PE-119-02

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PRELIMINARY REPORT OF THE HARRIS CREEK MINE,
TWELVE MILE ARM, KETCHIKAN MINING DISTRICT,
June 11, 1936.

Location:

The Harris Creek mine is located three-fourths of a mile from tidewater near the head of Twelve Mile Arm on the east coast of Prince of Wales Island. The property is located two miles southwest of the town of Hollis. A government trail leads from Hollis to Harris Creek where a road leads to the old mill. A trail leads up from the mill to the present operations at an elevation of approximately 500 feet.

History:

The early history of this property is not known. The earliest report of this property is the development work on the Julia claim in U. S. G. S. Bull. 314, "Lode Mining in Southeastern Alaska", 1906, by C. W. Wright, p. 62. It later became known as the Rogers mine and Harris Creek claims, and later the Dutton mine. A 5-stamp mill was operated and an incline shaft was sunk to a depth of 300 feet prior to 1915. Later productive operations were carried on by the Kassan Gold Company. This company was reorganized and called "Kasaan Mines, Inc." This latter company did some surface development work on the Hardy claims in 1930. Later the property was leased to W. Dawson, who is at present engaged in mining on the Hardy claims.

Geology:

Detail geology of this promising section has never been made. Generally, it has been covered and a short description which classifies the sedimentary formations as of the Wales series of possible Lower Paleozoic age, is given in Prof. Paper No. 1, "Ketchikan Mining District" by A. H. Brooks, p. 41.

Theo. Chapin in Bull 692, "Mining Developments in the Ketchikan District, 1917", p. 87, describes the geology as: "The geology of this area is a complex assemblage of sedimentary and igneous rocks whose relations have not been worked out in detail. The bedded rocks include tuff, breccia, schists, thin beds of limestone, black slate, argillite, and graywacke and are cut by a large boss of quartz diorite and associated porphyritic dikes."

The veins occur in a band of black graphic slates that extends for several miles in a northeasterly direction, between Harris and May-Be-So Creeks. This band contains many of the old former discoveries of gold and is a very favorable zone for prospecting. J. B. Martie, Jr. reports of this band in U. S. G. S. Bull. 714, "Mineral Resources of Alaska, 1919," under title "Lode Mining in the Juneau and Ketchikan Districts," p. 127 as: "The country rock at the mine is a graphitic slate, which ranges in strike from east to N. 30° W. averaging perhaps N. 30° E. and dips 12-35° SE. The slate is much faulted and slickensided, but the displacements are for the most part parallel with the rock structure. The highly graphitic character of the slate is particularly evident along the slickensided surfaces. Fine grained dike rocks, in places porphyritic, also intrude the country rock more commonly parallel with the structure of the slates themselves."

Mining and development work has been confined to the Free Gold vein. This is located on the Hardy No. 1 claim and strikes from N. 75° W. to N. 81° E. and a dip that varies from 76° N. to 42° N. The sharp variation in strike and dip as noted in the outcrops of this vein is due, as found in the later mining work, to the fact that the outcrops represent faulted blocks of the vein. These blocks range from 35 feet to 50 feet and are cross faulted with a series of apparently parallel faults that strike N. 15° E. and are apparent on the surface by sharp small ravines that extend up and down the slope. In mining, the ore of these blocks were found to have been faulted nearly horizontally at depths of 25 to 30 feet below surface outcrops, while sufficient work has not been done to get the true dips of these faults, it appears that these blocks have been moved from their original position down slope to the present. The downward extension or original position of this vein has not been found, nor has the intersection of this vein with the Humbolt vein which strikes N. 5° E. and located on the westward extension. Above these outcrops there is considerable overburden and dense large timber which make surface prospecting difficult. However, by following these small ravines that represent the faults, bedrock can be seen and possibly other segments and the original position of the vein might be located. Another means of discovering the original position of this vein would be to continue underground development in the Humbolt tunnel until the intersection is found. The amount of work necessary is undeterminable at this time.

