MR-194-04

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PROGRESS OF LODE MINING

IN INTERIOR ALASKA

1930

By

Earl R. Pilgrim

MR 1944

MINING INVESTIGATIONS,
IN COOPERATION WITH U.S. INTERIOR
DEPARTMENT, GEOLOGICAL SURVEY

ASSISTANCE TO PROSPECTORS
MINE INSPECTION

TERRITORY OF ALASKA
MINING DEPARTMENT
JUNEAU, ALASKA

Fairbanks,

Feb. 11, 1931.

NOTED
FEB 13 1931
B. D. STEWART

Mr. B. D. Stewart
Supervising Mining Engineer,
Juneau, Alaska.

Dear Mr. Stewart;

I am enclosing report on the Fairbanks district with a brief description of the Liberty Bell mine on Eva Creek in the Nenana district. I made the trip down there and have the material to fix up a more detailed report on it which I will send along as soon as I get some results on determinations by Paul Hopkins. I am sending this now as per your letter about having to have the material before the legislature March 1st.

The figures obtained from the local gold mines are perhaps fairly accurate. I have informed the operators that the individual figures on tonnages and production values would not be published but was desired only to obtain a total production for the district.

I would suggest that the department have printed forms sent to each operator early in the season so that he can keep better account of the items such as labor, and days of operation.

I have no information on other mining activites in the interior but understand there is some work going on near McGrath and will try to find out.

Very Sincerely Yours,

Earl R. Pilgrim

PROGRESS OF LODE MINING IN INTERIOR ALASKA

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By

Earl R. Pilgrim

Progress of Lode Mining in Interior Alaska 1930.

Lode mining in the Interior during 1930 had one of the best seasons in a number of years in spite of the fact that several mines which operated in 1929 were idle during all or the greater part of the year. There were no new discoveries of promise made during the year. The close of the year was marked by a resumption of work on one of the regular gold producers which was idle during most of 1929 and 1930 because of litigation; by the reentrance into the ranks of the producers by the famous Free Gold mine, greatest producer of the Fairbanks district; by the resumption of work on the Liberty Bell mine in the Nenana district Totatlanika Region and the Tolovana and Newsboy mines in the Fairbanks district. Interest also was shown in an effort to open up one of the tungsten mines, non-operative since 1917. In a period marked by general depression and idleness, it was cheering, that practically all quartz miners in the Interior worked steadily through both the summer and winter. Present activities forecast the most successful year for the gold lode mines since 1915. The proposed increase of freight rates on the Alaska Railroad between Seward and Fairbanks will undoubtedly have a dampening effect on the mineral investigations being made in the Interior by several groups seeking investments.

General Summary of Operations.

Fairbanks District

	1929	1930
Number of mines operated	10	9
Number of mills operated	9	7
Tons of ore milled	6,181	5,033
Production	$83,500	$124,000
Number of men employed underground	41	32
Number of men employed in mills	10	9
Total employed by lode mines	58	48

Improvements in Power.

The principal improvement obtained during 1930 was the change by the Mohawk Mining Company from steam to deisel power. In the

early years of lode mining in the Fairbanks district, wood was used for fuel in all plants. Later as the available birch and spruce became scarce and more costly, coal was used. Coal delivered at the nearby mines in the Fairbanks district, costs from $ 6.00 to $ 12.00 per ton. Fuel consumption, of the lignite coal mined in the Nenana Field, in the small power plants amounts to approximately .01 tons or from 6 cents to 12 cents per horsepower-hour. Deisel oil delivered at the mines costs from 20 cents to 25 cents per gallon. Fuel consumption of the deisel engine for these small plants equals approximately .05 gallons or from 1 cent to 1½ cents per horsepower-hour. Other plants are contemplating the change from steam to deisel power during the present year.

Mine operations.

K49-13 The Cleary Hill Alaska Mines Company operating the Free Gold vein, worked continuously during 1930, again taking rank as the foremost producer of the district. Most of the ore milled during the year was obtained from above the Penrose tunnel on the shoot found in 1929. This mine has a past production of close to $ 1,000,000. The company is operating a 5-stamp mill and a 9x8 Ingersol-Rand compressor, driven by steam power.

K49-26 & 49-269 The Wyoming mine was idle throughout the year of 1930. This mine is situated on Bedrock Creek south of the Free Gold mine. It is opened by an upper tunnel ~~in~~ 165 feet in length and a lower tunnel ~~over~~ 100 feet lower which is about and at an elevation of 1,220, over 1,000 feet in length. The vein strikes N. 65° E. and dips 30° to 60° SE. Most of the vein has been stoped above this lower tunnel. It is now planned to drive a ~~lower~~ tunnel on a parallel vein 150 feet north of the present and upon which little work has been done. A crosscut can then be driven to reach the Wyoming vein at increased depth. The plant consists of a 7 x 10 Blake-type crusher, a 4-foot ~~director~~ Herman ball mill and amalgamation plates. The mill is driven by a 10-Hp. gasoline engine. A 120-cubic foot Gardner-Denver air compressor is driven by a 4-cylinder automobile engine.

which is situated

KX49-87 The Tolovana mine, near the mouth of Willow Creek was operated during 1930, under lease by R. E. Parenteau and C. W. Nelson. This property has been idle for a number of years except for a few spasmodic attempts to operate it. The lessees have located the extension of the vein on the west side of Willow Creek and had developed it by a tunnel 160 feet in length. The vein here strikes from N. 65° E. to N. 30° E. and dips from 30° to 60° SE. About 50 tons of ore that was milled from this tunnel in 1930 showed good values. The tunnel, which is at an elevation of 1,300 feet, gives little depth below the ridge between Willow and Cleary creeks. The ground appears to be considerably shattered and faulted, perhaps due to the shallow depth. The vein shows from 1 to 12 inches in width with an average of 7 inches of banded white quartz, which is considerably crushed in places. The plant is equipped with a 2-stamp Nisson mill steam-driven.

