

EXPLORATION AND DEVELOPMENT
PLACER GOLD REPORT
KLONDIKE GOLD DISTRICT
YUKON TERRITORY, CANADA

on

INDIAN RIVER PROPERTY
WOUNDED MOOSE CREEK

LATITUDE 63⁰37' N
LONGITUDE 138⁰41.5' W

YUKON PLACER CREEK CLAIMS
DAWSON MINING DISTRICT
YUKON TERRITORY

NTS SHEET 115-0-10e

for

CAL-DENVER RESOURCES LTD.
VANCOUVER, BRITISH COLUMBIA

by

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JANUARY 10, 1987

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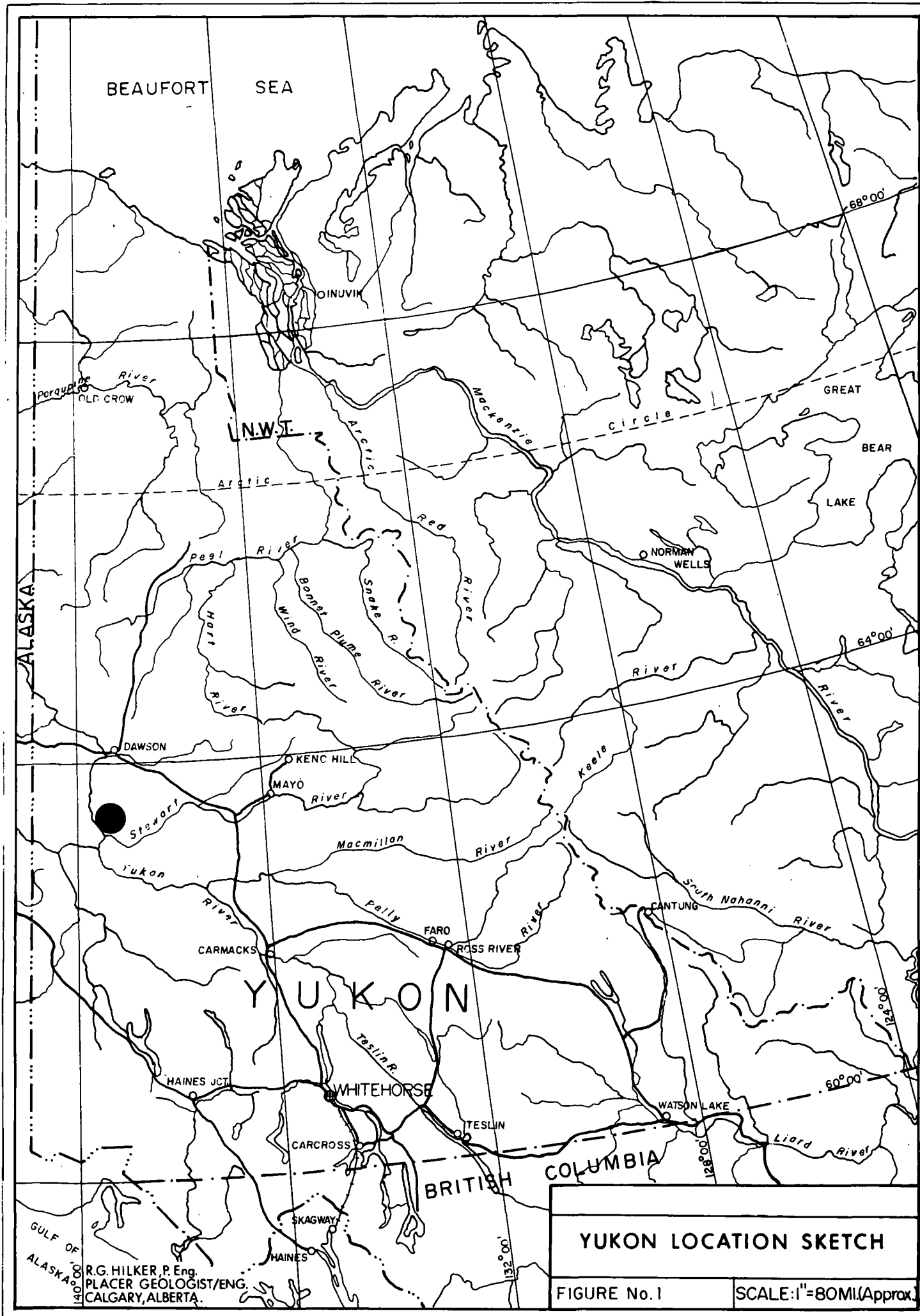
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SCALE: 1:5,000

INTRODUCTION

The Klondike gold fields are located east of the Yukon River between north latitude 63°35' and 64°15' in the Yukon Territory, Canada. The gold district is generally bounded by the Yukon River on the west; by the Klondike River on the north, by Flat Creek, a tributary of the Klondike, and Dominion Creek, a tributary of Indian River on the east; and by the Indian River on the south. The area within these boundaries measures approximately 800 square miles. Most of the streams that drain the 800 square mile area are all gold-bearing to some extent. The most productive streams have been Bonanza, Eldorado, Hunker, Bear, Quartz and Sulphur Creeks and related tributaries. A considerable number of gold-bearing creeks are located west of the main Klondike gold field and the Alaska/Yukon boundary.

The Klondike Gold District is located east of the Coast Range and is within the Cordilleran Interior Plateau. The district is further described to be situated in the Western Yukon Plateau and locally forms a part of the Tertiary-aged Klondike Plateau. The topography was formed by uplifting of an undulated plain which formed a series of long branching ridges between intersecting streams and rivers. The topography of the area has an average elevation of 1,700 to 4,000 feet and forms the western part of the Quaternary age Dawson Range. The maximum relief of the Klondike district is approximately 4,000 feet. The Klondike District is non-glaciated and lies within the discontinuous zone of permafrost. The valleys are mainly V-shaped, are broad-floored and have interlocking spurs. The stream system contains clear water, indicating that they are not presently transporting material because of frozen gravel conditions and bedrock grade. The valleys have been sunk into the uplands to a depth of 1,500 to 3,000 feet.

During the period 1971 to present, considerable interest has been revived in the Klondike and Sixtymile, Yukon Territory, placer gold fields due to the increase in the price of gold. The method of mining gold-bearing material in a creek bed or bench deposit has changed considerably during the period 1882 to the present. Since 1950, large-size crawler-type diesel tractors have been developed by advanced technology and have, therefore, permitted large volumes of material to be moved mechanically. In the early years (1886 - 1930) in the Klondike, and Sixtymile gold fields, the main method of placer mining was by hand, hydraulic monitoring and dredging operations. This method moved gold-bearing gravels through a sluice box to recover the high-density raw gold. In addition, it was necessary to thaw frozen muck and gravel material by hydraulic or mechanical methods and costly steam points or water circulation methods. However, it is presently possible to move large volumes of gold-bearing creek material by using hugh crawler tractors, motor scrapers or by front-end loaders. The crawler-type tractor can be equipped with 'rippers' to break permafrost material and expose frozen muck and gravel to the warm atmosphere and sun to accelerate thawing.



YUKON LOCATION SKETCH

FIGURE No. 1

SCALE: 1" = 80 MI. (Approx.)

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GENERAL INDIAN RIVER PROPERTY

Cal-Denver Resources Ltd. - #201 , 1512 Yew St., Vancouver, British Columbia, V6K 3E4, tel. (604) 731-8158; President Randy Reifel and Operations Manager Gary W. Crawford, Cal-Denver Resources Ltd., signed a Lease Agreement To Prospect, on the 15th October 1986, with Cripo Exploration 1977 Ltd. - Dawson City, Yukon Territory, for six Yukon Placer claims located on the Indian River, Yukon Territory. The Indian River property Lease Agreement permitted Cal-Denver Resources Ltd. to conduct placer exploration within the claim group. The Lease Agreement contains a provision concerning a Mining Lease Agreement, should Cal-Denver Resources Ltd. exploration test results prove favorable and the property is to be placed into production. The registered and beneficial owners of the Indian River property are John Erickson/Herman Liedtke et al principal owners of Cripo Exploration 1977 Ltd. of P.O. Box 48, Dawson City, Yukon Territory. The signed Lease Agreement, with the property owners Erickson/Liedtke et al, permitted the company to conduct exploration on the claim group with certain payment conditions granted to the property lien holders prior to a mining operation.

The Indian River Property is located approximately 38 airmiles southeast of Dawson on NTS Placer Sheet 115-0-10e Dawson Mining District, Yukon Territory. The Cal-Denver Resources Ltd. leased claims on the Indian River property contain 1937 drill indicated placer gold bearing gravels.

During the time period of December 3 to December 12, 1986, R. G. Hilker, P. Eng., was in Dawson City, Y.T., on a business trip. On the 9th of December, 1986 the writer searched the Indian River - Wounded Moose Creek claim records at the Dawson Mining Office and purchased six Certified Abstracts of Records of claims registered or beneficially recorded to Erickson/Liedtke et al. Mr. Gary W. Crawford, Cal-Denver Resources Ltd., Dawson City operations manager, supplied the writer with 1937 Yukon Consolidated Gold Corporation (YCGC) exploration and detail drill results on and adjacent to the Indian River Property at Wounded Moose Creek.

- a) 1937 YCGC exploration spaced drill holes across the Wendy/Susi/Allen placer claims (Indian River Property).
- b) 1937 YCGC detail drill data located on the Carl #7-#8-#9 placer claims that "are not" part of the Cal-Denver Resource leased claim group.

R. G. Hilker, P. Eng., did not conduct a placer property examination on the Indian River property, located at the mouth of Wounded Moose Creek, because of the isolated distance from Dawson and the winter weather conditions. During December the road between Dawson and the Indian River/Wounded Moose Creek property was snow covered and impassible in a 4 X 4 vehicle. The Dawson area had about 6.5 hours of daylight on December 9th and the temperature averaged -20°C. On December 9th and 10th, 1986, the writer gathered property information concerning claim ownership, Lease

Agreement documentation and 1937 YCGC drill data located at the mouth of Wounded Moose Creek and adjacent areas of the Indian River. The writer gathered sufficient data to prepare a placer exploration report on the Indian River property for Cal-Denver Resources Ltd.

In a letter dated November 7th, 1986, Mr. P. Randy Reifel - President of Cal-Denver Resources Ltd. requested R. G. Hilker, P. Eng. to prepare a Placer Exploration and Development Report on the Indian River property. In compliance with Mr. Reifel's request, the writer confirmed in a letter dated December 18th, 1986 to Cal-Denver Resources Ltd. that a two-stage placer exploration report would be prepared:

- 1) Stage 1 - Placer Drill Program
- 2) Stage 2 - Bulk Sample Program (contingent on favorable results Stage 1).

Therefore, the effective date of the Cal-Denver Resources Ltd. Indian River Property Placer Report is January 10th, 1987.

LOCATION AND ACCESS

The Cal-Denver leased Indian River property is located approximately 38 airmiles southeast of Dawson City, Yukon Territory. The Indian River and Wounded Moose Creek property is within the Dawson Mining District - Y.T., NTS Placer Sheet 115-0-10e and located at approximately latitude 63°37'N and longitude 138°41.5'W. Access to the property from Dawson is by the Hunker-Sulphur Creeks road or on the Bonanza Creek - Upper Bonanza Creek - King Soloman Dome - Sulphur road.

- 1) Dawson-Hunker Summit-Sulphur Road to site of Dominion - Indian River bridge, the distance is 46 miles to the Indian River property.
- 2) Dawson-Bonanza Road-Upper Bonanza Road-Bonanza Summit to King Soloman Dome-Sulphur Road to site of Dominion - Indian River bridge, the distance is 44 miles to the Indian River property.

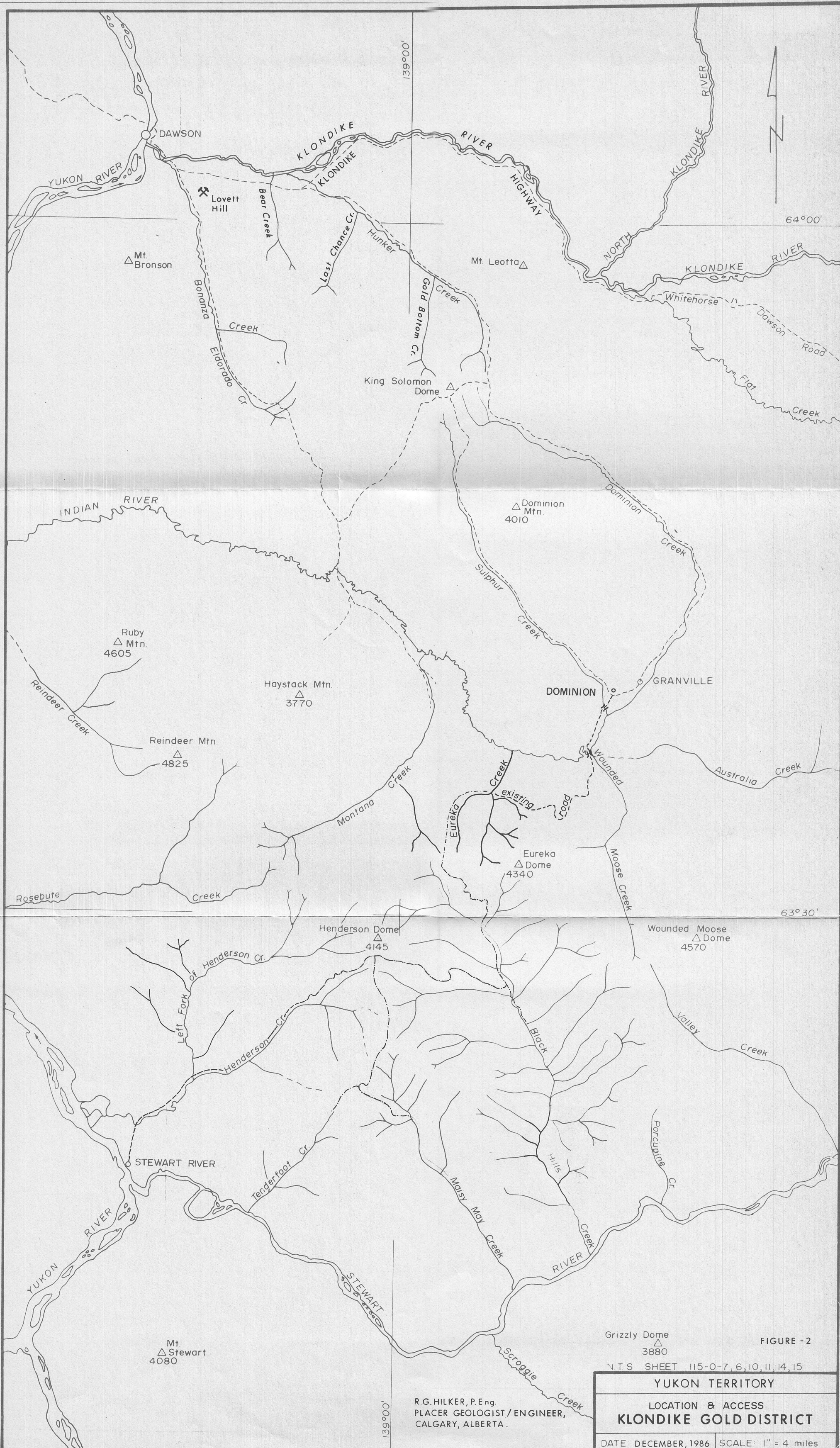


FIGURE - 2

N.T.S SHEET 115-0-7, 6, 10, 11, 14, 15

YUKON TERRITORY

LOCATION & ACCESS
KLONDIKE GOLD DISTRICT

DATE DECEMBER, 1986 SCALE: 1" = 4 miles

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YUKON PLACER CLAIMS

The following described Yukon Placer Creek claims are located on or near the confluence of Wounded Moose and Australia Creeks and the Indian River. The six claims are located on the left limit of the Indian River Valley. The beneficial owners of the six placer claims are: John Erickson - Herman Liedtke - Monika Liedtke of Cripo Explorations 1977 Ltd. and Cripo Explorations Ltd. - Herman Liedtke, Monika Liedtke and John Erickson. On the 9th of December 1986, the writer searched the claim records at the Dawson Mining Recorder's Office - Dawson City, Yukon Territory and purchased six Certified Abstracts of Records of claims registered or beneficially recorded to the owners. The Erickson/Liedtke et al placer claims are referred to as the Indian River property.