Development Work:

Development work consists of two short crosscut tunnels, total length 150', driven under two ore blocks at elevations of 500 and 525 feet. Stripping and trenching has been done on the surface. Most of the ore from these blocks have been stoped, the faults were encountered and the ore terminated. In the last two years the oxidized quartz was washed and approximately two thousand dollars in gold was recovered as free and eight hundred and twenty-five dollars in concentrates. Twenty-eight tons of ore was shipped and reported to have

returned two thousand dollars in gold. Two ore dumps with approximately 100 and 250 tons, respectively, are ready for crushing and transportation via a 2-inch pipe line to the mill on Harris Creek. This ore was reported to average $25 a ton.

Mineralization:

The quartz of this vein is somewhat banded and rather impure with numerous pieces of brecciated slate showing. Numerous crystals are in evidence. Along the vein and cutting into the fissure are several small bluish gray porphyry dikes. These show altered feldspar crystals, chlorite and some quartz. The mineralization consists of gold, arsenopyrite, chalcopyrite, sphalerite and galena in a gouge of quartz, graphite, calcite and chlorite. The gold was reported as being 650 in fineness. The pyrite occurs in both large and fine crystals.

Machinery:

The tunnels, drifts and stoping were done by hand methods. The ore was crushed outside the tunnel with a small 4x6" Straub crusher which was run by a 3 H. P. Fairbanks Morse gas engine. From the crusher the ore was screened and run with water through a 2-inch pipe approximately 2000' to four wooden tanks in the old mill of the Kassan Gold Company on Harris Creek. From the tanks it is fed to a 24"x30" Chambers-Williams rod mill driven by a 5 H. P. White gas engine. The pulp from the mill is run over blankets and a 4x8' amalgam plate. From the plates the pulp is run over a Wilfley table. A $300 per ton concentrate is made. Considerable old machinery is contained in this mill, but most of it is in ruin or beyond repair.

In conclusion it might be added that further prospecting for the downward extension of the Free Gold vein is warranted in that the faulted blocks contain good values. Prospecting along the faults that occur as sharp ravines above the faulted blocks and driving the Humbolt tunnel to intersect this vein would be the most logical methods.

SUPPLEMENTARY TO PRELIMINARY REPORT OF HARRIS CREEK MINE,
TWELVE MILE ARM, PRINCE OF WALES ISLAND, ALASKA
June 2, 1938

The Harris Creek Mine, formerly known as the Julia, Dutton, and including the Humboldt and Free Gold veins, consists of 18 lode claims, two of which are patented and held by the Kasaan Gold Mining Company. Since the writer's visit in 1936 Mr. Wendell Dawson has renewed his lease for a period of 25 years, paying a 10 per cent royalty on the gross production. Since the beginning of Mr. Dawson's lease in 1933 a total of $22,000 in gold has been produced by him to date. At the present time Dawson is mining a faulted block of ore, known as the Free Gold vein, and milling between seven and eight tons daily of ore that averages between $20 an d $30 per ton.

Further Notes on Geology:

References to the geology of this section have been made in the former preliminary report. The following information was noted in an attempt to solve the present fault problems that exist. Unusual structure on the bedded veins with the recent faulting has produced a complex series of geological problems. As a result of these conditions mining problems arose which account in part for the failure of past operations. Briefly mentioned here are the geological conditions and structural problems. The presence of considerable glacial overburden and abundant vegetation makes the solution of these problems difficult. The veins on this property and the Crackerjack and possibly other prospects on the Harris and Maybeso Creek divide are associated with these conditions.

The existing mountain ridge between Harris and Maybeso creeks contains a diorite core. This intrusion, which is possibly genetically related to the Granite Mountain diorite, has intruded or cut through comparatively flat-lying beds of black slates and greenstones. The slates were capped by limestone which the intrusive also penetrated. However, the present day conditions show only the slates and greenstones exposed on the surface in a tilted and folded structure with the limestone all worn away with the exception of odd remnants about the intrusion itself at higher elevations. The present creek valleys have been worn by stream, ice and other erosional agencies to their present levels on each side of this elongated intrusive. The black slate band which contains the present veins represented the weakest members of the series and zones of weakness developed parallel to the bedding. Dike material was injected into these zones of weakness and the material was accompanied by silica and mineralizing solutions. Pressure continued along these zones after the dike injections, and the dikes themselves became schisted and altered. This was followed by further solutions which filled the open spaces, mineralized the slates, and gradually formed the quartz veins. Pressure of greater magnitude followed, causing the partly formed veins and the schisted dikes to buckle, forming rolls at intervals along the vein. These buckles or small folds formed greater openings and

