



W.A. No.

NAME

SUBJECT *Cell Data.*

.....

.....

*82 FSU 11B 169
California*

PROPERTY FILE
003247

07

R.J. Macnachie
1941

GOLD-MINE LEASING EXPERIMENT

California Operation

The California property, owned by Mrs. M.J. Wilson of Trail, is comprised of the following claims; Union, Deadwood, Hillside, Exchequer and California, all Crown-granted; and the Waverly, Star Fraction and Gold King, not Crown-granted. The property is located on Toad Mountain approximately 3 miles south of Nelson. It is accessible from Nelson by 7 miles of road on good grade.

The claims cover ground on the eastern slope of Toad Mountain, which slopes eastward at 25 to 35 degrees and is well covered with timber. There is generally sufficient overburden to permit easy road building. Domestic water at the camp is taken from underground. The closest large supply of water is from Giveout Creek which flows toward the east approximately 1 mile north of the camp. The camp, at an approximate elevation of 3800 feet, consists of one small cabin which provides adequate accommodation for three men.

The property is underlain by rocks of the Rossland Volcanic series. These are described by W.E. Cockfield in Memoir 191 of the Geological Survey as a "..... complex assemblage of basic volcanic rocks with pyroclastics. Bands of slate, tuff, and limestone occur. Augite andesite, augite porphyrite, hornblende andesite, and augite-feldspar porphyrite are the main rock types. In places these rocks are highly sheared and converted to chlorite schists." These rocks are cut by granodiorite of the Nelson batholith. In the underground workings at the California the rocks exposed are principally andesite. The California vein occurs in andesite, near a granodiorite contact. The vein occurs within a sheared zone which strikes easterly, dips at 45 to 50 degrees to the south and has a maximum width of about 10 feet. Within the shear, and on the hanging-wall side of the vein, there is a second, parallel, vein; between them there occurs irregularly an andesite dyke which seldom has a width in excess of 1 foot. The presence of the two veins within the shear has led to considerable confusion and wasted effort in the past. The one on the hanging-wall side is the wider, with a width generally between 2 and 3 feet, and is attractive in appearance. The quartz gangue is frequently banded and small amounts of pyrite, sphalerite and galena occur within it. However, as far as this vein has been exposed, it does not contain commercial gold values. The foot-wall vein is considerably narrower, seldom exceeding 1 foot in width. The average width is probably not in excess of 6 inches; a section that was mined during the past season averaged not over 4 inches. This foot-wall vein is composed of quartz gangue well mineralized by pyrite, galena and sphalerite. The sulphides contain appreciable gold values associated with low values in silver. The vein occurs either as one width or as several stringers separated by sheared rock. The quartz gangue is banded by graphitic material and the walls are commonly heavily slickensided. The two veins may touch or there may be as much as 6 feet of highly altered graphitic rock between them. These conditions make it difficult and sometimes dangerous mining when the intervening distance is greater than the mining width required above the foot-wall vein, due to the tendency of rock from the upper vein to break in slabs. In the case of both veins the principal characteristic is probably their continuity, especially with regard to the narrow foot-wall vein which might be expected to pinch out entirely at any time. However, it has been found that there is always some trace of the foot-wall vein even though its representation may be less than 1 inch in width. Faulting of the vein is never

sufficient to throw it beyond the working face; during the time of operation observed movement never exceeded 4 feet. Near the surface in the western end of the No. 1 level stope the vein was found to be faulted on a series of small slips striking approximately north, dipping 70 degrees west, with upthrow of a few inches to 4 feet on the east side. These slips may possibly be associated with greater widths for the foot-wall vein and with increased gold content as the strongest and richest sections of vein worked during the past season occurred in this region of movement. The rake of the ore-shoots within the foot-wall vein is upward to the west at approximately 60 degrees.

Considerable surface stripping has been done but in several cases the work was concentrated on the hanging-wall vein and no parallel exposure has been made of the foot-wall vein. As the hanging-wall vein is of little or no value this stripping has been wasted as far as determination of the worth of the property is concerned.

