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WILSON Co.

PLACER GOLD DEPOSITS

Atlin, British Columbia

By James A. Connors; Assist. Alvin Graves

Field work in Atlin section during the 1937 season was primarily planned for the prospecting of lode gold deposits which were reported by Mr. Carl Barkdull, one-time placer operator in Atlin. The prospective auriferous quartz veins were found to have been staked, analized, and abandonned as unworthy of development. The prospecting was thus turned to placer gold deposits of the district.

The studying of the various creeks and types of placer deposits of the viwinity of Atlin had as its main objective facilitating of a detailed study of the little known Wilson Creek.

Atlin, B.C. is located about 100 miles N15E of Juneau, Alaska, is accessible from that city by plane. Another means of approach is by way of the White Pass & Yukon R.R., from port of Skagway, Alaska, to Carcross, Y.T., then by plane to Atlin. Freight must follow the latter route to Carcross, Y.T., then by boat south on the Tagish Lake to Taku inlet, across a two and half mile portage by rail to Scotia Bay on Atlin Lake, by scow to Atlin proper. The town is located on the east shore of Atlin Lake, thirty miles south of the Yukon line.

Summer freight rates on commodities from Vancouver to Atlin vary from $51 to $66 a ton for carload lots. For machinery the rates are $51 a ton for carload lots, $56 a ton for less than carload lots. Generally, the rate for less than carload lots varies from $74 to $103 a ton.

The method of transporting machinery customary to large-scale operators is by way of the winter roads from Carcross, about the end of February or first part of March when ice on the Lakes is thickest.

Development in Atlin area has been handicapped by this roundabout but unavoidable means of access, attended by high transportation cost. For lack of development, we might also blame the Alien Law of earlier years of the camp, and unprogressiveness of the majority of native miners.

History -

Gold was first discovered by one Mr. Miller, on Pine Creek, while enroute to Dawson with cattle in '98. By the close of the first season over 3,000 people were in the new field and the principal gold bearing creeks were staked.

The record of placer gold output started out the first year with 3,750 ounces; the second year, 40,000 ounces; then there was a general downward flustuation till the lowest mark was hit in '29. There has been a general rise in the curve of output to the 18,423 ounce mark of 1936.

The camp has experienced three rushes since its discovery, the first drawing gold seekers from outside the camp, the last two, a shifting within the camp itself. The original gold rush was a period of prospecting and staking of the richest of the auriferous gravel in the creek valley floors. As time went on, it was conceded by the old-timers that gold did not fly up the hill but that elder channels had existed at higher levels on the benches. This was a less exciting episode but much more systematic than the first. Although deep drifting on bedrock had been started before 1916, it did not ~~###~~ arouse interest of large scale operators until recent years. The development of large scale operations at the deep levels of the Tertiary channels may be easily considered a third rush although it has not gained momentum in any but two creeks.

On any creek with a deep channel we may, today, find the remnants of old-fashioned machinery used in attempts to sink shafts to bedrock. China pumps, axe-hued wooden waterwheels with wooden axels, hand windlass's rest by caved-in shafts that are filled with the water that defeated the inappropriate equipment, and its purpose.

Drills used in Atlin thus far have not produced very satisfying results, first, because of their inability to prospect the desired depth, second, because of incapability of operators to determine correct results. In the season of 1937, however, two capable American groups operated Airplane Drills on ground of a 40 foot depth. Although correct results were obtained, much difficulty with boulders was encountered and progress exceedingly slow.

Spruce Creek operations:-

This creek is the most active and greatest producer in Atlin at ppesent; and because similar methods of operation are deemed advisable on WilsonCreek it affords a parallel by which the latter may be developed.

The largest scale operators are the Columbia Developing Co., using two wood-fuel steam shovels, one stripping overburden, the other scraping gravel from bedrock up, employing 22 men; and the Colpe Mining Co.,Ltd., working by drifting methods in vertical shafts at a depth of 303 feet. The latter company was incorporated in May, 1935 with a capitalization of $50,000. Previous to 1935 this ground had been worked in an unsystematic manner by "lay men".

Tunnels follow the old channel from shaft to shaft and the ground is blocked off by crosscuts between and lateral to them. The workings are dewatered by drainage to pump-sumps at the shafts.

Bedrock drainage which would be most convenient and cheapest could not be executed because of the uncompromising attitude of operators downstream from Colpe's mine.

