Waldemar M. Ervin
MINING ENGINEER

NEW MEXICO FOUNDATION

Consecutive Corporate Name

CONTINENTAL ENGINEERING COMPANY

Mr. C. B. Degner, President
Engineers' Gold & Silver Mining Company
Carrizoso, New Mexico

Dear Sir:

In compliance with your request for a report on the properties of the Engineers' Gold & Silver Mining Company, I am submitting the following:

The Engineers' Gold & Silver Mining Company own properties in two mining districts about 60 miles apart, the Water Canyon properties in the Nogal District and the Gallinas properties in the Red Cloud district. The two groups are discussed separately in this report.

CONCLUSIONS:

Water Canyon properties in Nogal District:

The mineralization found in the wide fissure veins of great length on the Water Canyon properties appears favorable for discovery of valuable ore bodies in these veins below the surface tufa and near water level. Operations are recommended which will explore these veins in the locations most suitable for ore deposition and yet carry on the work at minimum cost.

The writer has been very favorably impressed with the surface indications seen and is of the belief that the properties offer a splendid opportunity for development.

Gallinas properties in Red Cloud District:

The geological conditions and surface mineralization present on

J. E. Degner
[illegible]

[illegible] these claims together with the history of adjoining properties warrants the opinion; that there are numerous ore bodies of shipping grade within 100 to 200 feet of the surface. That [illegible] the extremely broken surface rocks, probably 500 to [illegible] feet of depth, mineralization has been more concentrated [illegible] large ore bodies will be found.

It [illegible] been noted that the Old Hickory [illegible] surface, [illegible] been quite a little tonnage [illegible] and [illegible] from [illegible] the possibilities are [illegible] considered. [illegible] relatively short [illegible] Hickory [illegible].

[illegible] ore bodies [illegible] mined.

[illegible] for [illegible] a profitable shipping grade of [illegible] Old Hickory [illegible] within a [illegible].

The [illegible] substantial [illegible] Grand [illegible] it [illegible] be doubted [illegible] profitable mine.

[illegible] PROPERTIES:

The [illegible] properties are [illegible], the [illegible], the Upper Lode, and the Little [illegible] [illegible] fifty-six (56) [illegible] the [illegible] acres.

[illegible] located in the Nogal Mining District [illegible] Ruidoso, New Mexico and along the west slope [illegible]

Blanca Mountains. The claims are held by location under the mining laws of the United States and the State of New Mexico. The area in which the claims lie has sufficient timber in the canyons for mining purposes. Several springs are located on the property and apparently more water could be developed for domestic and milling purposes. A coal mine is located some four or five miles from the property, thus insuring fuel for power at low cost.

A large bunk house has been built on the Surprise Mill and tunnel site claim at a good spring supplying sufficient water for camp needs. Several pictures taken on these claims are attached to this report.

GEOLOGY:

The surface rocks of the area are exclusively of igneous origin, the principle surface rock being an andisitic tuff or breccia. The andesite has been eroded in a number of places, exposing the underlying rocks, these standing up in ridges resembling dikes and usually so called. The underlying rocks exposed are much altered. In many places they are of a material which has been classified by the U. S. Geological Survey as probably an altered monzonite. Attention should be called to this as the monzonite is an accompaniment of all mineralizat ion in this portion of New Mexico. The andesite is cut by several true, unclassified porphry dikes. These dikes are not mineralized on the surface but one which is exposed in the Iron Blossom shaft at 100 feet of depth is carrying copper, principally chalcopyrite, disseminated thru the dike material.

THE PARK GOLD:

The Park Gold Group is comprised of fourteen (14) claims. The main vein of the Park Gold claims Nos. 3, 4, 6 and 11 is a quartz vein filling the fissure of a contact between the andesite and the underlying monzonite. The monzonite outcrop has a bearing of N. 35° E., is approximately one hundred (100) feet wide and may be followed for more than a mile.

A shaft fifty (50) feet deep on this contact vein, located on a high ridge at the west end of Park Gold claim No. 3, exposes the mineralized portion of the quartz vein as being thirteen (13) to twenty-four (24) inches wide. Two samples taken by J. D. Coon from this shaft assayed: Sample No. WC. - 1: Gold 0.02 oz.; Silver 3.80 oz.; Copper 8.2 %; Lead 7.1 %; On the basis of todays metal markets, a gross value of $38.25 per ton. Sample No. WC. - 2: Gold 0.01 oz.; Silver 6.0 oz.; Lead 35.2 %; (not run for copper), a gross value of $45.79. The vein at this point is several hundred feet above ground water level and shows intensive leaching and oxidation, in view of which these assays are very favorable.

Three veins are found northwest of this contact which are parallel to the contact. These veins are quartz carrying ore minerals, are quite prominent and are probably fissures. The most northwesterly vein of this parallel system has the same bearing as the Park Gold Contact, i. e. N. 65° E., and can readily be followed for over a mile and a half. The vein appears to be vertical and to have a uniform width of about ten feet.

The gangue is composed of a very finely granular honeycomb quartz with yellow limonite, in contrast with other veins on the property,

very little calcite or barite is found. Copper and lead minerals show in the quartz at all the places at which the vein was examined. Three shallow open cuts constitute all the work that has been done on this vein.

SURPRISE GROUP:

The Surprise group is composed of twenty-five (25) claims. The Surprise vein is the outstanding feature of the property. This vein runs N. 61° W., cutting the Park Gold system at an angle of 54°, and appears to be independent of the other fracturing in the area. The vein is vertical, varies in width from twelve (12) to thirty-five (35) feet, averaging twenty (20) feet and may be readily followed for over 3,000 feet from where it crosses Water Canyon on the southeast to where it disappears in an alluvial fill on the Iron Blossom claim at the northwest. A heavy iron gossan marks the course of the vein from about the center of Surprise No. 1 claim to the northwest terminus.

The Surprise shaft cannot be examined to the bottom because of an old platform at about fifty (50) feet. I examined the shaft to the platform and apparently small pockets of good ore were found all the way down. A few specimens remain, the appearance of which, together with specimens found in the dump confirm assay results of samples you had taken previously. Since all commercial ore has been removed no new samples were taken. The assay results of your samples are given in detail in the page of assays at the end of this report, as Nos. Wc - 7, WC. - 8, WC. - 9, WC. - 10, WC. - 11, WC. 12. Sample No. WC. - 9 was probably nearest representative of the original ore as it was a 15# sample by A. S. & R. Co. and assayed gold 0.22 oz.; silver 30.7 oz.;

Copper 4.48 %; not assayed for lead. Gross value on present N. Y. Metal Quotations of $40.15.

Mr. E. L. Csanne, a former owner of this claim, in a letter dated February 4, 1941 states, "My recollection is the shaft at Apex (later called Surprise) is about 85 feet. Sample taken at bottom across the shaft assayed 21 ozs. silver and 3% copper which I had made by the Pueblo Smelter. I also received about the same results from an open cut and short drift following on vein towards shaft on the west at Apex."

The vein material is principally quartz with calcite and barite, oxidized iron minerals, the copper minerals malachite, azurite, with some chalcocite and chalcopyrite, cerargyrite and embolite, and galena. The vein at the shaft is twenty(20) feet wide whereas the shaft has been sunk about the middle of the vein exposing five (5) to six (6) feet of the vein and has not at any point cut either wall of the vein, hence we cannot determine what the mineralization may be next to the walls where the heaviest mineralization frequently occurs. The site of the shaft is probably five or six hundred feet above ground water level and the vein materials show heavy leaching and oxidation. Ore bodies of consequence are not to be expected very much above water level hence the mineralization shown in the vein at the shaft is very favorable.

A short tunnel on the vein two hundred (200) feet east of the shaft shows the same vein conditions found at the shaft. A number of open cuts along the vein to the northwest expose the same conditions, though not as heavy iron content in the vein.

INTERSECTION:

The best mineralization found along the Surprise vein, aside from that at the shaft, is at the intersection of the Surprise vein with the northwesterly vein of the Park Gold parallel system; mention has previously been made of the characteristics of this vein. The Surprise vein on the surface is twenty-five (25) feet wide at the intersection, is composed of honeycomb quartz, calcite, barite, and iron. Quartz boulders on the surface show an appreciable percentage of oxidized copper, silver and lead minerals.

A shaft sixteen (16) feet deep has been sunk in the intersection, the bottom carries lead and silver values amounting to $4.20 per ton.

The cross vein has more characteristics of gold bearing veins than the other veins of this area hence there is a possibility that the Surprise Vein, may, at this junction, produce an ore carrying more gold than at other points in its course. No assays for gold have been made from this vein.

IRON BLOSSOM:

A heavy iron "blossom" of quartz--limonite distinguishes the Surprise vein near its northwest terminus. The "blossom" is very prominent and is twenty (20) feet wide on the surface. The vein at this location is intersected by several cross dikes of unclassified porphry of rather basic composition, nearly vertical and unmineralized on the surface. A vertical shaft has been sunk one hundred and twenty (120) feet and the bottom is in country rock of the footwall, the collar, being about midway of the vein. The vein has been cross cut from the bottom of the shaft and drifts

run a total of eighty (80) feet. Quite a little ore of milling grade carrying silver, copper and lead has been cut in sinking. The cross cut North has cut one of the cross dikes which is carrying disseminated copper minerals. Assays from this cross cut are shown on the assay sheet as samples Nos. WC. - 19 and WC. - 20. Samples taken in the shaft while it was being sunk are shown as samples Nos. WC. - 14, WC. 15, WC. - 16, WC. - 17, WC. - 18. Water level has not been reached and ore bodies of consequence are not to be expected above water level. All the indications here lead to the belief that this will produce ore when water level is reached and the vein cross cut.

The writer took a sample of quartz about two inches wide from the hanging wall side of the vein about three hundred (300) feet west of the shaft, which ran 0.30 oz. Gold: $7.00 per ton.

Samples have been taken from time to time as sinking progressed, the ore has generally constituted about one-third the area of the shaft which has been broken about 5½ x 9 feet, these samples have averaged a gross value of $7.80 per ton in silver and copper, the silver content averaging eight (8) ozs.

COPPER LODE GROUP:

The copper lode group is composed of seven (7) claims, is located on a large vein which runs approximately north and south. The vein averages 21 feet in width, is composed of quartz-porphry and is similiar to a dike. The material on the surface all carries a trace of gold, silver, and copper. One one ten (10) foot shaft has been sunk on the property. Exploration might develop good ore bodies on these claims.

LITTLE HECLA GROUP:

The Little Hecla group is composed of eight (8) claims, is located on two veins running approximately northeast southwest not quite parallel but joining to the southwest.

The north vein is nine (9) feet wide and the south vein is seven (7) feet wide. Both veins show ore minerals at a number of places.

One sample from ten (10) feet below the surface in a caved shaft thirty (30) feet deep, assayed gold Tr.; silver 8.5 oz.; copper 0.48 %. Another sample from this group assayed Gold 0.01 oz.; Silver 29.1 oz.; Copper 11.70 %. Further exploration work should be done on these veins as there is a strong possibility of developing ore.

FUTURE WORK:

There are a number of veins on the properties which warrant exploration, however the most promising locations for finding ore appear to be at the Iron Blossom shaft, the Surprise shaft and the vein intersection at the end lines of the Surprise and Surprise No. 1 claims.

I would advise sinking the Iron Blossom shaft to at least 300 feet of depth, cross-cut the vein and drift 200 or 300 feet both ways.

A tunnel should be driven on the vein from the Canyon northwest of the intersection mentioned, under the intersection and drift on the Surprise vein to a point under the Surprise shaft. A depth of 475 feet could be obtained at the intersection with 700 feet

of tunnel and approximately 300 feet of depth with 2200 feet of tunnel at the Surprise shaft. A single compressor plant could deliver air for both the shaft and the tunnel. The hoist you have at the Iron Blossom shaft would be sufficient for hoisting from the shaft.

THE GALLINAS PROPERTIES:

The Gallinas properties are composed of the Conqueror and Rio Tinto Groups of claims, the Summit claim and the Old Hickory Group.

The Conqueror and Rio Tinto groups are adjoining groups consisting of twenty-five (25) unpatented claims held by location under the Mining Laws of the United States and the State of New Mexico. The Summit is a full, patented claim joining Conqueror Claims No. 2 and 3 on the northwest. The Engineers' Gold & Silver Mining Company hold clear title to all the above claims.

The Old Hickory group is a group of five (5) patented claims joining the Summit and Conqueror No. 3 on the North and on which the Engineers' Gold & Silver Mining Company holds an option,

LOCATION:

The Gallinas properties are located in the Red Cloud Mining District in Lincoln County, New Mexico, fifty (50) miles north of Carrizozo, the county seat and seven (7) miles northwest of Gallinas Station on the Southern Pacific Railroad. The town of Corona on the railroad lies approximately ten (10) miles northeast, to which a direct road exists. The elevation of the properties is from 7200 to 7600 feet. The climate is mild and dry, permitting outside work the year round. A fair road through

the properties is maintained by the United States Forest Service. A spring on one claim will furnish a limited supply of water and water may be developed along the east foot of the mountain.

GEOLOGY:

The surface rocks of the area are principally sedimentary, composed of limestone, quartzites and shales, probably of late permian and early cretaceous age. Quartz monzonite porphry has been intruded into the sediments and appears as comparatively small, irregular bodies. Dikes of other igneous mocks are found cutting through the sedimentary rocks, but no evidence has been found of any relationship between these dikes and the mineralization.

The quartz monzonite intrusions have broken and uplifted the sedimentary beds, so they now lie at quite steeply pitching angles, greatly broken and crushed, there being no discernable general strike or dip.

The ores in the area have been found in the sedimentary rocks near the monzonite intrusions, replacing the lime in irregular bodies or impregnating the quartzites and shales along bedding and fracture planes. The ores on the surface or near surface do not follow any defined vein systems. The mineralization visible has all occurred since the uplifting and fracturing, hence has scattered throughout the broken mass. A survey of the surface ore showings surrounding the Conqueror shaft was made and a map from the survey is attached to this report. This illustrates the manner in which the ores have been scattered. This is not intended to imply that there are no commercial bodies of near surface ores but that large bodies are not to be expexted.

ORES OF AREA:

The ores in the area carry gold, silver, copper and lead. The silver, copper and lead are all in the oxidized minerals. Occasional cubes of galena are found, otherwise no sulphides are to be seen, even in the deepest workings, 320 feet in an adjoining property. All the ores shipped to smelters in the past from this district have been free from objectionable minerals, very little zinc and have drawn no penalties but are much desired by smelters for fluxing characteristics. An approximate analysis of a sample from the Conqueror shaft, made May 25, 1941, by G. G. Hayes, Denver, shows the following:

Fluorite	19%
Barite	7%
Calcium carbonate	Low
Calcium Oxide - 9 plus 3% CO_2 - calcite	12%
Silicon Oxide - Limey form of quartzite	41%
Potassium aluminum silicate	Traces
Sodium calcium aluminum silicate - Limey form	5%
Iron (FeO, 6%, limonite, 3% pyrite, 1%)	13%
Sulphur	Trace

Gold -	0.16 oz.	Gross Value	$ 5.60	- native	
Silver-	3.20 oz.	" "	1.57	- chlorides	
Copper-	2.10 %	" "	5.04	- malachite, brochantite,	2.10%.

Total Gross Values - $12.21 - Total % - 92.1

(Note: The above are "ACID" Assays and are approximate.)

Samples were taken by the writer from several of the claims to determine the mineralization of the area and were not taken with a view to any tonage estimate. The locations of these samples are shown on the accompanying map.

The gross values given are based on N. Y. Metal Quotations for April 1941: Gold $35.00 an oz.; silver $0.7111 oz.; lead $0.0595 lb.; copper $0.1185 lb. Sample No. 1: From Conqueror No. 9 shaft 25 feet

deep, vertical seam 1 to 3 ins. wide in contact of lime and quartz; gold not assayed, silver 11.2 oz.; lead 28.4%; copper 2.5%. Gross value $43.13.

Sample No. 2, Conqueror No. 3, from dump of old shaft 30 ft. deep, shaft in bad condition. Surface is quartzite. Dump composed of quartzite, lime and monzonite. Reported 18 in. of ore in bottom of shaft. Gold, not assayed, silver 2.5 oz.; lead 4.0%; copper 4.2%. Gross value $10.41. Sample #3, Conqueror No. 1, open cut with 8' face. 18" of ore, vertical, cutting bedding of quartzite; gold, trace; silver 2.2 oz.; lead 1.5%; copper 4.22 %. Gross value $13.31. Sample # 4 center Conqueror No. 1, 30 feet west of sample # 3. Picked from dump of old shaft which is in bad condition. Elevation of surface is 25' higher than surface at sample #2. Reported shaft 50' deep with 18" ore in bottom. Dump composed of quartzite, monzonite contact short distance west of shaft. Gold 0.02 oz.; silver 10.13 oz.; lead not assayed. Copper 7.25%. Gross value $25.08. The foregoing samples were taken prior to sinking the new shaft on the Conqueror No. 1. The new shaft has been sunk at the point where sample No. 3 was taken and the collar is 25 ft. below the collar of the shaft where No. 4 was taken. This new shaft is now down 40 feet hence the bottom is 15 ft. below the bottom of the old shaft. A sample taken from the bottom of the new shaft April 15, 1941 assayed: Silver 10.7 oz.; Copper 9.13 %; Lead 20.1 %. Gross value $32.70. The increase of values with alittle depth is especially noticeable. Sample No. 5: From pillar at surface of old open stope on Eureka claim of Old Hickory group. Ore in bedding planes of thin bedded quartzite. Pillar

is 42 in. high, total thickness of ore in streaks 24 inches. Gold trace; silver 9.9 oz.; lead trace; copper 31.52%. Gross value $31.74.

