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ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: WEAVER AND RICH HILL

ALTERNATE NAMES:

WEAVER GULCH GOLD PROPERTY

YAVAPAI COUNTY MILS NUMBER: 275A

LOCATION: TOWNSHIP 10 N RANGE 4 W SECTION 32 QUARTER C
LATITUDE: N 34DEG 09MIN 55SEC LONGITUDE: W 112DEG 41MIN 45SEC
TOPO MAP NAME: YARNELL - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:

GOLD PLACER

BIBLIOGRAPHY:

GOLD PLACERS AND PLACERING IN AZ AZBM BULL
168 REPRINTED 1978 P 43
AREA PLACERED INCLUDE LAND IN SEC. 29-31
T10N-R4W AND SEC. 25 & 36 T10N-R5W AND
SEC. 5 & 6 T9N-R4W
ADMMR WEAVER AND RICH HILL FILE

Made for the
S. E. C.

Cost \$5,000.00.

Accepted by the S.E.C. REPORT ON

R. M. MERRILL RICH HILL GOLD PLACERS,
OCTAVE, YAVAPAI COUNTY, ARIZONA

for

WEAVER GOLD PLACERS, INC.

by

GUY C. RIDDELL, Consulting Engineer
Royal Oak, Maryland.

Based on an appraisal of examinations and reports by American and foreign engineers (1919-38), Bulletins of Arizona Bureau of Mines and United States Geological Survey (1905-33) and writer's field study of the property and conferences with owner, his engineers and associates, during the months of May and June 1951.

* * * * *

No new sampling of the Merrill properties was done during this recent appraisal of the area by the writer. Numerous pitting and reconnaissance samplings by experienced mining engineers and placer operators had been made during the 17 year period 1919-1936 at distinctive areas of the property that have yielded broad data on the deposit. These investigations have now been reviewed in the light of the writer's 1951 personal reconnaissance of the area and its geological background.

The following conclusions have been reached:

(1) These placers are of above ordinary commercial grade in extensive areas.

(2) Mr. Robert M. Merrill and his wife of Los Angeles, California are the owners of the property. Mr. Merrill is an experienced western mining operator, having started in his youth as a mucker in the Homestake Mine at Lead, South Dakota. The Merrills have gradually acquired by purchase and location over a period of 22 years this vast property consisting of some 5550 acres. During this long period they were delayed in achieving their goal of unit operation of the whole property by litigation, war-time restrictions and latterly by several years of severe illness.

(3) (A) Extensive surface drainage areas exist on nearby water sheds to the north and east.

(B) Water accumulations of volume and dependability exist in formations surrounding and underneath the gravel beds.

(C) Singly, or in combination, these water resources, suitably developed, can support large-scale gold placer mining operations.

(4) Geophysical procedure is now known in widely effective use in the mining and petroleum fields, that can delineate actual bedrock and false bedrock structures, and chart such sub-surface water entrapment areas and resources as exist. Deep water exists in both Weaver and Antelope Creeks due to the false bedrocks present and good supply can be developed.*

* E. M. Carter, Mining and Civil Engineer (Hydrology & Sub-surface Hydraulics) May 13, 1936, to R. M. Merrill after 16 weeks survey of Wickenburg-Rich Hill Weaver district: "5,000 gallon-per-minute potential in deep zone, even in dry season".

* * * * *

PROPERTY: Contiguous claims, 49 in number, covering approximately 5,550 acres, of which 45 claims are unpatented, 4 patented; located in the Weaver Mining District in Yavapai County, slightly west of the geographical center of the state of Arizona, covering the equivalent of about 1.7 sections along the West boundary of Township 9 North; Range 4 West, about 6.4 sections along the East boundary of Township 9 North, Range 5 West, and a one-half section along the north boundary of Township 8 North, Range 5 West, Gila and Salt River Base Meridian, the ground lying substantially between the old Octave lode mine on the north and a landmark known as "Round Mountain" on the south. It is approximately 7-1/2 miles east of Congress Junction on the Santa Fe railroad and 16 miles north of Wickenburg, United Verde, Jerome, and Clarkdale are about 60 miles to the northeast.

John M. Nicol, Consulting Engineer for U. S. Smelting, Refining & Mining Co. in 1926, and for R. M. Merrill, Owner, whose field examination and 25 page report on the Rich Hill Antelope Valley - Weaver Creek situation reflect engineering integrity and comprehensive mining experience, states, inter alia:

The gravel areas under attention are deltas built out by Antelope and Weaver Creeks on to the plains to the southwest of Weaver Mountains. The head of the delta area is approximately at Octave, Yavapai County (See U.S.G.S. Map 1904, Congress Quadrangle, Arizona).

TOPOGRAPHY, CLIMATE & GENERAL CONDITIONS: The district is typical of the desert areas of central and southwestern Arizona.

Weaver Mountains rise abruptly from a great desert plain, a bold, deeply eroded range carved out from an extensive area of early granite intrusives of batholithic proportions. The eastern portion of Weaver Mountains are a complex of much more recent extrusive volcanic rocks. This area, highest point 6,391 feet altitude, cuts off and forms the head of the valleys of Weaver and Antelope Creeks.

From this point the delta fan of gravels slope gently down to the drainage valley of the Hassayampa River. There are two gradually diverging slopes. The first slope is to the south and southeast and is drained by Cyanide and Yaqui Gulches which finally join the Hassayampa above the "Box" (see map). The second slopes to the south and southwest and is the more important body of gravel. It is drained by the lower Weaver and Antelope Creeks. These, after joining Martinez Creek, flow into the Hassayampa below the "Box" (see map). The general slope of the gravels gives an average grade of approximately 100 feet to the mile, the beds of the present gulches having been eroded through the gravels at slightly steeper grades, until they unite with the Martinez Creek in a broad flat.

The total surficial area of the gravels under consideration covers a zone approximately 1-5/8 miles across at the point of greatest width, 1/2 mile at the southwestern extremity and about 7-1/2 miles long. Within this area

approximately 5,550 acres of placer claims have been tied up and are now held as one group. 21

The climatic conditions are favorable for work all the year, the winters are mild and the summers, although hot, are not subject to the excessive heat of some parts of Arizona. The rainfall is small and erratic; but almost every year there are short spells of heavy rainfall which cause heavy run-off in the streams and gulches, and admit of impounding water where impounding sites are available and where the water is not subject to prior appropriation.

WATER SUPPLY FOR PLACER OPERATIONS: Sources of water exist for camp and testing purposes, but there is none in the immediate vicinity for gravel washing purposes. This appears the broad reason why this valuable main body of gravel is still intact. ✓
How OK

Dry placering has been continued and recorded down through the years more or less to date, the lack of sustained surface water having constituted a barrier to the important commercial operation of which the area is capable. Recent investigations by the writer at the property and among mining and placer engineers long familiar with southern Arizona ground have convinced the writer of the presence of percolating underground water sources, wells and bedrock catch-basins of large capacity adjoining and within the Weaver Creek area. A discussion of water supply applicable to an initial dry-land washing plant and power shovel operation of 3,000 cu. yds. capacity per day will be found at page 26.

The suggestion was made by Mr. Merrill and it appears in several of the numerous reports reviewed by the writer,

that a natural water impounding site exists at the outlet of Peeples Valley, approximately 15 miles to the north and that from 3,500 to 5,000 gallons per minute could be developed and maintained throughout the year. After careful study of it, the writer believes that such a project would be feasible but considering present war-time restrictions, (1951) labor and material shortages and the need of further extensive testing of the gravels before such a large capital investment would be justified, he is postponing a detailed analysis of it for a future and more appropriate time.

GENERAL GEOLOGY OF THE DISTRICT: All the central and southwestern part of Arizona is, geologically speaking, of great age. Weathering and erosion of the rock surfaces of mountain ranges has developed on a vast scale and throughout great epochs of time, with the result that large areas of underlying rocks of great age have been uncovered by erosion. In other words, the gradual wearing down of the mountains and the leveling off processes and corresponding filling-up of the valleys (constructional) has been going on with less interruption from young or recent mountain building forces and extrusive processes than is the case in California.

There is evidence, over considerable areas, of tertiary eruptives, and some later flows of basalt, but over the greater part of central and southwestern Arizona there are but limited areas of the later sedimentary rocks.

Rich Hill Mt. is a mass of very old granite intrusives surrounded by a belt of shists with an almost vertical dip, and a general north-south strike that is in evidence on Antelope Creek, and which can be traced for a considerable

distance above Stanton. A similar belt can be traced between Octave and Weaver on the east side of Rich Hill Mt. and Weaver Creek.

There is ~~some~~ a more or less regular system of quartz veins, which have a NW to SE strike and dip into the hills. These have been worked as gold quartz mines, of which Octave was the principal producer. But in addition to these large veins, there is a vast complex network of quartz stringers, lenses, and pockety deposits, which cover Rich Hill and particularly the slopes of the Mountain to the east between Octave and Weaver, and also above Stanton, and to a lesser extent on the slopes to the west of Antelope Creek.

The gradual weathering and decomposition of this vast complex of small gold bearing veins has been the source of the gold in the detrital gravels below. ✓

The general indications are that there have been a number of successive periods of gold impregnation in and about the Rich Hill Mt. granite plug; from very early geological times up to and probably including a final mine realization during tertiary time, the corresponding period of enrichment accompanying the Miocene intrusion in Mexico and California.

It is also evident that there was formerly an extensive "blanket" of earlier rocks into which the granite intruded, and that these have been removed by erosion; and that it is more probable that there were numerous, and possibly richer, quartz veins in this eroded "blanket". This probably represents at least several thousand feet removed through a period of many million years.

It is, of course, true that the greater part of the gold eroded during these earlier periods has gone far down the streams, but it can be emphasized that the geological evidence shows intensive gold impregnations with successive periods of enrichment of the gold quartz veins of the Rich Hill District. Also to be noted is the great age of the district, with consequent long periods of erosion, with concentration and reconcentration of the gravels, so that there is the opportunity for a very general distribution of gold over large areas and far down on the course of the gravel depositions - providing that we keep within the limits of the zone that has developed from the source of the gold. This zone is covered by a "fan" of gravels developing from Weaver and Antelope Creeks, south, southeast and southwest.

It seems, moreover, highly probable that there are deep-seated underlying beds of gravel of pre-tertiary age; and also probably one or more well defined old river channels, which are now buried under the existing layers of Tertiary and Quaternary gravels.