larger quartz bands were formed. They also represent pressure points where the greatest amount of pressure was applied causing a greater degree of metamorphism and making richer orebodies. Due to the folded nature of the veins at these points, dips and strikes are different than the general strike and dip of the bedded veins, which generally are persistent and constant. In the vicinity of the Free Gold and Humboldt veins cross faulting has developed cutting the veins into blocks. Recent gravitational faulting has shifted the positions of these blocks changing both the dip and strike of the veins.

The slate formation, with the exception of the faulted blocks, strikes N. 20 to 30° W. and dips 25 to 35° SW. Two parallel bedded veins occupy their relative positions near the top of the slate band, 250 feet apart as they outcrop, and can be traced from where they cross the bed of Harris Creek north and around onto the Hollis and Crackerjack claims and down to the Maybeso Creek valley. Due to the comparatively flat dip and the differences in elevation of the outcrops, the vein outcroppings appear to have various directions of strike. (For a more complete description of these veins and geological processes involved in these formations, see report of Crackerjack group by the writer).

Free Gold Vein:

Sketch Plates Nos. 1 and 2 show both the surface and underground exposures of the Free Gold and Humboldt veins. Both are clearly shown as faulted blocks. The Free Gold block, elevation 480 feet, has a length of 210 feet. Both ends are shown and a flat fault of recent origin cuts the vein at a distance of 30-40 feet below the present surface. The width of this vein varies from 3 to 8 feet along the above distance. The strike of the vein in this block varies from No. 75° W. and dips 45° N. on the east end, to N. 81° E. and dips 75° N. on the west end. Definite proof that this block is a faulted block of one of the normal strike veins is found in the fact that the vein follows the dip and strike of the slates along its 210 foot length, and also has the schisted greenstone dike as a hanging wall. Otherwise, if this vein were a cross vein, as formerly supposed, it would cut the schistosity or bedding of the slates. The limits of the faulted slate block could not be traced due to considerable overburden. However, the east and west ends of the Free Gold vein mark the end boundaries of this one block. From the various dips and strikes noted in the vicinity this one block is not great in extent. However, the presence of other faulted blocks and the great amount of overburden makes a complete solution of this fault problem difficult without further underground development work or trenching.

Humboldt Vein:

The Humboldt vein block is located 600 feet south and slightly west of the Free Gold vein at an elevation of 250 feet. The vein outcrops along the west bank of a small creek for a distance of 150 feet. The vein ends abruptly on the northeast end in the bed of the creek. The southwest end was not determined due to overburden. The strike of this vein is

N. 20° W. and normal to the general strike of the formation. This vein section may be in place and continue south along its normal strike. However, the dip of 20-22° is less than the normal dip of the general formation, and this change is no doubt caused by faulting. The Humboldt tunnel was driven nearly on the strike of the vein which it follows for nearly 200 feet. At a point 220 feet from the portal the vein was faulted and its extension from this point has not been found. The drift follows along the footwall of the vein. The fault shows as a crushed zone 8 to 12 feet wide from which a small stream of water flows. The dip and strike of this fault could not be determined. The drift continues on past this fault through schistose slate, cuts a small green dike and ends in hard dense slate. On the surface outcrop the greenstone dike occurs on the hanging wall of the vein. The vein is banded and ranges from 6 to 10 feet in width.

Evidence that the Free Gold and Humboldt veins are segments of the same vein follows:

1. Both veins are inclosed in the same graphitic slate formation.

2. Both veins follow dip and strike of the formation.

3. Both veins have the same kind and widths of schisted dike material as a hanging wall.

4. The widths of the two veins are comparable.

5. Similar quartz bands occur in both veins. (under the microscope, slides of the quartz of both veins have the same general appearance).