The location is approximately one mile northeast of sample No. 1 and one half mile north of sample No. 3. The old stope is unsafe for inside inspection but that portion which may be seen from the surface would indicate that probably 10,000 tons of ore have been mined from it.

Throughout the area where ever trenching and assessment work has bored small slips of rocks, or contacts of the sedimentary rocks and the porphry, mineralization is found.

Assays of a number of other samples taken by C. E. Degner from the Conqueror No. 1. shaft and other locations on the Company claims are shown on the assay map and on the sheet of assay attached to this report.

The Old Hickory shaft, on the Old Hickory claim is located approximately 1700 feet northwest of the stope mentioned under sample No. 5. The shaft is badly caved and cannot be inspected but is reported to be 130 feet deep. Some ore remaining on the dump apparently corresponds in value to the ore from the open stope southeast, (sample No. 5), except that lead carbonates are plentiful. The operations on these claims are reported to have been carried on between 1890 and 1900 and very little can be learned about the production other than that it was hauled by teams over 100 miles to the Socorro Smelter, hence must have been good.

The Red Cloud and Deadwood claims lying about the center of the Conqueror Group are not under consideration in this report but are mentioned here because of mineralization. The Red Cloud thru

shafts and winze is down 320 feet. Smelter returns may be checked for a production from one stope of 3160 tons which netted $20.00 per ton at the smelter. Records from another stope have not been available to the writer. The Red Cloud and Deadwood production from 1880 to 1900 probably exceeded this, though because of the 100 mile wagon haul to Socorro Smelter a higher grade ore was necessary than has been of late years. The total gross production has been estimated at $200,000.00, which is probably correct. The writer once examined smelter returns on 2384 tons shipped from the Red Cloud during the years of 1920, 1921 and 1922, the average content of which was: Silver 5.89 oz.; lead 22.43 %; copper 0.93%; zinc 1.9%. This was all produced from two small stopes on the Red Cloud which demonstrates that small bodies of commercial ore are found near surface in the area.

Surface conditions found on Conqueror No. 1 claim surrounding the shaft are practically the same as those surrounding the Red Cloud shaft except that there are many more surface showings of ore around the Conqueror shaft than around the Red Cloud. The possibilities of picking up a commercial ore shoot at 100 to 200 feet of depth in this shaft appear very good.

DEVELOPMENT:

The new shaft on the Conqueror No. 1 claim is a two compartment shaft now down about 40 feet. It has 40 foot heavy timber head frame over it. A 20' x 30' hoist and compressor house has been erected to the south of the shaft and is equipped with 235 I. R. Compressor and Lidgerwood double cylinder air hoist. To the North a 16' x 30' machine shop has been built and equipped with forge,

drill press, etc. A camp house with sleeping and eating quarters for five or six men has been built, about 150 yards east of the shaft. A superintendents house has also been built. A road has been built from the Forest Service road in Red Cloud Canyon to the camp and the shaft, a distance of approximately 800 yards. Several pictures of the shaft and equipment are included at the end of this report.

As sinking has progressed in this shaft the ore has constantly increased in grade and quantity as may be seen on the accompanying assay map, and there has been a constant production of a small amount of ore of shipping grade.

FUTURE WORK:

The geological conditions found, lead to the belief that they are promising for large ore bodies at some depth, probably five or six hundred feet, and work should be planned to sink a shaft to that depth. In the meantime there are undoubtedly valuable near surface ore bodies if they can be located without too much cost in blind searching. These can be located and outlined from the surface by means of geophysical instruments in conjuction with diamond drilling, this should lead to early production from the Conqueror Shaft and from a number of other places on different claims where there is considerable surface mineralization and probabilities are that ore bodies are within 100 to 200 feet of the surface. The writer is inclined to the view that the present market and skilled labor situation make this course of concentrating operations on the shallow ores preferable, while exploration and development of the deeper ore bodies which will require months

of time, possibly years if they prove extensive, may be carried on more slowly.

In view of the equipment on the ground and the start made on the Conqueror shaft profitable production from shallow ores could probably be secured in a short time, while some ore of shipping grade is being constantly produced while sinking the shaft. In order to maintain production, work will have to be carried on developing other ore bodies simultaneously in order to develop sufficient ores to maintain profitable production.

The writer advises immediate purchase of the Old Hickory group and sinking a 200 foot shaft at the old open stope on the Eureka claim. The old stope was mined from a tunnel level upwards to the surface but no ore was removed below the tunnel level hence it appears that production of high grade copper ore could be commenced as soon as the shaft could be sunk and drifts run under the ore, which would probably require four months time. There are also a number of other places on these claims with considerable mineralization that will warrant geophysical - diamond drill exploration of shallow ores.

COSTS:

In view of the undeveloped character of these claims any estimate of cost of operation is problematical however a few figures may be arrived at.

Ore bodies similiar to those that have been mined in this district should be mined at cost not to exceed the following:

(These estimates were made by Mr. Ervin based on metal prices of May, 1941. Therefore, they do not apply to our present development program.)

	Gold	Silver	Lead	Copper
Old prices	$35 oz.	71.1¢ oz	5.85¢ lb	11.85¢ lb.
Current prices	$35 "	90.½¢ "	17¢ lb	24⅝¢ lb.

Geophysical surveys and diamond drilling	$1.50 per ton
Mining	1.00 " "
Haulage	3.50 " "
Freight to Smelter	3.00 " "
Total cost at Smelter	$10.00 per ton

Judging from the ore that has been taken from the new Joaquinor shaft and from the one assay from the old shaft there should be little difficulty in shipping ore from below the 100 foot level that will net $20.00 per ton at the smelter, leaving a profit of $10.00 per ton. A production of 50 tons per day on this basis would be very profitable while developing deeper ores for later and larger operations.

The extensive surface mineralization considered in the light of the record of ores shipped from the area is very convincing evidence that a systematic exploration campaign will develop a highly profitable operation.

Waldemar M. Ervin

Waldemar M. Ervin
Mining Engineer

Submitted May 30, 1941
Carrizozo, New Mexico

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Turn page for estimates based on recent metal prices.

CONQUEROR MINE
Red Cloud Mining District

Supplementary to Waldemar M. Ervin report,dated May 20, 1941

The writer was associated with Mr. Ervin during his examination of this property, and was also mine superintendent at the Conqueror.

Mining	$5.00	per ton
Haulage	1.00	" "
Freight to Smelter	4.00	" "
Overhead (misc.)	1.00	" "
Smeltering charge	8.50	" "
Total cost at smelter	$19.50	" "
Gross value of ores, less 5% smelter loss	69.80	" "
Net return before taxes	$50.30	per ton

Mr. Ervin states fifty tons per day during development. The writer agrees with this supposition, and this would show a profit to the company of $2500.00 per day during development.

The ores of this property are carbonate, and therefore, a smelter ore, rather than a milling. The history of the adjoining producers indicate the continuation of smelter ore. The American Smelting and Refining Co.'s gold, silver, lead, and copper production works are located in El Paso, Tex., 190 miles distant. Lead-copper ores of carbonate types are particularly wanted, and are given premium smeltering rates, therefore, will probably never become necessary or profitable for capital outlay for refining of gold, lead, silver, and copper on this property.

SURPRISE PARK GOLD MINES
Nogal Mining District

All information as to geology, types of ore, past development, and production are referred to Mr. Ervin's report to Mr. C.E.Degner, May 20,1941. This report is intended as a practical working formula based on some 300% rise in metal prices, and the writer's practical mining and milling experience in the Nogal Mining District from 1934 to 1940. Gross mine values are based on revised ore prices to date of assays from samples by Mr. Waldemar M. Ervin listed following page 18 of report to Mr. C.E.Degner, Pres., Continental Engineering Co, Carrizozo,N.Mex.,dated May 30,1941.

This group of claims has been developed in several places with shafts and tunnels from 10 to 150 feet in depth, and 10 to 400 feet in length. The various workings cut or penetrate veins containing values in gold, silver, lead and copper, averaging $60.75 per ton, while the developed ore is small in tonnage, the potential on the strength of the present workings could be enormous.

Due to numerous facings,in the writer's estimate, it is conservative to estimate that a minimum of 50 tons could be shipped daily during development of the property for later milling operations.

Development costs (mining)	$7.00	per ton
Haulage	1.10	" "
Freight to smelter (crude ore)	3.50	" "
Smelter charge	8.50	" "
Overhead (misc.)	1.50	" "
Total	$21.60	per ton
Gross value of ore, less 5% smelter loss	57.71	" "
Grt returns per ton	$36.11	per ton
Returns on fifty tons per day during development	$1805.50	

Ores of the Nogal District are wholly Sulphides, therefore are suitable milling ore. Selective flotation was proven as the recovery equipment suitable for a high percentage recovery of values of these ores. Milling operations would save more than seven dollars per ton in costs over shipping. These properties will undoubtdly develop ore for more than a 200 ton per day mill.

A seventy-five ton(per twenty-four hours) initial milling unit will cost the company approximately $1200.00 per ton($90,000). Additional capacity can be added at considerable less per ton cost because of building and power facilities included in first unit.

Summary of Mining and Milling operating costs of 75 ton unit.

Milling	$4.00 per ton
Mining(developed ore)	4.00 per ton
Haulage concentrates(mine ton)	.25 " "
Freight concentrates(mine ton)	.80 " "
Smelter charges concentrates(mine ton)	1.75 " "
Overhead (taxes, misc.) (mine ton)	1.00 " "
Total costs	$10.80 per ton

Costs of 75 ton per day	$780.00
Smelter returns(allowing 10% milling loss and 5% smelter loss	$54.17 per ton
Seventy-five tons per day	$4062.75
Income before taxes	3252.75

With capitol carefully invested in proper equipment, good management and a well planned development program, in my opinion these propertieswill become profitable producers.

Respectfully Submitted

Jack A. Payne

Jack A. Payne
Mining Engineer
Box 548, Whitney, Nevada

October 26, 1950

(These estimates are based on the following metal prices current on Oct. 26th, 1950. Higher now.)

Gold	Silver	Lead	Copper
$35.00	90½¢oz	16¢lb.	22⅔¢lb.

A S S A Y S

GALLINAS PROPERTIES - RED CLOUD DISTRICT

Sample No.	Description	Gold oz.	Silver oz.	Lead %	Copper %	Gross Values
G-1	Conqueror No.9 Bottom of 25' shaft					
	Seam 1" to 3" wide	No Assay	11.2	28.4	5.5	$46.16
G-2	Conqueror #8 80' shaft					
	10# sample selected from dump	No Assay	2.5	4.0	4.2	13.41
G-3	Conqueror #1 8' depth					
	Channel 18" of ore in open cut	Trace	2.2	1.5	4.22	13.31
G-4	Conqueror #1 50' shaft					
	10# sample selected from dump	0.02	10.13	No Assay	7.25	25.09
G-5	Eureka claim, Old Hickory Group					
	Pillar old stope at surface					
	channel sample of ore					
	24" ore in streaks in 42" face	Trace	9.9	Trace	31.32	31.74
G-6	Conqueror #9					
	3" seam in 20' shaft	0.02	15.7	0.2	1.23	17.13
G-7	Conqueror # 1 6' depth					
	Selected from seam in open cut	0.07	No Assay	No Assay	4.70	14.23
G-8	Conqueror # 1					
	Selected from open cut	0.01	4.8	7.1	1.30	10.35
G-9	Conqueror # 1					
	Selected from seam in open cut	No Assay	4.5	46.0	3.40	38.27
G-10	Conqueror # 1 Surface					
	Selected from trench	No Assay	4.1	59.2	5.13	70.12
G-11	Conqueror # 1 New shaft 15' depth					
	18" ore across shaft	No Assay	2.2	22.4	No Assay	37.77
G-12	Conqueror # 1 New shaft 40' depth					
	Selected from ore in shaft	No Assay	10.7	20.1	3.13	31.72
G-13	Conqueror # 1 New shaft 40' depth					
	Selected for analysis	0.16	2.20	00.0	5.10	15.71

Gross values of samples are based on the following prices:

Gold	$35.00 per oz.
Silver	0.711 per oz.
Lead	0.053 per lb.
Copper	0.1185 per lb.

Samples shown are indicative of type of mineralization present on properties but do not represent blocked ores.

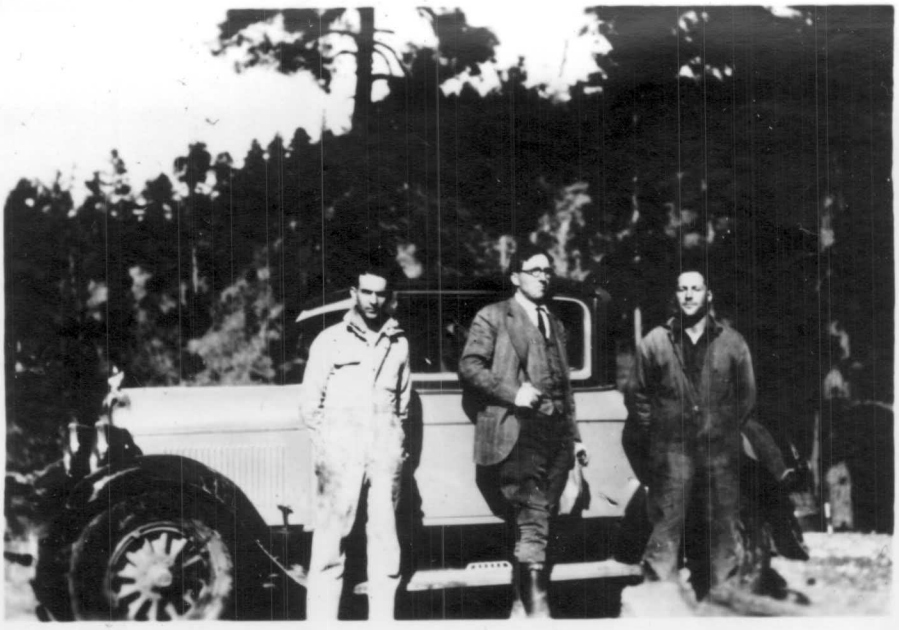
A S S A Y S

WATER CANYON PROPERTIES - NOGAL DISTRICT

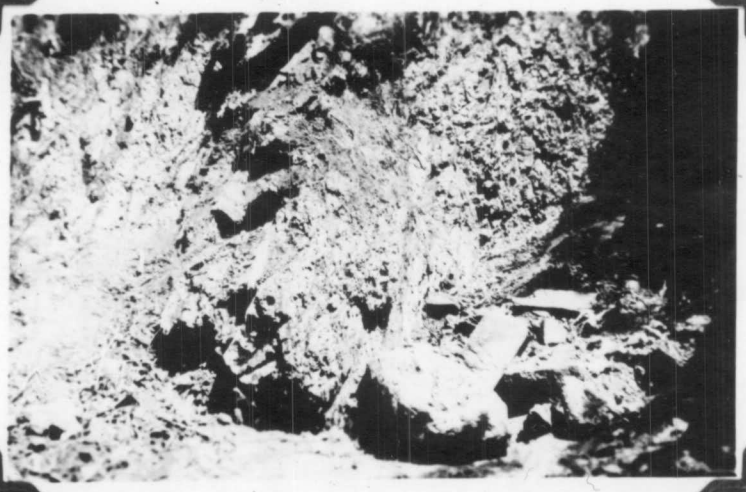
Sample No.	Description	Gold oz.	Silver oz.	Lead %	Copper %	Gross Values
WC-1	Park Gold # 3 & 4 50' shaft 13" quartz vein in shaft	0.02	6.80	7.1	0.2	$33.25
WC-2	Park Gold # 3 & 4 50' shaft 13" quartz vein in shaft	0.01	6.8	35.2	No Assays	48.79
WC-3	Selected from dump Park Gold # 3 & 4 50' shaft	0.02	7.2	57.7	No Assays	73.33
WC-4	Park Gold # 3 & 4 Selected from dump 50' shaft	No Assay	No Assay	50.3	No Assays	53.35
WC-5	Little Hecla # 1 30' shaft Selected from dump	0.01	39.1	No Assay	11.70	43.70
WC-6	Little Hecla # 4 10' shaft 4" vein in shaft	Trace	8.5	No Assay	0.43	7.11
WC-7	Surprise Shaft 30' depth Selected from dump	0.01	55.2	No Assay	15.92	113.48
WC-8	Surprise Shaft Selected from dump	0.01	40.4	No Assay	27.44	94.11
WC-9	Surprise Shaft 15 Lb. sample from dump	0.22	30.7	No Assay	4.43	19.13
WC-10	Surprise Shaft 80' deep Selected from dump	0.17	No Assay	No Assay	No Assay	3.93
WC-11	Surprise Shaft 80' deep Selected from dump	No Assay	7.7	No Assay	7.52	18.49
WC-12	Surprise Shaft 80' deep Selected from dump	No Assay	3.6	7.0	5.93	16.97
WC-13	Iron Blossom claim-Surprise vein 2" quartz Against wall surface	0.20	No Assay	No Assay	No Assay	7.00
WC-14	Iron Blossom shaft-Surprise vein apprm. 18" across short 10' deep	No Assay	0.9	0.3	0.93	3.19
WC-15	Iron Blossom shaft-Surprise vein appr. 24" across shaft 20' depth	No Assay	3.3	No Assay	1.32	1.94
WC-16	Iron Blossom shaft-Surprise vein 4" Wall gangue 20' depth	Trace	17.2	No Assay	0.34	13.74
WC-17	Iron Blossom shaft-Surprise vein appr. 20" across shaft 25' depth	0.02	7.7	0.02	1.34	9.34
WC-18	Iron Blossom shaft-Surprise vein appr. 24" across shaft 50' depth	Trace	8.3	No Assay	0.43	7.94
WC-19	5' face of North drift 100' depth Iron Blossom shaft-across dike	No Assay	1.5	2.3	2.00	3.23
WC-20	Iron along wall of cross dike 100' depth	No assay	1.7	1.3	4.08	12.40

Gross values given above are based on current N. Y. Metal Market Quotations vs: Gold $35.00 per oz.
Silver $0.711 per oz.
Lead $0.0585 per lb.
Copper $0.1185 per lb.

