

GEOLOGICAL AND GEOCHEMICAL REPORT

ON THE

GEP 1-32 (Y35852-Y35883)

MINERAL CLAIMS

DAWSON RANGE AREA

YUKON TERRITORY

62°-41' N LATITUDE

139°-00' W LONGITUDE

N.T.S. DESIGNATION: 115-J-10

WHITEHORSE MINING DIVISION

BY

G.G. CARLSON, GEOLOGIST

R.G. HILKER LIMITED

BOX 1566

WHITEHORSE, YUKON TERRITORY

UNDER THE SUPERVISION OF

R.G. HILKER, P.ENG.

21 AUGUST 1970

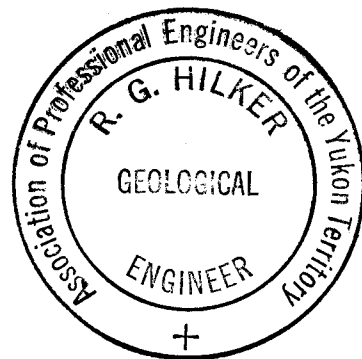


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INTRODUCTION

On July 11th, 1970, G.G. Carlson (geologist), J. Smith (soil sampler), and L. Roy (linecutter) were moved to the GEP claim group via fixed-wing aircraft from Whitehorse to the Casino airstrip and by helicopter from the Casino strip to the property. A reconnaissance traverse was run immediately upon reaching the property to locate claim posts, check general geology, and to observe soil conditions in preparation for sampling.

During the period of July 12th to 16th (inclusive), a program of linecutting, geological mapping, and soil sampling was carried out over the claim group. A total of 7.0 line-miles were cut and the sampling/mapping program was referenced to the grid lines. Claim posts were tied in to the grid as encountered.

The claim group covers an area of flat to moderately rolling topography covered with generally heavy underbrush consisting of buckbrush and willow. A baseline was cut along a ridge top down the centre of the claim group on a bearing of 050° azimuth for a distance of 10,500 feet. Grid lines were cut at right angles to the baseline and extended to both the southeast and northwest for ½ mile. Six grid lines were cut on a 1500-foot spacing to the southeast of the baseline while four lines were cut on a 3000-foot interval to the northwest of the baseline. The lines to the southeast of the baseline were cut on a closer interval than those to the northwest due to

better sampling conditions in the higher ground (residual soils as opposed to muskeg and alluvial soil). Samples were taken for analysis on 100-foot intervals on both the grid lines and baseline.

Geological mapping was carried out both by walking the grid lines and by pace-and-compass traverses throughout the general area of the claim group. Due to lack of outcrop (less than 1% of the claims area), boulder trains, talus, and individual boulders were mapped to accumulate as much information as possible.

The geological, geochemical and grid layout work was completed by 4:00 p.m. on July 16th, with the camp and crew being moved off the property immediately thereafter.

LIST OF PERSONNEL

The following personnel of R.G. Hilker Limited were directly involved in the geological and geochemical program on the GEP claim group:

<u>Name</u>	<u>Address</u>	<u>Position</u>
R.G. Hilker, P.Eng.	Box 1566 Whitehorse, Y.T.	Geologist - supervision and report preparation
G.G. Carlson	Box 548 Whitehorse, Y.T.	Geologist - field supervision and report preparation
J. Smith	c/o Box 566 Whitehorse, Y.T.	Soil Sampler - field sampling
L. Roy	Box 3245 Whitehorse, Y.T.	Linecutter
G.S. Zimmer	Box 1293 Whitehorse, Y.T.	Geologist - report preparation