The placer property is recorded in the Dawson Mining District, Yukon Territory and located on Placer Sheet 115-0-10e. The Indian River property contiguous claim group is centered at approximately latitude 63°37'N and longitude 138°41.5'W. The Erickson/Liedtke et al claims Allen, Susi and Wendy are grouped to a common anniversary date. The placer claims Jane #1-#2-#3 were staked on the 26th of September 1986 and recorded on the 6th and 9th of October 1986. The Erickson/Liedtke placer claims have not been legally surveyed and referenced to the Indian River Baseline and are therefore subject to "post" location as staked.

Indian River Property - Sheet 115-0-10e

<u>Claim Name</u>	<u>Claim Number</u>	<u>Registered Owner</u>	<u>Anniversary Date</u>
1) Wounded Moose Creek			
Wendy	P27821	John Erickson	13 October 1987
Susi	P27828	Herman Liedtke	13 October 1987
Allen	P27827	Monika Liedtke (POA H. Liedtke)	13 October 1987
2) Australia Creek			
Jane #1	P29850	John Erickson	6 October 1987
Jane #2	P29851	Bill Oliver (POA J. Erickson)	6 October 1987
3) Wounded Moose Creek			
Jane #3	P29924	John Erickson	9 October 1987

Cal-Denver Resources Ltd. entered a Lease Agreement To Prospect with Cripo Exploration 1977 Ltd. on 15th October 1986 for the Wendy - P27821, Susi - P27828 and Allen - P27827 placer claims. The Wendy-Susi-Allen placer claim group Records of Mineral Claim indicate a Claim of Lein registered 20 August 1986 and Lis Pendens registered 20 October 1986 to the grantor Klondike Transport Ltd. The writer further noted, when searching

the Claim Records at the Dawson Mining Recorder's Office on 9th December, 1986, five Erickson/Leidtke et al placer claims had lapsed that were included in the Cripo Exploration 1977 Ltd. Lease Agreement dated 15th October 1986 with Cal-Denver Resources Ltd. The Erickson/Leidtke et al or Cripo Exploration 1977 Ltd. placer claims Aussie #1 - P28906, Aussie #2 - P28907 (lapsed 25th September 1986) and Lynn #1 - P28967, Lynn #2 - P28968, Lynn #3 - P28969 (all 1st tier bench claims - Indian River), lapsed 28th October 1986.

The writer was informed, by personal communication, during late December 1986 by Mr. Gary W. Crawford, Operations Manager for Cal-Denver Resources Ltd. that the five lapsed claims included in the Cripo Exploration 1977 Ltd. Lease Agreement were to be substituted by the Jane #1 - P29850, Jane #2 - P29851 and the Jane #3 - P29924 placer claims. However, to the date of this report R. G. Hilker, P. Eng., has not observed any amended Lease Agreement, that includes the Jane #1-#2-#3 placer claims, between Cripo Exploration 1977 Ltd. and Cal-Denver Resources Ltd.

GENERAL PLACER GEOLOGY

Klondike Gold Field Geology

The Ogilvie map area, containing the Klondike Gold Field, has not been glaciated. The ridge tops are rounded, of similar elevation, and contain no plateaus. This area includes long ridges with steep sides and narrow V-shaped valleys. The terrain in the Ogilvie area is described by H. S. Bostock as being at accordant summit levels and the erosive surface developed since Tertiary time. The accordant summit level is defined as a level surface indicating that the hill tops or mountain summits, over a region, have approximately the same elevation. In a region of high topographic relief this suggests that the summits are remnants of an erosional plain formed in a previous erosion cycle. Also, the area can be described as being a summit concordance which is equal or nearly equal in elevation of ridge tops or mountain summits over a region. The concordance is thought to indicate the existence of an ancient erosional plain of which only scattered patches are preserved. The Tertiary period spans between 65 million years - Paleocene, through to the Pliocene of 2 to 3 million years. The ancient Tertiary surface has since been cut to depths of 2,000 feet by the main drainage system. Outcrops are scarce in the area and are usually confined to ridge tops, stream-cut banks, stream beds and south-facing slopes. In places, rock fragments in the soil suggest the type of the underlying rock.

The quartz stringers and veins that occur in the metamorphic igneous or sedimentary source rocks of the Yukon Group are considered as the source of the gold in the Klondike, Sixtymile, Indian River and Scroggie districts (W. E. Cockfield, 1921). The quartz stringers and veins that carried gold would probably be of different ages and not all quartz veins carried gold. The possible source of the veins could be from Permian (?) and/or Triassic (?) age granitic and ultra-mafic intrusives. The gold was concentrated in the creek and bench gravels by the disintegration, weathering and erosional process into the valley bottoms since the Tertiary time period 65 million years ago.

The oldest rocks in the area (Table of Formations) are Precambrian and Later in age and consist of the Yukon Group - limestone, gneiss, quartzite, schist and slate - and the Klondike schist which contains sericite schist and minor chlorite schist. The aforementioned rocks are intruded by gneissic granite and ultra-mafic intrusives in parts. Paleozoic, Mesozoic and Cenozoic aged sedimentary intrusive and extrusive rock types occur throughout the Ogilvie map area. Tertiary/Modern gravel stream deposits and Modern/Recent stream deposits are the source of the placer gold deposits within the Klondike district.

The older Yukon Group (Unit E-Bostock, 1942) (Schist Gneiss - D. J. Tempelman-Kluit, 1974) of rock consists mainly of mica schists, hornblende schists, chloritic schists, actinolite schists, cyanite schists, greenstone schists, schistose quartzites, schistose amphibolites, mica gneisses, hornblende gneisses, gneissoid quartzites, and crystalline limestone that is in parts dolomitic. Several of the schistose rock types have been metamorphosed gradually and pass into corresponding gneissoid varieties. Particularly there is a transition between a mica and hornblende schist into mica hornblende gneisses. The schistose and gneissoid rocks are reported by D. P. Cairnes to be mainly of sedimentary derivation, but that some of the rocks may be of igneous origin. Because of the folding, faulting, contortion and high degree of metamorphism of the origin source rocks, the original sedimentary and igneous rock types are indistinguishable in the field. The schistose rocks and associated gneissoid rocks and crystalline limestone are similar to the schistose rocks of the Klondike and in other of the more important gold producing districts of Yukon and Alaska. These Schist Gneiss group of rocks underlie the Indian River and Scroggie gold-bearing districts.

Quartz veins are abundant in the metamorphic rocks of the Yukon Group, they consist of the Pelly Gneiss, Schist Gneiss, Klondike Schist, Nasina Quartzite and a Foliated Biotite Granodiorite (D. J. Tempelman-Kluit, 1974). The Klondike gold is thought to have been derived from the Klondike Schists. The Sixtymile gold source appears to be derived from the Nasina Quartzite and the gold source in the Indian River and Scroggie districts appear to be from a Schist Gneiss rock type that includes rocks of the Klondike Schist and Pelly Gneiss that are undifferentiated. Consequently, any of the members of the Yukon Group; Schist Gneiss, Klondike Schist or the Nasina Quartzite; probably contribute to the source of the placer gold, if gold carrying quartz veins have been injected into planes of foliation of the host rock. These Yukon Groups of rocks are a common factor in the Klondike and surrounding placer gold districts. The quartz veins are probably of different ages and possibly the vein material was injected into the host rocks from Permian(?) and/or Triassic(?) aged granitic or ultra-mafic intrusives.

GENERAL DESCRIPTION OF PLACER GRAVELS

The gold-bearing stream deposits in the Klondike Placer Districts are Tertiary/Modern and Modern/Recent in age. The following is a description of the gravels which occur on several of the major gold placer creeks in the Klondike/Indian River-Scroggie Districts (quoted from "The Yukon Territory - Its History and Resources - 1916", pages 33, 34 and 35):

LOW LEVEL GRAVELS - The low level creek gravels are the most important gravels in the district. They floor the bottoms of all valleys to a depth of from 4 to 10 feet; they rest on bedrock usually consisting of decomposed and broken schists, and are overlaid by a sheet of black frozen muck ranging in thickness from 2 to 30 feet or more. They are local in origin and consist entirely of the schists and other rocks outcropping along the valleys. The schist pebbles are usually flat, round-edged discs measuring 1 to 2 inches in thickness and 2 to 6 inches in length. They constitute the greater part of the deposit but are associated with a varying proportion of rounded and sub-angular quartz pebbles and boulders and, less frequently, with pebbles derived from the later eruptive rocks of the region. The pebbles are loosely stratified, usually embedded in a matrix of coarse, reddish sand, and alternate in places with thin beds of sand and muck.

(a) *Creek - The creek gravels frequently enclose leaves, roots and other vegetable remains and also the bones of various extinct and still-existing northern animals, such as the mammoth, the buffalo, the bear, the musk-ox, the mountain sheep and goat.*

(b) *Gulch - The gulch gravels occupy the upper portions of the main creek valleys and small tributary valleys. They differ from the creek gravels in being coarser and more angular. A considerable proportion of their material consists of almost unworn fragments of schist washed down from the adjacent slopes. They contain the same vegetable and animal remains as the creek gravels.*

(c) *River - The only river gravels of the district proven, so far, to contain gold in paying quantities occur in the wide flats bordering the lower portions of the Klondike River below the mouth of Hunker Valley. The river gravels consist of quartzite, slate, chert, granite and diabase pebbles largely derived from the western slopes of the Ogilvie Range. They are harder and better-rounded than the creek gravels, a necessary result of the greater distance travelled.*

TERRACE GRAVELS - Rock terraces occur at various points cut into the steep slopes of the present valleys. They are produced during the deepening of the valleys and are simply remnants of former valley bottoms. They are small, seldom exceeding a few yards in width and a few hundred yards in length, irregular in distribution and occur at all elevations up to the bottoms of the old valleys. The terraces support beds of gravel, usually from 6 to 15 feet in thickness, very similar to those in the creek bottoms but showing somewhat more wear. The terrace gravels, like the creek gravels, are overlaid as a rule with muck, and at one point on Hunker Creek they were found buried beneath 100 feet of this material.

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HIGH LEVEL GRAVELS - These consist primarily of ancient creek deposits, overlaid near the mouths of some of the valleys by gravels laid down by the Klondike River when it ran at a much higher level than at present and occupied a somewhat wider valley. These gravels occur at various points along the Klondike River. In the Klondike district they are found covering the small plateaux in which the ridges separating Bonanza and Hunker Creeks from the Klondike River terminate. They rest, in both places, on high level creek gravels at an elevation of about 450 feet above the present valley bottoms. They have a thickness of from 150 to 175 feet and consist principally of well-rolled pebbles of quartzite, slate, chert, granite, diabase and conglomerate embedded in a matrix of grey sand and derived, like those in the present stream, from the western part of the Ogilvie Range.

(a) White Channel Gravels - The White Channel gravels differ somewhat from the ordinary type of stream deposit. They are generally very compact and, in some of the hydraulic cuts, stand up in almost vertical cliffs, even when the face is unfrozen. The white or light-grey colouration, from which the deposit derives its name, is very conspicuous in most of the sections but it is not universal, as red, yellow and dary-grey beds frequently occur. The deposit is highly siliceous, the principal constituents being rounded pebbles and rounded and sub-angular boulders of vein quartz. Flat schist pebbles and boulders, usually in a more or less advanced stage of decomposition, occur with the quartz and also occasional pebbles derived from the various dikes and stocks outcropping along the valleys. No material foreign to the district occurs in the deposit. The pebbles and boulders are usually small, seldom exceeding 18 inches in diameter, and are embedded in a compact matrix consisting essentially of small sericite plates and fine angular quartz grains. The uniformity planes are, as a rule, inconspicuous and there has been no sorting of the various constituents into separate beds. The deposits, unlike the creek and gulch gravels, appear to be destitute of vegetable and animal remains. The thickness of the White Channel gravels varies from a few feet to 150 feet, and the original width varies from a few hundred yards to over a mile.

(b) Yellow Gravels - The white compact gravel deposit described above is overlaid in places by loosely stratified gravels known as the yellow gravels. These latter are of a rusty colour, are more distinctly stratified than the white gravels and consist mainly of flat schist pebbles lying loosely in a coarse sandy matrix.

WHITE CHANNEL - The White Channel bench or hill gravels are the oldest in the district and, excepting the present creek gravels, are the most important from an economic standpoint. They were originally creek gravels, deposited in a similar manner to those occupying the low levels at present, and their elevated position is due to an uplift which affected the whole

region bordering the Yukon from the Stewart River northwest to the Alaskan boundary and for a considerable distance beyond. This uplift, and a small depression which preceded it, produced many notable changes in the topography of the country. It is probable, although not conclusively proved, that during the White Channel period the lower portion of the Klondike Valley (the portion into which the principal gold-bearing creeks discharge) was occupied by a small local stream and that the Klondike itself flowed either into the Stewart or into Twelve Mile River. The White Channel deposits are remarkable in the respect that, even when completely destroyed, their former position is marked by a trail of gold; they are traceable in this manner from the present valley of the Klondike, showing that the old valley was small - smaller than that of Hunker Creek - and unlikely to have contained a large, rapid river such as the Klondike. At the close of the White Channel period, the district was depressed and it was during this depression that the Klondike is considered to have broken into its present valley; it brought down an immense quantity of material from its upper reaches and rapidly built up a wide gravel bed, fully 150 feet in depth.

These gravels at the mouths of Hunker and Bonanza Creeks rest on the White Channel deposits and at other points, where not destroyed, are distributed along the hillsides at the same level. The depression was followed by an uplift of approximately 700 feet, which gave new life to all the streams by increasing their grades, and they immediately commenced deepening their channels. This process was continued not only through the old gravel deposits but also down into the bedrock to a depth of from 150 to 300 feet. The new valleys are sunk, as a rule, through the bottom of the old ones, but in a few places, as at the mouth of Bonanza Creek, they deviate and have carved out independent courses. The difference in character between the old and the new valleys is striking: the old ones represent the product of long-continued stable conditions and are characterized by wide flats and gentle sloping sides, from which all traces of angularity have been smoothed away; the flats of the old Hunker Creek valley have a width in places of over a mile. The new valleys, on the other hand, while opening out into occasional basins, are generally narrow, steep-sided and angular. This applies only to the creeks, all of which are small, as the Klondike River has cut a huge trench through the district since the uplift. Only a portion of the deposits of the old valleys was destroyed during the excavation of the recent valleys, as the latter are much narrower and do not follow exactly the same course. The undestroyed portions constitute the White Channel gravels of the miners.