KX49-122 The Newsboy mine, which has been idle since 1913 due to inability to find the faulted extension of the vein, was optioned to a group known as the Newsboy Development Company, and work was started late in the year 1930 to reopen the old workings. This vein, which was one of the early producers of the district, is located on the saddle between the heads of Cleary and Little Eldorado creeks. The property consists of the Newsboy, Lucky Lad, Red Flag, and Wise Mike claims. The vein strikes N. 40° E. and dips 73° NW., and is opened by a shaft over 300 feet deep following the vein. The vein has been stoped for about 100 feet northeast of the shaft above the 215-foot level, and for about the same distance southwest of the shaft. Levels are turned off at the 60, 115, 165, 215, and 315-foot horizons. The vein where stoped ranged from 2 feet to 14 feet in width, with an average width of about 5 feet. A complicated system of faults has cut off the vein on both ends. The faults strike northeast and dip to the northwest. The property has a 5-stamp Joshua Hendy mill steam-driven, located about 4,000 feet north of the shaft and 600 feet lower in elevation.

KX49-145 The Soo claim formerly a part of the Spalding mine and later described as the Heath and Kerns mine was worked in 1930 by Heath and

Kerns during the early part of the year and by C. M. Hawkins during the latter part of the year. Mining was carried on, on the Heath and Kerns vein in the stope above the 110 feet level east of the shaft and also from the shaft close to the surface. Some ore was mined from the Alpha claim southeast of the Soo claim. Wackwitz Brothers on a lease took out a few tons of good ore from the Heath and Kerns vein at a point above the 500 feet tunnel close to the surface. George Pittoff was preparing to operate a sub lease on the Wild Rose vein during 1931.

KX58-37 Borovich and Stevens operated during the year on the property known as the Eva Quartz mine between Ready Bullion and Ester Creeks. This property is developing into a large low grade mine showing widths of over 40 feet of low grade ore in a shear zone of crushed shhist. Sampling of some of the 1930 developments showed the following; 56 feet feet of crosscut on No. 2 vein at No. 6 raise averaged $ 2.50 per ton, 46 feet of crosscut on No. 3 vein from Raise No. 4 averaged $ 5.82 per ton.

KX58-6 The Eva Creek group was worked in a small way by Sam Stay producing over 200 tons of ore which was milled in the mill of the Eva Quartz Company on Ester Creek. This vein is a persistant regular fissure striking N. 15° W. and dipping steeply to the west. The vein is cut by a system of step faults striking N. 30° E., each of which has moved the north segment of the vein a few feet to the west. The vein ranges from a few inches to over 2 feet in width.

KX58-202 William McConn and James McCann lessees on the Wandering Jew claim ajoining the First Chance vein at the head of St Patricks Creek discovered a vein which is probably the southwest extension of the First Chance vein. A shaft 50 feet in depth was sunk with drifts 25 feet each way from a point 30 feet in depth. Over 60 tons of ore was mined from above these drifts during 1930. The vein strikes N. 45° E. and dips 60° NW. The vein ranges from a few inches to over 2 feet in width of white crystalline quartz containing considerable needle crystals of stibnite with the characteristic greenish stain of the quartz ores of Ester Dome.

KT58-69 The Mohawk Mining Company operated throughout about 10 months of the year with the mill in operation somewhat less, on a scale consistant with past operations. This property, the second largest producer of the district has shown a fairly regular production for a number of years. Most of the ore mined during the past year was obtained from above the main tunnel on the Mohawk No. 1 vein.

A 25 Hp. Fairbanks-Morse deisel engine was installed in the mill during the summer which effects a considerable saving in fuel, water consumption and in the efficiency of mill operation.

KT58-69 A lease was let to Alfred Hightower on the Bondholder claim of the Mohawk group. The Bondholder vein is a strong vein said to carry a considerable width of medium grade ore. It has been developed by several shafts and a long tunnel, all of which are now caved.

KT58-35 The Irishman group was worked in a small way during the year by Hugh Mathieson and O. M. Grant. 186 tons of ore produced, was milled in the Mohawk Mining Company's mill. This property is the lowest in the district in elevation. The vein ranges from a few inches to 3 feet with an average of 18 inches in width. It is developed from a shaft 180 feet deep.

KT58-145 The Sanford group was worked during the year. Some ore was mined but not milled.

KT49-96 The Hiyu group was idle during the greater part of the year. It is now under lease to Henry Feldman. A new Gibson balanced rod mill was being installed at the end of the year.at the mouth of the main tunnel. The mill will be driven by a small gasoline engine.

KT58-4
KT56-159

Sheelite Tungsten Claim

Work was started late in 1930 to reopen the tungsten lode on the Sheelite claim, formerly the property of the Alaska Tungsten Mines Company. The Sheelite claim is located on the divide between the heads of Gilmore Creek and Yellow Pup. A tunnel is to be driven to connect with the bottom of the 190-foot shaft. During the war period about 1,000 tons of ore was mined from this property and treated in the mill which is situated on Yellow Pup. It is planned to increase the mill capacity

to 60 tons per day the installation of by additional jigs and concentrating tables and 2 sets of rolls. ~~to 60 tons per day.~~

The vein has been previously described as ranging from 2 to 12 feet in thickness, striking N. 70° E. parallel to the schistocity of the country rock. The shaft following the vein dips at an angle of from 40° to 18°.

Nenana District.

K-58-53 The Liberty Bell mine on Eva Creek, which is a tributary of California Creek ~~and the~~ one of the branches of the Totatlanika River, was taken over under lease by Algot Norberg, Justice Johnson, Oscar F. Erickson, and Bror Johnson. The deposit is a gold, arsenopyrite, quartz, bismuthinite mineralization in flat bedded schists. The mineralization in which the principal development has been done is in a clayey schist which ranges in dip from 0° to 30°. The highest gold values lie along the top layers close to a harder compact quartzitic variety which forms a roof or hanging wall of the deposit. The vertical range of this mineralization is not known but it is reasonable to expect other ore bodies to occur in other horizons in the locality. The gold values are partly free, but a considerable proportion is enclosed with the [illegible] sulphides. Development work consists of a tunnel 260 feet in length just above the creek level. This tunnel is driven in a direction of S. 5° W. with a drift to the east for 135 feet and one to the west for 139 feet. Several hundred tons of milling ore recovered from the tunnel, drifts and 3 raises is piled at the portal of the tunnel. ~~Considerable~~ Extensive previous development workings have caved and are inaccessable.