In new workings during the season of 1936, a crew of 60 men worked out an average of 18 sets per week (40sq. ft. per set), with the reported average recovery of 80-100 ounces from 18 sets. In the section operated the best values averaged 4-5 ounces to the set. The season of 1937 was, according to reports, much more profitable, considering the increase of laborers to 80 men. The values reported from this section reached a high mark of 42 ounces to the set for a short time.

Average operating cost for drifting: (maximum) of Otter Ck.

Labor.....wage per man per day....$7.00

" required per set...4 man shifts.....$28.00 and less.

Timbers " " " .....$ 5.00

Pumping (Deisil-26HP) for 24 hours--12 gals.

Hoisting (Deisil-12HP) " " " 8 gals.

Compressor (gas) ____ " " " 7 gals.

Average cost of fuel for machinery.....$..... .

Compensation paid by company, 4% of worker's wage

Average cost of operation per set, including machinery, labor and accessories only,.....

The above figures are considered high above those of Spruce Creek, but the Otter Creek miners are working under much more difficult circumstances. At times, Colpe's mining averages one set per man shift or one-fourth that given above.

Wilson Creek

General. Wilson Creek occupies a trough extending southerly for about 14 miles from Wilson Lake which is 6 miles to the south-west of Spruce Creek headwatersand a mile south and perpendicular to O'Donnell River near its headwaters. Downstream from the lake the valley narrows from a wide grass flat with gentle sloping banks to a less extensive "U" shaped valley with steep banks of glacial clay. The creek occupies a moderately-winding channel from 10-15 feet wide in a trough 120 to 240 feet wide, and with the exception of a continuous canyon from a mile below the O'Donnell River Road bridge to its mouth, a distance of about four miles. In the section confined by the canyon the gradient averages 3 per cent. For the next four miles/the gradient averages one per cent, then to the lake the gradient drops off to make the average for whole creek 1.5 per cent. On the west side of the valley about a mile and a quarter south of the lake a tributary enters, draining the vicinity to the south of Bald Mt. and south-west of the low divide between it and Spruce Creek. This stream supplies more of the water than any of the other four tributaries which also drain the mountains to the west of the valley and more than the creek proper thoughout the drier parts of the summer.

The creek may be reached by the Atlin-O'Donnell River Road which is a fair auto gravel route, a distance of 85 miles. A poor road follows the creek north to within a few miles of Wilson Lake. From the creek's mouth, at its junttionwith the O'Donnell River to a point about half way to the lake, the valley is lightly timbered with jack pine and spruce but heavy in "buck-brush". Beyond the half-way mark the timbering gets heavy with Spruce and Balsam.

Wilson Creek (cont.)

History-

Gold was discovered in the early days of the camp by Andy Greer, about 3.7 miles south of Wilson Lake, on the west side of the valley floor along a steep clay bank and at the mouth of a warm spring. The discoverer employed 8 men and recovered $52 per man per day for a season, working out an area of approximately 2,000 square yards in gravel that was only 2 feet deep from grass roots to hard-pan. Two miles downstream from Greer's find and close to the east bank, one Peterson recovered $600 from a weeks sluicing; and immediately below him on the same side, Dunlea recovered $10 per day for a season, working in shallow ground similar to that of Greer and Peterson. 1½ miles further downstream a prospector panned slightly over an ounce per day for a short time. Two prospectors working a sluice-box near the last find mentioned shovelled in from a low terrace, six feet of gravel on rim rock, recovering 20 ounces from about 300 square feet of rim rock. An ounce piece was found by Nord on the east side of the valley floor across the stream from Greer's workings.

On the reports of these finds, the creek experienced rushes on many occasions; sometimes eight miles of creek were staked. The only ground worked out was that which gave a minimum water trouble, or the very shallow ground. Prospecting of the creek for the most part was limited to test holes sunk to water level and a few below with the aid of a hand or China pump. Tunnelling into the west bank done quite extensively by Dunlea was of no avail at the time, but furnished some data for the investigation of bench deposits in '37. Good prospects were found in superficial channels on the west terraced bench but investigation did not exceed the dig-ging of a few test holes.

Wilson Creek (cont.)