The property has had a varied history. Since 1897 it has been operated by many parties under lease and bond from W.H. Moore of Nelson, who owned it for a number of years and, more recently, under lease from Mrs. J. Wilson of Trail. The record shows that the property has always been found attractive by reason of the high gold content of the foot-wall vein. It appears that there has been some misjudgment of the possible production from the vein due to the maintained narrow widths. Admittedly, the vein will maintain a uniform high gold content but the narrow widths prevent any large production per lineal foot of vein mined.

At the time that the property was leased to the Government it was idle and had acquired a reputation based on the previous operations which had been conducted at a loss.

Underground development upon the property consists of three adit-levels driven essentially upon the shear-zone. The lowest of the three drifts, known as No. 3, is at the elevation of the camp. It has been driven on the shear in a westerly direction, for a distance reported to be somewhat in excess of 1500 feet. This working is blind and at the present time the air is not sufficiently good to permit close examination. Apparently most of the drifting on this level is on the hanging-wall vein. No. 2 level, 170 feet higher in elevation than No. 3, has been driven for approximately 625 feet in a westerly direction and follows the shear for practically the entire distance. From this level the ground has been stoped through to the No. 1 level, 106 feet higher. Where the stoping has been done the hanging-wall vein has been left and, in some places, where inadequately supported, the hanging-wall has caved and the drift filled with muck. This is the case at approximately 200 feet from the portal. The records show that sections of the foot-wall vein which were mined between 2 and 1 levels carried consistently high gold values. The No. 1 level, 106 feet above No. 2 level, has been driven for 310 feet along the shear in a westerly direction. Stoping extends from the level to the surface for approximately 125 feet of this length. Stoping commenced at approximately 100 feet from the portal and continued to within 25 feet of the face. It is only at the inner end of the working, above the final 75 feet of the drift, that the stope has not broken through the surface. Here there is still a block of ore available for mining. The property was taken under lease by the Government with the intention that mining of ore between the No. 1 level and the surface would be conducted with all expediency and that any profit which might accrue would be used to clean out No. 2 level and thus make available exposures of ore in the foot-wall vein, reported on that level beyond the cave.

On May 21st machinery was moved onto the property. This consisted of a 440 cu. ft. Ingersoll-Rand portable compressor, gasoline driven. A stoper, a drifter and a plugger were available for underground work. Detachable bits were used throughout. A single cylinder gas engine provided power to a belt-driven grinder wheel for sharpening of bits. Actual mining started on June 1st.

At the time Government operation commenced there was a stope face in ore on the foot-wall vein, at 77 feet above the No. 1 level. This measurement was in the plane of the vein. This stope face, above the inner end of the level, was approximately 75 feet long. Stopping proceeded actively from June 1st until September 23rd when, for 5 days, the compressor was being repaired. From September 28th to October 5th work proceeded as usual. During this four month period two shifts of two men each were maintained steadily, with generally a fifth man available for tramming, mucking back, sharpening bits and truck driving. It was found most satisfactory to drill across the full stope face with most of the holes either above or below the vein as the particular location required. On the opposite side of the vein a few holes were drilled to permit breaking down the vein after the other holes had been blasted. This procedure prevented loss in fines. A cut round was drilled at one end of the stope and, after this had been blasted, holes were shot successively away from it across the face. Only sufficient holes were blasted at one time to permit complete sorting of the ore on that shift. Sorting was the most costly part of the mining as it was found necessary to go over the complete muck pile with hand picks in order to be assured of satisfactory recovery. This was particularly true in sections where the vein occurred as two or three narrow stringers where it was almost impossible to blast the waste and ore separately. After sorting, the ore was passed to the drift in a tight, sawn-lumber chute, trammed to the surface and trucked directly to the smelter. It was found that with five men working conscientiously the maximum production which could be expected per month was in the neighbourhood of 20 tons. This production could admittedly be bettered by men working for themselves and working in excess of standard hours.