The property is 11 miles from mile 371 on the Alaska Railroad, with which it is connected ~~with the railroad~~ by a good highway ~~constructed several years ago by the Territory~~. ~~It is planned to~~ The construct in 1930 a 50-ton cyanide or flotation mill during the coming year is planned by the lessees.

Very ~~Respectfully~~,

Earl R. Pilgrim

Progress of Lode Mining in Interior Alaska, 1931.

The year was notable for a marked increase in production of gold from the lodes of the Interior. All mines operating in 1930 operated in 1931 and in addition considerable work was done in re-opening a number of older mines which had been idle for one or more years and some stimulus was given to new prospecting. Two new properties came into production during the year upon the completion of milling plants; also two new mills were placed upon older properties of the Fairbanks Precinct. The Nabesna Mines Corporation brought their property to the production stage with the completion of their concentrating plant during the summer at White Mountain, Nabesna River Basin. The Eva Creek Mining Company constructed a grinding and flotation plant during the latter months of the year which went into production early in 1932. New discoveries are reported in the Nabesna, and Fairbanks precincts.

Fairbanks had the greatest lode gold production since 1915 and 1932 should equal if not exceed the production of 1931. A number of the mines show a reduction in operating costs effected through lower prices of foods and certain other supplies; and the installation of cheaper power, which in spite of the increased freight rates of the Alaska Railroad, show a reduction from prices of previous years. Certain items such as explosives are considerably higher than they have been since the early days of the region.

Three of the older mines of the Fairbanks Precinct adopted deisel power for their plants. The saving in power costs can be figured as $1.00 per ton less, for milling costs , making it possible to mine ores carrying that much less per ton.

For the first time in a number of years quartz mining labor is plentiful. A larger number are employed in the region than in a number of years but a large number have moved in from mining districts outside the Territory who will undoubtedly become permanent residents of the Interior.

General Summary of Operations.

Fairbanks Precinct.

	1929	1930	1931.
Number of Mines Operated	10	9	13
Number of Mills Operated	9	7	7
Tons of Ore Milled	6,181-	5,033	
Production	$83,500	$124,000	
Number of Men Underground	41	32	43
Number of Men Employed in Mills	10	9	13
Number of Men Employed Surface	7	7	11
Total Number Employed	58	48	67

The above does not include about 6 or 8 individual prospectors developing veins in the district.

Mines.

K+49-13 The Cleary Hills Alaska Mines Company operating the Free Gold vein on Bedrock Creek operated the mine continuously during 1931, furnishing steady work for a number of skilled workers throughout the year. This property again took first rank of gold producers for Fairbanks and became fourth largest producer of the gold lode mines of the Territory.

New developments have located the vein on the Main Tunnel level which gives over 200 feet of depth now available in the new workings. A 100 H.P. Washington S. Step deisel engine was installed early in the year which drives the mill and a 45 KW. 60 cycle 440 volt generator which furnishes power for the compressor, pumps, and lights. This plant is the most modern and complete small plant in the Fairbanks Precinct.

K+49-36 49-369 The Wyoming Mine, on Bedrock Creek about 1,200 feet south of the Free Gold vein, was idle throughout the year except for about 60 feet of tunnel driven at a level about 50 feet below the main tunnel to open up a parallel vein about 150 feet north of the Wyoming vein.

K+49-82 The Tolovana Mine was operated only in a small way during the year producing a few tons of ore most of which came from the extension

found on the west side of Willow Creek.

K44-132 Work was continued on the Newsboy Mine at the head of Cleary Creek by the Newsboy Development Corporation. Several hundred tons of mill ore was blocked out for mining. In October the mill, which had been reconditioned and a deisel engine installed for power, burned completely. Further prospecting work has been resumed in the mine and it is planned to rebuild the mill as soon as new developments justify. It is also planned to unwater the lower workings and continue developments from there.

The mine plant is equipped with a 122 cubic foot Gardner- Denver compressor diredt connected to a Buick motor, and a Lidgerwood air hoist with drum 24 inches by 30 inches hoisting a 12 cubic foot bucket with rope speed of 200 feet per minute.

K44-145 C. M. Hawkins continued leasing on the Soo claim on Dome Creek. The Soo claim is a part of the old Spalding Mine group. Late in the year the two stamp mill was replaced by a 5 stamp D. D. Demarest Co. mill of 1,000 pound stamps with a 9 inch by 8 inch Colorado Iron Works Blake type crusher. The mill is powered by two Fairbanks Morse Deisel engines, a 25 Horsepower which drives the mill and compressor and a 15 Horsepower which drives a small direct current generator to operate a two stage centrifugal pump for mill water. The pump is set at the 110 foot Level of the shaft on the Heath and Kerns vein. All ore mined during the year was from above this level taken through a new shaft sunk to a depth of 85 feet at a point 110 feet east of the main shaft.

K44-73 A lease was acquired in the fall of 1931 by Harry Wood on a group of claims on Dome Creek consisting of the Franklin, Mary, Alpha, Omega, and Soo claims. A tunnel was started from a point near the southeast corner of the Franklin claim in a direction of N. 6° W. cross-cutting the general vein system and expecting to reach the Haath and Kerns, Wild Rose, and Soo veins at a distance of over 1,200 feet. It is also expected that several other veins will be crossed in the course

~~in the course~~ of this tunnel which starts at an elevation of about 1,228 feet and which will have a vertical depth of about 300 feet below the collar of the Heath and Kerns shaft on the Soo claim. The tunnel was in over 300 feet at the close of the year.