Geology-

With the exception of the canyon section above and to the mouth area, rock outcrops through the moraine deposits of the valley-floor are scarce. Precipitous outcrops of rim rock, rising from the valley-floor are uncommon, yet occur at intervals that facilitate, to some extent, the tracing of earlier courses and trend of the present stream. The present channel is incised in glacial clay, with a high terrace on the east, and follows in proximity to the steep-sided limestone and basic igneous mountains of that side. From the west side of the valley-floor ascends a gradual sloping terrace, interrupted by precipitous outcrops which are parallel to and about an average distance of 300 yards from the valley floor. These outcroppings are more centrally located in the valley as a whole, and as there is a correlation of levels and an alignment of this high rim-rock for many miles the theory of a more westerly channel is strongly supported. Moraine deposits on the west terrace have a general north-south axis and can be traced easily for five miles, varying in distance from the present stream channel.

It is theorized by the writer that the pre-glacial channel contains auriferous gravel and followed a course indicated by the high rim-rock on the west terrace. The first glaciation filled this Tertiary channel with drift, moving it to the vicinity of its present channel where it incised a channel of approximately 100 feet in depth. Nord has sunk a shaft to a depth of 85 feet in this channel, hitting rim on the east side of his shaft at a depth of 70 feet. The clay excavated was very tenacious in character, having an even distribution of iron, and at lower levels an abundance of volcanic ash.

Wilson Creek (cont.)

Geology-

During the second glacial period ~~#####~~ this ~~post-Tertiary~~ inter-glacial channel was filled with drift, described above, and the ~~channel~~ stream was veered to the bench on the west. Occurence of hardpan and auriferous gravel on the west bench, 20 feet above the valley floor, verifies this theory, in part, at least. The evidences of later glaciation coming from the small cirques in the mountains to west side of the valley and the alluvial deposits coming from the numerous tributary streams and springs on the west give reason for the shifting of the stream to the eastern extremity of the valley, or to its present position.

Rim-rock occurs on the west bank of the stream, rising 20' above the valley-floor on the Buster Lease of the Bender property. It outcrops at infrequent intervals downstream for about a mile and half, then becomes rather extensive, trending away from the present channel and to the south-west. The rim follows a marshy grass-flat in a general south and south-west direction till it disappears under glacial moraine near the O'Donnell River Road. Along the road from this point to the present channel is a distance of 700 yards.

Because the canyon section toward the mouth of the creek has a rugged surface and lacks glacial markings, its post glacial age is clearly shown. A chain of lakes just below and visible from the road indicate a major glacial valley following a general ~~East~~ N.-westerly course from the vicinity of Murphy's leases on O'Donnell River to Atlin Lake. The terminal moraine of at least one glacier from Wilson Creek valley borders this chain-lake valley. The lack of even flour gold from the gravel in, below, and on the rim of the canyon indicates that bench channels were beyond the eroding scope of drainage waters in that section.

Wilson Creek (cont.)

Geology-

Because of the spotted natube of the gold deposition it was summized that the few very rich spots were curves in the higher bench channel that had been cut by the present stream, causing a reconsentration of gold at those particular locations. An attempt was made to plot the general courwe of this channel after auriferous gravel had been discovered on hard-pan, 20 feet above the level of the valley-floor. Pits were openned at the same level on many parts of the west bank, and although good prospects were found in most cases the gravel could ~~not be correlated with that of the rich consentrations~~, ~~but~~ only be classified as that of a higher superficial channel of the present stream.

In the valley-floor there seemed to be a relationship of the richer hard-pan with a red gravel that occurred, usually, a short distance down-stream from good finds. A check was made, with success, in the shallow gravel, but the correlation could not be confirmed in more than a very few parts of the creek because of excessive depth of hard-pan and the necessity of a lengthy drain-ditch for such prospecting.

Summary-

(1) The locations of Wilson Creek pre-glacial ~~channel~~ and inter-glacial channels are indicated along the course shown on the accompanying map.

(2) It is indicated that the gold was deposited in the present stream by reconsentration from glacial moraine and higher superficial channels of the present stream but not from direct erosion of higher ancient channels (~~directly~~).

(3) The interglacial channel is buried beneath the present valley-floor, to an approximate depth of 100 feet.

Wilson Creek (cont.)

Geology- (summary)

(4) The bottom of the post-glacial channel which runsbeneath the present channel at a depth of 20 feet has not been prospected.

(5) The depth of hard-pan in the present valley is as shallow as two feet and was found richer at that depth than any hard-pan at greater depth. It is about 6' deep in many places of the leases tested

(6) In most parts of the creek hard-pan has never been encountered.

(7) The gradient of the pre-glacial channel is indicated by the levels of aligned high rim as being somewhat greater than the present stream

(8) The depth and values of the gravels in the deeper ancient channels may be ascertained most efficiently by drilling.