Samples shown indicate type of mineralization present on properties but do not represent blocked ores.



C. E. Degner, (center) President of Engineers' Gold And Silver Mining Company, on the Gallinas properties of the Company.



View of vein on Silver Dollar Surprise Group.

Erecting headframe Conqueror Mine

Main shaft workings Conqueror mine

Timbering shaft Conqueror Mine

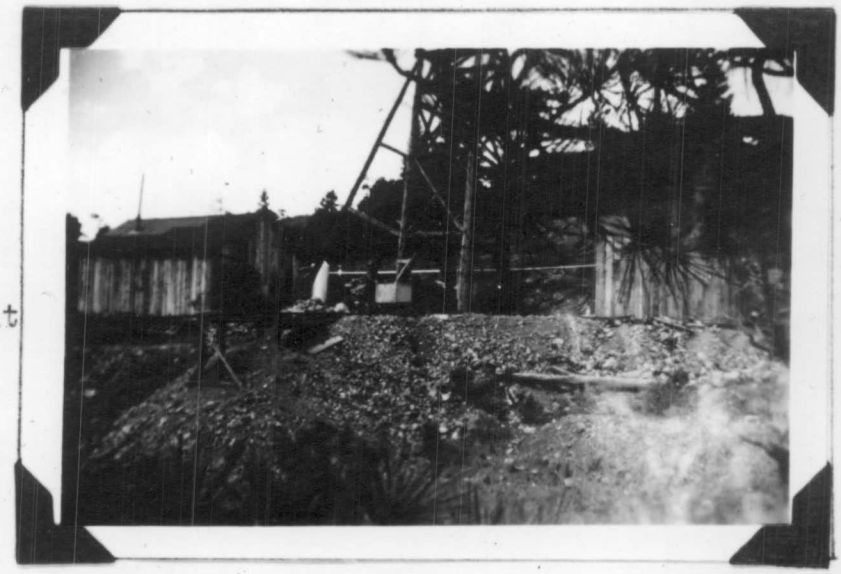
Ore bins Conqueror Mine

View of Conqueror No. 1 shaft. Location (marked by arrow), taken from Forest Service road about one mile East of shaft.

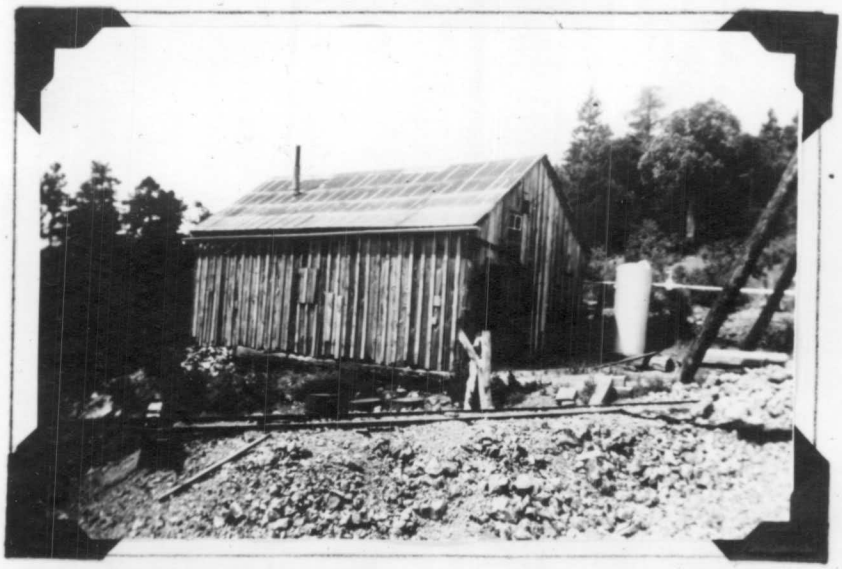
Bunk house at Conqueror No. 1. In foreground is I. R. Drill sharpener not yet installed at the mine.

Superintendents house at Conqueror Mine.

Windlass over Conqueror No. 1 shaft and dump before erection of headframe.

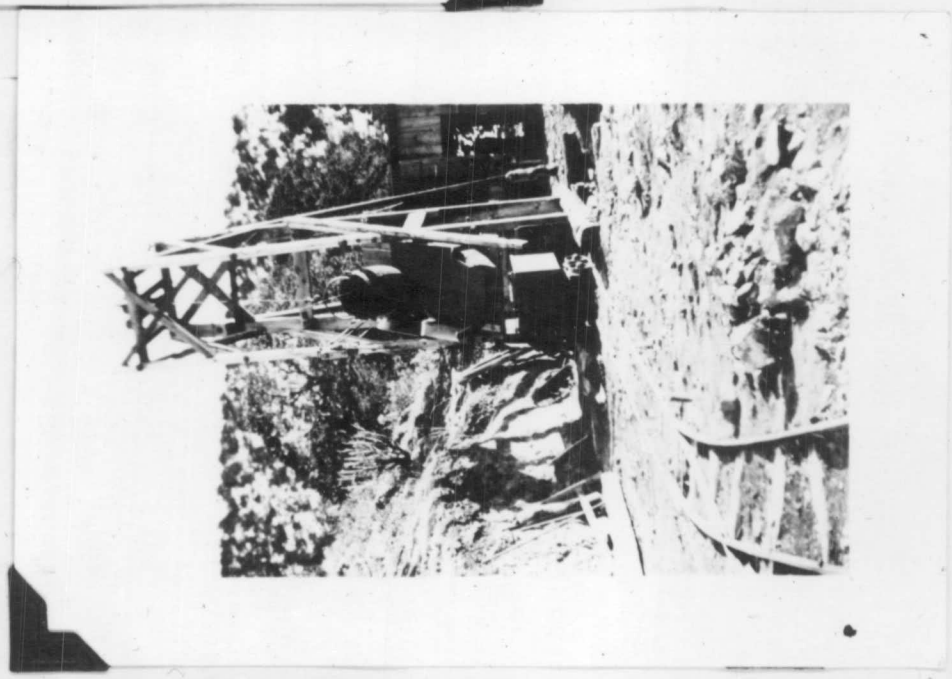


Headframe over Conqueror No. 1 shaft. Hoist and Compressor at left, Machine shop at right



Close view of hoist and Compressor house, 20' x 30'. Large air receiver stands at right of building.

View of Iron Blossom of Water Canyon properties looking Northwest toward Valley.



Iron Blossom shaft looking Northeast.

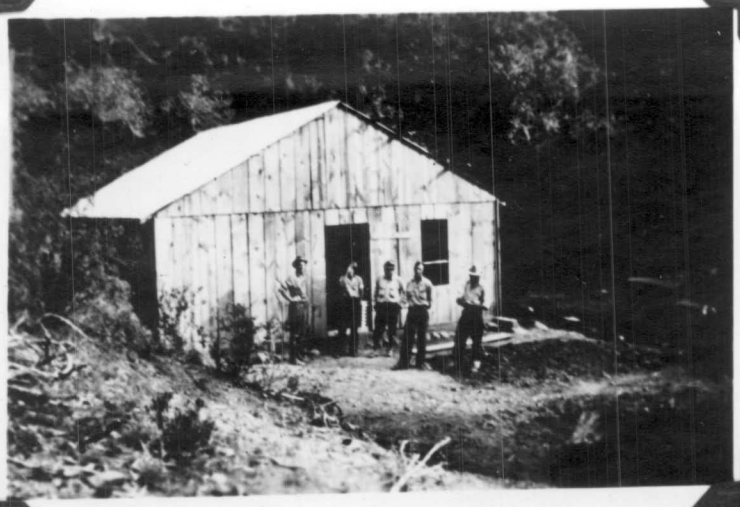
Unloading hoist at Iron Blossom shaft.

Hoist is Leyner 35 h. p.

Four X's showing location of Surprise Mine, Park Gold Mine, Little Hecla and Copper Lode Mining Properties in the Sierra Blanca , eleven miles southeast of Carrizozo, New Mexico.

Mess House Conqueror Mine

Shaft at Surprise Mine



Bunk House at Water Canyon

Tunnel Portal -

"Park Gold Tunnel Lode" claim 420' tunnel.

Dump at Surprise shaft.

Waldemar M. Ervin
MINING ENGINEER

NEW MEXICO COPPER MIN NG CO.
Consecutive Corporate name

CONTINENTAL ENGINEERING COMPANY

DEPARTMENT OF THE INTERIOR
Bureau of Mines Publications
MENLO
DEC 30 1952

Mr. C. E. Degner, President
Engineers' Gold & Silver Mining Company
Carrizozo, New Mexico

Dear Sir:

In compliance with your request for a report on the properties of the Engineers' Gold & Silver Mining Company, I am submitting the following:

The Engineers' Gold & Silver Mining Company own properties in two mining districts about 60 miles apart, the Water Canyon properties in the Mogul district and the Gallinas properties in the Red Cloud district. The two groups are discussed separately in this report.

CONCLUSIONS:

Water Canyon properties in Mogul District:

The mineralization found in the wide fissure veins of great length on the Water Canyon properties appears favorable for discovery of valuable ore bodies in those veins below the surface tufa and near water level. Operations are recommended which will explore these veins in the locations most suitable for ore deposition and yet carry on the work at minimum cost.

The writer has been very favorably impressed with the surface indications seen and is of the belief that the properties offer a splendid opportunity for development.

Gallinas properties in Red Cloud district:

The geological conditions and surface mineralization present on

these claims together with the history of adjoining properties warrants the opinion; that there are numerous ore bodies of [illegible] grade within 100 to 200 feet of the surface. That [illegible] the extremely broken surface rocks, probably 500 to [illegible] feet of depth, mineralization has been more concentrated [illegible] large ore bodies will be found.

It [illegible] enough that the Old Hickory group of claims [illegible] suggested, [illegible] been quite a little [illegible] possibilities are [illegible]

[illegible]

[illegible]

[illegible]

[illegible] prefitable mine.

<u>[illegible]</u>:

The [illegible] Lake, and the Little [illegible] fifty-six (56) [illegible]

[illegible]

The [illegible] are located in the Nogal Mining District [illegible] northeast [illegible], New Mexico and along the west slope [illegible]

Blanca Mountains. The claims are held by location under the mining laws of the United States and the State of New Mexico. The area in which the claims lie has sufficient timber in the canyons for mining purposes. Several springs are located on the property and apparently more water could be developed for domestic and milling purposes. A coal mine is located some four or five miles from the property, thus insuring fuel for power at low cost.

A large bunk house has been built on the Surprise Mill and tunnel site claim at a good spring supplying sufficient water for camp needs. Several pictures taken on these claims are attached to this report.

GEOLOGY:

The surface rocks of the area are exclusively of igneous origin, the principle surface rock being an andisitic tuff or breccia. The andesite has been eroded in a number of places, exposing the underlying rocks, these standing up in ridges resembling dikes and usually so called. The underlying rocks exposed are much altered. In many places they are of a material which has been classified by the U. S. Geological Survey as probably an altered monzonite. Attention should be called to this as the monzonite is an accompaniment of all mineralizat ion in this portion of New Mexico. The andesite is cut by several true, unclassified porphry dikes. These dikes are not mineralized on the surface but one which is exposed in the Iron Blossom shaft at 100 feet of depth is carrying copper, principally chalcopyrite, disseminated thru the dike material.

THE PARK GOLD:

The Park Gold Group is comprised of fourteen (14) claims. The main vein of the Park Gold claims Nos. 3, 4, 6 and 11 is a quartz vein filling the fissure of a contact between the andesite and the underlying monzonite. The monzonite outcrop has a bearing of N. 65° E., is approximately one hundred (100) feet wide and may be followed for more than a mile.

A shaft fifty (50) feet deep on this contact vein, located on a high ridge at the west end of Park Gold claim No. 3, exposes the mineralized portion of the quartz vein as being thirteen (13) to twenty-four (24) inches wide. Two samples taken by J. B. Coon from this shaft assayed: Sample No. WC. - 1: Gold 0.02 oz.; Silver 6.80 oz.; Copper 8.2 %; Lead 7.1 %; On the basis of todays metal markets, a gross value of $33.25 per ton. Sample No. WC. - 2: Gold 0.01 oz.; Silver 6.0 oz.; Lead 35.2 %; (not run for copper), a gross value of $45.79. The vein at this point is several hundred feet above ground water level and shows intensive leaching and oxidation, in view of which these assays are very favorable.

Three veins are found northwest of this contact which are parallel to the contact. These veins are quartz carrying ore minerals, are quite prominent and are probably fissures. The most northwesterly vein of this parallel system has the same bearing as the Park Gold Contact, i. e. N. 65° E., and can readily be followed for over a mile and a half. The vein appears to be vertical and to have a uniform width of about ten feet.

The gangue is composed of a very finely granular honeycomb quartz with yellow limonite, in contrast with other veins on the property,

very little calcite or barite is found. Copper and lead minerals show in the quartz at all the places at which the vein was examined. Three shallow open cuts constitute all the work that has been done on this vein.

SURPRISE GROUP:

The Surprise group is composed of twenty-five (25) claims. The Surprise vein is the outstanding feature of the property. This vein runs N. 81° W., cutting the Park Gold system at an angle of 54°, and appears to be independent of the other fracturing in the area. The vein is vertical, varies in width from twelve (12) to thirty-five (35) feet, averaging twenty (20) feet and may be readily followed for over 8,000 feet from where it crosses Water Canyon on the southeast to where it disappears in an alluvial fill on the Iron Blossom claim at the northwest. A heavy iron gossan marks the course of the vein from about the center of Surprise No. 1 claim to the northwest terminus.

The Surprise shaft cannot be examined to the bottom because of an old platform at about fifty (50) feet. I examined the shaft to the platform and apparently small pockets of good ore were found all the way down. A few specimens remain, the appearance of which, together with specimens found in the dump confirm assay results of samples you had taken previously. Since all commercial ore has been removed no new samples were taken. The assay results of your samples are given in detail in the page of assays at the end of this report, as Nos. Wc - 7, WC. - 8, WC. - 9, WC. - 10, WC. - 11, WC. 12. Sample No. WC. - 9 was probably nearest representative of the original ore as it was a 15# sample by A. S. & R. Co. and assayed gold 0.22 oz.; silver 30.7 oz.;

Copper 4.48 %; not assayed for lead. Gross value on present N. Y. Metal Quotations of $40.15.

Mr. E. L. Ozanne, a former owner of this claim, in a letter dated February 4, 1941 states, "My recollection is the shaft at Apex (later called Surprise) is about 85 feet. Sample taken at bottom across the shaft assayed 21 ozs. silver and 3% copper which I had made by the Pueblo Smelter. I also received about the same results from an open cut and short drift following on vein towards shaft on the west at Apex."

The vein material is principally quartz with calcite and barite, oxidized iron minerals, the copper minerals malachite, azurite, with some chalcocite and chalcopyrite, cerargyrite and embolite, and galena. The vein at the shaft is twenty(20) feet wide whereas the shaft has been sunk about the middle of the vein exposing five (5) to six (6) feet of the vein and has not at any point cut either wall of the vein, hence we cannot determine what the mineralization may be next to the walls where the heaviest mineralization frequently occurs. The site of the shaft is probably five or six hundred feet above ground water level and the vein materials show heavy leaching and oxidation. Ore bodies of consequence are not to be expected very much above water level hence the mineralization shown in the vein at the shaft is very favorable.