KLONDIKE DISTRICT
TABLE OF FORMATIONS - OGILVIE SHEET

CENOZOIC

MODERN/RECENT

12 8 - Stream deposits

TERTIARY AND MODERN

11 7 - Stream deposits - in parts gold-bearing gravels

11WC WC - White Channel gravels - high level or hill gravels,
gold-bearing, in parts coarse gold paystreak

EOCENE OR LATER

6 - Selkirk Series; basalt, andesite

10 5 - Granite and syenite porphyry

9 4 - Carmacks group; andesite, basalt, dacite, trachyte,
rhyolite, breccia, tuff, agglomerate

EOCENE

8 3 - Conglomerate, sandstone, shale, coal; tuff

MESOZOIC

JURASSIC OR LATER

7 2 - Granite and granodiorite

PALAEOZOIC

ORDOVICIAN OR LATER

6 1 - Argillite, sandstone, conglomerate

PRECAMBRIAN AND LATER

5 A - Gneissic granite

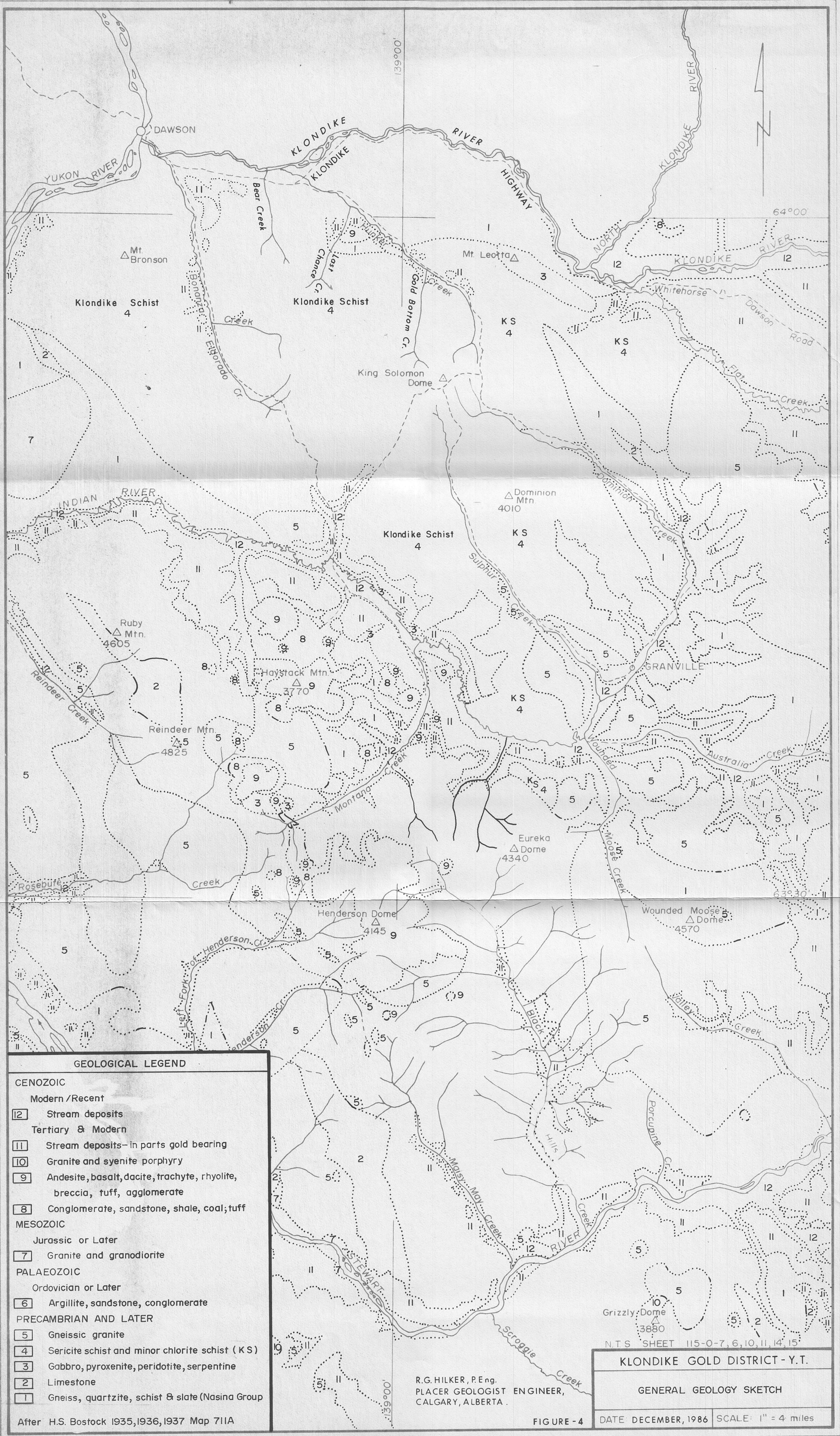
4 B - Klondike Schist; sericite schist and minor chlorite
schist

3 C - Gabbro, pyroxenite, peridotite, serpentine

2 D - Yukon Group; Limestone

1 E - Yukon Group; Gneiss, quartzite, schist and slate

After Geology: H. S. Bostock - 1941, Ogilvie Map.



GEOLOGICAL LEGEND

- CENOZOIC**
- Modern / Recent
 - 12 Stream deposits
 - Tertiary & Modern
 - 11 Stream deposits—in parts gold bearing
 - 10 Granite and syenite porphyry
 - 9 Andesite, basalt, dacite, trachyte, rhyolite, breccia, tuff, agglomerate
 - 8 Conglomerate, sandstone, shale, coal; tuff
- MESOZOIC**
- Jurassic or Later
 - 7 Granite and granodiorite
- PALAEOZOIC**
- Ordovician or Later
 - 6 Argillite, sandstone, conglomerate
- PRECAMBRIAN AND LATER**
- 5 Gneissic granite
 - 4 Sericite schist and minor chlorite schist (KS)
 - 3 Gabbro, pyroxenite, peridotite, serpentine
 - 2 Limestone
 - 1 Gneiss, quartzite, schist & slate (Nasina Group)

After H.S. Bostock 1935, 1936, 1937 Map 711A

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N.T.S. SHEET 115-0-7, 6, 10, 11, 14, 15

KLONDIKE GOLD DISTRICT - Y.T.

GENERAL GEOLOGY SKETCH

DATE DECEMBER, 1986 SCALE: 1" = 4 miles

FIGURE - 4

KLONDIKE DISTRICT PERMAFROST

The Klondike Gold District is within the "discontinuous permafrost zone", the gravels in the region are frozen in parts and thawed in other areas. The permafrost condition varies in thickness from surface to a depth of 200 feet in the creek, bench and hill gravel deposits. Therefore, a majority of the gold bearing placer ground in the Yukon Territory is permanently frozen for about 60 - 200 feet in depth. The gold-bearing gravels are usually overlain by several feet of "black muck" that contains 50 to 75% ice by volume. The Yukon black muck is a mixture of fine silt, partially decomposed vegetation and ice. When thawed the black muck becomes a thick soupy partial liquid that flows.

The position of the creeks to sun exposure during the long daylight hours in the summer months, has caused a thawing effect on north and east slopes in the area. Consequently, alternate thawing and freezing conditions have caused erosion, land sliding and creeping on the north and east slopes of the unconsolidated gravels. Therefore, any gold-bearing terrace gravels are re-deposited into the creek bottom over previously deposited creek gravels. Alternately, the south and west facing terrace gravels are in their original deposition position and have been uplifted to their present elevation above the creek valley bottom. The creeks in the area are not cutting deeper into the present valley bottoms, due probably, to bedrock grade and frozen gravel conditions. The valleys in the area have a main terrace and gravels that are located between 50 to 75 feet above the present stream level. Discontinuous permafrost occurs in the creek valleys and areas dredged in one season by the Yukon Consolidated Gold Company's eight dredging operations on Bonanza, Eldorado and Hunker Creeks, 68.4% was frozen and required thawing by steam. The present method of thawing is to strip the surface vegetation off the muck and expose it to the sun. A second method of thawing is hydraulic monitoring of the surface vegetation and muck by producing a 'head' of water with a high-pressure pump. Frozen gravel and muck conditions of permafrost exist in the Scroggie, Klondike, Stewart and Sixtymile gold-bearing districts. Quoted from: 'The Yukon Territory - Its History and Resources - 1916'.

"Throughout almost all the mining districts in the Yukon Territory, with the exception of Kluane, the gravels are covered by a body of black frozen muck which varies from 4 to 20 feet in thickness. The muck can be picked, but no impression can be made on the frozen gravels, which have to be thawed. The thickness of the frozen stratum varies considerably and is less on the ridges than in the valleys and less on southern than on northern slopes. A shaft sunk on the ridge south of Eldorado Creek reached unfrozen ground at a depth of 60 feet, while one in the valley of Eldorado Creek was stopped by running water at a depth of a little over 200 feet. Another shaft sunk through gravel on the plateau between Bonanza Creek and the Klondike River passed through the frost line at a depth of 175 feet; near the head of Quartz Creek, a shaft tapped running water at a depth of about 216 feet. The summer heat has little effect on the frozen layer except in the few places where the surface is unprotected by moss. Exposed gravel beds in

favourable positions thaw out to a depth of from 6 to 10 feet, but where moss is present frost is always encountered close to the surface. The depth of gravel varies from 3 feet on some of the creeks to 30 and 40 feet on Lower Dominion and from 80 to 100 feet on Quartz Creek. The frozen muck which overlies the gravels forms an exceedingly firm roof and no timbering is required in the drifts. The shafts in which self-dumpers are operating, however, are usually timbered as well as the tunnels leading from the bottom of the shafts to the face of the drifts. Underneath the frozen muck, large chambers can be excavated during the winter. In one case on Dominion Creek, a muck roof, unsupported by pillars, covered a vault said to measure 140 feet by 230 feet, and remained unbroken until mid-summer. Examples of muck roofs spanning vaults over 100 feet in width are quite common".

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ECONOMIC PLACER EVALUATION

Inferred Gravel Reserves and Grade

A representative placer gold sample is difficult to obtain, as the deposit is a mixture of fine sand, pebbles, cobbles and boulders that vary in the mass of aggregate in different proportions. To collect and test a representative placer sample all of the constituents of a deposit should be in the exact same proportion in which they occur in the aggregate mass. When testing a placer sample, containing heavy concentrate and high valued gold, any error in the gold content of the sample will drastically affect the final result. In an economic placer deposit the amount of gold by volume, may be in the order of one part gold to a hundred million parts of gravel. Placer ground having a gold-gravel ratio of 1:100,000,000 by volume is worth approximately \$1.86 per cubic yard (gold @ \$435/oz.). A single fly speck of gold in a pan of gravel is equivalent to about \$0.17 per cubic yard at \$435/oz. gold - 885 fineness. Theoretically, the problem can be overcome by taking a large bulk sample rather than a few pounds of gravel, but it is seldom practical or possible to take large samples. If the deposit is a large mass of small and uniform size of gravel the gold is more evenly distributed and a few samples are required to estimate the value. If the stream type of deposit contains a variety of material from sands to large boulders, with coarse erratically distributed gold particles, it will affect the number of samples to be taken from the aggregate.

Placer samples yield limited information because of the heterogenous nature of gold-bearing gravels. Correct sample interpretation of the test results depends upon a placer engineer's experienced judgement and geological deduction ability rather than on any set formulae application. A pre-determined optimum sample pattern is difficult to achieve for the purpose of evaluating a placer property. Initial sample evaluation should be flexible enough to determine if a property is not economic, or if good economic potential indicates further work on a closer sample pattern is warranted. However, the desired number of samples can rarely be taken on a placer property due to economics or available equipment. It is noted by the writer that the "placer investor or operator must either reject a property which is not 100% reliable and therefore the investor/operator must accept some degree of risk". The minimum number of samples taken, to evaluate a placer property, must be considered to be the frequency required to keep the risk within acceptable limits.

There are several placer geological features and reported grades per cubic yard of creek or bench gravels, from previous work, that indicate possible economic potential gravel reserves in the Klondike District. The final analysis of the data collected on the placer property is usually based on the placer geological knowledge of the area. The writer has followed the procedure to report precious metal values and sample technique reporting as followed by most Canadian Security Commissions and specified by the policy of the Ontario Securities Commission. The tested value of gravels are reported to indicate "inferred grade" and "possible gravel reserve", that is based on gold recovered from a sluice box washing plant.

Ontario Securities Commission Policy

- 1) Ore and Grade Classification: Canadian Securities Law Reports. The Ontario Securities Commission states in Policy 2, Statement (54 - 839), that care should be taken in the use of the word "ore", when preparing Engineer's Reports for securities purposes. The term "ore" is defined in the most recent Ontario Regulations as follows:
- (a) ORE - means a natural aggregate of one or more minerals which, at a specified time and place, may be mined and sold at a profit, or from which some part may be profitably separated;
 - (b) Proven Ore or Measured Ore - means that material for which tonnage is computed from dimensions revealed in outcrops or trenches or underground workings or drill holes and for which the grade is computed from the results of adequate sampling, and for which the sites for inspection, sampling, and measurement are so spaced and the geological character so well defined that the size, shape, and mineral content are established, and for which the computed tonnage and grade are judged to be accurate within limits which shall be stated and for which it shall be stated whether the tonnage and grade of proven ore or measured ore are in situ or extractable, with dilution factors shown, and reasons for the use of these dilution factors clearly explained;
 - (c) Probable Ore or Indicated Ore - means that material for which tonnage and grade are computed partly from specific measurements, samples, or production data, and partly from projection for a reasonable distance on geological evidence, and for which the sites available for inspection, measurement, and sampling are too widely or otherwise inappropriately spaced to outline the material completely or to establish its grade throughout;
 - (d) Possible Ore or Inferred Ore - means that material for which quantitative estimates are based largely on broad knowledge of the geologic character of the deposit and for which there are few, if any, samples or measurements, and for which the estimates are based on an assumed continuity or repetition for which there are reasonable geological indications, which indications may include comparison with deposits of similar type, and bodies that are completely concealed may be included if there is specific evidence of their presence.

Note: Where the word "ore" may not properly be used, such terms as "mineralization", "mineralized bodies" or "concentrations", etc., should be used.

ECONOMIC EVALUATION - INDIAN RIVER PROPERTY

GENERAL

The Cal-Denver Resources Ltd. leased placer claims are situated adjacent to the lower part of Wounded Moose Creek and the Indian River valley. The claim group is located south of the Indian River Baseline and below the 1700 foot elevation contour on the left limit of the Indian River. The Indian River valley is approximately 4,500 feet wide between the 1,700 foot elevation contours from the right limit to the left limit at Wounded Moose Creek. The creek gravels are frozen, 7 - 15 feet thick and overlaid by approximately 4 - 8 feet of black muck on the Wendy - Susi - Allen claims. The elevation contours and drainage system suggests that the left limit side of the Indian River valley, at Wounded Moose Creek, was the original location of the river channel. In 1937 the Yukon Consolidated Gold Corporation (YCGC) conducted exploration and detail placer drilling in the Indian River valley, upstream and downstream from Wounded Moose Creek. The Wounded Moose Creek drill line crossed the Wendy, Susi, Allen and Jane 3 placer claims. The Australian Creek drill line crossed the Jane 1 and Jane 2 placer claims. The 1937 YCGC exploration drill holes on the Cal-Denver Resources leased claim group indicates a possible payzone on the Wendy, Susi and Allen claim group.

Klondike District Grade Gold Content

The placer gold deposits in the Klondike, Sixtymile and Scroggie areas usually contain pay zones in one foot of bedrock and 6 - 10 feet of overlying gravels. The placer bearing material contains pay zones overlaid by waste material. The predominately frozen creek placer material pay and waste zone layers were deposited from surface to bedrock as follows:

- (4 - 12 ft.) - Overburden black muck (varies in depth).
- (10 - 20 ft.) - Waste creek gravels (10 - 20 ft.).
- (6 - 10 ft.) - Gold bearing creek gravels (6 - 10 ft.).
- (-1 - 0 ft.) - Gold bearing bedrock (varies in depth).

The thickness of the pay and waste layers of material is approximate and vary in different locations. Therefore, the inferred average grade of the placer material includes all black muck, waste gravels, pay gravels and about one foot of pay bedrock.

- 1) Average gold content 0.012 oz./yd³ - value \$6.00 yd³ (\$500 oz./Cdn.).
- 2) Average gold content 0.373 gms/yd³.

YCGC DRILL PROGRAMS 1937

1937 YCGC Exploration Drill Lines

The 1937 YCGC drill line at Wounded Moose Creek indicated that seven drill holes were spaced at 300 foot intervals across the Wendy-Susi-Allen-Jane 3 claim group. The Australian Creek YCGC drill line indicates four drill

holes crossed the Jane 1 and Jane 2 claims. The 1937 drill hole data was based on \$35 per ounce gold price. The 1937 YCGC drilling sketch only covered the area within the Indian River valley on the left limit of the Indian River Baseline. The writer has no knowledge of where the 1937 YCGC drill hole original plan is located. The drill hole information was given to Cal-Denver Resources Ltd. by Herman Liedtke when the Lease Agreement was signed by Cripo Exploration 1977 Ltd. The reader is referred to PLAN #1 in Pocket of Report, for location of drill lines and holes in reference to the Cal-Denver Resources Ltd. leased property.

Note: 6 - 13 - 3.4¢
muck-gravel - value cu. yd. (\$35 oz.)
- value cu. yd. (\$500 oz.)

LINE #1 - (located south of Angle 5 - Indian River Baseline). These holes are not within the Cal-Denver Resources leased claims.

- | | |
|--|------------------|
| 1) 8 - 9 - 2.1¢
- \$0.30 yd ³ | 3) 12 - 0 - 0.0¢ |
| 2) 9 - 8 - 15.2¢
- \$2.17 yd ³ | |

Grade 0.004 oz./cu. yd.

LINE #2 - (located on left limit of the Indian River approximately 1,800 feet upstream from Line 1). These holes are not within the leased claims.