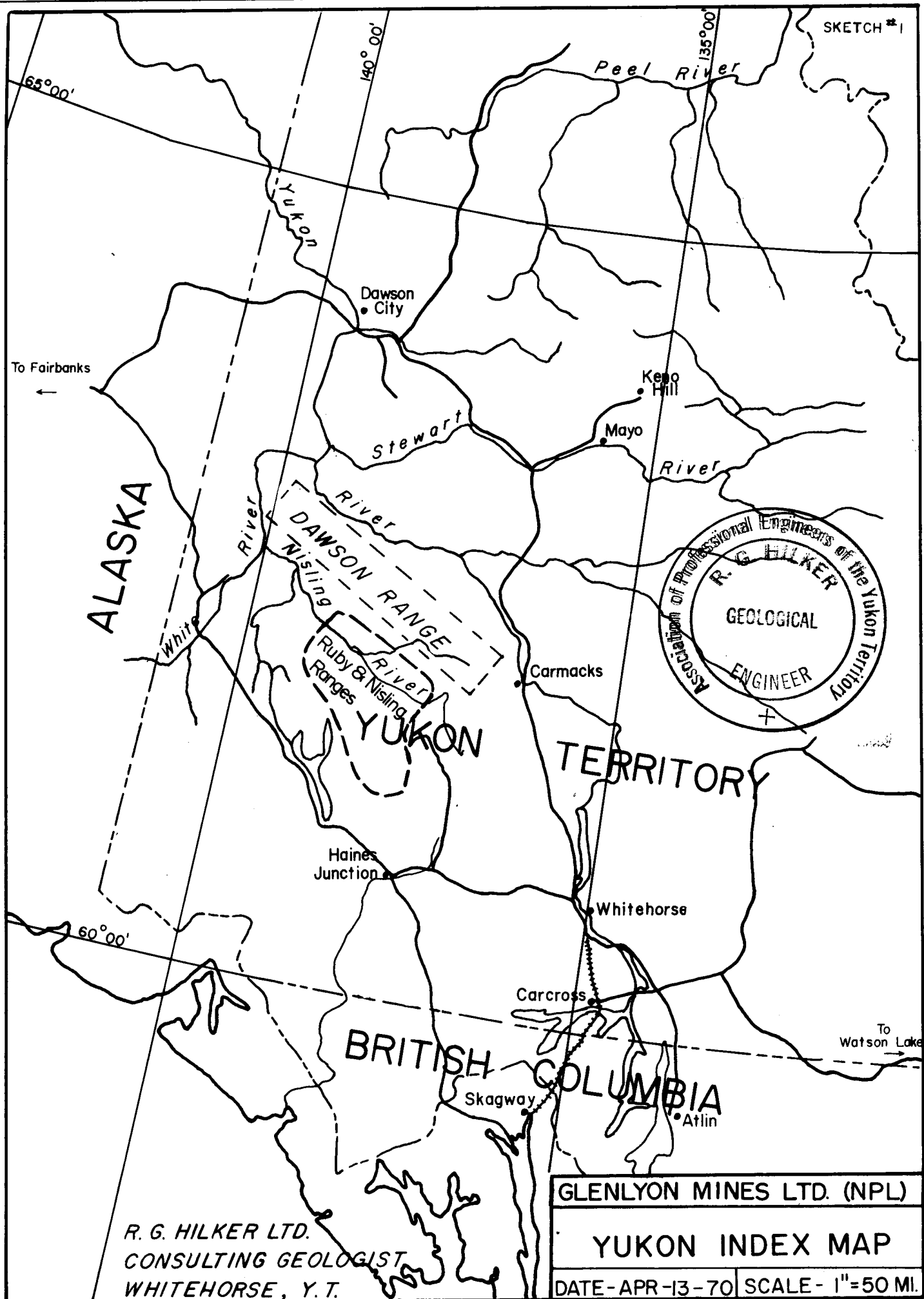
LOCATION AND ACCESS

The GEP 1-32 claim group is located in the west-central portion of the Yukon Territory within the Dawson Range. The Dawson Range is a low mountain belt, approximately 110 miles long by 20 miles wide, which trends approximately N 45° W between latitudes 62° - 00' N and 62° - 45' N and longitudes 137° - 00' W and 140° - 00' W. The Range is bounded on the north and east by the Yukon River, on the southwest by the Nisling River, and on the northwest by the White River.

The claims are located in the immediate vicinity of 62° - 41' N and 139° - 00' W on Staking Sheet No. 115-J-10 in the Whitehorse Mining Division. The claims were staked over an area approximately 6 miles WSW of the Casino airstrip and about 5 miles northwest of the confluence of Dip Creek and Casino Creek.

At present, the most practical access to the claim group is by fixed-wing aircraft to the Casino airstrip and by helicopter from there to the property. Numerous fixed-wing aircraft are available for charter out of Whitehorse and several helicopters are more-or-less permanently based in the Casino strip-Dawson Range area. The Casino strip is located 194 air miles northwest of Whitehorse.