A short tunnel on the vein two hundred (200) feet east of the shaft shows the same vein conditions found at the shaft. A number of open cuts along the vein to the northwest expose the same conditions, though not as heavy iron content in the vein.

INTERSECTION:

The best mineralization found along the Surprise vein, aside from that at the shaft, is at the intersection of the Surprise vein with the northwesterly vein of the Park Gold parallel system; mention has previously been made of the characteristics of this vein. The Surprise vein on the surface is twenty-five (25) feet wide at the intersection, is composed of honeycomb quartz, calcite, barite, and iron. Quartz boulders on the surface show an appreciable percentage of oxidized copper, silver and lead minerals.

A shaft sixteen (16) feet deep has been sunk in the intersection, the bottom carries lead and silver values amounting to $4.20 per ton.

The cross vein has more characteristics of gold bearing veins than the other veins of this area hence there is a possibility that the Surprise Vein, may, at this junction, produce an ore carrying more gold than at other points in its course. No assays for gold have been made from this vein.

IRON BLOSSOM:

A heavy iron "blossom" of quartz--limonite distinguishes the Surprise vein near its northwest terminus. The "blossom" is very prominent and is twenty (20) feet wide on the surface. The vein at this location is intersected by several cross dikes of unclassified porphry of rather basic composition, nearly vertical and unmineralized on the surface. A vertical shaft has been sunk one hundred and twenty (120) feet and the bottom is in country rock of the footwall, the collar, being about midway of the vein. The vein has been cross cut from the bottom of the shaft and drifts

run a total of eighty (80) feet. Quite a little ore of milling grade carrying silver, copper and lead has been cut in sinking. The cross cut North has cut one of the cross dikes which is carrying disseminated copper minerals. Assays from this cross cut are shown on the assay sheet as samples Nos. WC. - 19 and WC. - 20. Samples taken in the shaft while it was being sunk are shown as samples Nos. WC. - 14, WC. 15, WC. - 16, WC. - 17, WC. - 18. Water level has not been reached and ore bodies of consequence are not to be expected above water level. All the indications here lead to the belief that this will produce ore when water level is reached and the vein cross cut.

The writer took a sample of quartz about two inches wide from the hanging wall side of the vein about three hundred (300) feet west of the shaft, which ran 0.20 oz. Gold: $7.00 per ton.

Samples have been taken from time to time as sinking progressed, the ore has generally constituted about one-third the area of the shaft which has been broken about 5½ x 9 feet, these samples have averaged a gross value of $7.80 per ton in silver and copper, the silver content averaging eight (8) ozs.

COPPER LODE GROUP:

The copper lode group is composed of seven (7) claims, is located on a large vein which runs approximately north and south. The vein averages 21 feet in width, is composed of quartz-porphry and is similiar to a dike. The material on the surface all carries a trace of gold, silver, and copper. One one ten (10) foot shaft has been sunk on the property. Exploration might develop good ore bodies on these claims.

LITTLE HECLA GROUP:

The Little Hecla group is composed of eight (8) claims, is located on two veins running approximately northeast southwest not quite parallel but joining to the southwest.

The north vein is nine (9) feet wide and the south vein is seven (7) feet wide. Both veins show ore minerals at a number of places.

One sample from ten (10) feet below the surface in a caved shaft thirty (30) feet deep, assayed gold Tr.; silver 8.5 oz.; copper 0.48 %. Another sample from this group assayed Gold 0.01 oz.; Silver 29.1 oz.; Copper 11.70 %. Further exploration work should be done on these veins as there is a strong possibility of developing ore.

FUTURE WORK:

There are a number of veins on the properties which warrant exploration, however the most promising locations for finding ore appear to be at the Iron Blossom shaft, the Surprise shaft and the vein intersection at the end lines of the Surprise and Surprise No. 1 claims.

I would advise sinking the Iron Blossom shaft to at least 300 feet of depth, cross-cut the vein and drift 200 or 300 feet both ways.

A tunnel should be driven on the vein from the Canyon northwest of the intersection mentioned, under the intersection and drift on the Surprise vein to a point under the Surprise shaft. A depth of 475 feet could be obtained at the intersection with 700 feet

of tunnel and approximately 800 feet of depth with 2200 feet of tunnel at the Surprise shaft. A single compressor plant could deliver air for both the shaft and the tunnel. The hoist you have at the Iron Blossom shaft would be sufficient for hoisting from the shaft.

THE GALLINAS PROPERTIES:

The Gallinas properties are composed of the Conqueror and Rio Tinto Groups of claims, the Summit claim and the Old Hickory Group.

The Conqueror and Rio Tinto groups are adjoining groups consisting of twenty-five (25) unpatented claims held by location under the Mining Laws of the United States and the State of New Mexico. The Summit is a full, patented claim joining Conqueror Claims No. 2 and 3 on the northwest. The Engineers' Gold & Silver Mining Company hold clear title to all the above claims.

The Old Hickory group is a group of five (5) patented claims joining the Summit and Conqueror No. 3 on the North and on which the Engineers' Gold & Silver Mining Company holds an option,

LOCATION:

The Gallinas properties are located in the Red Cloud Mining District in Lincoln County, New Mexico, fifty (50) miles north of Carrizozo, the county seat and seven (7) miles northwest of Gallinas Station on the Southern Pacific Railroad. The town of Corona on the railroad lies approximately ten (10) miles north-east, to which a direct road exists. The elevation of the properties is from 7200 to 7600 feet. The climate is mild and dry, permitting outside work the year round. A fair road through

the properties is maintained by the United States Forest Service. A spring on one claim will furnish a limited supply of water and water may be developed along the east foot of the mountain.

GEOLOGY:

The surface rocks of the area are principally sedimentary, composed of limestone, quartzites and shales, probably of late permian and early cretaceous age. Quartz monzonite porphry has been intruded into the sediments and appears as comparatively small, irregular bodies. Dikes of other igneous rocks are found cutting through the sedimentary rocks, but no evidence has been found of any relationship between these dikes and the mineralization.

The quartz monzonite intrusions have broken and uplifted the sedimentary beds, so they now lie at quite steeply pitching angles, greatly broken and crushed, there being no discernable general strike or dip.

The ores in the area have been found in the sedimentary rocks near the monzonite intrusions, replacing the lime in irregular bodies or impregnating the quartzites and shales along bedding and fracture planes. The ores on the surface or near surface do not follow any defined vein systems. The mineralization visible has all occured since the uplifting and fracturing, hence has scattered throughout the broken mass. A survey of the surface ore showings surrounding the Conqueror shaft was made and a map from the survey is attached to this report. This illustrates the manner in which the ores have been scattered. This is not intended to imply that there are no commercial bodies of near surface ores but that large bodies are not to be expected.

ORES OF AREA:

The ores in the area carry gold, silver, copper and lead. The silver, copper and lead are all in the oxidized minerals. Occassional cubes of galena are found, otherwise no sulphides are to be seen, even in the deepest workings, 380 feet in an adjoining property. All the ores shipped to smelters in the past from this district have been free from objectionable minerals, very little zinc and have drawn no penalties but are much desired by smelters for fluxing characteristics. An approximate analysis of a sample from the Conqueror shaft, made May 25, 1941, by G. G. Hayes, Denver, shows the following:

Fluorite	18%
Barite	7%
Calcium carbonate	Low
Calcium Oxide - 9 plus 3% CO_2 - calcite	12%
Silicon Oxide - Limey form of quartzite	41%
Potassium aluminum silicate	Trace
Sodium calcium aluminum silicate - Limey form	5%
Iron (FeO, 6%, limonite, 6% pyrite, 1%)	13%
Sulphur	Trace

Gold -	0.16 oz.	Gross Value	$ 5.60	- native	
Silver-	2.20 oz.	" "	1.57	- chlorides	
Copper-	2.10 %	" "	5.04	- malachite, brochantite, 2.10%.	

Total Gross Values - $12.21 - Total % - 92.1

(Note: The above are "ACID" Assays and are approximate.)

Samples were taken by the writer from several of the claims to determine the mineralization of the area and were not taken with a view to any tonage estimate. The locations of these samples are shown on the accompanying map.

The gross values given are based on N. Y. Metal Quotations for April 1941: Gold $35.00 an oz.; silver $0.7111 oz.; lead $0.0535 lb.; copper $0.1185 lb. Sample No: 1: From Conqueror No. 9 shaft 25 feet

deep, vertical seam 1 to 3 ins. wide in contact of lime and quartz; gold not assayed, silver 11.2 oz.; lead 28.4%; copper 2.5%. Gross value $48.16.

Sample No. 2, Conqueror No. 8, from dump of old shaft 30 ft. deep, shaft in bad condition. Surface is quartzite. Dump composed of quartzite, lime and monzonite. Reported 18 in. of ore in bottom of shaft. Gold, not assayed, silver 2,5 oz.; lead 4.0%; copper 4.2%. Gross value $10.41. Sample #3, Conqueror No. 1, open cut with 8' face. 18" of ore, vertical, cutting bedding of quartzite; gold, trace; silver 2.2 oz.; lead 1.5%; copper 4.22 %. Gross value $13.31. Sample # 4 center Conqueror No. 1, 30 feet west of sample # 3. Picked from dump of old shaft which is in bad condition. Elevation of surface is 25' higher than surface at sample #2. Reported shaft 50' deep with 18" ore in bottom. Dump composed of quartzite, monzonite contact short distance west of shaft. Gold 0.02 oz.; silver 10.13 oz.; lead not assayed. Copper 7.25%. Gross value $25.08. The foregoing samples were taken prior to sinking the new shaft on the Conqueror No. 1. The new shaft has been sunk at the point where sample No. 3 was taken and the collar is 25 ft. below the collar of the shaft where No. 4 was taken. This new shaft is now down 40 feet hence the bottom is 15 ft. below the bottom of the old shaft. A sample taken from the bottom of the new shaft April 15, 1941 assayed: Silver 10.7 oz.; Copper 9.13 %; Lead 20.1 %. Gross value $32.76. The increase of values with alittle depth is especially noticeable. Sample No. 5: From pillar at surface of old open stope on Eureka claim of Old Hickory group. Ore in bedding planes of thin bedded quartzite. Pillar

is 42 in. high, total thickness of ore in streaks 24 inches. Gold trace; silver 9.9 oz.; lead trace; copper 31.52%. Gross value $31.74.

The location is approximately one mile northwest of sample No. 1 and one half mile north of sample No. 3. The old stope is unsafe for inside inspection but that portion which may be seen from the surface would indicate that probably 10,000 tons of ore have been mined from it.

Throughout the area where ever trenching and assessment work has bored small slips of rocks, or contacts of the sedimentary rocks and the porphry, mineralization is found.

Assays of a number of other samples taken by C. E. Degner from the Conqueror No. 1. shaft and other locations on the Company claims are shown on the assay map and on the sheet of assay attached to this report.

The Old Hickory shaft, on the Old Hickory claim is located approximately 1500 feet northwest of the stope mentioned under sample No. 5. The shaft is badly caved and cannot be inspected but is reported to be 130 feet deep. Some ore remaining on the dump apparently corresponds in value to the ore from the open stope southeast, (sample No. 5), except that lead carbonates are plentiful. The operations on these claims are reported to have been carried on between 1890 and 1900 and very little can be learned about the production other than that it was hauled by teams over 100 miles to the Socorro Smelter, hence must have been good.

The Red Cloud and Deadwood claims lying about the center of the Conqueror Group are not under consideration in this report but are mentioned here because of mineralization. The Red Cloud thru

shafts and winze is down 320 feet. Smelter returns may be checked for a production from one stope of 3160 tons which netted $20.00 per ton at the smelter. Records from another stope have not been available to the writer. The Red Cloud and Deadwood production from 1880 to 1900 probably exceeded this, though because of the 100 mile wagon haul to Socorro Smelter a higher grade ore was necessary than has been of late years. The total gross production has been estimated at $200,000.00, which is probably correct. The writer once examined smelter returns on 2384 tons shipped from the Red Cloud during the years of 1920, 1921 and 1922, the average content of which was: Silver 5.89 oz.; lead 22.43 %; copper 0.93%; zinc 1.9%. This was all produced from two small stopes on the Red Cloud which demonstrates that small bodies of commercial ore are found near surface in the area.

Surface conditions found on Conqueror No. 1 claim surrounding the shaft are practically the same as those surrounding the Red Cloud shaft except that there are many more surface showings of ore around the Conqueror shaft than around the Red Cloud. The possibilities of picking up a commercial ore shoot at 100 to 200 feet of depth in this shaft appear very good.

DEVELOPMENT:

The new shaft on the Conqueror No. 1 claim is a two compartment shaft now down about 40 feet. It has 40 foot heavy timber head frame over it. A 20' x 30' hoist and compressor house has been erected to the south of the shaft and is equipped with 235 I. R. Compressor and Lidgerwood double cylinder air hoist. To the North a 16' x 30' machine shop has been built and equipped with forge,

drill press, etc. A camp house with sleeping and eating quarters for five or six men has been built, about 150 yards east of the shaft. A superintendents house has also been built. A road has been built from the Forest Service road in Red Cloud Canyon to the camp and the shaft, a distance of approximately 300 yards. Several pictures of the shaft and equipment are included at the end of this report.

As sinking has progressed in this shaft the ore has constantly increased in grade and quantity as may be seen on the accompanying assay map, and there has been a constant production of a small amount of ore of shipping grade.

FUTURE WORK:

The geological conditions found, lead to the belief that they are promising for large ore bodies at some depth, probably five or six hundred feet, and work should be planned to sink a shaft to that depth. In the meantime there are undoubtedly valuable near surface ore bodies if they can be located without too much cost in blind searching. These can be located and outlined from the surface by means of geophysical instruments in conjuction with diamond drilling, this should lead to early production from the Conqueror Shaft and from a number of other places on different claims where there is considerable surface mineralization and probabilities are that ore bodies are within 100 to 200 feet of the surface. The writer is inclined to the view that the present market and skilled labor situation make this course of concentrating operations on the shallow ores preferable, while exploration and development of the deeper ore bodies which will require months

of time, possibly years if they prove extensive, may be carried on more slowly.

In view of the equipment on the ground and the start made on the Conqueror shaft profitable production from shallow ores could probably be secured in a short time, while some ore of shipping grade is being constantly produced while sinking the shaft. In order to maintain production, work will have to be carried on developing other ore bodies simultaneously in order to develop sufficient ores to maintain profitable production.

The writer advises immediate purchase of the Old Hickory group and sinking a 200 foot shaft at the old open stope on the Eureka claim. The old stope was mined from a tunnel level upwards to the surface but no ore was removed below the tunnel level hence it appears that production of high grade copper ore could be commenced as soon as the shaft could be sunk and drifts run under the ore, which would probably require four months time. There are also a number of other places on these claims with considerable mineralization that will warrant geophysical - diamond drill exploration of shallow ores.

COSTS:

In view of the undeveloped character of these claims any estimate of cost of operation is problematical however a few figures may be arrived at.

Ore bodies similiar to those that have been mined in this district should be mined at cost not to exceed the following:

(These estimates were made by Mr. Ervin based on metal prices of May, 1941. Therefore, they do not apply to our present development program.)

	Gold	Silver	Lead	Copper
Old prices	$35 oz.	71.1¢ oz	5.85¢ lb	11.85¢ lb.
Current prices	$35 "	90.½¢ "	17¢ lb	24½¢ lb.

Geophysical surveys and diamond drilling	$1.50 per ton
Mining	1.00 " "
Haulage	3.50 " "
Freight to Smelter	3.00 " "
Total cost at Smelter	$10.00 per ton

Judging from the ore that has been taken from the new Conqueror shaft and from the one assay from the old shaft there should be little difficulty in shipping ore from below the 100 foot level that will net $20.00 per ton at the smelter, leaving a profit of $10.00 per ton. A production of 50 tons per day on this basis would be very profitable while developing deeper ores for later and larger operations.

The extensive surface mineralization considered in the light of the record of ores shipped from the area is very convincing evidence that a systematic exploration campaign will develop a highly profitable operation.

Waldemar M. Ervin

Waldemar M. Ervin
Mining Engineer

Submitted May 30, 1941
Carrizozo, New Mexico

wme;ahd

Turn page for estimates based on recent metal prices.

CONQUEROR MINE
Red Cloud Mining District

Supplementary to Waldemar M. Ervin report, dated May 20, 1941

The writer was associated with Mr. Ervin during his examination of this property, and was also mine superintendent at the Conqueror.

Mining	$5.00 per ton
Haulage	1.00 " "
Freight to Smelter	4.00 " "
Overhead (misc.)	1.00 " "
Smeltering charge	8.50 " "
Total cost at smelter	$19.50 " "
Gross value of ores, less 5% smelter loss	69.80 " "
Net return before taxes	$50.30 per ton

Mr. Ervin states fifty tons per day during development. The writer agrees with this supposition, and this would show a profit to the company of $2500.00 per day during development.

The ores of this property are carbonate, and therefore, a smelter ore, rather than a milling. The history of the adjoining producers indicate the continuation of smelter ore. The American Smelting and Refining Co.'s gold, silver, lead, and copper production works are located in El Paso, Tex., 190 miles distant. Lead-copper ores of carbonate types are particularly wanted, and are given premium smeltering rates, therefore, will probably never become necessary or profitable for capital outlay for refining of gold, lead, silver, and copper on this property.

