PE-112-5

COPY

Juneau, Alaska
October 22nd, 1940.

L. P. Dawes, M. D., F.A.C.S.,
Juneau, Alaska.

Dear Dr. Dawes:

On September 28th, 1940 in company with your partner, Mr. Stanton, I left Juneau and went to Yankee Cove to make a report on the Yankee Cove Gold Mining Co., which I understand is owned jointly by you and Mr. Stanton. This property having been previously known as the Aurora Borealis, and later as the Morning Star Group. My report covers the progress that has been made and the work that has been done since the beginning of work on these claims about 1910. The following is my report:

LOCATION

The property is located about 2-1/2 miles east of Yankee Cove and about 1000 ft. elevation. Yankee Cove is about 35 miles north of Juneau (Capitol of Alaska) on Lynn Canal, a salt water arm running between Juneau and the Pacific Ocean.

The mill site is on a flat about 80 acres in extent. Bessie Mountain rises at the rear of the property and there are several streams running down the mountain side which will furnish abundance of water for power purposes. I would estimate that Bessie Mountain rises above this property some 1800 to 2000 ft. There are twelve claims in this group which lie on this mountain and adjacent to the mill site. The claims are 600 ft. x 1500 ft. each and the two mill sites belonging to this group are each 600 ft. by 600 ft. At Yankee Cove the company owns 74.5 acres of patented land along the beach, and two water rights.

TUNNELING AND PROSPECTING

The tunnel for Wanderer No. 5, on the northeast side of Bessie Mountain and approximately 800 ft. above, and 1000 ft. on a direct line from the ore bin at the mill, is a 5' x 7' and 286 ft. to the face of the tunnel exposing ledge of ore, running from 24" to 48" in width and

lying between green stone walls. This tunnel has sufficient grade for drainage. The ledge of ore is exposed from the entrance of the mine to the face.

On the southwest side of Bessie Mountain, on the same ledge and approximately 200 ft. above the previously mentioned tunnel, also known as Wanderer No. 5, is a Tunnel 5' x 7' and 176 ft. to its face exposing ledge of ore averaging three ft. to four ft. in width. This tunnel also has a grade sufficient for drainage. There is a 96 ft. shaft extending down from the top of the ridge to the tunnel and connecting with the tunnel about 125 ft. from its entrance. Both the above tunnels have side hill entrances.

In what is known as the Liberty Girl Group of these claims are several short tunnels, all side hill entrances, size 5' x 7' and exposing a ledge of ore running from two feet to twelve feet in width. There is approximately 325 ft. of tunneling in this group.

There are true fissure ledges traversing this mountain parallel to each other and ranging from 100 ft. to 600 ft. apart as you go up the mountain, and varying from five feet to six feet in width. These ledges have been uncovered in places, for a length of approximately 600 ft. and are seamed with arsenical iron. These ledges stand practically vertical and from tracing, extend at least as far as the foot of the mountain. These ledges lie in green stone.

POWER

Water power is to be used to run the mill, sawmill, generators, etcetera. The intake is to be placed at a place about 200 ft. elevation above the mill with two water lines from the intake; one to the mill and the other to supply water power to the sawmill and generators, using Pelton wheels. In case of shortage of water in the creek water can be turned into it from other creeks closely adjacent thereto. The water from Bessie Creek has been diverted into this creek previously when needed.

HANDLING ORE TO MILL

About 100 ft. West and on a level with the top of the ore bin is a ledge of high grade ore, running from one foot to five feet in width with stringers running parallel to it. It is the intention to run a tunnel in the side of the mountain and follow the ledge, using mine track and ore dump cars to the bin.

Directly above the mill is the Wanderer No. 5 at an elevation of 800 ft. above the mill. It is the intention to use aerial tram (material on hand for its construction) and bring the ore down to the bin.

The above two operations are the ones that will be used at first; later it is the intention to run a track around the foot of the hill about 3/4 of a mile to the mill from the Liberty Girl Tunnels. There is a 12 ft. ledge beyond these tunnels that has been partially uncovered and prospected and can be handled by a continuation of this track.

TRAILS AND ROADS

From the Yankee Cove end at the beach to a point about 1-1/2 miles toward the mine, running in an easterly direction, the Territory of Alaska has a partially built road. The present grade on this road runs from 0.0 per cent to a grade of probably 20 per cent where there are humps. It is the Territory's intention to complete the road to the mine and to remove the humps so that there should be a grade not to exceed ten per cent at any place. There are spots on this road that have been corduroyed. About 1-3/4 miles of the road will have to be gravelled; the remainder of the road is cut out of the rock and will not need surfacing. There are several spots along the road where gravel can be obtained for surfacing.