These earlier gravels, naturally, represent a much longer period of erosion, of sorting, concentration, and reconcentration, and may be completely preserved by the present fan of constructional gravels. It is essential to explore and prove the question eventually by a series of carefully located shafts and some drifting.

There are a number of other interesting geological features not having an immediate relationship to the interpretation of these gravel deposits, hence not germane to

this report.

SUMMARY OF GEOLOGICAL INTERPRETATION:

(1) That the district is one of great geological age and erosion, and gravel concentration has been active through a great period of time.

f (2) That Rich Hill Mt. forms the center of a zone of intensive gold impregnation, as evidenced by the great gold impregnation, as evidenced by the great number of veins and that, furthermore, there appears to have been a number of different and successive periods of mineralization.

(3) That Antelope Valley shows indications of having been part of a main valley of a larger drainage system, and that this may account for the great number of water-worn boulders in the lower gravels; and that, as a consequence, there are great probabilities of there being buried old channels under the present fan-blanket of gravels.

(4) That the great age of the deposit and the evident long period of deposition, erosion and reconcentration of the gravels make it likely that there is a very general distribution of the gold; also, that the lower true bedrock zones should be rich, and it is necessary to explore for these. They will probably occur in well-marked channels. There is also a chance of greater deposition at the meeting point of the lower cross-valleys and lower Antelope Valley, although this may be deep.

THE GRAVEL DEPOSITS: The whole of the slope from the foot of Weaver Mountain, extending over the plains, is covered with a great blanket of "wash", a great part of which is more or less water-worn and partly stratified gravel.

The area that debouches from Antelope Creek and Weaver Creek shows a far larger proportion of well-washed gravel, and the positive evidence of being true river channel gravels. This area is the only one that is known to be gold bearing in a marked degree.

The Merrill property lies within this area, receiving a share of its gravel from Antelope Creek via its offshoot Slaughter House Creek and the balance from Weaver Creek.

The existing exposed or surface gravels may be classified as:

(1) Original Gravel; in places, even on the surface, these are compact and partly cemented by infiltration of alkaline matter - the so-called "Caliche".

(2) Gravel in part reconcentrated and washed down by recent (late Quaternary) gulch waters, and forming intermediary benches and gradual slopes up to the main banks of No. 1.

(3) Loose and sandy gravels forming the most recent and actual stream beds in the floor of the existing gulches, forming a third stage of very recent re-concentration.

These later gravels generally rest directly on a floor of No. 1, with "Caliche" structure, the so-called false bedrock.

From the general structural conditions and the position of bedrock at the upper end (it is exposed at Antelope, Slaughter House and Weaver Creeks where they debouch from the mountains) and also the slope of Round Mountain, it is expected that bedrock will be found within 50 feet at the upper end, and within 80 feet at the lower end, of the present bottom gulch levels. The acreage is so extensive and covers

such an expanse of unknown bedrock contour that any assumption as to an average depth dimension over the whole property is unwarranted.

The surficial area of the 4,000 "workable" acres is approximately 20 million square yards, and the average depth can be anything from 10 feet to 20 feet or more. Gross cubic content of "workable" yards of gravel is as yet conjecture. The estimate of "750,000,000 cubic yards" of the Nicol report is arbitrarily reduced on paper to 100,000,000 cubic yards for "working basis".

There is good evidence that the source of all this gravel was gold bearing, and that it has been concentrated and reconcentrated over a vast period of time. There seems to be reasonable evidence that at least all the gravels of No. 2 and No. 3 class are recent local gulch concentrations, and that a large part of these carry gold in commercial quantities.

The structural nature of this great fan of gravels is not altogether easy to explain. If it was built up of more or less fine and well stratified gravel, it would be explained by the usual constructional out-building effect of a stream delta debouching from a mountain valley into a plain. But there is very little regular stratification, and relatively coarse gravel and occasional large boulders are "peppered" all through the mass. Furthermore, rather large and perfectly water-worn gravel and occasional small boulders are to be found right on the surface of the top banks at least four miles south of the mountain valley limit.

100,000,000 cubic ft
~~(scribble)~~
~~(scribble)~~

While it is not in any way a glacial deposit, "levee building" by minor snow and ice action has helped to control the flood and has maintained the water within, at times, narrow limits, thus facilitating the transportation of coarse material over relatively great distances on the surface of the fan deltas. This possibly reflects a period of heavy rainfall during the end of the ice age in the late Pleistocene.

However it came about, there is a very general and rather regular distribution of a limited amount of well water-worn and coarse gravel over the whole fan of gravel. Where recent flood action has cut gullies through the main mass of the gravel, it has tended to wash away the lighter material and concentrate a blanket of coarse rock on the bottom. These blankets of coarse gravel and boulders, being very much in evidence, have caused some of the investigating engineers to form a premature idea of the extent of these "boulders" to be handled when the major standard dredging operation is reached some years hence.

The proportion of heavy and large boulders is excessive in the upper gulches close to the debouchment from the mountains, but further down the gullies the proportion steadily decreases, until, from the middle section south, it is probably reasonable to consider the ground as suitable for the use of fairly large size and powerful dredges with not less than 12 cu. ft. buckets.

There is attached hereto, marked Exhibit A, a map showing a portion of the Merrill property and superimposed thereon is a "generalized outline of presumed dredgable areas"

furnished by Carl G. Barth, Jr., E.M., in support of an application made by Mr. and Mrs. Merrill in 1938 to the State of Arizona and the Interior Department of the United States for a reconveyance to the Public Domain of the sections marked in red on which the Merrills claimed to have placer locations antedating the transfer thereof to the State for cattle grazing lands. The point at issue was, of course, the existence of commercial mineralization. The Merrills' application was promptly granted. X

REPORTED VALUE OF THE GRAVEL: Engineer Nicol did no sampling, seeing no use in duplicating work already done, unless more thorough methods could be employed, which he did not have the time or equipment to carry out. A great quantity of data and various engineering reports had been submitted to him, all of which, of course, bore dates prior to 1926, from which he quoted as follows:

"VALUE DATA OF OTHER REPORTS:

J. E. Russell states: "I found gold in every pan --, Where I panned, it would run from 30¢ to 60¢ per cubic yard, if not better -- Four white men constructed a short flume, dug out a ditch, and ran 25 or 30 yards of gravel; their recovery was about 30¢ per yard (\$20.62 gold price). They worked with a machine ... a semi-dredge, for about two months.. it is claimed that they recovered about 30¢ per cu. yd...; their costs were too high and they had no water."

W. L. Leland states: "You have in my judgment, made a big mistake in not going below your so-called false bedrock, because it is possible, and in fact quite likely, that your best values will be found down deeper... As a matter of fact,

I got my best samples down in the false bedrock... If the gold I found had been flakey, or if I had found places barren of gold altogether, which I did not, I would not, after making only 30 tests, even touch the subject of values. However, the evidence of extensive dry-washing in all directions is a factor to be considered in connection with my own sampling. I did not weigh the gold I panned out, but from forty years' experience, I am positive it was not less than 50¢ per cu. yd. (\$20.62 gold price) after estimating that half of your yardage is composed of small boulders and coarse gravel that does not carry values, and which are always thrown out in filling a pan... Now it is highly improbable, considering the general law of averages, that I would happen to stumble on the only rich spots every time, yet it might possibly be so. No one suggested where I should take the samples and no one was given the slightest chance to salt any of the dirt I took as samples. So much for values as far as samples can be considered as establishing same on a very large scale."

W. A. Farish states: "In sampling this ground, I dug a cubic yard of the ground at various points, loaded it into a wagon (after placing a canvas in the wagon to prevent any loss) and hauled each yard so obtained to the river and ran it through a small sluice box, catching and keeping the gold content of each sample separate. The results were taken to a laboratory and their amount and value carefully determined. I took about a dozen samples, over an area of about 300 acres, and the results ranged from 30¢ to \$1.47 per cu. yd.... As I remember throwing out the high samples of \$1.47, the results

averaged about 45¢ per cu. yd.... I met Mr. Axtell, who informed me he had made extensive drilling tests of the ground and the engineer referred to above was present and did the sampling of the holes and, after throwing out the heavier particles of gold to be safe, the ground ran over \$1.00 per cu. yd." (All of above values at \$20.62 gold price).

1905 - U. S. Geological Survey Mineral Resources:

"Weaver District, the Rich Hill, in this district, has yielded from the surface fabulous sums in the past. It was the scene of much activity during the spring months of the past year. A total of \$16,273. in gold extracted from the gravels on Rich Hill and vicinity, was sold to the store keepers in the neighborhood camps."

1899 - Report of the Governor of Arizona to the Secretary of the Interior: "The gold placer deposits of Weaver are celebrated for their richness and the coarseness of weight of the grains of gold. (Nuggets). They are at the southern base of the mountain and west of the Hassayampa River at the foot of Rich Hill at Stanton. They have been worked for many years, thirty or more."

History of Arizona by Farish: "The Rich Hill channel is noted for its coarse heavy gold (nuggets)... One of the largest found was worth (at \$20.62 gold) \$400., another \$300 and another \$150... Three lumps taken out were worth \$1,008 total. Nuggets to the aggregate value of some \$2,000 were taken out within a small area... Pedro Lucero, at Weaver, found one piece worth \$450.

While I do not endorse the methods used to sample, and while I think some of the conclusions drawn in the reports

are not altogether correct, still we must accept at their face value the statements of so many different men, and there must be some ground for a tentative appraisal of the property."

Abstracted by Carl G. Barth, Jr., Feb. 10, 1938, in support of the Merrills successful application mentioned above, opinions from another group of examining engineers ran as follows:

1919, W. T. Dineen to Ira J. Coe of San Francisco, California, October 28, 1919. "Estimated 600 acres of Gold Bearing Gravel of a net value of \$7,000 per acre."

1920, W. E. Plank, Mining Engineer, San Francisco, California, November 15, 1920, estimates a "workable area of 4000 acres with a value of 35 cents per yard. Cost of recovery 20 cents per yard."

1924, A. H. McNeer, Report to H. Hardaway, Bristol, Virginia. January 3, 1924. "Estimate the Oro Fino area, about 800 acres, as containing 4,100,000 yards of workable gravel valued at \$1.51 per yard."

1929, E. Lionel de la Pole to R. M. Merrill, February 18, 1929. "From Antelope, Weaver, Slaughterhouse, Oro Fino and Yaqui Washes, 34 samples were taken varying from 22 cents to \$2.02 per yard."

