IR 195-30

NOTED
JS
B. B. STEWART
Commissioner of Mines

**Investigations - Sitka Mining District, Vicinities Lisianski Inlet and West Coast of Chichagof Island and Itinerary of J. C. Boehm, Associate Engineer, to Commissioner of Mines, Territorial Department of Mines, Juneau, Alaska, June 29 to July 8, 1936.**

June 29. En route Juneau to Lisianski Inlet.

June 30. Visited the Lucky Strike prospect, owned by Jack Koby and associates, located 1½ miles south from the head of Lisianski Inlet, Chichagof Island. RX 114-83

Since the location of the high grade boulders in the creek bed, assessment work has been concentrated along the south bank which is very steep and about 100' high. Due to the steepness of the bank and the soft schistose formation of highly altered greenstone, these cuts were filled and caved. The vein, which showed in one cut directly above the boulders, and 30' below top, showed 3' of quartz with highly schisted walls of greenstone and it was cut off horizontally at the bottom with a gouge trail which led into the bank. This shows that this vein has been broken off or slightly faulted down the slope and appeared to have been tilted out or turned over from its true dip. Since this surface work has not been very advantageous and continued work would be likewise, a short crosscut prospect tunnel was recommended for the following reasons:

1. To find vein in place where it is not lopped over.
2. Thus to determine true dip.
3. To make accessible for drifting each way in order to locate the section from which the high grade boulders came.
4. To determine values below the weathered and leached zone.

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The location was a few feet above water level in creek and 70' below faulted section of vein that shows in bank cut above. Also at a point above the boulders which are scattered along the creek bed.

It was reported that assays taken from the quartz vein in the surface cuts only averaged about one dollar. The occurrence of considerable free gold in the boulders, together with their size, warrant the expense of this tunnel in order to locate this rich section. It

was very evident that the vein in its true position would be struck less than 100' in the crosscut, but the amount of drifting to hit the ore is undeterminable. However, judging from the appearance of the boulders, they appear to have not traveled far. They are large, with very sharp angular edges. And further, the geological conditions appear interesting and further prospecting is warranted. However, from the amount of work already done, very little can be actually determined regarding the deposit.

July 1. The Paramount prospect, now held by Schotter-Mork-Honning, KK 114-18 located 1-1/5 miles south of the intersection of Lisianski Inlet and Strait, is a group of 7 claims restaked since the original staking of this group in 1920 and restaking in 1924, at which time it was named the Goldwan group. At present this property does not have a name. They have a 5-ton Gibson mill on the beach which they intend to install 950' back below a 30' tunnel along a small creek. They intend to put in a small water power unit, 15 kilowatt generator which is to furnish power to both the mill and a small compressor. This equipment is used with the exception of the mill.

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Their showings consist of two small well defined veins, described by Brooks* and some newly discovered flat lying stringers at an

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*Mineral Resources of Alaska, 1923; U. S. Geol. Survey Bull. 773, p. 123.

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elevation 1500' nearly on top of the mountain. These flat stringers contain considerable visible gold and they are lacking in mineralization. They are almost inaccessible due to steepness of mountain. An attempt is to be made this summer to mine them by hand methods.

July 2-3. Development work on the New Chichagof Mining Syndicate has KK 114-29 been continuous since last year. Two men have been employed and part time a third man. The work has been confined to No. 2 tunnel, 87' vertically below No. 1 tunnel. This tunnel has a length of nearly 600'. Approximately 250' from entrance was in hard greenstone. The fissure showed strong and very persistent features, but it had a narrow width between walls and was lacking of quartz and values. Then a width of 100' of black slaty limestone was cut which to the north became dense black limestone of 40' in width. The walls of the fissure widened to 2 and 3 feet and contained occasional small bunches of quartz. It was reported a few low assays were obtained. At the contact of the dense black limestone which has a graywacke appearance and the grayish buff

limestone, a large bunch of crystalline calcite about 12' in length and 5' in thickness was encountered on the hanging wall. Beginning across on the footwall the first bunch of ore was found, which appears to be a small lense, 50' in length and a width of nearly 9' in the widest place.