There are about six miles of trails connecting the various ledges and tunnels together on the property. These are exceptionally good trails cut along the mountain side and up the mountain through slides, many large wind falls and brush.

BUILDINGS

At Yankee Cove where you disembark from the boat to take the road to the mine, there is a scow 22' x 54' in size with a building on it equipped with beds, cooking stove and kitchen utensils, with a storage space in the rear for equipment brought up by the boat for the mine. this lies on the 74.5 acres of patented land previously referred to in this report.

At Mill site there is a new building constructed to accommodate a complete ten stamp mill as shown in photograph marked "A". This building is built of heavy timber with a shake roof and was built in the last two years.

Within 25 ft. of the mill building is a building 14' x 18' in size which was also built in the last two years. This building is equipped as a blacksmith shop and has various equipment and tools also stored in it. Shown as "B" on photograph.

On the mill site grounds is also constructed an extremely well built peeled log building, 1-1/2 stories high with two rooms upstairs and a large room down stairs. It is 17' x 26' overall in size. The lower part is equipped as a kitchen and dining quarters with stove, kitchen utensils and the necessary equipment for a camp. This is shown on photograph as "C".

Directly below the mill, and on a direct line with it, is the foundation for the saw mill constructed of heavy timber. The construction of this building is at present being done. Shown as "D" on photograph.

EQUIPMENT

In the mill building and adjacent thereto is the equipment for a complete fifteen stamp mill, including stamps, jaw crusher, tables, line shaft, pulleys and all the miscellaneous materials necessary to the construction of a mill of this size.

There is the equipment for one complete sawmill including saws and a gas engine for running the mill and a Pelton wheel to be used when water power is furnished. Below is a partial list of other material on hand at the mill:

1 - 8" x 10" Steam air compressor
1500 - ft. of 1-1/2 Black pipe
2000 - ft. of 1/2" black pipe
300 - ft. of 3" black pipe
1 - stoper
600 - ft. of 5/8" galv. wire rope
2000 - ft. of 1/2" wire rope
300 - 1/2" galvanized returns
2 - Ingersoll - Rand Jack Hammers
12 - rounds of 1-1/4" drill steel
300 - ft. 7/8" Drill steel
2000 - ft. BM Lumber
Various miscellaneous tools including sledges, mauls, saws, round and square pointed shovels, picks, mattox, etc.

2 - Sets of Stocks and Dies
A large stock of pulleys, shafting, boxes gear wheels and the various equipment needed for repairs around the mill.
800 - ft. 18# mine rail
1 - 3 ton chain block
A quantity of valves and pipe fittings
2 - 2 ton ore dump cars
2 - Pelton Wheels - 1- 6' dia. 1- 3' dia.
2 - 3" Centrifugal pumps
1 - Portable Ingersoll-Rand Air compressor on wheels, capacity air for six jack hammers.
In addition to the above there is a quantity of flat iron and bar iron, kegs of various sized nails, bridge washers, drift pins, bolts of all sizes, wire of various sizes, etc.

VALUE OF EQUIPMENT, BUILDINGS, TUNNELING, ETC.

883 -	ft. of tunnel 5' x 7', all hand drilled at $18.00 per foot	$ 17,894.00
Lump -	Locating and uncovering ledges, etc. estimated	3,000.00
6 -	Miles of train at $350.00 per mile	2,000.00
Lump -	Sluicing down dirt and rock to fill flat for buildings	500.00
	Buildings, stoves, beds and cooking utensils	6,000.00
Lump -	While all the equipment for fifteen stamp mill is classified as second hand, ten stamps are new and a quantity of the other equipment together with the transportion costs to the mill site	25,000.00
1 -	Complete sawmill	1,800.00
2 -	Compressors 1- steam	1,200.00
	1- Ing. - Rand	2,500.00
	Various sizes and lengths of pipe as previously listed	930.00
2 -	Ingersoll - Rand Jack Hammers	400.00
	7/8" and 1-1/8" Drill steel as previously listed	675.00
1 -	3 ton chain hoist	75.00
1 -	Stoper	185.00
1500 -	ft. of 1-1/2" pipe packed up to mill site at 42¢ per foot	630.00
2000 -	ft. of 1/3# wire rope at 9¢ per foot	180.00
600 -	ft. 5/8" galv. wire rope at 11.5 foot	69.00
2 -	steel plates especially built for overdrive water wheel	75.00
10 -	Kegs of nails including freight and packing up to the mine	100.00

3000 - ft. BM lumber, freight and handling to mill . .	$	300.00
Lump - Miscellaneous tools estimated		1,000.00
Lump - Pulleys, shafting, gears, Pelton Wheels, bearings, bridge washers, etc. not included in mill and sawmill equipment, estimated		2,000.00
Lump - Various valves and pipe fittings at Yankee Cove		100.00
2 - 2 Ton ore cars at $75.00 each		150.00
2 - 3" Centrifugal pumps at $75.00 each		150.00
Total	$	67,013.01

PREAMBLE

A report (copy attached) was made by Mr. J. D. McIntyre M.E. in the early part of 1900, however the date is unreadable, then on May 10th, 1916, another report was made on the same property, by Mr. Blakeslee CE, EM, (copy also attached). These reports should give you a history of the property up to the time it was taken over by its present owner. Mr. Blakeslee's report has some very interesting assay reports attached to it, and it in my opinion explains the reason why the present owners have tried so hard to put this property over without outside help.

