#### Mohawk Group

The Mohawk vein is located on the Mohawk Claim about 550 feet west of the Mill Tunnel vein. This vein strikes N 40° E and dips 70° SE, and varies from a few inches to 11 feet in width with an average of 3 1/2 feet. The quartz ranges from a hard vitreous variety to a soft, oxidized, crushed quartz. Generally the higher grade of ore carries some stibnite with small amounts of arsenopyrite and is characterized by a greenish-yellow antimony oxide coating. Mining operations are greatly hampered by the occurrence of a complicated series of faults, which offset the vein.

Development work on this vein includes an upper tunnel 560 feet in length, with two raises to the surface. A raise extending upward from a point 340 feet from the portal reaches the vein 60 feet above the tunnel floor. A normal fault dipping slightly to the northwest has moved the upper portion of the vein 50 feet to the northwest. This fault passes above the tunnel and therefore the vein does not show in the tunnel until a point about 440 feet from the portal is reached. The tunnel is driven 340 feet S 40° W; it then turns south for 50 feet and then westerly for 170 feet. About 3,000 tons of ore has been mined from above this level.

Mill tunnel No. 2, also driven on the Mohawk vein is 156 feet lower in elevation than the Upper Tunnel. This tunnel is about 1080 feet in length and has a branch to the southeast over 200 feet in length leading from a point 932 feet from the portal. At a point 140 feet from the portal, a normal fault is encountered which strikes east and dips to the north. This fault has moved the vein about 75 feet to the west. Twelve raises have been driven from this tunnel and from them stopes have been opened. In these raises and stopes a number of gently dipping faults have been encountered. These faults generally offset the vein only a short distance. In a raise driven from a point 1022 feet from the portal a reverse fault was encountered about 25 feet above the tunnel level. This fault, which strikes northeast and dips southeast, offsets the vein about 100 feet to the northwest. This raise has been carried up on the vein and connects with the Upper Tunnel.

A third tunnel 52 feet lower than Mill tunnel No. 2 has been driven for a distance of 550 feet. The vein is reached 300 feet from the portal and on it a stope has been carried

up to the tunnel above. A considerable quantity of water has been developed in this mine which drains out of the lower tunnel and which is utilized for winter milling.

Over 12,000 tons of ore has been mined from the Mohawk vein since 1922, and the mine is the second largest producer of gold in the Fairbanks District.

On the north end of the Liberty Extension Claim a fourth vein has been developed by two shafts, one 25 feet deep and one 15 feet deep. This is a strong vein that shows a width of 10 feet of brown fractured quartz. The vein strikes N 30° E and dips vertical. It is said to carry medium grade values where exposed. It is an extension of the South Bend Vein on the South Bend Claim.

The Bondholder vein on the Bondholder and Bondholder Extension Claims which is a part of this group, has been described by John A. Davis! No additional work has been done on this vein since 1922.

Report of Territorial Mine Inspector, 1922

The Mohawk Group is operated by the Mohawk Mining Company. A 7-foot Lane Chilean Mill using two amalgamation plates, 5 feet by 5 feet in area, was installed on the property in 1923, and is still in use. A 7-inch by 10-inch Dodge-type crusher feeds into a 50-ton ore bin. A 50-h.p. boiler with a 25-h.p. steam-engine furnishes power, A 7-inch by 6-inch, 92-cubic-foot Ingersol-Rand compressor furnishes air for drilling. Camp buildings consist of a blacksmith shop, garage, bunk house, cook house, and two residences.

#### First Chance Vein

The First Chance Vein on the First Chance claim is located at the head of St. Patrick Creek adjoining the Bondholder claim. The vein varies from a few inches in width to 3 feet, strikes N 45° E and has a dip of 60° NW. The vein filling is white crystalline quartz containing some stibnite and slight amounts of arsenopyrite. The high grade ore is characteristically stained with the greenish-yellow coating of antimony oxide.

This vein has been developed by a shaft 127 feet deep with drifts in both directions from the bottom. The north drift extends 110 feet and the south drift 60 feet from the shaft. Both drifts have encountered faults at their faces. The north fault has offset the vein a few feet to the east where it has been located on the surface and several shallow shafts

north of the main shaft a cross cut tunnel has been driven for a distance of 200 feet.

This tunnel intersected one vein of glassy quartz which carried little values and which is believed to be a separate vein. About 200 feet north of the main shaft is another tunnel about 200 feet in length, which intersected a vein of glassy quartz 100 feet from the portal. This vein carries only slight values at this point.

The First Chance vein has produced over 400 tons of ore which has returned over \$25,000. The claim is owned by Sam Stay, Paddy McLaughlin, J. C. Kinney and Cal Franklyn. South Bend Vein

On the South Bend claim which is north of and adjoins the Liberty Extension claim, a vein has been developed by 3 shafts. This vein is about 10 feet wide, and shows brown crushed quartz containing medium grade values. The vein strikes N 30° E and stands vertical. One shaft is about 30 feet deep. The other two are shallow. There are three claims in this group; the South Bend, Wahpuka and Little Nurse.

# Padovich Group

A group of claims which is owned by Dan Radovich and Andy Markich, is located on the ridge west of Ready Bullion Creek which heads on the south side of Ester Dome and is tributary to Ester Creek. These claims are about one mile above the mouth of Ready Bullion Creek. This group consists of the Silver Dollar, Lucky Boy, Homestake, Hard Rock, War Baby, Gold Eullion, and Baby Fraction claims.

A tunnel has been driven on a vein for a distance of slightly over 200 feet and 45 tons of ore has been mined above it. The surface slopes so gently that very little depth was obtained by this tunnel. Close to the mouth of the tunnel a winze has been sunk to a depth of 35 feet, and about 30 tons of ore has been mined from it. The vein strikes N 15° E and dips 66° SE. It varies from 2 feet to 4 feet in width. The vein filling is weathered quartz, much stained and fractured. It shows much strike movement, especially along the walls. This condition necessitates careful timbering, especially along the hanging wall. The quartz shows only a small amount of sulphide mineralization. About 75 tons of ore has been mined from this tunnel and winze. This one was milled in the Mohawk Mining Companys' mill and returned over \$35 per ton.

A second tunnel, designed to cross cut the vein about 125 feet lower in elevation, has been driven for 467 feet but apparently has not encountered the vein. The plant consists of a blacksmith shop and one cabin.

#### The McDonald Group

Along the ridge on the east side of Eva Creek and adjoining the Eva Creek Group are four claims belonging to John H. McDonald and associates. The Blue Bird and Blue Bird Extension claims lie side by side down hill from the McDonald and Combination claim, which lie end to end.

Near the south end of the Blue Bird Claim a vein has been developed by a shaft 70 feet deep. This vein strikes N 35° W and dips 63° NE. From this shaft the vein has been mined in a stope which extends for about 50 feet north of the shaft and a few feet south of it. The vein varies from a few inches to over 4 feet in width. The hanging wall is regular and solid and requires very little support in mining. The foot wall is softer and contains a number of stringers and branches from the vein. The vein is in c bse contact with the walls and show no evidence of strike movement.

In the stope 58 feet north of the shaft a fault has been encountered which cuts off the vein. This fault strikes N 30° E and dips 62° SE. No attempt has been made to pick up the vein beyond this fault. On the south side of the shaft the vein continues but has narrowed down to only a few inches in width and has not been followed.

The ore is greyish white quartz showing small amounts of sulphides. The quartz is considerably weathered and fractured and requires little blasting. The vein apparently extends into the Blue Bird Fraction claim and is probably the continuation of the Stay Vein on the Little Eva claim.

About 500 tons of ore has been mined from this shaft and custom-milled. It is said to have returned over \$18 per ton.

#### Little Eva Group

The Little Eva group is located along the ridge on the east side of Eva Creek and near its mouth. This group, which is owned by Sam Stay, J. C. Kinney and Cal Franklyn, consists of the Little Eva, Clark, Comet Rose, Curlew No. 1 and Curlew No. 2 claims.

