOSAK
Broker

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A-BAR-K

REALTY



2100 EAST TAYLOR STREET
PHOENIX, ARIZONA

P. O. BOX 2043
SCOTTSDALE, ARIZONA 85252

July 18, 1973

Kelsey L. Boltz, Vice President
Nuclear Dynamics, Inc.
2871 Sky Harboe Blvd.
Phoenix, Az. - 85036

Dear Mr. Boltz:

Following my letter of September 27th, enclosed are some reports and assays on John Hinton's Cobre Grande. John is the client who has the 100 claims in the Black Rock Mining District.

Sincerely,

A. Kosak - broker

REPORT ON The
Cobre Grande Mining Claims
and the
Mineral Hill Tunnel site claim

by

Tom Beard

Consulting Mining Geologist

September 1956

Los Angeles, California

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LOCATION OF PROPERTY

The mining property and claims are located in the County of Graham, State of Arizona, in T5S - R20E, Sections 21, 22, 27 and 28 and further being situated in the Coronado and formerly the Crock National Forest.

The mine tunnel and dumps are at 6,600' above sea level, with the apex cropping of the east-west strike rising to 6,800' elevation.

ACCESSIBILITY & CLIMATE

The property is available throughout the year, and lies some 9 miles south and west of the Will Hinton cattle ranch, of which 4 miles of road has been installed, with the remaining 5 miles to be yet constructed. This last 5 miles can all be made with an D-8-Caterpillar angle dozer and road grader - in this 5 miles are two places which basic rock of limestones and granites are in place structure, and it will be necessary to dynamite and use rock breaking equipment for a total distance of 13 yards in one section and a distance of 25 yards in another section of the proposed road.

The mine lies 25 miles south of the Southern Pacific Rail, from the small town of Ft. Thomas, Az. The property is 45 miles westerly of Safford, Az., the county seat, and the supply hub of commercial activities. U. S. Hwy. #70 serves both Safford & Ft. Thomas. Two through trains from Phoenix to Globe to Lordsburg, N. M. and El Paso serve the area daily. Two flights daily connecting with international terminals have offices at the Safford Municipal Air Field, which affords planes of commercial and civilian status all accommodations of major facilities. All interstate bus and truck lines run regular schedules over Hwy. 70.

Climatic conditions permit year round mining operations, similar to the schedules carried on at Globe, and Ray, Hayden and Morenci.

STATUS OF TITLE

John Hinton of Ft. Thomas, is the owner, purchaser and locator of the Cobre Grande Mining Claims, numbering from one to 6 (1 - to 19) incl., situated in the Aravaipa Mining District, in Cobre Grande Mountain on the slopes of the Santa Teresa Mountain Range of Graham County. Legal record shows a quit claim deed from Norman L. Hancock and Dee Hill of Eden, Az., to John Hinton, Ft. Thomas. on 9/6/56, and shown as a matter of record in Docket 42, pages 280 & 281, indexed in Mine Deeds. Notices of location of lode mining claims of the Cobre Grande ~~Group~~ Group from 1-to-6, dated 9/13/56 in Docket 42, pages 282-283-284-285-286 and 287 and indexed in Book of Mines.

Notice of location of the Mineral Hill Tunnel Site, dated 9/13/56- Docket 42, page 353, indexed in Book of Mines.

Made a matter of record is a township Map and Claim Map combined by John Hinton - Docket 42 - page 437 in Book of Mines - numbered 3936, 9/20/56.

These claims are held under possessory title from the U. S. Govt. They are located on surveyed U. S. Govt. lands and conform as nearly as practical with the U. S. public land surveys and the rectangular subdivision of such surveys. The Mineral Hill Tunnel site was made under the federal mining laws, Section 2323, Revised Statutes, and constitutes, ~~■~~ 200 acres more or less - and is held under the procedures of this revised statute and-is-shown-as-a part of the mining laws of Arizona.

The above notices - records - maps, etc., are made a matter of record in the Graham County Court House, Safford, Az.

HISTORY

Because of the poor accessibility to the Township as a whole, the area had had little exploration and development. The writer has nothing to say in the way of production records to show past shipments made, and when and to whom. Reports from old mining men by word of mouth report that at the turn of the century a mining man responsible with early development of the mines of Miami and Superior sold out his interest at the turn of the century, and prospected and claimed and developed some 300' of tunnels, raises and winze represented at the mine.