CONCLUSIONS

In order to finish the road up quickly and avoid waiting for the Territory of Alaska to do the work, which has been under way now for the past two years, it is my estimate that it would take about . . . . . $ 10,000.00

To complete the sawmill building, set up the equipment and get it into operation 2,000.00

To completely finish up the mill, ore bins, set up the machinery and get everything operating and the mill grinding 6,000.00

Putting in intake, bringing water around to it, putting in pipe line from intake to mill & sawmill ... 2,000.00

Installation of Aerial Tram (Material on hand). 2,000.00

Necessary carrying funds for payrolls, etc. until mill is in operation and realizing from output of the mill 6,000.00

Insurance on buildings, equipment, compensation and personal insurance 3,000.00

Estimated cost of putting mill on paying production basis . . . . . $ 32,000.00 X

From the manner in which the various claims lay as to the mill site, the abundance of water power, easily accessible, the easy accessibility of the various ore bodies to the mill, coupled with the fact that with the exception of the entrance to the various tunnels, no timbering will be necessary, I feel that this ore can be mined and milled, after the mill is in operation, at a very low cost. From the various assays I have seen and the pannings that have been made from the earth at the edges of the ledge, there can be no doubt that you have throughout your claims very profitable commercial ore.

Below I submit the results of the assays made from samples of ore taken by me, these assys were made by the department of mines, Territory of Alaska, Ketchikan, Alaska. The report was made to Dr. L. P. Dawes under date of Oct. 25, 1940.

Gold - 1.28, $44.80; Silver 1.10, $0.77
Wanderer No. 5 opposite the mill . . . . . $ 45.57

Gold - 0.26, $ 9.10; Silver 0.70, $0.49
Wanderer No. 5, entrance to tunnel 9.59

Gold - 0.98, $34.30; Silver 1.30,$ 0.91
Upper tunnel No. 5 . . . . . 35.21

Gold - 0.10, $ 3.50; Silver 0.70, $0.49
Wanderer #7 . . . . . 3.99

Gold - 0.12, $ 4.20; Silver 0.80, $0.56
Top ledge 4.76

Respectfully submitted,

(Signed) B. C. JOHNSON
Inspection & Consultg. Engr.,
Foermerly with Robt. W. Hunt Co.,Engrs

Enc-

July 21, 1947

Mr. Joe Green
Juneau, Alaska

Dear Joe:

Following are the results of channel samples taken from the Aurora Borealis Adit No. 2 of June 27, 1947, with descriptions and locations:

Sample Number	Location	Description	Width	Ozs. Au	Per ton Ag	Total Value
1300	No. 2 Adit Face	Crushed and foliated quartz	2'	0.07	0.90	$3.00
1301	84' back from face	Quartz and banded shale	28"	0.07	0.80	2.95
1302	108' back from face top.	Banded quartz	28"	0.20	0.90	7.55
1303	122' from face -S.W. side bottom	Ribbon quartz	20"	0.12	0.80	4.70
1304	148' from face -S.W. wall	Banded quartz	26"	0.06	0.80	2.60
1305	160' back from face	White quarts in shale	4'	0.03	0.50	1.35
1306	120' back from face	White quartz	30"	0.02	0.60	1.05
1307	180' back from face at small slip fault	Gouge & white quartz	3'	0.09	0.50	3.45

Sample Number	Location	Description	Width	Ozs. Au	Per ton Ag	Total Value
1308	190' from face N.E. side of adit	Banded quartz	3'	0.03	0.50	1.35
1309	35 in from portal	Widest width of white quartz	3½'	0.02	0.70	1.10

Since these values are sub-commercial under the existing price of gold and economic conditions, I would advise concentration of work on the Bessie and Alaska Washington veins.

Yours very truly,

J. C. ROEBM
Associate Mining Engineer

JCR:jkp

cc - Dr. L. P. Dawes
Juneau, Alaska

PRELIMINARY REPORT OF WANDERER GROUP,
(Bessie Prospect)
EAGLE RIVER DISTRICT, JUNEAU GOLD BELT, ALASKA,
July 15, 1936.