On the Little Eva claim close to Eva Creek a shaft has been sunk 80 feet on a quartz

vein which strikes N 15° W and dips steeply to the northeast. The shaft is vertical and a crosscut at the bottom intersects the vein 40 feet from the shaft. The vein averages over 20 inches in width and assays show values of \$15 per ton. The vein-quartz is white and vitreous and contains only small amounts of sulphides. There is no gouge along the walls of the vein.

About 330 feet south of the shaft and 45 feet lower than collar of the shaft, a tunnel has been driven on a vein which will probably prove to be a continuation of the Eva vein. This tunnel has a length of over 200 feet and has gained a depth of 55 feet. At a point 138 feet from the portal the tunnel turns away from the vein, which has again been located, however, by two cross cuts. At 192 feet from the tunnel portal the vein is cut off by a fault striking N 30° E and dipping 55° NW. The vein was found to have been shifted 15 feet to the southwest where it was again picked up. The vein has a strike of N 30° W and a dip of 80° NE and averages 20 inches in width. The vein quartz in the tunnel is similar to that in the shaft. The vein and its walls are badly shattered and cracked by surface creep. The wall rock is blocky quartzite schist.

About 80 tons of ore was mined from this tunnel in 1929 and returned over \$25 per ton.

At a point 650 feet east of the Eva Creek Vein a vein has been developed by a shaft 60 feet deep. This vein contains about 8 inches of quartz which is said to assay over \$20 per ton. It strikes N 30° W and dips to the northeast and lines up very closely with the Blue Bird vein. About 20 feet west of this vein is another which is a few inches wide and apparently parallel to the first. A shaft has been sunk about 20 feet on this vein.

# The Eva Quartz Mining Company Mine

The Eva Quartz vein was discovered in 1926 on the ridge west of Ready Bullion Creek at an elevation of 1300 feet. This vein is a strong fissure striking N 10° W and dipping about 75° NE. The vein occupies a sheared zone showing much strike faulting and movement. This movement has taken place both in the vein-quartz and in the walls subsequent to the quartz deposition and it has been so extensive that it is difficult to define the walls of the vein or to follow any continuous portion of the quartz vein with regularity. Samples that have been taken indicate high grade ore in places, but the condition of the vein

prevents the mining of vein material only in any quantity. Consequently as a whole the material mined averages fairly low grade. The width of mineralized material is over 40 feet in places.

Development work on this property consists of an upper tunnel 700 feet in length from which 9 raises have been driven that aggregate 382 feet in length; a winze 66 feet deep, and another 27 feet deep; and 6 crosscuts aggregating 152 feet in length. A second tunnel 105 feet lower in elevation than the upper tunnel is 1200 feet in length and has two branch drifts each 100 feet in length, extending to the west of the main adit. This lower tunnel which has a northeasterly direction, intersects a smaller vein 425 feet from the portal. At a point 48 feet beyond this a second vein is intersected, and at a point 825 feet from the portal the main lead is reached. The first vein is about 6 feet in width and strikes parallel to the main vein. It is less crushed than the main lead, although it shows some movement. On this vein there is one raise over 40 feet in height. It is planned to do considerable mining upon this vein, as it is probable the ore is of higher grade than that rined from the main vein. The second vein is very narrow but contains good ore. No mining has been done upon it. From the lower tunnel on the main lead 8 raises have been driven that aggregate 704 feet in length. Three crosscuts have also been driven, which are 26 feet, and 18 feet, respectively, in length.

Over 5,000 tons of ore has been mined and milled from the larger vein that is said to have averaged over \$10 per ton in gold. This ore was milled in the old Hudson mill, which has been purchased by the Eva Quartz Company.

This is a 2-stamp Nisson Mill, with 1,350 pound stamps and inside amalgamation plates. There are also 2 apron plates for each stamp whose dimensions are 4 feet by 5 feet. A 7-inch by 10-inch Blake-type crusher feeds into a 25-ton ore bin, from which the ore is delivered to the stamps by two Challenge ore feeders. The mill is operated by a 25-h.p. steam-engine, and a 50-h.p. boiler. Water is secured from a well inside the mill building. This well, which is 60 feet deep, is at times incapable of furnishing sufficient water for milling operations on which occasions it becomes necessary to pump water from the creek below the mill. The ore is hauled by team from a bin at the Lower tunnel, 1000 feet

distant to a 30-ton storage bin above the mill, and is trammed thence to grizzly above the crusher. The mill track is 296 feet lower in elevation than the tunnel track.

The Eva Quartz Company is controlled by Nick Borovich, G. B. Stevens and associates.

The camp buildings include a blacksmith shop, cook house and two story frame bunk house.

Sheep Creek Group

The Sheep Creek Group is located at the head of Sheep Creek on the east branch at an elevation of 1600 feet, and comprises the Oregon, Seattle, Black Diamond and one other claim. On the Oregon Claim a vein has been developed by two tunnels. The vein strikes R 10° E and dips 65° SE. An upper crosscut tunnel has been driven for a distance of 25 feet that shows the vein in the face to be about 6 feet in width. The vein quartz is of vitreous type, showing some sulphides of antimony and arsenic. Both walls show several inches of gouge. The hanging wall is quartzite schist and the foot wall is diorite gneiss. A lower crosscut tunnel has been driven for a distance of 183 feet in a direction of S 65° W. This tunnel is about 50 feet below the upper tunnel and intersects the vein at 168 feet from the portal, at which point the vein has a width of 5 feet. The quartz exposed is glassy and is said to carry but little values. A drift on the vein has been driven 30 feet southerly and another 12 feet northerly from the tunnel intersection. From the north drift a raise has been driven up on the vein for a distance of 35 feet. The tunnel is being driven ahead to further crosscut the formation.

The vein is said to carry fair values in the upper tunnel but shows little in the lower tunnel and raise. This property is held by William McGlone, Louis Farvin and John Mikley.

Sanford Group

The Sanford Group is located on the ridge between Little Dome Creek and Sheep Creek of which Dome Creek is a tributary and at an elevation of about 1,400 feet. This group, which includes the Lone Tree, Golden Eagle, Green Blot No. 1, Green Blot No. 2 and Dome lode claims is held by Jesse Sanford.

On the Lone Tree Claim there are three veins on which some work has been done. No. 1 vein is about 4 inches wide and dips vertical. It strikes N 38° E. A shaft is down about 40 feet on this vein and 15 tons of ore has been mined from it.

Seventy feet west of No. 1 Vein is No. 2 Vein. This vein has been developed by a shaft 84 feet deep, measured on the dip. The dip which averages 50° SE, changes from 60° at the top to 40° at a depth of 40 feet and to 48° at the bottom. The vein is 6 inches in width at the bottom of the shaft and elsewhere varies from 2 inches to 18 inches in width having an average of less than a foot. The vein is tight on both walls and has replaced the wall rock slightly. Both walls are of quartzite schist. The vein has been stoped to a depth of 50 feet for a distance of 50 feet south of the shaft and for a distance of 30 feet north of the shaft from which operation 95 tons of ore was produced.

Thirty five feet west of No. 2 vein and parallel to it is a third vein. This vein is very narrow having a width of only from 2 to 3 inches and little work has been done on it. About 75 tons of ore that was mined from No. 1 and No. 2 veins returned \$52 per ton. Some ore was mined from the property during 1930 but was not milled.

# Happy Creek Mine

The Happy Creek Mine is located on the east side of Happy Creek, near its mouth, and one mile from Happy Station on the Alaska Railroad. A good automobile highway connects the mine with the railroad 1 1/2 miles distant and with the main Ester Creek road to Fairbanks, 4 miles distant.

There are 8 claims in the group; the names of which are American, Oregon, Yankee Boy, Washington, Columbia, Principal, Yankee Girl, and Nickoloff Placer.

Three veins have been found on this group but work has been confined to the one known as the Nickoloff vein. The quartz is found in a strong fissure which has undergone considerable movement, both during and subsequent to the mineralization that has developed a sheared zone. This zone varies in width from a foot to over 20 feet and represents a series of movements varying in direction and in angle of slip. The vein quartz is found in places massive and unbroken while in other places it is found badly crushed. When movement occurred where the schist walls were soft, the plane of movement generally passed around the quartz and into the walls of the vein. Where the walls were tough, however, the movement plane cut through the vein-quartz and sometimes planed off most of the ore.