Operations ceased on October 5th and the owner was able immediately to lease the property to another party on October 6th. Between the time that notice was given to the owner by the Government and October 5th, the ore in the stope improved considerably. On October 5th, the face of ore in the stope was considerably better than any which had been mined during the previous four months, and very much better than at the time the Government's lease on the property became effective.

The final figures on the Government operation showed production of 75.75 tons of ore, which had a gross value of \$5753.80 and contained 159.428 ounces of gold. Wages paid amounted to \$2262.80; \$785.78 was paid as royalty to the owner. Finally, exclusive of salary for the Department of Mines Engineer, an account not charged against the property, the operation showed a loss of \$241.86; included in the costs is an item of \$104.77 paid under the 2 percent Mineral Tax to the Finance Department. Thus, the net loss to the Government amounted to \$137.09.

The following statistical detail is of value as reference for the various costs involved in a small, typical leasing operation in the south-eastern part of the Province.

.....

CALIFORNIA OPERATION
Machine Mining

Costs for Actual Period of Operation
June 1st - October 5th.

Additional Costs Prior
to June 1st and after
October 5th.

Wages	Steel (1)	Powder Fuse & Caps	Misc. Mining (2)	Mach- inery Rental (3)	Hard- Ware (4)	Taxation paid to B.C. Govt.	Truck Up- keep (5)	<u>Total Cost</u>	Net Smelter Returns (6)	<u>Profit or Loss</u>	Additional Costs Prior to June 1st and after October 5th.			<u>Total Cost</u>
											Wages	Machin- ery Rental	Truck Up- Keep	
Total Costs 2621.41	141.36	506.68	372.68	835.25	121.59	104.77	110.92	4714.58	4795.70	+ 81.12	240.39	57.25	25.34	5037.56
											Loss - -241.86			
Cost per Ton (Based on pro- duction of 75.7500 Tons)	1.87	6.69	4.92	11.03	0.28	1.38	1.46	62.24	63.31	+ 1.07	3.17	0.76	0.33	66.50
											Loss - -3.19			

- (1) Includes cost of new bits, steel, cost of upsetting and threading shanks.
- (2) Includes lumber, kerosene, carbide, grinder wheels, lubricating oil, ore sacks, gas and oil for compressor.
- (3) Compressor and all underground machines, with necessary accessories, rented at \$200.00 per month; owners responsible for first \$25.00 repairs monthly
- (4) Includes nails, pipe fittings, rope, etc.
- (5) Includes gas and oil, tires, general repair involved in hauling ore and camp supplies, but does not include amortization, licences, insurance, etc.
- (6) Gross smelter return, less treatment and royalty to owner of property.

Original copy.

R. J. Macdonald
1941

8243W-169

GOLD-MINE LEASING EXPERIMENT

California Operation

The California property, owned by Mrs. M. J. Wilson of Trail, is comprised of the following claims; Union, Deadwood, Hillside, Exchequer and California, all Crown-granted; and the Waverly, Star Fraction and Gold King, not Crown-granted. The property is located on Toad Mountain approximately 3 miles south of Nelson. It is accessible from Nelson by 7 miles of road on good grade.

The claims cover ground on the eastern slope of Toad Mountain, which slopes eastward at 25 to 35 degrees and is well covered with timber. There is generally sufficient overburden to permit easy road building. Domestic water at the camp is taken from underground. The closest large supply of water is from Giveout Creek which flows toward the east approximately 1 mile north of the camp. The camp, at an approximate elevation of 3800 feet, consists of one small cabin which provides adequate accommodation for three men.