Location and Accessibility:

The Wanderer Group of six claims is located two and a half miles due east and inland from Yankee Cove, approximately 35 miles north and west of Juneau. This property is accessible over the old plank road from the head of Yankee Cove two and a half miles. Another means of accessibility is by following the Eagle River-Echo Cove trail for a distance of 7 miles from the mouth of Eagle River. The latter trail is kept in good repair and pack horses may be used with little difficulty to the camp.

Owners:

This group, which contains the showings of Aurora Borealis, Bessie and Alaska-Washington prospects, was staked by H. Stanton. The present owners are Stanton and Dr. L. P. Dawes of Juneau, Alaska.

History:

The Bessie and Aurora Borealis discoveries were made prior to 1903 by J. McWilliams and Peter Early. The Alaska-Washington vein was discovered about the same time, however, the discoverer is unknown. Active development followed for several years which consisted mainly of underground development, mainly tunneling. A 5-stamp mill was reported in operation on the Aurora Borealis prior to 1903 and a production of several thousand dollars in gold is reported. This is reported along with a description of the vein, corresponding description of the Bessie vein, and the Alaska-Washington vein in U. S. G. S. Bull. 287, "The Juneau Gold Belt" by A. C. Spencer, pages 132-133. Further reports from old timers in this district give the amount of gold produced at $6,000 with the first 5-stamp mill. Later 10 more stamps were brought to the property, where they have remained in the shipping crates until this year. The reasons for suspending operations at that time are not known. It is possibly due to many factors, among which are spotty values, flat vein, flat and possibly caving stopes together with high mining costs. An aerial tram, remnants of which still exist, was used to convey the ore down the steep narrow gulch to the mill. These properties were later visited in 1910 by Adolph Knopf of the U. S. G. S. and descriptions are given in Bull. 502, "The Eagle River Region, Alaska," pp. 47-49.

Since this report these properties have been inactive until 1934 at which time Mr. Stanton did some sluicing of soft and weathered vein material along the Aurora Borealis vein. This season an attempt has been made to re-erect the old mill with the prospects of milling ore this season. Since both geology and detail descriptions of these properties are given in the aforementioned reports only a brief description is here contained.

Aurora Borealis:

The Aurora Borealis vein outcrops along the west side of a small narrow ravine which extends up the mountain in a southeast direction. This vein is called a blanket vein and occurs on a contact of black slate and a greenstone conglomerate. Green ellipsoidal concretions, some nearly 10 inches in diameter, occur in the slate. The vein can be traced for a distance of 500' along the ravine between 990 to 1110' elevation. It has a northeast strike and a flat dip of less than 30° to the northwest which is somewhat variable. The vein averages between 2 and 3 feet in width. Slight movement of a few feet along the bedding plane has produced a banded nature and produced small lenses of banded quartz later than the first vein quartz both on the hanging and foot walls. These later lenses of a few feet carry the most values. Four tunnels have been driven on the vein at various elevations starting behind the mill. They are caved, but the ore that was milled no doubt came from small flat stopes in them. The mineralization consists of pyrite, arsenopyrite, a little galena and gold can be seen occasionally along the dark bands of the younger quartz. As a result of movement of the bedding plane a gouge has developed on both walls. The gangue minerals are quartz, calcite and gouge material of the wall rocks. A few ounces of gold has been obtained by sluicing the gouge and broken oxidized quartz along the outcrop of the vein.

Sample No. 46 taken across 15" of the gouge and later quartz in No. 1 cut behind the mill gave 0.01 ounces of gold and a trace of silver.

Bessie Vein:

The Bessie vein outcrops above the Aurora Borealis along the west bluff of the ravine at an elevation of 1685' and nearly 1000' south of the mill and 800' above. At this point a tunnel has been driven 287' on the vein. The vein strikes N. 72° E. and dips 82° S. It appears from its character to be a sheeted zone in greenstone conglomerate. At a point 120' from the portal a fault which strikes N. 15° W. and dips 83° W. has displaced the vein 25'. The vein averages

from 12 inches to 2 feet in width. Sample No. 43 was taken across the vein at a point 240' from adit. The width of the sample was 24 inches and it gave 0.01 ounces per ton gold and a trace of silver. The mineralization is pyrite, arsenopyrite and free gold in a gouge of quartz and altered wall rock.

Approximately 1000' southwest along the strike of the vein and at an elevation of 1840' a shaft was sunk which was later connected by a tunnel below. This shaft was inaccessible, but reported to be 96' in depth, and sunk on the vein. The vein is stripped on the surface northeast of the tunnel for a distance of 150' and has an average width of 18 inches. Mineralization from pieces seen on the dump show pyrite, sphalerite, arsenopyrite, gold and a bluish mineral on the seams that contains gold. Sample No. 44, picked pieces at random on the dump, gave 0.39 ounces per ton gold and 0.10 ounces of silver.

