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REPORT ON  
THE ORO FLAME  
GROUP OF CLAIMS

Hassayampa Mining District  
Yavapai County, Arizona

by  
GEO. A. KIRKBRIDE  
Mining Engineer.

THE CLAIMS:

Consist of three full claims and a fraction, all patented; namely, The Oro Grande, Old Ohio, Oro Flame and Mill claim.

The property is situated eight miles in a southerly direction from Prescott and is reached by a good road from Prescott. Elevation of the mines is about 5000 feet.

TOPOGRAPHY:

The surface of all the claims is steeply hilly and rough. A main canyon formed by the erosion of the Hassayampa River, which flows southerly and crosses the strike of the veins at a right angle on the Oro Grande claim, with steep sides rising to high ridges. This permits advantageous mine development by tunneling on the vein.

FORMATION:

The prevailing rocks of the country are granite and diorite, with diabase and felsite porphyry. On the surface of these claims is shown a sheet of felsite, in dike like form, intruded through the formation, ranging north and south with a dip to the west of 78 degrees.

This resulted in creating a strong fault fissure, which occupied a position between the felsite as the hanging and the diorite as the foot wall. It is along this line of contact, where for seven miles in length, is found shoots of gold bearing material, in form of veins or veinlets of quartz, or crushed zones in form of breccia, which consists mainly of quartz in wide lenses. This carries gold in payable quantities, with the ore bodies frequent and permanent.

On these claims, along line of vein, white and honeycomb quartz is everywhere noticeable. This mineralized zone is from 80

240 feet in width, with three planes, which carries ore in veinlike form lying on either foot, middle or hanging plane. At some point below the surface, estimated at 500 feet, they all dip together and form one wide vein of ore.

PRESENT CONDITIONS:

The 110 foot shaft on the Oro Grande is in fairly good condition.

The Old Ohio workings are in part inaccessible but it is possible to check the statements of Mr. Tomlinson's report with regard to these claims.

The Oro Flame workings are now depleted with the exception of perhaps six or eight cars of shipping grade ore. Further development will have to be carried out below the 140 foot tunnel level.

DEVELOPMENT AND ORE:

"Old Ohio":

The following information is taken from the report of Mr. Tomlinson. This report was made in 1909 during the time that the property was in operation under his direction. My work has been only to insofar as possible to check his statements and I have found them to be exceptionally accurate.

Continuing south, along the strike of vein is the claim named "Ohio", the principal developments being in the form of tunnels on vein. These are driven from the Hassayampa River side and consist of numbers 1, 2, and 3, corresponding to the ore shoots which each was driven to out. Tunnel No. 1 started on a level 40 feet above the river, runs northerly a distance of 800 feet. It is run the entire distance on the hanging wall plane, next to the felsite. One cross cut is made to the east under ore shoot No. 1, but no upraising or stoping was done. A large tonnage of mill ore may be mined from this opening as the grade is good, and while the tunnel is badly caved in places, it will not cost much to put it into good working condition, and it should be extended a further distance north in order to cut ore shoot No. 4, which shows large bodies of \$18.00 ore, opened by shaft and tunnel on the surface near the south end line of the claim.

Ore shoot No. 1 was discovered by outcrop on the surface which scattered pieces of quartz, some of which weighed from two to three tons, each, over a wide area. This float all panned well in free gold, assay value per ton being one ounce, or \$20.00. A shallow crosscut tunnel was started and run at right angle to course of vein. This cut under outcrop at 40 feet in depth, crossing 16 feet of ore. This was run through mill, yielding \$12.80 per ton saved by amalgamation with tails assaying \$7.00 and \$8.00 per ton. A winze sunk to a depth of 50 feet in this ore opened 8 feet of sulphide ore with average grade of \$42.00 per ton. This ore too, was mined and concentrated with a tailing loss of \$12.00 per ton and \$18.00 per ton.

Ore shoot No. 2 was opened by driving a tunnel under No. 1, opening on vein 126 feet north a body of sulphide ore was cut four or five feet in width, showing average value of \$37.00 per ton. Above shoot No. 1, while building a wagon road to get to the ore at shoot No. 4, another large outcrop of quartz was found which milled \$18.00 per ton. Thirty to fifty tons were picked up at this point and got by excavation made for the wagon road.

Continuing up the mountain, near the north end line, shoot No. 4, on the hanging wall plane is opened for 70 feet in length by tunnel, and also by shaft to a depth of 35 feet. Width of ore is from 3 to 5 feet with average value per ton of \$18.00

"Mill Claim":

Adjoining end lines on the south is the "Mill Claim". This is 518 feet by 541 feet in size. On this claim a shaft was sunk to a depth of 30 feet in center of vein, in order to provide means of centralizing the water for milling purposes. At the depth named, a crosscut was made under the stream for 105 feet. All this was in vein matter, and streaks of ore of good grade showed at intervals through the full distance to the felsite wall.

"Oro Grande":

This joins with the south end line of the "Mill Claim". Development made near the center of claim are in the form of tunnels

on the foot wall vein from both sides of a ridge, with a shaft sunk from the high part of the ridge, in the vein, to a depth of 110 feet. All workings are in low grade ore consisting of quartz and slate. The entire ore streak for 8 to 12 feet in width will average \$7.80 per ton in gold. The bottom level is well timbered and now ready for stoping. A cross section through vein shows what may be cut or found with depth as the vein is a large one and will pick up the hanging wall streak at the same depth as on the "Mormon" and "Gold Bug".

"Oro Flame":

The Oro Flame claim is on the extreme south end of the group. It is the work on this claim that has been under my observation for the past two years since it has been in operation.

The ore occurs on the foot wall plane on a granite porphyry schist contact.

The development consists of a tunnel driven in on the south side of the ridge, along the vein at a shallow depth. It is above this level that ore is now being removed.

Another tunnel driven a length of about 500 feet is only in part on the vein having been driven a distance of 350 feet paralleling the vein. A crosscut was driven a distance of eight feet from this tunnel and cut the vein at a depth of 140 feet.

An ore shoot 150 feet long was opened by this work and has been stoped clean to the upper level. The production from this work has grossed about \$50,000 in shipping ore of which about \$30,000 has been net profit. Values of ore shipped as shown by smelter return sheets have averaged about \$20,000 per ton in gold.

The ore shoot in the bottom of the drift shows strongly a width of about two and a half feet average in places swelling to four feet.

The ore has a galena base, which would indicate permanency with depth and there is no reason to believe that values will decrease as deeper development is carried out.

The presence of copper has been noted in all shipments although in quantities only about sufficient to avoid the smelter penalty for lack of it.

PARALLEL VEINS:

The hanging wall vein which has been opened on the adjoining claims, the Mormon, American Eagle and Gold Bug, shows very plainly on the surface the entire length of the claims and could be cross cut in a distance of about 125 feet from the lower workings of the Oro Flame. This vein has produced considerable high grade gold ore.

PROPOSED DEVELOPMENT:

The present plan of development embraces sinking in the ore to a depth of 100 feet below the 140 foot tunnel level, drifting to open the ore shoot on this level. With this work completed and timbering for stopes started it will be possible to ship at least two cars per week.

Additional later development should include cross cutting to the hanging wall vein and additional drifting on the foot wall vein to open other ore shoots indicated on the surface. Possibilities for a later mill operation are excellent on the Old Ohio and Oro Grande claims and should be given consideration.

PROFIT POSSIBILITIES:

Using as a criterion the recent production and the fact that with a total operating force of three men the present owners have been able to net about \$30,000 during the past two years it is logical to assume at least a profit of this amount if values are consistent with depth.

By dividing the ore shoot into two stopes it would be possible to double the income and I believe there is no question but that this property will net \$40,000 per year in addition to returning the original investment, from shipping ore along without taking into consideration the available mill ore on the Old Ohio and Oro Grande claims. The later development of the mill ore should prove attractive.

In conclusion, I have no hesitation in recommending this group of claims as being an excellent opportunity to develop a good paying property with a small preliminary investment.

Prescott, Arizona  
July 12, 1930

Respectfully submitted,  
(signed) Geo. A. Kirkbride,  
M. E.

Supplement to  
ORO FLAME REPORT

Under Date of  
July 12, 1930

Since writing the attached report, I with a group of friends have placed upon the property a small compressor and equipment for further development.

A new ore shoot has been opened above the 140 foot tunnel level, with ore varying in width from 2 to 4 feet.

Two cars of ore have been shipped from this minor shoot without sorting and returned \$13 per ton gold. Due to lack of air for development this work was discontinued and a winze sunk at the end of the main ore shoot to a depth of 60 feet. Ore values are consistent at \$16 to \$20 per ton gold where the winze was started and increased to \$26 per ton at the bottom. Vein width averages from 1 to 4 feet in the solid shipping ore.

Drifting has been done to a length of 42 feet along the 60 foot level in a southerly direction. The back was taken down preparatory to timbering for a stope. This work has all been in ore varying in width from 18 inches to 3 feet and produced 53 tons of ore having an average value of \$22 per ton. Drifting is again in progress on the vein with consistent vein widths and values.

The ore below the water table is a sulphide with gold values apparently carried with pyrite or specularite. No free gold is noticeable by panning.

The vein material is a dark, solid, fine grained quartz and is consistently found on the contact between the granite hanging wall and schist foot wall.

A soft gouge streak lies between the ore and hanging wall but carries no values.

The width of the vein is considerably greater in the bottom of the drift than in the back and gives every indication of going to a much greater depth with the possibility of obtaining a better gold value.

Since taking over the property I have done considerable

work on the Old Ohio and Oro Grande claims and believe a larger development plan should include the Oro Grande shaft. Samples of this ore have assayed from \$12 to \$20 per ton gold with vein width of 8 to 12 feet. There is very little ore available in the 110 foot shaft but what I would consider as being a showing well worth consideration.

The ore from these claims is high in silica and in consequence takes a rate of \$1.25 per ton at the smelter, freight to smelter is \$3.10 per ton, trucking to railroad is \$2.00 per ton making a total cost, not considering mining, of \$6.35 per ton. Mining by cut and fill methods can be done at from \$2.00 to \$3.50 per ton of ore depending on vein width. This leaves a nice profit on ore of \$15.00 or more per ton.

The property is held on lease, bond and option on favorable terms with ample time to open ore bodies before making payments.

This property certainly in view of recent production, and the present showing in the 60 foot winze below water level, justifies fully a well planned development program and sinking to a greater depth.

Respectfully submitted,

GEO. A. KIRKBRIDE, M. E.

PRESCOTT, ARIZONA

December 10, 1930

*Sold value at old price \$ 20.00 per g.*

(Values based on \$20.66 per 3.7 gold)

ORO FLAMME MINE

Supplement to Sterling Report Under date of June 1, 1932.

Since report was made by Mr. Tomlinson the following work has been done on this group.

Gold Bug Shaft was dewatered and timbered to the 200 foot level, on this level going north 60 feet, 15 samples were taken averaging \$13.50 gold averaging 4 1/2 ft. wide. The drift was caved 60' in from the shaft.

No. 2 tunnel was cleaned and timbered and shaft was sunk 40' on No. 3 shoot, 3 cars of ore were shipped averaging \$11.50 gold. One car was shipped from No. 2 shoot averaging \$14.00 gold.

Respectfully submitted,

H. K. Grove

Prescott, Arizona.

June 1, 1932.

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REPORT ON THE PROPERTY OWNED BY GROVE & SONS MINING COMPANY.

The holdings consist of three patented mining claims, shaft houses, hoist and boiler, boarding houses, bunk houses and office.

Beginning at the northerly end, the mine claims are named "American Eagle", "Gold Bug", "Mormon". Each of the claims is 600 by 1500 feet.

The section in which this property lies is situated eight miles in a southerly direction from the town of Prescott, the county seat of Yavapai County, Arizona. This is a main station on the Santa Fe, Prescott and Phoenix Railroad, which joins the main Santa Fe Line at Ashfork, Arizona.

The property is reached by a good wagon road from Prescott which crosses the Sierra Prietas, a mountain range lying east and south of the town. The greatest elevation of this range is 7,178 feet with elevation at the mines at 5,000 feet.

TOPOGRAPHY: The surface of all the claims is steeply hilly and rough. A main canyon formed by the erosion of the Hassyampa River which flows

southerly and crosses the strike of the vein at a right angle on the "Oro Grande" claim, with steep sides rising to high ridges. This permits advantageous mine development by tunneling on the vein.