Sample No. 23 was taken across 99" of mostly quartz with the characteristic variable amount of limestone.

Then for a distance of 25' two small bunches of calcite occur and the footwall is altered diorite. Over this interval the drift was turned more northerly and the fissure continued in the footwall. Another bunch of ore which is exposed on the east side of the drift has a length of 25' exposed, and its exact width could not be determined due to the fact that the drift was turned into the hanging wall. The last few feet of drift was turned to the west along a limestone diorite contact on which no ore was exposed. Sample No. 22 was taken across 70" of ore which was not its full width.

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I redirected the drift in order to get back on the fissure which should give reverse conditions with the diorite on the hanging wall and limestone on the footwall, according to displacement along this fissure. However, on the surface only very low gold values were encountered past this contact. However, the end of this drift, according to a Brunton survey, is directly under on the dip of the vein, of the above tunnel at a point where the ore was hit. Thus the ore in the upper tunnel extends for over 100' north and unless the oreshoot has a rather flat rake to the south, it is reasonable to assume more ore ahead in the No. 2 tunnel along the fissure.

A map was made of the present workings, including both tunnels and some surface features.

KK 114-30

July 5. On the Chichagof Creek property owned by H. Lucas & Pete Samarzich, and located at the head of Klag Bay. A survey of 11 claims had just been completed July 4 by Frank Metcalf.

Four short tunnels were seen on two different small veins. Considerable work, which consisted of small rock cuts, has been done in numerous places on the property. All showings were only very small quartz veins along faults, the largest consisting of a banded quartz 12" in width and exposed over 80' in the bed of a creek. This vein contained nearly half calcite with quartz and a little pyrite. It was reported as containing visible gold, however, none was seen.

Samples Nos. 24, 30, 31, 32 were taken at the best showings seen and the results will give a good estimation in themselves of the property thus far developed.

KK-114-69E70

July 6. The First Mine has again resumed operations in both mill and mine since the installation of their new Coeur d'Alene hoist. This is a 36" single drum well designed hoist, run by a 75 H. P. induction motor, equipped with an automatic cut-off switch. An electric cable 2,000' long leads from the adit to 3 - 50 V. A. transformers, located 150' from the hoist room. This cable carries 6800 volts, contains three conductors, No. 8, is 1½" in diameter and consists of rubber, jute, steel, jute with outside lead as non-conducting coverings, and is grounded throughout. At the three V. A. transformers the current is reduced to 440 volts and over a lead cable to hoist room. Another series of transformers behind hoist reduce current to 110 volts for use on lights and signals.

The signal system is new equipment and one of the latest types and extends to the lowest working level 1125.

Three new electric driven pumps, three cylinder type, have been installed on 300 level, 700 level and 1125 level. These are a very decided improvement over the old air pumps which used the greater amount of air compressed.

The next improvement that has greatest importance in regard to safety, is the new hooded, 30 cu. ft. capacity skip with automatic safety stop and the retimbering of the shaft, making two separate compartments. These compartments are of the same size, 4'x4.8' and the skip compartment is completely lagged from the collar to the 1125 or lowest level, with the exception of stations on which iron bars are across. The manway contains pipes and wires and staggered ladders with a floor every 10'. This condition extends to the 850 level. According to a statement from the management, this condition is to be extended to 1125 level soon.

As the 1125 level is the only working level, except drifting on the main level, this was the only level visited. Air conditions were good, and with a few more feet of raise to connect 1050 level, a circuit of ventilation with the surface will be completed. The drifts, raises and stopes are well timbered. Considerable difficulty was encountered in places in the stope in timbering where water was encountered. This condition is due to the dike on the footwall of the ore being in a highly altered and soft condition and the soft slaty hanging wall. Where water does not exist, it can be caught with the timber and held. A stope round is blasted and a square set is immediately put up making stoping in general quite safe. The ore appeared over 2' in width and was reported to run between two and three ounces of gold. Stoping, drifting and raising were in operation and preparations were being made to cut a skip pocket in this level in preparation to start sinking to the next level, one shift a day. Continuous drifting of one shift has

been proceeding on the main level along a fault fissure in an attempt to reach under a surface showing on the Bart claim on Chichagof side of the mountain.