Road access to the Casino Mines camp has been provided in the form of a winter road from the Burwash area (Mile 1097) on the Alaska Highway. Due to considerable areas of muskeg en route, this road is serviceable only in the winter months.

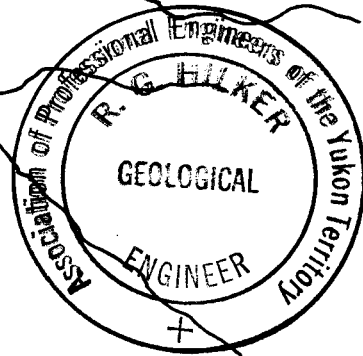


ALASKA

YUKON

TERRITORY

BRITISH COLUMBIA



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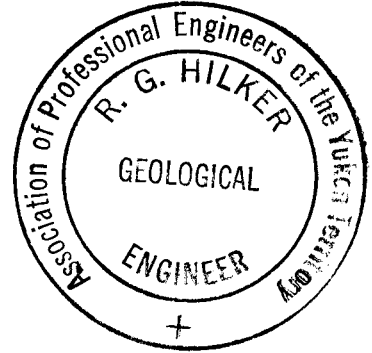
GLENLYON MINES LTD. (NPL)
 YUKON INDEX MAP
 DATE - APR-13-70 | SCALE - 1" = 50 MI.

CLAIMS

The following information was obtained by a search of the records at the Whitehorse Mining Recorder's Office on August 18th, 1970:

<u>Claim</u>	<u>Sheet No.</u>	<u>Grant Nos.</u>	<u>Anniversary Date</u>	<u>Recorded Owner</u>
GEP 1-32	115-J-10	Y35852-Y35883	29 July 1970	H.C. Fromme

2	1	18	17
↓	↓	↓	↓
Y35853	Y35852	Y35869	Y35868
4	3	20	19
↓	↓	↓	↓
Y35855	Y35854	Y35871	Y35870
6	5	22	21
↓	↓	↓	↓
Y35857	Y35856	Y35873	Y35872
8	7	24	23
↓	↓	↓	↓
Y35859	Y35858	Y35875	Y35874
10	9	26	25
↓	↓	↓	↓
Y35861	Y35860	Y35877	Y35876
12	11	28	27
↓	↓	↓	↓
Y35863	Y35862	Y35879	Y35878
14	13	30	29
↓	↓	↓	↓
Y35865	Y35864	Y35881	Y35880
16	15	32	31
↓	↓	↓	↓
Y35867	Y35866	Y35883	Y35882