**FORMATION:** The prevailing rocks of the country are granite and diorite, with diabase dykes and felsite porphyry. On the surface of these claims is shown a sheet of felsite, in dykelike form, intruded thru the formation, ranging north and south with a dip to the west of 78 degrees.

This resulted in creating a strong fault fissure, which occupied a position between the felsite as the hanging and the diorite as the foot wall. It is along this line of contact, where for seven miles in length, is found shoots of gold bearing material, in form of veins or veinlets of quartz, or crushed zones in form of breccia, which consists mainly of quartz in wide lenses. This carries gold in payable quantities, with the ore bodies frequent and permanent.

On these claims, along line of vein, white and honeycomb quartz is everywhere noticeable. This mineralized zone is from 80 to 240 feet in width, with three planes, which carries ore in veinlike form lying on either foot, middle or hanging plane. At some point below the surface, estimated at 500', they all dip together and form one wide vein of ore.

**PRESENT CONDITIONS:** Much work has been done on all the claims in the past. This was done in the form of tunnels and shafts where ore was found by outcrop. Long tunnels were driven on the veins in these places, and several shafts were sunk where depth could not be obtained by tunneling. At this time the main shafts are filled to the top with water and all timbering on any openings has rotted out, letting in the ground and rendering them almost impassable. Tunnels on the "American Eagle" have been retimbered and are in workable shape for mining the ore in the stopes over levels. Main shaft on "Gold Bug" is full of water which renders it impossible to get into the long drift run on the A-E vein which was reached by a crosscut from the 300 ft. level in "Gold Bug" shaft. The "Mormon" shaft is full of water. The long tunnel on the Ohio vein is caved after a point 200' in from the mouth is reached.

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1935 but failed completely in 1936 leaving some \$40,000.00 of unpaid accounts. The company went thru bankruptcy and the mine reverted to Grove who has organized a new company in conjunction with his Attorney, T. J. Byrne, of Prescott, and they have obtained an R.F.C. loan of about \$20,000 and are now resuming operations.

There is unquestionably some good ore left in this mine but the quantity seems doubtful and in view of the poor record of the last two operations the future would appear to be very uncertain.

G.M.C.

Shaft on the "Oro Grande" is in fairly good condition, altho there is no hoist on the surface. The tunnel from the south on "Oro Flamme" is claned out and retimbered to the first winze, and the winze is claned to the botton. The balance of the tunnel cannot be recovered on account of the hanging wall stuff having filled the stope to the surface. This, however, is not necessary as the River tunnel has now reached a point under ground where the ore shoot may be cut within the next twenty to thirty ft. This will obviate the necessity of any further use of the upper workings for mining the ore body.

#### DEVELOPMENTS AND ORE (See Map)

"American Eagle": Is developed by Tunnels No. 1 and 2. Tunnel No. 1 is driven south on vein for a distance of 325 feet from mouth. The vein is all ore of a milling grade, showing width from 18 inches to 8 feet; average width 5', showing ore vein in roof and floor of tunnel. This averages in value \$16.00 per ton gold. On opposite side of ridge from Tunnel No. 1 Tunnel No. 2 is run in on the vein for a full distance of 450'. This has a course northwest and cuts ore shoot No. 2 at a point near mouth. Along floor of level this shoot shows a distance of 120 feet with average width of ore vein of  $3\frac{1}{2}$  feet. The ground in back of tunnel has been stoped to the surface and winze sunk in floor shows the same size of vein with values per ton of \$15.00. At a point near heading ore shoot No. 3 has run thru, with a vein of ore averaging two feet in thickness. this ore shoot being 30' in length, average value per ton being \$18.00. Assays taken in the outcrop on the surface of shoot three ran as high as \$550.00 per ton and consisted of selenite with spots of black tellurium.

In these two shoots where opened, the ore seems regular and permanent in the vein. In order to fully demonstrate the continuance of the ore in the shoots of the A-E vein a crosscut was run from the 300' level in the shaft on the Gold Bug vein. Starting at a point in from the shaft one hundred feet, crosscut from the footwall plane was run

and the American Eagle vein was cut at 135 ft. Turning to the north on vein, shoot No. 2 was found in place, with 3' of ore assaying from one to thirteen ozs. of gold per ton. Continuing along course of vein shoot No. 3 was cut showing two feet of ore which ran as high as 3 ozs. The drift was then continued until it was within 75 feet of shoot No. 1 when all work was stopped. In a short time this shaft was filled with water and has never been cleared. This level as indicated by map is 276 feet lower on the vein than where shoot No. 2 and No. 3 were opened by level No. 2. It will cut under shoot No. 1 at a depth under the floor of Tunnel No. 1 of 330 ft. This is the main ore shoot and should become a large producer of high grade ore.

The deep ore is brecciated quartz with high grade iron sulphides. This carries high gold values entirely different from any other ore mined in this section. The vein is regular in size with a large gouge on the footwall side.

Estimates of tonnage available when the water is taken out is placed at 15,000 tons from the crosscut level to surface. The average value per ton is \$17.00. This ore may be mined and hoisted from the deep shaft on the "Gold Bug" and when drifts are run at the 400 ft. point at the bottom of the shaft, <sup>this</sup> will approximate a further tonnage of at least one third more, or more than \$300,000 without considering anything from shoot No. 1., which is the main ore shoot of this mine, and it will afford double the quantity of ore, represented by shoots nos. 2 and No. 3.

Gold Bug: The main shaft on this claim is sunk on the foot wall plane at an angle of 42 degs. to a depth of 420 feet. As the A-E vein dips at an angle of 78 degs. the two veins should dip together at about 500' in depth, This is plainly shown at the bottom of the shaft where the vein is opened in quartz and vein matter 46 feet in width. Being off the ore shoot it assays only \$2.40 per ton. Drifts run each way from the shaft at this depth will open up some good ore bodies in the several shoots opened in the levels above. On the 300 ft. level drifts are run each from the shaft, in the footwall vein. The one to the west is in a distance of 179 ft. from the shaft. The

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ore shoot was cut and upraise made to the 200 in the ore. No stoping is done at this point. The level east has gone in from shaft to a point 146 feet, nothing found along line of drift of a pay nature. This level may be turned to the north and the "American Eagle" vein cut in a distance of less than 100' of crosscut. At a point where it would cut, it shows a good vein of ore on the surface two feet in width which carries average value \$14.00 per ton. This is in shoot no. 4 and should prove to be a good producer of ore.

The 200 ft. level is in west from shaft 240 feet, most of the distance in ore varying in width from 4 to 14 feet. It is a body of ore averaging \$12.00 per ton, and supplies much solid smelting ore that carries as high as 10 ozs. gold per ton. The ground is ready to stope, being well timbered for that purpose.

From the 100 to surface the vein has been stoped and is now caved in. The air from the surface through to the 300 level was timbered thru this old stope, but is now closed. Opening it for a clear passage will be one of the first things to be done after unwatering.

Mormon: The next claim south is the "Mormon" which is developed by a shaft to a depth of 110' below surface outcrop of vein. Ore shows from top to bottom of shaft with average of 5' in width. Average value per ton will exceed \$20.00 with some high grade smelting ore which carries 5 ozs. of gold to the ton.

A crosssection thru Mormon shaft to the farthest point east, where ore veins will be found, is a distance of not less than 300 feet, the ground is all mineral bearing and large bodies of milling grade will be opened in crosscut at depth. The chance for opening a big ore producer at this point is not equalled anywhere on the whole property.

ADVANTAGES: This group of mining claims is favorably situated for economical operation and general conveniences. The whole section is well watered and covered with a heavy growth of pine, juniper, and oak timber.

Respectfully submitted,

December 19, 1929

THE TOMLINSON ENGINEERING CO.  
J. B. Tomlinson, E.M.

Visited by G. M. Colvocoresses and Geo. Harbauer on December 10th, 1933

ORO FLAMME MINE.

Situated on the Hassayampa River and adjoins the Sterling and Oro Grande and now all operated by the Oro Grande Mining Co. Pres. R. S. Witcher (formerly with the Big Jim at Catman,) Box 632 Prescott. Groves is with him as Superintendent.

Have erected a 50 ton mill and expect to produce about 100 tons of concentrates per month. These should carry---

Au. 60 oz. per ton ??? (probably 6.0)  
Pb. 30%  
Fe 20

Practically no cu. or zn.

They might also ship some high grade crude ore. Shafts are all in the same vein, about 3' wide and adjoin the old Mescal Mine. Developed to a depth of 330' and about 15000 tons of ore blocked out. The main ore body is 100' long and 8' wide and carried 0.55 oz. gold. On the Sterling there is another ore shoot 90' long and 5' wide opened up for depth 200'. Values are erratic but should average 0.45 in gold.

The trucking cost to Prescott, over the WolfCreek cut-off and White Spar Road will be \$1.75 per ton.

Mill has a 9 by 5 crusher, a small gyratory and 4' ball mill. Vein has a quartz filling in grano-diorite which has a schistose structure in places.

Looks as if this might become a steady shipper of lead concentrates. Groves is a very capable miner and his statements should be reliable, but he has had little if any milling experience.

October, 1937.

The mill referred to above did not give satisfactory results, also the grade of ore was lower than expected and the water supply failed. Operations of Witcher and Groves were discontinued in 1934.

Toward the close of that year the property was taken over by Howard Fields and Wayne Heffner who organized a company and sold quite a lot of stock on the basis of some rather loose representations. They redesigned the mill and operated for a time in

NOTES RE ORO FLAMME MINE

By G. M. Colvocoresses --- June 27th, 1938

I visited this property in December 1933 and again,- for the purpose of writing an up-to-date statement,- in June 24th, 1938.

The property is located on the Hassayampa River, 10 miles by road from Prescott,- last two miles of road is rather poor. The elevation is about 5000 feet.

It consists of 7 patented claims only three of which are described in the enclosed reports, owned by W. F. and H. K. Grove (father and son) of Prescott, subject to a mortgage for \$11,000 in favor of the R.F.C. except for which I am assured that the title is clear. A contract has now been made with the R.F.C. whereby the Groves or their assign can work the mine without interference with payment of 10% royalty to R.F.C. to apply on repayment of the mortgage.

The Groves would also want a minimum royalty or rental of about \$100 per month on a long term lease with provision for increase of royalty or rental after the mortgage is satisfied and would give option to purchase at any time for \$100,000 from which payment they would clear the mortgage. This price could probably be reduced.

The shafts and some of the underground workings (except on the Ohio Claim) are in good condition and accessible for sampling and there is a large mill building with ore bins in good condition.

They have a good hoist at the Oro Grande Shaft, good head frame and bins with track to mill, a portable Ingersoll Rand Compressor,- suitable for development work,- blacksmith shop with I. R. drill sharpener and heating furnace and adequate camp buildings and living accommodations for a small crew. The Central Arizona Power line is 4 miles distant and connection would have to be made or a Diesel plant installed. Water is obtained from the river with lift 120' to mill through a 250' pipe line, but new pump and pipe would be required. Water supply is said to be ample except during three or four weeks each year. A small spring furnishes domestic water.

There is a Western oil engine in the mill but it does not belong to Grove and is old and inefficient.

A portion of this mine (on the Ohio Claims and further north) was worked in the 90's or earlier and much high grade ore is said to have been shipped while lesser grade ore was treated in a stamp mill by amalgamation. The recovery is reported to have been poor and no records of production are available.

In the early 1900's the property was acquired by a man named Tomlinson who opened up the vein on the Oro Grande and Oro Flamme claims and shipped considerable ore containing 1 oz. or more of gold per ton. Grove purchased the mine in about 1929 and leased to a stock selling company headed by Kirkbride who did some development but failed during the depression and Grove resumed possession and successively leased with option to

purchase to two local concerns, the first of which built the present mill building but could not make a proper recovery of values. The second company altered the mill and recovered about 93% of values by flotation but did little development work and soon ran out of pay ore and money and their mill machinery was sold and removed.

Grove again resumed possession in 1937 and borrowed money from the R.F.C. for development work but after spending \$11,000 differences of opinion developed as to the proper location of the work and R.F.C. refused further funds but have now agreed to a leasing arrangement as mentioned above,- I have not seen a copy of this contract but am assured by a good attorney that it is fair and liberal and I will obtain a copy if further investigations are to be made.

