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by S.S. Holland June 27/44

No. 6.

035591

Report on the Leech River (48° 123°)

(Placer holdings on Leech and Sooke Rivers and Shasta Group)

Situation and access:

The Leech River is about 8 miles long, rises in meadows at the head of Jordan River, and flows eastward into Sooke River about 1-1/2 miles south of the outlet of Sooke Lake. Leechtown at the junction of the Leech and Sooke Rivers is about 36 miles by road from Victoria. It is reached by the Island Highway thence by way of the Shawnigan Lake road to a point half a mile south of Shawnigan Lake whence a road leads off to the south, skirting the east side of Sooke Lake to Leechtown.

History of Placer Activity:

Placer gold was first found on the Leech River by an exploration party sent out from Victoria by the Government in July, 1864. By 1876 it was estimated by G. M. Dawson that $100,000 worth of gold had been recovered. Later estimates place the value of the placer gold recovered between $100,000 and $200,000. One nugget valued at $70 is reported to have been found and even within the last 5 years nuggets of approximately 1/2 oz. and 1 oz. have been found.

It appears that most of the gold was recovered either from bars or in crevices in bedrock of the river bed, or from benches along the side of the river. The gold recovered from the benches was mined either at a depth of 10 to 15 feet and about 10 feet above river level on a clay, "false bedrock" of a low bench on the north side of the Leech River that extends a quarter of a mile up-stream from its junction with the Sooke, or on bedrock beneath

shallow overburden on a rock bench about 10 feet above river level that extends more or less continuously on one side of the river or the other at least as far as the first fork in the river about 3 miles up-stream from the Sooke.

Signs of old work are seen along the river up-stream from the Sooke, a distance of about 4 miles, to a point a mile beyond the first fork. According to Dawson the run of gold turned up the North Fork but rapidly diminished and ran out above the falls in the Devil's Grip. Gold also was found up Martin's Gulch for a distance of 1-1/4 miles from Leech River.

There is no record of the fineness of Leech River gold. However tests were run on three small samples resulting in fineness values of 842, 867.5, and 882.5 parts of gold per thousand. In this report an average fineness of 864, is used, equivalent to a price of $33.32 an ounce or 0.1071¢ per milligram.

The Leech River has been worked sporadically ever since the initial rush after its discovery. According to one 'oldtimer' as many as 60 Chinese were still working on the Leech prior to 1914, he claims the boss Chinaman stated that they were averaging about 25 cents worth of gold per day by hand work.

In 1901 the Leech River Gold Fields Mining Company, Ltd. was formed and acquired three placer leases at the junction of the Leech and Sooke Rivers. An unsuccessful attempt was made to reach bedrock in a deep hole at the mouth of the Leech past which the Sooke River was flumed.

The Minister of Mines Report for 1928 states that there are several old shafts put down on the bench just south of the junction of the Leech and Sooke Rivers. The deepest of these shafts is said to be 35 feet deep and not to bedrock. The report states that tests of good pay were obtained from them but that the report could not be verified because of the delapidated state of the shafts.

In 1931 and 1932 MacDonald and Butterworth put in a cut either by hydraulicking or ground-sluicing on the north side of Leech River about a third of a mile up-stream from the Sooke River.

In 1933 they moved their equipment farther up-stream and began working on the north side of the Leech River just up-stream from Martin's Gulch.

In 1937 Vanisle Mines Ltd. was incorporated and acquired 15 placer leases extending up Leech River and the north fork for about 4 miles from the Sooke. The company built a flume to obtain water, began hydraulicking in January 1940, and ceased operations in 1941. The company still holds 12 placer leases. Under the provisions of the Free Miners' Exemption Act lease rentals and assessment work are not necessary. All the equipment has been removed from the ground, but the dam, flume, and mine buildings are still in fairly good condition.

At present there are two men 'sniping' along the river, Beatton is working by the MacDonald and Butterworth cut a third of a mile up-stream from the Sooke, and Henderson is at the mouth of Williams Creek. For three weeks work Henderson had about $5 worth of gold.

Topography:

At a point 3 miles up-stream from the Sooke, the Leech River is joined by a tributary from the west and changes from a southerly to an easterly course. From there the river flows on bedrock and over several low falls with an average gradient about 2.5 percent to Martin's Gulch. Between Martin's Gulch and the Sooke River the average gradient is about 1.3 percent and the river flows on bedrock at least as far as Williams Creek. No bedrock is exposed in the river bottom for half a mile up-stream from the Sooke.