SURPRISE PARK GOLD MINES
Nogal Mining District

All information as to geology, types of ore, past development, and production are referred to Mr. Ervin's report to Mr. C.E.Degner, May 20,1941. This report is intended as a practical working formula based on some 300% rise in metal prices, and the writer's practical mining and milling experience in the Nogal Mining District from 1934 to 1940. Gross mine values are based on revised ore prices to date of assays from samples by Mr. Waldemar M. Ervin listed following page 18 of report to Mr. C.E.Degner, Pres., Continental Engineering Co, Carrizozo,N.Mex.,dated May 30,1941.

This group of claims has been developed in several places with shafts and tunnels from 10 to 150 feet in depth, and 10 to 400 feet in length. The various workings cut or penetrate veins containing values in gold, silver, lead and copper, averaging $60.75 per ton, while the developed ore is small in tonnage, the potential on the strength of the present workings could be enormous.

Due to numerous facings,in the writer's estimate, it is conservative to estimate that a minimum of 50 tons could be shipped daily during development of the property for later milling operations.

Development costs (mining)	$7.00 per ton
Haulage	1.10 " "
Freight to smelter (crude ore)	3.50 " "
Smelter charge	8.50 " "
Overhead (misc.)	1.50 " "
Total	$21.60 per ton
Gross value of ore, less 5% smelter loss	57.71 " "
Gr. returns per ton	$36.11 per ton
Returns on fifty tons per day during development	$1805.50

Ores of the Nogal District are wholly Sulphides, therefore are suitable milling ore. Selective flotation was proven as the recovery equipment suitable for a high percentage recovery of values of these ores. Milling operations would save more than seven dollars per ton in costs over shipping. These properties will undoubtdly develop ore for more than a 200 ton per day mill.

A seventy-five ton(per twenty-four hours) initial milling unit will cost the company approximately $1200.00 per ton($90,000). Additional capacity can be added at considerable less per ton cost because of building and power facilities included in first unit.

Summary of Mining and Milling operating costs of 75 ton unit.

Milling	$4.00 per ton
Mining(developed ore)	4.00 per ton
Haulage concentrates(mine ton)	.25 " "
Freight concentrates(mine ton)	.80 " "
Smelter charges concentrates(mine ton)	1.75 " "
Overhead (taxes, misc.) (mine ton)	1.00 " "
Total costs	$10.80 per ton

Costs of 75 ton per day	$780.00
Smelter returns(allowing 10% milling loss and 5% smelter loss	$54.17 per ton
Seventy-five tons per day	$4062.75
Income before taxes	3252.75

With capitol carefully invested in proper equipment, good management and a well planned development program, in my opinion these propertieswill become profitable producers.

Respectfully Submitted

Jack A. Payne

Jack A. Payne
Mining Engineer
Box 548, Whitney, Nevada

October 26, 1950

(These estimates are based on the following metal prices current on Oct. 26th, 1950. Higher now.)

Gold	Silver	Lead	Copper
$35.00	90⅓¢oz	16¢lb.	22⅔¢lb.

A S S A Y S

GALLINAS PROPERTIES - RED CLOUD DISTRICT

Sample No.	Description	Gold oz.	Silver oz.	Lead %	Copper %	Gross Values
G-1	Conqueror No.9 Bottom of 25' shaft Seam 1" to 3" wide	No Assay	11.2	28.4	7.5	$43.13
G-2	Conqueror #8 80' shaft 10# sample selected from dump	No Assay	2.5	4.0	4.2	13.41
G-3	Conqueror #1 8' depth Channel 18" of ore in open cut	Trace	2.2	1.3	4.23	13.31
G-4	Conqueror #1 50' shaft 10# sample selected from dump	0.02	10.13	No Assay	7.25	25.09
G-5	Eureka claim, Old Hickory Group Pillar old stope at surface channel sample of ore 24" ore in streaks in 42" face	Trace	9.9	Trace	31.32	21.74
G-6	Conqueror #9 3" seam in 20' shaft	0.02	15.7	0.2	1.23	17.13
G-7	Conqueror # 1 6' depth Selected from seam in open cut	0.07	No Assay	No Assay	4.20	14.23
G-8	Conqueror # 1 Selected from open cut	0.01	4.9	7.1	1.30	10.33
G-9	Conqueror # 1 Selected from seam in open cut	No Assay	4.5	40.0	3.40	30.27
G-10	Conqueror # 1 Surface Selected from trench	No Assay	4.1	33.2	2.18	70.12
G-11	Conqueror # 1 New shaft 15' depth 18" ore across shaft	No Assay	2.2	22.4	No Assay	27.77
G-12	Conqueror # 1 New shaft 40' depth Selected from ore in shaft	No Assay	10.7	20.1	2.15	21.72
G-13	Conqueror # 1 New shaft 40' depth Selected for analysis	0.13	2.20	00.0	2.10	12.71

Gross values of samples are based on the following prices:

Gold	$35.00 per oz.
Silver	0.711 per oz.
Lead	0.058 per lb.
Copper	0.1135 per lb.

Samples shown are indicative of type of mineralization present on properties but do not represent blocked ores.

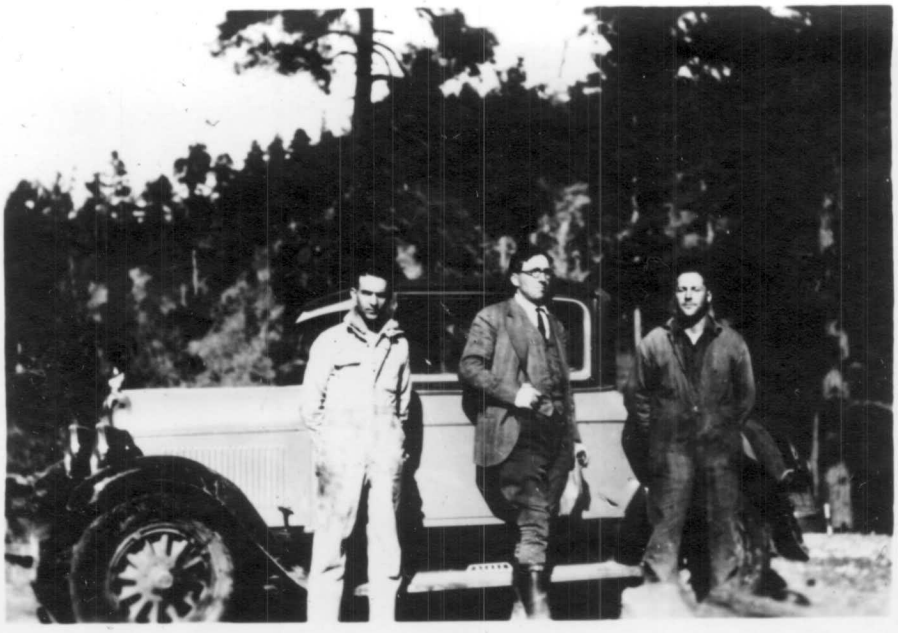
A S S A Y S

WATER CANYON PROPERTIES - NOGAL DISTRICT

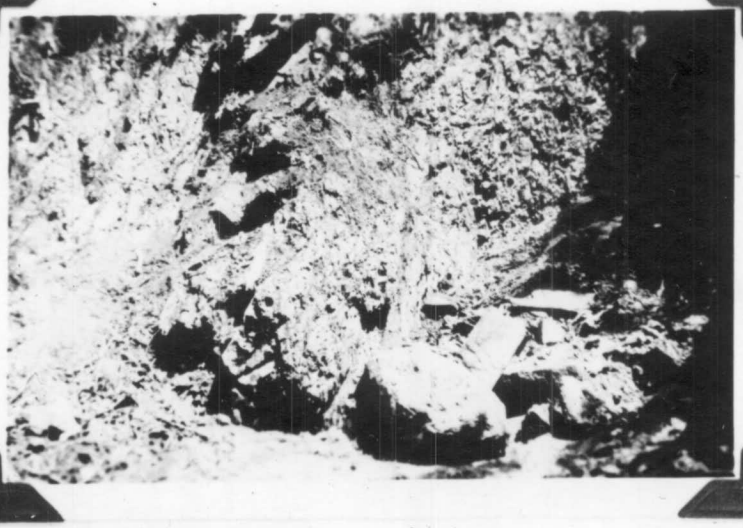
Sample No.	Description	Gold oz.	Silver oz.	Lead %	Copper %	Gross Values
WC-1	Park Gold # 3 & 4 50' shaft 13" quartz vein in shaft	0.02	6.80	7.1	3.2	$33.25
WC-2	Park Gold # 3 & 4 50' shaft 13" quartz vein in shaft	0.01	6.8	35.2	No Assays	45.79
WC-3	Selected from dump Park Gold # 3 & 4 50' shaft	0.02	7.2	57.7	No Assays	73.33
WC-4	Park Gold # 3 & 4 Selected from dump 50' shaft	No Assay	No Assay	50.3	No Assays	53.35
WC-5	Little Hecla # 1 30' shaft Selected from dump	0.01	39.1	No Assay	11.70	43.70
WC-6	Little Hecla # 4 10' shaft 4" vein in shaft	Trace	3.5	No Assay	0.43	7.12
WC-7	Surprise Shaft 30' depth Selected from dump	0.01	55.2	No Assay	33.03	113.49
WC-8	Surprise Shaft Selected from dump	0.01	40.4	No Assay	27.44	94.11
WC-9	Surprise Shaft 15 Lb. sample from dump	0.22	30.7	No Assay	4.43	40.15
WC-10	Surprise Shaft 30' deep Selected from dump	0.17	No Assay	No Assay	No Assay	5.03
WC-11	Surprise Shaft 30' deep Selected from dump	No Assay	7.7	No Assay	7.53	23.40
WC-12	Surprise Shaft 30' deep Selected from dump	No Assay	3.3	2.0	5.33	13.07
WC-13	Iron Blossom claim-Surprise vein 2" quartz Against wall surface	0.20	No Assay	No Assay	No Assay	7.00
WC-14	Iron Blossom shaft-Surprise vein apprm. 18" across short 10' deep	No Assay	0.9	0.3	0.33	3.12
WC-15	Iron Blossom shaft-Surprise vein appr. 24" across shaft 20' depth	No Assay	3.3	No Assay	1.32	1.24
WC-16	Iron Blossom shaft-Surprise vein 4" Wall gangue 20' depth	Trace	17.2	No Assay	0.34	13.74
WC-17	Iron Blossom shaft-Surprise vein appr. 20" across shaft 25' depth	0.02	7.7	0.02	1.34	9.34
WC-18	Iron Blossom shaft-Surprise vein appr. 24" across shaft 50' depth	Trace	8.3	No Assay	0.43	7.04
WC-19	5' face of North drift 100' depth Iron Blossom shaft-across dike	No Assay	1.5	2.3	2.03	0.33
WC-20	Iron along wall of cross dike 100' depth	No assay	1.7	1.3	4.08	12.40

Gross values given above are based on current N. Y. Metal Market Quotations vs: Gold $35.00 per oz.
Silver $0.711 per oz.
Lead $0.0585 per lb.
Copper $0.1185 per lb.

Samples shown indicate type of mineralization present on properties but do not represent blocked ores.



C. E. Degner, (center) President of Engineers' Gold And Silver Mining Company, on the Gallinas properties of the Company.



View of vein on Silver Dollar Surprise Group.

Erecting headframe Conqueror Mine

Main shaft workings Conqueror mine

Timbering shaft Conqueror Mine

Ore bins Conqueror Mine

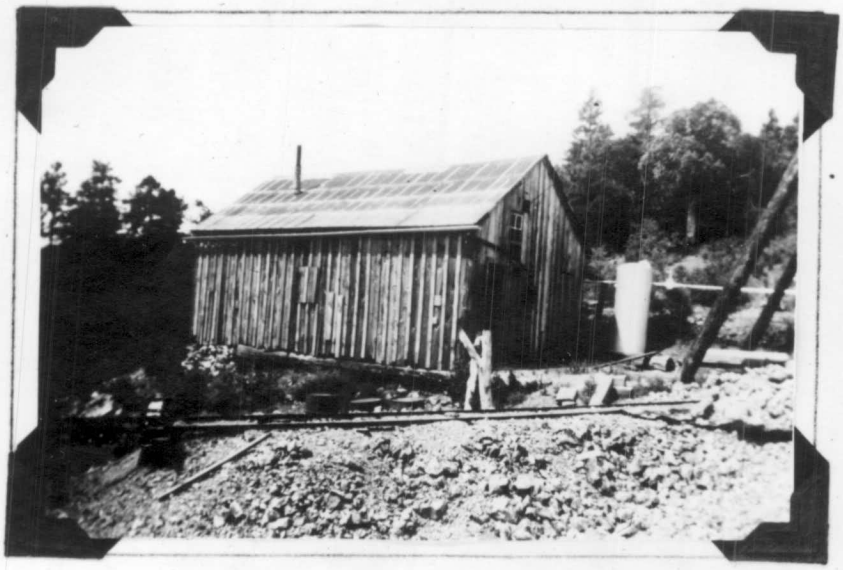
View of Conqueror No. 1 shaft. Location (marked by arrow), taken from Forest Service road about one mile East of shaft.

Bunk house at Conqueror No. 1. In foreground is I. R. Drill sharpener not yet installed at the mine.

Superintendents house at Conqueror Mine.

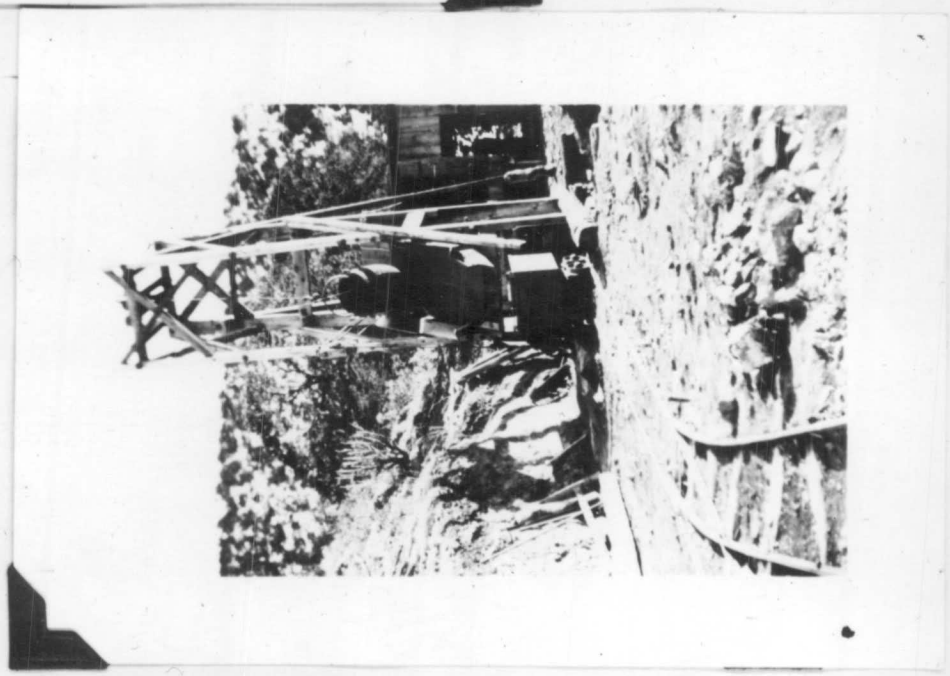
Windlass over Conqueror No. 1 shaft and dump before erection of headframe.

Headframe over Conqueror No. 1 shaft. Hoist and Compressor at left, Machine shop at right



Close view of hoist and Compressor house, 20' x 30'. Large air receiver stands at right of building.

View of Iron Blossom of Water Canyon properties looking Nortwest toward Valley.



Iron Blossom shaft looking Northeast.

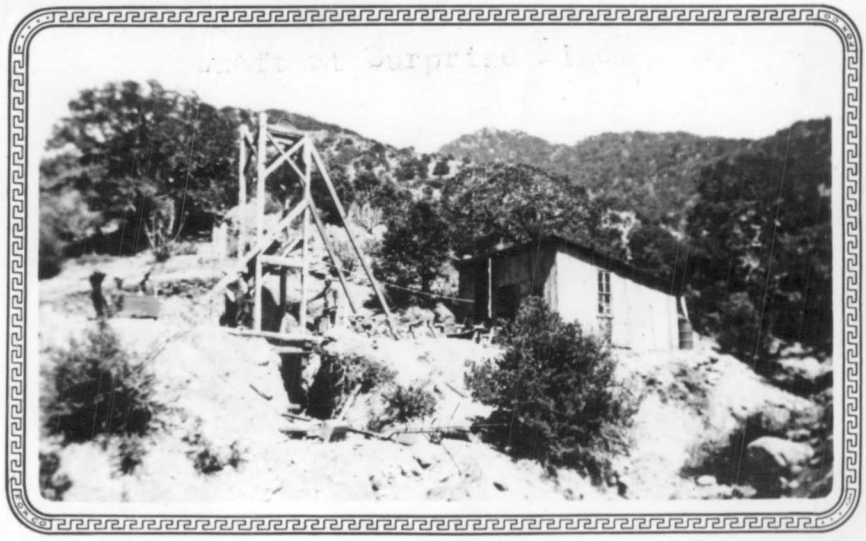
Unloading hoist at Iron Blossom shaft.