K49-96 ff Henry Feldman was leasing on the Hi Yu Mine on Moose Creek tributary of Fairbanks Creek. A few tons were milled in the new Gibson Balanced Rod mill which was installed late in 1930 at the mouth of the main tunnel.

K49-22ff Herbert Falkner and James Muir were prospecting the North Star No. 1 ~~and No.~~ 2 veins on the North Star claim situated on the Wwest side of Skoogy Gulch. The North Star No. 1 tunnel starting at an elevation of about 1,546 feet is driven in a direction of S. N. 87° W. for 155 feet, which strikes a 2 inch vein at a distance of a few feet in and follows it for the remainderof its length. The Quartz is white crystalline containing many drusy caveties and small amounts of sulphides. The vein dips about 83°S. The wall rock is blocky quartzite for most of the distance in the tunnel except for the first 6 feet which is a mass of non porphyritic granite, faulted into its present position. The tunnel was driven to open up a vein exposed in a shallow shaft higher up the slope and over 200 feet west, said to have a width of about 10 inches and to carry good v. values. The vein in the tunnel shows some goldvalues.

A second tunnel driven from a point 125 feet south of the North Star vein No. 1 tunnel and slightly higher in elevation follows a vein for about 30 feet and crosses it diagonally. This vein is about 2 feet in width of crushed brown quartz said to assay about $5.00 per ton. This vein strikes about S. 55° W. and dips 43° S. A second vein is encountered 30 feet in which strikes N. 83° W. and stands vertical. This vein is filled with white crystalline quartz somewhat crushed, banded and containing considerable stibnite and arsenopyrite. The quartz is said to assay about $ 50.00 per ton. A small tongue of granite shows in the face of the tunnel but is not cut by the vein. The tunnel is in over 60 feet. Several tons of

ore has been mined and sacked from this vein.

Kt 49-232 Qt G. O. Warren was developing a group of 4 claims consisting of the Annie, Mary, Elsie, and Key claims on the ridge between and just above the junction of Tamarack and Chatham creeks. A shaft sunk on the Elsie claim from an elevation of 1,417 feet to a depth of 35 feet shows a vein about 12 inches thick of dark sheared schist and quartz. The vein strikes N. 75° W. and dips 80° S. A few tons of ore recovered from this shaft was sacked for hauling to ~~to~~ milling. About 95 feet east from this shaft and on the Mary claim another shaft has been sunk to a depth of 25 feet. This shaft was inaccessable for examination but is said to show the same sheared zone with bunches of quartz containing considerable sulphides of galena, stibnite, and arsenopyrite, also fair values in gold.

A tunnel has been driven from a point below the first shaft and on the Elsie claim for over 60 feet which failed to locate a definite vein but shows much crushed brecciated material.

Kt 49-230 Qt The Rex claim is situated on the west side of Chatham Creek about 2,000 feet above its mouth. This claim has been held for over 20 years by W. S. Reese and associates. A tunnel has been driven into the ridge in a general southerly direction crosscutting the trend of the veins of that section. This tunnel starting at an elevation about 100 feet above the creek bed encounters a vein 72 feet in, which strikes northeasterly and is said to average about 3 feet in width. Several tons of ore milled from this vein a number of years ago is said to have milled about $8.50 per ton. The vein was not open for examination when visited by the writer. At a distance of 258 feet in the tunnel a fault is encountered striking S. 60° W. A branch of the tunnel follows the fault for over 45 feet and at a point a few feet from the face a quartz stringer shows on the west wall striking almost west and dipping 45° S. This stringer is about 3 inches thick of crystalline quartz which pans some free gold. The other branch of the tunnel is driven south for almost 100 feet through a blocky schist.

About 40 feet in from the two branches of the tunnel a stringer shows crossing with a strike of N. 75° E. and dipping 25° S. This stringer is about 3 inches thick of white crystalline quartz which also pans some free gold.

K58-31 Borovich and Stevens operating the Eva Quartz Mine sunk a large number of shafts and pits with drifts from them, searching for a vein from which 2½ tons of float was found. This float was very high grade and several veins were discovered in the search but were not believed to be the vein throwing the rich float. One shaft visited by the writer sunk from an elevation of about 1,175 feet and about 300 feet east from the portal of the Eva Quartz Company's lower tunnel, and 40 feet deep, showed a vein from 16 to 24 inches in width, striking N. 2° W. and dipping 75° E. of brown stained quartz containing much schist breccia. The schist wallrock stands almost vertical. It is a decomposed, altered porphyry.

Roy Caldart and Andy Markich were leasing during the year on the Eva Creek Group, producing over 300 tons of ore which was custom milled. Most of this ore was recovered from the tunnel which was extended through the Little Eva claim and into the Blue Bird claim. A 40 foot crosscut tunnel was driven east in an endeavor to locate the southern extension of the vein which was found to be faulted just south of the main tunnel portal. A shaft was sunk 45 feet and a crosscut driven 20 feet from the bottom. Another crosscut was driven 60 feet from a point in the main tunnel and two winzes sunk 30 feet and 40 feet in depth were sunk from the main tunnel.

K58-8 Sam Stay milled a few tons from the Little Eva Extension claim, taken from the old shaft at the 40 foot level. He also drove a few feet on the vein from the 80 foot shaft on the Little Eva claim producing a few tons of ore which were not milled.

K58-26 John Y. Bigelow mined about 85 tons of ore from the Blue Bird claim which was custom milled. This work was done from the

70 foot shaft near the south end of the claim. Bigelow was also working on the Iving claim drifting from the bottom of a 55 foot shaft into a granite porphyry dike which is said to carry values in gold. The Iving claim is situated just west of the Ryan No. 2 claim. A tunnel was also driven 268 feet in a northerly direction of the Marion claim in a search for a vein from which a large quartz boulder of float weighing over a ton was found. Two crosscuts from this tunnel, 18 feet and 30 feet have been driven. The Marion claim lies east of the McDonald claim.