A crosscut tunnel below the shaft along the bank of Bessie Creek, El. 1735' has a length of 125' of crosscut and a 75' length on the vein. The vein has a width from 8" to 3'. The greenstone formation strikes N. 30° W. and the mouth of the crosscut tunnel is in slate and graywacke. The vein has free walls and a banded nature with numerous bluish streaks showing. On the footwall a mineralized dike of a bluish gray to greenish porphyry follows the vein. Sample No. 45, taken at random on the dump from sorted vein material, gave .06 ounces of gold per ton and a trace of silver.

Alaska-Washington:

The Alaska-Washington vein was not visited. It is reported to be similar in general features to the Bessie. It is exposed by opening over a distance of 3000' and lies a half mile southeast of the Bessie vein. It cuts the same formation with a strike N. 85° E. and averages 3' in thickness. Movement along the vein was reported with the effect that the quartz is brecciated and slickensides developed on the walls. Development is reported to consist of four tunnels, totaling 500', a 20' raise and a 30' shaft. The mineralization is reported as the same kind and type as the Bessie.

Machinery and Buildings:

Some of the mill machinery that remains on the property could probably be used. It consists of 2 - 5-stamp batteries, Allis Chalmers, 1 - 5-stamp Hammond battery, stems, shoes and dies. Parts of Allis Chalmers crusher 10x7" jaws, 36" Pelton wheel (good condition), 8x16' Diester concentrating table, 6' bull wheel (good condition), 2000' of 1/2" cable and 500' of 5/8" cable, new. A log cabin situated near the mill site and a new 14x17' blacksmith shop is located on the property, and a scow at Yankee Cove is used as living quarters.

10.4, 10.5

134°52'W
58°36'N

TERRITORY OF ALASKA

DEPARTMENT OF MINES

JUNEAU, ALASKA

AUG [illegible] 1947

SUPPLEMENTARY REPORT of WANDERER GROUP of CLAIMS YANKEE COVE, EAGLE RIVER MINING DISTRICT JUNEAU PRECINCT, ALASKA

By J. C. Roehm, Associate Mining Engineer

June 30, 1947

At the request of Joe Green, of Juneau, for assistance in planning exploratory work on the Wanderer Group of claims, the writer left Juneau at 12 noon June 26 and returned June 29 at 3 P. M. The trip was made by car to Eagle River landing, thence by boat to Yankee Cove, and thence by foot trail to the property.

The writer wishes to acknowledge assistance from Dr. L. P. Dawes and Joe Green in furnishing information regarding the property and transportation. This prospect was examined by the writer on July 15, 1936 and reference is hereby made to this report which is on file at the office of the Commissioner of Mines at Juneau.

This trip was made primarily as a preliminary investigation to determine and estimate the amount of work necessary so that a detailed examination could be made in order to determine the value of the property in connection with the present option.

Housing Facilities:

The camp facilities are adequate for a crew of four to six men, both at the beach at Yankee Cove and at the millsite located at the lower workings of the Aurora Borealis vein. On the beach the facilities consist of a two room, one story building on a scow, a log cabin in good condition and shed. A good foot-trail follows the old roadway from the beach up along Bessie Creek for nearly two miles, thence over a low divide and down for three-fourths of a mile to the camp and millsite at an elevation of approximately 1000 feet. This upper camp consists of a well-constructed two-story cabin, one small cabin, blacksmith shop and mill shed.

Aurora Borealis: - KX 112-25

The Aurora Borealis or Blanket vein outcrops along the banks of a small stream which descends off the mountain and flows northwest. Along the west bank there is evidence of considerable open-cut work along the outcrop of the vein. Apparently some of the material was removed, which was

probably milled during some early production prior to 1914. These cuts, however, have become filled and sloughed to such an extent that considerable work is required to expose the vein for sampling. Four adits were driven into the west bank, as indicated by dumps. One adit, located 200 feet southwest from the mill shed, has been reopened and timbered at the portal. This adit has a length of over 200 feet. The vein was encountered at a point 35 feet from the portal, and thence turns southwest and follows the vein. The vein is made up of milky white quartz, slightly banded, and intensely fractured and broken. The width ranges from 3½ feet near the portal to 20 inches at the face with some broken and blank sections in between. The formation enclosing the vein consists of black clay shales folded and highly compressed. The vein, which strikes N.40° E. and dips from 30 to 35° NW., conforms to the schistosity of the shales. This vein, which outcrops on the west side of the creek, occupies the west limb of the small anticlinal fold, and the vein which occupies the east bank and now only partly visible at the east corner of the mill shed, occupies the east limb of the same fold.