6. The mineralization contained in the two veins is composed of the same minerals.

7. They lie in close proximity to each other.

Differences noted in the two veins:

1. The veins lie at different strikes and dips. However, these conform to the formation in both occurrences. Explanation: This difference is accounted for in the rotational movement of the Free Gold faulted block, and the vein segment near a rolled section of the vein.

2. Differences in gold content of the two veins. The average mill run of the Free Gold is from $20 to $30 per ton gold and silver. The average channel sampling in the Humboldt tunnel was reported ranging from $7 to $8 per ton. Explanation: As the Free Gold block is mined the greater portion of the values were found on the hanging wall quartz bands.

The Humboldt tunnel follows only the footwall portion of the Humboldt vein and in channel sampling this vein in the tunnel only the footwall bands could be sampled and these no doubt would contain lower values. A factor that makes for lower values in the Humboldt and greater values in the Free Gold is that the latter is in closer proximity to a pressure point or roll on the veins, as described in the report on the Crackerjack property by the writer. Another factor which may influence the values of the Free Gold vein, and about which little is known, is the occurrence of a basic dike above the Free Gold vein. (Not shown on sketch). This dike is located 500 feet above the Free Gold showing, is 4 feet in width and cuts the formation. Accurate dip and strike was not determined, however, its cross formation strike gives ample proof that it intersects the bedded veins at some point above the Free Gold showing.

This dike in thin section was found to contain a ground mass of plagioclase feldspar showing a well developed ophitic structure, an olivine content of nearly 20 per cent, pyrite mineralization of 10 per cent, and numerous apatite needles and other small undeveloped crystals. With the olivine content and the ophite structure of the plagioclase feldspar, this dike is classified as an olivine diabase dike. The age, association and relation of this dike to the present existing bedded veins still remain unknown, and also the solution, which may determine the location and genesis of the higher grade orebodies.

The Fault Problem:

Due to the present existing conditions such as insufficient underground development, the existing amount of overburden, the heavy timber and brush, and the variation in elevation, the present fault problem could not be worked out. If it were possible to determine accurate dip and strike of the faults the solution would be comparatively easy. The objective is to find the bottom extension of the Free Gold vein. Positive proof exists that the Free Gold block originally was in a position normal to the strike of the formation, N. 20° W., since the vein in the block parallels the formation in the block. Therefore, the movement of the Free Gold block has been rotational or hinge type. The Free Gold vein appears to represent a limb of one of the buckles or rolls developed along the bedding plane. Further movement parallel to the bedding faulted the vein on the bottom due to the movement following a straight line. This caused the faulting of a block of slate, including the vein, on the bottom. Other faults known as cross faults developed and cut the block on the ends. This condition remained until erosion had worn away to nearly the present surface conditions. Thus gravity caused the faulted block to slip down on the dip of the bedding and rotate as a hinge with the lower end or west end acting as a pivot. The present flat fault which is exposed in the underground workings contains crushed quartz showing a movement of the hanging wall down on the dip. Thus the movement in this fault, which strikes N. 19° W. and dips 26° SW. (parrallel to bedding), and which acted as the cutting agency of the vein in the bottom, has again been the cause of the recent movement of

this block as normal faulting, while the former movement was thrust and reverse faulting. To place this block into its former normal position is the present problem. More surface trenching and underground work is necessary to measure displacements. Due to faulted conditions other vein outcroppings cannot be considered as in normal positions. The present creeks and other erosional agencies have worn considerable of the faulted block away. Glacial debris has covered the vein outcrops. Mining development has not reached the west end of the Free Gold vein on the bottom. It is possible that the vein in place will be found below at this point. This hinge type of fault could have been developed in two ways, one the reverse of the other. The thrust fault movement was on the vein with a direction of plunge 38° off horizontal toward the west. Since the movement of the walls is not known in relation to one another, the faulted block was either thrown to the north with the east end as a pivot, or it was thrown south with the west end as a pivot. This was followed by recent movement of normal faulting of the faulted block downhill as clearly shown by the flat fault in the underground workings. This recent faulting has covered the original vein below. In either case there has not been great displacement, possibly between 100 and 200 feet, depending on which end of the block the measurement is taken.

