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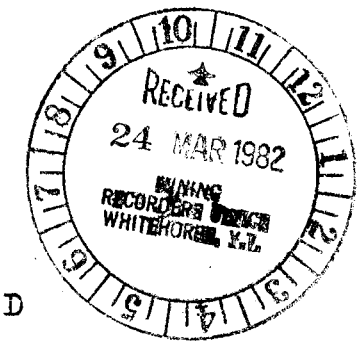

TO:

ATLANTIC ENERGY LIMITED

805 - 8TH AVENUE SW

CALGARY, ALBERTA

T2P 1H7

A Report on the Preliminary Examination of Your Four Placer Leases in the Yukon

By:

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Introduction

The Use of Geochemistry to Locate Placer Gold Deposits

The use of geochemistry as a prospecting 'tool' to locate hardrock mineral deposits and mineralized quartz veins completely hidden by overburden has been very successful in recent years. An example of this type of exploration undertaken in the Yukon is the water, silt and soil sampling programs initiated by United Keno Hill Mines Limited. This company has located several silver-lead-zinc veins hidden by considerable depths of frost-broken bedrock detritus and soil covered completely by a blanket of black frozen muck and peatmoss so charatteristic of permanently frozen areas. These valuable mineral deposits remained undetected by early-day prospectors due to the ineffectiveness of conventional methods of prospecting through extensive residual till. However, once the geochemical anomalies were placed on the map, the hidden mineral deposits could be drilled effectively in order to determine their true worth. Thus the use of geochemical prospecting cut drilling and exploration cost immeasureably by restricting all future effort to the anomalous areas only and eliminating vast areas of 'moose pasture' from further exploration expense. Another good example is the soil and silt sampling program conducted in the Casino-Canadian Creek area, quite close to where your placer leases are located. This geochemical program was initiated by the writer during 1967 for Nordex Exploration Limited and was continued by a very thorough geochemical and drilling program by Archer, Cathro and Associates for Brameda and Teck Corporation. This led to the discovery of a great copper-molybdenum porphyry deposit in June, 1969 .

Introduction: (Continued)

Geochemical prospecting to locate placer gold deposits prior to drilling them is a new concept. However I believe that your four five-mile leases on Pedlar Creek, Excelsior Creek, Coffee Creek and Dan Man Creek lend themselves admireably to this type of exploration, for the following reasons:

1. The waters of your creeks drain the same 'domes' or headlands as creeks in the same geographical area that are known to be auriferous, namely Ballarat, Kirkman, Scroggie, Canadian and Rude Creeks. This does not necessarily mean that your creeks are auriferous, however it does mean that by geophysical association your creeks may be classified as being 'low level creeks' which floor their valleys' bottoms to depths of from 4 to 10 feet of gravel (beneath various thicknesses of frozen black muck and moss) resting on bedrock. These gravels are local in origin and consist entirely of the schists and other rocks outcropping along their valleys. The remnants remaining in these outcrops of many narrow quartz veins, also 'stringers' of gold quartz, indicate that these were the original feeders containing the gold that is now sorted and concentrated into placer gold deposits in and on bedrock. If, during the many centuries it took for your creeks to erode these rock formations from their heights of land to the present elevations of their valley bottoms, if your creeks cut through suitable rock formations containing veins and stringers of gold quartz, they will be auriferous. The geochemical annalyses of the silt and soil samples taken during the original examination of your creeks may indicate this by anomalous values of arsenic and gold in certain locations. The element 'arsenic' is a constituent of most gold quartz vein and stringer systems; it is a sticky,

Introduction: (Continued)

1. yellow-coloured, clay-like substance to which the gold flakes and nuggets strongly adheres - it is ferric arsenate, a good reliable geochemical indicator for the presence of gold.
2. The fact that all four of your placer mining leases are located on creeks within an unglaciated area and that the creek gravels and bedrock are permanently frozen in themselves is very important because any possible deposits of contained gold in them have remained undisturbed and protected from glacial action. Prospecting by geochemical means may thus locate such gold deposits as they will not be overlain by glacial detritus as are gold placer deposits in creeks located further to the west and south.

History

The history of the Yukon and it's gold rush keeps repeating itself. At the turn of the century when the Klondike gold rush became known, stampeders from all over the world staked claims on practically every creek between the head of navigation at Whitehorse northwesterly to Circle City, Alaska. This rush was over in a few years as the cost of living in the Klondike was too high for the average stampeder to make a profit by hand-mining methods with gold selling at only $20.00 and ounce . Restrictive legislation regarding water rights and wood permits made it difficult for any except large operators of dredges to continue work. These large companies took over most of the creeks within reach of their power plants and water transmission ditches and pipelines. A few individual placer miners continued to work the more isolated creeks by hand methods; the rest of them abandoned their claims and returned to civilization somewhat disillusioned.