The valley of the Leech River is narrow, fairly steep-sided and heavily timbered. Near the Sooke and extending up-stream on the Leech for about half a mile is a gravel bench about 25 feet above the river which near the Sooke was worked in the very early days. Other benches at successively higher levels extend up the Leech, more or less discontinuously and appear first on one side of the river and then on the other. Just above Martin's Gulch on lease No. 86 on the north side of the river there is a prominent bench about 80 feet above river level which extends up-stream for about 500 feet. Three miles from the Sooke where the Leech bends to the north on lease No. 49 a low bench about 20 feet above river level is triangular in shape having one side along the Leech about 600 feet long and another along the North Fork about 300 feet long. The gravel in these two benches was considered to be potential placer ground by the Vanisle Company.

Character of Bedrock:

Bedrock exposed in the Leech River is a hard black slate, with occasional 1 to 10 foot bands of white quartzite and containing fairly numerous quartz veins and stringers parallel to the formation. The rocks strike north 70 to 80 degrees west and dip steeply to the north. Black slates are exposed for about 1-1/2 miles up Martin's Gulch and outcrop at intervals along the railway track between the mouth of Leech River and the outlet of Sooke Lake.

Dense, fine grained, green volcanic rocks outcrop on Sooke River just below the mouth of the Leech and presumably extend westward in a belt along the south side of the lower Leech River valley.

A number of quartz stringers and veins outcrop in Martin's Gulch the widest observed being about 2-1/2 feet wide. The veins are parallel to the enclosing black slates and are extremely lenticular. The quartz is white and milky with occasional small crystal lined cavities but no sulphide minerals were observed in it. The slight iron staining appears to come from iron in the slate wall-rock.

A considerable amount of quartz float was observed on the ridge to the west of Martin's Gulch.

At an elevation of about 600 feet above river level and about a mile north by trail from the mouth of Williams Creek a 60 foot crosscut was driven in a northerly direction to intersect a 10 foot quartz vein exposed along the surface for about 200 feet. Only about 2 feet of quartz was cut by the crosscut adit. On the surface the white milky quartz lies parallel to the enclosing slate. No sulphide minerals were observed in it.

Similarly three quartz showings on the Shasta group about 500 feet east of the railway track at Mile 35 are formational veins with no sulphides observed in them.

In spite of the fact that no sulphides nor any free gold were seen in any of the quartz veins it is probable that the placer gold on the Leech River was largely derived from the erosion of the numerous quartz veins that appear to be fairly common in the slate formation. The eroded veins, similar to those outcropping, may have been small, discontinuous and extremely low grade nevertheless they prbably contained sufficient gold, in erratically distributed pockets, to supply the placer gold in the river.

Operation of Vanisle Mines Ltd.

The Vanisle Mines Ltd., a private company, was incorporated in June 1937 to work placer ground on Leech River. The company still holds 12 of the original 15 placer leases. ie. Nos. 49, 50, 55, 64, 86, 97, 99, 100, 101, 110 and 116. The leases (see accompanying sketch map) extend for 3 miles up-stream on the Leech River west of its junction with the Sooke.

The company built a diversion dam on lease No. 49 about 200 yards down-stream from the junction of the west fork, and about 7,000 feet of box flume down along the south side of the river to a point just down-stream from Martin's Gulch. The flume, 5 feet wide and 3 feet deep, has a capacity of about 75 cubic feet of water per second and gave a head of about 175 feet above sluice grade in the Starling Pit.

In February 1941, one 6 inch and one 8 inch monitor were working in the Starling Pit and one 6 inch monitor was used to stack the tailings.

The first hydraulicking was done in Whites' Pit near the down-stream end of lease No. 99, on the south side of the river about a third of a mile up-stream from Williams Creek. This work began in January 1940 and approximately 5,000 yards of gravel was sluiced yielding gold to the value of $408.19 or 8¢ per cubic yard. Bedrock on the south side of the river is low, there was no dump space for tailings which had to be stacked by a monitor, and it was not possible to work low enough to reach the bedrock.

This pit was abandoned and operations were begun on the south side of the river on the upper end of lease No. 99 just east of Martin's Gulch in what is known as Starling's Pit. Gravel lying on bedrock about 10 to 15 feet above river level was sluiced and a length along the river of about 400 feet was worked. Clean-ups in May, November, and December yielded gold to the value of $1410.08, $519.44, and $1100.97 from approximately 15,000 yards of gravel sluiced or about 20¢ per cubic yard.

In 1941 about 41,000 yards (according to the company's estimate) was hydraulicked in the Starling Pit. From this gold to the value of $1539.98 was recovered, or a gold content of less than 3¢ per cubic yard. According to the company's figures the gold recovered from all operations was valued at $4978.66. The total yardage sluiced was about 61,000 cubic yards with an average recovery of 8¢ per yard.

