C-2566 - J. Hradil.

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A PRELIMINARY REPORT ON J. HRADIL UPPER LIARD PLACER HOLDINGS

by

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Report on J. Hradil Upper Liard Placer Holdings

1. Introduction

This is a preliminary report on certain acreage on which application has been made for placer lease. The holdings described in this report are situated on the west bank of the Liard River above the Alaska Highway bridge at Upper Liard (MP 642½ approx.). The holdings consist of one lease recorded in the name of J. Hradil (see NES/JP/D1). The No. 1 post of the Hradil Lease is recorded as being located 4 miles ahd 4000 feet above the Liard Bridge on the west bank of the river. The lease extends for one mile up river from the No. 1 post and 1000 feet back from the bottom of the natural bank of the Liard River. The position of the corner posts has not been checked by survey so that at the time of writing this report, the recorded positions have been assumed.

The text of this report is based on a brief examination of the leases described. Less than one day was spent by the writer in the general area and no attempt was made to carry out any quantitative work.

2. <u>Transportation and Accessibility</u>.

The lease can be made readily accessible by road. The southern portion of the holdings is less than 5 miles from the Alaska Highway. A bush road already follows the river bank for about a mile toward the property from the Alaska Highway and the remaining 4 miles would require only bull-dozed clearing to allow bush transportation to the property. The Liard River is easily navigable by boat in the area under consideration (see NES/JP/M1). and the river banks of the leases concerned are shallow enough to allow easy access by boat.

The Liard bridge is approximately 643 miles from railroad at Dawson Creek, British Columbia and 275 miles from railhead at Whitehorse, Yukon Territory.

Watson Lake Airport is only 5 or 6 miles distant to the north-east of the holdings (see NES/JP/M1) and is readily accessible by road from the holdings.

3. Topography, Vegetation and Water Supply.

The holdings are situated in the meander belt of the Liard River. In this area the meander belt is around 2000 feet above sea-level and one to two miles in width. Above the meander belt the land rises fairly abruptly to 2400 and 2500 feet above sea-level. The holdings are situated on a river flat in the meander belt and no steep gradients were evidenced.

The holdings are densely spruce covered and whilst the timber is not especially heavy there are good tall straight stands averaging about a foot in diameter.

The Liard River bounding the property will provide any water supply required for development purposes.

4. Placer development in the general area.

The whole of the general area under consideration is heavily covered with glacial debris and rock exposures are lacking. The Upper Liard and its tributaries drain the area to the north and west as far as the divide of the Pelly River and water is provided from the Cyr, Simpson and Logan ranges.

H. S. Bostock (Reference,1935) mentions a good deal of placer activity at the head of the Liard River in 1934. Activity is noted on Betty, Shootanook, Sayyea, Scurvy, Rainbow, Surprise, Dome and Caribouhome Creeks. Northern Aerial Minerals Exploration Company is believed to have been associated with this activity.

According to Bostock (Reference,1936) there was considerable activity in placer prospecting on the tributaries of the Upper Liard River in 1933 and 1934 and this was carried out by Northern Aerial Minerals Exploration Company, by the Yukon Border Gold Ltd., of Toronto and by individual miners. Although considerable areas of gold-bearing gravels were found, the undeveloped state of the area made mining costs too high. Exploration was therefore dropped By 1935, work was restricted to that of a few independant operators.

To the south of the area concerned in the Eagle - McDame area, Cassiar District, a considerable amount of placer work has been carried on in the past (Reference, G.Hanson and D.A.McNaughton,1936). Gold was discovered on Thibert Creek in 1873 and shortly afterwards on Dease and McDame creeks. In 1874, the production of gold from the district was $1,000,000. Later work showed that placer gold was not confined to these creeks but occured in other localities where the geological conditions were somewhat similar.

In the Dease Lake area placer gold deposits were found to occur in three or possibly four different ways(Reference, W.A.Johnston,1925).

a) In old high-level channels probably pre-Glacial (late Tertiary) in age.

b) In glacial and/or interglacial gravels that have infilled old stream channels and existing valleys, In this instance, gold in glacial drift has been reworked by stream action.

c) In post-glacial or surface gravels in the beds and on the low benches of the present streams. These gravels are rich in places where an old gold-bearing channel of the stream has been cut away by the present stream.

d) In lava-buried placers eg. in the Eagle River country.

5. <u>The Leases under consideration</u>.

The area under consideration is believed to include type C) (see section 4 above) and instances of type b) may be developed after further study.