#Kx58-208 The Clipper claim part of the St Paul group lies across Eva Creek about 2 miles above ite mouth. At an elevation of 1,118 feet a tunnel was driven from a point close to the creek into the hill in a direction of S. 85° E. for about 245 feet crosscutting the trend of the veins. At a distance of about 50 feet in, a vein striking N. 4° E. and dipping 80° E. has been followed with a drift which was in 85 feet January 13, 1932. The vein shows from 4 to 12 inches wide with an average of about 8 inches of grey crystalline quartz containing slight sulphides. The vein is said to carry fair values.

#Kx58-155 A new vein was discovered in the fall of 1931 on the Kilarney claim of the St Paul Group. This discovery is about 500 feet from the north end line of the claim which is located on the ridge between Eva Creek and St Patrick Creek. A shaft sunk on the vein from an elevation of about 1,432 feet was down 40 feet on January 15, 1932 and about 15 tons of ore on the dump. The vein shows about 12 inches of vitreous, greenish stained quartz, containing some sulphides. The vein has a strike of N. 5° E. and dip of 75° W. The walls are light colored micaceous schist dipping gently to the east.

#Kx58-164 Grant Augustine and E. F. Wann were working late in the year on the First Chance claim at the head of St Patrick creek, reopening the upper tunnel.

#Kx58-69 The Mohawk Mining Company operated throughout the year. Ore

was mined from the Mohawk No. 1 vein above the main tunnel level and from the Bondholder vein. Leasers were working during the winter on both veins. A new shaft was sunk on the Bondholder vein from a point several hundred feet south of the old shafts. This shaft was down about 40 feet January 13, 1932. Leasers were planning on sinking the shaft deeper and opening up a stope from there. This new shaft starts at an elevation of about 1,315 feet. The vein has a strike here of N. 28° E. and a dip of 40° W. with a width of from 6 to 10 feet of crushed quartz and country rock.

KY 58-145 Jess Sanford operated alone throughout the year, producing some ore which was not milled.

KY 58-350. M. Grant was operating during a part of the year on the Irishman Group. About 100 tons of ore was mined and custom milled which returned about $ 15.00 per ton. This ore was mined from above the 180 foot level which is slightly above water level. The 180 foot level is about 86 feet into bedrock on the vein with an overburden of about 94 feet. This level was extended south from the shaft to a total length of about 250 feet. It is planned to sink a new shaft about 500 feet south of the present working shaft.

KY 58-244 W. P. Borden and Ed Quinn were working on the American claim situated on the divide between the heads of Pearl Creek tributary of Fish Creek and Victoria Creek tributary of Smallwood Creek. A shaft sunk a number of years ago from an elevation of 1,733 feet said to be 70 feet in depth was on a vein said to be from 18 inches to over 7 feet in width. The vein strikes about N. 56° E. and dips 62° NW.

About 400 feet Northeast from this shaft and at an elevation of 1,634 feet a tunnel was driven in a general southwest direction in an endeavor to pick up a vein whose float was found in considerable quantities along the course of the tunnel. The tunnel however failed to locate the vein which is probably farther west. This tunnel was in 160 feet June 2, 1932, and about 75 tons of ore piled on the dump. Either the vein up hill which has the shaft on it is a different vein from the one whose float is found in the tunnel or it has been faulted some distance. The ores from this vein shows much sheelite mixed with

quartz. This property is within the sheelite belt of the district and only about 1 mile from the Sheelite and Tungston claims at the head of Yellow Pup.

Respectfully Submitted, June, 5, 1932.
Fairbanks, Alaska.

Earl R. Pilgrim

Associate Territorial Mining Engineer,.

Progress Of Lode Mining In Interior Alaska.

1932.

Lode mining was carried on in the Interior of Alaska in 1932 at about the same rate as in 1931. All mines which operated in 1931 were working in 1932; Inaddition there was some activity in reopening mines which had been closed down for some time and work was done on several new veins. One mill was dismantled and moved to a new location in the Fairbanks precinct. The Eva Creek Mining Company operated the Liberty Bell mine and concentrator throughout the season shipping gold flotation concentrates to the Tacoma Smelter. The Nabesna Mining Corporation operated throughout the swason which was short but highly successful. New discoveries are reported in the Nabesna,and Fairbanks precincts.

Gold production of the Fairbanks precinct was about the same as during 1931 although a production resulted from a larger number of operators. Also a substantial greater number of men were employed in the precinct. The cost of mining is still affected by the high rates for freight on the government owned railroad on coal, oils, gasoline, explosives, lumber and foodstuffs. An encouraging announcement was received late in the year authorizing the management to lower freight and passenger rates,when deemed advisable, to the older rates existing prior to 1931. It has been found possible under the present rates to ship explosives and other commodities by truck over the Richardson Highway in summer at a considerable saving.

Labor was plentiful for mining during the year. Wages remained at the customary level for the camp. Lode miners were paid $ 6.00 and board per 8 hour shift. This is considerably higher than along the coast. Most of the mines operate seasonally and therefore cannot insure steady work except for possibly one third of the total number employed. A number of men employed during the summer season in connection with placer mining are found in the winter engaged in prospecting or developing Quartz. This creates an overlapping in the tabulation of labor data for the Fairbanks precinct.

General Summary Of Operations.

Fairbanks Precinct.

	1929	1930	1931	1932
Number of Mines Operated	10	9	13	17
Number of Mills Operated	9	7	7	9
Tons of Ore Milled	6,181	5,033	5,948	____
Production Value.	$ 83,500	124,000	144,900	____
Number of Men Employed Underground	41	32	43	70
Number Of Men Employed in Mills	10	9	13	13
Number Employed Surface	7	7	11	18
Total Employed	58	48	67	101

The above does not include about 6 or 8 individual prospectors developing veins in the district or labor doing annual assessment work on idle property.

Mines.

KH4-17 The Chatham Mine located near the head of Chatham Creek and which has long been idle was leased late in the year to Herb Miller, and associates. Work was started on a crosscut tunnel which it is believed will strike the lead at a distance of 550 feet in and give a depth of about 120 feet below the main tunnel which is also a crosscut tunnel. The vein strikes about N. 60° W and dips about 70° S. It is reported as having an average width of about 12 inches. The property has had a considerable past production from ore which was hauled to the mill consisting of 2 units of 2 Joshua Hendy 1,000 pound stamps, situated about a mile from the mine and in Chatham Creek.