- | | |
|---|--|
| 1) 6 - 13 - 0.0¢ | 3) 4 - 10 - 3.4¢
- \$0.49 yd ³ |
| 2) 5 - 9 - 7.0¢
- \$1.00 yd ³ | 4) 10 - 6 - 3.9¢
- \$0.56 yd ³ |

Grade 0.002 oz./cu. yd.

LINE #3 - (located at Wounded Moose Creek left limit of the Indian River valley).

Drill holes (not on leased claims)

- | | |
|--|--|
| 1) 5 - 10 - 0.5¢
- \$0.07 yd ³ | 3) 8 - 10 - 7.7¢
- \$1.10 yd ³ |
| 2) 7 - 12 - 4.4¢
- \$0.63 yd ³ | 4) 7 - 7 - 0.8¢
- \$0.11 yd ³ |

Drill Holes - seven drill holes located on Wendy-Susi-Allen-Jane 3 leased placer claims.

- | | |
|--|--|
| 1) 8 - 10 - 7.7¢
- \$1.10 yd ³
Grade 0.002 oz./cu. yd. | 5) 4 - 9 - 9.3¢
- \$1.33 yd ³
Grade 0.003 oz./cu. yd. |
| 2) 7 - 7 - 0.8¢
- \$0.11 yd ³ | 6) 8 - 9 - 1.1¢
- \$0.16 yd ³ |
| 3) 6 - 11 - 0.4¢
- \$0.06 yd ³ | 7) 10 - 8 - 0.0¢ |
| 4) 4 - 15 - 31.9¢
- \$4.56 yd ³
Grade 0.009 oz./cu. yd. | |

LINE #4 - (located at Australia Creek left limit of the Indian River).

Drill Holes (not on leased claims).

- | | |
|------------------|------------------|
| 1) 11 - 9 - 1.1¢ | 2) 10 - 9 - 0.5¢ |
|------------------|------------------|

Drill Holes - four drill holes located on the Jane 1 and Jane 2 placer claims.

- | | |
|--|---|
| 1) 7 - 11 - 6.1¢
- \$0.87 yd ³ | 3) 9 - 9 - 1.8¢
- \$0.26 yd ³ |
| 2) 9 - 7 - 1.8¢
- \$0.26 yd ³ | 4) 7 - 8 - 1.5¢
- \$0.21 yd ³ |

1937 YCGC Detail Drilled Reserve

The 1937 YCGC drilled gravel reserve is located on parts of the Carl 7 - P20681, Carl 8 - P20682 and Carl 9 - P20683 placer claims, on the left limit of the Indian River. The claims that contain the drilled placer gravel reserve are not part of the leased Cal-Denver Resources Ltd. placer property. The writer has included the drilled reserves to indicate inferred grade of gold that may occur in payzones in the Indian River and Wounded Moose Creek area. The drilled placer gravel reserve is located approximately 3,500 feet upstream from the Susi placer claim (see Plan #2 - Pocket of Report).

Carl Claims - 1937 Drilled Gravel Reserve

Block - 1

Muck - 23,300 cu. yd.
Gravel - 26,800
Ratio 0.9:1
Grade - 0.009 oz./cu. yd.
Value (\$500) - \$4.50 cu. yd.
Au Content - 247 oz.

Block - 2

Muck - 100,100 cu. yd.
Gravel - 80,200
Ratio 1.2:1
Grade - 0.008 oz./cu. yd.
Value - \$4.00 cu. yd.
Au Content - 678 oz.

Block - 3

Muck - 297,600 cu. yd.
Gravel - 158,000
Ratio 1.9:1
Grade - 0.012 oz./cu. yd.
Value - \$6.00 cu. yd.
Au Content - 1,854 oz.

Block - 4

Muck - 295,500 cu. yd.
Gravel - 205,900
Ratio 1.4:1
Grade - 0.011 oz./cu. yd.
Value - \$5.50 cu. yd.
Au Content - 2,200 oz.

Block - 5

Muck - 176,300 cu. yd.
Gravel - 121,500
Ratio 1.4:1
Grade 0.005 oz./cu. yd.
Value - \$2.50 cu. yd.
Au Content - 626 oz.

Block - 6

Muck - 136,100 cu. yd.
Gravel - 96,100
Ratio 1.4:1
Grade - 0.007 oz./cu. yd.
Value - \$3.50 cu. yd.
Au Content - 696 oz.

Possible Payzone

The Wounded Moose Creek drill Line #3 at hole #4 is reported to contain 15 feet of gravel at a grade of 0.009 oz./cu. yd. and value of \$4.56 cu. yd. The drill holes in this area of hole #4 are spaced 300 feet apart on the drill line. The drill hole #4 suggests a possible gold bearing payzone on parts of the Susi and Allen placer claims. The 1937 YCGC placer drilling in the area reports gold bearing gravels that contain approximately a grade of 0.009 oz./cu. yd. at a value of \$4.50 cu. yd. Therefore, the general area adjacent to hole #4 warrants a placer drill program to indicate possible payzone gold values.

Fineness Placer Gold

The fineness of the Indian River placer gold is reported to be 843.

DEVELOPMENT PLACER GOLD DEPOSIT

General

Since the discovery of gold in the Yukon Territory at Forty Mile in 1886, the Sixtymile in 1892, the Klondike in 1896 and at Matson in 1911, the value of gold, method of recovery, and location have determined a placer gravel reserve. The method of testing gravels, for economic gold content, has varied with available financing, mining method and quantity of gravel to be mined. Testing of placer gravels has been by hand-sunk shafts, hammer drilling, hand panning and by test cuts and pits excavated by machinery. Generally, because of the heterogeneous nature of placer gold distribution in the gravels, a large volume bulk sample of the gravels being tested is preferable to a small sample. However, placer gold usually occurs on or near the bedrock trap which retains the heavy gold particles and other heavy mineral concentrates; it is therefore necessary to test the surface area of bedrock and at depth into bedrock. It is essential that, when a specific placer valley or area is studied to determine the 'possible' potential of economic gravel deposits, several procedures must be followed to arrive at a reasonable conclusion.

Placer reserves are reported in the Yukon as values per cubic yard of gravel or in bedrock feet (square feet). Both methods of reporting values are valid as paystreak occurs in overlaying gravels, bedrock surface and at depth into bedrock bedding planes and fractures. The position of the paystreak determines the quantity of waste that must be removed to extract pay material for processing.

Drilling Method of Exploration

- 1) EXPLORATION DRILLING: When a few holes are drilled on a creek to discover indications of placer gold. The drill holes are located on a drill line perpendicular to the creek and holes are spaced 100 feet apart. Drill samples are processed, heavy concentrate recovered and gold reported in colors or weight (mg).
- 2) DETAIL DRILLING: After the initial exploration drilling has proven gold colors, then a broad spaced drill pattern is required to establish the location of a possible 'paystreak'.
- 3) DEVELOPMENT DRILLING: If detail drilling has indicated and broadly delineated a paystreak in a lateral direction, then further detail drilling is required. The development drilling delineates the paystreak in detail to permit accurate calculation of gold grade and volume of gravels in cubic yards.

When drilling has indicated that an economic gold paystreak has been delineated, grade and volume are reported by the criteria, PROVEN-PROBABLE-POSSIBLE paystreak.

Placer Property Development

To properly and economically explore and develop the Indian River placer property, the following-described procedure is necessary and essential for orderly exploration:

- 1) BASIC PLACER EXPLORATION:
 - Exploration drilling
 - Detail drilling
 - Development drilling
- 2) BULK SAMPLE TESTING:
 - Open-cut bulk sample
 - Thickness pay gravels
 - Grade pay zone
 - Stripping Ratio of Waste:Pay Gravels
 - Recovery method
- 3) PLACER FEASIBILITY STUDY:
 - Grade and volume
 - Mining plan
 - Costs/expenditures for development
- 4) PLACER PRODUCTION:
 - Placer operation
 - Operating costs

Sensitivity Factor

- a) If the grade of gravels change due to the heterogenous distribution of gold or a complex paystreak developed when deposition patterns are changed by creek development.
- b) If the price of gold changes on the world market or when the value of gold drops to \$300 U.S. or \$420 Cdn.
- c) If the volume of production changes but the operating costs remain the same.
- d) If the hours of production change or there are changes in operation costs.
- e) When limitations are imposed on placer operations by restricted working capital.

Bulk Sample Testing

The following listed equipment would be necessary to conduct a bulk sample evaluation test program on a placer gold prospect.

1) Heavy Equipment:

- 1 - D9H Caterpillar tractor with single shank ripper and "U" blade.
- 1 - D355 Kamatsu tractor with single shank ripper and "U" blade.
- 1 - 966C Caterpillar front-end loader with 4 yd³ bucket.

2) Processing Plant:

- 1 - Trommel, with 24 feet scrubber and 8 feet rotating screen (1/2 inch screen), the unit is 7 feet in diameter. The trommel discharges 1/2 inch minus material into a dump box that splits the material into two sluice boxes 4 feet wide and 30 feet long.

- 1 - Derocker that discharges 2 inch minus gravel into a dump box that feeds a sluice box 5 feet wide and 30 feet long.

3) Miscellaneous Equipment:

- 1 - Hydraulic number 2 monitor with a 4 inch nozzle tip and 12 inch steel pipe line.
- 1 - Morris Trash Pump (10 X 12 inches) powered by a 350 HP Cummins Diesel Engine.
- 1 - Welding truck gasoline 2-ton International.
- 2 - 4 X 4 pick-up trucks.
 - Fuel storage tanks - 4,000 gallons.
 - Parts and lubricant storage structures.
 - 1,000 feet 12 inch steel pipe.
 - Camp trailers that include bunkhouse, washhouse/laundry, kitchen/diner.

CONCLUSIONS/RECOMMENDATIONS

CONCLUSIONS

- 1) Cal-Denver Resources Ltd. signed a Lease Agreement To Prospect on the 15th of October 1986, with Cripo Exploration 1977 Ltd. - Dawson City, Yukon Territory, for six Yukon Placer claims located on the Indian River, Yukon Territory. The Indian River property Lease Agreement permitted Cal-Denver Resources Ltd. to conduct placer exploration within the claim group. The Lease Agreement contains a provision concerning a Mining Lease Agreement, should Cal-Denver Resources Ltd. exploration test results prove favorable and the property is to be placed into production.
- 2) The Cal-Denver leased Indian River property is located approximately 38 airmiles southeast of Dawson City, Yukon Territory. The Indian River and Wounded Moose Creek property is within the Dawson Mining District, Y.T., NTS Placer Sheet 115-0-10e and located at approximately latitude $63^{\circ}37'N$ and longitude $138^{\circ}41.5'W$. Access to the property from Dawson is by the Hunker - Sulphur Creeks road or on the Bonanza Creek - Upper Bonanza Creek - King Soloman Dome - Sulphur road.
 - a) Dawson - Hunker Summit - Sulphur Road to site of Dominion - Indian River bridge, the distance is 46 miles to the Indian River property.
 - b) Dawson-Bonanza Road - Upper Bonanza - Bonanza Summit to King Soloman Dome - Sulphur Road to site of Dominion - Indian River bridge, the distance is 44 miles to the Indian River property.
- 3) In a letter dated November 7th, 1986, Mr. P. Randy Reifel - President of Cal-Denver Resources Ltd. requested R. G. Hilker, P. Eng. to prepare a Placer Exploration and Development Report on the Indian River property. In compliance with Mr. Reifel's request, the writer confirmed in a letter dated December 18th, 1986 to Cal-Denver Resources Ltd. that a two-stage placer exploration report would be prepared:
 - a) Stage 1 - Placer Drill Program
 - b) Stage 2 - Bulk Sample Program (contingent on favorable results Stage 1).

Therefore, the effective date of the Cal-Denver Resources Ltd. Indian River Property Placer Report is January 10th, 1987.

- 4) The Cal-Denver Resources Ltd. leased placer claims are situated adjacent to the lower part of Wounded Moose Creek and the Indian River valley. The claim group is located south of the Indian River Baseline and below the 1,700 foot elevation contour on the left limit of the Indian River. The Indian River valley is approximately 4,500 feet

wide between the 1,700 foot elevation contours from the right limit to the left limit at Wounded Moose Creek. The creek gravels are frozen, 7 - 15 feet thick and overlaid by approximately 4 - 8 feet of black muck on the Wendy - Susi - Allen claims. The elevation contours and drainage system suggests that the left limit side of the Indian River valley, at Wounded Moose Creek, was the original location of the river channel. In 1937 the Yukon Consolidated Gold Corporation (YCGC) conducted exploration and detail placer drilling in the Indian River valley, upstream and downstream from Wounded Moose Creek. The Wounded Moose Creek drill line crossed the Wendy, Susi, Allen and Jane 3 placer claims. The Australian Creek drill line crossed the Jane 1 and Jane 2 placer claims. The 1937 YCGC exploration drill holes on the Cal-Denver Resources leased claim group indicates a possible pay zone on the Wendy, Susi and Allen claim group.

- a) 1937 YCGC exploration spaced drill holes across the Wendy/Susi/Allen placer claims (Indian River Property).
- b) 1937 YCGC detail drill data located on the Carl #7-#8-#9 placer claims that "are not" part of the Cal-Denver Resources leased claim group.

The 1937 YCGC drill line at Wounded Moose Creek indicated that seven drill holes were spaced at 300 foot intervals across the Wendy/Susi/Allen/Jane 3 claim group. The Australian Creek YCGC drill line indicates four drill holes crossed the Jane 1 and Jane 2 claims. The 1937 drill hole data was based on \$35 per ounce gold price and covered the area within the Indian River valley on the left limit of the Indian River Baseline.

- 5) Wounded Moose Creek Drill Line #3 - located at Wounded Moose Creek on the left limit of the Indian River valley. The 1937 YCGC data reported seven drill holes were located on the Wendy-Susi-Allen-Jane 3 leased placer claims. Hole #4, that reported a grade of 0.009 oz./cu. yd., was located on the Allen placer claim (see Plan #1). The seven drill holes on the claims are reported as follows:

- | | |
|--|--|
| a) 8 - 10 - 7.7¢
- \$1.10 yd ³
Grade 0.002 oz./cu. yd. | e) 4 - 9 - 9.3¢
- \$1.33 yd ³
Grade 0.003 oz./cu. yd. |
| b) 7 - 7 - 0.8¢
- \$0.11 yd ³ | f) 8 - 9 - 1.1¢
- \$0.16 yd ³ |
| c) 6 - 11 - 0.4¢
- \$0.06 yd ³ | g) 10 - 8 - 0.0¢ |
| d) 4 - 15 - 31.9¢
- \$4.56 yd ³
Grade 0.009 oz./cu. yd. | |

Note: 6 - 13 - 3.4¢
muck - gravel - value cu. yd. (\$35 oz.)
- value cu. yd. (\$500 oz.)

- 6) The Wounded Moose Creek drill Line #3 at hole #4 is reported to contain 15 feet of gravel at a grade of 0.009 oz./cu. yd. and value of \$4.56 cu. yd. The drill holes in this area of hole #4 are spaced 300 feet apart on the drill line. The drill hole #4 suggests a possible gold bearing pay zone on parts of the Susi and Allen placer claims. The 1937 YCGC placer drilling, in the area, reports gold bearing gravels that contain approximately a grade of 0.009 oz./cu. yd. at a value of \$4.50 cu. yd. Therefore, the general area adjacent to hole #4 warrants a placer drill program to indicate possible pay zone gold values.
- 7) The fineness of the Indian River placer gold is reported to be 843.
- 8) Klondike Gold District - Average Gold Content

The average gold grade of the material between surface and bedrock within the Klondike/Sixtymile/Indian River/Scroggie Gold Districts, that includes all black muck and gravel to bedrock is:

- a) Average gold content 0.012 oz./yd³ - value (gold \$500 oz. Cdn.) is \$6.00 yd³.
- b) Average gold content 0.373 gms/yd³.