The Humboldt vein is in its normal position in regard to strike. It is definitely faulted on the north end as shown in the tunnel and on the surface. The dip is, however, less than the normal dip and the vein may represent another faulted block. Again displacement would not be great and the solution of one block will possibly solve the problem of the other.

Development Work:

The total amount of development on this property is not known. At the old workings located on Harris Creek an incline shaft has formerly been sunk and considerable drifting with some stoping was done during the early operation of this mine. These workings are filled with water and inaccessible. Several old short prospect tunnels were noted in the vicinity of the Free Gold and Humboldt veins. Some of these were caved. The total workings on the Free Gold vein consist of four tunnels, two of which are caved, and amounting to 350 feet, including raises and crosscuts. The south portion of the vein has been stoped from the fault below to the surface. The total workings of the Humboldt consists of 500 feet of drift, crosscuts, and one raise to the surface. Another short tunnel cuts the vein a few feet below the surface above the Humboldt tunnel. At the present time development work is limited to stoping ore on the Free Gold vein.

Milling Machinery:

Mining, including all the recent work, has been done by hand methods. The broken ore is trammed to the ore bin on the upper side of

the mill. Here large pieces are broken by hand and run through a 1-inch grizzly to a 4x6" Straub crusher run by a 3 H. P. gasoline engine. From the crusher the ore is fed direct to a 21x50" rod mill using 3-inch rods. This mill has a capacity of 18 to 20 tons daily and is run by a 7 H. P. Wittes gasoline engine. Attached to the end of the mill cylinder is a revolving 35-mesh screen. The fines run over 10 feet of coco-matting to a standard Wilfley table, the coarse being fed to an elevator and returned to the mill circuit. The concentrate from the table is sacked for shipment and middling is returned by hand to the mill circuit. Tailings are fed to a 2-inch pipe, 2,000 feet in length, to the camp where the flow is run over 20 feet of coco-matting and thence the tailings are dumped on the road bed.

Conclusion:

This property has several advantages that are favorable to mining such as salt water transportation, abundance of timber, possible development of small water power, and the geological conditions are very favorable. A systematic development of the known orebodies and a search for others should result in a profitable venture.

The following is taken from REPORT OF INVESTIGATION, SOUTHEASTERN ALASKA, by Howard M. Fowler, Associate Mining Engineer, Territorial Department of Mines - May 24 to Nov. 10, 1950

KX 119-8

May 30 - Wendell Dawson's mine at Hollis was visited

Mr. Dawson returned to the property from Utah on February 1, 1950, in an attempt to make an early season start. However, he was seriously handicapped by heavy snows and found that he actually would have been farther ahead by returning at least six weeks later.

Mr. Dawson's lawsuit with Howard Larned of Seattle was decided adversely for Mr. Dawson by Judge Folta during the spring session of court at Ketchikan (Opinion No. 2681Ka. Filed: May 11, 1950).

Mr. Larned in his suit against Mr. Dawson contended that Mr. Dawson had staked two claims near Hollis, Alaska, that over-lapped claims owned by Mr. Larned. Previous separate examinations by Mr. Aner Erickson, Ketchikan engineer, and by Mr. Howard M. Fowler, Associate Mining Engineer for the Territory of Alaska, Department of Mines, failed to disclose any discovery monuments or corner posts on the ground claimed by Mr. Larned. No side lines could be found by Mr. Fowler, but occasional old blazes were found, although they had no apparent connection with the claim boundaries; i.e. it could not be determined definitely just where the claims in question lay. The court decided that Mr. Larned could return and reestablish his old claim lines, and the claims would be valid. Mr. Dawson was charged a $5.00 token damage, but was also assessed all court costs, and costs of the plaintiff--even to expenses of witnesses from Seattle. This amounted to $1,300.00 which, it is reported, was later reduced to $800.00.