The ore from this operation was put on mules and burros and shipped to an unknown destination. It is reported this ore averaged 13% copper with fair values in gold and silver. The writer has checked this report with sampling on the tunnel and open pit cuts and finds such values did and still do exist in commercial quantities, as evidenced by assay sheets attached. The forest service and cattlemen have maintained horse trails and foot paths used for erecting fence lines over the years. It is reported by good source of information that over the years the Hinton family and others have kept this present trail cleared and for over 30 years Mr. Landsman walked each year to the mine and cleaned the trail and path and did hand work on the tunnel and put in some open cuts to further explore the mineralized areas.

This man passed on in 1950, and is buried at his request at his camp on the west side of the mountain. Such factual data being available, prompted the writer to investigate this virgin and unexplored area, and to note such data and geological occurrences that presents itself from the workings done, together with the general physical structures relative to ore deposition.

TOPOGRAPHY

The mining properties discussed in this Report are a part of the southern Arizona Rockies, and lie in what is known as the Mountain Region or Mexican Highlands, which constitutes a section of The Basin and Range Province. These deposits are located on a pediment that is a northwestward projection of the Santa Teresa Mountains. The terrain is highly faulted with uplifts and sheet wall systems combined with foldings and trenching of the rugged mountain range province.

This type of complex structuring was probably due to the major late tertiary volcanics. The range trends northerly to the local area of the San Carlos Dam, thence a slow southerly faulting system which grades down in sedimentary movements to the lower pediments and forming the Regional drainage system of the area in the Gila and San Pedro Rivers.

Pine trees, scrub oak, together with mesquite, greasewood, and paloverde and cactus are common vegetation, with ocotillo and catsclaw on the low desert benches. Where the fault and contact zones combine together, the water table is relatively shallow, which has been evidenced by creating water at depths not to exceed 100' for domestic purposes, and by shallow excavating for spring water for cattle use within a few hundred yards of the general mine area. Many natural springs and seepage areas are scattered through the township in which this report has reference to.

GEOLOGY

The Santa Teresa Range consists of many series of unconformities from faulting and displacement related to the volcanic epis of the tertiary times. Two systems of fracturing and faulting occur in this district. The first system is a northeast strike, which consists of the pre-mineral conditions, and in which the major ore depositions are confined. There seems to be a second system of post mineral fracturing that is striking northwest and is faulting the veins and the secondary replacement zone in limestone. The main tunnel reflects the chalcopryrite replacement of the limestone where folds occur, and the impervious volcanic rock has afforded a condition of damming the solutions, creating rooms and traps in which there appears rich localization of the copper ores.

The main ore system from the surface vein of the northwest structure is related to 3 types of deposition -- #1: that tabular replacement is occurring along the fault fissures; #2: that irregular replacements occur in the wall system and favor the carboniferous limestones, and creating an outward movement of mineralization from the main depositional structure. This type of mineralization has been noted to 100' on eachside of the major structure, and or the veins and beds. The 3rd condition is related to the disseminated deposits, occurring in the diabase and quartzite, in which large bodies of medium grade ore appear to exist.

Mineralization consists of pyrite, chalcopryrite, and bornite with some azurite and malachite together with coatings on the wall structure of diopside. It is this writer's opinion that the rock formation consisting of paleozoic limestones and sediments, quartzites-shales and conglomerates are lying on a basement of complex structure which is unknown at this time, as there are no developments to depth to denote this formation. However, this structure has been intruded by the diabase and granite rocks, which have prepared the way for mineral replacement within the structural limits referred to in this report.

The mineralized zone follows the trend of the intrusive rocks, and both intrusives and mineralization are coincident with a main regional axis of uplift along which paleozoic sediments have been raised, folded and distorted with relation to the volcanics that flank the uplifted block.

The general area within this Township and the adjoining Township 19, reflects the same occurrences depositionally as is recorded here, in which the Stanley Butte, and Deer Creek area of western Graham County depict the top of the Gila conglomerate lying above the Dacite flows, under which is the whiteail, conglomerate, thence into the cretaceous sandstone, shale, and overlying andesitic volcanic rocks of the Deer Creek Basin, which is some 3 miles northerly and westerly of this area.

Approximately 1,500' westerly along the mineralized zone from the tunnel, there is an occurrence of a quartz-diorite porphyry dike which cuts the mineral zone and is a thick sill, which has almost a vertical structure.

An open cut referred to on the accompanying map, and butting against the overlying sediments shows high values in copper, gold, and some silver. This cut some 16' wide and 5' deep and 10' long, is the only workings going westerly on the mineral-zone which has a strike of north 65 degrees west.