1930, W. L. Leland, Placer Operator, San Francisco, letter to R. M. Merrill: "Based on sampling by an associate, estimate an area 6000 feet by 1320 feet along Weaver Creek averaging 20' 9" in depth to have a value of \$1.88 per yard. Suggests a 10,000 yard plant."

1936, J. B. Tenney, Mining Engineer, Tucson, Arizona: Reports in a letter that sampling showed values ranging from

5.7 per yard to \$1.00 per yard in Weaver and Oro Fino Washes.

Copy of a striking endorsement of the Weaver placer property is among papers in a Merrill portfolio submitted to the writer, in the form of a 1935 letter to Oro Seco, Limited, 650 So. Grand Avenue, Los Angeles from Fred B. Piehl, Good-springs, Nevada, dated May 16, 1935. His examination work on this Merrill placer property occurred at two periods 21 years apart, 1914 and 1936; conclusions emphatically favorable. The survey made by Piehl in 1914 is described as being one of a "2100 mile investigation covering practically all of the placer districts in Arizona at that time, by a mining man of 25 years experience in placer operation. Thirty panning samplings with twelve wet-rocker runs were made from the surface to a stratum of caliche, known locally as 'false bedrock'":

"Goodsprings, Nevada
May 16, 1935.

Oro Seco, Limited
650 South Grand Avenue
Los Angeles, Cal.

Gentlemen:

At your request I have made an examination of the placer property belonging to Mr. R. M. Merrill and located on Weaver Creek, in the southern part of Yavapai County, Arizona, and being -

The southwest 40 acres of the southeast quarter of sec. 6, near the Octave mine. Having made an examination, I hereby submit to you a report of my findings:-

I first visited this and adjoining property in 1914, examining this entire section of placer country. This

survey by me was made at a time when I was covering practically all of the placer districts in Arizona and traveled on foot a total of some 2100 miles in that state in connection with said work. At that time I found unusually high gold values per yard in the placers of Weaver Creek and Rich Hill. But, owing to the lack of water in the district and its immediate vicinity, I did not recommend or undertake any placer operations there, having in mind at that time no contemplation of any process other than water sluicing being feasible for use, the dry machines of large capacity at that time being considered quite out of the question and the thought of such plan being only a dream.

While making my examination in 1914, and over a period of several weeks, I sampled by pan, and wet rocker, and dry rocker. In all cases results were unusually good.

During the examination of the same property for you in March of this year, I found that the results of my sampling checked perfectly with the results of the sampling in 1914.

I took samples by panning and wet-washing in a rocker in numerous places, from surface to a stratum of Caliche, known locally as 'false bedrock'. I made over thirty samples by panning, and at least twelve with wet-rocker runs, and I obtained values in gold in all but one (a Pan that was blank). From this general panning and rockering I feel safe in saying that in my opinion, and I am convinced, the gravels of Weaver area will run at least \$1.50 or better per yard, bank run. There is no doubt in my mind that the loose gravel in the mesa banks will run at least \$1.00 per yard in place. X

I am reasonably sure that there are at least a million yards of gravel on the forty acres described above, that will run \$1.00 or better per yard. Allowing 50¢ per yard for treatment of the gravel, there should be a profit in its handling of at least \$500,000 with a perfectly good chance of encountering richer gravel as the work progresses in the Weaver Creek bed operations.

I also feel safe in saying that the same yardages and values can be used on each contiguous 40 acres of adjoining property. I repeat because of its importance, that the sampling, yardage and values given herein checked exactly with my findings in 1914, as shown by my notes taken at that time, which I still have.

I also found, and all other engineering reports available show, that the lack of water is apparent and its absence has prevented this ground from being worked to any appreciable extent. A number of old timer residents in the district, and some newcomers, are using small dry-washers and wet-rockers in the same old way as has been the local custom for the past 50 years, and all take out a little gold, at least enough to make a living. The gold that is recovered by this method is practically all coarse. The operators do not try to save the fine gold as their methods of handling the gravel are very crude, and they handle but a small amount of gravel in a day.

All of the methods used, even though crude, as well as my panning rockering and sampling in general, prove to me that the 40 acres described above will carry enough values per yard to make a highly profitable operation, with the proper

kind of machinery and competent equipment.

As a mining man of 25 years experience and long familiarity with many placer operations, wet and dry, I feel qualified and justified in making the above recommendations and in stating my belief that the property referred to, including the contiguous parcels, is the best and most valuable deposit of its kind, of which I have definite and personal knowledge.

Very truly yours,

(Signed) Fred B. Piehl."

POSSIBLE DREDGING AREAS:

Though adequate standard sampling of the property as a unit remains to be done, these local tests and estimates have been scattered over a score of years and locations. Within the zone under consideration are large areas suitable for standard dredging operation; these areas being the large flats of gravel of secondary concentration in the bottoms of the lower gulches. John M. Nicol made a tentative (1926) estimate of four zones of dredgable area in the lower gulches (southern end): "60,000,000 yards, averaging 50 cents gross value per yard. With 80% extraction (40 cents recoverable value) and dredging costs at 20 cents (inclusive of 10 cents per yard to cover costs of pumping water for breaking upper banks by hydraulic mining, and for high stacking of tailings). Nicol arrived at a net valuation for these four dredgable operations of \$12,000,000 on the \$20.62 gold price and 20 cents cost of 1926.

The four zones recommended were:

1. The lower end of Weaver Gulch, starting about 500 yards below its junction with Oro Fino Gulch, and working upstream for about 3000 yards.
2. From Oro Fino and Weaver, going up Oro Fino, across a low divide to the middle section of Yaqui Gulch.
3. A large flat extending about 1000 yards down from the junction of Slaughter House Gulch and Weaver Gulch.
4. A considerable extent of lower Antelope Creek.

In addition to this \$12 million 1951 net outcome for the dredgable areas mentioned, there are "possibilities of true bedrock gravels and of far greater area of high placer banks to be worked." Nicol cautions that these statements must be taken with severe reservations but asserts that enough had been seen at the property to identify the lower Weaver Creek - Antelope Creek body of gravel as one of the largest desert placers of which he knew; with sufficient values in evidence to warrant a thorough complete and systematic sampling on which to base adequate capital investment for water development and large dredge operation.

Nicol gave as an overall figure of possible volume of placer gravel in the 5000 acres of Merrill placer ground in Weaver and Antelope Valleys which he was examining in 1926, a gross total of 750,000,000 cubic yards ("average depth 75 ft."). His 1926 conclusion however discloses his real objective:

"Well worth complete sampling and further exploration. Possible valuation very great. Immediate tentative valuation 1926 on data available, \$12,000,000 dredg-
able ground." (John H. Nicol, 1926).

A much greater portion of the Weaver Gold Placers area must be drilled or pit-sampled before any average depth of 75 ft. could be safely assumed. 75 ft. depths will be found, and exceeded, in all probability, at different points of the ancient valley or valleys but a 75 ft. vertical average for stream bed gravel bodies would be bold estimation indeed. No warrant exists, prior to actual measurement, for assuming other than a 15 ft. average working depth for the 4000 presumably productive acres on which the 1951 project is based. This, in broad estimation only, shrinks the 1926 Nicol 750,000,000 yardage figure to an approximate 100,000,000 cubic yards. I believe however that the Weaver commercial ground will ultimately be found to measure far in excess of the latter figure.

RECOMMENDED PRESENT OBJECTIVE (DEVELOPMENT AND PRODUCTION CAMPAIGN): A 3,000,000 cubic yard gravel section in Weaver Creek, systematically sampled by pits and channelling in 1936, (recoverable gold content between 50 and 60 cents a yard) and a smaller yardage on Little Oro Fino Flat of about 155,000 yards (recoverable content about \$1.00 per yd.) constitute the first gravels in the present plan of initial operation.

Summary of Initial Weaver Creek 3,155,000 yd. operation:

90% Recovery: Upper Weaver Creek 3,000,000 yds. @ 57¢	\$1,539,000
Oro Fino Flat 155,000 yds. @ \$1	<u>139,500</u>
Total:	1,678,000
3,155,000 yds. cost per yd. @ 25¢ est.	<u>787,500</u>
Total operating profit:	890,500
Less Plant Cost	<u>350,000</u>
Net Profit:	\$ <u>540,500</u>

A 3,000 yard per day operation is recommended for the dual purpose of exploration and pilot production, utilizing two power shovel excavators, each of 2 cu. yd. capacity with transportation from gravel banks to centrally located washing plant by diesel-engine driven trucks. Four 10 or 11 cubic yard trucks on a normal delivery run of approximately one mile will serve the requirement. A diesel driven medium-size tractor-bulldozer unit will be provided for truck road construction and maintenance as well as shovel-floor maintenance. One or two heavy-duty diesel driven service pumps for field work should be included.

At the location of the washing-plant, the delivery trucks will discharge their gravel loads directly into a large receiving hopper-type bin from which, by means of a feeder and conveyor, the material will be elevated and delivered to the screening and washing plant.

A washing plant capacity is recommended and estimated at 200 cu. yds. per operating hour, based on a probability of scalping 50% of the material at the screen and passing the remaining 50% (value bearing) through the jigs.

The 1951 cost of a plant embodying these capacities (including essential auxiliary spare parts, tools, lubricating materials, small machine shop with lathe, drill press, shaper, forging and welding apparatus, garage, warehouse, field office and minor buildings) is estimated by major suppliers as follows:

Two (2) Diesel driven standard caterpillar mounted shovels of 2-cubic yard capacity Bucyrus-Erie Model 51-B or equivalent	\$110,000
Four (4) Diesel engine driven trucks similar to Sterling Model 340 or equivalent	72,000
One (1) Caterpillar diesel driven tractor and bulldozer, caterpillar Model D-7 or equivalent	13,000
Two (2) Diesel driven field pumps of any of the leading standard manufacturers	17,600
* * * * *	
Truck loading hopper type bin	5,000
Feeder and conveyor	10,000
Screening and washing plant (Includes electric motor driven units, revolving screen, distributor chutes and jigs)	110,000
* * * * *	
Spares and operating materials	30,000
Machine tools	15,000
* * * * *	
Housing, building structures, etc.	<u>50,000</u>
Total:	\$ 432,000

dredging zones, nor the \$20 million net outcome of the 100,000,000 yardage estimate to be found in the summary of this report should be taken as "limiting" valuation. The total body of workable gravel is very great and it will not be known until the drift-mining possibilities and conditions of the deep, ancient-channel pay-streaks and bedrock gravels of Antelope and Weaver Creeks, possibly at 100 to 500 feet depths in sections, are reached, if ever.