The recent history of the mine is certainly not favorable but knowing something of the owners and the parties who previously operated I believe that the repeated failures since 1933 were due to improper financing and poor management while prior to that date the lower value of the gold content would not appear to have made the venture attractive from any conservative mining standpoint. The mine as it stands today should be considered on its merits.

The country is Bradshaw granite and diorite (both pre-Cambrian) and the one strong vein which runs through these claims can be traced for several miles. It is a contact fissure with diorite foot wall and strike about  $5^{\circ}$  to  $10^{\circ}$  west of north, dip to

east varying from 68° to 78°, dykes of later intrusive porphyry referred to as a felsite in the old reports form a hanging wall or fill the mineralized zone and cut through this vein and fault it slightly at intervals and in places there is an agglomerate or breccia in the fissure. The ore bearing vein swells to a width of 15' or more and elsewhere narrows down to a thin seam only a few inches in width. The original filling appears to have been a barren quartz and later quartz with sulphides of iron, lead and copper came in with gold and a little silver associated with the sulphides.

Without attempting to describe in detail the present workings and ore showings which are fairly well represented on a set of maps that I have examined and of which copies can be secured, I may say that the owners now claim as positive and highly probable:-

In the Oro Framme	5000 @ 16.00
In the Oro Grande	17000 @ 10.00
In the Ohio	6000 @ 14.00
	<hr/>
Total	28,000

In addition they claim in small showings some 2,000 tons of \$20.00 ore, say a total of 30,000 tons averaging \$12.00 or better. The values are based in part on the record of shipments and last mill operations but largely on the sampling of the R.F.C. engineers. The average width of this ore where I examined it, may be taken as slightly in excess of 3' and I should roughly estimate that working costs would be as follows:-

Mining & current development	\$4.00
Milling with concentration 30-1	1.75
Freight, treatment of concentrates, etc.	1.25
Overhead and general	1.00
	<hr/>
Total	\$8.00

Leaving a net profit of \$3.00 per ton on a recovered value of \$11.00.

The chances for developing a much larger tonnage appear to be excellent, especially in the Ohio where the old workings indicate greater average width of values and cleaning out the old adit drifts and connecting them up with raises might well serve to prove up an addition of nearly 100,000 tons of ore.

The further sinking of the Oro Grande Shaft for 100' with connection along the vein to the Oro Flamme would also serve to develop the downward extensions of two shoots in which some 20,000 tons might be expected and drifting from the Oro Grande to the Ohio would develop a virgin territory along the vein in which other shoots may reasonably be found.

In addition the workings on the Sterling Claims and in the hanging wall veins, which I did not visit, are said to indicate over 10,000 tons of \$15.00 ore but ore from the Sterling would have to be trucked some distance to the mill.

The record of the last mill operations in late '35 and '36 indicate a very poor mechanical condition with high percentage of lost time but the recovery of values appears to have been 93% and the ratio of concentration from 25 to 1 to 30 to 1 depending largely upon the percentage of sulphides in the ore.

My general opinion of this mine is favorable, - subject to a more thorough investigation which I believe to be justified. The last development work on the 300' level from the Oro Grande shaft was discouraging since the vein had been faulted and broken up by the intrusion of the porphyry but I think that this disturbance will prove to be local and ore may be expected at a lower level. In other portions of the mine it appeared that there were excellent chances of proving up large additional reserves of ore and that this could be done with comparatively small expense. Some of the ore makes out into the diorite away from the contact.

The terms on which the mine could be obtained appear to be reasonable and the sampling by the R.F.C. engineers may be taken as generally reliable although this should be checked to some extent and additional samples taken in other portions of the mine.

The vein is not uniformly mineralized and the pay ore occurs in shoots, as is the case with practically all mines in the Bradshaws, but these seem to have sufficient length and width to form the basis for a profitable mining operation and give promise of extending downwards for some hundreds of feet below the present workings. It appears particularly important to drift south along the vein from the Oro Grande to the Oro Flamme and to clean out the old workings on the Ohio where the ore shoot is wider than at any other point and between which and the Oro Grande

(a distance of about 1/2 mile) there seems to be good reason to hope that other shoots will be developed.

Copies of assay maps and other data can be secured and forwarded but as this will involve some expense I shall not do so until hearing from you further,- meantime, am enclosing copies of two reports made some years ago by Kirkbride and Tomlinson both of whom were interested in the mine at the dates of writing and appear to me to have considerably exaggerated the width and values of the ore, some of which was subsequently milled and other portions resampled by the R.F.C. engineers and others.

SENATOR DISTRICT

Oro Flamme Mine

Visited by S. McC & George Harbourn  
12/10/33 Dec 10th, 1933

Situated on the Hassayampa river and adjoins the Sterling and Oro Grande and now all operated by the Oro Grande Mining Co., President, R. S. Witcher, (formerly with the Big Jim at Oatman), Box 632, Prescott. Groves is with him as Supt.

have erected a 50 ton mill of ~~good design~~ and expect to produce about 100 tons of concentrates per month. These should carry---

Au---60 oz per ton (??) *probably 6.0*  
Pb---30%  
Fe---20  
Practically no Cu or Zn

They might also ship some high grade crude ore. Shafts are all in the same vein, about 3' wide and adjoin the old Mescal mine. developed to a depth of 330' and about 15000 T of ore blocked out. The main ore body is 100' long and 8' wide and carried 0.55 oz gold. On the Sterling there is another ore shoot 90' long and 5' wide opened up for depth 200'. values are erratic but should average 0.45 in gold.

The trucking cost to Prescott, over the Wolf creek cut off and White Spar Road will be \$1.75 per ton.

mill has a 9 by 5 crusher, a small gyratory and 4' ball-mill. Vein has a quartz filling in grano-diorite which has a schistose structure in places.

Looks as if this might <sup>become</sup> be a steady shipper of lead concentrates. Groves is a very capable miner and his statements should be reliable.

*but he has had little if any milling experience.*

~~mill did not prove satisfactory, being waterlogged~~

Howard Fields or Wayne Heffner is also 34. (Haber)

~~is doing the ~~best~~ ~~work~~ ~~for~~ ~~them~~~~

mill operated for a time in 1936 but shut down in summer because of lack of water. Also they may be out of funds.

*Caro Flamm*

Supplement to  
Sterling Report  
Under Date of June 1, 1932

Since report was made by Mr. Tomlinson the following work has been done on this group.

Gold Bug shaft was dewatered and timbered to the 200 foot level, on this level going north 60 feet, 15 samples were taken averaging \$13.50 gold averaging  $4\frac{1}{2}$  feet wide. The drift was caved 60 feet in from the shaft.

No. 2 tunnel was cleaned and timbered and shaft was sunk 40 feet on No. 3 shoot, 3 cars of ore were shipped averaging \$11.50 gold. One car was shipped from No. 2 shoot averaging \$14.00 gold.

Respectfully submitted,

H. K. Grove

Prescott, Arizona,

June 1, 1932

REPORT ON THE PROPERTY

OWNED BY

GROVE & SONS MINING COMPANY

The holdings consist of <sup>three</sup> seven patented mining claims, shaft houses, hoist and boiler, boarding houses, bunk houses, and office.

Beginning at the northerly end, the mine claims are named "American Eagle", "Gold Bug", "Mormon", "~~Old Ohio~~", "~~Oro Grande~~", and "~~Oro Flame~~". Each of the claims is 600 by 1500 feet, ~~with exception of the mill claim which is 500 feet in length and 600 feet in width.~~

The section in which this property lies, is situated eight miles in a southerly direction from the town of Prescott, the county seat of Yavapai County, Arizona. This is a main station on the Santa Fe, Prescott and Phoenix Railroad, which joins the main Santa Fe Line at Ashfork, Arizona.

The property is reached by a good wagon road from Prescott, which crosses the Sierra Prietas, a mountain range lying east and south of the town. The greatest elevation of this range is 7,178 feet with elevation at the mines at 5,000 feet.

TOPOGRAPHY

The surface of all the claims is steeply hilly and rough. A main canyon formed by the erosion of the Hassayampa River which flows southerly and crosses the strike of the vein at a right angle on the "Oro Grande" claim, with steep sides rising to high ridges. This permits advantageous mine development by tunneling on the vein.

## FORMATION

The prevailing rocks of the country are granite and diorite, with diabase dykes and felsite porphyry. On the surface of these claims is shown a sheet of felsite, in dykelike form, intruded through the formation, ranging north and south with a dip to the west of 78 degrees.

This resulted in creating a strong fault fissure, which occupied a position between the felsite as the hanging and the diorite as the foot wall. It is along this line of contact, where for seven miles in length, is found shoots of gold bearing material, in form of veins or veinlets of quartz, or crushed zones in form of breccia, which consists mainly of quartz in wide lenses. This carries gold in payable quantities, with the ore bodies frequent and permanent.

On these claims, along line of vein, white and honeycomb quartz is everywhere noticeable. This mineralized zone is from 80 to 240 feet in width, with three planes, which carries ore in veinlike form lying on either foot, middle or hanging plane. At some point below the surface, estimated at 500 feet, they all dip together and form one wide vein of ore.

## PRESENT CONDITIONS

Much work has been done on all the claims in the past. This was done in the form of tunnels and shafts where ore was found by outcrop. Long tunnels were driven on the veins in these places, and several shafts were sunk where depth could not be obtained by tunneling. At this time the main shafts are filled to the top with water and all timbering on any openings has rotted out, letting in the ground and rendering them almost impassable. Tunnels on the "American Eagle" have been retimbered and are in workable shape for mining the ore in the stopes over levels. Main shaft on "Gold Bug" is full

of water, which renders it impossible to get into the long drift run on the A-E vein which was reached by a crosscut from the 300 foot level in "Gold Bug" shaft. The "Mormon" shaft is full of water. The long tunnel on the Ohio vein is caved after a point 200 feet in from the mouth is reached.

Shaft on the "Oro Grande" is in fairly good condition, although there is no hoist on the surface. The tunnel from the south on "Oro Flame" is cleaned out and retimbered to the first winze, and the winze is cleaned to the bottom. The balance of the tunnel cannot be recovered on account of the hanging wall stuff having filled the stope to the surface. This, however, is not necessary as the River tunnel has now reached a point under ground where the ore shoot may be cut within the next twenty to thirty feet. This will obviate the necessity of any further use of the upper workings for mining the ore body.

DEVELOPMENTS AND ORE  
(See Map)

"American Eagle":

Is developed by Tunnels NO. 1 and 2. Tunnel No. 1 is driven south on vein for a distance of 325 feet from mouth. The vein is all ore of a milling grade, showing width from 18 inches to 8 feet; average width 5 feet, showing ore vein in roof and floor of tunnel. This averages in value \$16.00 per ton gold. On opposite side of ridge from Tunnel No. 1, Tunnel No. 2 is run in on the vein for a full distance of 450 feet. This has a course northwest and cuts ore shoot No. 2 at a point near mouth. Along floor of level this shoot shows a distance of 120 feet with average width of ore vein of 3½ feet. The ground in back of tunnel has been stoped to the surface and winze sunk in floor shows the same size of vein with values per ton of \$15.00. At a point near heading ore shoot No. 3 has run through, with a vein of ore averaging two

feet in thickness, this ore shoot being 30 feet in length, average value per ton being \$18.00. Assays taken in the outcrop on the surface of shoot three ran as high as \$550.00 per ton, and consisted of selenite with spots of black tellurium. In these two shoots where opened, the ore seems regular and permanent in the vein. In order to fully demonstrate the continuance of the ore in the shoots of the A\_E vein a crosscut was run from the 300 foot level in the shaft on the "Gold Bug" vein. Starting at a point in from the shaft 100 feet, crosscut from the footwall plane was run and the "American Eagle" vein was cut at 135 feet. Turning to the north on vein, shoot No. 2 was found in place, with 3 feet of ore assaying from one to thirteen ounces of gold per ton. Continuing along course of vein shoot No. 3 was cut showing two feet of ore which ran as high as 3 ounces. The drift was then continued until it was within 75 feet of shoot No. 1, when all work was stopped. In a short time this shaft was filled with water and has never been cleared. This level as indicated by map, is 276 feet lower on the vein than where shoot No. 2 and No. 3 were opened by level No. 2. It will cut under shoot No. 1 at a depth under the floor of Tunnel No. 1 of 330 feet. This is the main ore shoot, and should become a large producer of high grade ore.

The deep ore is brecciated quartz, with high grade iron sulphides. This carries high gold values entirely different from any other ore mined in this section. The vein is regular in size with a large gouge on the foot wall side.

