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REPORT ON MALIK'S CONSOLIDATED COPPER GROUP
WALLAPAI MINING DISTRICT, MOHAVE COUNTY, ARIZONA

By Richard W. Malik, Field Engineer

Location.

The property consists of 10 mining claims located in one block on the east and north side of Ithica or Turquoise Peak, in Mineral Park Basin, on the west side of the Cerbat Range, and about 5 miles SE from the Chloride R.R. station, on the Santa Fe branch line running from Kingman to Chloride. The nearest railroad point is Mineral Park station, 5 miles west from the property, and connected by a good auto road. Kingman, the county seat of Mohave county is 24 miles south of the property.

Titles.

Held by individuals under the U.S. Mineral Acts by doing annual assessment work. No patented claim in this group.

Climate.

The climate of this region is arid, with hot summers and mild winters. It is the most healthful climate in the U.S.A., and the precipitation does not exceed 6 inches - a few showers in early spring and late summer, snow very seldom, and only a few days on the ground, as the melting is very rapid. Vegetation of the desert type; timber growth in Mineral Park Basin consists of scrub pine and cedar, some palo verde and cacti.

Topography.

Topography surrounding Mineral Park is mountainous and the main Cerbat Range on the east reaches the highest elevation of 7,000 feet in Cherum Peak north of Mineral Park Townsite, which once was the county seat of Mohave County, when the fissure veins on the old Pre-Cambrian Range were worked for gold, silver, lead and zinc.

The drainage from the whole basin issues through Mineral Park wash into the Sacramento Valley to the west. The basin is about 2 miles long by one mile wide and reaches an elevation of 4,000 to 5,000 feet above sea level.

Geology.

The country rock consists of the Pre-Cambrian granite, gneiss, and schist which were intruded at a later period by coarse grained granite porphyry, also monzonite, and diorite and these in turn were cut by rhyolite dikes.

The main granite porphyry strikes S. 65° E. with a dip of 80°-60° NE taken along the Manuel dike and its continuation on the Ithica Peak. We will find the Keystone leader running at right angles into the Manuel dike near the Kay property. The granite porphyry which caps the copper deposit is very much leached, showing some iron oxide and manganese and only a trace of copper, and has nothing in common with the fissures on the old Pre-Cambrian complex, which all showed good values on surface in the precious metals, but lower down turned into refractory ores of lead, copper and zinc and are of the same type as the veins in the Chloride mining district, 5 miles northerly on the same range.

Undoubtedly the granite porphyry and the schist beds were mineralized at the same time, and after that the leaching of the upper strata enriched both to a commercial ore body. As the writer has done exploration work in Mineral Park for the past two years, he is able to show the main outline of the copper deposit. The Ithica Peak shows very plainly as being the main uplift of the porphyry in the main trend N. 60° W. over Manuel to Nigger Head, where a distinct fault throws the porphyry more to the north to the head of Alum Wash, and the uplift on the head of Alum Wash shows similar structure to Ithica Peak.

The porphyry forms laccoliths and dykes the same as the schist, but porphyry is the main capping. The porphyry is a light colored rock stained by iron and manganese and softening below the

surface to kaolin. The schist is very similar to the Pinal schist in Miami-Inspiration deposits. It is a bluish grey rock with satiny sheen, splitting easily into thin sheets. It is bisected by many veinlets running in all directions and disseminated with little specks of pyrite, mica and chalcopyrite, showing in the cleavages chrysocolla coatings. The schist itself is made up of quartz, sericite, hornblende, and biotite. As the Keystone Mine shows hornblende schist at the 300 ft. level, I would ascribe the origin of the copper schist to the hornblende schist beneath, which by metamorphism was made into the present state. As the schist is very acidic it was favorable to making a copper deposit in the form of carbonates. As the writer's development shows some beds of schist were evidently more favorable for the ore deposition than others. To explain this we would have to take into consideration that the granite porphyry was made into a schistose zone near the main dikes by shearing and faulting and those schist bodies are only an alteration of the granite porphyry and are entirely different from the basic hornblende schist in the Keystone Mine.