RECOMMENDATIONS

1) The Cal-Denver Resources Ltd. leased placer claim group consisting of the Wendy - P27821, Susi - P27828 and Allen - P27827 are recommended to be exploration drilled. The drill program would determine a possible pay zone on the Indian River property. The 1937 YCGC seven drill holes on the property reports Hole #4 contained gold bearing gravels. The 1937 drilling also indicated pay zone gravels in the area contained a possible grade of 0.009 oz./cu. yd. or a value of approximately \$4.50 cu. yd.

a) Stage #1 - Exploration Placer Drilling

- Negotiate a placer drill contract for a drill program on the Indian River Property.
- Start drill program in January 1987 on a daily rental basis of related equipment.
- Winter weather conditions in the Dawson City and Indian River area are severe during January, February and March.
- A large size Caterpillar D9 tractor will be required to mobilize the drill to the property, plow access roads and cut drill lines.
- Exploration Drill Grid: Plan #2
 - Line spacing 300 feet
 - Drill hole spacing 100 feet and 50 feet
- The drill program is recommended to be completed prior to further test work on the property.

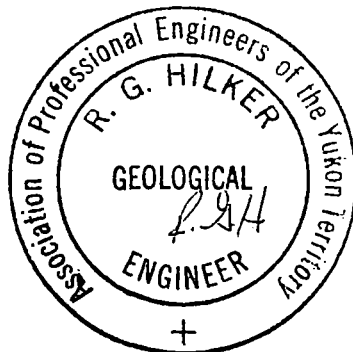
b) Conduct a drill program and/or additional bulk sampling from test trenches on the property. The results from a systematic detail drill program could be checked by bulk sample testing. Advance drilling would indicate paystreak dimensions, thickness of black muck/gravels, and depth of bedrock from surface.

2) The Indian River placer property would require placer sample testing in the creek gravels to delineate and prove reserves and grade. It is recommended that large open-cut test pits be excavated and bulk sampled by sluicing the gravels. The bulk sample test program would be contingent on favorable placer drilling results.

a) Stage #2 - Bulk Sample Testing

- Bulk sample creek gravels from the surface to bedrock for placer gold values. If possible, further sample 2 feet into bedrock to check for gold values.

- Test sluice the bulk samples and recover all heavy concentrate that is predominantly magnetite and other heavy minerals. Recover all placer gold from the heavy concentrate and precision weigh the gold.
 - b) All placer exploration bulk sample testing, drilling and sluicing should be designed and supervised by a placer geologist to establish and certify gold values and delineated proven gravel reserves.
 - c) Special placer sample processing equipment is required to recover gold from heavy concentrate.
- 3) The Indian River property warrants a two-stage Exploration Test Program to determine gold content in areas where possible pay zone gravels are indicated by the 1937 YCGC drilling.
- a) Stage #1 - Exploration Placer Drilling.
 - b) Stage #2 - Bulk Sample Testing.



R. G. Hilker
R. G. Hilker, P. Eng.
Calgary, Alberta
Effective Date Report
January 10, 1987

ESTIMATED COST OF PROGRAM

Summary Program Procedure - Cal-Denver Resources Ltd.

The estimated costs for exploration placer drilling and bulk sample gravel testing, on the Indian River property, are based on equipment rental rates and related costs in the Dawson City area, Y.T. The placer drill program is recommended to be conducted during 1987 and approximately 30 days of drilling is required. The drill samples are estimated to be processed in 30 days and laboratory processed in an additional 30 days. The Klondike creek gravels contained on the property are frozen and require "ripping" by a large tractor. The bulk sample testing open cuts would be "ripper" excavated in approximately 15 feet of muck and waste gravels and 6 - 8 feet of pay zone gravels overlaying bedrock. The gold bearing pay zone gravels become thawed when excavated and can then be processed in a Derocker/Sluice washing plant. The gold content is recovered from the pay zone gravels and inferred grade and volume is then calculated for the bulk sample. All drill samples and bulk samples collected and processed during the exploration program are to be referred to fine ounces of gold grade per cubic yard of gravel. The open-cut test areas on the Indian River property contain frozen muck and gravels that would require "ripping" during excavation.

Stage #1 - Placer Drilling Program - (30 days)

The drill program is designed to drill indicate pay zone gravels.

1) Placer Reverse-Circulation Drilling -----	\$ 72,000
- Drill rental \$2,400/day X 30 days (includes driller and helper).	
2) Miscellaneous Drill Costs -----	11,600
- Crew board and room -----	\$8,000
- Surveying drill lines -----	<u>3,600</u>
3) Placer Sample Processing -----	17,000
- Processing Equipment -----	\$5,000
- Sample grabber (1M) -----	4,000
- Sample processor (1M) -----	5,000
- Laboratory gold recovery -----	<u>3,000</u>
4) Tractor and Equipment (60 days) -----	117,200
- Crawler Tractor (D9) 60 days @ \$900/day -----	\$54,000
- Fuel and Lubricants -----	18,000
- Repairs and Parts -----	6,000
- Labour 2 Operators @ \$5,000 M ---	20,000
- Welding Truck \$120/day -----	7,200
- Mobilization and Demobilization Costs -----	<u>12,000</u>

Estimated Cost of Program (Con't)

5) Geological Engineer Supervision -----		\$ 11,000
- Field travel and expenses -----	\$4,000	
- Professional fees 20 days @ \$350 -	<u>7,000</u>	
Sub-Total Exploration Drill Program -----		<u>\$228,800</u>

Stage #2 - Bulk Sample Test Program - (45 days)

The Stage #2 - Bulk Sample Test Program is to be conducted after the completion of the Stage #1 - Drill Program and contingent on favorable results.

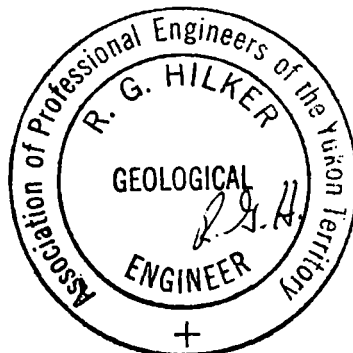
1) 1 - D9 Caterpillar -----		\$ 79,000
- Leased @ \$75/hr. or \$900/day -----	\$40,500	
- Ripper teeth and parts \$170/day --	7,500	
- Fuel \$290/day -----	13,000	
- 2 Operators @ \$400/day -----	<u>18,000</u>	
2) 1 - 966C Caterpillar Front-End Loader -----		49,500
- Leased @ \$42/hr. or \$500/day -----	\$22,500	
- Fuel \$195/day -----	9,000	
- 2 Operators @ \$400/day -----	<u>18,000</u>	
3) Processing Plant -----		31,500
- Derocker/Sluice Plant \$300/day ---	\$13,500	
- 2 Operators @ \$400/day -----	<u>18,000</u>	
4) Miscellaneous Test Equipment -----		35,500
- Pumps/Steel Pipe \$250/day -----	\$11,200	
- (2) 4 X 4 pick-up trucks at \$160/day -----	7,200	
- 1 - Welding Truck \$120/day -----	5,400	
- Misc. equipment \$160/day -----	7,200	
- Fuel and lubricants \$100/day -----	<u>4,500</u>	
5) Camp Costs -----		31,500
- 7 men X 45 days - 315 man days 315 days X \$100/day -----	<u>\$31,500</u>	
6) Operations Manager Supervision -----		9,000
- 45 days X \$200/day -----	<u>\$ 9,000</u>	
7) Placer Evaluation Reports -----		24,000
- Placer Drilling Evaluation -----	\$12,000	
- Bulk Sample Exploration Testing --	<u>12,000</u>	
Sub-Total Bulk Sample Program -----		<u>\$260,000</u>

Estimated Cost of Program (Con't)

The estimated exploration costs are based on 30 days of placer drilling and 45 days of open-cut bulk sample gravel testing on the Indian River property.

Summary - Exploration Program Costs

- 1) Stage #1 - Placer Drill Exploration Program ----- \$228,800
- 2) Stage #2 - Bulk Sample Test Program ----- \$260,000



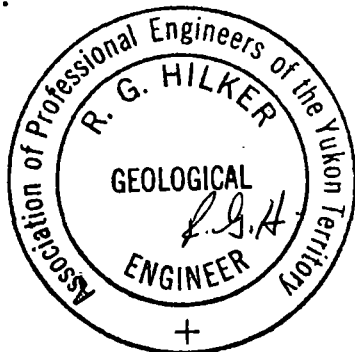
R. G. Hilker
R. G. Hilker, P. Eng.
Calgary, Alberta
Effective Date Report
January 10, 1987

CERTIFICATION

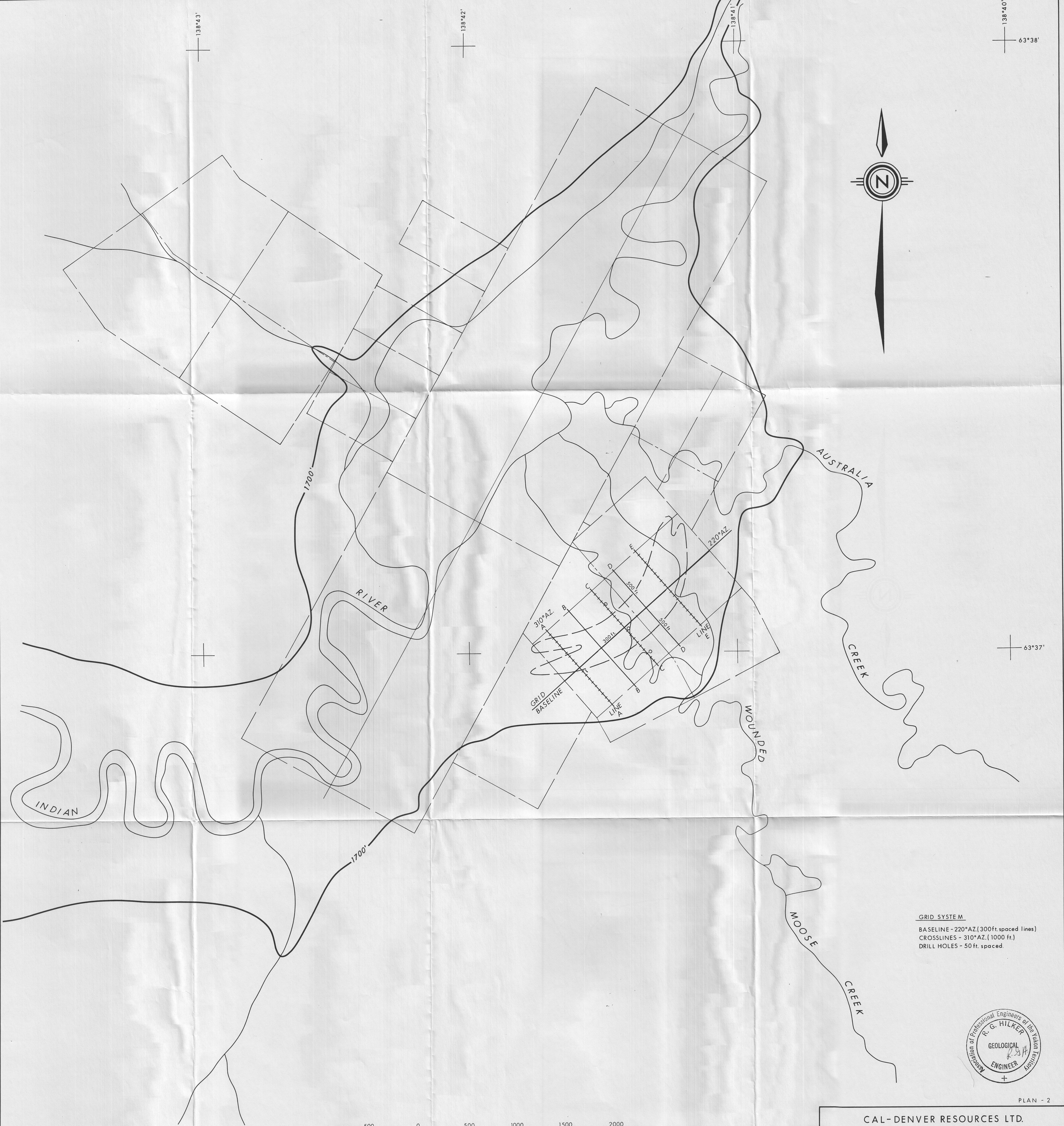
I, ROBERT G. HILKER, of 324 Silver Valley Rise N.W., in the City of Calgary in the Province of Alberta, Canada, DO HEREBY CERTIFY:

1. THAT I am a Consulting Geological Engineer, with an office located at 324 Silver Valley Rise N.W., in the City of Calgary, in the Province of Alberta.
2. THAT I am a graduate of the Michigan Technological University located at Houghton, Michigan, U.S.A., where I obtained a Bachelor of Science Degree in Geological Engineering (Exploration Option) in 1962.
3. THAT I am a registered Professional Engineer (Geological); in the Association of Professional Engineers, Geologists and Geophysicists of Alberta - #38356; The Association of Professional Engineers of the Yukon Territory; The Association of Professional Engineers of British Columbia (non-residence license); Fellow of the Geological Association of Canada; and a Member of the Society of Mining Engineers of AIME - #1436600.
4. THAT I have practised my profession as an engineer and geologist for the past twenty-four years.
5. THAT I have personally managed placer exploration and a mining operation in the Klondike, Sixtymile, Indian River and Scroggie areas of the Yukon Territory, AND THAT I have examined several other placer properties and mining operations located on several creeks in the Klondike and Scroggie Districts, for the purpose of evaluation and orientation of placer gold techniques during the time period of 1972 to the present.
6. THAT I have personally prepared the Exploration And Development Placer Gold Report for Cal-Denver Resources Ltd. AND THAT the effective date of the Placer Report is the 10th of January 1987, on the Indian River property that is located on NTS Placer Sheet 115-0-10e, Dawson Mining District, Y.T., based on personal experience in the Klondike District, by gathering property data December 9th and 10th, 1986 in Dawson City, Y.T., and by researching placer literature in the Klondike and Indian River areas.
7. THAT I have no direct, indirect or contingent interest in any of the Yukon Placer Claims located on the leased Indian River property, or in any securities or common stock issued by Cal-Denver Resources Ltd.

Dated this 14 day of MAY, 1987, in the City of Calgary, Province of Alberta.



R. G. Hilker
R. G. Hilker, P. Eng.

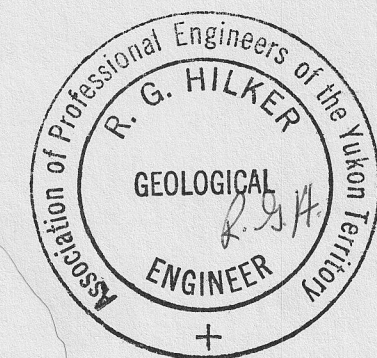


NOTE: COPIED FROM 1A & ND
 MAP SHEET 115-O-10e.
 LOCATION OF CLAIMS
 ARE ONLY APPROXIMATE.



R.G. HILKER, P.ENG.,
 PLACER GEOLOGIST/ENGINEER,
 CALGARY, ALBERTA.