During the past summer, it was reported that Mr. Brown, surveyor at Ketchikan, was employed by Mr. Larned to re-run the claim lines. Accordingto the report, a preliminary survey showed that Mr. Dawson was never on the ground in question, and that when Mr. Larned's claim lines are laid out, Mr. Dawson's ground will be found to be approximately 150 feet above Mr. Larned's end claim line. After the preliminary survey disclosed this condition, no further attempt was made to reestablish end lines on Mr. Larned's claims. This in effect, continues to throw a cloud on Mr. Dawson's title to ground in the area, and makes it difficult for him to raise the necessary capital to properly develop his mine.

The following is taken from REPORT OF INVESTIGATION, SOUTHEASTERN ALASKA, by Howard E. Fowler, Associate Mining Engineer, Territorial Department of Mines - May 24 to Nov. 10, 1950

October 8 - To Kendall Dawson Mine at Hollis, Alaska

This property was given a further examination because of additional work done by Mr. Dawson, and because of Mr. Dawson's request. The examination is written up in a separate report, and reference is made to that report.*

Mr. Dawson has had considerable difficulty with machinery breakdowns, orders for supplies, and concentrate shipments. The burden has gotten so heavy that it is questionable if Mr. Dawson can re-open his property in the spring.

As an example of Mr. Dawson's troubles, and the troubles that beset small operators, during the winter of 1949-50 he shipped 28,540 pounds of concentrates to the Tacoma Smelter. It took 4 men 2 hours to load the concentrates at Hollis without benefit of longshoremen. To unload at Ketchikan, it required 12 longshoremen plus 2 foremen 2 hours or a total unloading cost of $65.00. The cost to ship to Ketchikan by mailboat was five dollars per ton, or $70.00. The cost to ship south by Alaska Steamship Co. was $272.19 (includes wharfage, etc. to smelter). The total charges of shipping the concentrates from Hollis to Ketchikan were $407.19. This does not include the charges for transporting the concentrates from the mine to Hollis.

In addition, during the summer of 1950, Mr. Dawson shipped a consignment of concentrates to the Tacoma Smelter that left Ketchikan via Alaska Steamship on June 12, 1950, but did not arrive at the smelter until August 10, 1950. The concentrates had apparently lain on the Alaska Steamship dock in Seattle during the intervening time.

*4/3/52 Report has never been turned in by Fowler. When he left Department 1/10/52 he was to forward it from Tacoma.

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The following is taken from REPORT OF INVESTIGATIONS BY HOWARD M. FOWLER, ASSOCIATE MINING ENGINEER, TERRITORIAL DEPARTMENT OF MINES, IN THE KETCHIKAN-HYDER MINING PRECINCTS, ALASKA - May 23 - July 14, 1949

May 25 - Ketchikan to Hollis. Visited Dawson Mine on Harris River. Dawson has milled approximately 125 cars of ore. Expects to mill about 300 cars for the season. Dawson has acquired a partner at the property named Earl Simpson. Simpson is not a miner, and is working alone in a flat dipping stope with a heavy hanging wall. Insufficient timber is being used. The men were advised to take precautions, but they apparently felt there was no hazard.

The following is taken from REPORT OF INVESTIGATIONS BY HOWARD M. FOWLER, ASSOCIATE MINING ENGINEER, TERRITORIAL DEPARTMENT OF MINES, IN THE PETERSBURG-KETCHIKAN MINING PRECINCTS, ALASKA - May 30 August 1, 1948

June 29 - Inspected Wendell Dawson mine on Harris Creek. Mr. Dawson had some difficulty this spring with his aerial tramway breaking but it is now repaired and operating satisfactorily. At the time of my visit, the property was operating with four or five cars a day being milled. Mr. Dawson's wife, small daughter, sister, and young nephew were at the property. Mrs. Dawson and Mr. Dawson's sister took turns operating the mill while Mr. Dawson worked the mine. Mr. Dawson expects to mill for approximately 100 shifts during 1948.

The ore structure at the Dawson mine is too flat lying for broken ore to flow freely in the stope. The foot wall is smooth and unbroken but the hanging wall is badly fractured. Mr. Dawson insists on opening too much ground in his stopes without proper support. He was advised against this but still continues to mine in the same way. There is considerable danger that his hanging wall will start to cave and that his present stope may be lost.