The amount of development work for 1935:

125' of vertical shaft - 12'x6'

Drifting:
600' - Main level.
225' - 700 level, NW. drift.
230' of crosscut to ore, 1125 level.
95' of sub-drift at top main level raise.
75' of raise main level.

Development work for 1936:

133' of drift, main level.
200 to 300' of drifting under ore.
3 raises - one nearly to 1050 level.
Contemplate 125' of main shaft sinking and several hundred feet of drifting on 1125 level to southeast to prospect.

S. Hea 114

Milling has been mainly continuous the last two years. It was stopped for two months this year while the new hoist was installed and shaft retimbered. The amount of ore milled was not given out and the reason that another dividend is to be declared soon.

In conclusion, with this new mine equipment, the retimbering of the main shaft, and the decided improvement over old conditions, this mine may be spoken as safe, efficient, and well managed.

July 7. The Slocum Grunter prospect, owned by Geo. Bolyan and Frank Cox, is located in Island Cove on the east shore of Slocum Arm, two thirds of the distance down toward the head. KX 114-9

A dike of dioritic nature outcrops 2700' from the beach and at an elevation of 900' in the bed of a small creek. This dike varies in width from 8 to 12' and follows the course of the creek to the top of the mountain, and is traceable for 1500'. The general strike is N. 40° W. and has a vertical dip. The color is greenish and weathers to a light buff. This dike is in altered schistose andesite tuffs which has the appearance of graywacke. Small minor lenses of ore occur along a fault plane which extends parallel and located through the center of the dike. These lenses are quartz containing free gold and a few scattered sulphides. Pyrite was the only one identified.

The gangue minerals consist of an impure limy quartz with blebs and pieces of greenish and bluish country rock, also small to medium angular pieces of dike material and calcite.

Showings consist of a few quartz boulders in the creek above the tunnel, 18" to 20" in diameter which contain visible gold. A 550' tunnel follows the strike of the dike at an elevation of 860'. Four minor lenses of ore show distributed along this length. They range in length from 16' to 42' and in width from 12" to 27" at points of greatest widths. Samples Nos. 25 and 26 were taken across the face at the end of the drift and sample No. 29 taken across 27", or the widest portion of the longest lense.

The Pinta Bay property owned by the owners is to be operated this summer as soon as three bridges are replaced. These operations will consist of stoping more ore and milling with the small Gibson. KK 114-54

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A trip was made into Lake Ann, two miles south of Chichagof and the discovery of iron in forms of hematite and magnetite with possible chromium content was seen. This discovery was made last winter and consists of two small areas at the north end of Lake Ann along the beach 200' apart where numerous red and black boulders occur. These boulders originated from segregations in an altered greenish dike that is 12 to 15' in width, and strikes along the shore in a northeasterly direction. These segregations are about 40 to 50' in length and weather red to black according to form of iron content. One sample of pieces was sent for chromium assay, No. 33.

Located along the north shore of Lake Ann, one mile from outlet is an 8' green dioritic dike in graywacke. This dike is slightly silicified, fractured, and mineralized. Small gash veins occur within the dike and the widest seen was 5". This dike strikes N. 69° W. and dips nearly vertical. A 10' tunnel was driven along the west wall on the beach above high tide mark. A rock trench 30' long, 7' wide and 6' deep was along the dike, 150' from the beach and 80' in elevation. Two other small cuts were seen which showed only dike with small stringers of quartz. These stringers contain pyrite and were reported to pan gold. No samples were taken.