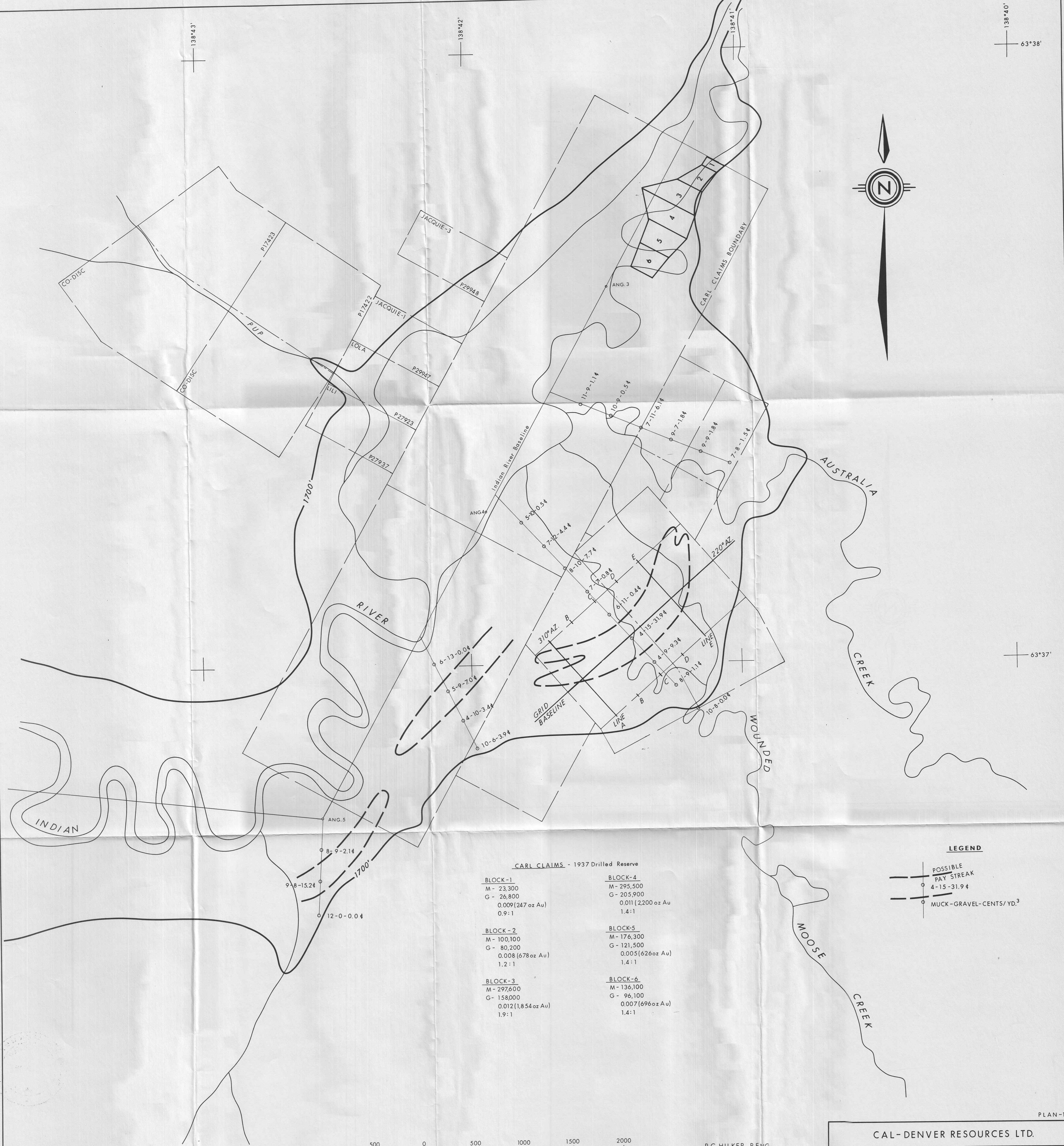
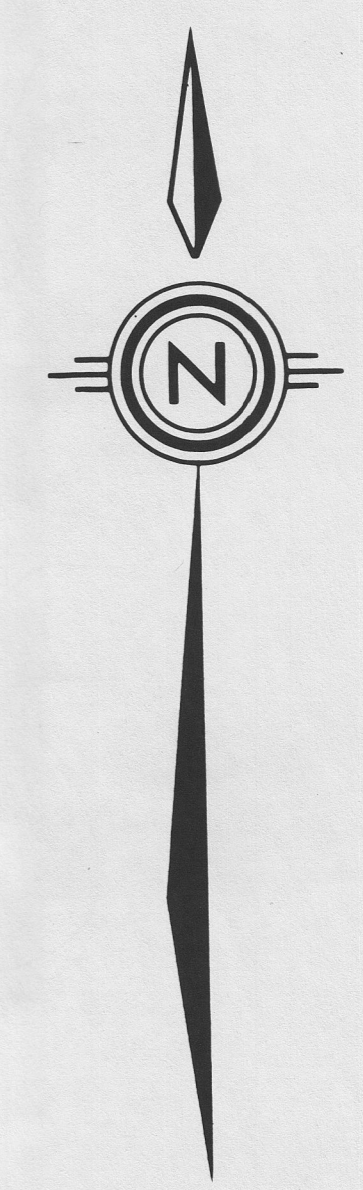
GRID SYSTEM
 BASELINE - 220°AZ. (300ft. spaced lines)
 CROSSLINES - 310°AZ. (1000 ft.)
 DRILL HOLES - 50 ft. spaced.



PLAN - 2

CAL-DENVER RESOURCES LTD.	
GRID SYSTEM 1987 EXPLORATION & BULK SAMPLE PLACER GOLD PROGRAM WOUNDED MOOSE CREEK & INDIAN RIVER	
DATE: JAN., 1987	SCALE: 1:5,000

138°43' 138°42' 138°41' 63°38' 63°37'



CARL CLAIMS - 1937 Drilled Reserve

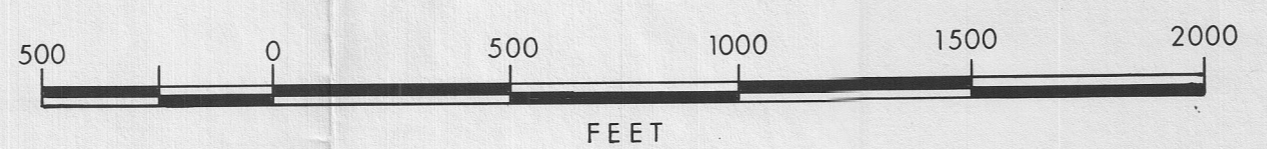
BLOCK-1	BLOCK-4
M - 23,300	M - 295,500
G - 26,800	G - 205,900
0.009 (247 oz Au)	0.011 (2,200 oz Au)
0.9:1	1.4:1

BLOCK-2	BLOCK-5
M - 100,100	M - 176,300
G - 80,200	G - 121,500
0.008 (678 oz Au)	0.005 (626 oz Au)
1.2:1	1.4:1

BLOCK-3	BLOCK-6
M - 297,600	M - 136,100
G - 158,000	G - 96,100
0.012 (1,854 oz Au)	0.007 (696 oz Au)
1.9:1	1.4:1

LEGEND

- POSSIBLE PAY STREAK
- 4-15-31.9#
- MUCK-GRAVEL-CENTS/YD.³



R.G. HILKER, P. ENG.,
PLACER GEOLOGIST/ENGINEER,
CALGARY, ALBERTA.

NOTE: COPIED FROM I A & ND
MAP SHEET 115-O-10e
LOCATION OF CLAIMS
ARE ONLY APPROXIMATE.

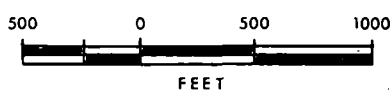
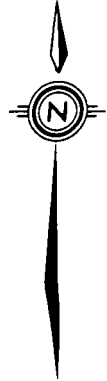
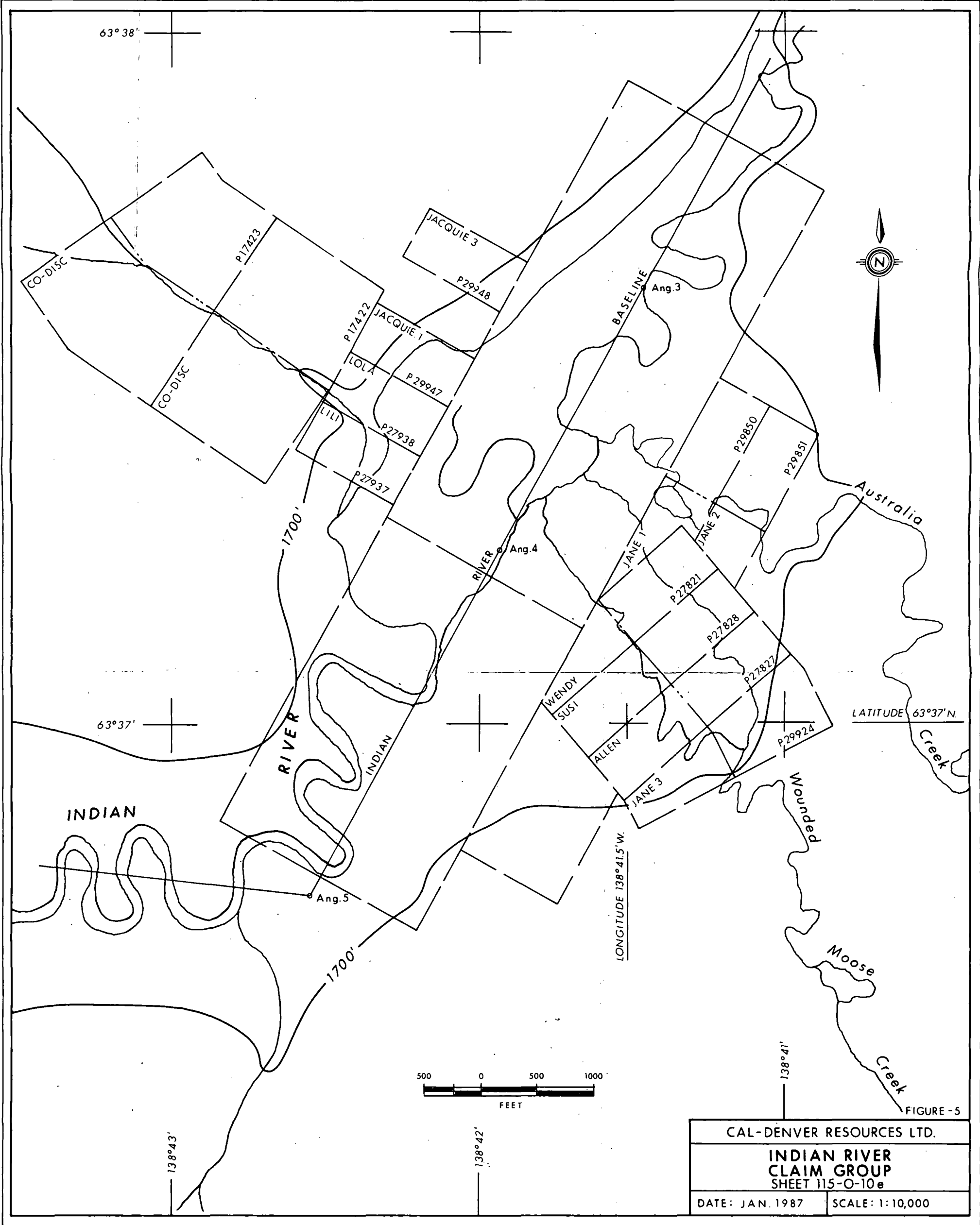
PLAN-1

CAL-DENVER RESOURCES LTD.

1937-Y.C.G.C. DRILL SHEET
WOUNDED MOOSE & AUSTRALIA CREEKS
INDIAN RIVER

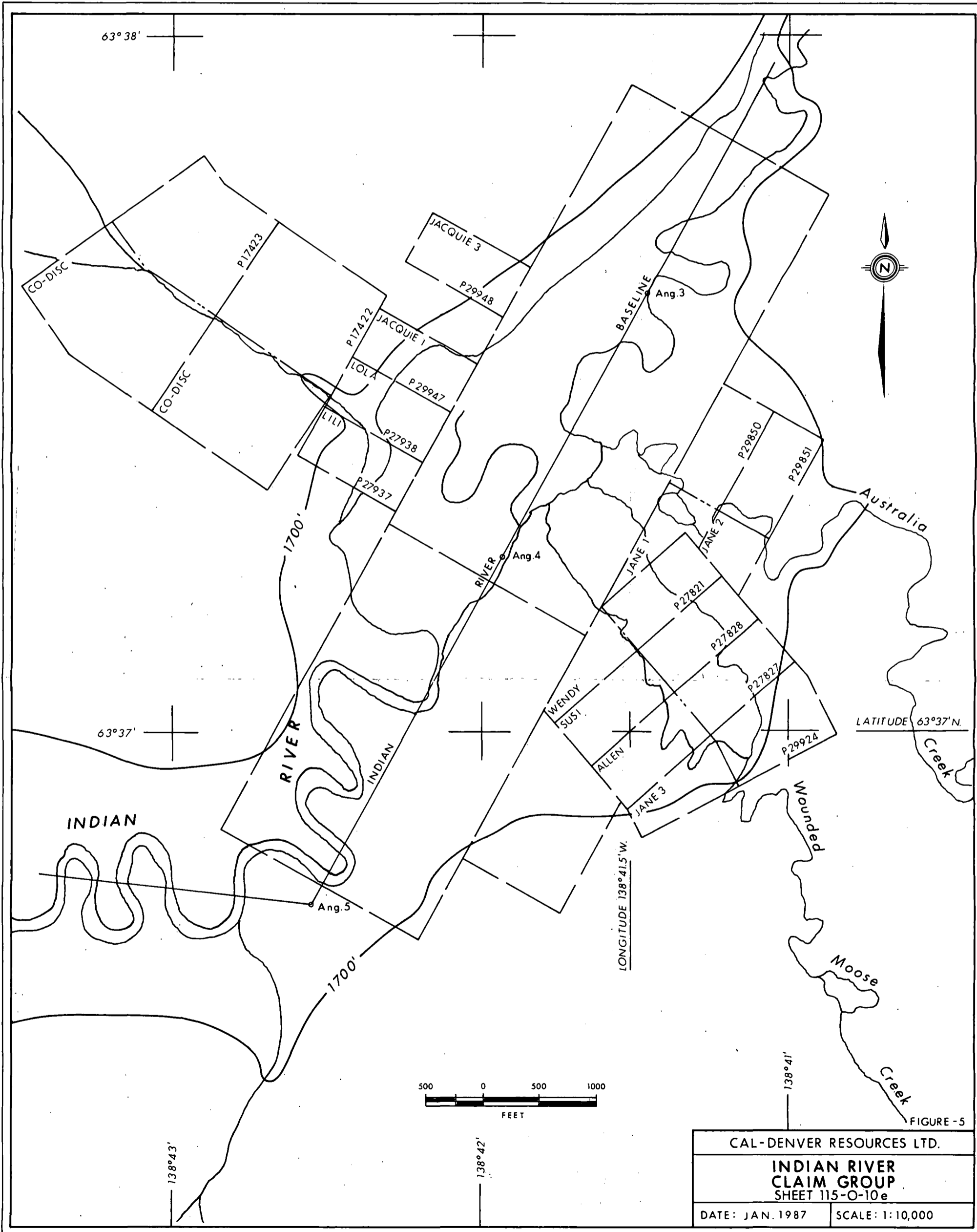
DAWSON MINING DISTRICT-Y.T.

DATE: JAN., 1987	SCALE: 1:5,000
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CAL-DENVER RESOURCES LTD.	
INDIAN RIVER CLAIM GROUP SHEET 115-O-10e	
DATE: JAN. 1987	SCALE: 1:10,000

FIGURE - 5



CAL-DENVER RESOURCES LTD.
INDIAN RIVER CLAIM GROUP
 SHEET 115-O-10e
 DATE: JAN. 1987 SCALE: 1:10,000

FIGURE -5

1987 PLACER DRILLING
EXPLORATION REPORT
KLONDIKE GOLD DISTRICT
YUKON TERRITORY, CANADA

on

INDIAN RIVER PROPERTY
WOUNDED MOOSE CREEK

LATITUDE $63^{\circ}37'N$

LONGITUDE $138^{\circ}41.5'W$

YUKON PLACER CREEK CLAIMS
DAWSON MINING DISTRICT
YUKON TERRITORY

NTS SHEET 115-0-10e

for

CAL-DENVER RESOURCES LTD.
VANCOUVER, BRITISH COLUMBIA

by

R. G. HILKER, P. ENG.
TRON DUIK CONSULTANTS LTD.
CALGARY, ALBERTA

MAY 4, 1987

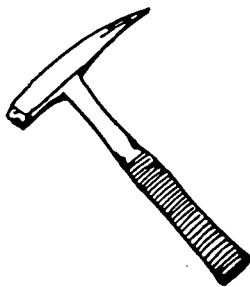


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GENERAL INDIAN RIVER PROPERTY

Cal-Denver Resources Ltd. - #201, 1512 Yew St., Vancouver, British Columbia, V6K 3E4, tel. (604) 731-8158; President Randy Reifel and Operations Manager Gary W. Crawford. Cal-Denver Resources Ltd. signed a Lease Agreement To Prospect, on the 15th of October 1986, with Cripo Exploration 1977 Ltd. - Dawson City, Yukon Territory, for six Yukon Placer claims located on the Indian River, Yukon Territory. The Indian River property Lease Agreement permitted Cal-Denver Resources Ltd. to conduct placer exploration within the claim group. The Lease Agreement contains a provision concerning a Mining Lease Agreement, should Cal-Denver Resources Ltd. exploration test results prove favorable and the property is to be placed into production. The registered and beneficial owners of the Indian River property are John Erickson/Herman Liedtke et al principal owners of Cripo Exploration 1977 Ltd. of P.O. Box 48, Dawson City, Yukon Territory. The signed Lease Agreement, with the property owners Erickson/Liedtke et al, permitted the company to conduct exploration on the claim group with certain payment conditions granted to the property lien holders prior to a mining operation.