Estimates of tonnage available when the water is taken out is placed at 15,000 tons from the cross cut level to surface. The average value per ton is \$17.00. This ore may be mined and hoisted from the deep shaft on the "Gold Bug" and when drifts are run at the four hundred foot point at the bottom of the shaft, this will approximate a further tonnage

of at least one third more, or more than \$300,000.00 without considering anything from shoot No. 1, which is the main ore shoot of this mine, and it will afford double the quantity of ore, represented by shoots No. 2 and No. 3.

"Gold Bug":

The main shaft on this claim is sunk on the foot wall plane at an angle of 42 degrees, to a depth of 420 feet. As the A-E vein dips at an angle of 78 degrees the two veins should dip together at about 500 feet in depth. This is plainly shown at the bottom of the shaft where the vein is opened in quartz and vein matter 46 feet in width. Being off the ore shoot it assays only \$2.40 per ton. Drifts run each way from the shaft at this depth will open up some good ore bodies in the several shoots opened in the levels above. On the 300 foot level drifts are run each from the shaft, in the foot wall vein. The one to the west is in a distance of 179 feet from the shaft. The ore shoot was cut and upraise made to the 200 in the ore. No stoping is done at this point. The level east has gone in from shaft to a point 146 feet, nothing found along line of drift of a pay nature. This level may be turned to the north and the "American Eagle" vein cut in a distance of less than 100 feet of cross cut. At a point where it would cut, it shows a good vein of ore on the surface two feet in width which carries average value \$14.00 per ton. This is in shoot No. 4 and should prove to be a good producer of ore.

The 200 foot level is in west from shaft 240 feet, most of the distance in ore varying in width from 4 to 14 feet. It is a body of ore averaging \$12.00 per ton, and supplies much solid smelting ore that carries as high as 10 ounces gold per ton. The ground is ready to stope, being well timbered for that purpose.

From the 100 to surface the vein has been stoped and is

now caved in. The air from the surface through to the 300 level was timbered through this old stope, but is now closed. Opening it for a clear passage will be one of the first things to be done after unwatering.

"Mormon":

The next claim south is the "Mormon", which is developed by shaft to a depth of 110 feet below surface outcrop of vein. Ore shows from top to bottom of shaft with average of 5 feet in width. Average value per ton will exceed \$20.00 with some high grade smelting ore which carries 5 ounces of gold to the ton.

A cross section through Mormon shaft to the farthest point east, where ore veins will be found, is a distance of not less than 300 feet, the ground is all mineral bearing and large bodies of milling grade will be opened in cross cut at depth. The chance for opening a big ore producer at this point is not equalled anywhere on the whole property.

ADVANTAGES:

This group of mining claims is favorably situated for economical operation and general conveniences. The whole section is well watered and covered with a heavy growth of pine, juniper, and oak timber.

Respectfully submitted,

THE TOMLINSON ENGINEERING COMPANY,

J. B. Tomlinson, E. M.

Prescott, Arizona,

December 19, 1929

Supplement to  
ORO FLAME REPORT

Under Date of  
July 12, 1930

Since writing the attached report, I with a group of friends have placed upon the property a small compressor and equipment for further development.

A new ore shoot has been opened above the 140 foot tunnel level, with ore varying in width from 2 to 4 feet.

Two cars of ore have been shipped from this minor shoot without sorting and returned \$13 per ton gold. Due to lack of air for development this work was discontinued and a winz sunk at the end of the main ore shoot to a depth of 60 feet. Ore values are consistent at \$16 to \$20 per ton gold where the winz was started and increase to \$26 per ton at the bottom. Vein width averages from 1 to 4 feet in the solid shipping ore.

Drifting has been done to a length of 42 feet along the 60 foot level in a southerly direction. The back was taken down preparatory to timbering for a stope. This work has all been in ore varying in width from 18 inches to 3 feet and produced 53 tons of ore having an average value of \$22 per ton. Drifting is again in progress on the vein with consistent vein widths and values.

The ore below the water table is a sulphide with gold values apparently carried with pyrite or specularite. No free gold is noticeable by panning.

The vein material is a dark, solid, fine grained quartz and is consistently found on the contact between the granite hanging wall and schist foot wall.

A soft gouge streak lies between the ore and hanging wall but carries no values.

The width of the vein is considerably greater in the bottom of the drift than in the back and gives every indication of going to a much greater depth with the possibility of obtaining a better gold value

Since taking over the property I have done considerable work on the Old Ohio and Oro Grande claims and believe a larger development plan should include the Oro Grande shaft. Samples of this ore have assayed from \$12 to \$20 per ton gold with vein width of 8 to 12 feet. There is very little ore available in the 110 foot shaft but what I would consider as being a showing well worth consideration.

The ore from these claims is high in silica and in consequence takes a rate of \$1.25 per ton at the smelter, freight to smelter is \$3.10 per ton, trucking to railroad is \$2.00 per ton making a total cost, not considering mining, of \$6.35 per ton. Mining by cut and fill methods can be done at from \$2.00 to \$3.50 per ton of ore depending on vein width. This leaves a nice profit on ore of \$15.00 or more per ton.

The property is held on lease, bond and option on favorable terms with ample time to open ore bodies before making payments.

This property certainly in view of recent production, and the present showing in the 60 foot winz below water level, justifies fully a well planned development program and sinking to a greater depth.

Respectfully submitted,

GEO. A. KIRKBRIDE, M. E.

PRESCOTT, ARIZONA

December 10, 1930.

REPORT ON

THE ORO FLAME

GROUP OF CLAIMS

HASSAYAMPA MINING DISTRICT  
YAVAPAI COUNTY, ARIZONA

BY

GEO. A. KIRKBRIDE  
Mining Engineer

### THE CLAIMS:

Consist of three full claims and a fraction, all patented; namely, The Oro Grande, Old Ohio, Oro Flame and Mill claim.

The property is situated eight miles in a southerly direction from Prescott and is reached by a good road from Prescott. Elevation of the mines is about 5000 feet.

### TOPOGRAPHY:

The surface of all the claims is steeply hilly and rough. A main canyon formed by the erosion of the Hassayampa River, which flows southerly and crosses the strike of the veins at a right angle on the Oro Grande claim, with steep sides rising to high ridges. This permits advantageous mine development by tunneling on the vein.

### FORMATION:

The prevailing rocks of the country are granite and diorite, with diabase and felsite porphyry. On the surface of these claims is shown a sheet of felsite, in dike like form, intruded through the formation, ranging north and south with a dip to the west of 78 degrees.

This resulted in creating a strong fault fissure, which occupied a position between the felsite as the hanging and the diorite as the foot wall. It is along this line of contact, where for seven miles in length, is found shoots of gold bearing material, in form of veins or veinlets of quartz, or crushed zones in form of breccia, which consists mainly of quartz in wide lenses. This carries gold in payable quantities, with the ore bodies frequent and permanent.

On these claims, along line of vein, white and honeycomb quartz is everywhere noticeable. This mineralized zone is from 80 to 240 feet in width, with three planes, which carries

ore in veinlike form lying on either foot, middle or hanging plane. At some point below the surface, estimated at 500 feet, they all dip together and form one wide vein of ore.

PRESENT CONDITIONS:

The 110 foot shaft on the Oro Grande is in fairly good condition.

The Old Ohio workings are in part inaccessible but it is possible to check the statements of Mr. Tomlinson's report with regard to these claims.

The Oro Flame workings are now depleted with the exception of perhaps six or eight cars of shipping grade ore. Further development will have to be carried out below the 140 foot tunnel level.

DEVELOPMENT AND ORE:

"Old Ohio":

The following information is taken from the report of Mr. Tomlinson. This report was made in 1909 during the time that the property was in operation under his direction. My work has been only insofar as possible to check his statements and I have found them to be exceptionally accurate.

Continuing south, along the strike of vein is the claim named "Ohio", the principal developments being in the form of tunnels on vein. These are driven from the Hassayampa River side and consist of numbers 1, 2, and 3, corresponding to the ore shoots which each was driven to cut. Tunnel No. 1 started on a level 40 feet above the river, runs northerly a distance of 800 feet. It is run the entire distance on the hanging wall plane, next to the felsite. One cross cut is made to the east under ore shoot No. 1, but no upraising or stoping was done. A large tonnage of mill ore

maybe mined from this opening as the grade is good, and while the tunnel is badly caved in places, it will not cost much to put it into good working condition, and it should be extended a further distance north in order to cut ore shoot No. 4, which shows large bodies of \$18.00 ore, opened by shaft and tunnel on the surface near the south end line of the claim.

Ore shoot No. 1 was discovered by outcrop on the surface which scattered pieces of quartz, some of which weighed from two to three tons, each, over a wide area. This float all panned well in free gold, assay value per ton being one ounce, or \$20.00. A shallow crosscut tunnel was started and run at right angle to course of vein. This cut under outcrop at 40 feet in depth, crossing 16 feet of ore. This was run through mill, yielding \$12.80 per ton saved by amalgamation with tails assaying \$7.00 and \$8.00 per ton. A winze sunk to a depth of 50 feet in this ore opened 8 feet of sulphide ore with average grade of \$42.00 per ton. This ore too, was mined and concentrated with a tailing loss of \$12.00 per ton and \$18.00 per ton.

Ore shoot No. 2 was opened by driving a tunnel under No. 1, opening on vein 126 feet north a body of sulphide ore was cut four or five feet in width, showing average value of \$37.00 per ton. Above shoot No. 1, while building a wagon road to get to the ore at shoot No. 4, another large outcrop of quartz was found which milled \$18.00 per ton. Thirty to fifty tons were picked up at this point and got by excavation made for the wagon road.

Continuing up the mountain, near the north end line, shoot No. 4, on the hanging wall plane is opened for 70 feet in length by tunnel, and also by shaft to a depth of 35 feet. Width of ore is from 3 to 5 feet with average value per ton of \$18.00.

Mill claim:

adjoining

"Mill Claim":

Adjoining end lines on the south is the "Mill Claim". This is 518 feet by 541 feet in size. On this claim a shaft was sunk to a depth of 30 feet in center of vein, in order to provide means of centralizing the water for milling purposes. At the depth named, a crosscut was made under the stream for 105 feet. All this was in vein matter, and streaks of ore of good grade showed at intervals through the full distance to the felsite wall.

"Oro Grande":

This joins with the south end line of the "Mill Claim". Development made near the center of claim are in the form of tunnels on the foot wall vein from both sides of a ridge, with a shaft sunk from the high part of the ridge, in the vein, to a depth of 110 feet. All workings are in low grade ore consisting of quartz and slate. The entire ore streak for 8 to 12 feet in width will average \$7.80 per ton in gold. The bottom level is well timbered and now ready for stoping. A cross section through vein shows what may be cut or found with depth as the vein is a large one and will pick up the hanging wall streak at the same depth as on the "Mormon" and "Gold Bug".

"Oro Flame":

The Oro Flame claim is on the extreme south end of the group. It is the work on this claim that has been under my observation for the past two years since it has been in operation.

The ore occurs on the foot wall plane on a granite porphyry-schist contact.

The development consists of a tunnel driven in on the south side of the ridge, along the vein at a shallow depth. It is above this level that ore is now being removed.

Another tunnel driven a length of about 500 feet is

is only in part on the vein having been driven a distance of 350 feet paralleling the vein. A crosscut was driven a distance of eight feet from this tunnel and cut the vein at a depth of 140 feet.

An ore shoot 150 feet long was opened by this work and has been stoped clean to the upper level. The production from this work has grossed about \$50,000 in shipping ore of which about \$30,000 has been net profit. Values of ore shipped as shown by smelter return sheets have averaged about \$20,000 per ton. in gold.

The ore shoot in the bottom of the drift shows strongly a width of about two and a half feet average in places swelling to four feet.

The ore has a galena base, which would indicate permanency with depth and there is no reason to believe that values will decrease as deeper development is carried out.

The presence of copper has been noted in all shipments although in quantities only about sufficient to avoid the smelter penalty for lack of it.

#### PARALLEL VEINS:

The hanging wall vein which has been opened on the adjoining claims, the Mormon, American Eagle and Gold Bug, shows very plainly on the surface the entire length of the claims and could be cross cut in a distance of about 125 feet from the lower workings of the Oro Flame. This vein has produced considerable high grade gold ore.