A. E. Lathrop and associates took a lease and option late in the year upon a group of claims from Lew Colbert and George Warmbold. These claims are on the Tamarack Creek tributary of Chatham Creek and lie along the south slope of Chatham Creek. A tunnel started in October was in 550 feet on Feb. 8, 1933. This tunnel was started at an elevation of 1,295 feet and is being driven in a direction of N. 37° E. to crosscut 3 veins which outcrop on the surface. At 380 feet in a vein is crossed which strikes northwest or at about 900 from the tunnel and dips 28° S. This vein is repe

prted as dipping 45° on the surface. It shows in the tunnel about 5 inches of crumbly ground quartz which is said to pan considerable gold. The quartz is brownstained showing no sulphides.

A small stringer 1inch in thiskness shows cutting across the tunnel at a point 175 feet in, which is said to pan a little gold. This stringer strikes N. 48°W. and dips 53° S. A fissure shows cutting the tunnel at a point 240 feet in which is filled with gouge and brecciated schist. This slip is reported as not panning. It is believed that the tunnel is considerably past the point where the first of the 3 veins should be encountered at that depth so it is presumed that they either have flattened out greatly or are cut off by a fault.

A small Gardner Denver 119 cubic foot compressor diredt connected to a Buick motor furnishes air for the tunnel driving. An Ingersol Rand 12" x 10" type E. R. compressor has been moved onto the ground which will be driven by a 75 Horsepower Fairbanks Morse 2 cycle Oil engine.

K+49-26 49-269 The Cleary Hills AlaskaMines Company operated continuously during the year. The mill was operated about 7 months and a small crew was kept developing during the remainder of the year. Recent operations have brought the present mining to below the main tunnel. Some work was done during the year on the 70 foot level which is 70 feet below the main tunnel or about 390 feet below the highest point on the ridge between Bedrock and Chatham creeks where the vein crosses. Plans are considered to drive a still lower tunnel starting from a point downstream which will give a possible 70 feet additional depth. Unless this lower tunnel is driven it will be necessary to pump a large aflowt of water which was encountered when the winze was sunk in 1913 to a depth of 140 feet below the main tunnel and levels run out on the 70 and 140 foot horizons. A later shaft sunk in the footwall also showed extensive water.

K49-231 Charles Holke started work late in the year on a group of claims extending across Chatham Creek and including property originally covered by the old Pioneer Mine property.

It is said that early operations on this vein showed it to be in a block of ground probably broken off from its original position and turned over to a flat lying position. It is planned by the present leasers to reopen and develop this property which at one time had a 5 stamp mill and is said to have produced several thousand dollars in bullion.

K 49-26 The Wyoming mine was idle throughout the year. It is reported that attempts are being made to reorganize and finance this property.

K 49-87 The Tolovana mine was operated in a small way during the year. Plans are now underway to ship a few tons of high grade ore in which the greater portion of the values are said to be locked up in the sulphides, which consist of arsenopyrite, stibnite, pyrite, galena and tetrahedrite.

K 49-127 Development work continued throughout the greater part of the year on the Newsboy Mine at the head of Cleary Creek, by the Newsboy Development Corporation. A new 180 cubic foot Sullivan compressor driven by a 25 horsepower deisel engine has been installed at the mine which furnishes air for drilling, hoisting and pumping water. It is planned to install a new electric driven triplex pump in the near future. During the year 150 tons of ore was hauled 7 miles by truck to the Tom Gilmore mill on Fairbanks Creek and milled This returned slightly less than $ 20.00 per ton. In February 1933 the 215 foot level was being reopened and it was planned to carry on exploration work on the level north of the faulted region which has cut off the vein in that direction. Leasors were sinking a shaft on the Robinson vein on the Newsboy claim. The shaft was down about 30 feet and it was planned to sink to the 50 foot level and then drift. A small surface cut on this vein is reported as having produced 35 tons of ore a number of years ago which milled up about $ 35.00 per ton. The vein shows in the above shaft about 800 feet northeast of the Newsboy shaft and is striking about N. 80° E. and dipping 70° S. The Newsboy vein strikes N. 42° E. and dips 73° W. The Newsboy Extension vein which is exposed in a shaft 300 feet northeast of the

the Newsboy shaft strikes N. 15° E. A continuation of the Robinson vein with its apparant strike would cause it to intersect the Newsboy and Newsboy Extension veins at points approximately 200 feet north of the Newsboy shaft. No evidence of this shows in the underground workings and it is probable that the Robinson vein will be found bending until it is parallel to the Newsboy vein. It has probably been affected by some relationship to a soft basic intrusive rock which has been found outcropping at points northeast of the surface cut and towards which the vein points.

The Robinson vein has a width of from a few inches to over 2 feet with an average of about 10 inches of white crystalline quartz containing considerable arsenic and antimony sulphides. There is about ½ inch of gouge along both walls.

KX49-145 The C. M. Hawkins lease was operated until September 1932 on the Soo claim on Dome Creek. When work ceased the mill was dismantled and moved to the Andy Markich property on Ready Bullion Creek. All ore produced from the Soo claim during the year was obtained from the block of ground measured from 100 feet south of the Heath and Kerns shaft to 200 feet north of it and from above the 110 foot level. All ore was obtained from the Heath and Kerns vein.

KX49-73 The Harry Wood lease on the Soo claim and adjoining claims was continued by driving the tunnel, started during the year previously, to a depth of 850 feet, where a vein believed to be the Heath and Kerns vein was encountered. A drift was driven east on this vein for a distance of 50 feet and 2 short raises run up. The vein in these raises shows a width of from 10 to 16 inches of brown oxidized quartz which is said to carry good values. It is planned to install a 2 stamp Nisson, 1,350 pound stamp, mill near the portal of the tunnel early in the Spring .