Examination of deposits was made below the Liard Bridge on the west bank. The bank here is flat and only a few feet above the river. A bush-road extends along the bank from the Alaska Highway for about 1½ miles so that it is possible to drive in by car to the end of the road where placer working is presently being conducted. It has been reported verbally to the writer that this property and operation is controlled by Tecumseh Petroleums Limited of Calgary, although no official confirmation has been received at this time. River gravels are loaded into a box by means of a cat. Concentrates are separated on a mechanically operated table, a second table is in the process of construction. Operating conditions here are exactly similar to those which could be envisaged on the holding under consideration on the north side of the bridge. The broad extent of the gravel and sand flats on this bank of the river make loading by bulldozer simple and economical. On the opposite bank, conditions in this portion of the river are not so favourable because of steep cut-banks often 50-60 feet high.

A sample was taken south of the bridge and found to contain a rich heavy mineral suite. Sample was made of gravel exposed in the river bank. A similar mineral assemblage to that already being developed south of the bridge was found continuous along the bank of the river.

Within two or three weeks prior to the writing of this report, Placer Leases along the banks of the Liard River and Dredging Leases on the river for a distance of ten miles below the bridge and over 15 miles above the bridge have been recorded. (see NES/JP/D1)..

6. <u>Heavy mineral residues.</u>

Samples of gravel and sand were selected at random from various points adjacent to the properties described. These samples were 'panned' under field conditions and the 'heavy residues' were dried and examined by hand lens. No attempt was made to carry out systematic or quantitative sampling. A list of minerals identified by hand lens and a very rough estimate of percentages present in the 'panned' samples is included herewith. (The figures quoted are meant to serve as a very rough guide since no quantitative data may be obtained under the conditions of sampling and separation).

The conclusions which may be derived from these results are that the same heavy mineral suite persists across the area under investigation; Magnetite - Ilmenite and Garnet are the most dominant heavy minerals; Gold, whilst present in fine flakes, was only encountered in small proportion; many of the minerals (eg. garnet) still retain good crystal form indicating that the detrital grains have undergone little transportation; the good crystal form and the fullness of the mineral suite would tend to indicate primary deposition, proximity to source and a relatively short geological evolution of the detrital sediments.

A Rough Analysis of Six Samples

Collected at Random

	A	C	D	E	G	H
GARNET	40-45%	10%	40-45%	7-10%	-	75-85%
STAUROLITE	5%	3%	3%	?	-	2%
KYANITE	✓	✓	✓	✓	-	✓
SPINEL	?	✓	2%	✓	-	?
MONAZITE	-	?	-	-	-	-
SILLIMANITE	✓ 5-15%	✓ 15%	✓ 7-8%	✓ 5%	-	✓ 3%
ANDALUSITE	✓	25-35%	✓	✓	-	✓
DIOPSIDE	?	✓	?	✓	-	3%
GOLD	✓	✓	✓	✓	-	✓
ZIRCON	?	-	?	✓	-	✓
MAGNETITE & ILMENITE with LEUCOXENE	40-45%	35-40%	40-45%	85-90% sphene	100%	10%

A - Sample taken from the site of present operations - below Liard Bridge.

C - Sample taken close to Hradil and Anderson leases.

D - Sample taken close to Frame and Anderson leases.

E - Sample taken on the Paradis lease.

G, H - Sample taken from the west bank on the upper side of the Liard Bridge.

Specimen G was obtained by magnetic separation. Specimen H is the remaining residue.

7. Conclusions.

a. The property concerned is readily accessible by river from the Alaska Highway and would require about four miles of bulldozed road to reach by vehicle from the Highway.

b. The property is situated on a low flat bank of the Liard River thus rendering any development of the sands and gravel both easy and econmmical.

c. The same heavy mineral assemblage presently being developed in the close proximity is in evidence on the property.

d. In contrast to the early days of placer development,deposits which would not have had economic significance before the construction of the Alaska Highway are now readily accessible. Improvements in mechanisation enables a larger turnover of gravel and sand at a greatly reduced cost. Improved processes in recent years enable the separation of rare minerals, even though they may be present in small quantity. Some minerals at one time ignored may now have strong economic significance.

8. <u>Recommendations</u>.

a. "Black sand" (Magnetite) is present through the sands and gravels of the Liard River in this area. The association of magnetite with rare minerals provides a means of further investigation to evaluate local concentrations. It is recommended that a systematic magnetic or electronic survey be conducted in conjunction with some systematic quantitative sampling to evaluate areas of high concentration. (More work should be conducted on the study of old river channels of the Liard, particularly where ample water supply is obtainable).

b. Whilst the deposits may be easily and cheaply worked by means of bulldozer, loading box and mechanically operated tables, the source of material is so extensive that heavier equipment may be introduced in later stages of development to increase the turn-over.

c. In order to work the sands and gravels of the leases under consideration removal of the timber will be necessary. In order to compensate clearing costs, and from the standpoint of conservation, it is suggested, dependent of course on local market, that the available timber be exploited in conjunction with placer development.