(9) The finding of depth and grade in the ancient channels will be the factors by which a method of operation can be determined.

(10) Gold values are indicated by the source of the stream, coming from the same summit as Spruce, Mckee, Otter, Wright and Union Creeks and O'Donnell River, all of which have been proven rich.

(5) → (11) No prospecting or work has been done on ~~this~~ Wilson creek other than that on the shallow ground, forementioned as very rich.

(12) Operations on the creek, are advised by the Resident Engineer, would be underground, although other methods may be feasible if the pre-glacial channel is proven shallower than the inter-glacial, and of a higher gradient than the present stream.

(6) → (13) The most economical method of prospecting the various gravel strata of the present creek is with a light drill, such as the Airplane Drill; a real heavy drill is recommended for the deep channels.

(14) Water is very abundant on Wilson Cr. throughout the season.

Wilson Creek (cont.)

Geology- (summary)

(15) Gold taken from this creek assays as being 2nd in fineness only to Graham Creek, a much cleaner yellow in color, and less course than that of other creeks.

(16) Tests made of gravel for values per cubic yard:

(a) Bench gravel- $.45/cu.yd.; 3'x4' of hard-pan; 8' of overburden, glacial clay.

(b) Valley-floor gravel, taken from six locations on various sides of the creeks between the Buster and Snow Shoe Leases:- $.90/ cu.yd.; 12 sq. ft. of hard-pan, 18" to 3' of gravel.

(17) The above testing was done on hard-pan that was shallow and rather easily drained and therefore,cannot be considered a true averaging.

(18) The working season generally runs between the end of May and middle of October.

(19) The gravel on the bench is cemented with lime and encludes glacial clay; that on the valley-floor is loose and clean, having only few large boulders.

General summary-

The field work in the earlier part of the season had as its main objective the study of the general geology of the region and the possibilities of worth while gold lode deposits. In a short time, the lode prospecting was discontinued, and the rich placer deposits were studied in detail.

As Wilson Creek appeared to have the same possibilities as any of the other creeks originating in the same summit, and but little under control of lease-holders, it was studied in detail. The creek at one time was staked for eight miles but now only 3½ miles were held by three parties. The shaft which had reached the 60 foot level on the lease held by Nord was practically the only prospecting done on the creek since the birth of the camp. When course gold was discovered at a 20 foot level above the valley-floor, the writer saw good reason to consider the creek as fit for large scale operations.

The shaft was checked frequently while a thorough prospecting of the bench was being carried to an extent that was not obvious enough to cause excitement. At the 85 foot level of the shaft it was reported by Nord that water was increasing. Under normal conditions water should have been decreasing because the surface streams were at their lowest levels for the season. This condition along with signs of gravel in the excavated clay were factors that indicate proximity to a deeper channel. Noting these circumstances the writer considered it not too early to take options on all leases on the creek, before the shaft went any deeper.

An accident while blasting in the shaft disabled the pumping equipment, and as the writer would be the debtor for any repairs the operations were discontinued. The two operators were employed

in the extensive prospecting of the present creek's valley-floor and the bench.