WATER COMMENT: Substantial nearby watersheds to the north and east contributory to the Hassayampa River, the lower Kirkland Valley, and Peoples Valley offer, under adequate group action and development, ample facilities. Nearer by, and directly underneath the placer ground, seismic procedures available in the petroleum and mining industries are capable of exact delineation of water-level, bedrock contour, reservoir formations and basins of accumulation at an approximate cost of \$10,000. It is my recommendation that the geophysical work involved in the determination of bedrock depths and water levels in the Weaver Gold Placers, Inc. ground be at once undertaken. This general problem has been thoroughly discussed by the writer with Dr. John J. Jakosky, President, International Geophysics, Inc., of West Los Angeles, and courses of procedure tentatively agreed upon. Dr. Jakosky, known personally and professionally by the writer for some 20 years past is one of the outstanding geophysicists of the world, his organization serving major oil and mining companies on all continents.

Percolating underground waters noted by the writer in and around the Merrill Weaver property are as follows:

(a) The great reservoir in the abandoned Octave Mine that directly adjoins the NE line of the Merrill placer property - approximately 40 miles of flooded underground workings, from the surface to the 2200 ft. level - provides a vast standby body of water, in continuous overflow at the 800 ft. mine level by percolation, into the bedrock structures and pools beneath the Weaver gravels.

(b) There is reputable hearsay evidence of the sinking of a dry shaft to a depth of 165 feet at a point adjacent to the northwest end of the property and of the drifting therefrom 71 feet westerly where water suddenly broke through in such volume as to exceed the capacity of a pump capable of handling 250 gallons per minute. The men were driven from the hole by the rush of incoming water and were forced to abandon the machinery and tools. The shaft is at present bulkheaded. The head frame is still standing.

(c) There is similar evidence of an 84 foot shaft about one-half mile north of the property between Rich Hill and Slaughter House Creek where water was found in volume at its bottom.

(d) Three miles north of the property at a depth of 53 feet in a shaft sunk by Mr. R. M. Merrill water was again too heavy for working without pumps.

(e) Approximately 5 miles north of the property below Peeples Valley are seven springs, one of which furnished adequate water to the Octave 100 ton milling operation for several years. Peeples Valley forms part of the extensive

upper Kirkland Valley watershed.

(f) About 1 mile from the west boundary of the property and about 3 miles south from the north end, on the Hayes Cattle ranch, a windmill pumps water for ranch purposes through a 2 inch pipe. *Water*

(g) Near the center of the property is an abandoned shaft reputed to be over 100 feet deep, wherein the dropping of a pebble indicates that there is water standing at approximately the depth indicated. Water was produced from this by windmill 10 or 15 years ago.

(h) A well at north end of village of Congress Junction dug within the last few years to about 700 ft. through gravel, schist, and granite boulders, delivers a steady 60 gallons per minute, mounting to 100 g.p.m. for short periods.

(i) Other instances of neighboring underground water are found at greater distances to the north of the Weaver area. An artesian well which has been flowing for about four years is located in the Martinez Valley approximately 12 miles to the west. This artesian flow drains into the Martinez wash and joins the Hassayampa drainage system two miles west of Wickenburg.

(j) Between 60 and 75 miles to the northeast large volumes of water from springs and underground water courses furnish the power for the great mining operations in the Jerome Mining District, the power plants of the Mid-Arizona Power Company at Pine, Arizona, and large irrigation systems near Clarkdale. The United States Geological Survey topographical maps show the general drainage trend from this district to the Gila River via the Hassayampa and other rivers

but considerable water from the Mogollon Plateau area and the mountain ranges north of Jerome and Clarkdale undoubtedly finds its way by percolation directly south to the underground reservoir basins of Yavapai County and the Weaver Mountain district via fault and granite crevices.

(k) The windmill, at the "Foot Hill Service Station" where the real ascent on the new highway to Yarnell begins, has a good well, 170' deep. This well furnishes enough water for all household purposes of owner and his cafe, soda fountain, tourist automobiles and water bags. Has never gone dry - owner does not know what its real capacity is.

(l) Lastly, it is interesting to note that at the great Meteor Crater, one of the landmarks of the southwest, approximately 120 miles northeast of the Weaver Mining District, a large water supply was developed during the extensive Colvocoresses exploratory operations of several years duration from the Coconino Sandstone strata - 600 feet below the surface. (Jakosky). The geologic maps of Arizona, made by the United States Geological Survey, show the minor occurrence of this Coconino Sandstone south and east of the Weaver Mining District, where it may or may not carry similar water content. In making this reference the writer has no intention of implying any underground connection between the Meteor Crater district and the Weaver Mining District since the drainage from the former is well known to be in the direction of the Colorado River to the north and west.

✓ SUMMARY:

Location: Central Arizona, Yavapai County, 7-1/2 miles east and southeast of Congress Junction on the Santa Fe Railroad, about 60 miles northwest of Phoenix.

Topography: Desert plains, and delta emerging from Weaver and Antelope Creeks in Weaver Mountains - altitude at mines 3300 feet.

Climate: Good, for desert, open for mining all year, rainfall about 10 inches.

Water: Good drinking and camp supply at head of property. No surface water for mining on property. Adequate supply can be developed from underground pools under and nearby the property without major engineering difficulties.

Area: Over 5550 acres held under placer claims.

General Geology: Archean schists, pre-Cambrian granitic intrusives, relatively recent tertiary eruptives. Gold sources: eroded complex of rich veins in and surrounding Rich Hill Mt. in Weaver Mountain Range at head of delta.

Gravel Structure: A large delta of Quaternary gravels with part reconcentration of Tertiary gravels, and possible underlying bedrock area of pre-Tertiary gravels. Gravels have been reconcentrated into three types by gulch water:

1. Primary gravels - deep, over 100 feet.
2. Secondary gravels - forming flats in bottom of lower gulches. Dredgable.
3. Actual loose gulch wash.

Volume of Gravels: Surficial area - 4,000 acres.
96,800,000 total cubic yards if depth taken at 15 feet, in
round figures: 100,000,000 yards. Possible depths to
ancient channels range to several hundred feet, with
yardages running to 750,000,000 (J. M. Nicol).

Value of Gravels: No recent sampling done. Data
from a score of early reports range from 30¢ to \$1.50 per
cu. yd. (gold @ \$20.62). Present estimated average for
working basis, 100,000,000 yards at 50¢ gross, 90% recovery,
\$45,000,000. With 1951 costs assumed at 25¢ per yard, a
realizable value of at least \$20,000,000 (gold @ \$20.62)
before overhead, depreciation, depletion and taxes, seems
reasonable.

(Signed) G. C. Riddell
G. C. Riddell
Consulting Engineer.

The gold placer deposits of Weaver are celebrated for their richness and the coarseness or weight of the grains of gold. They are at the southern base of the mountains and west of the Massayampa at the foot of the Rich Hill at Stanton. They have been worked for many years—thirty or more. The deposits of gravel are not deep and heavy. The gold appears to have been broken out from a not far distant vein. The soil is red with iron oxide and the gravel is chiefly quartz veinstones. The deposit on the top of Rich Hill was found in value from an area of less than 1 acre of ground, along an old river channel.

A score or so of men are now working on these placers from year to year, and it is supposed that they get from \$2,000 to \$4,000 in value per month.

The Rich Hill channel is noted for its coarse, heavy gold. Small scale gold does not occur there. It has not been transported far from its original matrix. The same observations apply to the placers of Weaver, which no doubt had their source in the same vein from which Rich Hill was supplied. It seems strange, however, to get such coarse gold on the top of of a mountain. Tom Connell, who mined extensively on the top of the hill, assured me that he could not get even \$10 worth of fine scale gold, but he took it out in coarse masses and nuggets. One of the largest found was worth \$400, another one \$300, and another \$150 in round figures. Three lumps taken out by him were worth \$1,000. Nuggets to the aggregate value of some \$3,000 were taken out within a small area. Pedro Lucero, at Weaver, found one piece worth about \$450.

COPY.

*Report
(Consulting Geologist)*

A
RECONNAISSANCE
of the
OLD RIVER CHANNELS
of
ANTHELOPE CULCH.

Yavapai County, Arizona,

for

R. M. MERRILL

by

JOHN M. NICOL, Consulting Engineer, and
→ Geologist, for The U.S.
Mining & Smelting Corp.

Octave, Arizona,
August 1926.

The General Geological Report on The Rich Hill District covers fully all the present data available; the following is a more detailed sketch of the evidence of an old GOLD bearing channel of Antelope Valley.

There is much evidence on which to base the supposition that the lower end of Antelope Gulch form part of a main valley of great age, and at one time drained a considerable territory to the north, possibly as far as Skull Valley.

Great volcanic eruptions of the tertiary epoch filled the whole middle section of the valley and for a time dammed its lower outlet, forming a lake of considerable dimensions; the remains of which, as buried lake beds, are still clearly in evidence.

Great flows of lava covered the whole, the remains of which form the prominent mountain peaks of Antelope and others to the east and west. Recent erosion has gradually developed the lower end of the old valley and restored it to somewhat of its former shape; but has not yet eroded it to the same depth as in pre-tertiary times. In other words, the old channel remains buried below the present bottom of the existing Antelope Gulch Channel.

The present channel and one of its upper branches, has cut through the "rims" of the old channel at a number of places which enables it to be very clearly traced for about $3\frac{1}{2}$ miles; that is, from its lower end at Stanton, where it disappears under, and is buried by the great delta fan of valley gravels, to a point - going north - where it disappears under the great cap of tertiary lavas that form Antelope Peak and the hill to the north. However further the channel extends is, of course, a geological surmise; --we may count on a workable length of over three miles.

The rims as exposed over the whole length are schistose rocks, the bedrock is therefor undoubtedly the same character of schist and would be easily worked in drifting and would be an excellent "gold catcher."

The width of the old channel varies from about 200 feet at the narrowest to about 1200 feet at the widest point at the lower end. Assuming a drifting depth of 6 feet, or two yards, and an average width of 100 yards, we have approximately 350,000 cubic yards of workable gravel per mile run. As there are 3 miles of channel whose existence is well established, we may count on 1,000,000 cubic yards of workable gravel. What now we need is some basis on which to form a judgment of the probable values of this gravel.