The vein strikes N 30° E and the dip varies from 75° NW to 66° SE with an average of about vertical. The vein filling consists of a white crystalline quartz containing small

amounts of stibnite and aresenopyrite. Close to the surface the quartz is oxidized and stained with iron and antimony oxide. Horses of schist are found in the quartz. The gold is not deposited uniformly and probably was deposited later than the quartz. The best grade of ore always shows a considerable fracturing of the quartz.

In two places in this vein at points over 300 feet apart, native amalgam has been noted. Native amalgam has also been reported in other mines of this district.

Development work on the property consists of three shafts whose depths are 112 feet, 75 feet, and 30 feet respectively. A tunnel, known as the Johnson Tunnel connects with the 100 foot level of the deep shaft and with the bottom of the 75 foot shaft. This tunnel is 855 feet long and extends 130 feet beyond the deep shaft. At a point 45 feet back from the tunnel face, a raise has been driven to the surface. From this raise and 60 feet above the tunnel floor, an intermediate level has been driven for 256 feet south on the vein, and a stope has been opened above it. Another stope has been opened from the tunnel level at a point 715 feet from the portal. A tunnel 130 feet lower in elevation than the Johnson Tunnel has been driven for a distance of 150 feet. This tunnel exposes no ore. It is used in tramming ore to the mill from a raise that has been driven to the surface from a point 142 feet from the portal. The ore is hauled by truck from a bin at the portal of the Johnson Tunnel and dumped into this raise.

The surface plant includes a 5-stamp Joshua A. Hendy amalgamation mill with 1,000 pound stamps. A 65-h.p. boiler and steam engine furnishes power. A 7-inch by 10-inch Blake type crusher feeds into a 90-ton ore bin. Water for milling is obtained from Happy Creek and from a 6-inch, cased well 150 feet deep. This well furnishes only a scant supply of water for use in the mill and boiler, A Gardner-Denver, 129-cubic foot air compressor furnishes air for drilling. Camp buildings include a log blacksmith shop, compressor house, garage, cook house, bunk house, and residence.

The ore milled from this vein has averaged less than \$8 per ton in value. The property was not in operation during 1929 and 1930.

The Irishman Vein

The Irishman Group consists of the Irishman No. 1, Irishman No. 2 and Gold Lode No. 1 claims. This group is located at the foot of Ester Dome on the lower slope between Happy Creek and St. Patrick Creek and about 3/4 mile from the Alaska Railroad at Happy Station. The workings on this vein are at an elevation of 725 feet, which is the lowest of any lode property being worked in the Fairbanks District. The vein was discovered by drifting on bedrock from a placer shaft at a point where the bedrock is covered with over 90 feet of overburden.

The vein strikes N 40° E and dips 82° SE. The ore is a white crystalline quartz containing many coarse, intergrown crystals. Only small amounts of sulphides are found in the vein. The vein quartz is in close contact with the hanging wall but on the footwall and has about an inch of brown gouge underlying it. The foot wall is characterized by a tough, iron-cemented casing several inches thick, which assists in supporting the rotten schist behind it.

Development work includes a 5-foot by 7-foot shaft which is 180 feet deep, from the 130-foot level of which drifts extend 100 feet north and 70 feet south respectively. All ore above this level has been stoped. The vein averages 18 inches in width. A lot of 216 tons of ore that was milled in 1929 averaged \$17 per ton in value. The mine is equipped with a small carrier bucket and gasoline hoist.

Considerable trouble has been experienced at this mine on account of the occurrence of carbonic acid gas that fills crevices in the rock and gravel. This gas pours out whenever the atmospheric pressure drops below normal, and at times in such volume that a 6-inch suction fan is unable to keep air in the workings breathable.

Heath and Kearns Mine

The Soo Claim on Dome Creek is being worked under lease and option by Robert Heath and Guy P. Kearns. A cross cut tunnel, driven from a point 530 feet east of the west end line, has intersected a vein known as the Heath and Kearns vein, at a distance of 247 feet from the portal. At a point 172 feet beyond this intersection the tunnel crosses the Wild Rose vein 90 feet in from which it reaches the Soo Vein.

Considerable ore was mined on the Heath and Kearns vein from above this tunnel, and

was milled in the old Spalding mill. At a point 400 feet west of the tunnel, a shaft has been sunk on the vein to a depth of 138 feet. Drifts have been driven 450 feet east and 30 feet west from the shaft at the 110 foot level. From this level at a point 425 feet east of the shaft a raise has been driven that connects with a drift driven east from the crosscut tunnel.

The vein has an east-west strike and an average dip of 62° N. It varies in width from a mere stringer to 5-feet, the average being about 18 inches. One small displacement of about 3 feet appears on the 110 foot level, but no other faults have been encountered. The vein filling is white fractured quartz with occasional lenses of schist. Slight amounts of gouge occur occasionally on either wall but elsewhere the quartz is in close contact with the walls. The quartz is very much crushed and broken and many parallel movement clanes in the quartz follow the trend of the vein. The walls are regular and require little timber in mining, except that used for support of the main transportation ways.

Water that is developed on the lower level and which drains to the sump is pumped to the surface is sufficient to operate the mill about 10 hours daily.

The Wild Rose Vein where intersected in the tunnel, has a width of from 2 to 6 inches. This vein has a strike of about N 79° E and dips almost vertical but slightly to the north. The convergence of this vein with the Heath and Kearns Vein is indicated both by their dips and their strikes. Ore mined from the Wild Rose vein by the Reliance Mining Company is said to have been of high grade. Several tons of ore that was mined recently by leasers whose work was carried on from the tunnel, is said to have milled over \$175 per ton.

In the face of the tunnel and at a depth of over 100 feet below the surface the Loo vein is composed of 12 inches of white quartz. This vein apparently strikes S 85° E and dips 52° NW. Other than a short raise no work has been done on it by the present operators.

The mine is equipped with a 10-cubic foot car-skip operated by a 7-h.p. gasoline engined hoist, with a capacity of 10 tons per hour. A 3 1/2-h.p. gasoline engine operates a pump-jack equipped with wooden rods that are connected to a Hooker sinking pump of size 2 1/2.

The mill includes a 25-ton ore bin, a two-stamp, (Joshua A. Hendy, 1000-pound) battery

operated by an 8-h.p. gasoline engine. Two apromplates, 4 feet by 5 feet in dimension are used in amalgamation. The ore is hand cobbed. Water is obtained from the mine. A . Gardner-Rix two-cylinder, 129-cubic foot compressor, driven by a Fordson Tractor, is used for mining. The compressor and mill are housed in a building located at the collar of the shaft. The mill was moved to its present site from a previous location, one half mile away on Dome Creek.

Up to 1929 about 2,400 tons of ore had been mined from the Heath and Kearns vein that has returned over \$15 per ton in value.

# The Free Gold Mine

In 1924, the Free Gold mine also known as the Rhoads-Hall mine, and other adjacent properties were acquired by the Cleary Hill Alaska Mines Company. This company was formed for the purpose of reopening the Free Gold mine which had been closed down since 1915.

Officers of the company are D. R. Gustaffson, President, and J. A. Gustaffson, Secretary-Treasurer and General Manager. This company now controls, by ownership or option, a group of 12 claims.

#### The Henry Ford Group

The Henry Ford Group, situated on the divide at the head of Fairbanks Creek and at an elevation of 2100 feet, is being worked by George Ewers and L. J. McCarty. This group consists of the Henry Ford, Henry Ford No. 1, Henry Ford No. 2, Henry Ford No. 3, and Henry Ford No. 4 claims. Several veins have been found upon this group but the most extensive work has been done upon the McCarty vein which extends through the Henry Ford No. 4 claim. This vein was first developed in 1927 and since that time has produced about 1200 tons of ore that is said to have returned over \$20 per ton when milled.