#### PROPOSED DEVELOPMENT:

The present plan of development embraces sinking in the ore to a depth of 100 feet below the 140 foot tunnel level, drifting to open the ore shoot on this level. With this work completed and timbering for stopes started it will

be possible to ship at least two cars per week.

Additional later development should include cross cutting to the hanging wall vein and additional drifting on the foot wall vein to open other ore shoots indicated on the surface. Possibilities for a later mill operation are excellent on the Old Ohio and Oro Grande claims and should be given consideration.

PROFIT POSSIBILITIES:

Using as a criterion the recent production and the fact that with a total operating force of three men the present owners have been able to net about \$30,000 during the past two years it is logical to assume at least a profit of this amount if values are consistent with depth.

By dividing the ore shoot into two stopes it would be possible to double the income and I believe there is no question but that this property will net \$40,000 per year in addition to returning the original investment, from shipping ore along without taking into consideration the available mill ore on the Old Ohio and Oro Grande claims. The later development of the mill ore should prove attractive.

In conclusion, I have no hesitation in recommending this group of claims as being an excellent opportunity to develop a good paying property with a small preliminary investment.

Respectfully submitted,

GEO. A. KIRKBRIDE, M. E.

Prescott, Arizona

July 12, 1930

NOTES RE ORO FLAMME MINE

By G. M. Colvocoresses --- June 27th, 1938

I visited this property in December 1933 and again, for the purpose of writing an up-to-date statement, in June 24th, 1938.

The property is located on the Hassayampa River, 10 miles by road from Prescott, - last two miles of road is rather poor. The elevation is about 5000 feet.

It consists of 7 patented claims only three of which are described in the enclosed reports, owned by W. F. and H. K. Grove (father and son) of Prescott, subject to a mortgage for \$11,000 in favor of the R.F.C. except for which I am assured that the title is clear. A contract has now been made with the R.F.C. whereby the Groves or their assign can work the mine without interference with payment of 10% royalty to R.F.C. to apply on repayment of the mortgage.

The Groves would also want a minimum royalty or rental of about \$100 per month on a long term lease with provision for increase of royalty or rental after the mortgage is satisfied and would give option to purchase at any time for \$100,000 from which payment they would clear the mortgage. This price could probably be reduced.

The shafts and some of the underground workings (except on the Ohio Claim) are in good condition and accessible for sampling and there is a large mill building with ore bins in good condition.

They have a good hoist at the Oro Grande Shaft, good head frame and bins with track to mill, a portable Ingersoll Rand Compressor,- suitable for development work,- blacksmith shop with I. R. drill sharpener and heating furnace and adequate camp buildings and living accommodations for a small crew. The Central Arizona Power line is 4 miles distant and connection would have to be made or a Diesel plant installed. Water is obtained from the river with lift 120' to mill through a 250' pipe line, but new pump and pipe would be required. Water supply is said to be ample except during three or four weeks each year. A small spring furnishes domestic water.

There is a Western oil engine in the mill but it does not belong to Grove and is old and inefficient.

A portion of this mine (on the Ohio Claims and further north) was worked in the 90's or earlier and much high grade ore is said to have been shipped while lesser grade ore was treated in a stamp mill by amalgamation. The recovery is reported to have been poor and no records of production are available.

In the early 1900's the property was acquired by a man named Tomlinson who opened up the vein on the Oro Grande and Oro Flamme claims and shipped considerable ore containing 1 oz. or more of gold per ton. Grove purchased the mine in about 1929 and leased to a stock selling company headed by Kirkbride who did some development but failed during the depression and Grove resumed possession and successively leased with option to

purchase to two local concerns, the first of which built the present mill building but could not make a proper recovery of values. The second company altered the mill and recovered about 93% of values by flotation but did little development work and soon ran out of pay ore and money and their mill machinery was sold and removed.

Grove again resumed possession in 1937 and borrowed money from the R.F.C. for development work but after spending \$11,000 differences of opinion developed as to the proper location of the work and R.F.C. refused further funds but have now agreed to a leasing arrangement as mentioned above,- I have not seen a copy of this contract but am assured by a good attorney that it is fair and liberal and I will obtain a copy if further investigations are to be made.

The recent history of the mine is certainly not favorable but knowing something of the owners and the parties who previously operated I believe that the repeated failures since 1933 were due to improper financing and poor management while prior to that date the lower value of the gold content would not appear to have made the venture attractive from any conservative mining standpoint. The mine as it stands today should be considered on its merits.

The country is Bradshaw granite and diorite (both pre-Cambrian) and the one strong vein which runs through these claims can be traced for several miles. It is a contact fissure with diorite foot wall and strike about 5° to 10° west of north, dip to

east varying from 68° to 78°, dykes of later intrusive porphyry referred to as a felsite in the old reports form a hanging wall or fill the mineralized zone and cut through this vein and fault it slightly at intervals and in places there is an agglomerate or breccia in the fissure. The ore bearing vein swells to a width of 15' or more and elsewhere narrows down to a thin seam only a few inches in width. The original filling appears to have been a barren quartz and later quartz with sulphides of iron, lead and copper came in with gold and a little silver associated with the sulphides.

Without attempting to describe in detail the present workings and ore showings which are fairly well represented on a set of maps that I have examined and of which copies can be secured, I may say that the owners now claim as positive and highly probable:-

In the Oro Framme	5000 @ 16.00
In the Oro Grande	17000 @ 10.00
In the Ohio	6000 @ 14.00
	<hr/>
Total	28,000

In addition they claim in small showings some 2,000 tons of \$20.00 ore, say a total of 30,000 tons averaging \$12.00 or better. The values are based in part on the record of shipments and last mill operations but largely on the sampling of the R.F.C. engineers. The average width of this ore where I examined it, may be taken as slightly in excess of 3' and I should roughly estimate that working costs would be as follows:-

Mining & current development	\$4.00
Milling with concentration 30-1	1.75
Freight, treatment of concentrates, etc.	1.25
Overhead and general	1.00
	<hr/>
Total	\$8.00

Leaving a net profit of \$3.00 per ton on a recovered value of \$11.00.

The chances for developing a much larger tonnage appear to be excellent, especially in the Ohio where the old workings indicate greater average width of values and cleaning out the old edit drifts and connecting them up with raises might well serve to prove up an addition of nearly 100,000 tons of ore.

The further sinking of the Oro Grande Shaft for 100' with connection along the vein to the Oro Flamme would also serve to develop the downward extensions of two shoots in which some 20,000 tons might be expected and drifting from the Oro Grande to the Ohio would develop a virgin territory along the vein in which other shoots may reasonably be found.

In addition the workings on the Sterling Claims and in the hanging wall veins, which I did not visit, are said to indicate over 10,000 tons of \$15.00 ore but ore from the Sterling would have to be trucked some distance to the mill.

The record of the last mill operations in late '35 and '36 indicate a very poor mechanical condition with high percentage of lost time but the recovery of values appears to have been 93% and the ratio of concentration from 25 to 1 to 30 to 1 depending largely upon the percentage of sulphides in the ore.

My general opinion of this mine is favorable, - subject to a more thorough investigation which I believe to be justified. The last development work on the 300' level from the Oro Grande shaft was discouraging since the vein had been faulted and broken up by the intrusion of the porphyry but I think that this disturbance will prove to be local and ore may be expected at a lower level. In other portions of the mine it appeared that there were excellent chances of proving up large additional reserves of ore and that this could be done with comparatively small expense. Some of the ore makes out into the diorite away from the contact.

The terms on which the mine could be obtained appear to be reasonable and the sampling by the R.F.C. engineers may be taken as generally reliable although this should be checked to some extent and additional samples taken in other portions of the mine.

The vein is not uniformly mineralized and the pay ore occurs in shoots, as is the case with practically all mines in the Bradshaws, but these seem to have sufficient length and width to form the basis for a profitable mining operation and give promise of extending downwards for some hundreds of feet below the present workings. It appears particularly important to drift south along the vein from the Oro Grande to the Oro Flamme and to clean out the old workings on the Ohio where the ore shoot is wider than at any other point and between which and the Oro Grande

(a distance of about 1/2 mile) there seems to be good reason to hope that other shoots will be developed.

Copies of assay maps and other data can be secured and forwarded but as this will involve some expense I shall not do so until hearing from you further,- meantime, am enclosing copies of two reports made some years ago by Kirkbride and Tomliason both of whom were interested in the mine at the dates of writing and appear to me to have considerably exaggerated the width and values of the ore, some of which was subsequently milled and other portions resampled by the R.F.C. engineers and others.

21.40 net - Am -

( 9 & # 17 <sup>00</sup>

( raise 9. 90 - 3

300' 109. 9

6. 10 10

( Frank Harmonson )

Visited by G. M. Colvocoresses and Geo. Harbauer on December 10th, 1933

ORO FLAMME MINE.

Situated on the Hassayampa River and adjoins the Sterling and Oro Grande and now all operated by the Oro Grande Mining Co. Pres. R. S. Witcher (formerly with the Big Jim at Satman,) Box 632 Prescott. Groves is with him as Superintendent.

Have erected a 50 ton mill and expect to produce about 100 tons of concentrates per month. These should carry---

Au. 60 oz. per ton ??? (probably 6.0)

Pb. 30%

Fe 20

Practically no cu. or zn.

They might also ship some high grade crude ore. Shafts are all in the same vein, about 3' wide and adjoin the old Mescal Mine. Developed to a depth of 330' and about 15000 tons of ore blocked out. The main ore body is 100' long and 8' wide and carried 0.55 oz. gold. On the Sterling there is another ore shoot 90' long and 5' wide opened up for depth 200'. Values are erratic but should average 0.45 in gold.

The trucking cost to Prescott, over the WolfCreek cut-off and White Spar Road will be \$1.75 per ton.

Mill has a 9 by 5 crusher, a small gyratory and 4' ball mill. Vein has a quartz filling in grano-diorite which has a schistose structure in places.

Looks as if this might become a steady shipper of lead concentrates. Groves is a very capable miner and his statements should be reliable, but he has had little if any milling experience.

October, 1937.

The mill referred to above did not give satisfactory results, also the grade of ore was lower than expected and the water supply failed. Operations of Witcher and Groves were discontinued in 1934.

Toward the close of that year the property was taken over by Howard Fields and Wayne Heffner who organized a company and sold quite a lot of stock on the basis of some rather loose representations. They redesigned the mill and operated for a time in

2-

1935 but failed completely in 1936 leaving some \$40,000.00 of unpaid accounts. The company went thru bankruptcy and the mine reverted to Grove who has organized a new company in conjunction with his Attorney, T. J. Byrne, of Prescott, and they have obtained an R.F.C. loan of about \$20,000 and are now resuming operations.

There is unquestionably some good ore left in this mine but the quantity seems doubtful and in view of the poor record of the last two operations the future would appear to be very uncertain.

G.M.C.

Geo Flamme, file

Prescott, Ariz

Dec 16, 1938

Mr G. M. Colvocoresses.

1102 Luks Bldg.

Phoenix, Ariz

Dear Mr Colvocoresses:

Your letter of  
Dec 15<sup>th</sup> received, and the Geo Flamme is in the same  
standing as it was. I believe I did a little more  
work after you visited the mine, and the Government  
book & lease is as it stood when I last talked with you.  
We have not tied the property up to any parties  
with Best wishes for Merry Xmas & Happy new year

Yours very truly,

N. K. Scott.

Car Reson Car 7<sup>6/25</sup> 38

Pos + height per 243  
Side

17000 t @ 70.00

Eng man

End hole for 35 to 43c

117 t cum.

Am - 7.55

By - 8.19

help to 271.10

Further devel & require  
depth of about 700'  
& about 100'

Small mine cubs  
+ bond by cage &  
✓ had new equipment  
& mine 50 t p d

---

Plenty of water in  
1st mine. Rain 1x day  
from 8 am well  
& ✓ h to pump  
to 200' to tank  
+ did 400'.

---

Also 6000 t  
in another place @ 14.00  
& ✓ h to tank 1/4  
h to well

J. Clancy of date 7 7 2

deposit & another

Shanty x - 7 1/2 m<sup>2</sup>

ground & added to -  
other plan. Small

starts 3' wide @ 20.00

—  
Center stud 60

leg, 5' wide & any

> 1/4 m<sup>2</sup> why 2 1/2 m<sup>2</sup>

—  
In Cold Bay, pole &  
end to station ad found

> 1/2

4' X 40 X 300'

15

300

3500

by 5000 @ 16.00  
(with 6 m<sup>2</sup>)

4 y<sup>2</sup> 149 gas in ~~at~~ the  
in 25' or.