KK 114-

July 8. Located one mile southwest of Chichagof on the west side of Klag Bay is a group of 34 claims staked by Mike McKallick. A small quartz vein is exposed for 200' and can be traced for 700' at an elevation of 600' and 1500' back from the beach. This vein is along a fault of N. 30° W. strike and is one of the eleven known parallel faults in this region. Its width is 2" to 10" and is in graywacke

and slate formation. A 4' greenish dioritic dike intersects this vein on the surface and it is displaced a few feet by the fault vein. The quartz has its greatest width of 10" between this displacement. Visible gold can be seen over this exposed length of 200' and it is associated with pyrite. The dike is somewhat mineralized and silicified near the intersection and reported to contain low gold values. Angular pieces of dike occur imbedded in the quartz vein. A gouge occurs on the hanging wall of the vein and pans gold.

Work has been confined to a tunnel approximately 80' below surface showings. This tunnel to date is 75' long with a 38' crosscut. At a point 19' in the crosscut from drift a 4" gouge was cut. This may or may not be the above vein, but from appearance of the 67° dip on the surface, the vein is still ahead in the direction of the crosscut. Sample Nos. 27 and 28 were taken. No. 27 was taken across the widest and best looking portion of the vein on the surface between displacement of the dike on the fault vein. This width was 8" of quartz showing free gold. No. 28 was a sample taken across 4" of gouge in the crosscut. This vein was sampled two years ago by Mr. Hills of Chichagof Mining Company. He mentioned that free gold was showing in several samples and that the average was very low and the width very small.

July 9 to 13. Headquarters, Juneau Office.

KX-112-35

July 13. Upon request by K. Aschenbrenner for additional horse trail from the present termination at the cabin in Yankee Basin, 35 miles north of Juneau, over summit to E-Pluribus Unum claim on Canyon Creek slope. I made a trip with M. S. V. Dennison, Supt. of Maintenance and Construction for the Forest Service over this trail. The old trail that extends from Eagle River to Yankee Basin has been made into a horse trail with agreement between the Forest Service and Aschenbrenner. The latter agreed to do the packing with horses for the Forest Service. The termination for this trail was Yankee Basin cabin.

Since the operation by Aschenbrenner of the Gibson mill on the small high grade lense of ore on this claim has not been successful, he has decided to mine the high grade ore and pack out for shipment, providing this horse trail is extended by the Forest Service from the cabin to the summit. Mr. Dennison and myself decided that this trail was not warranted for the following reasons:

1. From the cabin in Yankee Basin to the summit is only approximately half a mile over which is a used foot trail. The difference in elevation is 1000' which is decidedly too steep for a horse trail.

2. Thus a trail around the head of Yankee Basin, a distance of two miles over numerous small creek canyons and considerable overgrown slide rock, would cost between $2,000 and $3,000, and take two to three months to build.

3. With the trail terminated at the summit, it would then be a mile away from operations. About half a mile across the summit horses could easily be taken with a little work, however, the last half a mile is again too steep for horses and an expensive zig zag trail would have to be built. And again the 1000' of elevation down to the Canyon Creek valley.

4. The logical route for a horse trail to Canyon Creek basin is via Echo Cove along the foot trail. This distance is only 7 miles and a gradual rising elevation to only 1200', while the trail via Yankee Basin would be 9½ miles into Canyon Creek basin over a summit elevation of 2300'.

5. The operators are lessees and intend to mine high grade only. It is not their intent to do any development work, nor have they any capital for such.

6. It is not the intent of the Forest Service to build trails to individual enterprises, unless by so doing it means the development of an area in general.

Summary 112

The Husky Group of 20 claims originally is now a group of four, including the old E Pluribus Unum claim owned by Vic Spaulding of Auke Bay, and leased and optioned to K. Aschenbrenner & H. E. Young. Work has been confined to the small high grade lense mentioned in bulletin No. 502.* Nearly one third of this lense has been mined. 13-112-35

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*The Eagle River Region, by Adolph Knopf; U. S. Geol. Survey Bull. 502, 1912.

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Its maximum length is 26' and greatest width is 18" and appears to be pinching downward. Its average value was reported as 8 oz. of gold per ton. An important feature shows in regard to this small high grade lense and its surrounding environment, with stages of ore deposition in this area. Three stages of ore deposition are ~~shown~~ shown here over a small area and this high grade lense represents the third and last stage.

Samples were taken across a stringer zone in the upper tunnel to show average value. Samples were also taken of battery, plates and tailings to show amount recovered with this small Gibson mill and table in this type of ore.