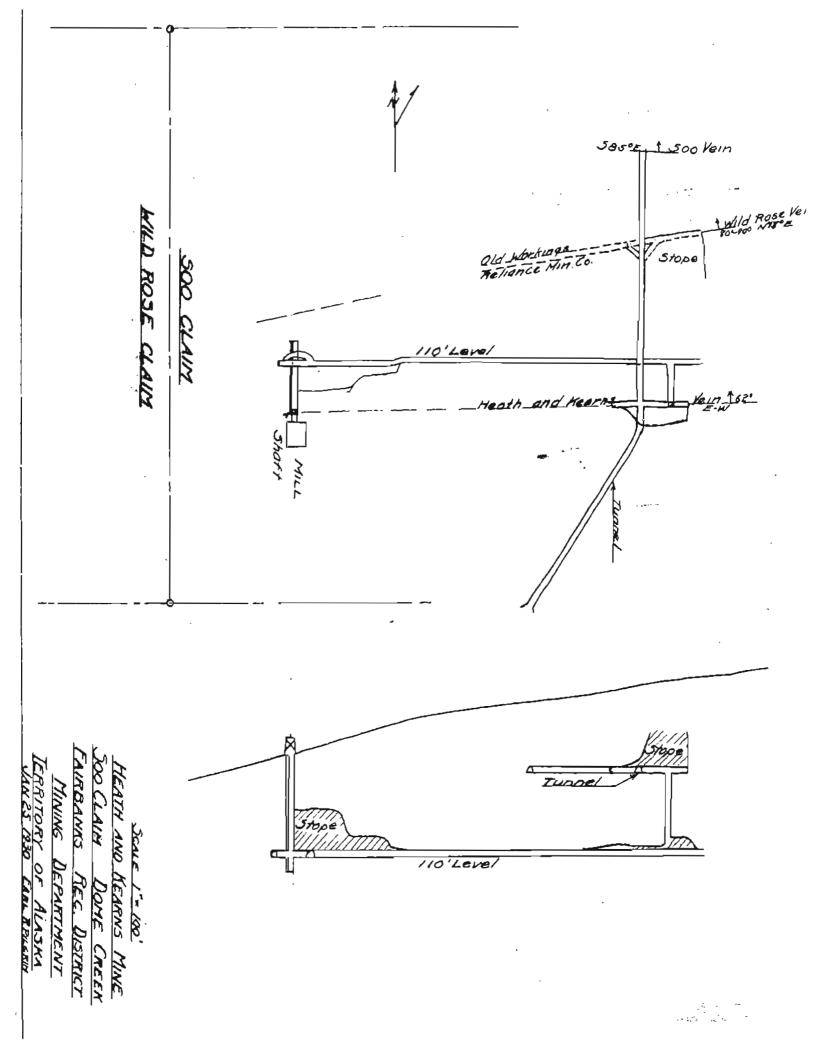
The vein has a strike of N 75° W and a dip of 65° to the SW, and varies in width from a few inches to 5 feet, with an average of 12 inches. The vein filling consists of white crystalline quartz containing small amounts of stibnite and arsenopyrite. The quartz is much crushed in places due to strike-faulting along the vein. On the hanging wall side of the vein is from an inch to 12 inches of gouge. The hanging wall is generally softer and more cavey than the foot wall and requires close lagging in the drifts and shaft.

The vein cuts through two cross leads offsetting them 34 feet. The first cross lead is

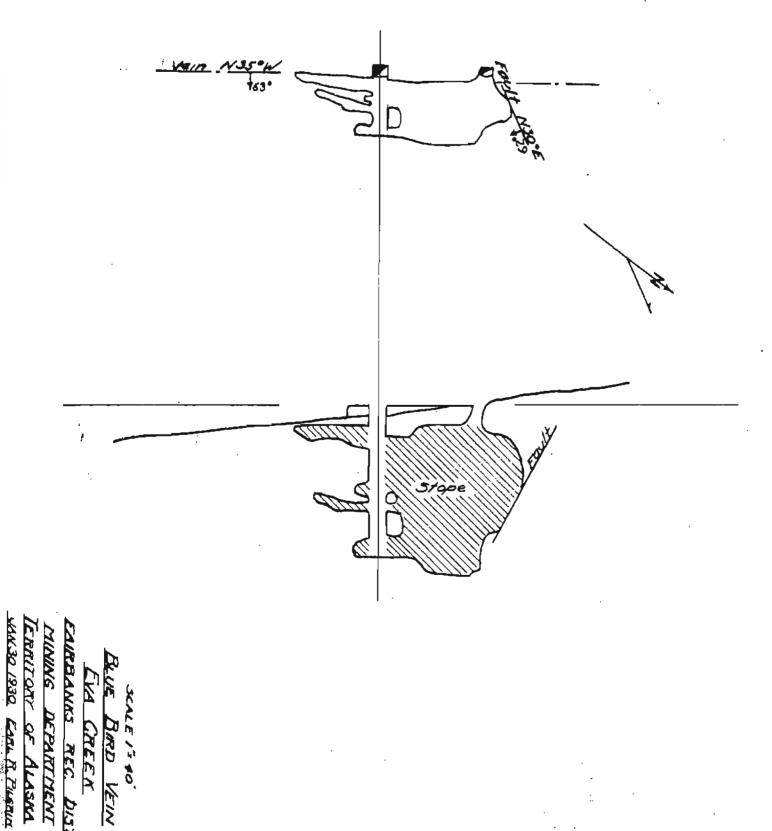
reached at a point 203 feet west of the main shaft where it shows in the foot wall. It strikes N 55° E and dips almost vertical. The continuation of this vein shows in the hanging wall 34 feet farther west. At a point 282 feet west of the main shaft, a second cross lead is intersected that appears in the foot wall. It strikes approxiamtely N 55° E. The continuation of this cross lead shows in the hanging wall 34 feet farther west. These two cross veins have not been developed for any distance and are said to be low grade and to carry a considerable quantity of arsenopyrite. The McCarty Vein is faulted at a point 74 feet west of the main shaft. This fault has a strike of S 45° W and offsets the vein for 34 feet along the strike. A second fault is encountered 369 feet west of the main shaft and the vein has not been picked up beyond it.

The development work on the property consists of a main working shaft 100 feet deep drive on the vein which has a dip of 65°. A drift at the 60 foot level extends 135 feet east and 369 feet west of the shaft. There is a raise reaching to the surface at the end of the east drift and another at a point 284 feet west of the shaft, where the distance to the surface is 85 feet. All ore estimated to be of milling grade has been stoped above the 60 foot level and the shaft was being sunk towards the 200 foot level in February 1930.

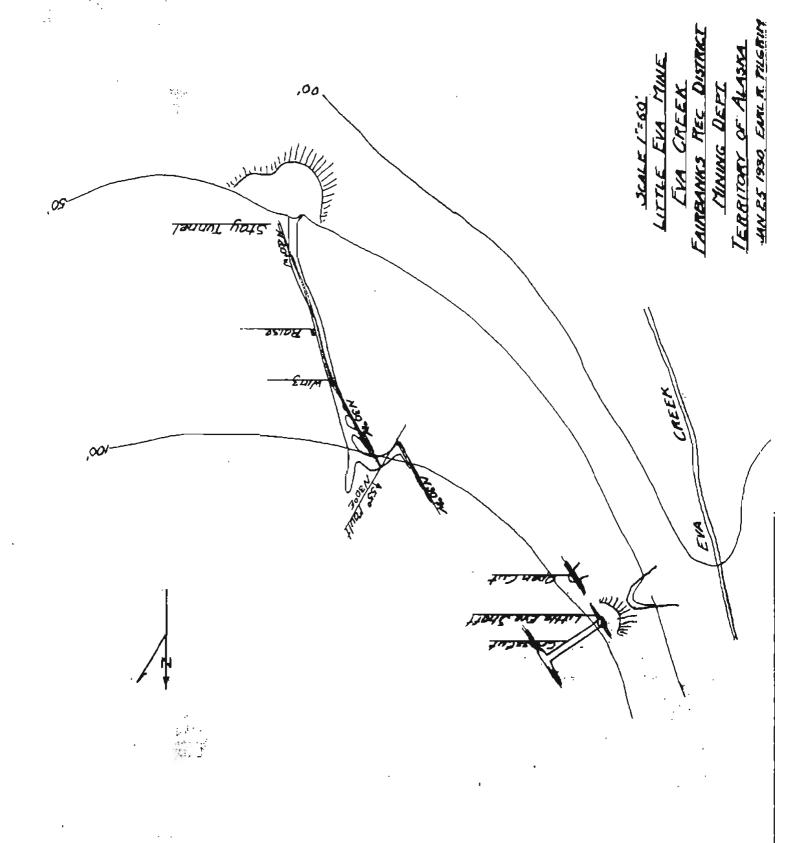
A 6-h.p. Fairbanks Morse gasoline hoist operates a car skip with a load of 700 pounds of ore. Five tons of ore per hour can be hoisted from the 60 foot level. A 25-ton ore bin is located at the head frame from which the ore is hauled 1 1/2 miles to the Gilmore Mill, which is held under lease. This mill is equipped with a 5-stamp battery of 1000 pound stamps.