KX49-96 Late in the year a lease and option was taken on the Hi Yu mine, better known as the Crites and Feldman mine, by the Gustaffson Brothers (of the Cleary Hills Alaska Mines Company) Joe Crossen and Ed Young. During the winter of 1932-1933 2 men were employed with development work preparing to drive a raise from the main tunn-

el to the upper tunnel to prospect the ground between. Over $ 100,000.00 was produced from a shoot of ore above this upper tunnel and it is believed the ore should be found raking down below the tunnel and the raise should interseet it. There is a vertical distance of 200 feet between these tunnels and 250 feet between the main tunnel and mill tunnel. The upper tunnel is in about 1,200 feet while the main tunnel is in 1,525 feet.

KX49-103 Leasers commenced work on the Henry Ford group or Mc Carty mine at the head of Fairbanks Creek. They were preparing to sink the main shaft of the Mc Carty vein, which is at present 80 feet, to a depth of 150 feet, and extend drifts from this new horizon.

KX49-136 William Hightower and associates started work late in the year on the David claim of the Rainbow mine. They had started to sink a shaft at the portal of the Rainbow tunnel on Feb. 1, 1933 to prospect the vein ~~at a point~~ below the tunnel level. The main shaft extends to a depth of 40 feet below the tunnel but is at present inacessible because of ice filling the tunnel from seepage water. The permanent water level is about 10 feet below the tunnel floow.

KX58-166 C. M. Hawkins leased the Andy Markich group consisting of the Fairbanks Lode No. 1 and No. 2 claims in September. This property is situated about 1½ miles above the mouth of Ready Bullion Creek.(This property was described in the Report of 1930 as the Radovich group.) A small amount of development work was done by driving the lower tunnel about 75 feet ahead and 2 raises extended into the vein. The mill moved from Dome Creek was set up and about 750 tons of ore put through late in the year, which returned low values. Most of this ore was obtained from both sides of the winze below the upper tunnel. The upper tunnel is about 130 feet higher in elevation and about 470 feet south of the lower tunnel. The lower tunnel starts at an elevation of 1,180 feet and is in about 545 feet. Above the lower tunnel an

intermediate drift 75 feet in length extending south from a point below the winze, was driven and most ore milled during the season was - obtained from above. Water was encountered in this drift which coupled with the soft gouge and brecciated vein filling, caused by strike faulting, gave much trouble on account of a swelling hanging wall. It is planned in future mining to keep the drift well into the foot wall.

The mill consists of a battery of 5 D. D. Demarest Co. 1,000 pound stamps, with amalgamation plates 5 feet by 6 feet and a battery of 2 Joshua Hendy stamps with plates 2½ feet by 6 feet both driven by a 25 horsepower Fairbanks Morse deisel engine. A 15 horsepower deisel engine of the same make is belted to a direct current generator which furnishes power for lights and pumping water for the mill. The mine is equipped with a 110 cubic foot Rix portable type compressor driven by a Fordson tractor. Buildings consist of a log cabin residence, frame bunk house, mess house and mill.

K-58-37 Borovich and Stevens at the Eva Quartz Mine continued the surface prospecting of the mineralized area south of the underground workings and along the strike of the mineralization. About 18 surface shafts were sunk during the year with about 150 feet of drifts and crosscuts from them. About 40 feet of raises were driven above the lower tunnel. When visited Feb. 4, 1933 a cross cut was being driven from a point 120 feet in the lower tunnel, east to connect with the [illegible] series of surface holes. This will connect or crosscut the mineralized area for a width of over 400 feet which from work to date shows values of from a few cents to over $ 30.00 per ton. About 60 tons of medium grade ore was milled from the property during the year and about 110 tons of custom ore was treated.

K-58-8 Roy Caldart and Andy Markich leasing the Little Eva group produced 56½ tons of ore which returned $ 34.00 per ton. This ore was custom milled. The ore was recovered from the south end of the Little Eva claim south of the Sam Stay tunnel.

K-58-26 John Y. Bigelow and H. T. Jeppeson leasing on the McDonald

claim of the McDonald group sunk a new shaft about 40 feet north of the old caved McDonald shaft on the Mc Donald vein. This shaft had reached a depth of 60 feet on the incline when visited Feb. 4, 1933. The vein shows striking N. 15° W. and dipping from 30° at the surface to 62° in the bottom of the shaft. The vein has a width of from 6 inches to over 2 feet of quartz laying in one or more bands with an inch or more gouge on the walls and also in the vein between the quartz bands. The vein filling includes a considerable amount of sulphides principally arsenopyrite. The quartz is dense dull fine grained varying in color from white to dark green from the oxidized arsenic minerals. The wall rock on both walls is a soft gray intrusive, probably granodiorite.

A lot of several tons of this ore when milled a few years ago was found to have over half of the gold values locked up in the sulphides incapable of being amalgamated. A lot of 54 tons mined during 1932 was milled in the Eva Quartz mill and returned only $ 11.00 per ton in free gold amalgamated. Another lot of 31½ tons of ore was shipped late in the year to the Tacoma Smelter. A return of $ 40.47 per ton was received although there is only slight profit shipping this grade of ore after freight, penalties on account of arsenic and antimony , and treatment charges are deducted.

The smelter analysis on this lot is here given:

Al2 03	1.3%	Antimony	.46%
Iron	8.9	Si 02	60.00
Arsenic	10.59	Ca O	trace.
Sulphur	1.2		

The freight on a shipment of ore from Fairbanks to the Tacoma Smelter is $ 12.00 per ton. Treatment charge for an ore valued at $ 40.00 is $ 6.50 per ton. The penalty is 25 cents per unit for contained arsenic and antimony.

#K58-208 John Mikely drove the north drift of the Clipper vein ahead about 25 feet as annual assessment work. He was starting a lower crosscut tunnel to strike the vein at a depth of 60 feet below the present crosscut tunnel.