The District of Rich Hill has been famous for the rich placer diggings in the shallow gulches worked in the early days.

There seems to be fairly authentic data to the effect that over \$5,000,000.00 in placer gold was taken out from the 60's to the 90's. And there are estimates running several more. It is also certain that many large nuggets were taken out;--one of over \$1,000.00, and many of several hundred dollars in value.

The writer has seen quite a few taken out in recent times from the Weaver side of Rich Hill. The bulk of this gold came from benches of old channels.

On the west side of Rich Hill there are two well marked sections of an old bench of a still earlier channel of Antelope Valley, and there is some evidence of an old fragmentary bench near the top of Rich Hill; -That these benches were the principal feeders of the gulches and the main source of the smooth, well-washed placer gold, is quite certain; because those gulches that were not tributary to these benches did not have as much gold; and when we go up Antelope beyond the last point, where rims of the gold channel are to be found, we get practically no gold.

Prospecting on the minor benches and the exposed sections of the rim of the old channel shows good ground, and this, together with the above facts, leads us to the normal conclusion that the bed-rock of the deepest of the old channels should be very rich. I would not be surprised to find sections averaging \$10.00 per yard on bedrock.

The old channel is entirely virgin as far as old records and actual evidence of the absence of old workings go.

The matter of sinking a main working shaft and drifting on the old channel by breasting should not be difficult. It could be carried out in accord with standard California practice.

In fact, I can see no special engineering or other difficulties in the way of developing the old channel and a moderate investment of capital will prove it up.

An expenditure of \$25,000.00 should be sufficient for a moderate sized equipment and shaft.

There is no question of the recognized value of the district as a gold bearing placer zone. That the old channel is there, and still intact is self-evident. I feel, therefore, it is a good venture for a moderate capital investment.

Submitted,

/Signed/ JOHN H. NICOL,
Consulting Mining Engineer
and Geologist for The U.S.
Mining and Smelting Corp.

N O T E: -- This document is considered by most competent and GOLD-Placer
Specialist Mining Engineers - as BETTER THAN ANY REPORT

C O P Y

San Francisco, California
40 - 25th Avenue
July 1, 1930.

Mr. R.M. Merrill,
Congress, Arizona

Dear Mr. Merrill:

"You have asked me for a report on your Arizona gravel property, located at or near the town of Octave, Yavapai County, Arizona, with particular reference to my idea of how to profitably mine the same.

The fact that we have disagreed on several vital points, particularly the water situation, is why I have hesitated to make any formal report for you; and for that reason, I will at this time, outline my ideas in a letter. If after you have read this letter, you desire to do so, I will make a formal report and also submit a plan for working the ground. Understand, please, the report, if made, will follow closely along the lines herein indicated.

There is but one problem to solve; "water". I mean the cost of developing, storing and conveying water to your ground in quantities commensurate with your requirements. You probably have enough water locally without pumping, to operate one power shovel on the middle portion of your Weaver Creek holdings; and at that, you may at first be obliged to pump some extra water out of one of the local mines, until the muddy water from your mining operations tighten up some of the seepage places in a storage reservoir, which I suggest be built.

Now, with all respect to your judgement, it is not possible to develop enough additional water locally to operate a second power shovel outfit. There is no use wasting any time in arguing this question; and your first step, I am very sure, is to get a good power shovel to work there. The total cost of eventually developing, storing, and bringing to two thousand miners inches of water, would be, comparatively speaking, small, and the tremendous amount of gold you would undoubtedly be able to get out of your ground with this amount of water, would on the whole, make the first cost insignificant. ~~But-you-cannot-make-anyone-believe-the-first-cost-insignificant.~~ But you cannot make anyone believe this; no use trying; not until you first prove the values in your ground; and do it by operating on a big enough scale to remove all possible doubts on this vital point from the minds of persons to whom you may look for finances. They cannot be convinced, I feel sure, in any other way.

Now, so far as I have been able to determine, the cheapest and best way by far, and in fact, the only practicable way that I know of, considering how little water there is locally, is to use a power shovel, separating your boulders and coarse gravel from the pay-dirt by using the identically same standard-~~tried out~~ with gold dredge machinery that has been proven for that purpose. Try no experiments. Then the first gravel - - sand, etc., containing the gold, can be washed up in sluice boxes, in the usual way, as you go along, by using an outfit on skids carrying regular dredge machinery; the skids or sleds to follow along immediately behind, and connected by means of a chain to a power shovel, such as I have sketched out for you.

This fine gravel, sand, etc., containing the pay-dirt, should be carried away by means of a regular dredge-type Robbins belt-conveyer to your sluice boxes, located eighty or possible ninety feet away from the shovel to prevent water

and sluice tailings from running back down and around the power shovel, thereby clogging up your operations, and otherwise hampering your work.

Personally, I have never seen any power shovel outfit do mining work satisfactorily, unless they keep the sluice water and tailings clear off and well out of the shovel. This is the only way as far as I can determine, to conclusively demonstrate what you have there in the way of gold values. Anyway, its first cost will be at least 90% cheaper than the cost of a dredge and pumping plant. Understand, you will have to build a fairly good sized dam across Weaver Creek, below your power shovel. This can be done in a very few days, either with a shovel, or horses and scrapers. Then as soon as the water fills up your reservoir, you can immediately begin operations, washing up the fine gravel and pay-dirt by using the water out of the reservoir, over and over again. Set your electric pump at the lower end of the dam where the water is still and comparatively free of mud. While the water will, of course, be muddy, it will not be too muddy for sluicing purposes. The fine gravel and sand, and heavier portions of the silt, will settle along the creek; some of it will go along down into the bottom of the reservoir in the still, water, of course; but before it gets down as far as the pump, most of the material, excepting the finest silt, will sink. There is no experiment in or about this sort of an arrangement; because the plan is in use right along in several places.

This installation complete, will cost in the neighborhood of \$30,000.00 or \$35,000.00. In no case, will it, I am sure, exceed \$40,000.00. A one and one-half cubic yard shovel should theoretically make three trips per minute, and at that rate, should handle theoretically, 6,525 cubic yards of material every twenty-four hours. But let us cut this estimate down say 85% to only 1,000 cubic yards handled every twenty-four hours. A great deal of your ground is rich enough to pay back your entire \$40,000.00 initial cost of installing your plant, plus operating expenses, every Saturday night, even if you handle only 1,000 cubic yards every twenty-four hours.

As a matter of fact, you should average over two thousand cubic yards every day in the year. If you can get all of your money back, and all of your expenses back, including maintenance costs, - even once a year, that in itself would be pretty good. In any event, you should get your money back every month, if you fix up right and use common sense in your operations. I think you will find your heavy boulders - power shovel - ground, will not average less than \$1.88 per cubic yard anywhere. As a matter of course, you will work your boulder power shovel ground as you come to it. It will not average \$10.00 per cubic yard or even half that much. But the poorest of the Weaver Creek power shovel ground will pay back your entire investment every month at the very least, I am sure, if you fix up right, using a good yard and a half shovel. (No doubt you would use either electricity or Diesel engine for power on your power shovel.) If you put in a halfway outfit and hire a halfway manager, it means failure before you start, beyond the slightest doubt.

You will note, I have suggested holes 2" in diameter, in the dredge type trommel. This is on account of the large nuggets. If you could be sure of $1\frac{1}{2}$ " diameter holes letting all the nuggets through, it would materially cut down your power bill for pumping water from the reservoir for sluicing purposes; so as not to be obliged to sluice anything over $1\frac{1}{2}$ " diameter. One of the many reasons for using a $1\frac{1}{2}$ cubic yard shovel or larger, is that if you get one too light, the hydraulic cylinder on the sled, will pull the shovel back to the sled instead of pulling the sled up to the power shovel, when it moves a few feet at a time on its own caterpillar tract. Do not get a sheel propelled power shovel.

First thing when you get there with your power shovel is to dig

a pit 14 or 15 feet deep, thirty feet wide, and 70 or 80 feet long; and start building your sled in the pit. Then take your shovel where the crack forks, and in one or two days you can build a dyke to turn the water down the south water way; so as to be safe in case of cloudburst. Then take the shovel down and build the storage dam across Weaver Creek. By this time, you should have the outfit ready to go mining.

In wet weather, you will no doubt be obliged to run a hose on board from your sluice water pipe, to wash the mud off the boulders while they are still tumbling in the trommel. As the same time, you will likely have to decrease the grade of the trommel, so as to get the boulders clean before they fall out of the power end of the trommel, on to the 3-foot wide belt.

Please remember there were no gold dredgers 32 years ago. That it was many years before the combined efforts and costly experiments of all the dredge mining people finally got down to a point that enabled them to design a good standard dredge. Now please just stick with this standardized dredge machinery on your sled; viz., a standard dredge trommel, not a gravel pit type trommel; and standard type Tobbins belt conveyor, and not the usual economical designed outfit for indoors steady load crushed handling.

Kindly bear in mind, as I have often told you, to refrain from stating the correct values on any values for that matter, in your ground; because no will believe you and it would result in creating suspicion in the minds of others as regards any other statements you may make on any other subject. Let whoever goes in with you determine the values there for themselves. Insist on this, it is easily done in this kind of mining. Not so in underground mining or in hardrock mining either.

After you demonstrate with a power shovel the values in that portion of your ground, where it is too shallow to dredge, which ground it so happens, contains boulders so large that no dredge ever built could possibly handle them it ought to be easy then for you to raise enough money to build a regular proven type steel dredge, one capable of handling 10,000 cubic yards per day; which means over 14,000 tons per day. (Some dredges handle as much as 20,000 cubic yards per day.) Such a dredge will cost ready to run about \$400,000.00 not counting pipe lines or pumping plants for supplying water which might up to another thousand dollars. Then locate the dredge four or five miles from Weaver Creek just north of Round Mountain and about four miles from the Santa Fe Railroad at Harquehala Station. There are no large boulders down there, or anything else unusual to trouble you in dredging work, except of course the lack of water; and you can get that by pumping.

The "Three Friends Dredge" that Mr. Ringe, Mr. Griffin, and myself built 24 years ago, which I operated for seven years, had an average running of 23 hours and 22 minutes out of every 24 hours. This dredge by the way is still running.