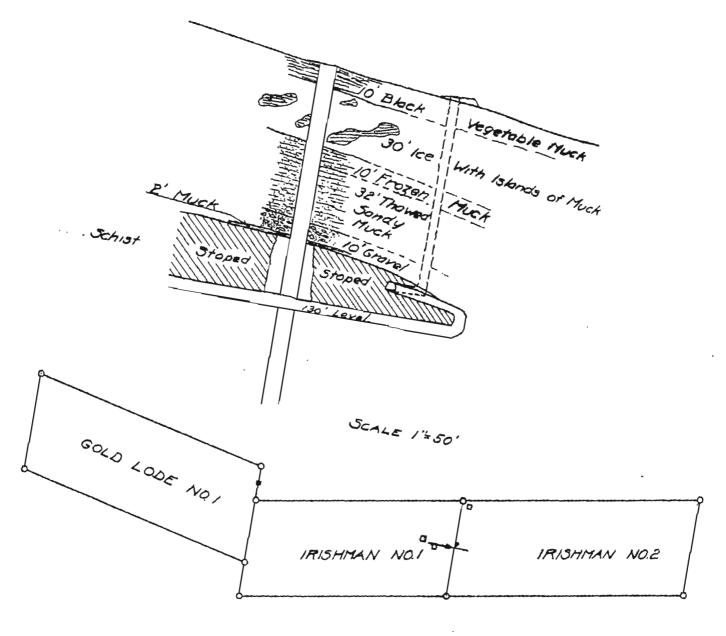
Black Corbanaceous & CARL R PRESTON FAIMBANKS REC. DISTRICT SILVER DOLLAR GLAIM READY BULLION GREEK LEGRITORY OF ALASKA SCUE 1:50' MN 251930 MINING SILVER DOLLAR LOWAR TUNDEL



TERRITORY OF ALASKA EAIRBANKS REC. DIST MINING DEPARTMENT ENA CREEK SCALE 13 40 BIRD VEIN



Old Placer Short



SCALE / = 600'

GRANT AND PILGRIM MINE
SI PATRICKS CREEK

LAKSBANKS REG DISTRICT

MINING DEPARTMENT

Mohawk Group 12 58, 169

The Mohawk Group is located on the east slope of Ester Dome at the head of St Patrick Creek. This group consists of the follow-ing claims;

Mohawk Peg Log Fraction Liberty -

Mohawk No. 1 Peg Leg Extension Liberty Fraction

Mohawk No. 2 Yellow Jacket / Liberty Extension

Mohawk No. 3/ Yellow Jacket Fraction Bondholder: <

Mohawk Extension Yellow Jacket Extension Bondholder Extension -

Peg Leg / Spite Fraction /

On the Mohawk No. 2 claim, a vein has been opened up by a tunnel 616 feet in length. This vein (Mill Tunnel Vein) strukes N.40°E. and dips 65° S.E. The vein averages 18 inched in width. The quartz is greatly crushed and fractured. The schist walls are badly fractured, and difficult to support when mining. Several hundred tons of ore have been produced from above this tunnel level, which returned about \$15 per ton when milled.

feet west of the Mill Tunnel Yein. This vein strikes N.40° E, and dips 70° S. E. The vein varies from a few inches to 11 feet in width with an average of 3½ feet. The quartz ranges from a hard vitreous variety to a soft, oxidized, crushed quartz. Generally the higher grade of ore carries some stibnite with small amounts of prenopyrite and is characterized by a greenish-yellow antimony oxide coating. Mining operations are greatly hampered by the coarse of faults, which of facts the line.

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feet in length, with two raises to the surface. A raise from a point

340 feet in the trinnel encounters, the vein 60 feet above the tunnel

floor. A normem fault dipping slightly to the northwest has moved

the upper portion of the vein 50 feet to the northwest.

Ruole

The Mill Tunnel No. 2 driven on the Mokawk Fein from

is 156 fect lower in elevation than the Upper Tunnel. This tunnel is about 1030 feet in length with a branch to the southeast over 200 feet leading from a point 932 feet from the portal. At a point 140 feet in a normal fault is encountered which strikes east and dips to the north. This fault has moved the vein about 75 feet to the west. Twelve raises have been driven from this tunnel and stopes faults have been encountered. These faults are generally offset the vein only a short distance. These faults are generally offset the vein only a short distance. These faults are generally offset the vein only a short distance. These faults are generally offset the vein only a short distance. These faults are generally offset the vein only a short distance. These faults are generally offset the vein only a short distance. These faults are generally offset the vein only a short distance. The vein level. This fault which strikes northeast and dips southeast, the vein is offset about 100 fect to the northwest. This raise has been carried up on the vein

A third tunnel 52 fect lower has been driven in for 550 had and feet. The vein is encountered 300 feet in and a stope carried up to the tunnel above. A considerable quantity of water has been developed in this mine which drains out of the lower tunnol and contact id utilized for winter milling.

Over 12,000 tons of ore has been mined from this vein since 1922, and this mine is the second largest producer of gold in the Fairbanks District.

on the north end of the Liberty Extension Claim a fourth vein has been opened up byntwo shafts, one 25 feet deep and one 15 feet deep. This is a strong opened vein showing 10 feet of brown

fractured quartz. The vein strikes N. 30° E. and dips vertical.

It is said to carry medium grade values where opened up. This vein is an extension of the South Bend Wein on the South Bend Claim.

The Bondholder Wein on the Bondholder and Bondholder Extension Claims, is a part of this group and has been described in the love reports by John A. Davis, No additional work has been done on this vein a Report of Remoderate Inner Anapareter, 1900.

The Mohawk Group is operated to The Mohawk Mining Company.

A 7-foot Lane Chilean Mill using two amalgamation plates, 5feet by 5 feet in area, was installed in 1923. A 7-inch by 10-inch Dodge-type crusher crushes into a 50-ton ore bin. A 50-MonP. boiler with a 25-H.P. steam-engine furnishes power. A 7-inch by 6-inch, 92-cubic-feet Ingersol-Rand compressor furnishes air for drilling. Camp buildings consist of a blacksmith shop, garage, bunk house, cook house, and two residences.

The First Chance Vein on the First Chance glaim is located at the head of St Patrick Creek adjoining the Bondholder glaim.

The vein varies from a few inches in width to 3 feet, strikes

N.45° E. and has a dip of 60° N.W. The vein filling is g white crystalline quartz containing some stibnite and slight amounts of arsenopyrite. The high grade ore is characteristically stained with the greenish-yellow coating of antimony oxide.

This vein has been opened up by a shaft 127 feet deep with drifts both directions from the bottom. The north drift is 110 feet in length and the south drift 60 feet in length from the shaft. Both drifts have encountered faults at their faces. The north fault has offset the vein a few feet to the east where it has been located on the surface and several shallow shafts sunk on the vein.

feet north of the Main Shaft a cross cut tunnel has been driven in for 200 feet. This tunnel encountered one vein of glassy quartz which carried little values and is believed to be another vein.

About 200 feet north of the Main Shaft is another tunnel in about 200 feet which encountered a vein of glassy quartz 100 feet which encountered a vein of glassy quartz 100 feet which encountered only slight values at this point.

This vein carried only slight values at this point.

The vein has produced over 400 tons of ore which has returned over \$25,000. The flaim is owned by Sam Stay, Paddy Mc Claughlin, J. C. Kinney and Cal Franklyn.