The dike cuts north 10 degrees east across the mineral zone. Surface examination farther west on the ore producing anomaly reflects good mineralization relative to the removal of the overlying limestone capping, which could vary from 20 to 50' before contacting the ore zone. It appears to the writer that the limestone replacement of chalcopryite ore was related to the mineralizing solutions having traversed the limestone bedding, and depositing high values in copper, gold and silver in the localized areas of contacts.

There is continued ore deposition of lower grade along the entire 2,000' of exposed mineralization, which in turn was the emanation of the fissuring from the transverse strike, with the solutions having been crudely selective, in working out a variety of beds along the minor fractures and folds so that the sulphide ore occurs as irregular masses, distributed through the partly garnetized limestone.

The general rule the writer has found from inspection of the area is that surface indication of the clusters of garnet, associated with clopside and tremolite, in the limestone and altered sediments is evidenced of copper bearing mineralization at not too great depths. Relative to ore indication at surface, it is indicated from the present workings in the tunnel that as the mineral zone gains in depth, the width of the ore bearing zone becomes greater.

The greatest ore bodies are reached at the 2,500' level in the Magma Mine at Superior, where the main shoot is 30 to 40' wide. The traverse conditions of the mineral zone is its easterly and westerly course has played a major part in the formation of the massive andradite during the epoch of replacement, and it is my opinion that the associated minerals of diopside, tramolite, epidote, accompanied by pyrite, magnetitite, chalcopryite, and some sphalerite were simultaneous in their occurrence as sulphides and not introduced at later periods.

Such an occurrence of complex minerals creates a depositional condition in which the basic character of the original rocks have been altered to the complexity of the present types of replacements minerals that are found in this deposit ranging from oxides, sulphides, carbonates and sulphates.

In conclusion and genetically speaking, the writer suggests so far as present evidence appears, that the copper zone of mineralization occurred independently of the main porphyry mass of granites of the Santa Teresa Range from which the Cobre Grande Pediment radiates, and it is particularly associated with dykes which were highly charged with magmatic waters.

ESTIMATED ORE

In order that as near a true estimate be made of immediate tonnage available, the writer has taken the tunnel workings at the floor level and has taken the width of the face that shows in a north drift from the main tunnel which emerges into a large room, which has a wide raise from the floor of the drift, and has taken the westerly length of the strike to the open cut designated on map and estimate the depth at 100' from present tunnel depth which is conservative, allowing for the surface alteration of limestones cappings.

The overall estimate is 1,500' long - 20' wide and 100' deep, with the rock figured at 12 cubic feet to the ton, it would appear that there is some ~~xxx~~ 125,000 tons of commercial grade ore, with an overall average of 5% copper, .05 gold, and .50 to 1 ounce of silver.

Extending the known further width of the ore mineral zone to 50' and to the known length of 2 claims or 3,000' in which copper mineralization outcrops and taking 200' in depth which is proven from the tunnel and dump exit to the apex of the easterly and westerly strike along the mineral zone, which show some 2,500,000 tons of copper ore that from the writer's opinion will be good grade of milling ore, with the metalurgy for treatment still to be determined. Should this Cobre Grande pediment be equivalent to its name, the tonnage of copper ore could be in unknown millions of tons, and could be comparable to Miami, Superior and Morenci if development and exploration work is projected into active operation.

METHOD OF OPERATION

The removal of ore from this deposit can be operated as an open pit mine. The known width of higher grade ore with average of 5% copper content can be selectively mined by shooting the waste and lower grade ores and creating a stock pile of future milling material, and taking the 8 to 20' width of shipping grade ores.

This type of operation is available for wagon drills for deep blasting either in volume or in a selective handling of ores. Movement can be done with power shovels, and loaded onto heavy duty trucks for trucking to rail head. Removal of overburden to expose the ore zone can be accomplished with either D-6 or D-8 Caterpillars or with any type of Dozer equivalent to these machines mentioned.

The area topographically speaking is ideal for stock pile of ore and disposal of waste as the zone of mineralization is the apex of the pediment, with a long extended faulted trough on the north extremity, which has a 300' sheer dip into the trough, that leads into a major canyon where a fault alters its direction to a northerly course of travel.

The westerly end of the pediment shears off into a north south extending canyon with a northerly dip into the Deer Creek area, and acts as a relief for the Western area of the Township. This type of topography is typically suitable for an operation as is presented here in that there is disposal room for millions of tons of waste materials and possible future tailing dumps. Power for stationary machinery and domestic purposes must be developed by generators for electric power. Fuel storage will be necessary for continued operations. Purchasing under contract in all departments can be arranged f.o.b. mining operations.