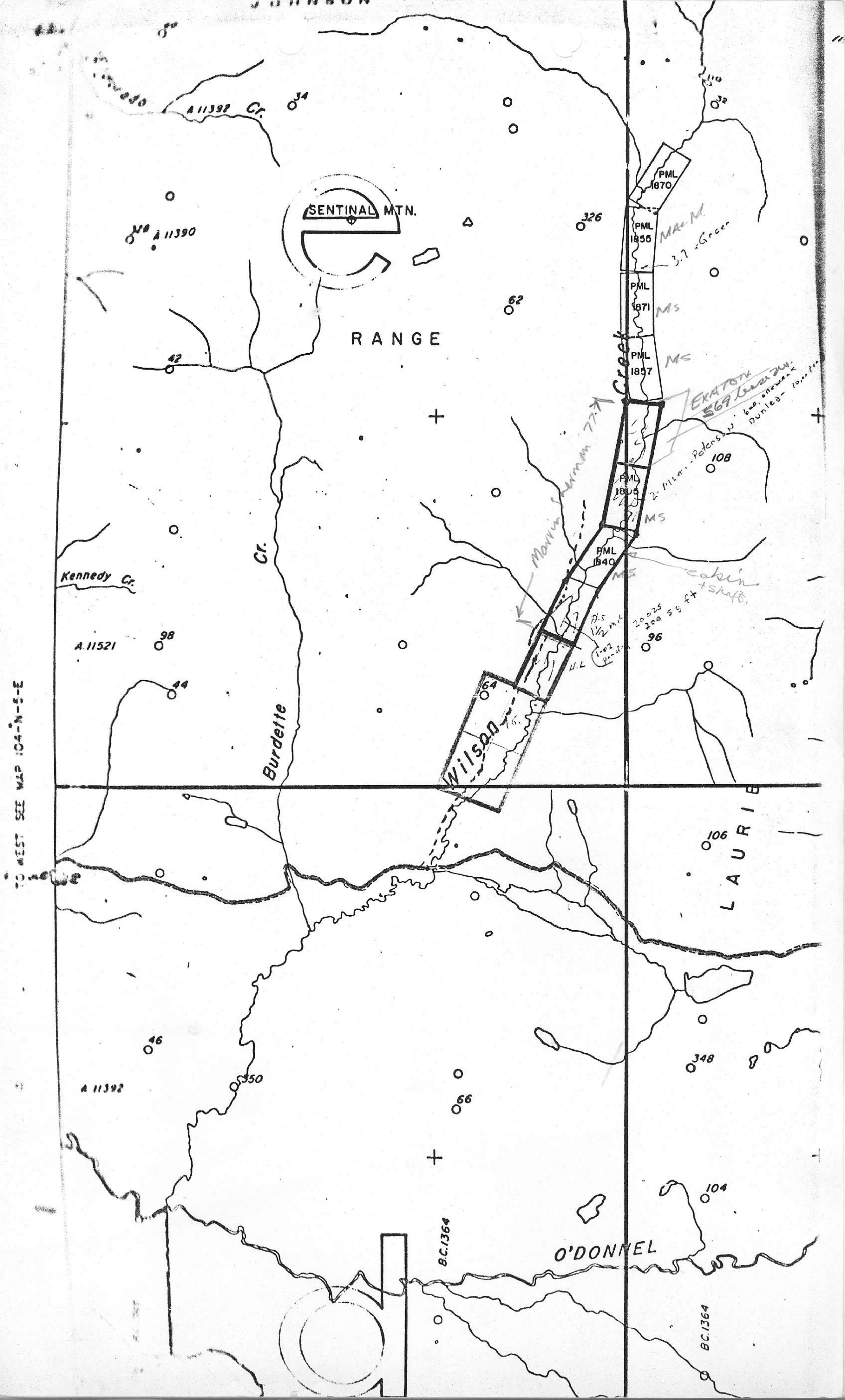
A map of the creek was made from its origin to the supposed mouth of its more ancient channel. The abundance of water eliminated one of the major problems in the pāānning of methods to be employed in any possible operations. At the completion of all mapping, prospecting, and business with the lease-holders the contemplated plans were discussed with the Gold Commissioner. He was kind enough to assure full protection on the whole creek even though much of it was left unstaked. Many of the other potential locations were described by the commissioner and the worthiness of them proven.

With the knowledge of the general geology of the region, the existence of so many potential, yet virgin locations, and the ease with which terms can be made for such ground the writer believes it most wise to become established in this camp with a drill suitable for deep prospecting. The unprogressiveness of the miners who are now even working surface gravel above/a proven buried channel on the richest creek in the camp is an example of the preservation of possibilities in the area as a whole. A drill such as that described and illustrated in this report is considered as a safe and most profitable investment if put into operation in the Atlin Camp at this opportune time.

The options taken on Wilson Creek are described here:

(1) Nord and Linnbo-	3	leases-;	down-payment,	$1,000;	Price,	$10,000
(2) Bender	2	"	"	"	$ 400;	"	$ 2,000
(3) Geen	2	"	"	"	$ 200;	"	$ 8,000
(4) Graves	1	"	"	"	$ 150;	"	$ 4,000
	8	"	"	"	$1750 ;	"	$24,000

Date of down-payments, Nov.1st,1937, $1,600 due
" " " " , Jan.1st,1938, $ 150 "



A 11392 Cr.
34
32
PML 1870
SENTINAL MTN.
326
A 11390
PML 1855
3.7 Green
PML 1871
MS
62
RANGE
42
PML 1857
MS
Creek
EXATON
Marvin Sherman 77
108
PML 1805
MS
Kennedy Cr.
Cr.
PML 1840
MS
cabin + shaft
A.11521
98
96
44
64
Wilson
Burdette
106
LAURI
46
A 11392
350
66
348
104
B.C.1364
O'DONNEL
B.C.1364