On the South Bend Mann, north of and adjoining the Liberty Extension Claim, a vein has been opened up by 3 shafts. This vein is about 10 feet wide, and shows prown crushed quartz containing medium grade values. The vein strikes N.30°E. and stands vertical. There is one shaft about 30 feet deep, and the shallow shafts. There are three claims in this group, the South Bend, Wahpuka and Luctle Nursele.

Radovich Group 12458

A group of claims owned by Dan Radovich and Andy Markich, is located on the ridge west of Ready Bullion Creek which heads on the south side of Ester Dome and is tributary to Ester Creek. These claims are babout one mile above the mouth of Ready Bullion Creek. This group consists of the Silver Dollar, Lucky Boy, Homestake, Hard Rock, War Baby, Gold Bullion, and Baby Fraction claims.

A tunnel has been driven in on a vein for slightly over 200 feet and 45 tons of ore mined above it. The surface slopes so gently that very little depth was obtained by this tunnel. A winze has been sunk alose to the mouth of this tunnel to a depth of 35 feet and about 30 tons of ore mined from it. The vein strikes N. 150 E. and dips 66° S.E. It varies from 2 feet to 4 feet in width. The vein filling is weathered quartz, much stained and fractured. It shows much strike movement in the rein especially along the walls. This requires careful timbering especially along the hanging wall. The quartz shows little sulphides eshbouting tons of ore mined from this tunnel and winze. This was milled in the Mohawk Mining Companys mill and returned over \$ 35 pertagn.

A second tunnel, driven to cross cut the vein about 125 feet lower in elevation has been driven for 467 feet but apparently has not encountered the vein. The plant consists of blacksmith shop and one cabin.

The Mc Donald Group Kt 58-26

Along the ridge on the east side of Eva Creek and adjoining the Eva Creek Group are four claims belonging to John H. Mc Donald and associates. The Blue Bird and Blue Bird Extension claims lie side by side down hill from the Mc Donald and Combination ation claims which lie end to snd.

been opened up by a shaft 70 feet deep. This vein strikes N.35°W. and dips 63° N.E. From this shaft the vein has been stoped for about 50 feet north of the shaft and a few feet south of the shaft. The vein varies from a few inches to over 4 feet in width. The hanging wall is regular and solid and requires very little support in mining. The foot wall is softer and contains a number of stringers and branches from the vein. The vein is in close contact with the walls and show no evidence of strike movement.

In the stope 58 feet north of the shaft a fault has been encountered which cuts off the vein. This fault strikes N. 30° E. and dips 62° S.E. No attempt has been made to pick up the vein beyond that fault. On the south side of the shaft the vein continues but has narrowed down to only a few inches in width and has not been followed.

The ore is greyish white quartz showing small amounts of sulphides. The quartz is considerably weathered and fractured and requires little blasting. The vein apparantly extends into the Blue Bird Fraction Flaim and is probably the continuation of the Stay Vein on the Little Eva Flaim.

About 500 tons of ore has been mined from this shaft and custom-milled. It is said to have returned over \$ 18 per ton.

CHE Eva Creek Group CA 121. 58.8

The Eva Creek Froup is located along the ridge on the east with the Eva side of Eva Creek and near its mouth. This group owned by Sam Stay, J. C. Kinney and Cal Franklyn consists of the Little Eva, Clark, Comet, Rose, Curlew No. 1 and Curlew No. 24 Clark.

On the Little Eva Claim close to Eva Creek a shaft has been sunk 80 feet on a white quartz vein which strikes N.15° W. and dips steeply to the northeast. The shaft is vertical and a cross-cut at the bottom executives the vein 40 feet from the shaft. The

wein averages over 20 inches in width and assays show values of \$15 per ton. The quartz is white and vitreous and contains only small amounts of sulphides and shows no gouge along the walls of the later.

collar of the shaft, a tunnel has been driven in on a vein which will probably prove to be a continuation of the Eva vein. This tunnel has been driven over 200 feet and has gained a depth of of 55 feet. At a point 138 feet tribby tunnel turns: away from the vein but has picked it up by two cross cuts. At 192 feet in the vein is cut off by a fault striking N.30 E. and dipping 550.

N.W. The vein was found to hand demonstrated by the southwest. The vein shows a strike of N.30 W. and addip of 800 N.E. and averages 20 inches in width. The quartz is similar to that shown in the shaft.

The vein and walls are badly shattered and cracked by surface creep.

The walls are blooky quartzite schist.

About 80 tons of ore was mined from this tunnel in 1929 and returned over \$ 25 per ton.

What bound 650 feet east of the Eva Creek Vein a vein has been overed up by a shaft 60 feet deep. This vein shows about 8 inches of quartz which is said to assay over \$ 20 per ton. This voin strikes N. 30° W and dips to the northeast and lines up very clocely with the Blue Bird Vein. About 20 feet west of this vein is another with a few inches wide and apparently parallel to the part. A shaft has been sunk about 20 feet on this vein.

Insut /B

The Eva Quartz, Company Mine X+50,3

west of Ready Bullion Creek at an elevation of 1300 feet. This vein is a strong fissure striking N.10° W. and dipping about 75° N.E. The vein occupies a sheared zone showing much strike faulting and movement. This movement has taken place in the quartz and in the walls. So great has been this movement subsequent to the quartz deposition that it is difficult to define the walls or follow any portion of the quartz with regularity.

Samples taken indicate high grade ore in places, but the nature

of the vein prevents the mining of any quantity of this. Consequentaoa Ministrial puried

ly the whole averages fairly low grade. The mineralized width

mineralized material is the state over 25 feet in places.

Development on this property consists of an upper tunnel

700 feet in length with 9 raised aggregating 382 feet, a winze

66 feet deep, and one 27 feet deep; and 6 crosscuts aggregating

152 feet. A second tunnel 105 feet lower in elevation is 1200

feet in length with two branch drifts, each 100 feet in length,

152 feet. This tunnel is lead feet in length,

154 feet in length with two branch drifts, each 100 feet in length,

155 feet in length with two branch drifts, each 100 feet in length,

155 feet in length with two branch drifts, each 100 feet in length,

155 feet in length with two branch drifts, each 100 feet in length,

155 feet in length with two branch drifts, each 100 feet in length,

156 feet in length with two branch drifts, each 100 feet in length,

157 feet in length with the west. This tunnel is each 100 feet in length,

157 feet in width and strikes parallel to the main vein with the main lead is reached. The first vein is about 6

158 feet in width and strikes parallel to the main vein. It is

158 less crashed than the main lead, although it shows some movement.

159 feet in width and strikes parallel to the main vein. It is planned to

150 do considerable mining upon this vein as the probable with the main lead from the second vein above to the main lead of the first fam deen deen done the form the lead of the first fam deen deen done the form the lead of the first fam deen deen done the form the lead of the first fam deen deen done the fam the lead of the first fam deen deen done the first fam deen deen done the fam the lead of the first fam deen deen done the fam the first fam deen deen done the fam the fam the fam deen done fam the fam the fam the fam the fam deen done fam the fam

Over 5,000 tons of ore have been mined and milled from the

larger veing and is said to have averaged over \$ 10 per ton,
This ore was milled in the old Hudson Mill, which has been
purchased by the Eva Quartz Company. Samples taken in the

main stope above the lower tunnel level show the values;

Width.	Assay	∀alue	Per	Тол
11.67	feet	\$	5.33	3
10.0			5.02	3
8.0			4.4	L
9.83			1.98	3
7.0			7.93	3
7.0		:	17.07	7
5.0			2.70	)
5.0			6.60	)
6.0	4	, :	19.10	)
10.0	nu	X	3.55	5
5.0		. :	17.65	5
5.		•	2.20	)
10.5			5.48	3
5.2			0.90	)

A cross section of the vein as shown in a cross cut at the north end of the stope above the Main Tunnel shows the following formation from east to west;

7 feet quartz.
3 " schist.
5 " quartz.
5 " schist.
7 " quartz.
2 " schist.
4 " quartz.
33 " Total

The mitt is a 2-stamp Nisson Mill, with 1,350 pound stamps and

Okere are also

Cother dimension are

inside amalgamation plates, and 2 apron plates, each 4 feet by

5 feet for each stamp. A 7-inch by 10-inch Blake-type crusher

from which deleverad to 25-ton ore bin feats to stamps by two challenge Fre Feeders. The mill is operated by a 25-H.P. steam-engine, and a 50-H.P. Decent realist Water is furnished from a down well inside the mill This well, ("60 feet) is at times unable to furnish wy on which recan sufficient water for continues operation, and it then becomes necessary to pump from the creek below More is hauled from Ly trans an ore bin at the Lower Tunnel, 1000 feet by team to a 30-ton storage bin above the mill, and trammed from there to bine grizzley above the crusher. The mill track is 296 feet lower in elevation than the tunnel track.