Remember you have four distinct kinds of mining on your land; viz., first-power shovel work. This will be on ground where there are too many big boulders for dredging; and it so happens in this case - at the same time, the ground where the large boulders are is too shallow to float a dredge; - and besides all that, there would be no place to pump your tailings if you should attempt to hydraulic where you should use shovels. Furthermore, this power shovel ground should be worked out before you cover it up with hydraulic tailings. Second;--You will have to hydraulic your steeper ground above the power shovel ground.

The third;--Go after the dredging ground, that is the main standby. And, finally;--Perhaps you may in the future conclude to sink shafts and drift out the gravel if it pays in your deeply (up) ancient river channel that runs down near Antelope Creek just west of Rich Hill.

There is no safer investment possible in any line of human endeavor where ground is suitable for dredging and the gold is evenly distributed throughout the gravel, - provided it is carefully and intelligently drilled. It is not unusual to measure up the ground dredged the day you clean up, and before you get the gold out of the sluices, to be able to tell with pencil and paper, from the land area dredged since the previous clean-ups; taking the figures from the drilling records, to within two or three percent on how much the cleanup for the half month's operation will amount to, before you get the gold weighed.

Now, Mr. Merrill, in my judgment the only way to put this property of yours on its feet, is to work reasonably along the lines indicated. There is no doubt of the financial result whatever, provided you go at it right, and handle your yardage and save your gold. But don't, PLEASE, deal with anyone who wants to experiment; and positively refuse to permit any machinery to be installed that has not heretofore been thoroughly tested out on standard dredges. I refer to the machinery to be installed on your skids or sleds; same to follow along just behind your power shovel. And fourth, please don't let them put Cousin Jim or Uncle Ed in charge to try to run the outfit on your property, unless he is competent. And in any case, don't fool with dry washers.

Remember! the water you develop and store for mining will be valuable for all time for irrigation purposes, after you are through mining.

As to where the gold came from or how it got into your ground is immaterial. The gold is there, no mistake about it; which is sufficient for our purpose.

All the patented dry washers were failures, and dry washers always were and always will be failures, if the ground has even the slightest moisture in it; for it costs too much to dry the moisture out. Experienced miners with small machinery have made money there in mid summer, for three-fourths of a century, by working during the middle of the day. Just think what a dredge could earn in that kind of ground; - a dredge which is capable of handling more gravel in a day than ten thousand men can possibly handle in the same time with dry washers, or rather dry panning, as most of them do; and even then there is enough gold left in your washers tailings to pay the dredge. Just pan some of their dry wash tailings and see.

Now, a cubic yard is more gravel than the average dry washer miner can handle in a day. There are 120 pans of gravel in a cubic yard, and there are only 480 minutes in 8 hours. That means a pan must be dug out and dry washed every 4 minutes, if they handle a cubic yard per man per day. They just don't do it that fast, thats all.

The men who tested a part of the ground for me, before my last trip down there, were competent and 100% reliable. It was this man who tested the "Three Friends Dredging Company" ground (referred to above), before we built our dredge. The ground he tested paid over a period of seven years to within 2 2/3 per cent of what his drilling record indicated it would pay; and that error was in our favor.

In closing, I can say unhesitatingly that I am very sure from the very best possible source of information, and my own personal observations and test, that the values in your ground justify going ahead. And I also unhesitatingly assure you that if you do not go at it right, you will surely fail, irrespective of the values in the ground. There are, no doubt, ways to go about the work other than herein stated. However, I feel sure that the plans I have outlined, if followed carefully, will succeed."

Yours truly,

(signed) W. L. Leland.

COUNTY OF LOS ANGELES)
) ss
STATE OF CALIFORNIA)

I hereby declare the foregoing to be an absolute and correct copy of the original report made by W.L. Leland.

MARY M. LAWRENCE

Notary Public in and for The
County of Los Angeles,
State of California

Certified to be a True Copy.

Howard S. Hotton

COPIE.

Robert M. Merrill
2850 Griffin Avenue
Los Angeles 51
California

October 25th, 1948.

Mr. C. G. Cooley,
Chillicothe, Missouri.

Dear Mr. Cooley:

About two weeks ago I picked up a copy of The Mining World, June 1948, and read about the good work you are doing on The Terryall Placer. Congratulations! We have always held pleasant memories of you and Mrs. Cooley.

I am now writing to you to ask if you would be interested in The Rich Hill Placers, or a portion of them, located near Congress Junction, Arizona. There is no town of Octave, now. We now own most of that town-site.

There has been quite a change on the Placer since you were there in 1938. Considerable sampling has been done. I have purchased the property where you were camped, and have had it patented across to the base of Rich Hill. I have purchased a part of The Octave Mine, and had a part of it patented. I have been paying rent for the use of the Octave water in the underground workings of The Octave Mine for about two years; altho I have not been using it. Now that I have had a portion of the property patented, which is over the underground workings of The Octave mine, I guess I do not need to pay rent. I do not wish to imply that it will furnish water enough for but a medium sized plant. I will say, here however, that my recent advice is that there is plenty of water available for large operations, from other sources.

One of the principal things that has happened, I let a working contract to a Mr. Kennedy, who had quite an expensive dry rig. I do not approve of dry working; but I was well paid. He worked about 6,000 yards near the upper end of the property; and about 25,000 yards about two and one-half miles south of the road - recovering good values. In fact I let the local "Boys" have the 6,000 yards of tailings; which they were fighting over. Their recovery was very high. Kennedy was ordered off by, I understand, the Hay's Cattle Co. or their associates, who claimed the property under The Exchange Act. We sent an Attorney to Washington to clear up the Title, and they sent a crew out - also The State - to sample, - getting very good values; and the property was re-conveyed to us. But that and the war hold me up for some time.

My principal trouble now is, I have been on the sick list for the past two years, and have not been able to walk two blocks at one time or drive an automobile since; so have been not been able to take care of the property except to keep the Title clear. Are you interested?

Yours truly,

/Signed/ R. M. Merrill.

Telephone - Capitol 1-1706.

P.S. I am sending this via registered so I will know if you do not receive it, - being uncertain of your address.

O O P Y. (RE:-THE MERRILL PLACER).

Los Angeles, Calif.,
July 28, 1926.

Mr. R. M. Merrill,
1558 Pacific Avenue,
Alameda, California.

HOWARD S. HUTTON
3018 Berkeley Avenue
L.A. 26 • NO 1-1981

Dear Sir:

"This is to confirm what I told you verbally in explanation of the results of our prospecting works at Octave, on your Placer ground. It might be well to recall here that our company in taking up your placer ground, was looking wholly for a volume of gold bearing gravels that could be dredged at a profit. Incidentally, as a result of my preliminary examination, I told you that I felt certain that there were at least two old channels cutting through the flats upon which the ground optioned to us exists. While our company was looking only for dredging grounds, I felt that if these old channels did not exceed eighty-feet in depth, the bed-rock pay on them would be rich enough to pay for the moving by a dredge of the overlying barren gravels; and, therefore my prospecting work would not be confined only to the large volume of gravels in the flats, -but to these old channels as well."

You will recall that I maintained from the first that there must exist two channels out of these mountains, one from Antelope and one from Weaver Creek. Owing to the quantity and nature of the gold already produced in the upper stretches of these two creeks, it seems certain that once bedrock were reached in the old channels, that would be a concentration rich enough to yield excellent profits from the drifting of these concentrations or pay streaks. While our drilling has not reached bedrock, that is, to the pay streak, it has proven the deep trough existing in the old Antelope Channel; and the nature of the gravel indicates conclusively that there must be a rich concentration or pay streak on bedrock.

Our Geological work on Antelope Creek enables us to trace quite clearly this old channel for a distance upstream of three or four miles. This is important in that once the pay streak is out below, mining can be done upstream for that distance; and, since the source of the gold is being constantly approached as work progresses upstream, the richness should also increase.

I have not dwelt on Weaver old channel because our work ^{has} mainly been confined to Antelope, and nothing has been done to prove our assumption in regard to Weaver. The indications however, are just as clear; and only a small amount of work would be required to locate the old channel as well.

*

From a study of the production records, of the Geology of the two valleys, and from the distribution of gold shedding stringers in the country traversed by Antelope and Weaver Creeks, together with the remnant of an extremely rich old channel on the tip of Rich Hill, I am firmly convinced of the existence of unusually rich pay streaks on bedrock in these old channels. By the pay streaks, I mean concentrations of gold bearing material which will pay to drift; and, by unusual, I mean about two dollars per square foot of bedrock (not per cubic yard of gravel). I think I neglected to mention that we struck water at about one hundred feet. This is not only another indication of the channel, but assures you a source of water you had not formerly anticipated.

*

I do not hesitate to recommend that you, either by yourself, or with some associate, arrange for the necessary finances to sink on this old channel, and to prospect it by drifting across it."

Yours very truly,

/Signed/ NORMAN C. STINES,
Chief Mining Engineer on the
job for The U.S. Mining and
Smelting Corp.

COPY

*Water
Experts
Report*

E. M. CARTER
Mining and Civil Engineer
Hydrology and Sub-surface Hydraulics

Los Angeles, California
May 14th, 1936

Mr. R. M. Merrill, Mining Engineer,
Pasadena, California.

My dear Sir:-

As you know I have spent some sixteen weeks, a few years back, in and around Wickenburg, Arizona, during this survey of the hydrological conditions and geology I had cause to cover the Weaver Creek and Antelope at the base of Rich Hill, also I covered the Hassayampa Water Sheds and the hydrology of Peoples Valley.

You have no worries about water for your mining claims in this territory, for operation, I would turn to deep water right on the property it is possible, I am sure, that the deep zone will produce all the water you will ever require and at the same time I would watch for values, I know there is a deeper gravel at this point than has ever been sampled and no doubt will run very high in gold.

I am sure 5,000 gal. a minute can be developed at the lower end of the draw, during dry season. ✓

Yours truly,

(Signed)
E. M. Carter
Box 782
Wichita Falls, Texas.

P. S. I am leaving for the east about Monday.

*Water
Specialists Report.*

E. M. CARTER
MINING AND CIVIL ENGINEER
HYDROLOGY AND SUB-SURFACE HYDRAULICS

Long Beach California
May 13th., 1936.

Mr. R. M. Merrill, Mining Engineer,
281 Kenneth Road,
Glendale, California.