The Cal-Denver leased Indian River property is located approximately 38 airmiles southeast of Dawson City, Yukon Territory. The Indian River and Wounded Moose Creek property is within the Dawson Mining District, Y.T., NTS Placer Sheet 115-0-10e and located at approximately latitude 63°37'N and longitude 138°41.5'W. Access to the property from Dawson is by the Hunker - Sulphur Creeks road or on the Bonanza Creek - Upper Bonanza Creek - King Solomon Dome - Sulphur road.

- a) Dawson - Hunker Summit - Sulphur Road to site of Dominion - Indian River bridge, the distance is 46 miles to the Indian River property.
- b) Dawson - Bonanza Road - Upper Bonanza Road - Bonanza Summit to King Solomon Dome - Sulphur Road to site of Dominion - Indian River bridge, the distance is 44 miles to the Indian River property .

Cal-Denver Resources Ltd. retained R. G. Hilker, P. Eng. - Calgary, Alberta, to prepare an Exploration and Development Placer Gold Report on the Indian River property. The report effectively dated January 10, 1987 recommends a two-stage evaluation program to determine if the claims contained an economic pay zone.

- 1) Stage 1 - Placer Drill Program
- 2) Stage 2 - Bulk Sample Program (contingent on favorable results Stage 1).

The Conclusions and Recommendations from the Cal-Denver Resources Ltd. Indian River Property Report - effective date January 10, 1987 outlined the Stage #1 and Stage #2 (contingent) exploration programs. The Conclusions and Recommendations from the January 10, 1987 Report are therefore duplicated in this report.

CONCLUSIONS/RECOMMENDATIONS

CONCLUSIONS

- 1) Cal-Denver Resources Ltd. signed a Lease Agreement To Prospect on the 15th of October 1986, with Cripo Exploration 1977 Ltd. - Dawson City, Yukon Territory, for six Yukon Placer claims located on the Indian River, Yukon Territory. The Indian River property Lease Agreement permitted Cal-Denver Resources Ltd. to conduct placer exploration within the claim group. The Lease Agreement contains a provision concerning a Mining Lease Agreement, should Cal-Denver Resources Ltd. exploration test results prove favorable and the property is to be placed into production.
- 2) The Cal-Denver leased Indian River property is located approximately 38 airmiles southeast of Dawson City, Yukon Territory. The Indian River and Wounded Moose Creek property is within the Dawson Mining District, Y.T., NTS Placer Sheet 115-0-10e and located at approximately latitude 63°37'N and longitude 138°41.5'W. Access to the property from Dawson is by the Hunker - Sulphur Creeks road or on the Bonanza Creek - Upper Bonanza Creek - King Solomon Dome - Sulphur road.
 - a) Dawson - Hunker Summit - Sulphur Road to site of Dominion - Indian River bridge, the distance is 46 miles to the Indian River property.
 - b) Dawson-Bonanza Road - Upper Bonanza - Bonanza Summit to King Solomon Dome - Sulphur Road to site of Dominion - Indian River bridge, the distance is 44 miles to the Indian River property.
- 3) In a letter dated November 7th, 1986, Mr. P. Randy Reifel - President of Cal-Denver Resources Ltd. requested R. G. Hilker, P. Eng. to prepare a Placer Exploration and Development Report on the Indian River property. In compliance with Mr. Reifel's request, the writer confirmed in a letter dated December 18th, 1986 to Cal-Denver Resources Ltd. that a two-stage placer exploration report would be prepared:
 - a) Stage 1 - Placer Drill Program
 - b) Stage 2 - Bulk Sample Program (contingent on favorable results Stage 1).

Therefore, the effective date of the Cal-Denver Resources Ltd. Indian River Property Placer Report is January 10th, 1987.

- 4) The Cal-Denver Resources Ltd. leased placer claims are situated adjacent to the lower part of Wounded Moose Creek and the Indian River valley. The claim group is located south of the Indian River Baseline and below the 1,700 foot elevation contour on the left limit of the Indian River. The Indian River valley is approximately 4,500 feet

wide between the 1,700 foot elevation contours from the right limit to the left limit at Wounded Moose Creek. The creek gravels are frozen, 7 - 15 feet thick and overlaid by approximately 4 - 8 feet of black muck on the Wendy - Susi - Allen claims. The elevation contours and drainage system suggests that the left limit side of the Indian River valley, at Wounded Moose Creek, was the original location of the river channel. In 1937 the Yukon Consolidated Gold Corporation (YCGC) conducted exploration and detail placer drilling in the Indian River valley, upstream and downstream from Wounded Moose Creek. The Wounded Moose Creek drill line crossed the Wendy, Susi, Allen and Jane 3 placer claims. The Australian Creek drill line crossed the Jane 1 and Jane 2 placer claims. The 1937 YCGC exploration drill holes on the Cal-Denver Resources leased claim group indicates a possible pay zone on the Wendy, Susi and Allen claim group.

- a) 1937 YCGC exploration spaced drill holes across the Wendy/Susi/Allen placer claims (Indian River Property).
- b) 1937 YCGC detail drill data located on the Carl #7-#8-#9 placer claims that "are not" part of the Cal-Denver Resources leased claim group.

The 1937 YCGC drill line at Wounded Moose Creek indicated that seven drill holes were spaced at 300 foot intervals across the Wendy/Susi/Allen/Jane 3 claim group. The Australian Creek YCGC drill line indicates four drill holes crossed the Jane 1 and Jane 2 claims. The 1937 drill hole data was based on \$35 per ounce gold price and covered the area within the Indian River valley on the left limit of the Indian River Baseline.

- 5) Wounded Moose Creek Drill Line #3 - located at Wounded Moose Creek on the left limit of the Indian River valley. The 1937 YCGC data reported seven drill holes were located on the Wendy-Susi-Allen-Jane 3 leased placer claims. Hole #4, that reported a grade of 0.009 oz./cu. yd., was located on the Allen placer claim (see Plan #1). The seven drill holes on the claims are reported as follows:

- | | |
|--|--|
| a) 8 - 10 - 7.7¢
- \$1.10 yd ³
Grade 0.002 oz./cu. yd. | e) 4 - 9 - 9.3¢
- \$1.33 yd ³
Grade 0.003 oz./cu. yd. |
| b) 7 - 7 - 0.8¢
- \$0.11 yd ³ | f) 8 - 9 - 1.1¢
- \$0.16 yd ³ |
| c) 6 - 11 - 0.4¢
- \$0.06 yd ³ | g) 10 - 8 - 0.0¢ |
| d) 4 - 15 - 31.9¢
- \$4.56 yd ³
Grade 0.009 oz./cu. yd. | |

Note: 6 - 13 - 3.4¢
muck - gravel - value cu. yd. (\$35 oz.)
- value cu. yd. (\$500 oz.)

- 6) The Wounded Moose Creek drill Line #3 at hole #4 is reported to contain 15 feet of gravel at a grade of 0.009 oz./cu. yd. and value of \$4.56 cu. yd. The drill holes in this area of hole #4 are spaced 300 feet apart on the drill line. The drill hole #4 suggests a possible gold bearing pay zone on parts of the Susi and Allen placer claims. The 1937 YCGC placer drilling, in the area, reports gold bearing gravels that contain approximately a grade of 0.009 oz./cu. yd. at a value of \$4.50 cu. yd. Therefore, the general area adjacent to hole #4 warrants a placer drill program to indicate possible pay zone gold values.
- 7) The fineness of the Indian River placer gold is reported to be 843.
- 8) Klondike Gold District - Average Gold Content

The average gold grade of the material between surface and bedrock within the Klondike/Sixtymile/Indian River/Scroggie Gold Districts, that includes all black muck and gravel to bedrock is:

- a) Average gold content 0.012 oz./yd³ - value (gold \$500 oz. Cdn.) is \$6.00 yd³.
- b) Average gold content 0.373 gms/yd³.

R. G. Hilker, P. Eng.
Calgary, Alberta
Effective Date Report
January 10, 1987

RECOMMENDATIONS

1) The Cal-Denver Resources Ltd. leased placer claim group consisting of the Wendy - P27821, Susi - P27828 and Allen - P27827 are recommended to be exploration drilled. The drill program would determine a possible pay zone on the Indian River property. The 1937 YCGC seven drill holes on the property reports Hole #4 contained gold bearing gravels. The 1937 drilling also indicated pay zone gravels in the area contained a possible grade of 0.009 oz./cu. yd. or a value of approximately \$4.50 cu. yd.

a) Stage #1 - Exploration Placer Drilling

- Negotiate a placer drill contract for a drill program on the Indian River Property.
- Start drill program in January 1987 on a daily rental basis of related equipment.
- Winter weather conditions in the Dawson City and Indian River area are severe during January, February and March.
- A large size Caterpillar D9 tractor will be required to mobilize the drill to the property, plow access roads and cut drill lines.
- Exploration Drill Grid: Plan #2
 - Line spacing 300 feet
 - Drill hole spacing 100 feet and 50 feet
- The drill program is recommended to be completed prior to further test work on the property.

b) Conduct a drill program and/or additional bulk sampling from test trenches on the property. The results from a systematic detail drill program could be checked by bulk sample testing. Advance drilling would indicate paystreak dimensions, thickness of black muck/gravels, and depth of bedrock from surface.

2) The Indian River placer property would require placer sample testing in the creek gravels to delineate and prove reserves and grade. It is recommended that large open-cut test pits be excavated and bulk sampled by sluicing the gravels. The bulk sample test program would be contingent on favorable placer drilling results.

a) Stage #2 - Bulk Sample Testing

- Bulk sample creek gravels from the surface to bedrock for placer gold values. If possible, further sample 2 feet into bedrock to check for gold values.

- Test sluice the bulk samples and recover all heavy concentrate that is predominantly magnetite and other heavy minerals. Recover all placer gold from the heavy concentrate and precision weigh the gold.
 - b) All placer exploration bulk sample testing, drilling and sluicing should be designed and supervised by a placer geologist to establish and certify gold values and delineated proven gravel reserves.
 - c) Special placer sample processing equipment is required to recover gold from heavy concentrate.
- 3) The Indian River property warrants a two-stage Exploration Test Program to determine gold content in areas where possible pay zone gravels are indicated by the 1937 YCGC drilling.
- a) Stage #1 - Exploration Placer Drilling.
 - b) Stage #2 - Bulk Sample Testing.

R. G. Hilker, P. Eng.
Calgary, Alberta
Effective Date Report
January 10, 1987

1987 INDIAN RIVER DRILL PROGRAM

General

The 1987 Indian River property drill program was conducted from late January to April 5, 1987. The drilling equipment used was a Becker Drill - 180 Hammer, that used 5.5 inch diameter reverse circulation pipe and a crowded-in-bit, that drilled a 6 inch diameter hole. Mr. Gary W. Crawford, Operations Manager, Cal-Denver Resources Ltd. - Dawson City, Y.T. supervised the drill program. The drill program procedure was outlined in the Indian River Property Placer Report dated January 10, 1987 - by R. G. Hilker, P. Eng. The Drill Program was conducted during the cold weather conditions in February and March with average snow cover. The drill was mobilized from Dawson City to the Indian River property with a D9 Caterpillar tractor by the Upper Bonanza Creek Road. Approximately 30 miles of road required clearing of snow to move the drill, welding truck and crew pick-up trucks to the property. The road constantly blew in with snow within a 15 mile stretch from the Upper Bonanza Creek summit to King Solomon Dome summit. Diesel fuel and gasoline were hauled from Dawson City, for a distance of 45 miles, to the Indian River property. The D9 crawler tractor was used to cut the drill grid lines and drilling was conducted along drill lines designated Line C - Line D and Line E. The Erickson/Liedtke camp was used by the four-man crew.

Drill Program

- 1) January 15 - 31 --- Servicing and preparing drill and tractor for drill program at Dawson City. Very short daylight hours.
- 2) February 1 - 28 --- Mobilizing equipment to Indian River property from Dawson City. Ploughing Upper Bonanza Creek road to the property and hauling diesel fuel. Problems with blowing snow on road with constant re-ploughing to clear road for vehicles. Crews working 10 - 12 hour shifts with about 7 hours of daylight.
- 3) March 1 - 31 --- Drill program on the Indian River property, hauling samples to Dawson City and processing for gold recovery.
- 4) April 1 - 10 --- Completed drill program and returned drill to Dawson City. Hauled all drill cuttings from the Indian River to Dawson completing processing for gold recovery.

On February 16, 1987, R. G. Hilker travelled to Whitehorse and Dawson City from Calgary. The writer was in Dawson City February 16 to February 24, 1987 on a business trip. The writer accompanied Gary W. Crawford to the Upper Bear Creek road when the drill and tractor were in the process of mobilization to the Indian River property. The mobilization of the equipment was difficult due to short daylight hours, cold temperature conditions and constant blowing snow on the road that required re-ploughing.

Mr. Gary W. Crawford, Operations Manager for Cal-Denver Resources Ltd., provided the writer with the 1987 Indian River drill data on April 14, 1987 in Vancouver, B.C.

- a) Drill Reports - Lines C-D-E.
- b) Summary data of processed gravel samples and eight sample bags of heavy concentrate with gold colors.
- c) Sketch of drill hole location.
- d) Verbal communication concerning the 1987 Indian River drill program and heavy concentrate that remained after "washing" the samples.

The Indian River drill holes were spaced at 50 and 100 feet intervals, on drill lines 300 feet apart (Sketch Drill Hole Location - Scale 1:5,000).

- a) Line C - North baseline, 50 feet spaced drill holes WC-1N to WC-7N.
- b) Line D - North and south of baseline, 100 feet spaced drill holes WD-1N to WD-11N and WD-1S to WD-8S.
- c) Line E - North of baseline, 100 feet spaced drill holes WE-1N to WE-8N.

The reader is cautioned that R. G. Hilker, P. Eng., has no direct knowledge of the information gathered from the 1987 drill program and sample processing conducted by Cal-Denver Resources Ltd. on the leased Indian River property. This summary report, of the 1987 Indian River drill program, was prepared by the writer from information supplied by Cal-Denver Resources Ltd.

1987 Indian River Placer Drilling

<u>Drill Hole #</u>	<u>Drill Line</u>	<u>Total Depth - Ft.</u>	<u>Black Muck - Ft.</u>	<u>Gravel Ft.</u>	<u>Bedrock Ft.</u>
WC-1N	C-North	0 - 18		0 - 17	17 - 18
WC-2N		0 - 21		0 - 19	19 - 21
WC-3N		0 - 19		0 - 17	17 - 19
WC-4N		0 - 16		0 - 15	15 - 16
WC-5N		Lost		---	---
WC-6N		0 - 18		0 - 18	?
WC-7N		0 - 19		0 - 19	?