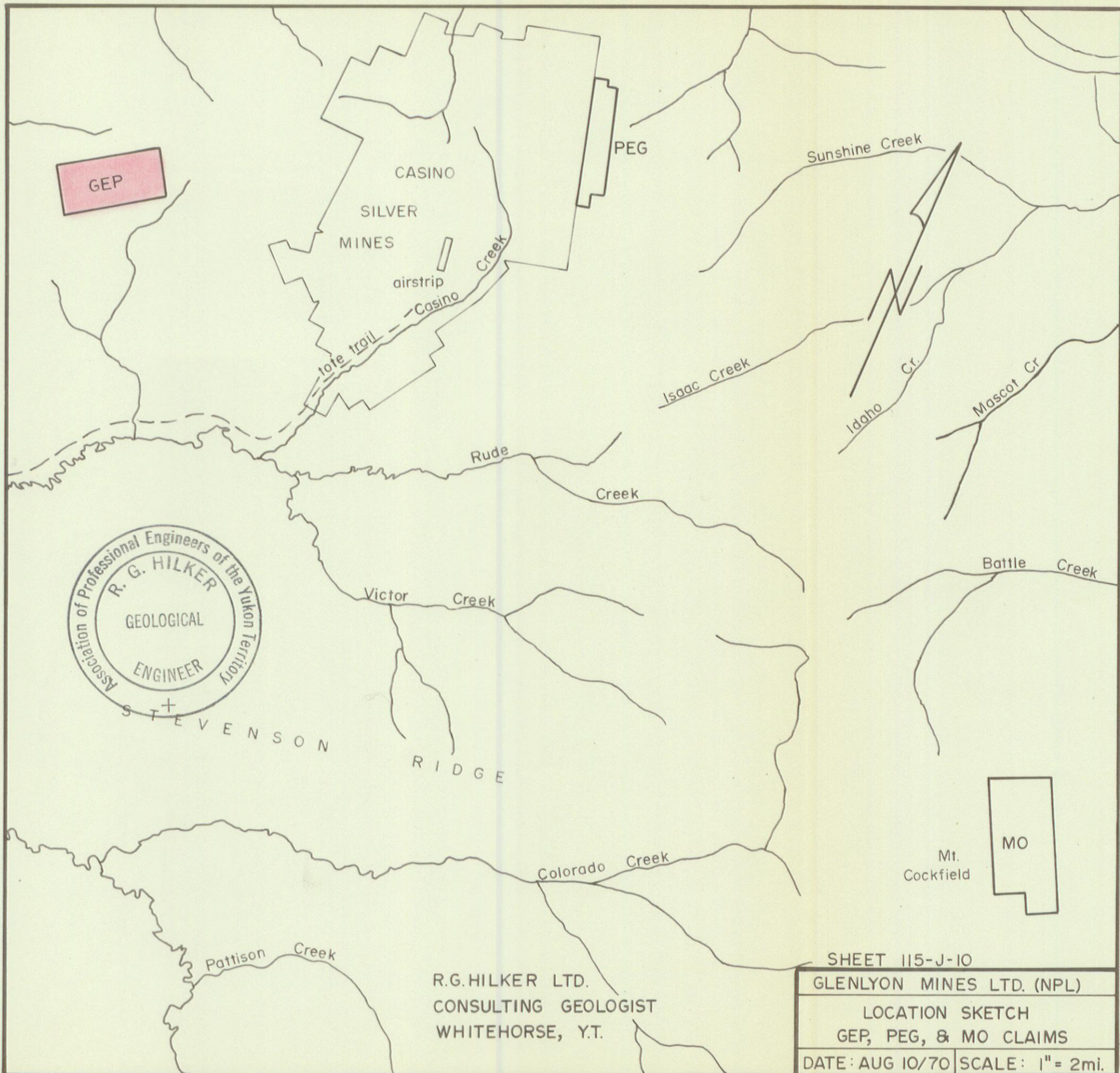
GEP GROUP

62°41'

135°00'

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WHITEHORSE, Y.T.

SHEET 115-J-10	
GLENLYON MINES LTD. (NPL)	
CLAIMS LOCATION GEP 1-32 CLAIMS	
DATE: JULY 2/70	SCALE: 1" = 1/2mi



GEP

PEG

MO

Association of Professional Engineers of the Yukon Territory
 R. G. HILKER
 GEOLOGICAL
 ENGINEER

STEVENSON
 RIDGE

R.G.HILKER LTD.
 CONSULTING GEOLOGIST
 WHITEHORSE, Y.T.

SHEET 115-J-10
 GLENLYON MINES LTD. (NPL)
 LOCATION SKETCH
 GEP, PEG, & MO CLAIMS
 DATE: AUG 10/70 | SCALE: 1" = 2mi.

REGIONAL GEOLOGY - DAWSON RANGE

The Dawson Range occurs in the physiographic Yukon Plateau Province. It is a mountainous terrain, with peaks rising more than 2,000 feet from the level of the plateau, and elevations within the range varying from 3,000 feet to 6,600 feet. Almost all of the area has been left completely untouched by recent glaciation. Accordingly, the outcrops, which predominate on the mountain tops and ridges, are quite irregular. Exposed rocks are highly jointed, fractured and weathered due to frost action and wind erosion. Overburden may reach thicknesses greater than 50 feet in the lower areas, restricting outcrop occurrences to the steeper valley slopes.

The predominant rocks in the area consist of the Upper Cretaceous Coastal Intrusive granites which form a batholith intruding the Yukon Group of sediments, Precambrian/Palaeozoic in age. These are also in contact with the Jurassic Mount Nansen group of volcanics and sediments. The Tertiary Carmacks volcanics overlies all of the earlier rocks in some areas.