A brief resurrection of placer gold mining in the Yukon

History: (Continued)

occurred shortly after December, 1933 when the United States raised the price of gold from $20.67 an ounce to $35.00 an ounce which meant that Canadian prices for gold could go to $37.00 an ounce or higher, depending on the exchange values of the American dollar. However, labour and operating costs in the Yukon kept rising and, by the year 1965, the last remaining dredging company sold their assets and leased their placer holdings to a few small operators.

Then came inflationary pressures on the money markets of the world and these, during the last decade, have raised the price of gold steadily until January, 1980 when it reached the phenomenal price of $850.00 an ounce. This has precipitated yet another gold rush to the Yukon of no mean proportions and virtually every creek has been re-staked, some of them from one end to the other. Some bulldozer operations have met with considerable success with their new 'Ross Box' sluices and washing plants. It is believed that in a year or so placer gold production in the Yukon will reach new highs, probably more than the dredges ever produced.

Your 5-mile placer lease on Excelsior Creek may be of historical interest to you. This creek was staked originally during 1898 by a group of New Zealanders who stopped there on their way downriver to join the Klondike gold rush. Martha Louise Black in her book "My Ninety Years in the Yukon", edited by Flo Whyhard, writes that she and her husband George Black staked on this creek also. The New Zealanders wantted to name the creek 'MaorieCreek', after their native Maories, as it was imperative that the creek be named before their claims could be recorded. However, Martha Black cooked them a good dinner and afterward talked them into naming the creek 'Excelsior Creek'. The Creek opposite Excelsior on the right limit of the Yukon River was also staked in 1898

History: (Continued)

by a group of Australian stampeders who named it 'Ballarat Creek' after their famous gold camp in Australia.

Coffee Creek on which you have recorded a 5-mile lease is historically famous for the Indian Trail connecting the Yukon River, up Coffee Creek and it's west tributary, up and over the divide, leading south-westerly to cross the Klotassin, Nisling and Donjek Rivers via Wellesley Lake and the Generc River to Beaver Creek, Alaska. In 1910 the Yukon Territorial Government improved this trail and until 1942, when the Alaska Highway was completed, the Coffee Creek Trail remained the only reasonable route of access to this huge area. Fred and Jim Martin-Derry owned and operated a trading post at the mouth of Coffee Creek from 1905 to 1914. Jim Martin used a horse-drawn double-ender sleigh on this trail to haul trade goods to Copper Jack and his tribal Indains in the Dip Creek and Klotassin River watersheds - he would return with their furs, fish and moosehides. Cy Detroz had a farm and cattle ranch on the Coffee Creek delta. He supplied the placer miners in Dawson with meat and vegetables for many years. He also logged large 40-foot spruce timbers from protective valleys far upstream on Coffee Creek which made them free of wind checks and frost splits and thus suitable to be sawn into planking for river boats and barges. Dan Man Creek was named after a stampeder from Alaska who prospected and placer mined on the Generc and Donjek Rivers prior to arriving at the creek he named before he recorded claims on it. It is not known if he found 'pay' there. The above is from personal communication with the residents of Coffee Creek. Not much is known about the history of Pedlar Creek but there is an old prospect shaft there near the mouth and about 5 miles upstream there is evidence of extensive wood cuttings which indicated that somebody used wood fires for shaft sinking. The stumps are 80 years old.

Property:

Your four 5-mile placerLeases are located on four creeks discharging into the Yukon River in a remote area not connected to supply centres in Dawson City and Whitehorse by roads. Thus boats, barges and aircraft must be used in season and snowmobiles, tractor-trains and aircraft in winter to service any proposed operations there. The distances from the supply centres to the mouth of each creek is as follows:

Name of Creek:	Distance from Dawson River Miles:	Distance from Dawson Air Miles:	Distance from White'hse River Miles:	Distance from White'hse Air Miles;
Pedlar Creek	122	82	338	188
Excelsior Creek	116	76	344	194
Coffee Creek	113	73	347	197
Dan Man Creek	102	64	358	206

Each of your placer leases is recorded with the No. 1 Post near the mouth of each creek and the No. 2 Post five miles upstream as follows:

Name of Creek:	Recorded in the Name of:	Placer Lease No.:	Expiry Date:
Pedlar Creek	Eric Allen Nelson	5940	April 8th,1982
Excelsior Creek	Glen Leroy Harris	5920	April 8th,1982
Coffee Creek	Ira Lew Foster	5931	April 8th,1982
Dan Man Creek	Willard Semeniuk	5932	April 8th,1982