IMPROVEMENTS

Facilities for housing have been built from logs taken from native timber. The years have deteriorated the two buildings and they need 60% repair. The mine portals need about 2 square sets to make safe mining and hauling ore from underground. The track is installed to the face of ore a distance of some 200', and has a 1,200 lb. ore car that is in good condition. Native timber can be cut for varied uses in the mining operations, or to further ascertain the present improvements.

MARKETING ORE

The ore that has been developed, and the possibilities of future developed ore in excess of the ore tonnage now estimated is a good smelting type of copper rock. Such ore that is acceptable from the point of low penalties and good silica content is in demand under good contracts from smelters in Arizona and El Paso. The writer suggests the American Smelting & Refining Co. of El Paso to handle the ore from this deposit, as the proposed road leads to the nearest rail head, and the freight rate on to El Paso would be less than the dirt road haul to Hayden, and the Miami plant is not accepting custom ore. Excellent loading ramp facilities are to be had at the siding at Ashurst, Az., and is 25 miles distant from the mine location. The regional ore buyer, Mr. Reed Welch, is located in Tucson for A. S. & R. and could be consulted relative to contracts on regular shipments.

OPERATION COSTS

The proposed costs per ton of mining and developing ore for shipment from open pit operations is estimated at \$3.00 per ton. Trucking costs to rail head for 25 miles dirt road \$3.00. Rail transportation cost from Ashurst to El Paso estimated at \$4.00 per ton. Estimated smelter treatment charges at \$4.00 per ton of ore. Administrative costs 50¢ per ton of ore. Supervising engineer and/or geologist in charge of all operations \$1,000 per month, plus expenses. All other labor costs are absorbed in the estimated per ton costs. The Arizona industrial commission requires a cash deposit on labor and the compensation fund estimated at \$1,000.

COST Breakdown per Ton

Mining operation cost - - - - -	\$3.00 - -	\$1.00
Trucking costs to rail - - - - -	3.00 - -	.09
Rail freight to smelter - - - - -	4.00	.12
Smelter treatment charges - - - - -	4.00	4.00
Administrative costs - - - - -	.50	.05
Engineering costs - - - - -	1.00	.20
Depreciation costs - - - - -	1.00	.50
General & Misc. Expense - - - - -	<u>1.00</u>	<u>.25</u>

Total expense per ton of ore	\$16.50	6.26
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Ore Returns per ton

One (1) ton of 3% copper ore @ -----	6.16	35.00
Less operation costs - - - - -	16.50	
Less 20% for smelter & total deducts - -	<u>7.00</u>	
	23.50	<u>6.26</u>

Total net profit - - - - \$12.50

This operation is estimated to produce not less than 1,000 tons per month or an average of 5 rail dump gondola cars of 50 tons each per week and/or a car per day on a 5 day work week.

Estimated net profit per day - concentrates -	\$12,500.00	
200 tons per day	net	\$1,548.00

CONCLUSIONS

The following general conclusions were reached as a result of the findings made and further related in the report attached.

1. The mineralization of the mine and the area discussed from the geological setting, warrants the immediate development program stated in this report to be activated.
2. Past workings of the mine, combined with present reconnaissance in determining the geological prospects have revealed a definite ore tonnage of commercial grade mining and shipping ore.
3. The potentials relative to ore production in this mine for future operations appear as an enormous ore body with both smelter ore for shipping purpose and local milling and treatment ore for assured plant recovery systems.
4. Simplicity in all detail is more than favorable in every consideration in establishing a profitable operation in the removing and development of specific ores from favorable zones of known mineralization.
5. The amount of capital required in financing this projected mining operation, in relation to the possible returns from a net profit consideration, place this proposed mining project high on the lists of one that should be a successful venture.
6. The writer can only conclude this report with a favorable recommendation that the main contention in any mine is that if mineable ore is present and is to had without any complexities in its removal and development of further valuable ore, there should be no mistake in its success, and such a contention seems to reflect the possibilities that are represented in this proposed mining operation.

Tom Beard, Consulting
Geologist

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P
Y

4/13/57

Tom Beard
1333 E. 7th St.
L. A.

Dear Sir:

Enclosed is our assay certificate showing the values and analysis of your sample of ore.

This grade of 9.00% copper would give a smelter value of nearly \$40.00 per ton at present prices.

We could accept some of this type now, so when you have ore to ship, let us know.

Yours very truly,

C. F. Smith, ore buyer

International Smelting and Refining Co.