Ore Deposits.

After two years of careful study and considerable prospecting work, the writer came to the conclusion that the main copper deposit lie in the basin and on the slopes north and east of the Ithica Peak. The old opinion here in Mineral Park that the Nigger Head, capped by iron oxides and manganese stains, were the croppings of a large copper deposit are not guaranteed. The Queen Bee mine near the Nigger Head, following a prominent fissure down to 200 feet had only silver, lead, zinc, ore, and a tunnel on the west side of the Nigger Head disclosed no copper. Assays from the surface do not show a trace of copper. The largest copper deposit so far opened in the Malik ground shows white colored granite and rhyolite porphyry very much leached on surface. The old workings on this ground were made for turquoise, and on fissures for silver values. The main opening is

the Malik tunnel, 350 ft. long with several crosscuts; the trend of the tunnel is SE cutting across a NE ridge, leading from Ithica Peak to Brown's Ridge. The surface shows leached schist and leached porphory; then carbonates appear, and a 60 ft. crosscut in schist to the NE shows $\frac{1}{2}\%$ copper, 40¢ in gold and a trace of silver. The SW crosscut is in granite porphory showing 0.58% copper, trace of gold and a trace of silver. A stringer of 3 to 4 inches in this drift shows from 2- $\frac{1}{2}\%$ copper, 2- $\frac{1}{2}\%$ zinc, 80¢ in gold and a trace in silver, up to 3% copper, 60¢ in gold, and 40¢ in silver. The face of the 350 foot tunnel is in monzonite with chalcopryrite and pyrite of the same grade. We have here a block of 180 x 100 feet opened by tunnel and crosscuts averaging $\frac{1}{2}\%$ copper, a trace of gold, and 20 cents in silver which shows the primary ore, and in some places carbonates of copper as malchite and crysocolla form. This outcrop of the ore mass is lean. This same character we found on the Ruth Mine at Ely, Nevada. The change from lean $\frac{1}{2}\%$ ore to a 3% chalcocite ore was very abrupt, and we have the same conditions here on the Kaye property, and we would naturally expect a chalcocite zone under the outcrop of the ore mass near the peak. The continuation of the SW drift in the Malik tunnel to 400 ft. would tap the peak, and gain 400 ft. more depth, but the driving of a lower tunnel on the water level would be the most essential work to do, as it would tap the chalcocite zone 200 ft. below the present tunnel, furthermore, it would establish drainage for the whole section, and would have 800 ft. depth under the peak. The length the tunnel would gain is 2,000 ft. in a proven ore zone. The ore bins on the mouth of the tunnel would be on an easy railroad grade, 3 miles from the main line. The depth from the surface to the ore body varies a great deal between the different altitudes of the properties. In the gulch properties, the water level is 20 ft. deep, and this establishes the chalcocite zone with 10 ft. of lean ore on top, while on the Malik tunnel in the peak region, the top of the ore body is 125 feet under ground. By aneroid the writer found that for every 1500 feet in length from the gulch

to the Malik Tunnel, the water level rises 100 ft., or for 4500 ft. in length, a rise in the water level of 300 ft. is found, allowing the Kay shaft 4300 ft. elevation, 10 ft. to water level, Malik Ridge apex 4,900 ft. elevation, and 4500 ft. from the Kay shaft, then subtracting 300 ft. we would get the water level at 4,600 ft., as the tunnel level elevation is 4725 ft., we would need 125 ft. depth to the water level, the lower proposed tunnel being 200 ft. below the present tunnel would tap the water level 75 ft. below its high mark, and this tunnel continued to the peak would encounter still higher water level, and would be a splendid drain tunnel. The erosion in this section was quite severe, and the solutions from the upper stratum enriched the lower ore body, and made by chemical reaction of the chalcopryrite the present chalcocite zone. Nevertheless, a considerable amount of copper was carried from the upper section in solution to the valley, and by encountering calcium carbonate formed an appreciable ore body of copper carbonate on the emerald Isle mine about 1- $\frac{1}{2}$ miles below Mineral Park.