Geological Setting:

Pedlar Creek, which is on the right limit of the Yukon River, heads up into the same 'dome' that is drained by several gold-bearing creeks, Namely, Barker, Scroggie, Thistle and Ballarat Creeks. This headland rises from river elevations of 1200' to several 'domes' of from 4500' to 5000' in elevation, all lying Between the Stewart River and the main Yukon River. The general geology of this area, described by preliminary G.S.C. reports and maps, is being a part of the Nasina series of quartzites, with some Pelly Gneiss and Klondike Schist Gneiss. These formations include some of the oldest argillaceous and silicious sediments; quartz and feldspar biotite also sericite and chloritic schists.

Coffee, Excelsior and Dan Man Creeks are on the left limit of the Yukon River. They drain from the Dawson Range, a northwest trending belt of gentle summits within the Yukon Plateau, of some 4000' in elevation. This area escaped glaciation during the Pleistocene. The climate is cold and arid. Mean annual temperature is in the range of 21° to 24° F and annual precipitation is between 10 and 20 inches of which one-half falls as snow. The soils are residual and are in permafrost. The rock formations lie along the northeast margin of the Klotassin Batholith. Potassium-argon dating of this batholith has given ages of 95 to 99 million years or upper Cretaceous. It intrudes the Yukon Group, a meta-sedimentary sequence of schist, gneiss, amphibolite and quartzite with minor limestone and conglomerate. The Yukon Group forms the base of the stratigraphic sequence which is considered to be Cambrian or older. These rocks are intruded by a number of younger quartz-rich stocks.

Exploration Method:

The preliminary exploration of your four 5-mile placer leases on Pedlar, Excelsior, Coffee and Dan Man Creeks was conducted by the writer, ably assisted by Al Nelson, Eric Nelson and Dan Fraser, between July 1st., 1981 and July 9th., 1981. A Helicopter was used to lift our party to the headwatters of the creeks. We explored the valley bottoms, on each side of the creeks where possible, all of the way downstream to the Yukon River where we returned by river boat to our centrally located base camp at Ballarat Creek.

We panned every sand bar and creek wash we came to in order to find gold colours. Soil and silt samples were taken at approximately 1250 foot intervals at or near creek drainages wherever it was possible to dig downwards with a mattock under the frozen muck and overburden to sample the typical dark brown clay soil with rusty brown lenses characteristic of the "A plus B" horizons. Some of these samples contained sharp rock fragments, mixed with soil, typical of the "C" horizon. Our silt samples consisted mostly of boulder clay, fine gravel concentrate and black sands which remained in our gold pans after the gravel and coarse rocks had been excluded by thorough washing and panning.

Each sample location was clearly marked by flagging attached to a blazed tree on which the sample number was marked for future reference. The numbered samples were placed in heavy Kraft envelopes which were to be dried at room temperatures prior to annalysis in a commercial laboratory.

The geochemical annalyses of the samples was accomplished by Bondar-Clegg and Company of Whitehorse and Edmonton. the dry samples were reduced to -80 mesh by screening before the annalysis for arsenic was determined by atomic absorption spectrometry of a hot aqua regia digestion. Gold values were determined

after extraction with MIBK. The sample pulps are stored in their laboratory for 12 months for future determinations of their copper, lead, zinc or silver content if this is deemeedto be necessary.

The threshold ranges of elements in soils and silts of this district in the Yukon have been determined from years of extensive regional data collected by Archer, Cathro and Associates, prominent Geological Consultants operating throughout the Yukon and British Columbia. Thesethreshold ranges, for unglaciated regions in this part of the Yukon, expressed in parts per milliom (ppm) are as follows:

	Copper:	Lead:	Arsenic:	Silver:	Gold:	
Silt	30 - 50	30 - 50	25	½ - 2	0.15	parts per million
Soil	50 - 100	50 - 100	50	1 - 2	0.20	" " "

Values consistently higher than the above may be considered to be anamalous and thus should be investigated further by drilling or test-pitting.

Since your four placer leases are all on creek drainages chassified as 'low-level creek placers', they must all derive their gold concentrations solely from the rock formations bordering their immediate limits - this by communition, solifluction and erosion over millions of years. Thus, if these creeks have eroded through mineralized rock formations which have been intruded by a series of vein-quartz stringers, their gold content should be high. if, on the other hand, these creeks have eroded only a minimum amount of vein quartz which has been intruded into relatively barren rock formations, there will be little or no recovery of enough gold to profit by future operations. Since arsenic is the most common element in any gold-bearing mineralized rock formation, we use arsenic as an indicator when we are looking for gold with geochemistry as the tool. The following illustration taken from the 'Western Miner' of June

1981 may clarify this picture.