C
O
P
Y

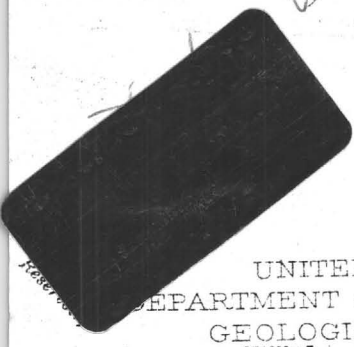
~~John Hinton~~

John Hinton's 100 claims

5 core drills

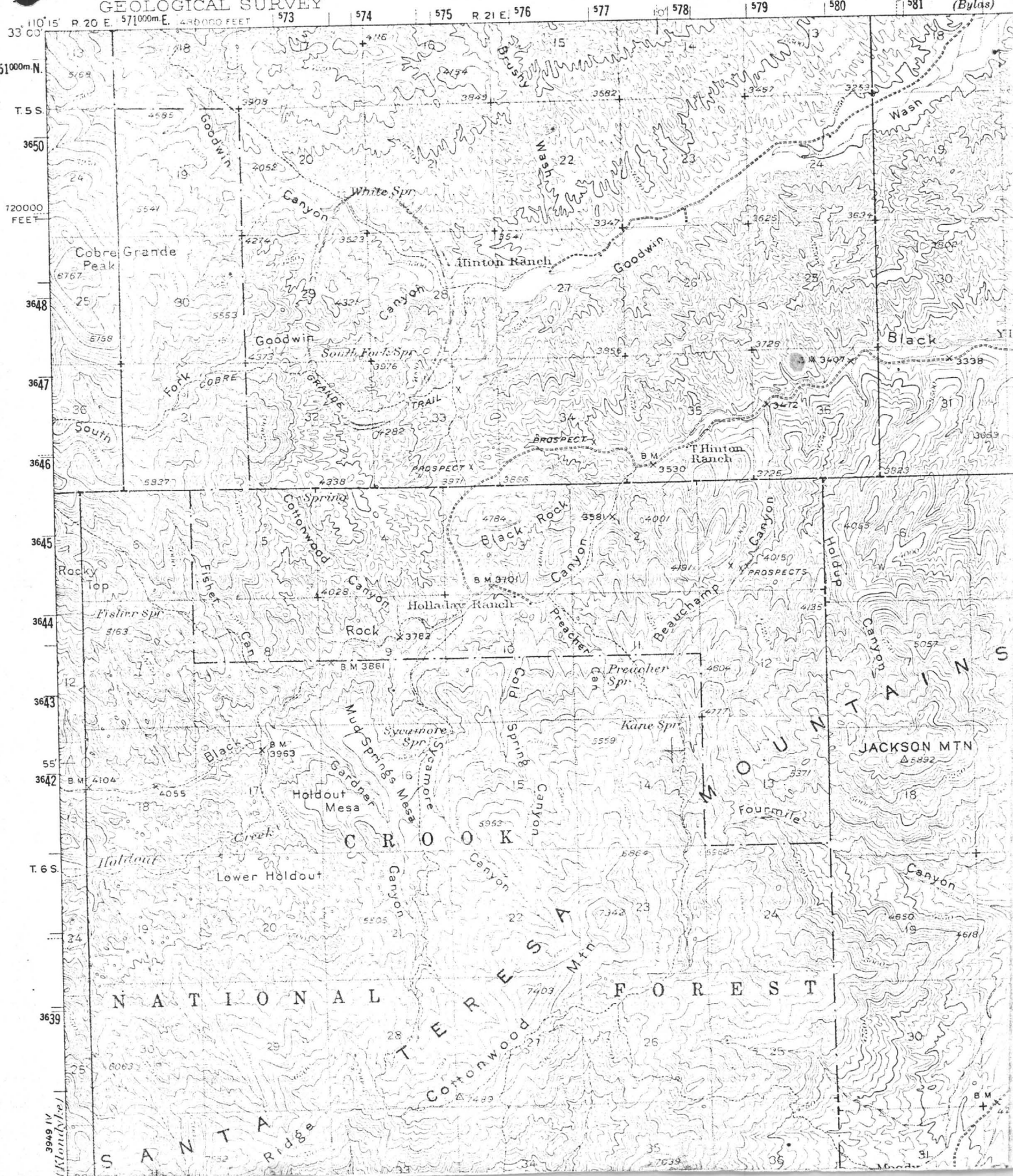
~~927~~

+100 -
end price very open



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

3950 II
(Bylas)



3949 IV
(Klondike)

Figures