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I, Claud N. Rands of Calgary, Alberta, author of this report hereby certify that:-

1. I am a graduate geologist of London University, a Fellow of the Geological Society, a Member of the Engineering Institute of Canada and a Professional Engineer of Alberta.

2. I have no interest, direct or indirect, nor do I expect to receive any interest, direct or indirect in the property described in this report.

3. This report is based on a one day visit to the property concerned.

Claud N. Rands

Signed................................

Claud N. Rands, P.Eng.,(Alta.).

Date.. July 14th., 1954.

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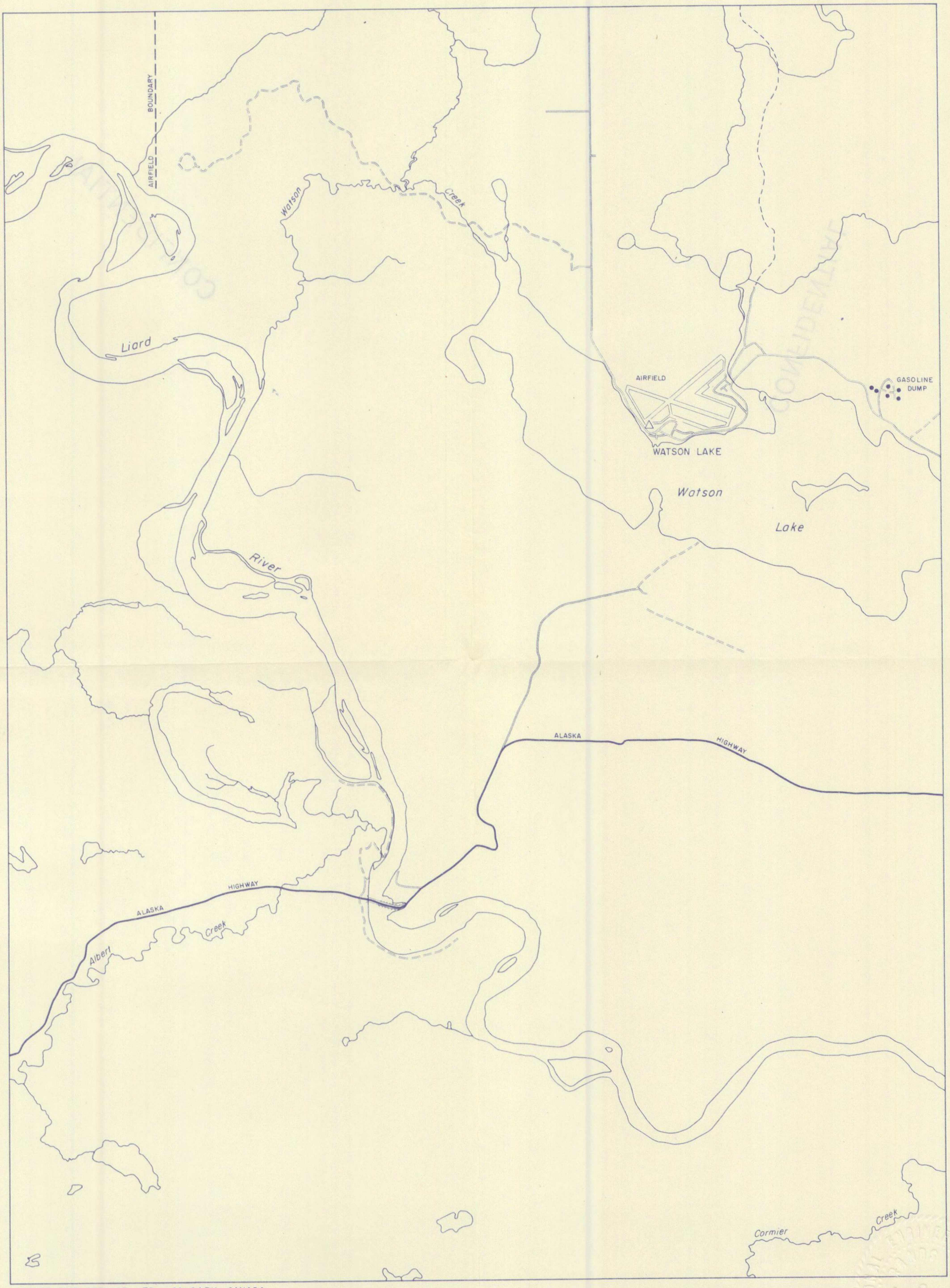
UPPER LIARD AND ALASKA HIGHWAY