During the summer of 1980, Mr. J. A. Morin of the Department of Mines in Yellowknife took about 150 samples of mineralized rock formations in the Yukon from which many of the gold and gold-silver deposits were derived. He annalyszed these samples by geochenistry for their gold, silver and arsenic content as well as for thirteen other elements associated with precious metal deposits. He found that the element arsenic was in the most abundance and he demonstrated that the element arsenic should be the most useful "lithogeochemical pathfinder" leading to the discovery of precious metal deposits. Morin cites examples of rock formations containing quartz veins, zones of disseminated pyrite, clay mineral alteration in Klondike schist and in argillized sericite schist which contained gold up to 350 parts per billion and arsenic up to 2400 parts per million. Another example was a sample of vein-quartz material containing 3900 parts per billion in gold and which contained oly 2100 parts per million in arsenic.

One would not expect to find that the annalyses of soil and silt samples by geochemistry to have values of gold and arsenic as high as those of rock samples because their mineralization would be throughly diluted by the derivatives of the barren rock also eroded by the creeks cutting through the same formations. However, on any gold-bearing placer creek that is rich enough in gold values to be worked profitably, one would expect to get at least the established threshold values of 25 parts per million in arsenic as an indicator for 200 parts per billion in gold content.

Assay results from your creeks:

The laboratory analyses of 35 silt and soil samples taken from your creeks during their preliminary examination are generally in the low range indicating negative values for gold and less than threshold values for arsenic, that is, about one-half were single digit values and the balance ~~ø~~ double digit valus but less than 25 parts per million in arsenic. These values are indicated , creek by creek, on the attached maps and they are described as follows:

Dan Man Creek: out of nine samples, six were negative in gold and the remaining three averaged only 6.7 parts per billion in gold. Their arsenic contents were uniformly low in single digits between 3 and 7 parts per million in arsenic.

Excelsior Creek: three out of nine samples were negative and the remaining five were low in gold content plus one erratic high of 1445 parts per billion in gold. This erratic high has to be discounted as it's corresponding arsenic value was only 9 parts per million. However, it is of interest to note that the arsenic values of samples from this creek were generally in double digits averaging 16 parts per million in arsenic which is approaching threshold values.

Pedlar Creek: out of seven samples 5 were negative in gold values and the remaining two ran only 20 and 5 parts per billion in gold. The arsenic values were uniformly low in single digits between 2 and 5 part per million.

Coffee Creek: 8 out of the 10 samples taken were negative in gold content, the remaining two being only 5 parts per billion in gold. However, the corresponding arsenic values were mostly double digit, varying between 7 and 15 parts per million.

Conclusions and Recommendations:

Your four 5-mile placer leases are on creeks located in an extremely isolated area far distant from any road to service and supply centres. Thus any work demanding the use of heavy equipment on these leases willbe very costly and should be avoided until suitable target areas containing much higher gold values than are presently indicated, can be discovered on them by further prospecting.

Pedlar and Dan Man Creeks produced no gold colours and very little black sand by panning methods. The gravels in these creeks consisted mostly of hard granite and granite gneiss with minor quantities of pure white, barren 'bull' quartz. There was no evidence of the presence of vein quartz, chloritized schist or sericite. Dan Man Creek dropped at 200 feet per mile and Pedlar Creek at 70 feet per mile, both much steeper than the average of 45 feet drop per mile found on many gold-bearing creeks in the Klondike. I would recommend therefor that Lease Numbers 5932 and 5940 on these creeks be dropped in order to concentrate all future effort on the remaining two leases as follows:

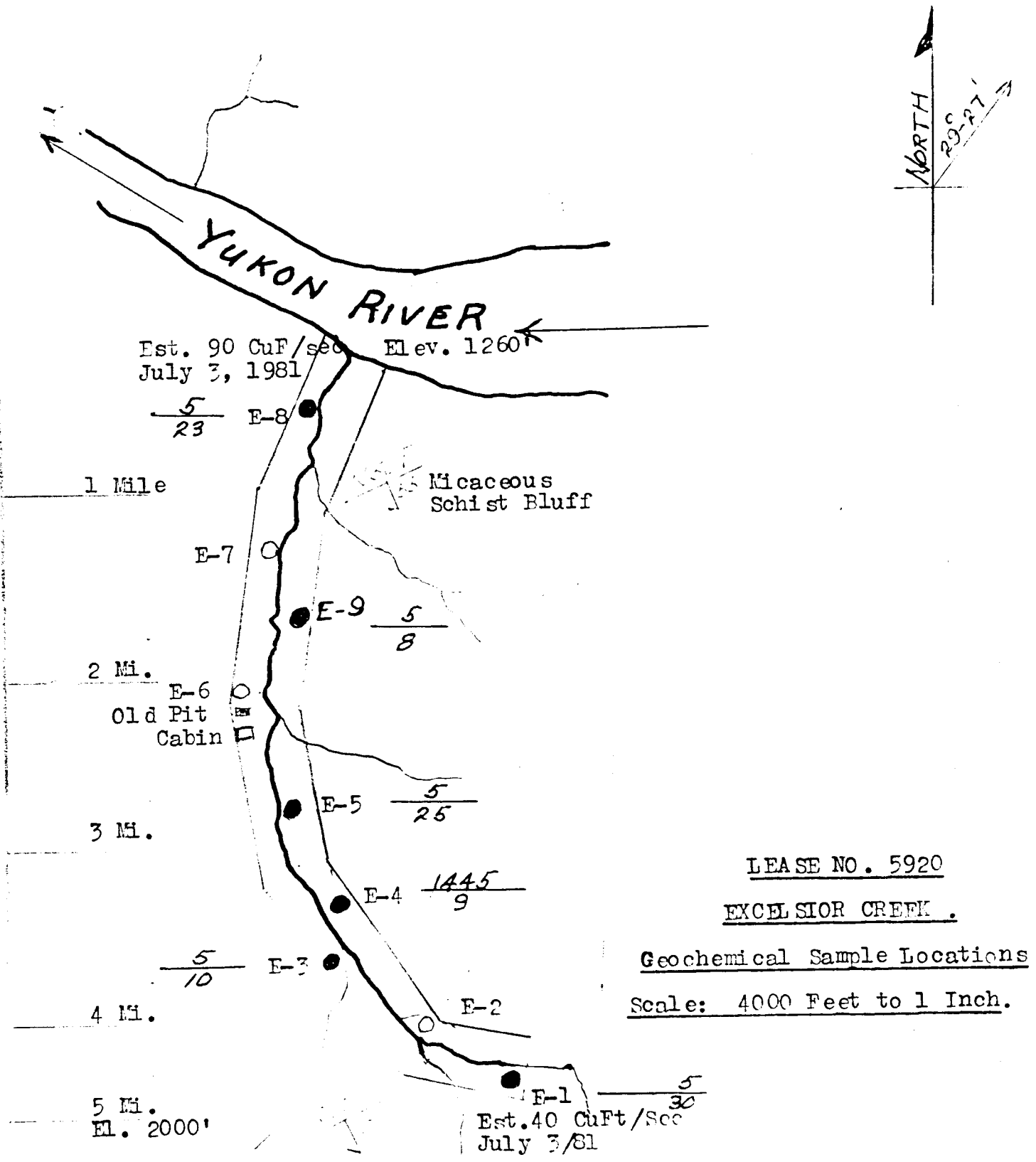
Lease No. 5920 on Excelsior Creek and Lease No. 5931 on Coffee Creek: Whereas there were no visible gold colours and very small quantities of black sands in the gold pannings of these creeks, there was some vein quartz and sericite schist noted in their creek gravels. The geochemical analyses of the soil and silt samples from both of these creeks indicated uniformly high, double digist arsenic values approaching but not quite reaching threshold values. I would recommend that both of these creeks be resampled when the water table is at it's lowest ebb using picks and shovels in an effort to take soil samples from the 'B' and 'C' horizons as close to bedrock as possible, all beneath the frozen muck and

'A' horizon. These samples should be taken along both sides of each creek at intervals of about 1000 feet upstream and downstream.

I would recommend further that no drilling or shaft sinking programs be initiated until suitable target areas containing indications of higher than threshold values in gold and in arsenic content, preferably three digit values in each element can be found.

Respectfully submitted,

C. D. N. Taylor, P.Eng.
Life Member of both the
Yukon & B.C. Professional
Engineers.



LEASE NO. 5920

EXCELSIOR CREEK.