The property is underlain by rocks of the Rossland Volcanic series. These are described by W. E. Cockfield in Memoir 191 of the Geological Survey as a "..... complex assemblage of basic volcanic rocks with pyroclastics. Bands of slate, tuff, and limestone occur. Augite andesite, augite porphyrite, hornblende andesite, and augite-feldspar porphyrite are the main rock types. In places these rocks are highly sheared and converted to chlorite schists." These rocks are cut by granodiorite of the Nelson batholith. In the underground workings at the California the rocks exposed are principally andesite. The California vein occurs in andesite, near a granodiorite contact. The vein occurs within a sheared zone which strikes easterly, dips at 45 to 50 degrees to the south and has a maximum width of about 10 feet. Within the shear, and on the hanging-wall side of the vein, there is a second, parallel, vein; between them there occurs irregularly an andesite dyke which seldom has a width in excess of 1 foot. The presence of the two veins within the shear has led to considerable confusion and wasted effort in the past. The one on the hanging-wall side is the wider, with a width generally between 2 and 3 feet, and is attractive in appearance. The quartz gangue is frequently banded and small amounts of pyrite, sphalerite and galena occur within it. However, as far as this vein has been exposed, it does not contain commercial gold values. The foot-wall vein is considerably narrower, seldom exceeding 1 foot in width. The average width is probably not in excess of 6 inches; a section that was mined during the past season averaged not over 4 inches. This foot-wall vein is composed of quartz gangue well mineralized by pyrite, galena and sphalerite. The sulphides contain appreciable gold values associated with low values in silver. The vein occurs either as one width or as several stringers separated by sheared rock. The quartz gangue is banded by graphitic material and the walls are commonly heavily slickensided. The two veins may touch or there may be as much as 6 feet of highly altered graphitic rock between them. These conditions make it difficult and sometimes dangerous mining when the intervening distance is greater than the mining width required above the foot-wall vein, due to the tendency of rock from the upper vein to break in slabs. In the case of both veins the principal characteristic is probably their continuity, especially with regard to the narrow foot-wall vein which might be expected to pinch out entirely at any time. However, it has been found that there is always some trace of the foot-wall vein even though its representation may be less than 1 inch in width. Faulting of the vein is never

sufficient to throw it beyond the working face; during the time of operation observed movement never exceeded 4 feet. Near the surface in the western end of the No. 1 level stope the vein was found to be faulted on a series of small slips striking approximately north, dipping 70 degrees west, with upthrow of a few inches to 4 feet on the east side. These slips may possibly be associated with greater widths for the foot-wall vein and with increased gold content as the strongest and richest sections of vein worked during the past season occurred in this region of movement. The rake of the ore-shoots within the foot-wall vein is upward to the west at approximately 60 degrees.

Considerable surface stripping has been done but in several cases the work was concentrated on the hanging-wall vein and no parallel exposure has been made of the foot-wall vein. As the hanging-wall vein is of little or no value this stripping has been wasted as far as determination of the worth of the property is concerned.

The property has had a varied history. Since 1897 it has been operated by many parties under lease and bond from W.H. Moore of Nelson, who owned it for a number of years and, more recently, under lease from Mrs. W.J. Wilson of Trail. The record shows that the property has always been found attractive by reason of the high gold content of the foot-wall vein. It appears that there has been some misjudgment of the possible production from the vein due to the maintained narrow widths. Admittedly, the vein will maintain a uniform high gold content but the narrow widths prevent any large production per lineal foot of vein mined.

At the time that the property was leased to the Government it was idle and had acquired a reputation based on the previous operations which had been conducted at a loss.