The Eva Quartz Company is controlled by Nick Borovich, G. B. Stevens and associates. They are operating on the

following claims;

Borovich Lode

Ready Bullion

Lode Fraction

Hosanna

Sun Flower

Stibnite No. 1

Horseshge-

Stibnite No. 2

The plant consists of, a blacksmith shop, cook house and two story frame bunk house.

Sheep Creek Group 1450 The Sheep Creek Group is located at the head of Sheep Creek on the Fast Franch at an elevation of 1600 feet, and consists of the Oregon, Seattle, Black Diamond and one other claim. On the Oregon Claim a vein has been opened up with two tunnels. The vein strikes N. 10° E. and dips 65° S.E. An upper crosscut tunnel has been driven in for 25 feet and shows the vein in the face to be about 6 feet in width. The vein quartz is A vitreous type, showing some sulphides of antimony and arsenic. Both walls show several inches of gouge. The hanging wall is p quartzite schist and the foot wall shows a diorite gneiss. A lower tunnel

( has been driven in for 183 feeting a direction of S. 65°W. This tunnel is about 50 feet below the Apper Junnel and intersects the vein at 168 feet in. There the vein shows to feet in width. The quartz there is glassy and is said to carry little values. A drift has been driven 30 feet south and one driven 12 feet northers.

From the North Frift a raise has been driven up on the yein for a ducknown. The tunnel issbeing driven ahead to crosscut the forma-35 feet. tion.

The vein is said to carry fair values in the upper tunnel but shows little in the lower tunnel and raise. This property is held by William Mc Glone, Louis Farvin and John Mikely.

Mandung Cours

- Sanford Group 4587146 The Sanford Group is located on the ridge between Little Dome Creek & tributary of Shoop Greek and Sheep Creek at an This group, cons elevation of about 1,400 feet. Lone Tree, Golden Eagle, Green Blot, Mo. 1, Green Blot No. 2 and the Dome Lode Plaim are held by Jesse Sanford.

On the Lone Tree Claim there are three veins on which some work has been done. We No. 1 vein is about 4 inches wide and dips vertical. It strikes N. 380 E. A shaft is down about 40 feet on this vein and 15 tons of ore has been mined

Seventy feet west of the No. 1 Vein is the No. 2 Vein. This vein has been opened up by a shaft 84 feet, deep, measured on The dip averages 50° S.E. warying from 60° at the top, depth and 480 at the bottom. to 40° at 40 feet in The vein shows oftheohoff elsewhere 6 inched in width at the bottom and varies from 2 inches to 18 inches inwidth with an average of less than a foot. The vein is tight on both walls and has replaced the wall rock slightly. Both walls show quartzite schist. The vein has been stoped to a distance offen 30 feet a depth of 50 feet for 50 feet south of the shaft and north of the shaft producting 95 tons of ore was produced.

Thirty five feet west of the No. 2 yeln is a third vein

parallel in strike and the. This vein is very narrow \$ 2 to 3 inches and little work has been done on it. About 75 tons of ore mined from No. 1 and No. 2 feins returned \$ 52 per ton. Force one was much the for specify during 1930 deel was mat mulled!

Happy Greek Mine 58155

The Happy Creek Mine is located on the east side of Happy Creek, near its mouth, and one mile from Happy Station on the Alaska Railroad. A good automobile highway connects the mine with the railroad 12 miles, and 4 miles to the main Ester Creek road to Fairbanks, 4 sinks destant.

There are 8 claims in this group; The Transact Further trace

American, Oregon, Yankee Boy, Washington, K+50-157

Columbia, Principal, Yankee Girl, Nickoloff Placer K+50-153

Three veins have been found on this group but work has been confined to the one room known as the Nickoloff Vein. The quartz is found in a strong fissure which has undergone x considerable movement, both during and subsequent to the mineralization. This pherical zone varies in width from a foot to over 20 feet and represents a series of movements varying in direction and in the angle of slip. The vein quartz is found in places massive and unbroken while in other places it is found badly crushed. If the movement occurred where the schist walls were soft, it generally passed around the quartz keeping in the walls while the walls were the walls were the walls were the walls were tough, the movement out through the quartz and sometimes planed off most of the ore.

The vein strikes N. 30° E. and the dip varies from 75° N.W. to 66° S.E. with an average of about vertical. The vein filling consists of a white crystalline quartz containing small/amounts of stibnite; and arsenopyrite. Close to the surface the quartz is oxidized and stained with iron and antimony oxide. Horses of schist are found in the quartz. The gold is not deposited uniformly and probably was deposited later than the quartz. The best grade of ore always shows a considerable fracturing of the quartz.

In two places in this vein and over 300 feet apart, native amalgam has been noted. Native amalgam has been reported in other mines of this district.

Development work on this property consists of three shafts, 112 feet, 75 feet, and 30 feet, A tunnel Johnson Tunnel connects with the 100 foot level of the deep shaft and with the bottom of the 75 foot shaft. This tunnel is 855 feet long and extends 130 feet beyond the deep shaft. At a point 45 feet back from the tunnel face, a raise has been driven to the surface. From this raise and 60 feet above the tunnel floor, an intermediate level has been driven for 256 feet south of the vein, and a stope Factor Another stope has been opened from the tunnel opened # above elevation, has been driven in for 150 feet. This tunnel shows no that has been It is used to tram ore into the mill from a raise driven to the surface from a point 142 feet fire. The ore is The ore is hauled by truck from an are bin at the portal of the Johnson Tunnel and dumped into this raise.

The surface plant sensition a 5-stamp amalgamation mill

Joshua A. Hondy with 1,000 pound stamps. A 65-M.P. boiler and

steam engine furnishes power. A 7-inch by 10-inch Blake type

crusher sensites into a 90-ton ore bin. Water for milling is

obtained from Happy Creek and from a 6-inch cased well 150 feet

deep. This well furnishes, a scant supply of water for the mill

and boiler. A Gardner-Denver, 129-cubic foot air compressor

furnishes air for drilling. Camp buildings, are a log blacksmith

shop, compressor house, garage, cook house, bunk house, and residence.

The bre milled has averaged less than \$ 8 per ton. The property

was not in operation during 1929 and 19 30.

The Irishman Vein

The Frishman Group consists of the Irishman No. 1, Irishman No. 2 and Gold Lode No. 1 claims. This group located at the foot of Ester Dome on the lower slope between Happy Creek and St Patrick Creek and about # mile from the Alaska Railroad at Happy Station.

X+ 50.35

The working of the Fairbanks District

on bedrock from a placer shaft, the bedrock is covered with over 90 feet of overburden. A cross section of this overburden

ehows;

10 feet frozen muck

30 feet clear ice containing islands of black vegetable muck.

10 feet frozen muck, grading into lighter sandy muck.

32 feet thawed sandy muck

10 feet angular slide rock and gravel

2 feet sandy muck

The vein strikes N.40° E. and dips 82° S.E. The ore is a white crystalline quartz containing much coarse, intergrown crystals. Only small amounts of sulphides are found in this vein. The vein quartz is in close contact with the hanging underlying it. wall, and has about an inch of brown gouge on the foot wall. The foot wall is characterized by a tough, iron-cemented casing x several inches thick, which assists in supporting the rotten schist behind it.

Development work consists of a 5-feet by 7-foot shaft which re on the 130-foot level extending 150 feet deep, with 100 feet north and 70 feet south. All ore above this level The vein averages 18 inches in width. **^21**6 has been stoped. tons of ore milled in 1929 averaged \$ 17 per ton, The mine is equipped with a small carrier bucket and gasoline hoist. This wine is greatly troubled with the presence of 177777 2 C ON carbonic acid gas filling the crevices in the rock and gravel. This gas pours out whenever the atmospheric preseure drops below normal, and at times with such volume that a 6-inch ave in the suction fan is unable to keep the workings breathable. Thrisproperty is being worked by Hugh Matheson and O.M. Grant.