Good well the 10%  
of the water not to  
be 28 days and  
no carb found &  
min. myself.

4 m of pure water

@ 1500 ft. in the

had found - Standard Engine

300' level - deep &

1' gas cut down on 1  
hour.

of heating furnace

In ~~line~~ 0 - a  
kitchen ~~Engine~~ & ~~belong~~  
to ~~Fuels~~ in this ~~cred~~  
iters. ~~Blk~~ - 1 f  
shape ~~lots~~ of ~~room~~

Fit wall - ~~dim~~ 7  
h h - ~~g~~ ~~into~~ 7  
0 - ~~fully~~ ~~at~~ ~~n~~  
1 ~~entire~~ + + ~~into~~  
down ~~off~~ ~~to~~ ~~300~~ ~~to~~  
2 170 of ~~to~~

~~line~~ - ~~at~~ ~~low~~ ~~grade~~  
~~shape~~

In Horn Point  
0 - a v g. contact

Strike N 50° W & dip  
70° to contact

At 5 pm sample was  
7' from junction 7400

Alabaster type con  
in the part of this hill  
west of contact zone

---

Also looking a bit  
to the west from the

the south side  
up hill side

ben whd ad uterus

2 hrs of 1 wh = 21 ft  
make 21 counts of 0 or

but from the 0 of 8  
8, 10 or 2 ft matter of  
8-10 ft

Stuck and he 10' wh  
LV likely 1 extent of  
IV or 1 Ben India  
Cero Flamm  
Cero to the 8000 in  
Cero Cero, ee

Con. Self

El Paso Smelter

Am.	6.16	6.23	8.80
Ag	5.8	4.4	8.2
Pb	1.1		1.8
Cu	1.51	1.43	1.85

SiO<sub>2</sub> 22,

Fe 19,

CaO, 32,

Zn 1.3

S. 0.3

Al<sub>2</sub>O<sub>3</sub> 35,

Con. Self. 2.9,

There is a good assay book

X - copy + date

Car Flammum.

7 part. cl.

Suppl by Soling: 11 Suppl  
the lower level 16 "

Q 1.10 g

And in. 0.31 / an

4 0.42 g

Recn by first 92.8% an

4 65% g.

Rate 30 ~~g~~ 1.

Core Au 9.40 | 11.4

and 11 g. 9.4 | 18.4

Pb. 1.2 | 2.8

C. 1.13 | 2.26

June 25th, 1938

Mr. H. K. Grove  
202 N. Pleasant Street  
Prescott, Arizona

Re: Oro Flamme

Dear Mr. Grove:

Replying to your letter of the 24th, I note that Kingdon will not take over the Oro Flamme at present.

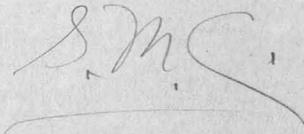
I cannot well get off my data on this mine to California today but I will do so on Monday and recommend a further investigation by the parties who have a concentrating mill and are looking for a suitable mine. I think that they will be favorably disposed to follow this recommendation unless, meantime, they have found something else which seems to fit their requirements and perhaps is located nearer to the present site of the mill. This is a situation which I explained to you and to your Father but I hope I may be able to advise you further in this matter before the end of next week.

I was favorably impressed with the possibilities of your mine and feel that a further and more thorough examination is well justified and in the event that the California people do not go ahead, I may be able to interest some other clients at a somewhat later date.

Will you kindly look over the file at your house and send me back the pencil drawing by Kirkbride which I left among your papers by mistake. Also, if you have a spare map showing the mining claims and any maps which show the workings on the Ohio Claim, I would be glad to have these since the only maps in my possession are those which cover the workings on the Oro Flamme and those on the Oro Grando and the sketch of the Oro Grande does not show any of your work below the 2nd Level in the mine nor any of the stoping which was done by Fields and his associates.

Thank you for the opportunity to make the very interesting inspection of your mine from which I hope that some business may result although I cannot promise any very quick action.

Yours very truly,



GMC:MF

6/25  
38

Pennott, Ky  
June 15, 1938

Mr. J. M. Collocounes  
Pleasant, Ky

Dear Mr. Collocounes.

Just showed  
Prock. and he said Mr. Knigdon did not care to  
put any money in Oro 7 law mine as it was  
not big enough for him.

So we are holding property for you, and  
kindly advise when you expect your men over

Yours very truly  
N. K. Gore.

702 N Pleasant St.

Prescott, Ariz  
June 20, 1938

Mr G. M. Colvocoresses.

Phoenix, Ariz

Dear Mr Colvocoresses:

Rec'd your letter  
of June 13 thru Mr Byrne.

At the present time we are on a deal with parties  
to put Mill on Leo & Lane for interest in property  
we should know in a few days if deal goes thru,  
and if not will send you maps and assay sheets.  
Are if you have time when you are in Prescott. if you  
would call our house could show you all the dope we  
have.

Yours Very Truly

W. K. Gray.

*Oro Flamme*  
*Prescott*

June 27th, 1938

Mr. Robert Linton  
Edison Building  
Los Angeles, California

Dear Linton:

Since last writing you in reply to your letter of June 15th, I spent a few days around Prescott and took occasion while there to look over the Oro Flamme Mine which was one of the properties that I had in mind to present to you in the first instance but concerning which I had no very recent information.

I am sending herewith my notes on this property and also copies of two reports made some years ago and I feel that this opportunity may perhaps interest you unless you have meantime found something which appears more attractive.

Will you kindly write me on receipt of this letter, if you have not already done so, and tell me if you are likely to further investigate any of the three properties on which I have sent you information. Of course, I can realize that anything of this kind must be made the basis of a leisurely and orderly procedure but if you are definitely not interested in any or all of these, I would be glad to have that information as soon as possible and also the return of the maps which I sent you on the Gladiator and Max Delta.

Personal regards.

Sincerely,

GMC:MF  
Enc. 3

August 1st, 1938

<sup>H. K</sup>  
Mr. K. H. Grove  
202 N. Pleasant Street  
Prescott, Arizona

Phone  
464-11

Re: Oro Flamme Mine

Dear Grove:

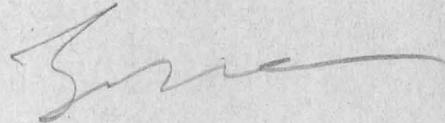
Thank you for sending me the maps of the Oro Flamme which I believe complete my file in respect to your property.

I am sorry to say that I have heard nothing further from the party who was anxious to find a suitable location for his concentrating mill but I suppose that he is still looking around in California as he did not want to move it out of that State if he could find a good property near to its present location.

I shall certainly keep on the lookout for any other operator who might be seeking a mine similar to the Oro Flamme and I will communicate with you promptly in case I have any likely prospects in view.

Personal regards.

Yours very truly,



GMC:MF

Oro Flame Mine

Kirkbride, 30

(I listed a p # 149 of  
"Bibliography of Geology and  
Mineral Resources"

"Nonmetallies": Hansen, 29

History - "L"

Mines - Blandy 18-1-18-2, Sparkes 15

Opportunity - Sparkes, 17

December 15th, 1938

Mr. H. K. Grove  
202 N. Pleasant Street  
Prescott, Arizona

Re: Oro Flamme Mine

Dear Grove:

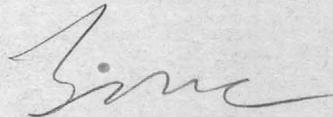
Although I have not had anything of interest to write you about for some time past, I have kept in mind your Oro Flamme and a few days ago I had an opportunity to talk it over with an engineer who claims to be representing people who would be interested in the development and operation of a medium sized gold property that appeared to have merit.

I believe that this man represents responsible parties and although I am not sure that he will follow up my suggestion and actually investigate your mine, I think that he may decide to do so and before he makes the trip to Prescott, I want to be quite sure that your property is not tied up with others and also that the situation in regard to the government loan and lease from the government has not changed since we last talked the matter over.

I presume that you have not done any active work at the mine during recent months but please let me hear from you also in that regard.

Best wishes to you and your father and other members of your family for the coming Christmas and New Year.

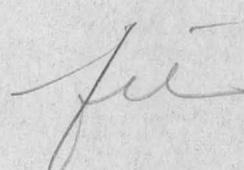
Sincerely,

A handwritten signature in cursive script, appearing to read "Grove".

GMC:MF

July 1st, 1938

Mr. H. K. Grove  
202 N. Pleasant Street  
Prescott, Arizona

Re: Oro Flamme 

Dear Mr. Grove:

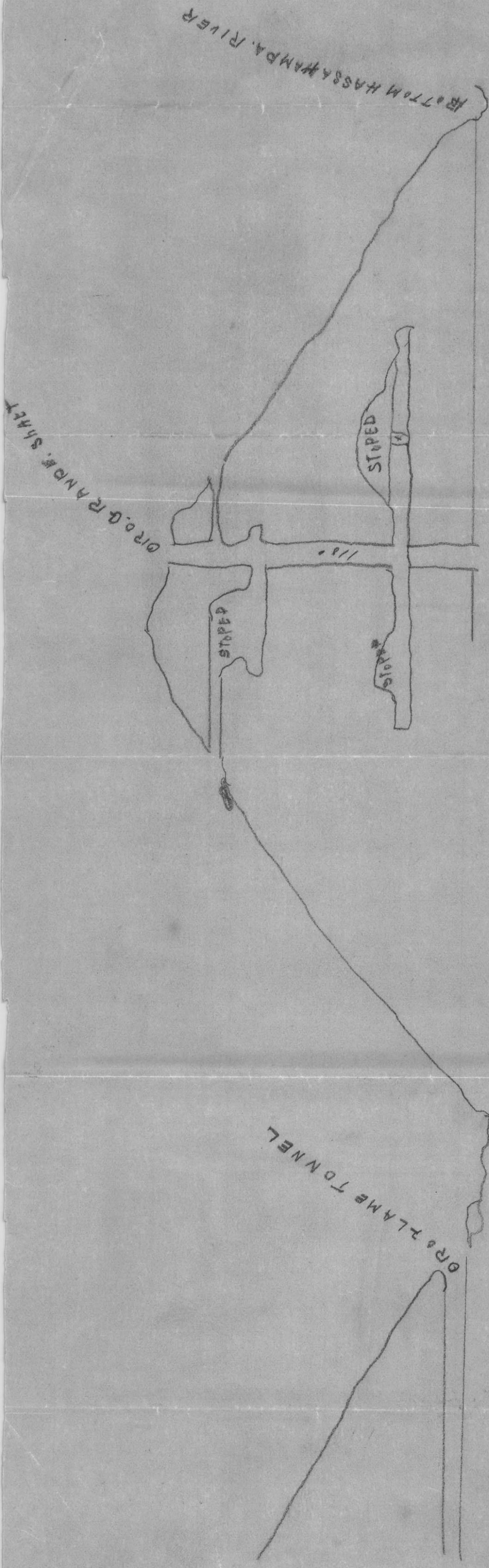
I have just had word from my friend in California to the effect that his client still prefers if possible to secure a mine in California which would be suitable for his mill and does not care to make any investigations in Arizona until they have exhausted the possibilities in their own state. I understand that some of these are at present being examined and if they should not find anything satisfactory in California, I may hear from them again in reference to the Oro Flamme.

Meantime, I thank you very much for the information which you gave me on that property and I may come in contact with someone else who would be disposed to invest. If so, I will communicate with you very promptly.