July 14. Also was in Black Chief tunnel, a parallel lode, 600' distance on this group of claims and described by Knopf in above reference. The character of this ore is more basic than E Pluribus Unum ore and is reported to contain $40 to $60 in gold per ton. This ore contains with its basic character important features in regard to ore deposition in this area. KX-112-35

July 15. The Wanderer group, located 2¼ miles inland from Yankee Cove, 40 miles north of Juneau, consists of 6 claims on which is located the Bessie mine, described in Knopf's report, Bull. 502. This group is owned by H. Stanton and Dr. L. P. Dawes of Juneau. An attempt is being made to erect an old Allis Chalmers 10-stamp mill, which is on the site, in preparation to mill several dumps and to continue mining in the workings of the old company. Samples from two different dumps were taken, Nos. 43 and 44, and one sample was taken across 15" of an enriched portion of the blanket vein which is located alongside the mill. A thorough channel sampling of all the old workings and showings to determine average value in gold content was recommended prior to starting mill operations.

July 16 & 17. Headquarters, Juneau office.

KX-112-41

July 18. Leave Juneau for Eagle River mine in company with Mr. H. B. Humphrey and Arthur Thane.

The faults were mapped and the geology in the Flume Tunnel which was the only accessible one, with the exception of a short tunnel on the Yankee Boy lode to the west.

The phases of dike rock, samples Nos. I-1, I-2, I-3 were sent to Hopkins for microscopic determination. Due to the slide condition on the surface of the Eagle River slope, surface outcropping of faults could not be located. On the summit a condition of mountain crumbling was noted which has the same appearance as ice crumbling at the end of a glacier. Considerable of this crumbling has been recent, due to the retreat of the Eagle River Glacier. The two first fault zones in the Flume Tunnel are normal crumbled zones. Three zones, which are stringer lodes appear on the Yankee Basin slope, however, on the Eagle River slope they are not due to abundance of slide rock.

Two series of slips were noted and enough mapped to show parallelism and direction with dips. The third fault zone was not seen well enough to determine much about it. However, by the location of the slate and graywacke contact and the zone of siliceous nature along which the small lenses of ore occur, and further by the occurrence of pieces of dike material in this zone, a horizontal movement of 300' was fairly well established. However, the strike and dip could not be determined. A detail topographic map of the area and of Yankee Basin may give more information as to these fault systems. However, I believe if exploration work was confined on the surface to the Yankee Basin outcrops of quartz, their extremities, widths, and values determined, would produce more results and give more basic information for the smallest amount of development money. Assuming that this work warranted more development with regard to blocking out ore for milling, then the Eagle River slope is to be considered as a tunnel site with underground prospecting. Four major problems present themselves in this area:

1. Problem of further evidence of horizontal faulting.
   (a) Considerable information could be gained by a good large scale topographic and geologic map of the area through Yankee Basin, Eagle River and Canyon Creek.
2. The problem of the occurrences, causes and relationships of the three periods of ore deposition; and a study of the parallel ore zones.
3. The problem of the nature, type, and persistence of these ore zones in depth with related values and a comparison with surface or near surface conditions and values.
4. Problem of a complex milling ore.

Why the Yankee Basin slope outcroppings warrant surface exploration:

The usual type of gold deposits found in slate and graywacke formations are of the lenticular-tabular type and extend vertically in series of large or small lenses. It is not uncommon to encounter more than one deposit of this type which usually occur along some zone of weakness--fault zone, shear zone, etc. It appears that the Eagle River orebody was of this type, which has been faulted into blocks. The upper portions have been mined. The ore is still occurring in blocks in the Flume tunnel. The ore that occurs in the end of the tunnel may or may not be in its original position. However, by exploring the Yankee Basin outcrops and with particular attention paid to sampling and corresponding assays, another or more orebodies of this type may be found. Further, dike rocks

also occur on this slope in close proximity to the silicified zones, which are the most favorable areas for ore deposits of this type.

July 20. Return to Juneau at 7.30 p.m.