The following is a general summary of the granitic rock types which occur in the coast range intrusive:

1. Granite Porphyry - composed of 40% orthoclase feldspar and 30% smoky quartz with biotite, augite and minor magnetite. Generally jointed and fractured and weathers a rusty brown color.
2. Granodiorite Porphyry - composed of 50 to 60% orthoclase feldspar, 10 to 15% plagioclase feldspar, 15% clear quartz,

augite, biotite and minor magnetite. Occurs in the Casino Creek area and is characterized by large phenocrysts.

3. Granodiorite - composed of 60% orthoclase feldspar and 20% plagioclase feldspar with augite and biotite. Fine to medium-grained in texture.

4. Diorite - composed of plagioclase and orthoclase feldspar with approximately 30% augite and biotite.

5. Quartz Monzonite - composed of 50% plagioclase feldspar, 10 to 15% orthoclase feldspar, 15% clear quartz, augite and fine to coarse crystalline biotite.

REFERENCE TO PUBLISHED GEOLOGY

The following listed publications and geological maps contain geological information in select areas of the Dawson Range, and reference was made to the information in the preparation of this report for Empire Mercury Corporation Ltd.:

1. D.D. Cairns 1916 - Klotassin Yukon Territory No. 1702, Geology Map, scale 1" = 2 mi. Canada Department of Mines Geological Survey, 1918.
2. H.S. Bostock 1944 - Paper 44 - 34 Preliminary Map Selwyn River, Yukon - Canada Department of Mines and Technical Surveys.
3. H.S. Bostock 1936 - Memoir 189 - Carmacks District, Yukon - Geological Survey of Canada - Department of Mines and Technical Surveys.
4. J.R. Johnston 1937 - Memoir 214 - Geology and Mineral Deposits of Freegold Mountain, Carmacks District, Yukon - Geological Survey of Canada - Department of Mines and Technical Surveys.

TABLE OF FORMATIONS

CENOZOIC

Quaternary

- Q - Alluvium, volcanic ash, ground ice.

Tertiary

Carmacks Volcanics

- 9 - Thick flows, basalt, amygdaloidal flows, top of flows breccia, local brecciation and porphyritic flows.

MESOZOIC

Jurassic - Upper Cretaceous

Coastal Intrusives

- 8 - Granite, granodiorite, quartz-monzonite, porphyry and breccia, altered (ore host rock).
7 - Syenite and monzonite.
6 - Diorite and gabbro.

Mount Nansen Group

- 5 - Basalt, andesites and dacite flows, breccias and tuffs. Green-black color, contains sedimentary rocks consisting of sandstone, siltstone, pyritic arkose and argillites. Bands and bedding distinct.

Tantalus Formation

- 4 - Conglomerate, sandstone, shale and coal seams.

Jurassic

- 3 - Laberge Group

Triassic

- 2 - Granite, monzonite.

PRECAMBRIAN & LATER

Yukon Group

- 1 - Limestone, shale, mica-quartz schist, chlorite schist, quartzite.

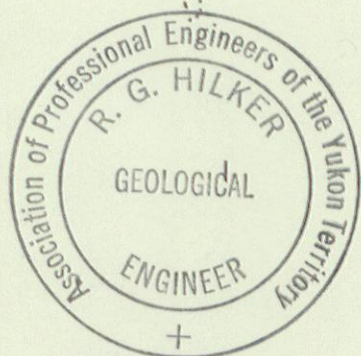
After Bostock; G.S.C. Paper 44 - 34.

SKETCH # 4

GEP

PEG

Casino
Silver
Mines



GEOLOGICAL LEGEND

CENOZOIC

Quaternary

Q Alluvium

MESOZOIC

Jurassic-Cretaceous

3 granitic rocks and
associated porphyry types

2 Mt Nansen Volcanics

PRECAMBRIAN/PALEOZOIC

1 Yukon Group-schists,
gneisses, etc.

MO

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WHITEHORSE, Y.T.