The company balance sheet of November 30, 1940 showed the following items:

Machinery and equipment	$ 13,731.37
Buildings	2,788.62
Camp & cookhouse equipment	902.35
Dam and flume construction	24,910.40
Development costs	22,557.96
Total	$ 64,890.70

At that time gold valued at $2337.71 had been recovered at a total cost of $64,890.70

The balance sheet at the end of operations in 1941 is not available.

All the hydraulicking operations were hampered by the fact that there was no dump room, consequently the tailings had to be stacked by a monitor which not only used extra water but which reduced the amount of gravel that could be handled per day. Secondly a great many large boulders were encountered that had to be bulldozed to a size that could be run through the sluices, increasing the amount of powder used and necessitating closing off the water for a time each day to drill and blast rock.

The recovered gold content per yard turned out to be low, about 8¢ per yard. The operation was unprofitable even though Nordlund estimated the total cost to be slightly more than 5¢ per yard, and Fraser estimated it to be about 8¢ per yard.

Reports by Nordlund and Fraser

Copies of two reports were obtained from B.F. Lundy, a director of the Company.(1) One is by K. Nordlund dated June 5, 1937 who did a considerable amount of test work on the leases, and who was in charge of the operations at the start. The other is by H. Mc. N. Fraser, dated October 20, 1938 in which are quoted the results of Nordlund's test work and additional results by Fraser.

(1) Unsigned copies of the reports were received from Mr. Lundy and have been returned to him. With his consent copies of the reports were made and are appended to this report.

Testing by Nordlund and Fraser:-

Nordlund apparently did a considerable amount of test work at various places but unfortunately does not give his results. He does however calculate the values at an average of 25¢ per yard stating that this is considerably less than the average of his testing.

Fraser in his report gives a tabular summary of Nordlund's sampling but, with a few exceptions, it is impossible to determine the precise sample locations. It appears however that Nordlund got bedrock values of more than 50¢ per cubic yard and that there was gold throughout most of the material. It is stated by Fraser that Nordlund cut channel samples 2 feet wide and one foot deep and excluding several high values of $4 per yard or more his average was 32¢ per cubic yard. Nordlund's sampling, from the description, appears to have been properly done. Fraser's sampling was done in the same places as Nordlund's and Fraser states he got values that confirmed Nordlund's results.

Testing on Leech River:-

The writer did a considerable amount of panning in the Starling Pit. Bedrock in the bottom of the pit is about 15 feet above river level. It is overlain by 25 feet of clay and very coarse bouldery gravel, then 20 to 25 feet of well sorted thinly bedded 'chicken feed' gravel containing thin clay and silt beds, then about 4 feet of fine silty clay, and with 6 to 10 feet of coarse, sandy gravel at the top.

Six (1) pans from gravel lying on bedrock on the north rim of the pit about 15 feet above sluice box grade contained 1.93 (2) mg. of gold indicating a gold value of about 5.8¢ per cubic yard.

Five pans from the base of the upper 10 feet of gravel on the south side of the pit contained 2.91 mg. of gold indicating a gold value of about 10.6¢ per cubic yard. Two pans from the upper 10 feet of gravel at the west end of the pit contained 11.7 mg. of gold indicating a gold value of about $1.06 per yard.

Numerous other pans elsewhere in the pit contained only very small colours indicating that the value of the material is less than a cent a yard. It is impossible to obtain any gravel from bedrock.

This sampling indicates that there is some gold in the top 10 feet of coarse gravel but little or none in the material beneath. The sampling was necessarily incomplete and is inconclusive neither confirming nor refuting Nordlund's and Fraser's results.

A 50 foot drift was driven northward on or slightly above bedrock beneath the gravel bench on the north side of Leech River just west of Martin's Gulch. The drift is caved so that it is impossible to sample it. Nordlund reported values of 50¢ per cubic yard in it, bedrock gravel running as much as $4 per cubic yard, and the overlying fine gravel carrying 25¢ per cubic yard. Pan samples from the overlying gravel contained only very small gold colours indicating values of only a fraction of a cent per cubic yard.

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(1) For calculation 170 pans per cubic yard is used

(2) For calculation Leech River gold is valued at 0.1071 cents per milligram.

Three pans were taken from the bottom of a pit 6 feet deep and about 100 feet east of the Leech River on the low bench on lease No. 49. The gold weighed 14.3 mgrs. indicating a value of 86¢ per cubic yard. Other pans contained only small colours nevertheless further testing on this lease seems warranted with the hope that sufficient yardage containing adequate values might be proved. It would have to be worked by some mechanical type of operation, because bedrock appears to be close to or below river level.