Mr. Dawson reported existence of two narrow (4" to 6") veins on the summit of the mountain on which he is located. He reports several samples were cut and went over one hundred dollars in gold a ton. The mountain was fogged in and the summit was still covered with snow so no investigation was made.

The following is taken from REPORT OF INVESTIGATION & ITINERARY OF J. C. ROEHM, ASSOCIATE MINING ENGINEER, IN THE HYDER AND KETCHIKAN MINING PRECINCTS, ALASKA - July 27 to August 18, 1947

August 3. Wendell Dawson reopened the Dawson mine last year after its having been closed since 1942. A small gold production was made last year. This year operations began in March and to date a total of 49 three-quarter-ton cars have been milled. Dawson has his mine developed to where stoping only is required, and as a result he is able to operate at an average capacity in the mine and mill of from three to four cars per day. He expects to mill at this rate until November. A mill recovery of free gold and a concentrate of the table averaged $30 per ton. The milling process is very simple consisting of crushing direct into a home-made rod mill that grinds to thirty-five mesh and which flows direct over a concentrating table. A free gold product pure enough for shipping is taken from the number one cut off the table and thence re-tabling. The number two or middling product is roasted and this makes another product of high enough value for shipping direct to the mint. Number three product is stored for shipment to the smelter.

Dawson operates this mine alone and considerable credit is due for his development of the existing ore-body. Indications are that this ore-body contains a reserve many times greater than the present capacity of the mill. Dawson also probably holds the distinction of operating the only producing gold lode mine in Alaska at the present time without the aid of labor. He has been working alone for the last two seasons.

Another factor of primary importance is that stibnite was identified by R. L. Stewart in pieces of ore brought to this office from this mine. This gives positive proof that the gold in this ore-body is primary in origin, and that the values will probably continue to good depths. Further, the S-fold structure on which the ore was formed is beginning to show in the developed workings. This is of considerable importance, and will have a definite important bearing in the future development of the Cracker Jack property and probably the old Harris Creek ore-body.

TERRITORY OF ALASKA

DEPARTMENT OF MINES

JUNEAU, ALASKA

Excerpt from

REPORT on COOPERATION BETWEEN the TERRITORY of ALASKA and the UNITED STATES in MAKING MINING INVESTIGATIONS and in the INSPECTION of MINES for the BIENNIUM ENDING MARCH 31, 1931, pp. 14-15

by F. E. Stewart, Supervising Mining Engineer

HARRIS CREEK MINE

Productive operations that have been carried on at the Harris Creek gold mine at the head of Twelve Mile Arm for several years past by the Kassan Gold Company have ceased. The company has been reorganized under the name "Kassan Mines, Inc." During the summer of 1930 this company accomplished a small amount of surface development work on that section of the property known as the Hardy claims, which lie to the northeast of the Harris Creek mine. The principal vein on the claims is known as the Humbolt, which is undoubtedly an extension of that upon which mining operations have heretofore been conducted, and which has been variously known as the Dunton, Julia and Harris Creek vein. This vein is part of a auriferous lode system which extends northeasterly for a distance of 4 or 5 miles, between Harris Creek and May-be-So Creek in the Hollis section.*

In addition to the work on the Humbolt vein, some stripping and sampling was done on the Free Gold vein, which outcrops on the Hardy No. 1 claim at an elevation of approximately 520 feet. This is a cross-vein that trends easterly and westerly. The quartz vein accompanies a shattered aplitic dike the oxidized exposures of which yield free gold on panning. Assays of surface samples have given encouraging results and the driving of a crosscut tunnel 160 feet in length is planned in order to explore the vein underground. It is believed that the westerly extension of the Free Gold vein will intercept the Humbolt vein within a few hundred feet and the junction of the two is looked upon as a probably favorable locality for the formation of an orebody.

* For a description of this zone see: Lode Mining in the Juneau and Ketchikan Districts, by J. B. Mertie, Jr., Geological Survey Bull. 714, pp. 127-128.