Underground development upon the property consists of three adit-levels driven essentially upon the shear-zone. The lowest of the three drifts, known as No. 3, is at the elevation of the camp. It has been driven on the shear in a westerly direction, for a distance reported to be somewhat in excess of 1500 feet. This working is blind and at the present time the air is not sufficiently good to permit close examination. Apparently most of the drifting on this level is on the hanging-wall vein. No. 2 level, 170 feet higher in elevation than No. 3, has been driven for approximately 625 feet in a westerly direction and follows the shear for practically the entire distance. From this level the ground has been stoped through to the No. 1 level, 106 feet higher. Where the stoping has been done the hanging-wall vein has been left and, in some places, where inadequately supported, the hanging-wall has caved and the drift filled with muck. This is the case at approximately 200 feet from the portal. The records show that sections of the foot-wall vein which were mined between 2 and 1 levels carried consistently high gold values. The No. 1 level, 106 feet above No. 2 level, has been driven for 310 feet along the shear in a westerly direction. Stoping extends from the level to the surface for approximately 125 feet of this length. Stoping commenced at approximately 100 feet from the portal and continued to within 25 feet of the face. It is only at the inner end of the working, above the final 75 feet of the drift, that the stope has not broken through the surface. Here there is still a block of ore available for mining. The property was taken under lease by the Government with the intention that mining of ore between the No. 1 level and the surface would be conducted with all expediency and that any profit which might accrue would be used to clean out No. 2 level and thus make available exposures of ore in the foot-wall vein, reported on that level beyond the cave.

On May 21st machinery was moved onto the property. This consisted of a 440 cu. ft. Ingersoll-Rand portable compressor, gasoline driven. A stoper, a drifter and a plugger were available for underground work. Detachable bits were used throughout. A single cylinder gas engine provided power to a belt-driven grinder wheel for sharpening of bits. Actual mining started on June 1st.

At the time Government operation commenced there was a stope face in ore on the foot-wall vein, at 77 feet above the No. 1 level. This measurement was in the plane of the vein. This stope face, above the inner end of the level, was approximately 75 feet long. Stopping proceeded actively from June 1st until September 23rd when, for 5 days, the compressor was being repaired. From September 28th to October 5th work proceeded as usual. During this four month period two shifts of two men each were maintained steadily, with generally a fifth man available for tramping, mucking back, sharpening bits and truck driving. It was found most satisfactory to drill across the full stope face with most of the holes either above or below the vein as the particular location required. On the opposite side of the vein a few holes were drilled to permit breaking down the vein after the other holes had been blasted. This procedure prevented loss in fines. A cut round was drilled at one end of the stope and, after this had been blasted, holes were shot successively away from it across the face. Only sufficient holes were blasted at one time to permit complete sorting of the ore on that shift. Sorting was the most costly part of the mining as it was found necessary to go over the complete muck pile with hand picks in order to be assured of satisfactory recovery. This was particularly true in sections where the vein occurred as two or three narrow stringers where it was almost impossible to blast the waste and ore separately. After sorting, the ore was passed to the drift in a tight, sawn-lumber chute, trammed to the surface and trucked directly to the smelter. It was found that with five men working conscientiously the maximum production which could be expected per month was in the neighbourhood of 20 tons. This production could admittedly be bettered by men working for themselves and working in excess of standard hours.

Operations ceased on October 5th and the owner was able immediately to lease the property to another party on October 6th. Between the time that notice was given to the owner by the Government and October 5th, the ore in the stope improved considerably. On October 5th, the face of ore in the stope was considerably better than any which had been mined during the previous four months, and very much better than at the time the Government's lease on the property became effective.

The final figures on the Government operation showed production of 75.75 tons of ore, which had a gross value of \$5753.80 and contained 159.428 ounces of gold. Wages paid amounted to \$2261.80; \$785.78 was paid as royalty to the owner. Finally, exclusive of salary for the Department of Mines Engineer, an account not charged against the property, the operation showed a loss of \$241.86; included in the costs is an item of \$104.77 paid under the 2 percent Mineral Tax to the Finance Department. Thus, the net loss to the Government amounted to \$137.09.

The following statistical detail is of value as reference for the various costs involved in a small, typical leasing operation in the south-eastern part of the Province.

.....

CALIFORNIA OPERATION
Machine Mining

Costs for Actual Period of Operation
June 1st - October 5th.

Additional Costs Prior
to June 1st and after
October 5th.