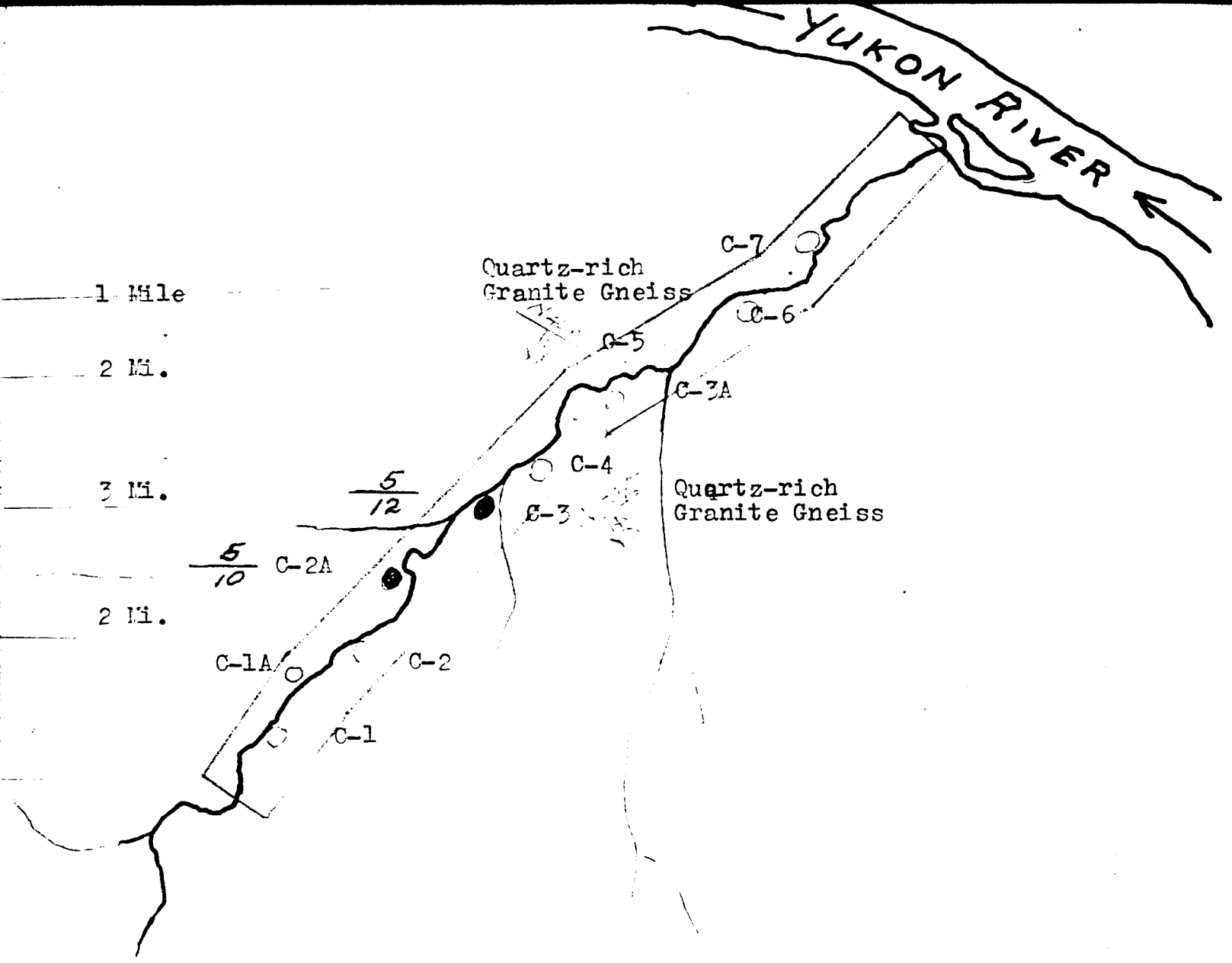
Geochemical Sample Locations

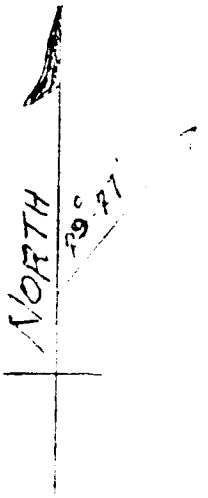
Scale: 4000 Feet to 1 Inch.

Legend:

○ Gold negative

● Gold in p.p.b.
Arsenic p.p.m.