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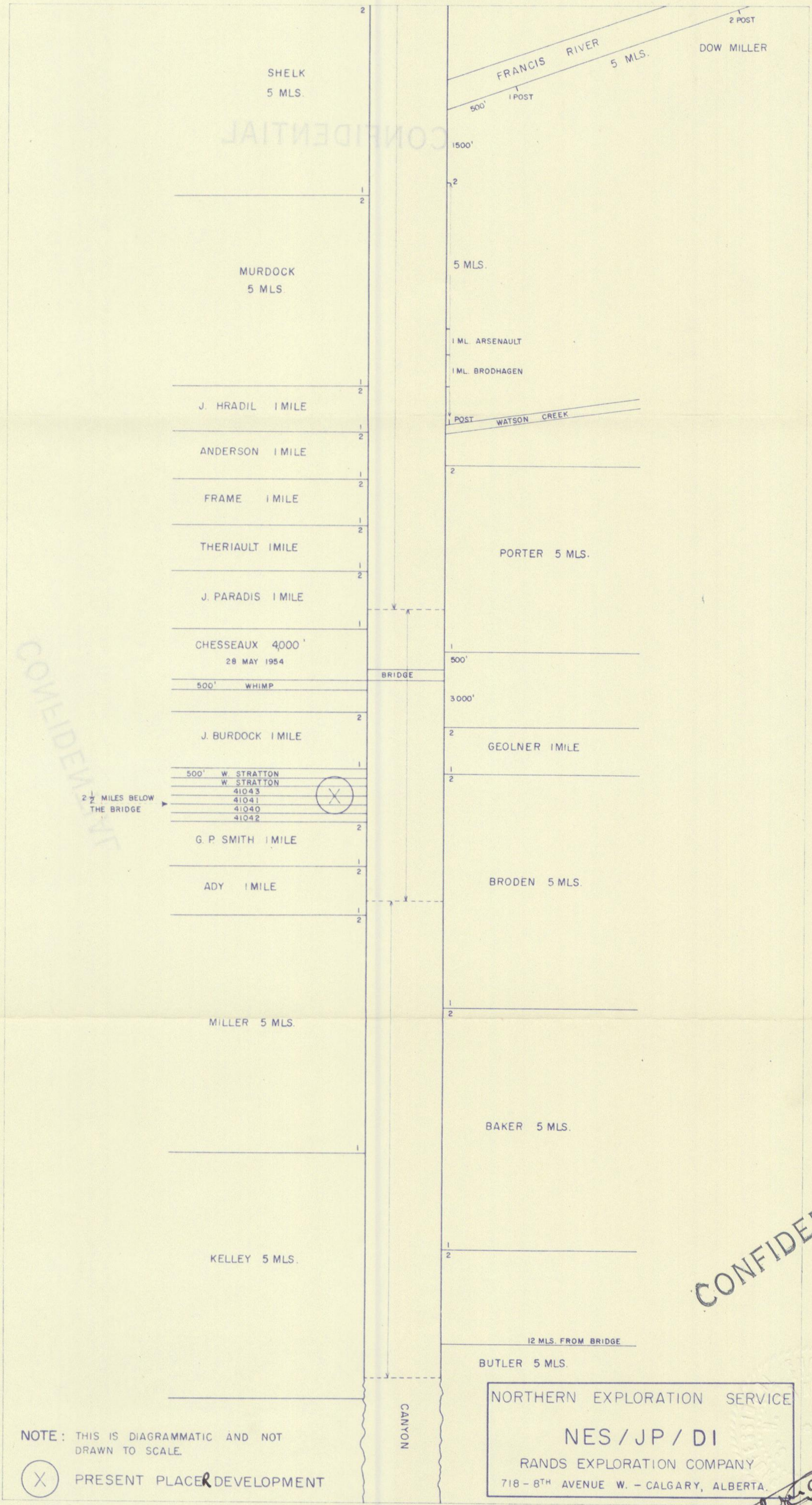
PLACER & DREDGING LEASES
AS RECORDED AT THE MINING RECORDER'S OFFICE WHITEHORSE ON 2 JULY, 1954
FOR THE UPPER LIARD AREA



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