Ten channel samples Nos. J.C.R. 1300 to 1309, inclusive, were taken at intervals of 10 to 20 feet along the vein in the adit. Very small amounts of sulphides were noted during the sampling. Results of these samples will be attached to this report upon receipt of returns.

Alaska Washington Vein: -KK 112-28

The workings and outcroppings of the Alaska Washington were not found during the limited time. They are located around the nose of the mountain about three-fourths of a mile to the east and much higher up on the mountain. Lack of trail and markings accounted for not encountering the showings.

Bessie Vein: KK 112-26

The Bessie vein and workings were not visited. However, the writer is quite familiar with these workings and there has not been any additional work since they were visited in 1936.

Preliminary work required before an evaluation examination can be made:

Aurora Borealis:

Three adits require reopening. This will require considerable mucking at the portal and sufficient re-timbering to prevent further sloughing. Further trenching may be warranted on the lower portion of the vein in the vicinity of the mill shed. The reopening of the adits is warranted, providing the channel sampling in the one adit shows or indicates commercial values.

Alaska Washington:

A good marked foot-trail is required from the camp-site to the showings. The four drift adits should be re-opened if caved, and the 70-foot raise timbered to the extent of a ladder way supported by stulls. The surface trenches should be cleaned out, particularly the reported 12-foot width showing near the top of the ridge. Since this prospect has not been visited, the amount of work necessary was not determined. There has not, however, been any further underground development on this prospect since that reported by the U.S.G.S. in 1912.

The Bessie:

A foot-trail from the camp to the Bessie adits is required. Stripping and uncovering by trenching of the Bessie vein along its strike, both east and west of the shaft which connects with the west adit, is warranted. Commercial values in gold were obtained from a dump sample of this shaft by the writer during the examination in 1936. Stripping each direction from the shaft will determine the length of the ore shoot.

Timbering to the extent of stulls set every five feet on the footwall of the shaft from the adit level to the surface is required, with a ladder-way, to obtain channel samples. Sampling of the shaft will indicate the average tenor of the ore. Further stripping of the vein between the two adits and on its extension to the west across Bessie Creek should be done providing it can be located.

Conclusion:

The amount of work required other than the opening of the Aurora Borealis adits should be accomplished in two months with four or six men, the number depending upon the experience of the men.

C
O
P
Y

Juneau, Aaa.
May 10th, 1916.

The Morning Star Group consisting of the best claims of the Aurora Borealis and Bessie Groups; this property is situated 2-1/2 miles east of Yankee Cove; a small indenture six miles north of the mouth of Eagle River on Lynn Canal, and being about 28 miles north of the city of Juneau, and located upon the Great Juneau Gold Belt, one of the largest mineralized zones ever discovered.

This property has been idle for a number of years, owing to lack of finances. The property is connected with Yankee Cove by a 12 ft. planked roadway, built at a cost of $19,000.00. The other improvements consist of all necessary buildings and a five stamp mill. This five stamp mill was dismantled preparatory to the erection of a ten stamp unit which has been purchased and landed at Yankee Cove. Work was ordered discontinued before the construction on the new ten stamp mill had been started, and everything closed down. The claims have reverted back to original locators and since then the only activity has been the usual assessment work required.

The Morning Star Group is comprised of the following 14 lode mining claims; and are known as follows, to-wit: The North Star, Golden West, Northwest Extension Golden West, Southeast Extension Morning Star, Morning Star, Northwest Extension Morning Star, Little Wanderer, Little Wanderer Extension, Blue Jay, No. 1, Bessie, Jumbo, Black Cat, Standard, and Eagle.

Extensive work has been done upon the Morning Star, Southwest Extension of the Morning Star and the Little Wanderer. The Bessie Vein, so-called, seems to carry the highest assays. The strike of the vein is south 75 degrees west and dip of same is almost vertical. The development consists of surface trenches, two tunnels and a shaft. The depth gained by this work shows 120 ft. of backs. The tunnel "G" (see plat attached) is about 700 ft. above the site of the old Aurora mill site, or an altitude of 1700 ft. and is in 245 feet on the vein. The width of ore averages better than 18" to 4 ft. and the sheeted structure is a feature of the vein, the quartz has a brecciated appearance. At a point approximately 110 ft. from portal of tunnel "G" the vein has faulted 45 feet northwesterly along fault zone trending north fifteen degrees west. The vein was recovered by deflecting the tunnel toward northwest, thence south 75 degrees west 1000

ft. more or less along strike of vein to tunnel "H", a cross tunnel which was driven 125 ft. to intersect bottom of shaft "I". Here the vein was opened by a drift 75 ft. long.