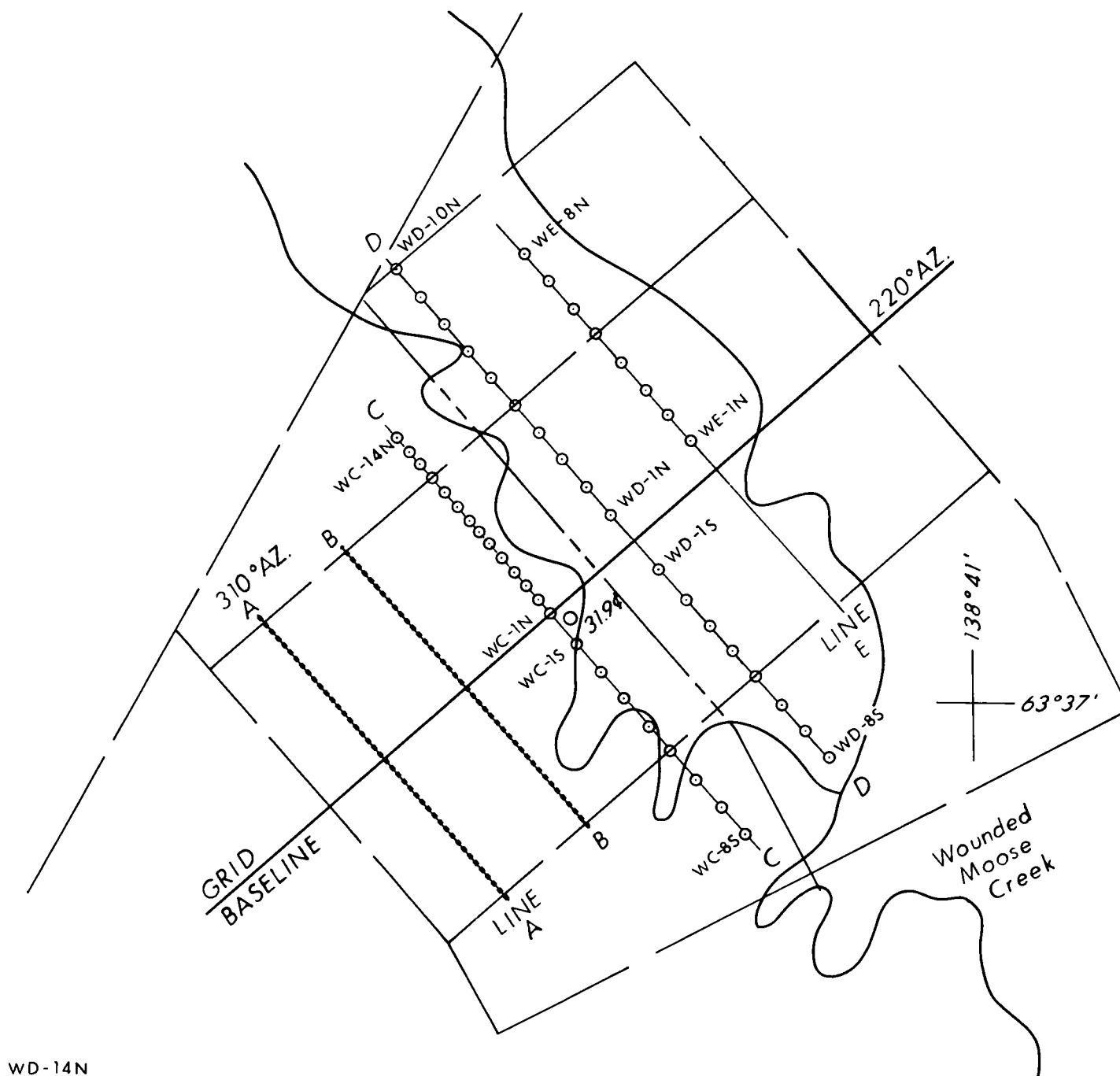
WD-1N	D-North	0 - 23	0 - 1	1 - 20	20 - 23
WD-2N		0 - 18	0 - 1	1 - 18	---
WD-3N		0 - 16		0 - 16	
WD-4N		0 - 32	0 - 10	10 - 28	28 - 32
WD-5N		0 - 32	0 - 10	10 - 27	27 - 32
WD-6N		0 - 19		0 - 15	15 - 19
WD-7N		0 - 19		0 - 16	16 - 19
WD-8N		0 - 18	0 - 1	1 - 17	17 - 18
WD-9N		0 - 18	0 - 1	1 - 17	17 - 18
WD-10N		0 - 19		0 - 17	17 - 19
WD-11N		0 - 19		0 - 16	16 - 19

WD-1S	D-South	0 - 24		0 - 22	22 - 24
WD-2S		0 - 24		0 - 22	22 - 24
WD-3S		0 - 29		0 - 27	27 - 29
WD-4S		0 - 24	0 - 10	10 - 23	23 - 24
WD-5S		0 - 24	0 - 7	7 - 23	23 - 24
WD-6S		0 - 24	0 - 6	6 - 21	21 - 24
WD-7S		0 - 29	0 - 6	6 - 27	27 - 29
WD-8S		0 - 25	0 - 6	6 - 23	23 - 25

WE-1N	E-North	0 - 16	0 - 7	7 - 15	15 - 16
WE-2N		0 - 23	---	0 - 21	21 - 23
WE-3N		0 - 19	0 - 9	9 - 17	17 - 19
WE-4N		0 - 18	---	0 - 17	17 - 19
WE-5N		0 - 12	---	0 - 11	11 - 12
WE-6N		0 - 15	---	0 - 14	14 - 15
WE-7N		0 - 14	---	0 - 12	12 - 14
WE-8N		0 - 10		6 - 9	9 - 10

Summary - Drill Holes

1) Line C - North -----	6 holes - 111 feet
2) Line D - North -----	11 holes - 232 feet
- South -----	8 holes - 203 feet
3) Line E - North -----	<u>8 holes</u> - <u>123 feet</u>
Total -----	<u>33 holes</u> - <u>669 feet</u>



WD-14N
 ○ — DRILL HOLE, LINE D,
 NORTH OF GRID BASELINE.

NTS 115-O-10e

CAL-DENVER RESOURCES LTD.	
1987 DRILL HOLE LOCATIONS INDIAN RIVER PROPERTY	
DATE: JANUARY, 1987	SCALE: 1:5000

Processed Drill Cuttings - Indian River Property

The following listed drill hole cuttings were processed in a long-tom sluice by Gary W. Crawford - Operations Manager, Cal-Denver Resources Ltd. - Dawson City, Y.T. The samples were processed during late March - April 10, 1987 and eight gold samples were bagged and the data reported to R. G. Hilkner, P. Eng. for documentation and calculations. The gold samples were weighed at Terra-Min Research Laboratory - Calgary, Alberta and supervised by the writer.

<u>Drill Hole #</u>	<u>Total Depth</u>	<u>Sample Footage</u>	<u>Length</u>	<u>Weight Sample</u>	<u>Rec. Gold</u>	<u>Reported Gold</u>
1) WC-1N	0-18 ft.	8-18 ft.	10 ft.	184 lbs.	---	---
WC-2N	0-21	12-21	9	95	---	---
WC-3N	0-19	12-19	7	115	59 mg.	---
WC-4N	0-16	10-16	6	121	23 mg.	---
WC-6N	0-18	10-18	8	195	7 mg.	---
WC-7N	0-19	12-19	7	123	---	2-fs

2) WD-1N	0-23 ft.	15-23 ft.	8 ft.	150 lbs.	> 1 mg.	3-fs
WD-2N	0-18	10-18	8	130	---	1-fs
WD-3N	0-16	20-26	6	100	---	5-#3
WD-4N	0-32	24-28	4	88	5 mg.	---
WD-5N	0-32	24-30	6	112	3 mg.	---
WD-6N	0-19	12-19	7	124	---	1-fs
WD-7N	0-19	---	---	---	2 mg.	---
WD-8N	0-18	---	---	---	27 mg.	5-#3
WD-9N	0-18	---	---	---	---	2-fs
WD-10N	0-19	---	---	---	---	---
WD-11N	0-19	---	---	---	---	---

3) WE-1N	0-16 ft.	12-16 ft.	4 ft.	94 lbs.	---	1-fs
WE-2N	0-23	13-23	10	288	---	---
WE-3N	0-19	12-19	7	190	---	---
WE-4N	0-18	12-18	6	195	---	1-fs
WE-5N	0-12	4-12	8	146	---	---
WE-6N	0-15	10-15	5	92	---	---
WE-7N	0-14	8-14	6	130	---	---
WE-8N	0-10	6-10	4	55	---	1-fs

Gold Color Classification Method

Gravel samples gathered from a placer prospect usually are hand panned and checked for "colors" of gold per pan. Samples are usually collected from test pits, shafts, or dug from creek beds or benches. The "pan factor" is the weight of gravels contained in the standard size pan and must be determined. The pan of gravels can then be related to a portion of a cubic yard of unconsolidated material tested. The gold color classification method, in a pan of gravels, is only an estimation of the value per cubic yard of material checked.

Classification of Colors:

No. 1 - particles over 4 mg (20 mesh particle 6.57 mg).

No. 2 - particles weighing between 1 - 4 mg (40 mesh particles 0.91 mg).

No. 3 - particles less than one mg (60 mesh particles 0.27 mg).

- a) Gold color value @ \$600/oz. Cdn. and 843 fineness is \$505.80/oz.
- b) Indian River placer gold value is \$16.26/gm or \$0.01626/mg.
- c) One fly speck of gold is estimated to weigh one mg or 0.0001 gram (or less).
- d) A standard pan of gravels weighs approximately 25 pounds and there are 135 pans per cubic yard of bank measure gravels, with a weight of 3,300 - 3,400 pounds.
- e) The total weight of a gravel sample or drill cutting sample can be referred to a cubic yard of volume measure.
e.g. $\frac{3,300 \text{ lbs./cu. yd.}}{115 \text{ lbs. (sample)}} = f 28.7/\text{cu. yd.}$
- f) Drill cutting sample weight, referred to a cubic yard of volume measure, is only within the length of hole sampled; - eg. drill hole depth 0 - 24 feet and 115 lbs. of samples tested in lower 8 feet of hole above bedrock (16 - 24 feet) and the payzone. The placer gold recovered within the 115 lb. sample and 8 feet of hole refers to the pay zone only.

Example:

- total hole 0 - 24 feet
- waste gravel 0 - 16 feet (16 ft.)
- pay zone gravel 16 - 24 feet (8 ft.)
- placer gold recovered in the 8 ft. sample is referred to value of oz. per cu. yd.

The Indian River placer gold recovered from the drill cuttings, from 8 holes, were weighed in the Terra-Min Research Lab. - Calgary, Alberta.

Economic Values and Grade - Indian River Drill Hole Cuttings

<u>Drill Hole #</u>	<u>Total Depth</u>	<u>Sample Footage</u>	<u>Length</u>	<u>Sample Weight</u>	<u>Colors</u>	<u>Lab. Weight</u>	<u>Possible Value</u>
1) WC-3N	19 ft	12-19 ft	7 ft	115 lbs	1-#1 1-#1 1-#1 1-#3	28 mg 26 4 > 1	\$27.50 yd ³ (59 mg) 0.046 ozyd ³
WC-4N	16	10-16	6	121	1-#1 1-#1 1-#1 1-#1 1-#2 1-#3	5 mg 5 5 4 3 1	\$10.20 yd ³ (23 mg) 0.017 ozyd ³
WC-6N	18	10-18	8	195	1-#1 5-#3	6 mg 1	\$1.90 yd ³ (7 mg) 0.003 ozyd ³
2) WD-2N	18	10-18	8	130	1-#3	>1 mg	tr.
WD-4N	32	24-28	4	88	1-#1	5 mg	\$3.05 yd ³ 0.005 ozyd ³
WD-5N	32	24-30	6	112	4-#3	3 mg	\$1.44 yd ³ 0.002 ozyd ³
WD-7N	19	12-19	7	100	1-#2	2 mg	\$1.07 yd ³ 0.002 ozyd ³
WD-8N	18	12-18	6	133	1-#1 1-#1 1-#2	27 mg 5 3	\$14.10 yd ³ (35 mg) 0.023 ozyd ³

Note

The Indian River drill hole cuttings samples are all determined within the pay zone gravels above bedrock for value per cubic yard. The overlying gravels do not contain gold and are therefore waste. When bulk sample testing by open cut, there is a stripping ratio of waste to pay zone gravels.

ECONOMIC EVALUATION

Conclusions

- 1) Cal-Denver Resources Ltd. signed a Lease Agreement To Prospect on the 15th of October, 1986, with Cripo Exploration 1977 Ltd. - Dawson City, Yukon Territory, for six Yukon Placer claims located on the Indian River, Yukon Territory. The Indian River property Lease Agreement permitted Cal-Denver Resources Ltd. to conduct placer exploration within the claim group. The Lease Agreement contains a provision concerning a Mining Lease Agreement, should Cal-Denver Resources Ltd. exploration test results prove favorable and the property is to be placed into production.
- 2) The Cal-Denver leased Indian River property is located approximately 38 airmiles southeast of Dawson City, Yukon Territory. The Indian River and Wounded Moose Creek property is within the Dawson Mining District, Y.T., NTS Placer Sheet 115-0-10e and located at approximately latitude 63°37'N and longitude 138°41.5'W. Access to the property from Dawson is by the Hunker - Sulphur Creeks road or on the Bonanza Creek - Upper Bonanza Creek - King Solomon Dome - Sulphur road.
- 3) The Cal-Denver Resources Ltd. leased placer claims are situated adjacent to the lower part of Wounded Moose Creek and the Indian River valley. The claim group is located south of the Indian River Baseline and below the 1,700 foot elevation contour on the left limit of the Indian River. The Indian River valley is approximately 4,500 feet wide between the 1,700 foot elevation contours from the right limit to the left limit at Wounded Moose Creek. The creek gravels are frozen, 7 - 15 feet thick and overlaid by approximately 4 - 8 feet of black muck on the Wendy - Susi - Allen claims. The elevation contours and drainage system suggests that the left limit side of the Indian River valley, at Wounded Moose Creek, was the original location of the river channel. In 1937 the Yukon Consolidated Gold Corporation (YCGC) conducted exploration and detail placer drilling in the Indian River valley, upstream and downstream from Wounded Moose Creek. The Wounded Moose Creek drill line crossed the Wendy, Susi, Allen and Jane 3 placer claims. The Australian Creek drill line crossed the Jane 1 and Jane 2 placer claims. The 1937 YCGC exploration drill holes on the Cal-Denver Resources Ltd. leased claim group indicates a possible pay zone on the Wendy, Susi and Allen claim group.
- 4) The Indian River property drill program was conducted by Cal-Denver Resources Ltd. and managed by Gary W. Crawford, during the time period January 15 to April 10, 1987.

5) Summary - Drill Holes

a) Line C - North ----- 6 holes ---- 111 feet
b) Line D - North ----- 11 holes ---- 232 feet
 - South ----- 8 holes ---- 203 feet
c) Line E - North ----- 8 holes ---- 123 feet
 Total ----- 33 holes ---- 669 feet

6) Summary - Economic Value and Grade

<u>Drill Hole #</u>	<u>Total Depth</u>	<u>Waste Gravel</u>	<u>Pay Gravel</u>	<u>Pay Depth</u>	<u>Poss. Value</u>	<u>Inf. Grade</u>
WC-3N	0-19 ft	0-12 ft	12-19 ft	7 ft	\$27.50 yd ³	0.046 oz yd ³
WC-4N	0-16	0-10	10-16	6	10.20	0.017
WC-6N	0-18	0-10	10-18	8	1.90	0.003

WD-2N	0-18	0-10	10-18	8	tr.	tr.
WD-4N	0-32	0-24	24-28	4	3.05	0.005
WD-5N	0-32	0-24	24-30	6	1.44	0.002
WD-7N	0-19	0-12	12-19	7	1.07	0.002
WD-8N	0-18	0-12	12-18	6	14.10	0.023

Note: The value of the gold is based at \$600 oz. Cdn. and a fineness of 843.

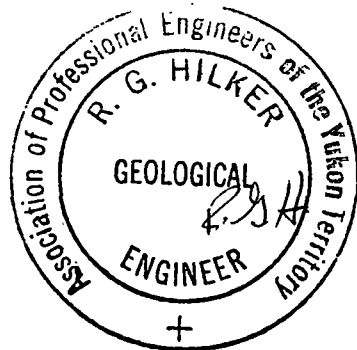
Recommendations

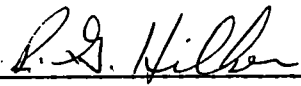
- 1) The Cal-Denver Resources Ltd. 1987 Drill Program conducted on the Indian River property indicated scattered gold values on lines WC-North and WD-North.
- 2) Three of the 1987 drill holes intersected economic values and grade of placer gold in gravels above bedrock.

<u>Hole</u>	<u>Poss. Value</u>	<u>Inferred Grade</u>	<u>Pay Gravels</u>
WC-3N	\$27.50 yd ³	0.046 oz. yd ³	7 ft.
WC-4N	10.20	0.017	6 ft.
WD-8N	14.10	0.023	6 ft.

Waste gravel overlaid the pay zone gravels above bedrock.

- 3) The 1987 drill program conducted on the Indian River property did not delineate an economic pay zone of placer gravels. Therefore, the writer recommends that no further exploration work be conducted on the property.
- 4) The Stage #2 - Bulk Sample Test Program recommended in the January 10, 1987 Evaluation Report is not warranted as the Stage #1 - Drill Program did not indicate an economic pay zone.





R. G. Hilker, P. Eng.
Calgary, Alberta
May 4, 1987