My dear Sir:-

As you know I have spent some six weeks in and around Weaver Mining District, Wickenburg Arizona, making a report and studies of the hydrological conditions both surface and sub-surface and my findings are as follows:

You will have no difficult problem in obtaining an adequate water supply for your mining operations in and around Antelope and Weaver Creeks, due the fact you have three sources, any of which will furnish the required amount for milling the gravels from your placer claims in that district.

No. 1 Antelope and Weaver Creeks both have deep water, due to the false bedrock and this strata is saturated and I am sure a good supply could be developed there with the proper methods, at the same time I am sure you will find your greater values in this UNTOUCHED STRATA, this strata alone is the source that flooded the Congress and Octave Mines and Congress Junction is drawing from this supply.

No. 2 Hassayampa Water Sheds, almost unlimited and with proper development and a short pipe line, proper pumping equipment, almost any desired amount is obtainable.

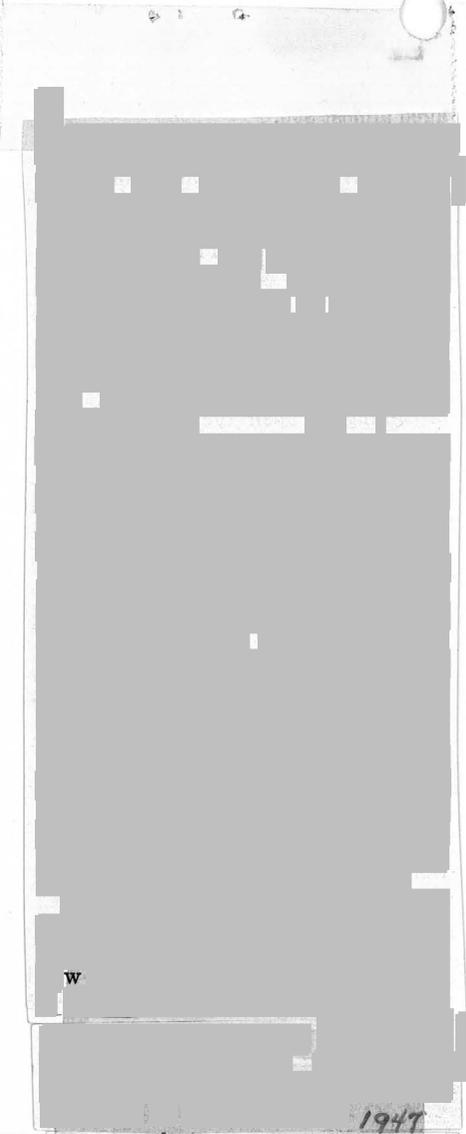
No. 3 Peeples Valley, to the north and east of your property has a wonderful dam-site, each rain in this territory would furnish enough water to carry your operations for a year, the drainage area consists of some 23 square miles, the water at the dam site would be 43 feet deep and cover some 50 acres.

If there should be more information desired you may write to me at my Wichita Falls Texas address, Box 702.

Yours truly

E. M.

Inspection 1933
March 1st to Apr. 15th.
File No. 2 Arizona.



1947

Engineering and Mining Journal—Vol.148, No.7

R. M. Merrill Rich Hill Gold Placers
" Octave Dist. (file) ✓

2

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

VERBAL INFORMATION SUMMARY

1. Mine file: WEAVER GULCH GOLD PROPERTY

2. Mine name if different from above:

3. County: Yavapai

4. Information from: ANON

Company: Jackpot Mining Co.

Address: 105 W. Road, Suite 25

P.O. Box 212238, Wickenburg, AZ 85358

Phone: (602) 684-2904 & 684-3045 and (702) 564-7845

5. Summary of information received, comments, etc.:

Mr. Ray J. Rees, president of Jackpot Mining Co. first had Merlyn Berg of International Capital Funders (ICF) Inc. raise funds through a boiler room operation selling gold for future delivery. When the delivery date passed and no gold was delivered Mr. Rees disavowed ICF and is now trying to raise capital himself by selling shares in the operation. Copies of both ICF's and Mr. Rees' offerings were placed in Weaver Gulch Gold Property file.

Date: June 29, 1989

Richard R. Beard, Mining Engineer

RRB WR 5/6/83: Cal Schroeder, P.O. Box 2435, Wickenburg, AZ 85358, Telephone: 684-3297 is trying to market gold nuggets. He had a bunch with him ranging in size from 1/16" to 3/4" in the long direction. He is operating a trommel and sluice about 3/4 mile up Weaver Creek from the road between Octave & Stanton. He reports that 85 cubic yards from near bedrock yielded 6 1/2 oz. of nuggets. Mr Schroeder was formerly with the leaching operation at the Octave.

njn wr 7/1/83: James Jones, president of Geo Tec visited and reported that he is General Manager of Weaver Mining Properties Inc. which is a subsidiary of Mottley Industries, Inc. Weaver's address is P.O. Box 1639, 335 Whipple Street Wickenburg, AZ 85358. Weaver currently is conducting a placer operation in Section 5, T9N R4W and Section 31 and 32 T10N R4W, Yavapai County. He invited someone from our department to visit the operation the next time we were in the area.

NJN WR 12/9/83: Mente Moate reported he will be starting a mining operation at T10W, R4W, Sec. 31 (Weaver Gulch Placer file.) Yavapai County. He hopes to set up a pilot operation out there about \$60,000 within 30 days.

Don E. Bryon

KP WR 1/19/79 - Jim Butler explained his plans to mine water for gold from workings on his Coyote, Weaver Extension, Weaver #1 and Weaver #2 patented claims, "Weaver" actually Rich Hill Dist., Yavapai Co. He explained that there is a shaft 35 feet deep with a 90 foot crosscut at the bottom which extends under a nearby stream (probably Weaver Creek). Water stands only a few feet below the shaft collar. He plans to pump the water from the shaft to a tank, then across successive charcoal beds to recover the suspended and/or dissolved gold in the charcoal. He claims the water has been assayed by ARC Laboratories and contains 1¢ per gallon in gold. He figures to recover 1/2¢ per gallon. A number of questions were discussed: what is the recharge capacity of the water in the old working; will the gold content remain 1¢ per gallon, rise or fall as new water percolates into the working when the water is pumped; will 1/2¢ per gallon pay costs; will the recovery method planned work?, It was suggested he discuss the project with Dave Rabb. 2/22/79 a. p.

RRB WR 2/27/81: Don E. Bryon, Mineral Research & Recovery, 2004 S. Eighth E., Salt Lake City, Utah 84105, and R. A. Elliott, Toronto, Canada, were in to find information on placer ground west of Octave. The area they are interested in coincides approximately with the Weaver Gulch Gold Property and they had that file copied. They said they were investigating the possibility of operating the property for the owners, Ron Stout, Jim Beaver, R.O. Carlson, and others.

NJN WR 12/24/82: Chuck Barnes reported Al Schroeder has a placer operation on Weaver Creek, Yavapai County, just south of Goodwin's leach operations at the Octave Mine. If a sampling program currently underway is successful Mr. Barnes may set up an eight yard bucket line dredge. Preliminary reports indicate bedrock at up to 28' in the upper part of the sample area. Material near bedrock contains up to 1 oz Au/yd.

NJN WR 4/29/83: It was reported that a group called Weaver Creek Mining, Jim Jones, geologist, is operating a 500 yard/day placer one half mile below the Octave mine in Weaver Creek in Yavapai County. The group reportedly would like additional financing to scale up to 2,000 yards/day.

RM WR 12/11/83: It was reported that the group will be starting a mining operation at
N.J.N., Min., Sec. 31

COMPLETE AND MAIL TO:

WEAVER CREEK GOLD PROJECT FILE

FOR OFFICE USE ONLY

STATE MINE INSPECTOR
1624 WEST ADAMS, ROOM 208
PHOENIX, ARIZONA 85007-2606

STATE MINE INSPECTOR

NOV 12 1986

START-UP NUMBER 64,396/80
STATE NUMBER _____
MSHA NUMBER _____

Boonm

NOTICE TO ARIZONA STATE MINE INSPECTOR

In compliance with the Arizona Revised Statute Section 27-303, we are submitting this written notice to the Arizona State Mine Inspector of our intent to start stop _____ move _____ (Please check one) a mining operation.

If this is a move, please show last location: N/A
If you have not operated a mine previously in Arizona, please check here: If you want the Education and Training Division to assist with your mine safety training, please check here:
If this operation will use Cyanide for leaching, please check here: _____

COMPANY NAME: CHESTER C. MODESITT

DIVISION: N/A

MINE OR PLANT NAME: WEAVER CREEK PROJECT TELEPHONE: 684-3677

CHIEF OFFICER: CHESTER C. MODESITT

COMPANY ADDRESS: PO BOX 2583

CITY: WICKELBURG STATE: ARIZ ZIP CODE: 85358

MINE OR PLANT LOCATION: (Include county and nearest town, as well as directions for locating property by vehicle: NORTH OF CONGRESS ON HWY 89

TURN ON ROAD TO STANTON OCTAUE, DRIVE ON THIS ROAD

UNTIL YOU REACH THE YELLOW OCTAUE SIGN TURN LEFT AT
(BLM GREEN BRUSH CORNER.)

OCTAUE SIGN & DRIVE NORTH TO WEAVER CEMETARY & CROSS CATTLE GUARD.

TYPE OF OPERATION: PLACER PRINCIPAL PRODUCT: GOLD

STARTING DATE: ASAP CLOSING DATE: UNKNOWN DURATION: UNKNOWN

PERSON COMPLETING NOTICE: CHESTER C. MODESITT TITLE: _____

DATE NOTICE MAILED TO STATE MINE INSPECTOR: 11-7-86

ORDER SHEET

Beach-Doe Company

ROOM 519 HEARD BUILDING

TELEPHONE 6147

PHOENIX, ARIZONA

TO

OUR ORDER NUMBER

DATE

SHIP TO

CUSTOMER'S ORDER NO.

VIA

CUSTOMER'S REQ. NO.

CHARGE TO

TERMS

QUANTITY

ARTICLE

PRICE F. O. B.