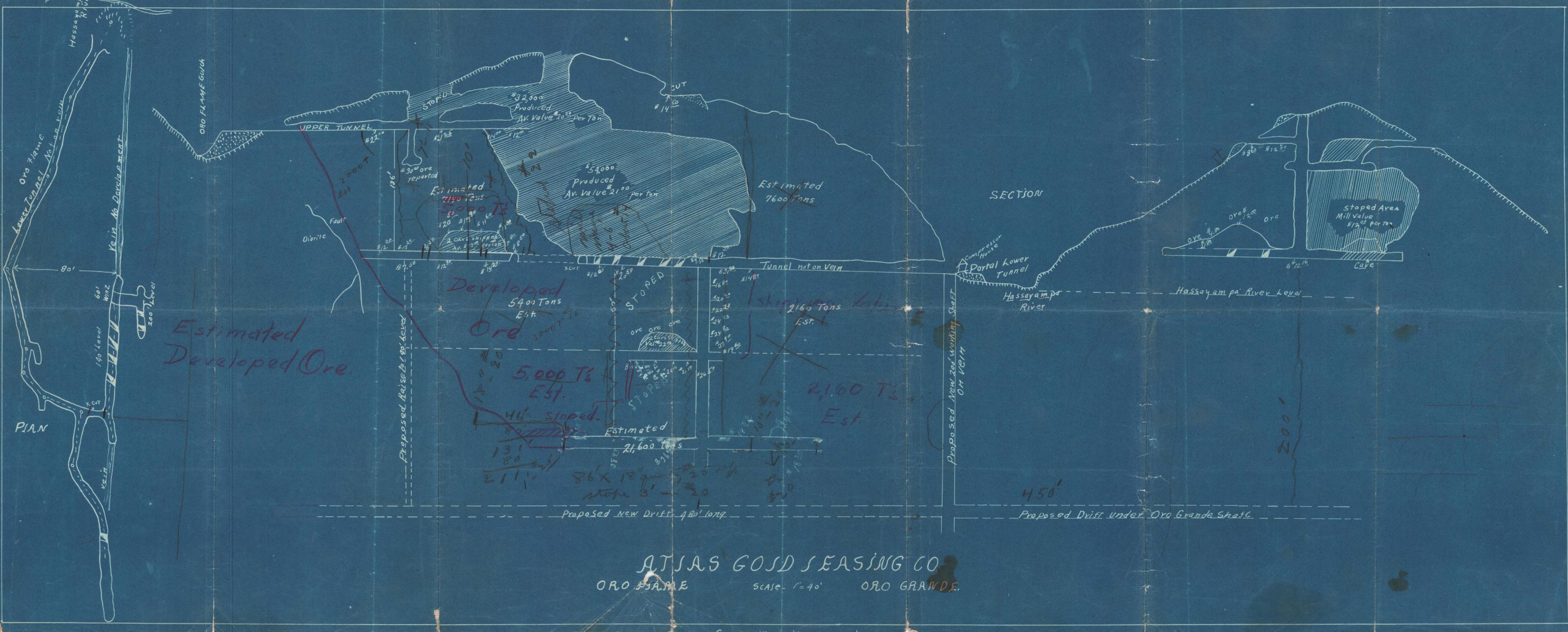
Yours very truly,

GMC:MF 

Oro Flamme



HASSAMPRA RIVER



Estimated Developed Ore.

Developed Ore 5,000 Tons Est.

46' stopped

Estimated 21,600 tons

Ship 2160 Tons Value Est.

2,160 Tons Est.

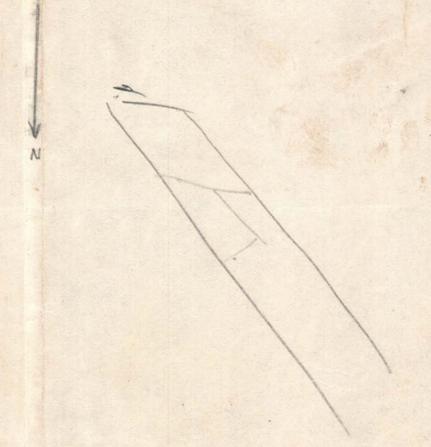
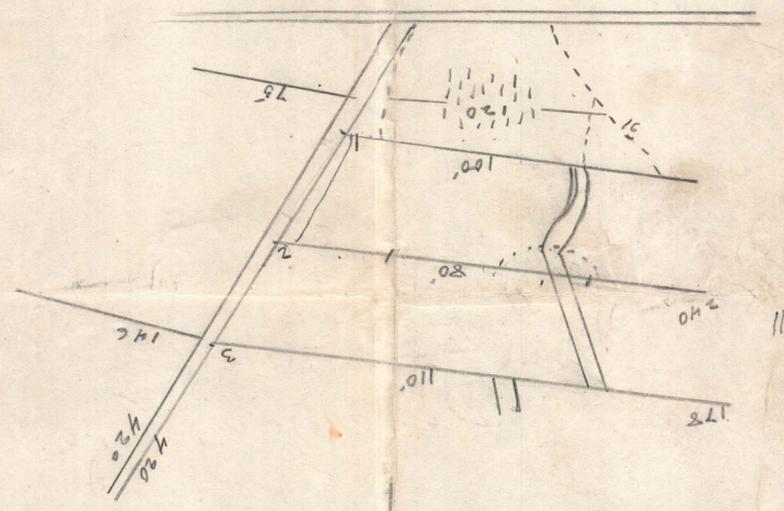
ATLAS GOLD LEASING CO.

ORO FLAME

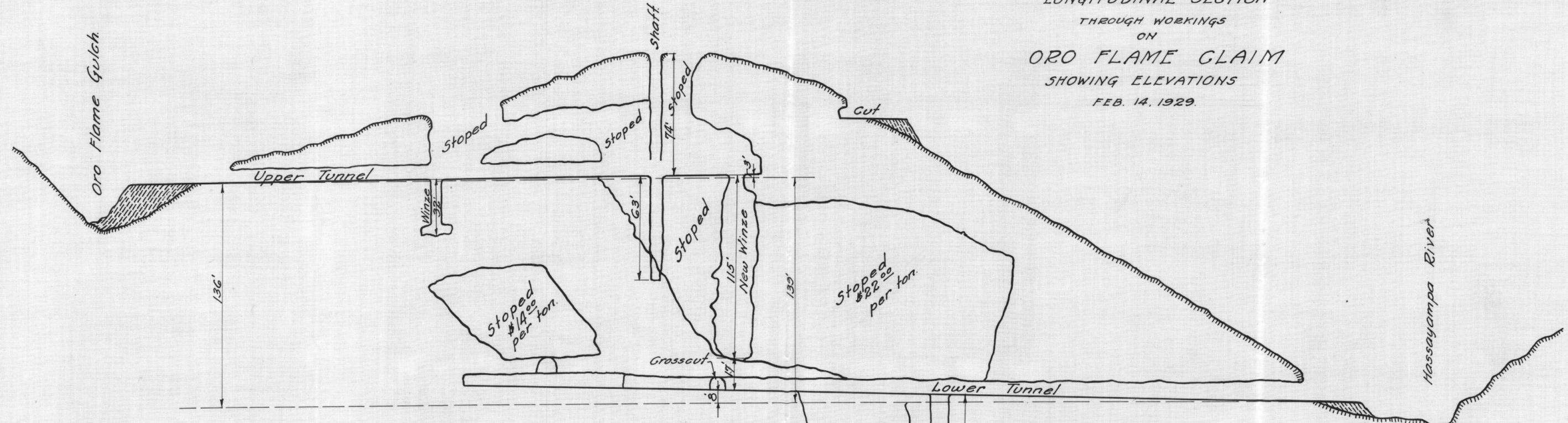
SCALE - 1" = 40'

ORO GRANDE.

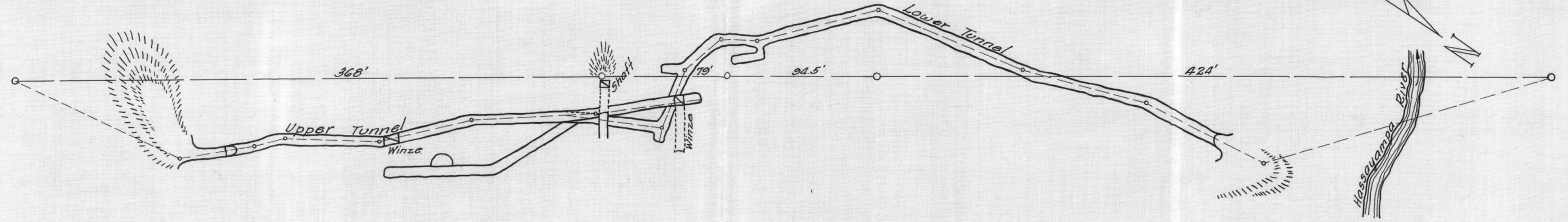
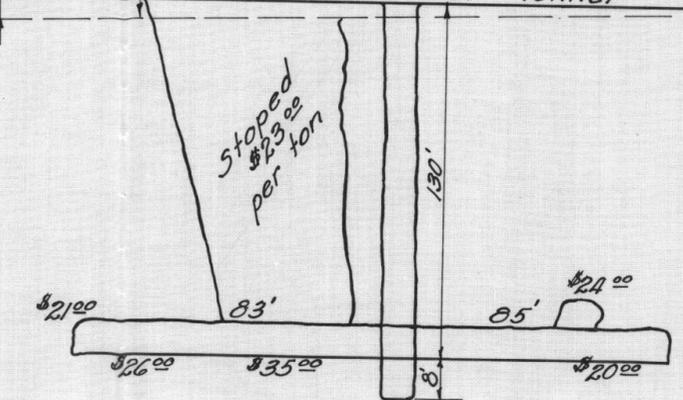
Gen. B. Kirkbride Dec 11, 1920



LONGITUDINAL SECTION  
 THROUGH WORKINGS  
 ON  
**ORO FLAME CLAIM**  
 SHOWING ELEVATIONS  
 FEB. 14, 1929.

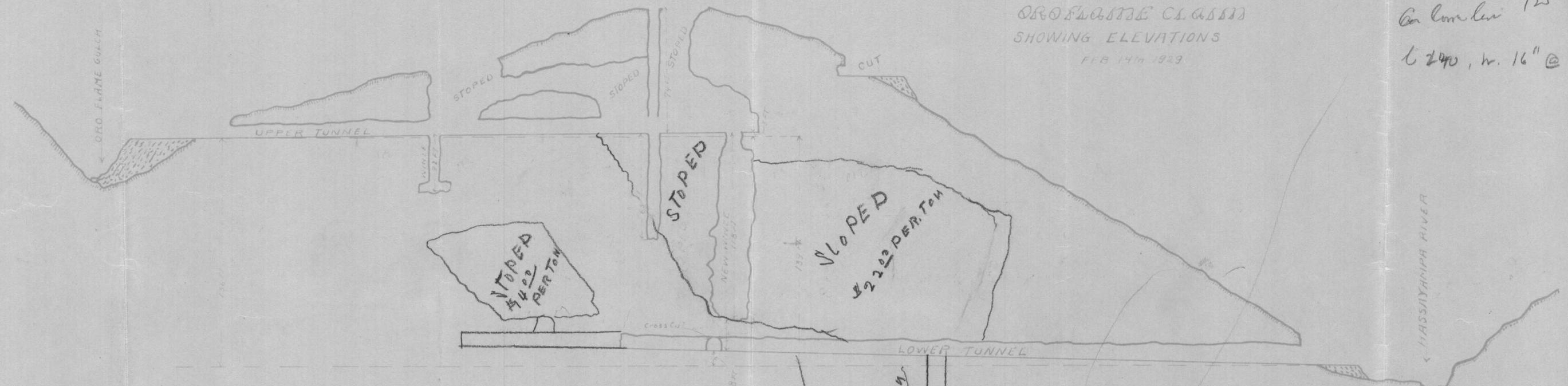


PLAN  
 OF WORKINGS  
 ON  
**ORO FLAME**  
 SHOWING  
 RELATIVE POSITION OF TUNNELS  
 SCALE 1 INCH = 50 FT.