# - Heath and Kearns Mine

and option by Robert Heath and Guy P. Kearns. A cross cut tunnel, driven from a point 530 feet east of the west end line has encountered a vein Heath and Kearns Vein X at a distance of 247 feet in. 172 feet beyond the tunnel crosses the Wild Rose Vein and 90 feet farther it crosses the Soo Vein.

from above this tunnel, and milled in the old Spalding Mill.

7 A shaft has been sunk on this vein at a point 400 feet west of the tunnel to a depth of 138 feet. Drifts have been driven 450 feet east and 30 feet west at the 110 foot level. A raise driven from a point 425 feet from the shaft, connects with a drift driven east from the tunnel.

The vein has an east- west strike and an average dip of 62°N. It varies in width from a mere stringer to 5 feet with average of 18 inches. One small displacement of about 3 feet with average of 18 inches. One small displacement of about 3 feet with average of 18 inches. One small displacement of about 3 feet with shown in 110 foot level but no other faults have been encountered. The vein filling is white fractured quartz with occasional lenses of schist. Slight amounts of gouge occur occasionally on either wall, often though the quartz is in close contact with the walls. The quartz is very much crushed and broken a exhibiting many parallel accounts along the trendnof the vein. The walls are regular and require little timber in mining, other than in supporting the main transportation ways.

Sufficient Water is developed on the lower level which drains to the sump and is pumped to the surface to operate the mill about 10 hours daily.

The Wild Rose Vein where encountered in the tunnel, shows a width of from 2 to 6 inches. This vein has a strike of about fur alight.

N. 79° E. and dips almost vertical to the north. The convergence of this vein with the Heath and Kearns Vein is indicated both by their dips and their strikes. Ore mined from the Wild Rose

Wein by the Reliance Mining Company is said to have been high whome whome grade. Several tons mined recently by leasers working from the tunnel, is said to milled over \$ 175 per ton.

The See Vein In the face of the tunnel and at a depth the of over 100 feet below the surface, shows 12 inches of white quartz. This vein apparantly strikes S.85° E. and dips 52° N.W. No work, other than a short raise has been done by the present operators.

The mine is equipped with a 10-cubic foot car-skip operated by a 7-H.P. gasoline engined hoist, with a capacity of 10 tons per hour. A 32-H.P. gasoline engine operates a pump-jack using with wooden rods connectific to a Hooker Sinker Pump Fize 22.

A. Hendy, 1000-pound & battery operated by an 8-H.P. gasoline engine. Two apron plates, 4 feet by 5 feet are used. The ore is hand cobbed. Water is obtained from the mine. A Gardner-Rix two-cylinder 129-cubic foot & compressor, driven by a Fordson Tractor, is used for mining. The compressor and mill are housed in a building located at the collar of the shaft. The mill was moved to No present and previous location, one half mile away on Dome Creek.

Water 1779 appoint 2,400 tons of ore have been mined from the Heath and Kearns Vein and has returned over \$ 15 per ton, in Value.

mount 7

The Free Gold Mine holman as the mile mile

In 1924, the Free Gold Rine and other adjacent properties were acquired by the Cleary Hill Alaska Mines Company. This company was formed for the purpose of meopening the Free Gold Rine which had been closed down since 1915. Officers of this company are D. R. Gustaffson, President, and J. A. Gustaffson, Secretary are D. R. Gustaffson, President, and J. A. Gustaffson, Secretary accounts by accounts for the following classes and company now owners or has under option, the following classes.

man !

Tree Gold

Colorado

Wyoming Fraction

Paupers Dream

Idaho

California

Texas

Alabama

Snow Drift

New York

Wyoming ( interest)

Discovery Placer ( Bedrock Creek)

Since acquiring these properties, work has been carried on and some production of gold, made. Recent developments indicate the possibility of a considerable body of good milling ore which should soon again make the Free Gold Mine a producer. Considerable work was done on the main tunnel level and other levels which has failed to show new ore bodies. A new tunnel 89 feet higher than the old Penrose Tunnel, has been driven in for over 900 feet with 538 feet of cross cuts and a roise of 40 feet. In this tunnel (No. 1 Tunnel) the vein has been orened up for several hundred feet and shows a considerable block of ore said to contain good values. This ore extends below the tunnelclewel but no work has been done from the lower tunnels to its extent on those levels. The main vein shows a strike of N. 64° W. with a dip of 58° S.E.

New Work done on this property by the new company up to the end of 1929 consists of; reopening and retimbering the Penrose Tunnel, driving it ahead for 45 feet, two cross cuts aggregating 535 feet in the hanging wall, one in the foot wall 60 feet and a raise 89 feet to the No. 1 Tunnel. On the Main Tunnel the Doget was driven on the vein for 154 feet, the Powder House Vein was drifted on for 51 feet and a cross out was driven into the hanging wall for 40 feet, one into the foot wall for 60 feet and the tunnel driven ahead for 192 feet. The Wyoming Tunnel was driven for 976 feet and three cross cuts aggregating 251 feet. The colorado Tunnel was driven for 137 feet, the Red Shaft sunk 100 feet. The new working shaft was sunk from a point close to the mill, for a depth of 185 feet with a cross cut of 280 feet. A windlass

mit - de paret

shaft was dunken on top of the ridge to a depth of 50 feet and a cross cut of 80 feet driven. The No. 1 Tunnel was driven for a total of 906 feet with a raise 40 feet and 5 cross cuts aggregating # 538 feet.

The Henry Ford Group 12+ 58-121

The Henry Ford Group situated on the divide at the head of airbanks Creek at an elevation of 2000 feet, is being worked by George Ewers and L. J. Mc Carty. This group consists of the Henry Ford, Henry Ford No. 1, Henry Forff No. 2, Henry Ford No. 3, and Henry Ford No. 4 claims. Several veins have been found upon this group but the most extensive work has been done upon the account which extends through the the Henry Ford No. 4 Claims. This vein was first opened up in 1927 and since that time has produced about 1200 tons of ore said to have returned over \$ 20 per ton when milled.

The wein has a strike of N. 75° W. and a dip of 65° to the southwest, and varies in width from a few inches to 5 feet with an average of 12 inches. The vein filling consists of white crystalline quartz containing small amounts of stibulte and arsenopyrite. The quartz is much crushed in places due to strike faulting along the vein. The hanging wall side of the vein is characteristic by from an inch to 12 inches of gouge. The hanging wall is generally softer and more cavey than the foot wall and requires close lagging in the drifts and shaft.

The vein cuts through two cross leads offsetting them 34 feet. The first cross lead is encountered 203 feet west of the main shaft and shows in the foot wall, with strike of N. 55° E. and dipping almost vertical. The continuation of this vein shows in the hanging wall 34 feet farther wast. At a point 282 feet west of the main shaft, a second cross lead is encountered.

These two cross veins have not been approximately N. 55° E. and the arrange of the west of the main shaft. This fault has a strike of S 45° W. and offsets the vein for 34 feet along the strike. A second fault is encountered 369 feet west of the main shaft and the vein has not not beenpicked up beyond.

The development work consists of a main working shaft 100 depth driver which have distributed to be foot level extended 135 feet east and 369 feet west of the shaft. There is a raise to the surface at the end of the east drift and one 284 feet west of the shaft extending 15 feet to the surface. The surface slope gives a greater depth going west. All ore estimated to be of milling grade has been stoped above the 60 foot level and the shaft is being sunk towards the 200 foot level in February 1930.

A 6-H.P. Fairbanks Morse gasoline hoistsoperates a car skip with a load of 700 pounds of ore. Five tons of ore per hour can be hoisted from the 60 foot level. A 25-ton ore bin is located at the head frame from which the ore is hauled 1½ miles to the Gilmore Mill, which is under lease. The Gilmore Will is to be stamp battery. of 1000 pound stamps, situated on the Ohio Group 1½ miles down etworm. on Fairbanks Creek.