Hoist is Leyner 35 h. p.

Four X's showing location of Surprise Mine, Park Gold Mine, Little Hecla and Copper Lode Mining Properties in the Sierra Blanca , eleven miles southeast of Carrizozo, New Mexico.

Less House Concentrator Mine

Shaft at Surprise Mine



Bunk House at Water Canyon

Tunnel Portal -

"Park Gold Tunnel Lode" claim 420' tunnel.

Dump at Surprise shaft.

NEW MEXICO COPPER MINING CO.
Executive's Corporate name

CONTINENTAL ENGINEERING COMPANY

Mr. C. E. Degner, President
Engineers' Gold & Silver Mining Company
Carrizozo, New Mexico

Dear Sir:

In compliance with your request for a report on the properties of the Engineers' Gold & Silver Mining Company, I am submitting the following:

The Engineers' Gold & Silver Mining Company own properties in two mining districts about 60 miles apart, the Water Canyon properties in the Nogal district and the Gallinas properties in the Red Cloud district. The two groups are discussed separately in this report.

CONCLUSIONS:

Water Canyon Properties in Nogal District:

The mineralization found in the wide fissure veins of great length on the Water Canyon properties appears favorable for discovery of valuable ore bodies in those veins below the surface tufa and near water level. Operations are recommended which will explore these veins in the locations most suitable for ore deposition and yet carry on the work at minimum cost.

The writer has been very favorably impressed with the surface indications seen and is of the belief that the properties offer a splendid opportunity for development.

Gallinas properties in Red Cloud district:

The geological conditions and surface mineralization present on

[illegible] properties [illegible] bodies of [illegible] surface. That below the [illegible] probably 500 to 600 feet of [illegible] concentrated and that large ore bodies [illegible]

It is recommended that the [illegible] group of claims be acquired, there having been quite a little tonnage of good ore produced from these claims and the probabilities are that ore could be shipped from them in a comparatively short time and with small initial investment.

Exploration work to locate and outline the near surface ore bodies at minimum cost is recommended.

The outlook is promising for producing a profitable shipping [illegible] of ore from both the Conqueror and Old Hickory properties within a short time.

The writer has long been enthusiastic over conditions found in this district and believes it presents a real opportunity to develop a large, profitable mine.

THE WATER CANYON [illegible]

The Water Canyon [illegible] composed of the Surprise, the Park Gold, the Copper [illegible] and the Little Hecla groups of mining claims, consisting fifty-six (56) claims of a little more than 1,[illegible] acres.

These claims are located [illegible] Mining District, southeast of Garrison [illegible] east slope of the Sierra

Blanca Mountains. The claims are held by location under the mining laws of the United States and the State of New Mexico. The area in which the claims lie has sufficient timber in the canyons for mining purposes. Several springs are located on the property and apparently more water could be developed for domestic and milling purposes. A coal mine is located some four or five miles from the property, thus insuring fuel for power at low cost.

A large bunk house has been built on the Surprise Mill and tunnel site claim at a good spring supplying sufficient water for camp needs. Several pictures taken on these claims are attached to this report.

GEOLOGY:

The surface rocks of the area are exclusively of igneous origin, the principle surface rock being an andisitic tuff or breccia. The andesite has been eroded in a number of places, exposing the underlying rocks, these standing up in ridges resembling dikes and usually so called. The underlying rocks exposed are much altered. In many places they are of a material which has been classified by the U. S. Geological Survey as probably an altered monzonite. Attention should be called to this as the monzonite is an accompaniment of all mineralizat ion in this portion of New Mexico. The andesite is cut by several true, unclassified porphry dikes. These dikes are not mineralized on the surface but one which is exposed in the Iron Blossom shaft at 100 feet of depth is carrying copper, principally chalcopyrite, disseminated thru the dike material.

THE PARK GOLD:

The Park Gold Group is comprised of fourteen (14) claims. The main vein of the Park Gold claims Nos. 3, 4, 6 and 11 is a quartz vein filling the fissure of a contact between the andesite and the underlying monzonite. The monzonite outcrop has a bearing of N. 65° E., is approximately one hundred (100) feet wide and may be followed for more than a mile.

A shaft fifty (50) feet deep on this contact vein, located on a high ridge at the west end of Park Gold claim No. 3, exposes the mineralized portion of the quartz vein as being thirteen (13) to twenty-four (24) inches wide. Two samples taken by J. B. Coon from this shaft assayed: Sample No. WC. - 1: Gold 0.02 oz.; Silver 6.80 oz.; Copper 8.2 %; Lead 7.1 %; On the basis of todays metal markets, a gross value of $38.25 per ton. Sample No. WC. - 2: Gold 0.01 oz.; Silver 6.0 oz.; Lead 35.2 %; (not run for copper), a gross value of $45.79. The vein at this point is several hundred feet above ground water level and shows intensive leaching and oxidation, in view of which these assays are very favorable.

Three veins are found northwest of this contact which are parallel to the contact. These veins are quartz carrying ore minerals, are quite prominent and are probably fissures. The most northwesterly vein of this parallel system has the same bearing as the Park Gold Contact, i. e. N. 65° E., and can readily be followed for over a mile and a half. The vein appears to be vertical and to have a uniform width of about ten feet.

The gangue is composed of a very finely granular honeycomb quartz with yellow limonite, in contrast with other veins on the property,

very little calcite or barite is found. Copper and lead minerals show in the quartz at all the places at which the vein was examined. Three shallow open cuts constitute all the work that has been done on this vein.

SURPRISE GROUP:

The Surprise group is composed of twenty-five (25) claims. The Surprise vein is the outstanding feature of the property. This vein runs N. 61° W., cutting the Park Gold system at an angle of 54°, and appears to be independent of the other fracturing in the area. The vein is vertical, varies in width from twelve (12) to thirty-five (35) feet, averaging twenty (20) feet and may be readily followed for over 8,000 feet from where it crosses Water Canyon on the southeast to where it disappears in an alluvial fill on the Iron Blossom claim at the northwest. A heavy iron gossan marks the course of the vein from about the center of Surprise No. 1 claim to the northwest terminus.

The Surprise shaft cannot be examined to the bottom because of an old platform at about fifty (50) feet. I examined the shaft to the platform and apparently small pockets of good ore were found all the way down. A few specimens remain, the appearance of which, together with specimens found in the dump confirm assay results of samples you had taken previously. Since all commercial ore has been removed no new samples were taken. The assay results of your samples are given in detail in the page of assays at the end of this report, as Nos. Wc - 7, WC. - 8, WC. - 9, WC. - 10, WC. - 11, WC. 12. Sample No. WC. - 9 was probably nearest representative of the original ore as it was a 15# sample by A. S. & R. Co. and assayed gold 0.22 oz.; silver 30.7 oz.;

Copper 4.48 %; not assayed for lead. Gross value on present N. Y. Metal Quotations of $40.15.

Mr. E. L. Cranne, a former owner of this claim, in a letter dated February 4, 1941 states, "My recollection is the shaft at Apex (later called Surprise) is about 85 feet. Sample taken at bottom across the shaft assayed 21 ozs. silver and 3% copper which I had made by the Pueblo Smelter. I also received about the same results from an open cut and short drift following on vein towards shaft on the west at Apex."

The vein material is principally quartz with calcite and barite, oxidized iron minerals, the copper minerals malachite, azurite, with some chalcocite and chalcopyrite, cerargyrite and embolite, and galena. The vein at the shaft is twenty(20) feet wide whereas the shaft has been sunk about the middle of the vein exposing five (5) to six (6) feet of the vein and has not at any point cut either wall of the vein, hence we cannot determine what the mineralization may be next to the walls where the heaviest mineralization frequently occurs. The site of the shaft is probably five or six hundred feet above ground water level and the vein materials show heavy leaching and oxidation. Ore bodies of consequence are not to be expected very much above water level hence the mineralization shown in the vein at the shaft is very favorable.

A short tunnel on the vein two hundred (200) feet east of the shaft shows the same vein conditions found at the shaft. A number of open cuts along the vein to the northwest expose the same conditions, though not as heavy iron content in the vein.

INTERSECTION:

The best mineralization found along the Surprise vein, aside from that at the shaft, is at the intersection of the Surprise vein with the northwesterly vein of the Park Gold parallel system; mention has previously been made of the characteristics of this vein. The Surprise vein on the surface is twenty-five (25) feet wide at the intersection, is composed of honeycomb quartz, calcite, barite, and iron. Quartz boulders on the surface show an appreciable percentage of oxidized copper, silver and lead minerals.
A shaft sixteen (16) feet deep has been sunk in the intersection, the bottom carries lead and silver values amounting to $4.20 per ton.
The cross vein has more characteristics of gold bearing veins than the other veins of this area hence there is a possibility that the Surprise Vein, may, at this junction, produce an ore carrying more gold than at other points in its course. No assays for gold have been made from this vein.

IRON BLOSSOM:

A heavy iron "blossom" of quartz--limonite distinguishes the Surprise vein near its northwest terminus. The "blossom" is very prominent and is twenty (20) feet wide on the surface. The vein at this location is intersected by several cross dikes of unclassified porphry of rather basic composition, nearly vertical and unmineralized on the surface. A vertical shaft has been sunk one hundred and twenty (120) feet and the bottom is in country rock of the footwall, the collar, being about midway of the vein. The vein has been cross cut from the bottom of the shaft and drifts

run a total of eighty (80) feet. Quite a little ore of milling grade carrying silver, copper and lead has been cut in sinking. The cross cut North has cut one of the cross dikes which is carrying disseminated copper minerals. Assays from this cross cut are shown on the assay sheet as samples Nos. WC. - 19 and WC. - 20. Samples taken in the shaft while it was being sunk are shown as samples Nos. WC. - 14, WC. 15, WC. - 16, WC. - 17, WC. - 18. Water level has not been reached and ore bodies of consequence are not to be expected above water level. All the indications here lead to the belief that this will produce ore when water level is reached and the vein cross cut.

The writer took a sample of quartz about two inches wide from the hanging wall side of the vein about three hundred (300) feet west of the shaft, which ran 0.20 oz. Gold: $7.00 per ton.

Samples have been taken from time to time as sinking progressed, the ore has generally constituted about one-third the area of the shaft which has been broken about 5½ x 9 feet, these samples have averaged a gross value of $7.80 per ton in silver and copper, the silver content averaging eight (8) ozs.

COPPER LODE GROUP:

The copper lode group is composed of seven (7) claims, is located on a large vein which runs approximately north and south. The vein averages 21 feet in width, is composed of quartz-porphry and is similiar to a dike. The material on the surface all carries a trace of gold, silver, and copper. One one ten (10) foot shaft has been sunk on the property. Exploration might develop gold ore bodies on these claims.

LITTLE HECLA GROUP:

The Little Hecla group is composed of eight (8) claims, is located on two veins running approximately northeast southwest not quite parallel but joining to the southwest.

The north vein is nine (9) feet wide and the south vein is seven (7) feet wide. Both veins show ore minerals at a number of places.

One sample from ten (10) feet below the surface in a caved shaft thirty (30) feet deep, assayed gold Tr.; silver 8.5 oz.; copper 0.48 %. Another sample from this group assayed Gold 0.01 oz.; Silver 29.1 oz.; Copper 11.70 %. Further exploration work should be done on these veins as there is a strong possibility of developing ore.

FUTURE WORK:

There are a number of veins on the properties which warrant exploration, however the most promising locations for finding ore appear to be at the Iron Blossom shaft, the Surprise shaft and the vein intersection at the end lines of the Surprise and Surprise No. 1 claims.

I would advise sinking the Iron Blossom shaft to at least 300 feet of depth, cross-cut the vein and drift 200 or 300 feet both ways.

A tunnel should be driven on the vein from the Canyon northwest of the intersection mentioned, under the intersection and drift on the Surprise vein to a point under the Surprise shaft. A depth of 475 feet could be obtained at the intersection with 700 feet

of tunnel and approximately 800 feet of depth with 2200 feet of tunnel at the Surprise shaft. A single compressor plant could deliver air for both the shaft and the tunnel. The hoist you have at the Iron Blossom shaft would be sufficient for hoisting from the shaft.

THE GALLINAS PROPERTIES:

The Gallinas properties are composed of the Conqueror and Rio Tinto Groups of claims, the Summit claim and the Old Hickory Group.

The Conqueror and Rio Tinto groups are adjoining groups consisting of twenty-five (25) unpatented claims held by location under the Mining Laws of the United States and the State of New Mexico. The Summit is a full, patented claim joining Conqueror Claims No. 2 and 3 on the northwest. The Engineers' Gold & Silver Mining Company hold clear title to all the above claims.

The Old Hickory group is a group of five (5) patented claims joining the Summit and Conqueror No. 3 on the North and on which the Engineers' Gold & Silver Mining Company holds an option.

LOCATION:

The Gallinas properties are located in the Red Cloud Mining District in Lincoln County, New Mexico, fifty (50) miles north of Carrizozo, the county seat and seven (7) miles northwest of Gallinas Station on the Southern Pacific Railroad. The town of Corona on the railroad lies approximately ten (10) miles northeast, to which a direct road exists. The elevation of the properties is from 7200 to 7600 feet. The climate is mild and dry, permitting outside work the year round. A fair road through

the properties is maintained by the United States Forest Service. A spring on one claim will furnish a limited supply of water and water may be developed along the east foot of the mountain.

GEOLOGY:

The surface rocks of the area are principally sedimentary, composed of limestone, quartzites and shales, probably of late permian and early cretaceous age. Quartz monzonite porphry has been intruded into the sediments and appears as comparatively small, irregular bodies. Dikes of other igneous mocks are found cutting through the sedimentary rocks, but no evidence has been found of any relationship between these dikes and the mineralization.

The quartz monzonite intrusions have broken and uplifted the sedimentary beds, so they now lie at quite steeply pitching angles, greatly broken and crushed, there being no discernable general strike or dip.

The ores in the area have been found in the sedimentary rocks near the monzonite intrusions, replacing the lime in irregular bodies or impregnating the quartzites and shales along bedding and fracture planes. The ores on the surface or near surface do not follow any defined vein systems. The mineralization visible has all occured since the uplifting and fracturing, hence has scattered throughout the broken mass. A survey of the surface ore showings surrounding the Conqueror shaft was made and a map from the survey is attached to this report. This illustrates the manner in which the ores have been scattered. This is not intended to imply that there are no commercial bodies of near surface ores but that large bodies are not to be expexted.

ORES OF AREA:

The ores in the area carry gold, silver, copper and lead. The silver, copper and lead are all in the oxidized minerals. Occasional cubes of galena are found, otherwise no sulphides are to be seen, even in the deepest workings, 320 feet in an adjoining property. All the ores shipped to smelters in the past from this district have been free from objectionable minerals, very little zinc and have drawn no penalties but are much desired by smelters for fluxing characteristics. An approximate analysis of a sample from the Conqueror shaft, made May 23, 1941, by G. G. Hayes, Denver, shows the following:

Fluorite	18%
Barite	7%
Calcium carbonate	Low
Calcium Oxide - 9 plus 3% CO_2 - calcite	12%
Silicon Oxide - Limey form of quartzite	41%
Potassium aluminum silicate	Traces
Sodium calcium aluminum silicate - Limey form	5%
Iron (FeO, 6%, limonite, 6% pyrite, 1%)	13%
Sulphur	Trace

Gold -	0.16 oz.	Gross Value	$ 5.60	- native
Silver-	3.20 Oz.	" "	1.57	- chlorides
Copper-	2.10 %	" "	5.04	- malachite, brochantite, 2.10%.

Total Gross Values - $12.21 - Total % - 98.1

(Note: The above are "ACID" Assays and are approximate.)

Samples were taken by the writer from several of the claims to determine the mineralization of the area and were not taken with a view to any tonage estimate. The locations of these samples are shown on the accompanying map.

The gross values given are based on N. Y. Metal Quotations for April 1941: Gold $35.00 an oz.; silver $0.7111 oz.; lead $0.0533 lb.; copper $0.1185 lb. Sample No. 1: From Conqueror No. 9 shaft 23 feet

deep, vertical seam 1 to 3 ins. wide in contact of lime and quartz; gold not assayed, silver 11.2 oz.; lead 28.4%; copper 2.5%. Gross value $48.16.