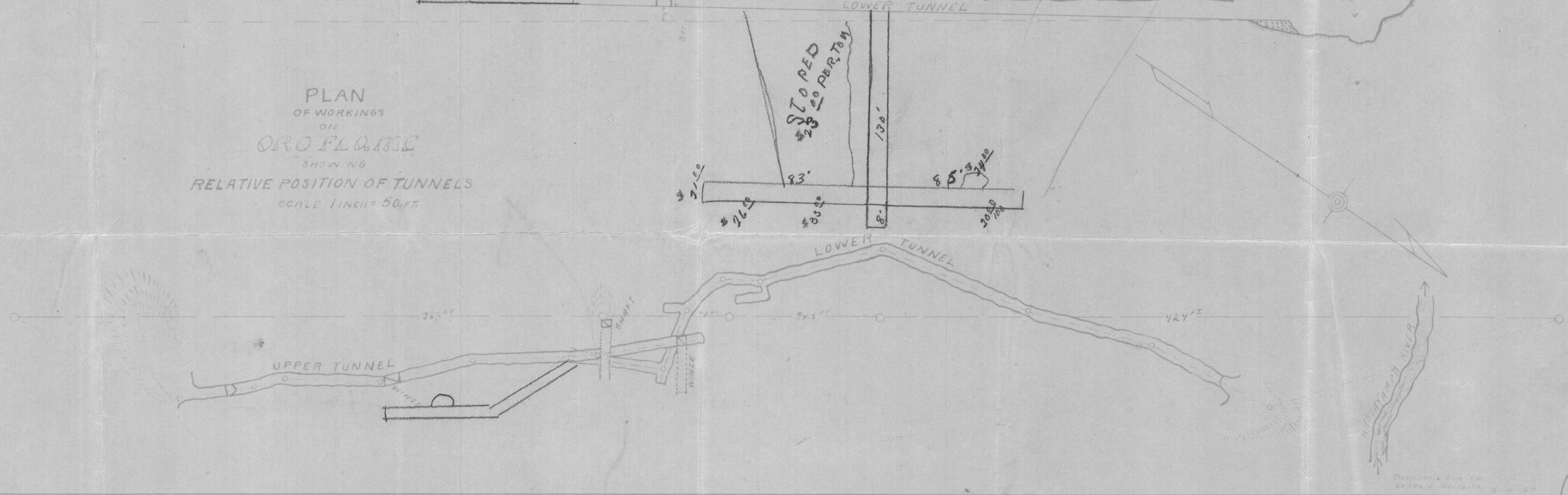


LONGITUDINAL SECTION  
 THROUGH WORKINGS  
 ON  
 ORO FLAME CLASS  
 SHOWING ELEVATIONS  
 FEB 14th 1929.

Can level 125' below main level  
 @ 240, w. 16" @ 1.10 g. Can.



PLAN  
 OF WORKINGS  
 ON  
 ORO FLAME  
 SHOWING  
 RELATIVE POSITION OF TUNNELS  
 SCALE 1 INCH = 50 FT.



#6 Working at Bluebell, Scale 50' = 1" , C.A.S. & P.P.

White lens  
or B.P.

#1 Shaft

#6 Ore  
Shoot

360  
Stope

460  
Stope

560  
Stope

660  
Stope

500' C.

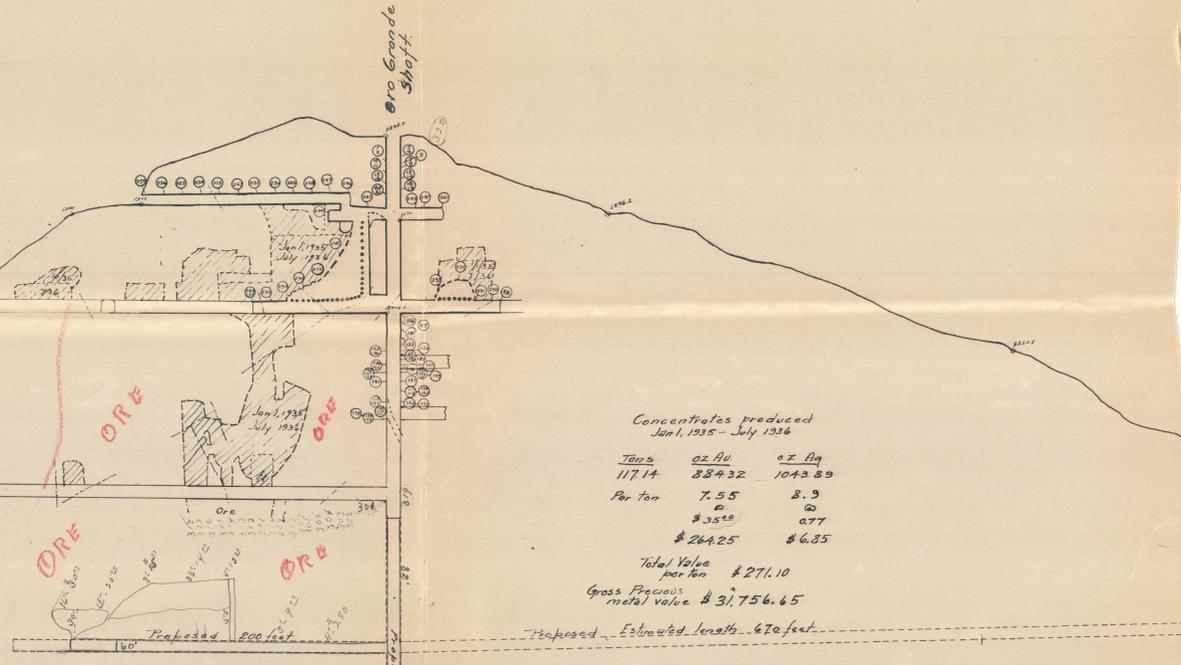
800' C.

Dr. F. H. ...

Dr. F. H. ...

#1 ...

Oro Grande - Oro Flame  
Vertical Sections  
on  
Dip of Vein  
scale 1"=30'  
O elevation according vertical  
- Veil - on dip of vein  
- - - slip or fault line



Concentrates produced  
Jan. 1935 - July 1936

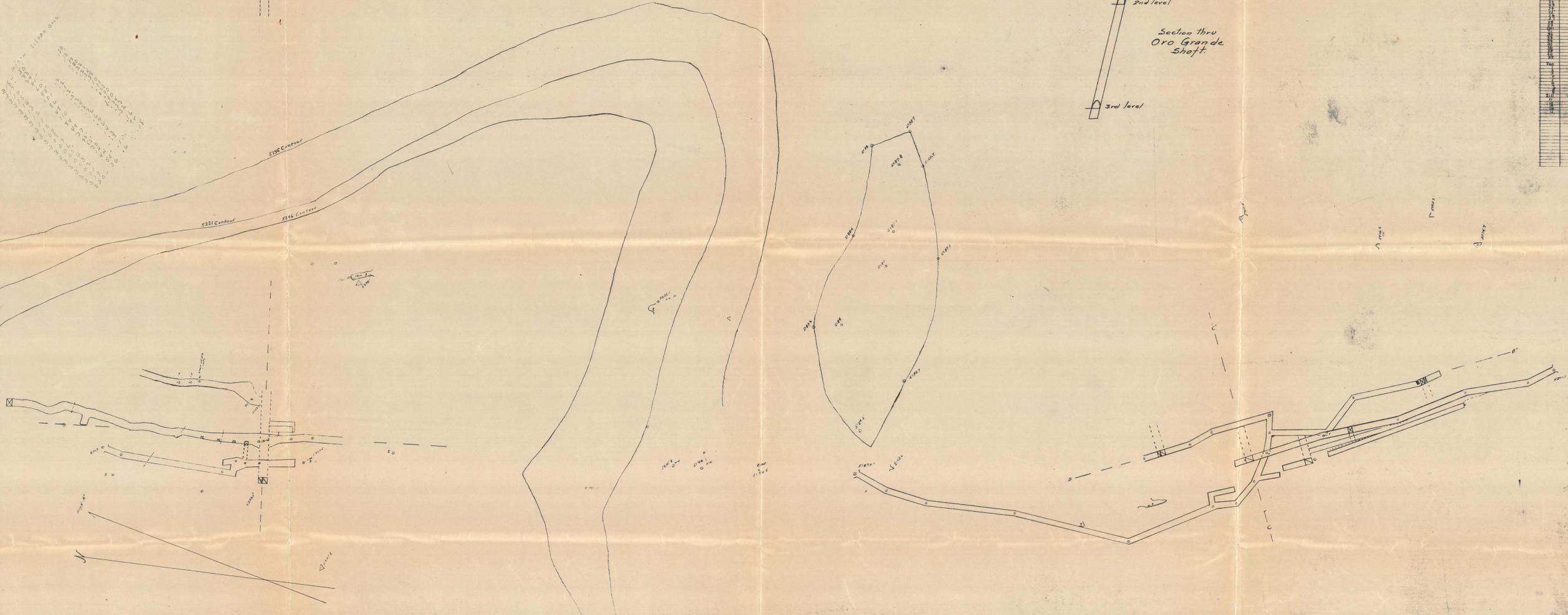
Tons	oz Au	oz Ag
117.14	384.32	1043.89
Per ton	7.55	8.9
	\$3.55	\$7.7
	\$26.25	\$6.85

Total Value per ton \$271.10  
Gross Precious metal value \$31,756.65

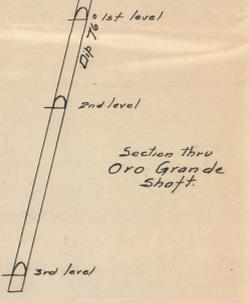
ASSAYS

NUMBER	WIDTH INCHES	QUANTITIES	VALUE
		Au. Ag.	Au. Ag.
1	30	1.80	1.80
2	30	1.80	1.80
3	30	1.80	1.80
4	30	1.80	1.80
5	30	1.80	1.80
6	30	1.80	1.80
7	30	1.80	1.80
8	30	1.80	1.80
9	30	1.80	1.80
10	30	1.80	1.80
11	30	1.80	1.80
12	30	1.80	1.80
13	30	1.80	1.80
14	30	1.80	1.80
15	30	1.80	1.80
16	30	1.80	1.80
17	30	1.80	1.80
18	30	1.80	1.80
19	30	1.80	1.80
20	30	1.80	1.80
21	30	1.80	1.80
22	30	1.80	1.80
23	30	1.80	1.80
24	30	1.80	1.80
25	30	1.80	1.80
26	30	1.80	1.80
27	30	1.80	1.80
28	30	1.80	1.80
29	30	1.80	1.80
30	30	1.80	1.80
31	30	1.80	1.80
32	30	1.80	1.80
33	30	1.80	1.80
34	30	1.80	1.80
35	30	1.80	1.80
36	30	1.80	1.80
37	30	1.80	1.80
38	30	1.80	1.80
39	30	1.80	1.80
40	30	1.80	1.80
41	30	1.80	1.80
42	30	1.80	1.80
43	30	1.80	1.80
44	30	1.80	1.80
45	30	1.80	1.80
46	30	1.80	1.80
47	30	1.80	1.80
48	30	1.80	1.80
49	30	1.80	1.80
50	30	1.80	1.80
51	30	1.80	1.80
52	30	1.80	1.80
53	30	1.80	1.80
54	30	1.80	1.80
55	30	1.80	1.80
56	30	1.80	1.80
57	30	1.80	1.80
58	30	1.80	1.80
59	30	1.80	1.80
60	30	1.80	1.80
61	30	1.80	1.80
62	30	1.80	1.80
63	30	1.80	1.80
64	30	1.80	1.80
65	30	1.80	1.80
66	30	1.80	1.80
67	30	1.80	1.80
68	30	1.80	1.80
69	30	1.80	1.80
70	30	1.80	1.80
71	30	1.80	1.80
72	30	1.80	1.80
73	30	1.80	1.80
74	30	1.80	1.80
75	30	1.80	1.80
76	30	1.80	1.80
77	30	1.80	1.80
78	30	1.80	1.80
79	30	1.80	1.80
80	30	1.80	1.80
81	30	1.80	1.80
82	30	1.80	1.80
83	30	1.80	1.80
84	30	1.80	1.80
85	30	1.80	1.80
86	30	1.80	1.80
87	30	1.80	1.80
88	30	1.80	1.80
89	30	1.80	1.80
90	30	1.80	1.80
91	30	1.80	1.80
92	30	1.80	1.80
93	30	1.80	1.80
94	30	1.80	1.80
95	30	1.80	1.80
96	30	1.80	1.80
97	30	1.80	1.80
98	30	1.80	1.80
99	30	1.80	1.80
100	30	1.80	1.80

Oro Grande - Oro Flame  
HORIZONTAL PLAN  
SCALE 1"=30 FT.



Oro Grande  
Approx. claim line  
Oro Flame



ASSAYS

NUMBER	WIDTH INCHES	QUANTITIES	VALUE
		Au. Ag.	Au. Ag.
1	30	1.80	1.80
2	30	1.80	1.80
3	30	1.80	1.80
4	30	1.80	1.80
5	30	1.80	1.80
6	30	1.80	1.80
7	30	1.80	1.80
8	30	1.80	1.80
9	30	1.80	1.80
10	30	1.80	1.80
11	30	1.80	1.80
12	30	1.80	1.80
13	30	1.80	1.80
14	30	1.80	1.80
15	30	1.80	1.80
16	30	1.80	1.80
17	30	1.80	1.80
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97	30	1.80	1.80
98	30	1.80	1.80
99	30	1.80	1.80
100	30	1.80	1.80