Assays.

The surface shows seldom gold and silver unless much manganese is present, which was favorable for precipitating the values. Copper is only a trace. The top of the ore body contains $\frac{1}{8}\%$ copper, a trace of gold and 20¢ in silver. The chalcocite zone for 80 ft. average on the 50 ft. level shows 3% copper, 40¢ in gold, and 40¢ in silver. The higher grade carbonate ore yields 12% copper, 80¢ in gold, and 40¢ silver. Selected boruite and chalcocite 9% copper, \$1.10 in gold, and 60¢ in silver. As the enrichments in the chalcocite zone show blotches of rich ore, and seams and veinlets in concentrated form, the sampling must be done more in bulk form and quartered down, which will be more accurate than cut samples, alone.

Facilities.

Short haul of 3 $\frac{1}{2}$ miles to a railroad siding, well equipped stores within 5 miles, fuel for domestic purposes on the claims, water for culinary purposes in concrete cisterns, and some of the houses

could easily be remodeled for use as mess and bunk houses. The water from the workings is not suitable for use as it contains too much acid. All houses in the old townsite become the property of the buyer, when the mines are paid for in full. The roads are in good shape to any mine in the basin. Concerning power, the electric line from Kingman to Chloride goes through Mineral Park, and could easily be used. I would advise the leasing of the Emerald Isle copper plant, one and one half miles below Mineral Park on the way to the railroad. This plant is an electric leaching plant in good condition, and tests could be made there which would enable better selection of a proper plant for hauling large tonnage in the future.

Price & Terms.

For the Malik Consolidated group consisting of fourteen claims covering the main disseminated porphyry copper deposit, ninety-six thousand dollars (\$96,000.00), and a block of non-assessable stock in the new company to be formed, the buyer to take care of all assessment work on each and all claims, and sixty shifts per month on the Tarr group, and make payments due on options as follows:-

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Respectfully submitted,

(Signed) Richard W. Malik
Field Engineer.

Chloride, Arizona, Sept. 1, 1923.

Malik's Consolidated

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ASSAYS:

The surface shows seldom gold and silver unless much manganese is present, which was favorable for precipitating the values. Copper is only a trace. The top of the ore body contains 1/2% copper, a trace of gold and 20¢ in silver. The chalcocite zone for 80 feet average on the 50 foot level shows 3% copper, 40¢ in gold, and 40¢ in silver. The higher grade carbonate ore yields 12% copper, 80¢ in gold, and 40¢ silver. Selected boruite and chalcocite 9% copper, \$1.10 in gold, and 60¢ in silver. As the enrichments in the chalcocite zone show blotches of rich ore, and seams and veinlets in concentrated form, the sampling must be done more in bulk form and quartered down, which will be more accurate than cut samples alone.

FACILITIES:

Short haul of 3-1/2 miles to a railroad siding, well equipped stores within 5 miles, fuel for domestic purposes on the claims, water for culinary purposes in concrete cisterns, and some of the houses could easily be remodeled for use as mess and bunk houses. The water from the workings is not suitable for use as it contains too much acid. All houses in the old townsite become the property of the buyer, when the mines are paid for in full. The roads are in good shape to any mine in the basin. Concerning power, the electric line from Kingman to Chloride goes through Mineral Park, and could

#6 - Malik's Consolidated Copper Group.