Testing on Sooke River:-

On leases 110 and 116 along the Sooke River at the junction with the Leech there is a fairly extensive gravel bench lying about 25 feet above the Leech River. The bench extends down the west side of the Sooke River for about 1800 feet below the junction of the Leech. A bridge crosses to the west side of the Sooke about 700 feet south of the Leech and from it a logging road runs up the south side of the Leech River valley. About 750 feet from the bridge along the logging road is an old shaft, said to be about 35 feet deep and not down to bedrock. The shaft is sunk in the centre of a shallow surface channel on top of the bench. The channel continues through to the Sooke River at the down-stream edge of the bench 1000 feet south of the bridge. There are several other caved shafts along the depression and an old 50 foot open cut at river level where the depression comes out to the eastern edge of the bench. The dump material from several of the old shafts was panned but only a few tiny colours were recovered. Mr. Lundy stated that he intended to sink the old deep shaft to bedrock in order to get a bedrock test at that place.

To the north of the shaft between the road and the river, the surface depression veers to the west and eventually comes out to the Leech River. It appears to be an old surface channel of the Leech River at that level.

Rock outcrops on both the east and west sides of the surface depression together with the depth to bedrock of about 35 feet or more strongly suggest that there is a deeper buried channel on the lease. There is no evidence to suggest whether it is a buried channel of either the Leech or Sooke Rivers, or whether it has gold on bedrock or not.

Recent Leases Staked by B.F. Lundy.

Three placer leases have been staked along the Sooke River extending northward from its junction with the Leech (see accompanying sketch map). Two staked on April 3, 1944 have tag Nos. 133, 689 and 133,692. The other staked on April 27, 1944 has tag No. 133,690. The location posts of the three leases are close to and on the west side of the railway track between Mile 34 at Leechtown and the bridge crossing Council Creek at Kapoor. All the leases are thrown 1320 feet to the west of the location lines.

The leases cover the Sooke River and ground lying to the west of the railroad right-of-way.

The pipe line for the Victoria City water crosses the railroad track, enters lease tagged 133,689 within 100 feet of the No. 2 Post of that lease, and runs through the northern end of that lease. It continues through the centre of lease tagged 133,692 and through the south-west corner of lease tagged 133,690 (see accompanying sketch map). On lease tagged 133,692 and on the northern end of 133,689 the Victoria City pipe line is about 50 feet above river level and for a considerable distance is on bedrock on the western side of the

of the valley. Lease tagged 133,690 does not encroach upon the Sooke Lake watershed area.

The Sooke River flows between rock walls on the southern end of lease tagged 133,689. To the west of a low rock hump there is a gravel bench. The gravel is exposed in a borrow pit where gravel and extends northward for 500 or 600 feet. was obtained for road surfacing. It is possible that the gravel fills a former channel of Sooke River, no positive evidence one way or the other was obtained.

A number of pans were taken from the gravel exposed in the borrow pit. A few tiny gold colours were obtained, insufficient to indicate that the gold content of the gravel would make it workable.

Lease tagged 133,690 takes in the junction of Deception Gulch and Sooke River where there is an extensive gravel flat along the river. There is gravel on both sides of the Sooke across a width of several hundred feet and extends along the river for possibly 1000 feet. No panning was done there.

Shasta Group.

The Shasta mineral claims are reached by a trail leading eastward from a point 100 yards south of Mile 35 on the railway track. This point is slightly less than a mile north of the bridge across Wolf Creek.

At a point about 500 feet east of the trail and 100 feet in elevation above it an inclined shaft has been sunk to a reported depth of 105 feet. The shaft is full of water. At the surface is a 2 foot quartz vein lying parallel to black slates striking north 80 degrees west and dipping about 70 degrees north. The vein appears to pinch out in the surface exposures and judging from the small amount of quartz on the dump possibly does so at depth. No mineralization was observed in the quartz.

About 300 feet to the north-west is another older shaft filled

with water. This shaft was sunk on a 2 foot quartz vein that is exposed in 2 open cuts for a length of 50 feet. In that distance the vein narrows to an inch or so. The white quartz has a few crystal lined cavities, is slightly iron stained, and no mineralization was seen in it.

At a point 100 feet east of the track is a third exposure of vein quartz 6 to 8 feet wide with an 8 foot deep pit on the west side of it. This vein is parallel to enclosing slates and contains no apparent sulphide minerals.

The three quartz vein exposures are either three separate lenticular veins, or a single variable vein that has been faulted into three segments.

The Leech River was examined between June 9th and June 16th, 1944.

June 27, 1944.

"Stuart S. Holland".

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