W. D. Thomas and brother worked throughout the year on the vein found late in 1931 on the Kilarney claim of the St. Paul group The working shaft was sunk to a depth of 94 feet and a drift turned off both north and south. The north drift was driven about 60 feet to where a fault was encountered. This fault was not open for examination by the writer but it is probable that the vein will be found to the east as other faults in the vicinity throw that direction. The south drift was extended for a distance of about 165 feet. An intermediate drift was driven at a depth of about 30 feet, north to the fault.

About 180 tons of ore was mined and milled from the vein during the season and milled in the St. Paul mill.

Warren and Parks were working on the Parker vein in February 1933. This vein outcrops on the ridge between the heads of Sheep and Nugget creeks. The vein was discovered a number of years ago and was opened by means of a number of open cuts and a shaft 70 feet on the incline. The vein shows in the shaft as a small irregular lead from 1to 6 inches wide of white coarsely crystalline quartz containing small amounts of sulphides. The vein strikes N. 15° E. and dips about 55° W. A few tons of ore obtained from sinking the shaft and from surface pits was milled in a test mill in Fairbanks and milled up over $ 80.00 per ton. The present leasers are drifting both north and south on the lead from a depth of about 50 feet in the shaft.

#1458-145 Jess Sanford was sinking a new shaft on his property at the head of Little Dome Creek tributary of Sheep Creek preparatory to taking out ore.

#1458-35 The Mutchler Brothers with O. M. Grant were sinking a new shaft on the Irishman No. 1 claim 500 feet south of the main shaft. A lot of 75 tons of ore produced during the year was custom milled and returned about $15.00 per ton.

#1458-64 Leasors worked continuously during the year on the Mohawk Mining Company's property at the head of St Patrick Creek. Two men were working on the Bondholder vein and two men on the Little Mohawk

vein. The latter did not produce mill ore during the year. All ore from the Mohawk and Bondholder veins was milled in the company mill.

K+58-164 A lease was taken on the First Chance vein by E. F. Wann at the head of St Patric Creek. He also worked on this property the winter previously.

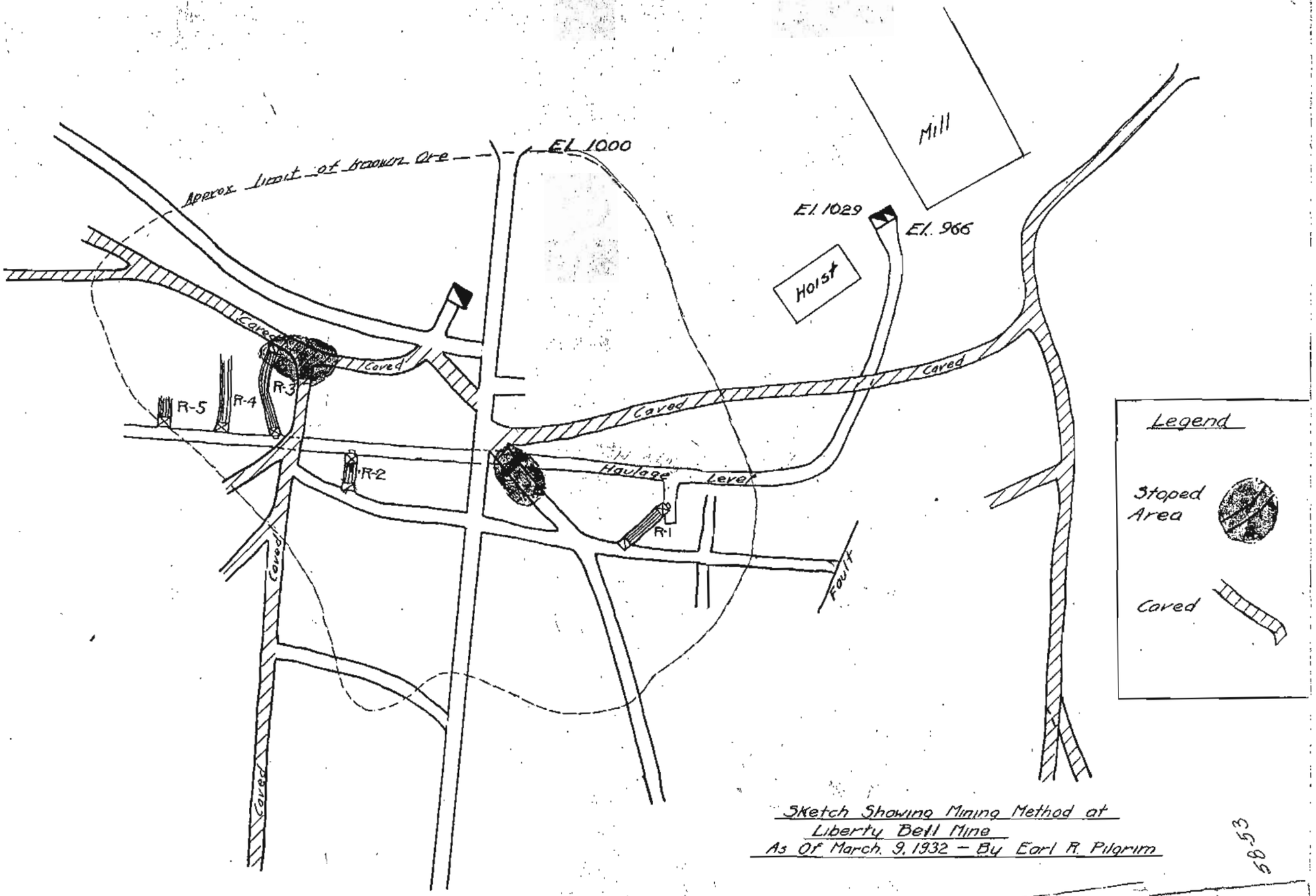
Respectfully Submitted,

Earl R. Pilgrim

Fairbanks, Alaska.
Feb. 13, 1933.

Associate Territorial Mining Engr.

TERRITORY OF ALASKA - MINING DEPARTMENT



Sketch Showing Mining Method at
Liberty Bell Mine
As Of March. 9, 1932 - By Earl R. Pilgrim

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