Sample No. 2, Conqueror No. 8, from dump of old shaft 30 ft. deep, shaft in bad condition. Surface is quartzite. Dump composed of quartzite, lime and monzonite. Reported 18 in. of ore in bottom of shaft. Gold, not assayed, silver 2.5 oz.; lead 4.0%; copper 4.2%. Gross value $16.41. Sample #3, Conqueror No. 1, open cut with 8' face. 18" of ore, vertical, cutting bedding of quartzite; gold, trace; silver 2.2 oz.; lead 1.5%; copper 4.22 %. Gross value $13.31. Sample # 4 center Conqueror No. 1, 30 feet west of sample # 3. Picked from dump of old shaft which is in bad condition. Elevation of surface is 25' higher than surface at sample #2. Reported shaft 50' deep with 18" ore in bottom. Dump composed of quartzite, monzonite contact short distance west of shaft. Gold 0.02 oz.; silver 10.13 oz.; lead not assayed. Copper 7.25%. Gross value $25.08. The foregoing samples were taken prior to sinking the new shaft on the Conqueror No. 1. The new shaft has been sunk at the point where sample No. 3 was taken and the collar is 25 ft. below the collar of the shaft where No. 4 was taken. This new shaft is now down 40 feet hence the bottom is 15 ft. below the bottom of the old shaft. A sample taken from the bottom of the new shaft April 15, 1941 assayed: Silver 10.7 oz.; Copper 9.13 %; Lead 20.1 %. Gross value $32.76. The increase of values with alittle depth is especially noticeable. Sample No. 5: From pillar at surface of old open stope on Eureka claim of Old Hickory group. Ore in bedding planes of thin bedded quartzite. Pillar

is 42 in. high, total thickness of ore in streaks 24 inches. Gold trace; silver 9.9 oz.; lead trace; copper 31.52%. Gross value $81.74.

The location is approximately one mile northeast of sample No. 1 and one half mile north of sample No. 3. The old stope is unsafe for inside inspection but that portion which may be seen from the surface would indicate that probably 10,000 tons of ore have been mined from it.

Throughout the area where ever trenching and assessment work has bored small slips of rocks, or contacts of the sedimentary rocks and the porphry, mineralization is found.

Assays of a number of other samples taken by C. E. Degner from the Conqueror No. 1. shaft and other locations on the Company claims are shown on the assay map and on the sheet of assay attached to this report.

The Old Hickory shaft, on the Old Hickory claim is located approximately 1500 feet northwest of the stope mentioned under sample No. 5. The shaft is badly caved and cannot be inspected but is reported to be 130 feet deep. Some ore remaining on the dump apparently corresponds in value to the ore from the open stope southeast, (sample No. 5), except that lead carbonates are plentiful. The operations on these claims are reported to have been carried on between 1890 and 1900 and very little can be learned about the production other than that it was hauled by teams over 100 miles to the Socorro Smelter, hence must have been good.

The Red Cloud and Deadwood claims lying about the center of the Conqueror Group are not under consideration in this report but are mentioned here because of mineralization. The Red Cloud thru

shafts and winze is down 320 feet. Smelter returns may be checked for a production from one stope of 3160 tons which netted $20.00 per ton at the smelter. Records from another stope have not been available to the writer. The Red Cloud and Deadwood production from 1880 to 1900 probably exceeded this, though because of the 100 mile wagon haul to Socorro Smelter a higher grade ore was necessary than has been of late years. The total gross production has been estimated at $200,000.00, which is probably correct. The writer once examined smelter returns on 2384 tons shipped from the Red Cloud during the years of 1920, 1921 and 1922, the average content of which was: Silver 5.89 oz.; lead 22.43 %; copper [illegible]%; zinc 1.9%. This was all produced from two small stopes on the Red Cloud which demonstrates that small bodies of commercial ore can be found near surface in the area.

Surface conditions found on Conqueror No. 1 claim surrounding the shaft are practically the same as those surrounding the Red Cloud shaft except that there are many more surface showings of ore around the Conqueror shaft than around the Red Cloud. The possibilities of picking up a commercial ore shoot at 100 to 200 feet of depth in this shaft appear very good.

DEVELOPMENT:

The new shaft on the Conqueror No. 1 claim is a two compartment shaft now down about 40 feet. It has 40 foot heavy timber head frame over it. A 20' x 30' hoist and compressor house has been erected to the south of the shaft and is equipped with [illegible] I. R. Compressor and Lidgerwood double cylinder air hoist. To the north a 16' x 30' machine shop has been built and equipped with forge,

drill press, etc. A camp house with sleeping and eating quarters for five or six men has been built, about 150 yards east of the shaft. A superintendents house has also been built. A road has been built from the Forest Service road in Red Cloud Canyon to the camp and the shaft, a distance of approximately 300 yards. Several pictures of the shaft and equipment are included at the end of this report.

As sinking has progressed in this shaft the ore has constantly increased in grade and quantity as may be seen on the accompanying assay map, and there has been a constant production of a small amount of ore of shipping grade.

FUTURE WORK:

The geological conditions found, lead to the belief that they are promising for large ore bodies at some depth, probably five or six hundred feet, and work should be planned to sink a shaft to that depth. In the meantime there are undoubtedly valuable near surface ore bodies if they can be located without too much cost in blind searching. These can be located and outlined from the surface by means of geophysical instruments in conjuction with diamond drilling, this should lead to early production from the Conqueror Shaft and from a number of other places on different claims where there is considerable surface mineralization and probabilities are that ore bodies are within 100 to 200 feet of the surface. The writer is inclined to the view that the present market and skilled labor situation make this course of concentrating operations on the shallow ores preferable, while exploration and development of the deeper ore bodies which will require months

of time, possibly years if they prove extensive, may be carried on more slowly.

In view of the equipment on the ground and the start made on the Conqueror shaft profitable production from shallow ores could probably be secured in a short time, while some ore of shipping grade is being constantly produced while sinking the shaft. In order to maintain production, work will have to be carried on developing other ore bodies simultaneously in order to develop sufficient ores to maintain profitable production.

The writer advises immediate purchase of the Old Hickory group and sinking a 200 foot shaft at the old open stope on the Eureka claim. The old stope was mined from a tunnel level upwards to the surface but no ore was removed below the tunnel level. Once it appears that production of high grade copper ore could be commenced as soon as the shaft could be sunk and drifts run under the ore, which would probably require four months time. There are also a number of other places on these claims with considerable mineralization that will warrant geophysical - diamond drill exploration of shallow ores.

COSTS:

In view of the undeveloped character of these claims any estimate of cost of operation is problematical however a few figures may be arrived at.

Ore bodies similiar to those that have been mined in this district should be mined at cost not to exceed the following:

(These estimates were made by Mr. Ervin based on metal prices of May, 19
Therefore, they do not apply to our present development program.)

	Gold	Silver	Lead	Copper
Old prices	$35 oz.	71.1¢ oz	5.85¢ lb	11.85¢ lb.
Current prices	$35 "	90.5¢ "	17¢ lb	24.5¢ lb.

Geophysical surveys and diamond drilling	$1.50 per ton
Mining	1.00 " "
Haulage	3.50 " "
Freight to Smelter	3.00 " "
Total cost at Smelter	$10.00 per ton

Judging from the ore that has been taken from the new Coughror shaft and from the one assay from the old shaft there should be little difficulty in shipping ore from below the 100 foot level that will net $20.00 per ton at the smelter, leaving a profit of $10.00 per ton. A production of 50 tons per day on this basis would be very profitable while developing deeper ores for later and larger operations.

The extensive surface mineralization considered in the light of the record of ores shipped from the area is very convincing evidence that a systematic exploration campaign will develop a highly profitable operation.

Waldemar M. Ervin

Waldemar M. Ervin
Mining Engineer

Submitted May 30, 1941
Carrizozo, New Mexico

wme;ahd

Turn page for estimates based on recent metal prices.

CONQUEROR MINE
Red Cloud Mining District

Supplementary to Waldemar M. Ervin report, dated May 20, 1941

The writer was associated with Mr. Ervin during his examination of this property, and was also mine superintendent at the Conqueror.

Mining	$5.00	per ton
Haulage	1.00	" "
Freight to Smelter	4.00	" "
Overhead (misc.)	1.00	" "
Smeltering charge	8.50	" "
Total cost at smelter	$19.50	" "
Gross value of ores, less 5% smelter loss	69.80	" "
Net return before taxes	$50.30	per ton

Mr. Ervin states fifty tons per day during development. The writer agrees with this supposition, and this would show a profit to the company of $2500.00 per day during development.

The ores of this property are carbonate, and therefore, a smelter ore, rather than a milling. The history of the adjoining producers indicate the continuation of smelter ore. The American Smelting and Refining Co.'s gold, silver, lead, and copper production works are located in El Paso, Tex., 190 miles distant. Lead-copper ores of carbonate types are particularly wanted, and are given premium smeltering rates, therefore, will probably never become necessary or profitable for capital outlay for refining of gold, lead, silver, and copper on this property.

SURPRISE PARK GOLD MINES
Nogal Mining District

All information as to geology, types of ore, past development, and production are referred to Mr. Ervin's report to Mr. C.E.Degner, May 20,1941. This report is intended as a practical working formula based on some 300% rise in metal prices, and the writer's practical mining and milling experience in the Nogal Mining District from 1934 to 1940. Gross mine values are based on revised ore prices to date of assays from samples by Mr. Waldemar M. Ervin listed following page 18 of report to Mr. C.E.Degner, Pres., Continental Engineering Co, Carrizozo,N.Mex.,dated May 30,1941.

This group of claims has been developed in several places with shafts and tunnels from 10 to 150 feet in depth, and 10 to 400 feet in length. The various workings cut or penetrate veins containing values in gold, silver, lead and copper, averaging $60.75 per ton, while the developed ore is small in tonnage, the potential on the strength of the present workings could be enormous.

Due to numerous facings,in the writer's estimate, it is conservative to estimate that a minimum of 50 tons could be shipped daily during development of the property for later milling operations.

Development costs (mining)	$7.00	per ton
Haulage	1.10	" "
Freight to smelter (crude ore)	3.50	" "
Smelter charge	8.50	" "
Overhead (misc.)	1.50	" "
Total	$21.60	per ton
Gross value of ore, less 5% smelter loss	57.71	" "
Gr. returns per ton	$36.11	per ton
Returns on fifty tons per day during development	$1805.50	

Ores of the Nogal District are wholly Sulphides, therefore are suitable milling ore. Selective flotation was proven as the recovery equipment suitable for a high percentage recovery of values of these ores. Milling operations would save more than seven dollars per ton in costs over shipping. These properties will undoubtdly develop ore for more than a 200 ton per day mill.

A seventy-five ton(per twenty-four hours) initial milling unit will cost the company approximately $1200.00 per ton($90,000). Additional capacity can be added at considerable less per ton cost because of building and power facilities included in first unit.

Summary of Mining and Milling operating costs of 75 ton unit.

Milling	$4.00	per ton
Mining(developed ore)	4.00	per ton
Haulage concentrates(mine ton)	.25	" "
Freight concentrates(mine ton)	.80	" "
Smelter charges concentrates(mine ton)	1.75	" "
Overhead (taxes, misc.) (mine ton)	1.00	" "
Total costs	$10.80	per ton

Costs of 75 ton per day	$780.00	
Smelter returns(allowing 10% milling loss and 5% smelter loss	$54.17	per ton
Seventy-five tons per day	$4062.75	
Income before taxes	3252.75	

With capitol carefully invested in proper equipment, good management and a well planned development program, in my opinion these propertieswill become profitable producers.

Respectfully Submitted

Jack A. Payne

Jack A. Payne
Mining Engineer
Box 548, Whitney, Nevada

October 26, 1950

(These estimates are based on the following metal prices current on Oct. 26th, 1950. Higher now.)

Gold	Silver	Lead	Copper
$35.00	90½¢oz	16¢lb.	22⅔¢lb.

A S S A Y S

GALLINAS PROPERTIES - RED CLOUD DISTRICT

Sample No.	Description	Gold oz.	Silver oz.	Lead %	Copper %	Gross Values
G-1	Conqueror No.9 Bottom of 25' shaft Seam 1" to 3" wide	No Assay	11.2	28.4	7.5	$43.13
G-2	Conqueror #8 80' shaft 10# sample selected from dump	No Assay	2.5	4.0	4.2	13.41
G-3	Conqueror #1 8' depth Channel 18" of ore in open cut	Trace	2.2	1.5	4.23	13.31
G-4	Conqueror #1 50' shaft 10# sample selected from dump	0.02	10.13	No Assay	7.25	25.09
G-5	Eureka claim, Old Hickory Group Pillar old stope at surface channel sample of ore 24" ore in streaks in 42" face	Trace	9.9	Trace	31.32	31.74
G-6	Conqueror #9 6" seam in 20' shaft	0.02	15.7	0.2	1.20	17.13
G-7	Conqueror # 1 6' depth Selected from seam in open cut	0.07	No Assay	No Assay	4.70	14.23
G-8	Conqueror # 1 Selected from open cut	0.01	4.9	7.1	1.30	10.33
G-9	Conqueror # 1 Selected from seam in open cut	No Assay	4.5	40.0	3.10	30.27
G-10	Conqueror # 1 Surface Selected from trench	No Assay	4.1	38.2	1.13	70.12
G-11	Conqueror # 1 New shaft 15' depth 18" ore across shaft	No Assay	2.2	22.4	No Assay	27.77
G-12	Conqueror # 1 New shaft 40' depth Selected from ore in shaft	No Assay	10.7	20.1	2.15	[illegible]
G-13	Conqueror # 1 New shaft 40' depth Selected for analysis	0.16	2.20	00.0	2.10	[illegible]

Gross values of samples are based on the following prices:

Gold	$35.00 per oz.
Silver	0.711 per oz.
Lead	0.058 per lb.
Copper	0.1185 per lb.

Samples shown are indicative of type of mineralization present on properties but do not represent blocked ores.

A S S A Y S

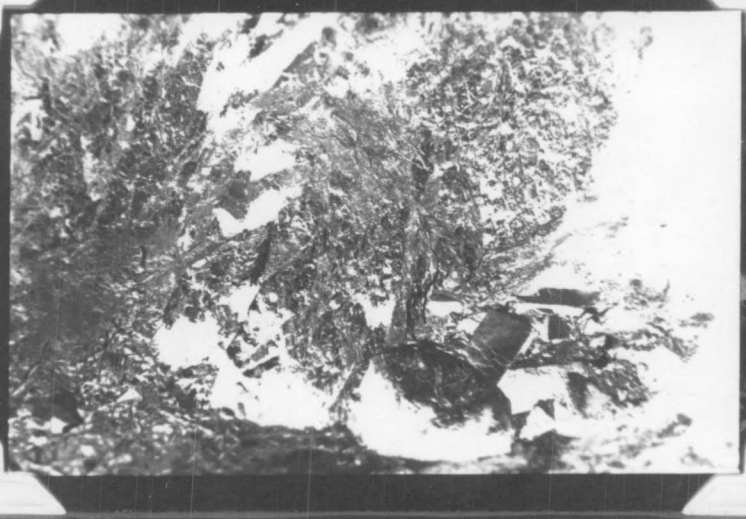
WATER CANYON PROPERTIES - NOGAL DISTRICT

Sample No.	Description	Gold oz.	Silver oz.	Lead %	Copper %	Gross Values
WC-1	Park Gold # 3 & 4 50' shaft 13" quartz vein in shaft	0.02	6.80	7.1	3.2	$33.25
WC-2	Park Gold # 3 & 4 50' shaft 13" quartz vein in shaft	0.01	6.8	35.2	No Assays	48.79
WC-3	Selected from dump Park Gold # 3 & 4 50' shaft	0.02	7.2	57.7	No Assays	73.33
WC-4	Park Gold # 3 & 4 Selected from dump 50' shaft	No Assay	No Assay	50.3	No Assays	[illegible]
WC-5	Little Hecla # 1 30' shaft Selected from dump	0.01	29.1	No Assay	11.70	[illegible]
WC-6	Little Hecla # 4 10' shaft 4" vein in shaft	Trace	8.5	No Assay	0.43	[illegible]
WC-7	Surprise Shaft 80' depth Selected from dump	0.01	55.2	No Assay	[illegible]	[illegible]
WC-8	Surprise Shaft Selected from dump	0.01	40.4	No Assay	37.44	[illegible]
WC-9	Surprise Shaft 15 Lb. sample from dump	0.22	30.7	No Assay	4.43	[illegible]
WC-10	Surprise Shaft 80' deep Selected from dump	0.17	No Assay	No Assay	No Assay	[illegible]
WC-11	Surprise Shaft 80' deep Selected from dump	No Assay	7.7	No Assay	7.5[illegible]	[illegible]
WC-12	Surprise Shaft 80' deep Selected from dump	No Assay	3.6	2.0	[illegible]	10.07
WC-13	Iron Blossom claim-Surprise vein 2" quartz Against wall surface	0.20	No Assay	No Assay	No Assay	7.00
WC-14	Iron Blossom shaft-Surprise vein apprm. 18" across short 10' deep	No Assay	0.9	0.8	0.[illegible]	[illegible]
WC-15	Iron Blossom shaft-Surprise vein appr. 24" across shaft 20' depth	No Assay	6.3	No Assay	1.[illegible]	[illegible]
WC-16	Iron Blossom shaft-Surprise vein 4" Wall gangue 20' depth	Trace	17.2	No Assay	0.[illegible]	18.74
WC-17	Iron Blossom shaft-Surprise vein appr. 20" across shaft 25' depth	0.02	7.7	0.02	1.34	[illegible]
WC-18	Iron Blossom shaft-Surprise vein appr. 24" across shaft 50' depth	Trace	8.3	No Assay	0.4[illegible]	7.0[illegible]
WC-19	5' face of North drift 100' depth Iron Blossom shaft-across dike	No Assay	1.5	2.8	2.0[illegible]	[illegible]
WC-20	Iron along wall of cross dike 100' depth	No assay	1.7	1.3	4.05	12.40

Gross values given above are based on current N. Y. Metal Market Quotations vs: Gold $35.00 per oz.
Silver $0.711 per oz.
Lead $0.0585 per lb.
Copper $0.1185 per lb.