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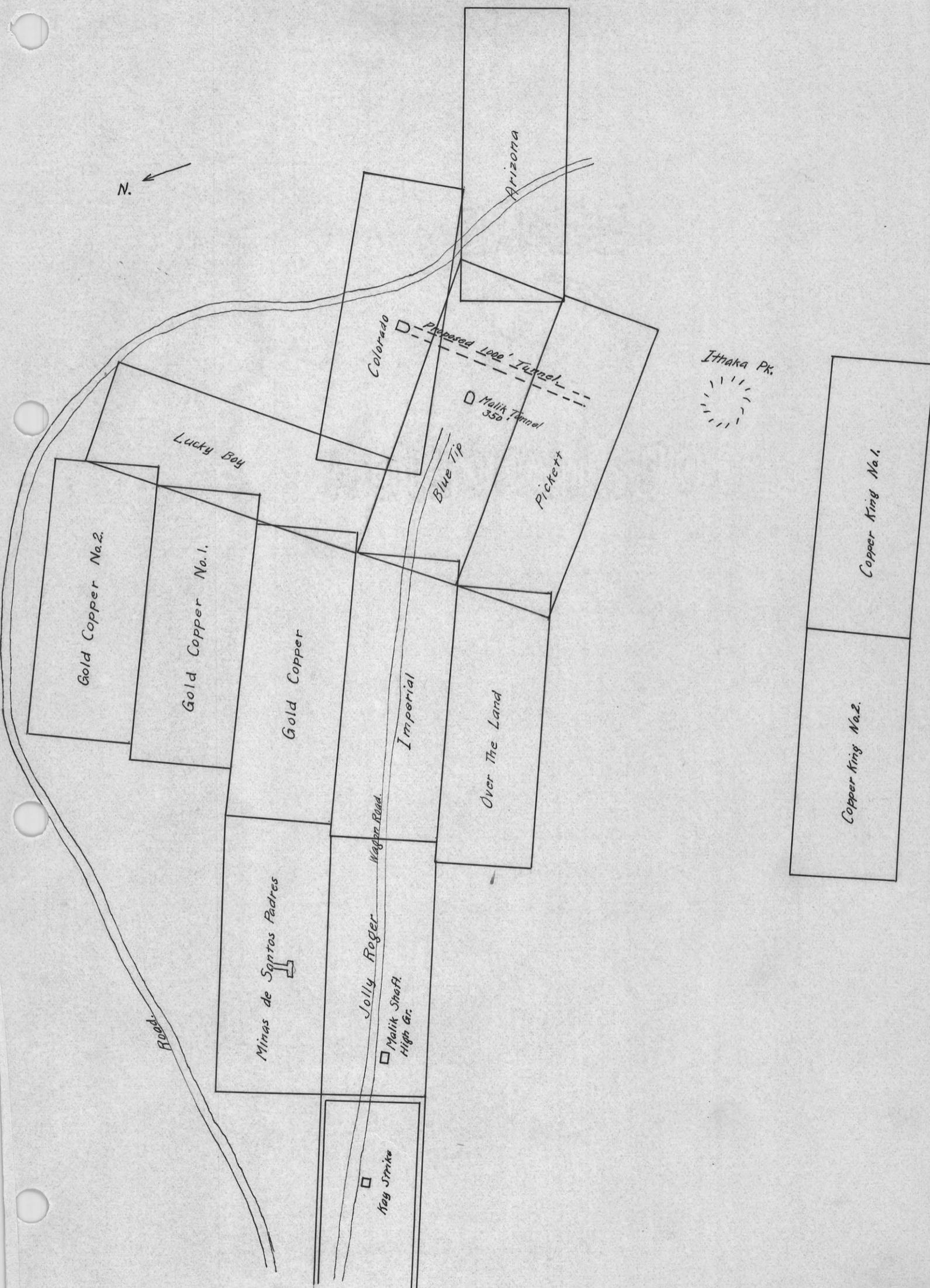
Sd. Richard W. Malik
Field Engineer.

Chloride, Arizona, Sept. 1, 1923.