The walls of the Bessie Vein are composed of green stone conglomerate, etc. The strike of formation is north 30 degrees west, that of the vein being south 75 degrees west, shows strike at right angles, and intersects numerous veins and veinlets. In tunnel "H" black slate and gray wacke is exposed. The Bessie Vein shows a width of 14" to 4 ft. The quartz carries pyrites, arsenal pyrites, rare galena and sphalerite. Wherever oxidation has taken place free gold is desernable to the eye.

The Morning Star inrichment or veins strike north 40 degrees west and varries or waves slightly; has a dip 27 degrees northeast. These veins follow contact between the black slate and the green stone. The heavy green stone foot and the elastic black slate hanging wall giving evidence of permanency. The width of the vein on surface varies from three to four feet and in tunnel "A" (see plat attached) shows a stoping width of 14 ft. The vein matter shows some brecciation and is heavily oxidized. The oxidized ore shows considerable free gold when mortared to pan. The sulphide in the ore are arsenal pyrites, pyrites and subordinate galena. The stoping has been confined to tunnels "A" and "E" and considerable ore extracted and milled by the Aurora Mill. The total tunnel work exceeds 1400 ft. (see A, B, C, D, and F plat attached), not including surface trenching. Ore shows in every tunnel and has been exposed on many open cuts on surface.

From history and present condition of this property everything would justify development. Values have shown in every place veins are exposed to sampling. Undoubtedly further development will show justification in increasing the mill capacity from the obsolete five stamps to the new ten stamp mill which now lies unpacked and crated on the mill site.

Regarding the previous exploitation, the people evidently overbid their resources, as nothing apparently justifies the cessation of activities as far as the ore and mining possibilities are concerned. The ore is there to be extracted and shows good values. The mine justifies further development. The ore has been assayed from time to time showing consistent enrichment.

Copies of assays attached and marked.

(Sgd) B. D. Blakeslee, C.E.E.M.

(Sheet #3 Assays report of Blakeslee)

Various assays

#1 - Gold, 2.56¢, Silver trace, picked sample tunnel B.	$	51.20
2 - Gold, 1.03, $20.60; Silver, 4.02, $2.31 Tunnel E.		22.91
3 - Gold, 2.01, $40.20; Silver, 1.5, 82¢ open cut above tunnel H.		41.02
4 - Gold, .86, $17.20; Silver, .84, 46¢ Tunnel B.		17.66
5 - Gold, 1.34, $26.80; Silver, 1.45, 80¢ Tunnel G.		27.60
6 - Gold, 14, $2.80; Silver 3½ oz., $1.75		4.55
7 - Gold, 1.27, $23.40; Silver, trace		23.40
8 - Gold, 11, $ 2.20; Silver, 7 ozs. $3.50		5.70
9 - Gold, 8 -- Waste on Mill dump		1.60
10 - Gold, 5.02, Surface sample shaft "I"		100.40
11 - Gold, 1.16 - Surface trench on Bessie Vein 600 ft. south from "G"		23.20
12 - Gold, 1.01 - Surface trench on Bessie Vein		20.20
13 - Gold, .19,- Trench above Tunnel A		3.80
14 - Gold 1.11, $22.20; Silver, 8.4, $4.20 above tunnel D.		26.40
14A -Gold, .38, $ 7.60; Silver, 3.1, $1.55 Bessie Vein below tunnel G		9.15
15 - Sent to Stegman, Hunter Bay, by Mc Williams, Gold, $6.00; Silver 10 oz. at 50¢, surface trench on Jumbo		11.00
16 - Gold only .1		2.00
17 - Surface trench on Jumbo, gold only		14.00
18 - Gold only, 3.06		61.20
19 - Gold only, 3.82		76.40
20 - Gold only, .29		5.80

COPY

To Prof. E. W. Shelton,
Seattle, Washington.

Dear Sir:

Under your direction I have visited Alaska and made a careful examination of the Bessie Gold Mine and adjoining claims known as the Aurora Borealis property.

These properties are located at Yankee Cove a point in Lynn Canal, about 23 miles north of Juneau. A mile and a half from the beach the Aurora Borealis Stamp mill and boarding houses are reached.

The mill is located at the foot of Bessie Mountain which rises to an elevation of about 1000 ft. above the mill. I easily traced three veins of ore in the Aurora Borealis and one in the Bessie running diagonally across the property.

My first impression was that it would be greatly to the advantage of both properties owing to their physical location, if they could be consolidated, and while either property could be worked separately and distinctly, yet they could be more conveniently operated as a whole.