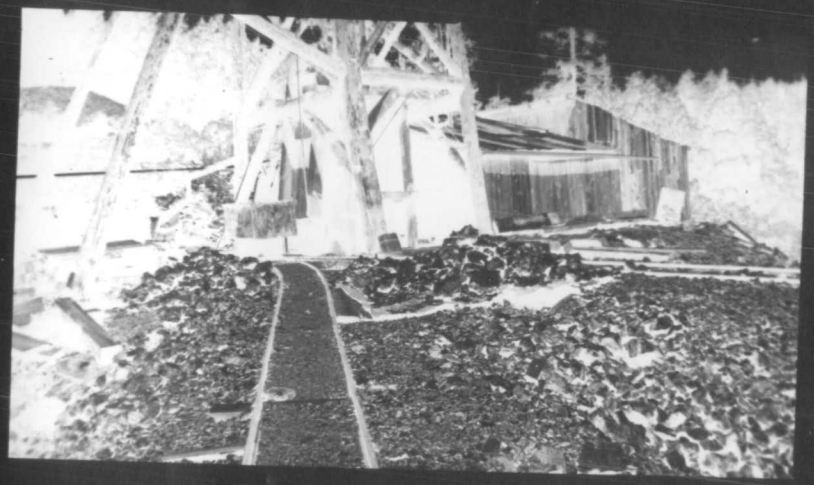
Samples shown indicate type of mineralization present on properties but do not represent blocked ores.

C. E. Degner, (center) President of Engineers' Gold And Silver Mining Company, on the Gallinas properties of the Company.



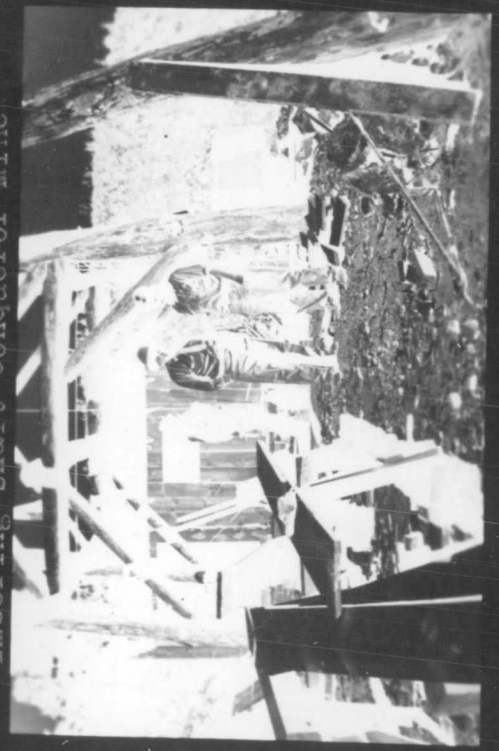
View of vein on Silver Dollar Surprise Group.

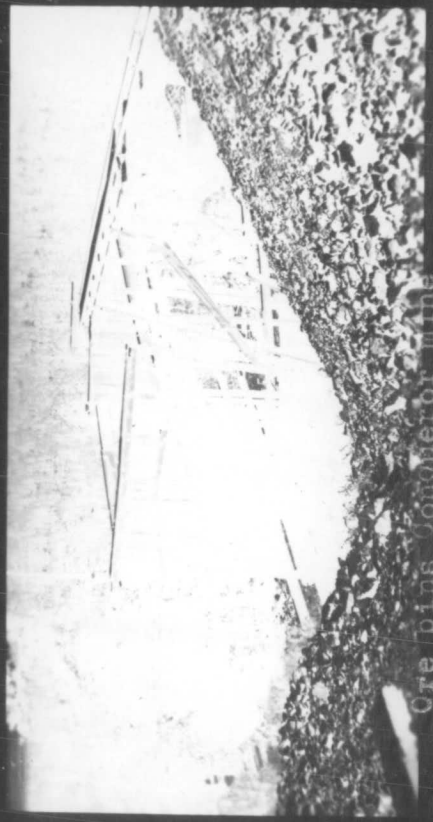
Main shaft workings Conqueror mine



Erecting headframe
Conqueror Mine

Timbering shaft Conqueror Mine

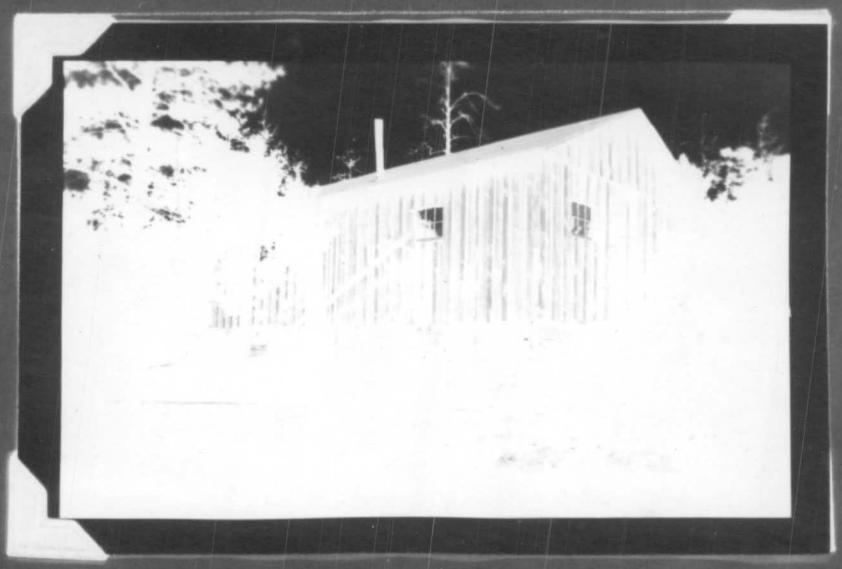




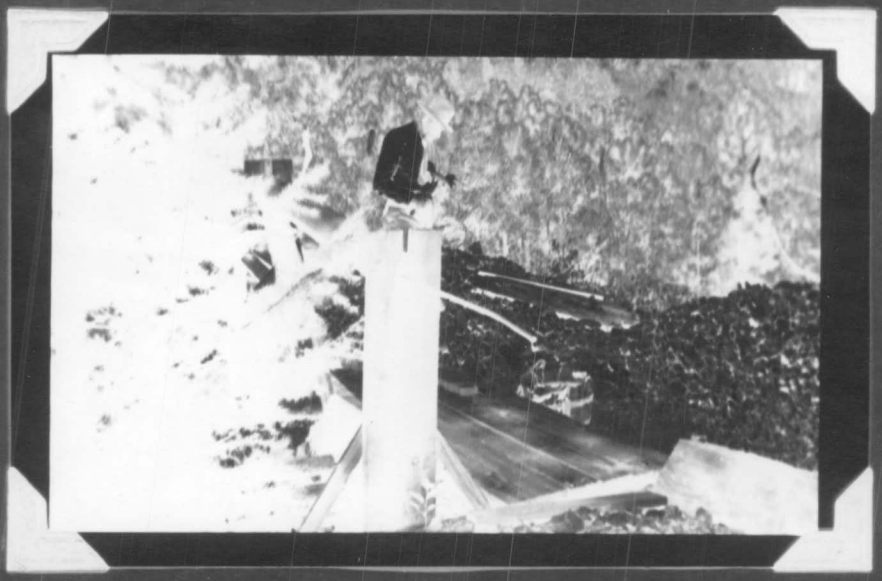
Ore bins Conqueror mine

View of Conqueror No. 1 shaft. Location (marked by arrow), taken from Forest Service road about one mile East of shaft.

Bunk house at Conqueror No. 1. In foreground is I. R. Drill Sharpener not yet installed at the mine.

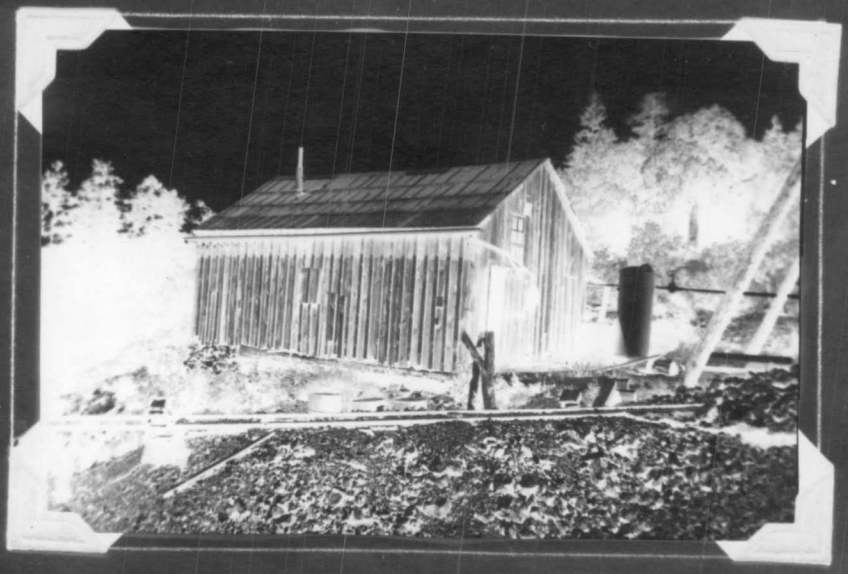


Superintendents house at Conqueror Mine.

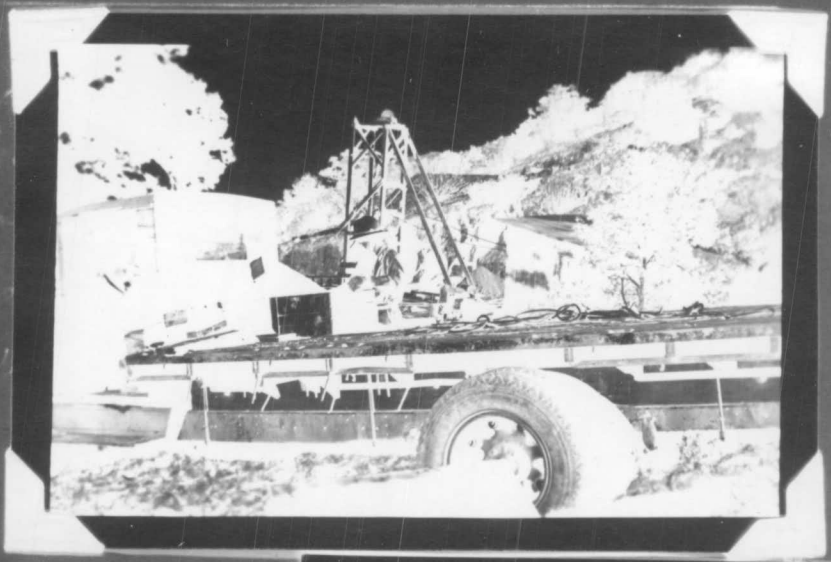


Windlass over Conqueror No. 1 shaft and dump before erection of headframe.

Headframe over Conqueror No. 1 shaft. Hoist and Compressor at left, Machine shop at right

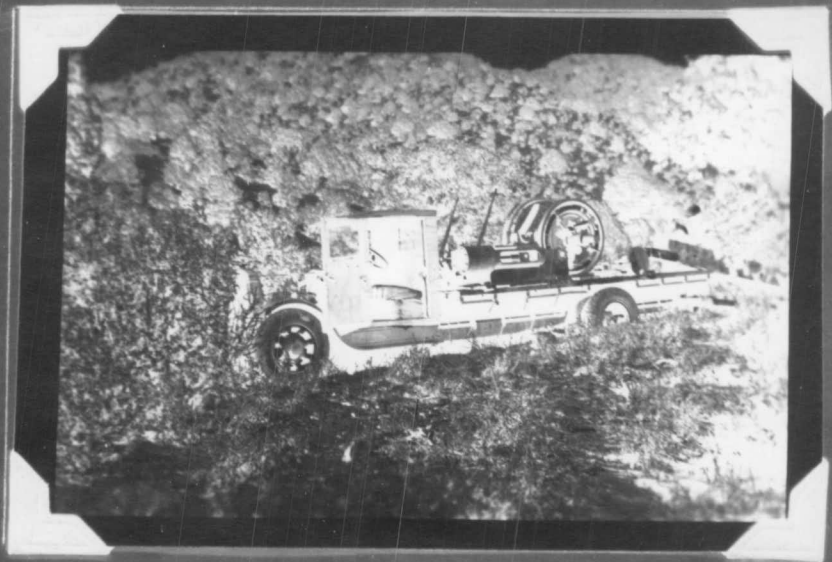


Close view of hoist and Compressor house, 20' x 30'. Large air receiver stands at right of building.



View of Iron Blossom of Water Canyon properties looking Northwest toward Valley.

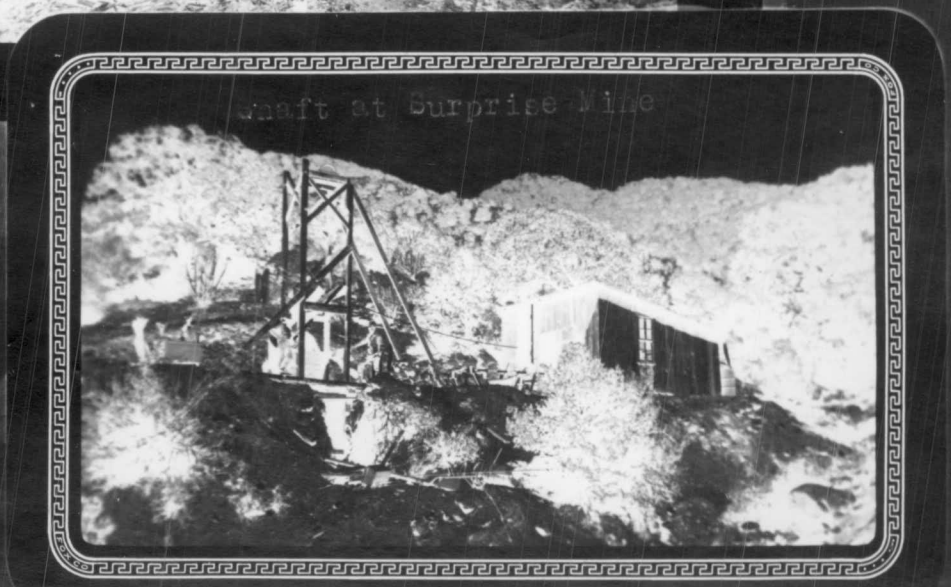
Iron Blossom shaft looking Northeast.



Unloading hoist at Iron Blossom shaft.

Hoist is Leyner 35 h. p.

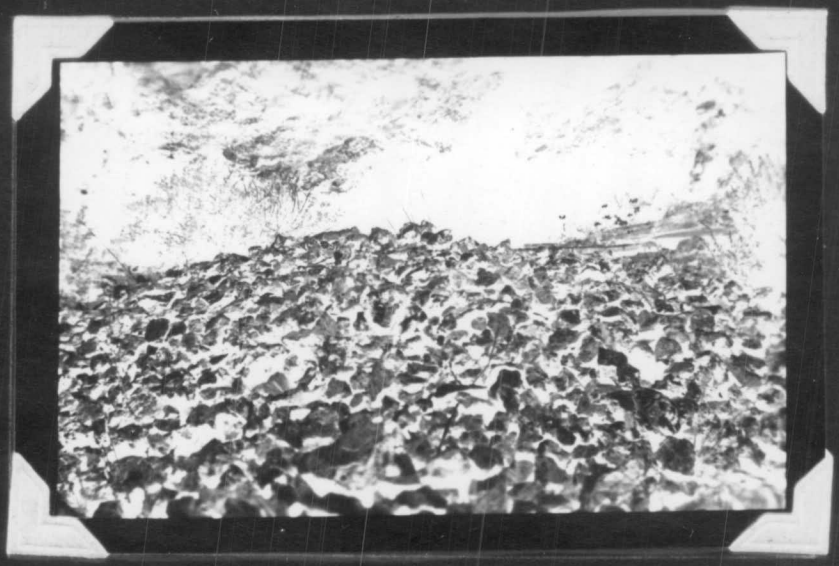
Four X's showing location of Surprise Mine, Park Gold Mine, Little Hecla and Copper Lode Mining Properties in the Sierra Blanca , eleven miles southeast of Carrizozo, New Mexico.



Bunk House at Water Canyon

Tunnel Portal -

"Park Gold Tunnel Lode" claim 420' tunnel.



Dump at Surprise shaft.