R. Malik's Porphyry Copper.
Mineral Park, Mojave Co, Arizona

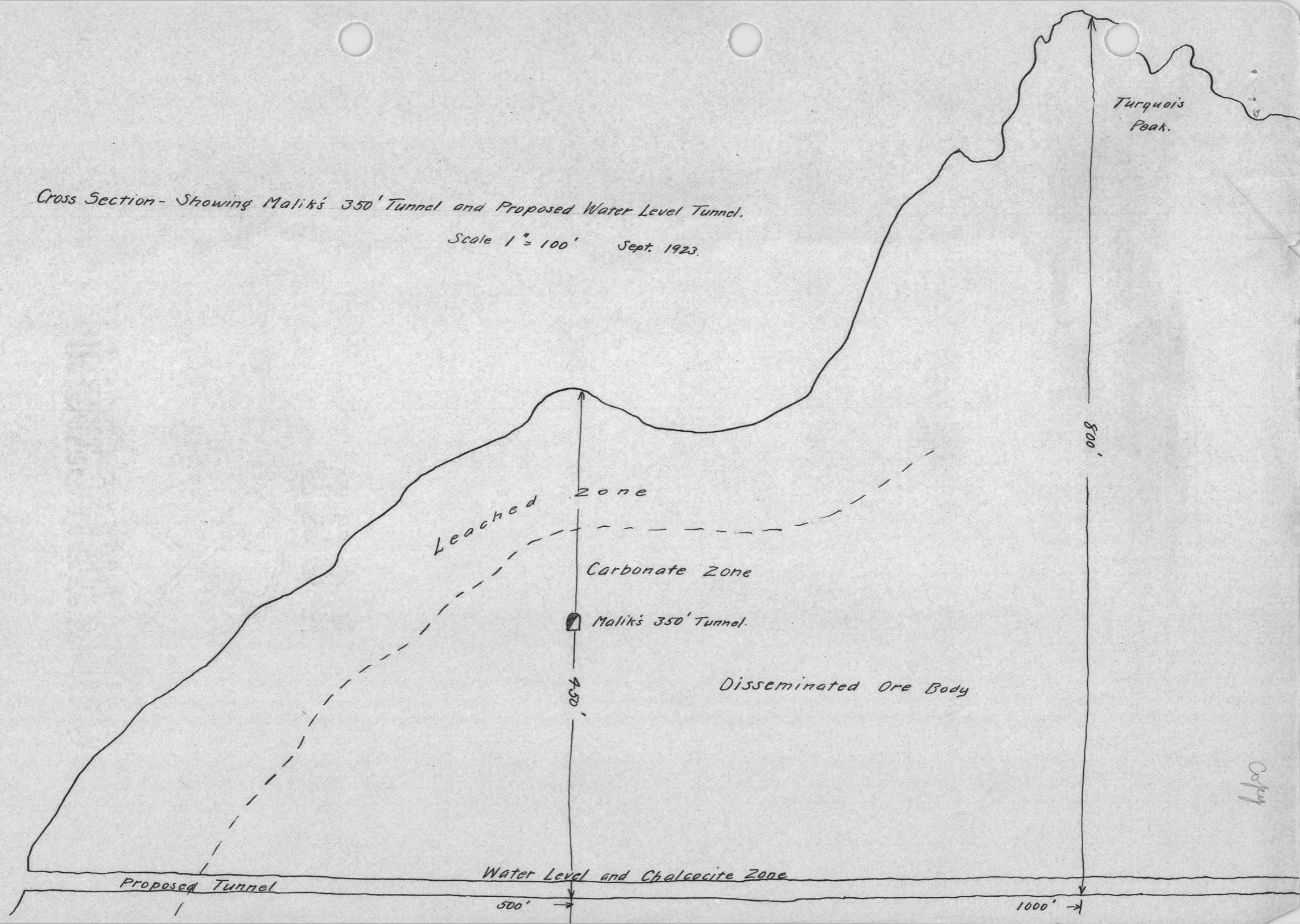
Sept. 1923.

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Cross Section - Showing Malik's 350' Tunnel and Proposed Water Level Tunnel.

Scale 1" = 100' Sept. 1923.



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