GLENLYON MINES LTD. (NPL)

GENERAL GEOLOGY

DATE: AUG 10/70 SCALE: 1" = 2 mi

after Cairnes 1916

GENERAL GEOLOGY

The geology of the PEG, GEP and MO claim groups is quite typical of the Dawson Range area. The Table of Formations which is listed on the following page, has been compiled both from previous observations in the Dawson Range area and from field observations made during the present survey. Geological mapping of the claim groups is to date only reconnaissance in nature, as the mapping was carried out mainly on or closely adjacent to the lines as they were cut. It is felt that most of the rock types in the various areas were observed, but a much more detailed investigation of the rocks themselves, their occurrence and their relation to each other, is necessary for a complete picture of the local geology within each claim group.

There are few outcrops in this area, with less than 1% surface rock exposure. However, talus and frost-heaved boulders occur extensively, and these may be used for mapping purposes. On the steeper slopes, talus is predominant, and this reflects mainly upslope geology, whereas the frost-heaved boulders on the gently sloping and flat areas may reflect bedrock geology more directly beneath the observed boulders. The area has not been regionally glaciated, but evidence of a small valley glacier was observed in the major valley at the south end of the MO group. However, the effects of glaciation would not appear to affect the geology, as mapped from the boulders, in any way.

TABLE OF FORMATIONS

CENOZOIC

Tertiary

- 4 Carmacks Volcanics - basalt and related basic dikes
- 4a - related andesite-dacite porphyries

MESOZOIC

Jurassic-Upper Cretaceous

- 3 Minor Intrusives - granite-diorite, quartz-feldspar porphyries
- 3a - associated (?) aplite and pegmatite dikes
- 2 Klotassin Batholith - hornblende-biotite-quartz granite, monzonite. Minor dioritic phases.

PRECAMBRIAN and LATER

- 1 Yukon Group - biotite-hornblende schists and gneisses

The foregoing Table of Formations includes rock types found on all three claim groups. The Klotassin Batholith, which forms most of the Dawson Range, was intruded into the Yukon Group of sediments and volcanics during the Cretaceous period. The Yukon Group, Precambrian or Cambrian in age, was variously affected by this intrusion. In some areas, it has remained almost totally unaltered. Over most of the central area of the batholith, however, the sediments are evident only in a few remaining, highly metamorphosed roof pendant-like structures and in abundant smaller inclusions or xenoliths. The sediments appear now as biotite-hornblende gneisses which appear to grade into mafic lean granitic rocks. These are probably derived from the siliceous end members of the sediments. The distinction between these rocks and Unit 2 is very difficult in field observation, except in a few cases where relict sedimentary structures are still evident. No skarn minerals were observed. Epidote is quite common, either disseminated or in small veinlets, but it appears to be associated with the intrusive.

Unit 2, the main body of the Klotassin Batholith, is the dominant rock type over the three claim groups. Its composition is quite variable, apparently over even relatively short distances, and as a result its classification to date has been by its age, approximately 110 million years. It is predominantly a hornblende-biotite granite-granodiorite. Diorite and even

gabbro phases are evident, while other leucocratic varieties contain up to 50 percent quartz and less than 10 percent mafics. Biotite may be the dominant mafic mineral, but it is most often secondary to hornblende. Observed accessory minerals include epidote and pyrite.

Unit 2 is most readily identified by its texture, as its overall composition, especially the proportion of quartz and the various feldspars, is often difficult to determine in field examination. It is a coarse-grained rock with large, subhedral hornblende crystals which have grown, in some instances, to over ½ inch in length. Large plagioclase crystals have roughly intergrown with quartz and orthoclase, producing large areas of semi-continuous cleavage face which are quite evident on fresh rock surfaces.

Alteration is present in most of these rocks, generally to a minor extent. This consists mainly of oxidation of iron minerals, chloritization of hornblende, and, to a lesser extent, sericitization of feldspars.

Unit 3, a second phase of the Klotassin intrusive, has been dated at approximately 70 million years. It again has quite variable composition, ranging from granite through quartz monzonite, granodiorite, quartz, feldspar and quartz-feldspar porphyries, monzonite and quartz diorite, and it is also best distinguished by its texture. It is a medium-grained, light-colored rock which may have rounded quartz and/or euhedral

plagioclase phenocrysts. Biotite and hornblende may or may not be present in the groundmass. Alteration of these rocks is similar to that of Unit 2, except that rust may be a little more abundant.