Wages	Steel (1)	Powder Fuse & Caps	Misc. Mining (2)	Mach- inery Rental (3)	Hard- Ware (4)	Taxation paid to B.C. Govt.	Truck Up- keep (5)	Total Cost	Net Smelter Returns (6)	Profit or Loss	Wages	Machin- ery Rental	Truck Up- Keep	Total Cost
Total Costs 2621.41	141.36	506.68	372.60	835.25	121.59	104.77	110.92	4714.58	4795.70	+ 81.12	240.39	57.25	25.34	5037.56
											Loss - -241.86			
Cost per Ton (Based on pro- duction 34.61 of 75.7500 Tons)	1.87	6.69	4.92	11.03	0.28	1.38	1.46	62.24	63.31	+ 1.07	3.17	0.76	0.33	66.50
											Loss - -3.19			

- (1) Includes cost of new bits, steel, cost of upsetting and threading shanks.
- (2) Includes lumber, kerosene, carbide, grinder wheels, lubricating oil, ore sacks, gas and oil for compressor.
- (3) Compressor and all underground machines, with necessary accessories, rented at \$200.00 per month; owners responsible for first \$25.00 repairs monthly
- (4) Includes nails, pipe fittings, rope, etc.
- (5) Includes gas and oil, tires, general repair involved in hauling ore and camp supplies, but does not include amortization, licences, insurance, etc.
- (6) Gross smelter return, less treatment and royalty to owner of property.

GOLD-MINE LEASING EXPERIMENTCalifornia Operation

The California property, owned by Mrs. M.J. Wilson of Trail, is comprised of the following claims; Union, Deadwood, Hillside, Exchequer and California, all Crown-granted; and the Waverly, Star Fraction and Gold King, not Crown-granted. The property is located on Toad Mountain approximately 3 miles south of Nelson. It is accessible from Nelson by 7 miles of road on good grade.

The claims cover ground on the eastern slope of Toad Mountain, which slopes eastward at 25 to 35 degrees and is well covered with timber. There is generally sufficient overburden to permit easy road building. Domestic water at the camp is taken from underground. The closest large supply of water is from Giveout Creek which flows toward the east approximately 1 mile north of the camp. The camp, at an approximate elevation of 3800 feet, consists of one small cabin which provides adequate accommodation for three men.

The property is underlain by rocks of the Rossland Volcanic series. These are described by W.E. Cockfield in Memoir 191 of the Geological Survey as a "..... complex assemblage of basic volcanic rocks with pyroclastics. Bands of slate, tuff, and limestone occur. Augite andesite, augite porphyrite, hornblende andesite, and augite-feldspar porphyrite are the main rock types. In places these rocks are highly sheared and converted to chlorite schists." These rocks are cut by granodiorite of the Nelson batholith. In the underground workings at the California the rocks exposed are principally andesite. The California vein occurs in andesite, near a granodiorite contact. The vein occurs within a sheared zone which strikes easterly, dips at 45 to 50 degrees to the south and has a maximum width of about 10 feet. Within the shear, and on the hanging-wall side of the vein, there is a second, parallel, vein; between them there occurs irregularly an andesite dyke which seldom has a width in excess of 1 foot. The presence of the two veins within the shear has led to considerable confusion and wasted effort in the past. The one on the hanging-wall side is the wider, with a width generally between 2 and 3 feet, and is attractive in appearance. The quartz gangue is frequently banded and small amounts of pyrite, sphalerite and galena occur within it. However, as far as this vein has been exposed, it does not contain commercial gold values. The foot-wall vein is considerably narrower, seldom exceeding 1 foot in width. The average width is probably not in excess of 6 inches; a section that was mined during the past season averaged not over 4 inches. This foot-wall vein is composed of quartz gangue well mineralized by pyrite, galena and sphalerite. The sulphides contain appreciable gold values associated with low values in silver. The vein occurs either as one width or as several stringers separated by sheared rock. The quartz gangue is banded by graphitic material and the walls are commonly heavily slickensided. The two veins may touch or there may be as much as 6 feet of highly altered graphitic rock between them. These conditions make it difficult and sometimes dangerous mining when the intervening distance is greater than the mining width required above the foot-wall vein, due to the tendency of rock from the upper vein to break in slabs. In the case of both veins the principal characteristic is probably their continuity, especially with regard to the narrow foot-wall vein which might be expected to pinch out entirely at any time. However, it has been found that there is always some trace of the foot-wall vein even though its representation may be less than 1 inch in width. Faulting of the vein is never