	<p> <i>Order cost #2,391.00 for 30 days</i> <i>7 1/2 months 150.00 - 50% = 75.00</i> <i>Handling 50.00 - 50% = 25.00</i> <i>Packing 150.00 - 50% = 75.00</i> <i>Insurance 81.00 - 10% = 8.10</i> <i>Supplies 150.00</i> <i>Postage 81.00 - 6% = 4.86</i> <i>Payment 100.00</i> </p>	
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PACK IN LIGHTEST SUITABLE PACKAGES. MARK AND SHIP AND BILL PER INSTRUCTIONS. SEND DUPLICATE INVOICE TO US, SPECIFYING ORDER NUMBER. ACKNOWLEDGE RECEIPT OF ORDER AND WHEN SHIPMENT WILL BE MADE.

BEACH-DOE COMPANY

BY

Handwritten signature and notes at the bottom of the page.

May 10 1932

Dear Mathews:

On top of Rich Hill near Lipton property is another which is now being worked by the old owners and \$35 or over per ton. The vein is a little wider than the average there and it would be by through tunnels. It is owned by 2 old men who have to hire all the work done while paying they want to sell and quit. The price is \$22,500 Terms 1,000 cash 15% and \$5,000 every 6 mo. until paid. It may be possible to modify the terms somewhat.

The cost of mining, hauling, etc would be about as follows: Mining \$5,00 - packing to RR \$3,00 Haul to RR \$100 - RR Mt 300. Smelly Chgs \$300. Total \$15,00 - leaving a net profit of 20,00 per ton. At first the ore would have to be packed off the hill, afterwards a cobbledy tram put in about 1000 feet long, saving the cost of packing.

The owners claim 6,000 tons of this grade ore in sight with plenty prospects for many times that amount to be developed.

6,000 tons @ 20 <u>or</u>	=	120,000. <u>or</u>
Less Cost of property		22,500 <u>or</u>
Total Profit is <u>or</u> <u>at</u> <u>least</u>		\$97,500. <u>or</u>

George M. Colvocoresses,
Mining and Metallurgical Engineer,
1108 Luhrs Tower,
Phoenix, Arizona.

MAY 26, 1930

Mr. John B. Ehrhart,
Phoenix, Arizona.

REPORT ON WEAVER GULCH GOLD PROPERTY

Dear Sir:

In compliance with your request, I visited this property on the 22nd inst., and made a very brief examination in order to advise you concerning its probable merit. My examination, as you realize, was of a preliminary nature, and cannot be made the basis for a detailed report, but I think that the information obtained is of considerable importance.

LOCATION, GEOLOGY AND HISTORY

Your claims are located in the southern part of Yavapai County, Arizona, along Weaver Creek, being about seven miles in an air line or twelve miles by fair road distant from the railway at Congress.

The camp on this creek has an elevation of slightly over 3,000 feet above sea level, and the ground rises rapidly to the east, forming the western slopes of the Weaver Mountains, with Rich Hill just to the north. The surface is rough and stony; there are no trees except along the washes and only scant vegetation consisting of cacti and various desert shrubs.

The country is Pre-Cambrian granite and schist, the higher mountains being capped by tertiary lava. Placer ground in this section comprises a total area of about eight by five miles, principally a sloping mesa composed of boulders, clay and sand formed by the erosion of the mountains and hills.

Gold was first discovered here in the 1860's and for several years there was a great mining activity at the vein mines on Rich Hill and vicinity and at the placers along Weaver and Antelope Creeks. The yield of gold prior to 1883 is said to have amounted to over \$1,000,000 Value. Only sporadic mining has continued since that date and according to the records of the State Bureau of Mines, the reported yield has been only \$75,000 since 1900, and practically negligible since 1914.

RED BANK PLACERS

This is located along the banks of Weaver Creek and I am given to understand that the property which you have under option consists of five unpatented placer mining claims of 20 acres, each, standing in the name of John B. Ehrhart.

The boundaries of these claims as pointed out to me would make the worable limits of the placer approximately 3000' in length along Weaver Creek, in an east and west direction, 2,000' in width, and the

and the average depth from the surface to bedrock is estimated, from comparatively meager data, at 15'. All of this ground consists of a sedimentary fill between steeply rising hill sides, and is composed principally of boulders and rocks of all sizes and dimensions, cemented together with gravel, and sand and rock; and clay; the gold occurring in small nuggets and specks. The total content of the placer ground which might be worked on these claims is about one million cubic yards, and a rough estimate of the percentage of boulders to gravel and dirt indicates that the boulders represent approximately 80% of the total yardage.

DEVELOPMENT

Aside from the surface exposure of the entire mesa, extending from Weaver Creek to the point where the mountains rise sharply, the deposit is out through to bedrock near its south side by the creek and much of the north bank stands up quite sheer and permits easy inspection and sampling. In this bank a number of short tunnels have been driven and one comparatively long tunnel near the camp has been run, as per sketch, attached to the report, which is based on a rough survey with a Brunton Transit. On this sketch the locations of samples taken are noted.

QUALITY OF MATERIAL

A preliminary estimate was made in the following manner: A number of pans of dirt were picked up at various points on the surface of the mesa and dry-panned by Dan Lucero, who was exceptionally skillful at this kind of work. These pans averaged about 12 lbs apiece and the specks and colors I judged by the eye to run about 6¢ per pan. Along the bed of the creek and in the banks several other samples were panned which gave some what erratic results, but appeared to average about the same as the sample taken from the main tunnel. In the tunnel itself five samples were taken by picking down the cementing material between the boulders at points varying from 2' to 5' above bedrock. These pans were carefully washed and the gold obtained from four of them aggregated 380 milligrams, derived from about 45 lbs of dirt. The specks of gold were all comparatively coarse and showed evidence of considerable travel and the recovery by panning was probably about what might be expected from any other form of operation or concentration. The fineness of the gold in Weaver Gulch, as given by the U. S. G. S. is 910, and, using the mean value of the surface sample and those obtained from the tunnel and assuming that the dirt susceptible to panning represented about 20% of the total cubic content of the ground, these tests indicated that each yard of your placer ground, boulders and rocks included, contains slightly over \$2.00 value in gold. The total value of the gold which might be recovered from this placer might, therefore, be figured at approximately \$2,000,000.

METHODS OF MINING

IN considering the possibility of operating this placer, the quantity of water available is of vital importance. Water as at present developed in some small springs or rock tanks along the bed of Weaver Creek and its tributaries shows that there is a certain amount of underflow which is said to be continuous throughout the year.

However, the topography of the ground, coupled with the average rainfall which does not exceed 10" or 12" per annum, except near the tops of the mountains, would not indicate that there is any large amount of water locally available, although no definite statement on this point can be made without further investigation. Although some water might be obtained from Antelope and Martinez Creeks to the west, the nearest flow of any importance is found in the Hassayampa River five to six miles south and east and about 600' below the level of the placers.

Placers similar to the Red Bank, where the gold is free and comparatively coarse, and are generally worked by one of the following methods, excluding dry concentration which the moisture in the sand and clay would pretty surely render very inefficient.

First -- Mining by pick and shovel and washing by hand in pans or rockers.

Second -- Mining on a larger scale by pick and shovel, or with riffles or in ground sluices.

Third -- Mining by mechanical means such as power scraper, drag line excavator, dredge, or steam shovel, and recovery in sluices or washing plant.

Fourth -- Hydraulic mining, that is, washing down the banks with a stream of water under high pressure and running the dirt into washing plants or through sluices with riffles.

RECOMMENDATIONS

I, accordingly, recommend:

First -- That the legal status of the claims should be thoroughly investigated to determine whether the locations are valid and the claims in good standing, and whether the parties with whom you are dealing would be able to deliver clear title.

Second -- If the matters mentioned above are found to be entirely in order, that you extend your present option from the owners for as long as possible.

Third -- That you should further investigate the value and extent of your ground and the possibility of hydraulicing first, by carefully studying the water supply and calculating the maximum amount of water which might be obtained from the various sources, and the approximate

cost of bringing this water to one or more suitable points. If it appears that sufficient water can be obtained without prohibitive cost, I suggest that several pits should be sunk from the surface to bedrock and at least three more tunnels run in for say 100' from the bank and if the results are favorable that an experimental plant should be provided through purchasing or leasing a small high-pressure pump to be driven by a gas engine and equipped with pipe line, nozzle, (giant) and to be installed in connection with collecting flumes and sluices in which riffles would be provided. The water for such an experiment could probably be obtained from the well located near the camp which ought to be sufficient to permit a fair trial and an experimental operation of this nature conducted over a period of say three or four weeks should give extremely valuable data, particularly in respect to the following.

First -- The quantity and pressure of water required to actually break down the gravel from the boulders which it now cements and disintegrate the clay. Records of various placer operations indicate that the water required varies within such wide limits that no definite estimate can be made regarding any particular placer ground except after an experimental test of this kind.

Second -- The Average percentage of boulders and rocks and the cost of handling them to open up channels through the deposit for advancing the hoses and nozzles and installing the sluices.

Third -- The average recovery of gold per cubic yard excavated which can be made the basis of reliable calculations as to the ultimate profit, if any, that might be obtained from following this procedure on a much larger scale.

While this experiment was in progress more detailed estimates could be made regarding the initial supply of water required and cost of obtaining same and of reclaiming as much of the water from the tailings as possible and returning this to the storage tanks.

Everything considered, I am inclined to believe that there is a chance of operating this deposit with a reasonable margin of profit. But, if you decide to proceed, it would be very advisable to first obtain if possible without much expense, options on additional placer claims located further down the gulch, since if

operations proved successful in one section of the gulch, the price at which all other claims could be obtained will mount rapidly. In the lower sections of Weaver Gulch it is to be expected that the percentage of boulders will decrease in proportion to the gravel, so that operating costs should diminish, but, on the other hand, the gold will naturally be finer and probably scarcer so that a lower recovery, as well as cheaper costs, must be expected.

Hydraulic operations have generally only been successful where a large flow of water was readily available, but for the most part these have been conducted on ground where the values were much less than in the case at the Red Bank.

CONCLUSION.

Summing up, I am satisfied that there is a great deal of gold in the placer and that the average values will probably prove to be in the order of those cited. I do feel that further exploration and investigation is justified and advise you to proceed along the lines indicated without making any large expenditure except for development and testing from which the recovered gold should cover a portion of the expense.

The money which will have to be spent to pretty definitely prove or disprove the value of your property will be essentially a mining gamble and may be entirely lost or yield many hundred per cent of profit.

I think that this is a good gamble and that it should make an appeal to people who are willing and able to engage in such a speculative venture especially at the present time when the price of all other metals is low and when gold mines are being more sought after than at any time during recent years.

Very truly yours,

(signed) G. M. COLVOCORESSES