Five different tunnel levels have been run into the mountain, four of them on the Aurora Borealis and one on the Bessie; also a shaft 110 ft. deep connecting the Bessie Tunnel with the surface at the top of the mountain. I found these levels, each and all of them, contained large quantities of ore; in fact, none of them were run on barren ground. The veins seem to penetrate regularly inot the very depths of the mountain and are contact veins. The hanging walls are of porphyry and the foot walls slate.

A solid mass of ore is exposed in each of the five levels from the foot of the mountain, at the mill, all the way up to the top, a thousand feet higher, where the Bessie is located.

I made a careful examination of the Bessie dumps and all the different levels of the Aurora Borealis, and obtained a back load of free gold specimens. With this showing I commenced panning, first at the Bessie dump, then along the different tunnel levels, all the way down to the mill, using the water of the Aurora

Borealis Creek the water power which runs through the property and passes close by the mill. I never failed to get not only "colors", but prospects of gold all the way up to three inches long in the pan. This, together with the fact that the ore is a beautiful "rose quartz", convinced me at once that I had met with one of those rare finds in mining which insures a great future. I made a general sample of the Bessie dump on the top of the mountain, which as I said before, is a thousand feet above the mill, and taking slate, earth and everything, the sample assayed $4.50 per ton. I may add here that a mill run from this dump later on brought $23.00 per ton. My pannings averaged all the way from $5.00 to $100.00 per ton in the Aurora Borealis levels, and mill runs on this property made afterwards amounting to over two thousand five hundred tons averaged nearly six dollars per ton; that included surface dirt, earth and slate mixed with the quartz, which must have considerably reduced the average output of the mill, and this only represents about sixty percent of the value of the ore, for the reason that no attempt was made to save the tailings or to concentrate them.

Tunnel No. 1 at the mill level shows a four to six foot vein of milling ore.

Tunnel No. 2 about 80 feet higher shows a vein of milling ore four to six feet thick.

Tunnel No. 3 about 150 ft. higher than the mill shows a vein of from six to fourteen feet of milling ore.

Tunnel No. 4 about three hundred feet higher than the mill shows a vein of from six to sixteen feet of milling ore.

Tunnel No. 5 on the top of the Bessie Mountain spur which is the Bessie tunnel hereinbefore described shows a vein two to three feet thick. This vein does not vary much in width anywhere, lies between smooth contact walls, and has an exposure of 275 ft. in the tunnel and 110 feet all in ore in the shaft reaching the tunnel. This vein is also plainly traceable on the surface for the whole length of the Bessie property, as well as in the tunnel above described, and no where does it vary much in thickness and is of a uniform richness. This was shown in my samples and in the mill runs obtained since my examination.

The large quantities of free gold found in this vein are not in seams or in pockets, but are distributed everywhere through the veins and are directly in the matrix of the quartz.

The property as it stands today is not a prospect, but a developed mine. There are three years ore in sight for a ten stamp mill, and another thousand feet of new development tunnels would, beyond a doubt, put many more years run of ore in sight. Over two-thousand five hundred tons have been milled and the average has been from six dollars to $24.00 per ton for the different cleanups. It is my opinion that this property, with a good up-to-date ten stamp mill, can earn a profit of from thirty thousand to fifty thousand dollars per year and perhaps more. I am also of the opinion that owing to the ideal natural conditions, the first dividend could be declared out of the first month's run of the mill. I base this assertion on the following facts:

There is one continuous body of milling ore for one thousand feet high up the mountain from the mill. There has been two-thousand five hundred tons of this ore milled and it has paid well. The mine for at least one thousand feet above the mill is a gravity tunnel proposition. There is abundant water power directly on the property to operate a water power mill, electric light plant for the power drills, haulage, and for all other power needed in the operation of the mine. The ore is free milling and the concentrates can be worked by cyanide on the ground. There is abundance of good timber everywhere. The mine is only 1-1/2 miles from deep salt water harbor. All the natural conditions are found here for the cheapest production of gold bullion. The ore has always paid well. The mine is situated on the great mineral belt of Alaska, known as the Juneau and Berner's belt, and extends for over fifty miles parallel with the coast. No mine on this belt, which has been economically managed, has failed to yield a profit to its owners, and some of them have returned millions.

A few of these are the Alaska-Treadwell, The Ready Bullion, the Mexican, the Sheep Creek, The Ebner property, The Berner's Bay, The Jualian and their are many others. The Comet yielded $60,000.00 in one day.

I feel confident that the Bessie property will be yielding up good dividends when this generation is passed away. I could furnish many assays, but the mill runs are more valuable than a multitude of assays; hence I furnish them instead. I consider the Bessie Property worth at least a half million dollars at the present time, and several more valuable ledges will in all probability be found in future development of the property.

Yours very truly

(Sgd) J. D. McIntyre, Mining Engineer