LEASE NO. 5931

COFFEE CREEK

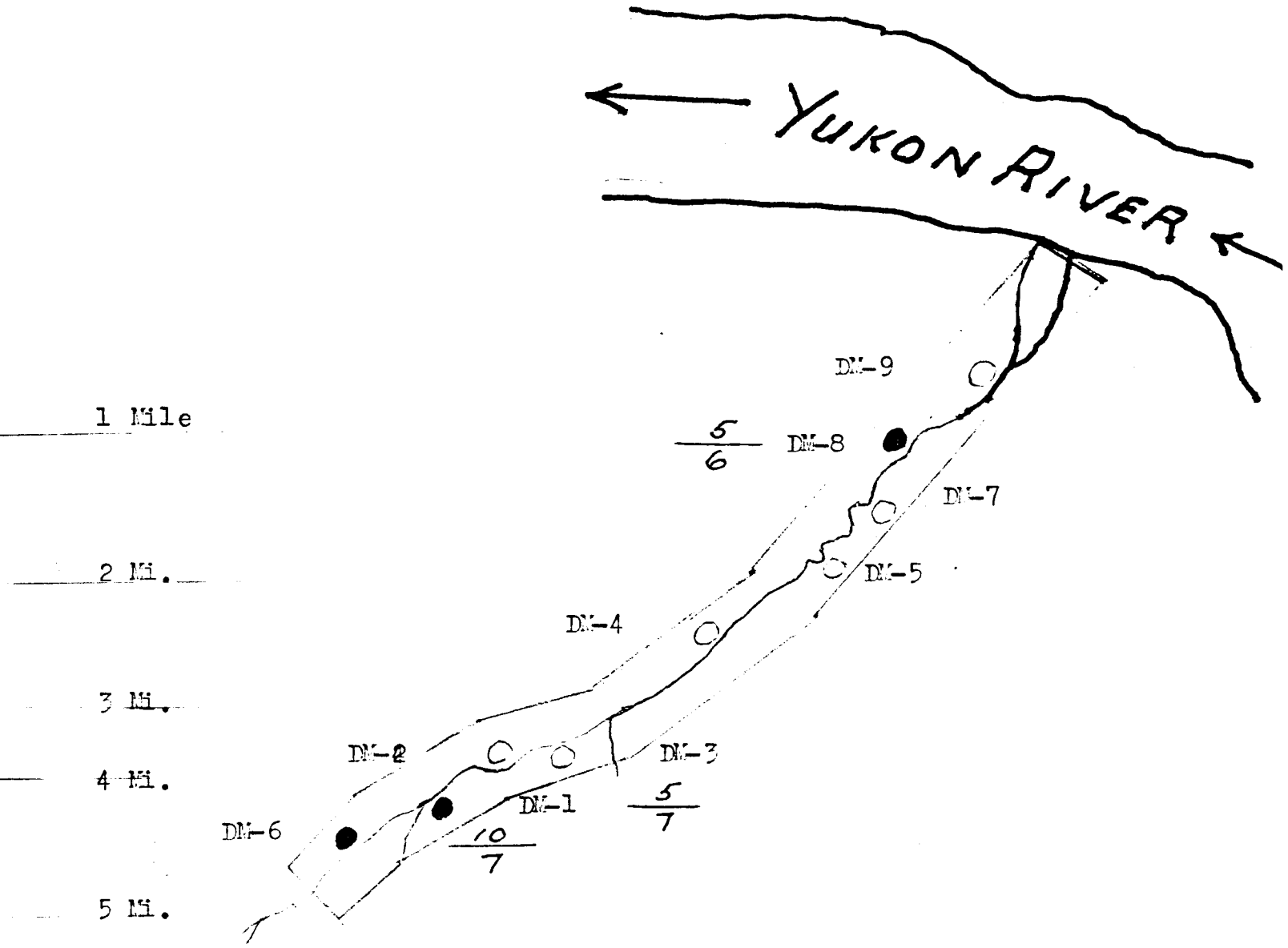
Geochemical Sample Locations

Scale: 4000 Feet to 1 Inch.

Legend:

○ Gold negative

● Gold in p.p.b.
Arsenic p.p.m.



Legend:

○ Gold negative

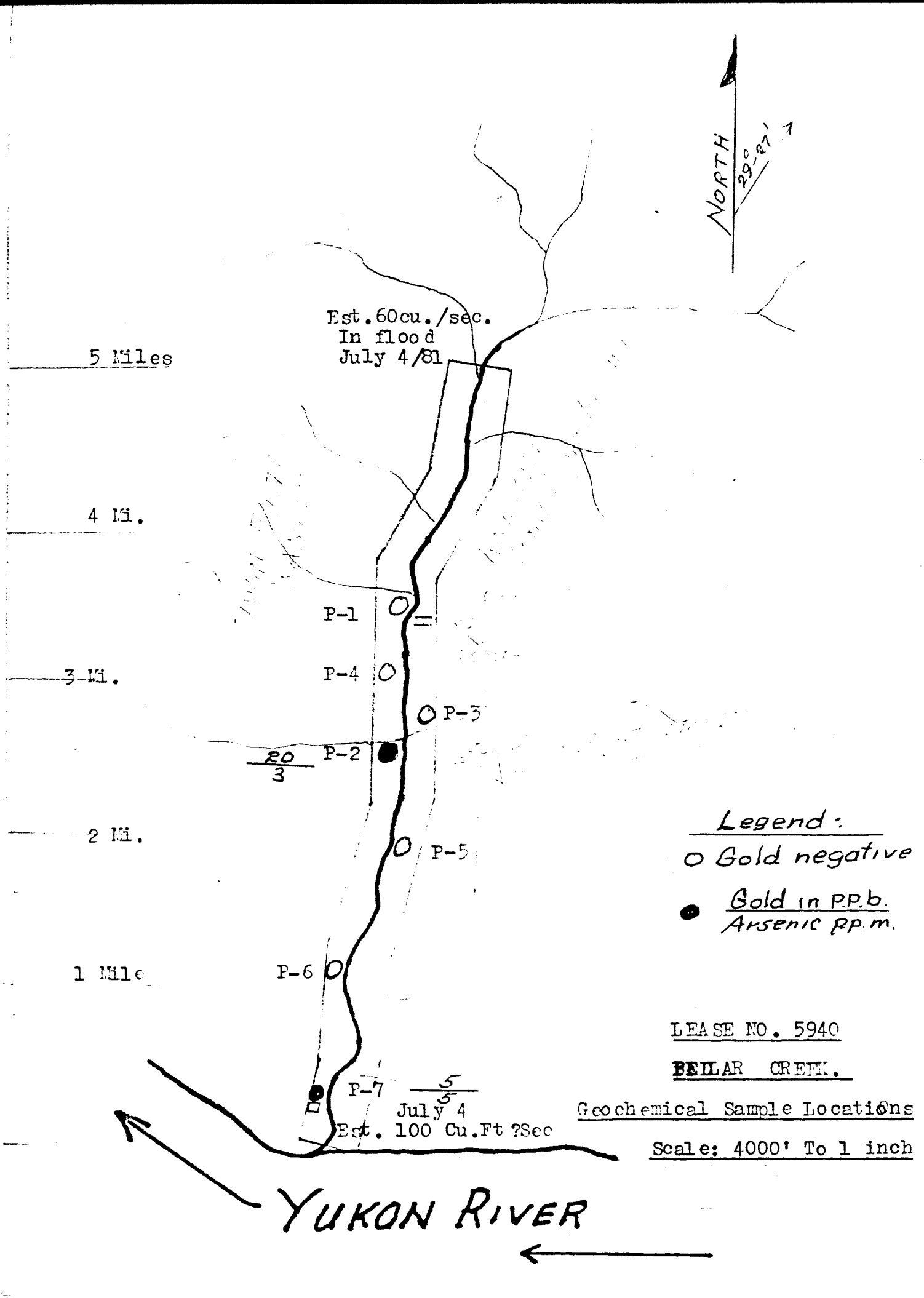
● Gold in p.p.b.
Arsenic p.p.m.

LEASE NO. 5932

DAN MAN CREEK

Geochemical Sample Locations

Scale: 4000 Feet to 1 Inch.


NORTH
29°-27'
Est. 60 cu./sec.
In flood
July 4/81
5 Miles
4 Mi.
3 Mi.
2 Mi.
1 Mile
P-1
P-4
P-3
P-2
20/3
P-5
P-6
P-7
5/5
July 4
Est. 100 Cu.Ft ?Sec
YUKON RIVER
Legend:
o Gold negative
● Gold in P.P.b.
Arsenic P.P.m.
LEASE NO. 5940
BELLAR CREEK.
Geochemical Sample Locations
Scale: 4000' To 1 inch

YUKON RIVER

80 MILES TO DAWSON CITY

WHITE RIVER

STEWART RIVER

Mt. Stewart 4064'

Barker Creek

Grizzly 3862' Dome

Scroggie Creek

NORTH

Walhalla Creek

Thistle Creek

4000'

4551'

Pyroxene Mt.

Scroggie Creek

Walhalla Creek

Mariposa Creek

Kirkman Creek

TAN MAN LEASE #5932

Ballarat Creek

LEASE #5940

PEILAR CREEK

COFFEE CREEK LEASE #5931

4266'

5158'

LEASE #5920 EXCELSIOR CREEK

Brittania Creek

Isaac Cr.

YUKON RIVER

SELWYN

317 Miles from Whitehorse

Canadian Creek

5487'

Hayes Creek

Idaho Creek

Selwyn River

ATLANTIC ENERGY LIMITED

LOCATIONAL PLAN OF PLACER LEASES.

IN YUKON TERRITORY

August 1981 C. D. N. Taylor, P.Eng.

SCALE: 4 MILES to 1 INCH

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NO/LI# Doc# 120617