sufficient to throw it beyond the working face; during the time of operation observed movement never exceeded 4 feet. Near the surface in the western end of the No. 1 level stope the vein was found to be faulted on a series of small slips striking approximately north, dipping 70 degrees west, with upthrow of a few inches to 4 feet on the east side. These slips may possibly be associated with greater widths for the foot-wall vein and with increased gold content as the strongest and richest sections of vein worked during the past season occurred in this region of movement. The rake of the ore-shoots within the foot-wall vein is upward to the west at approximately 60 degrees.

Considerable surface stripping has been done but in several cases the work was concentrated on the hanging-wall vein and no parallel exposure has been made of the foot-wall vein. As the hanging-wall vein is of little or no value this stripping has been wasted as far as determination of the worth of the property is concerned.

The property has had a varied history. Since 1897 it has been operated by many parties under lease and bond from W.H. Moore of Nelson, who owned it for a number of years and, more recently, under lease from Mrs. F.J. Wilson of Trail. The record shows that the property has always been found attractive by reason of the high gold content of the foot-wall vein. It appears that there has been some misjudgment of the possible production from the vein due to the maintained narrow widths. Admittedly, the vein will maintain a uniform high gold content but the narrow widths prevent any large production per lineal foot of vein mined.

At the time that the property was leased to the Government it was idle and had acquired a reputation based on the previous operations which had been conducted at a loss.

Underground development upon the property consists of three adit-levels driven essentially upon the shear-zone. The lowest of the three drifts, known as No. 3, is at the elevation of the camp. It has been driven on the shear in a westerly direction, for a distance reported to be somewhat in excess of 1500 feet. This working is blind and at the present time the air is not sufficiently good to permit close examination. Apparently most of the drifting on this level is on the hanging-wall vein. No. 2 level, 170 feet higher in elevation than No. 3, has been driven for approximately 625 feet in a westerly direction and follows the shear for practically the entire distance. From this level the ground has been stoped through to the No. 1 level, 106 feet higher. Where the stoping has been done the hanging-wall vein has been left and, in some places, where inadequately supported, the hanging-wall has caved and the drift filled with muck. This is the case at approximately 200 feet from the portal. The records show that sections of the foot-wall vein which were mined between 2 and 1 levels carried consistently high gold values. The No. 1 level, 106 feet above No. 2 level, has been driven for 310 feet along the shear in a westerly direction. Stoping extends from the level to the surface for approximately 125 feet of this length. Stoping commenced at approximately 100 feet from the portal and continued to within 25 feet of the face. It is only at the inner end of the working, above the final 75 feet of the drift, that the stope has not broken through the surface. Here there is still a block of ore available for mining. The property was taken under lease by the Government with the intention that mining of ore between the No. 1 level and the surface would be conducted with all expediency and that any profit which might accrue would be used to clean out No. 2 level and thus make available exposures of ore in the foot-wall vein, reported on that level beyond the cave.

On May 21st machinery was moved onto the property. This consisted of a 440 cu. ft. Ingersoll-Rand portable compressor, gasoline driven. A stoper, a drifter and a plugger were available for underground work. Detachable bits were used throughout. A single cylinder gas engine provided power to a belt-driven grinder wheel for sharpening of bits. Actual mining started on June 1st.

At the time Government operation commenced there was a stope face in ore on the foot-wall vein, at 77 feet above the No. 1 level. This measurement was in the plane of the vein. This stope face, above the inner end of the level, was approximately 75 feet long. Stoping proceeded actively from June 1st until September 23rd when, for 5 days, the compressor was being repaired. From September 28th to October 5th work proceeded as usual. During this four month period two shifts of two men each were maintained steadily, with generally a fifth man available for tramping, mucking back, sharpening bits and truck driving. It was found most satisfactory to drill across the full stope face with most of the holes either above or below the vein as the particular location required. On the opposite side of the vein a few holes were drilled to permit breaking down the vein after the other holes had been blasted. This procedure prevented loss in fines. A cut round was drilled at one end of the stope and, after this had been blasted, holes were shot successively away from it across the face. Only sufficient holes were blasted at one time to permit complete sorting of the ore on that shift. Sorting was the most costly part of the mining as it was found necessary to go over the complete muck pile with hand picks in order to be assured of satisfactory recovery. This was particularly true in sections where the vein occurred as two or three narrow stringers where it was almost impossible to blast the waste and ore separately. After sorting, the ore was passed to the drift in a tight, sawn-lumber chute, trammed to the surface and trucked directly to the smelter. It was found that with five men working conscientiously the maximum production which could be expected per month was in the neighbourhood of 20 tons. This production could admittedly be bettered by men working for themselves and working in excess of standard hours.

Operations ceased on October 5th and the owner was able immediately to lease the property to another party on October 6th. Between the time that notice was given to the owner by the Government and October 5th, the ore in the stope improved considerably. On October 5th, the face of ore in the stope was considerably better than any which had been mined during the previous four months, and very much better than at the time the Government's lease on the property became effective.

The final figures on the Government operation showed production of 75.75 tons of ore, which had a gross value of \$5753.80 and contained 159.428 ounces of gold. Wages paid amounted to \$2261.80; \$785.78 was paid as royalty to the owner. Finally, exclusive of salary for the Department of Mines Engineer, an account not charged against the property, the operation showed a loss of \$241.86; included in the costs is an item of \$104.77 paid under the 2 percent Mineral Tax to the Finance Department. Thus, the net loss to the Government amounted to \$137.09.

The following statistical detail is of value as reference for the various costs involved in a small, typical leasing operation in the south-eastern part of the Province.

.....

CALIFORNIA OPERATION
Machine Mining

Costs for Actual Period of Operation
June 1st - October 5th.

Additional Costs Prior
to June 1st and after
October 5th.

Wages	Steel (1)	Powder Fuse & Caps	Misc. Mining (2)	Mach- inery Rental (3)	Hard- Ware (4)	Taxation paid to B.C. Govt.	Truck Up- keep (5)	<u>Total Cost</u>	Net Smelter Returns (6)	<u>Profit or Loss</u>	Additional Costs Prior to June 1st and after October 5th.			<u>Total Cost</u>
											Wages	Machin- ery Rental	Truck Up- Keep	
Total Costs 2621.41	141.36	506.68	372.63	835.25	121.59	104.77	110.92	4714.58	4795.70	+ 81.12	240.39	57.25	25.34	5037.56
											Loss - -241.86			
Cost per Ton (Based on pro- duction of 75,750 Tons)	1.87	6.69	4.92	11.03	0.28	1.38	1.46	62.24	63.31	+ 1.07	3.17	0.76	0.33	66.50
											Loss - -3.19			

- (1) Includes cost of new bits, steel, cost of upsetting and threading shanks.
- (2) Includes lumber, kerosene, carbide, grinder wheels, lubricating oil, ore sacks, gas and oil for compressor.
- (3) Compressor and all underground machines, with necessary accessories, rented at \$200.00 per month; owners responsible for first \$25.00 repairs monthly
- (4) Includes nails, pipe fittings, rope, etc.
- (5) Includes gas and oil, tires, general repair involved in hauling ore and camp supplies, but does not include amortization, licences, insurance, etc.
- (6) Gross smelter return, less treatment and royalty to owner of property.