Unit 3a is most probably related to Unit 3, although this is uncertain. It consists of fine to medium-grained aplite dikes and, to a lesser extent, pegmatite dikes. Only one substantial sized body, on the GEP claim group, was observed. Compositionally, this rock type is very similar to the mafic lean granitic phases of Unit 3.

With regard to relative ages of the above three rock types, Unit 3a has been observed, in outcrop, intruding Unit 2. Units 2 and 3 were observed in close relationship, mainly in boulders, but no cutting relationships were observed.

The rocks of Unit 4 are the youngest rocks in the area, probably Tertiary (?) in age. They are fresh, fine-grained gabbro dike rocks, probably associated with the Carmacks volcanic series. From one outcrop occurrence, the dikes were observed to be quite small (less than 3-foot width) and highly irregular and discontinuous. They appear to be associated with faulting and shearing. Unit 4a is most likely associated with the above Unit 4. It consists of fresh, dense, fine-grained andesite-dacite porphyry. The phenocrysts are quartz and/or plagioclase. This unit was observed only on the MC group, and its relations with all other intrusive rocks are yet very vague.

GEOLOGY - GEP 1-32 CLAIM GROUP

The geology of this claim group is very typical in that the rocks are about 90 percent Unit 2. Moreover, there is little variation in texture or composition of these rocks over the entire grid. Hornblende-biotite granodiorite (?) is the dominant classification, with mafic minerals comprising 20 to 40 percent of the rock. One fairly extensive zone of alteration, centred south of LO between approximately 5W and 15W. The rocks here have a very crumbly texture due to chloritization of the hornblende and sericitization of feldspars. Rust is more dominant than elsewhere, with evidence of former pyrite cubes common, but the zone, rather limited in its exposure, does not appear to constitute a well-developed gossan. Other isolated occurrences of boulders of this altered rock were observed throughout the grid.

Visible sulfides, identified as pyrite, were observed in several boulders on the baseline around 85+00N. This occurrence is probably more widespread, but these sulfides are difficult to identify due to their finely disseminated nature and the fact that they have, in most cases, probably been weathered. The fact that pyrite does occur disseminated within the rock could indicate a secondary halo around a primary mineralization zone, as the Klotassin batholith is generally noted for the fact that it is usually quite sulfide lean.

Unit 1 is generally absent from this area except for the occurrence of small xenoliths throughout Unit 2, most of which appear to be almost totally incorporated into the intrusive.

Unit 3 is also absent from this area, but Unit 3a is quite abundant. Aside from numerous aplite and pegmatite dikes, observed both in outcrop and boulders throughout the claim group, it constitutes a large, elongated rock mass which forms the main ridge near the centre of the property. Here it is a fine to medium-grained orthoclase-rich and mafic-lean granite (biotite and lesser hornblende may or may not be present). It is cut by aplite and pegmatite dikes which appear to be later phases of the same intrusive body. The density of these dikes decreases away from the main intrusive centre. A minor alteration zone was observed in some of Unit 2 adjacent to the younger intrusive. This consists of a dominance of biotite over hornblende, and often no hornblende whatsoever.

This intrusive body (as mapped) would appear rather to be an intrusive centre consisting of a high density of dikes and sills of Unit 3a.

Unit 4 appears mainly in a few scattered boulders as a fresh, dense and fine-grained gabbro. It occurs in one outcrop, and here it appears in highly irregular and discontinuous dikes which appear to be following fracture planes. The dikes vary in width from a few inches to over two feet. They appear to have been further disoriented by a later stage of faulting, but this could also have been contemporaneous.

The rocks of this area show very little structure, mainly due to the lack of outcrop. Fracture, joint and shear planes are evident, and two prominent near-vertical planes, at approximately 30° and 120°, appear in almost all outcrops observed. These could be related to fault planes along which uplift has occurred, giving rise to the pinnacle-type rock outcroppings along the ridgetops which are characteristic of the Dawson Range area.

GEOCHEMICAL SURVEY

INTRODUCTION

The systematic sampling of soils and the subsequent analysis of these samples for trace amounts of copper and molybdenum has been successfully used throughout the Cordilleran region in the search for porphyry-type copper-molybdenum mineralization. This success has been extended to the Dawson Range, where several mineralized zones, including the Casino Silver Mines deposit, have been outlined by this technique.

For the successful application of a soil sampling survey, however, a careful study of all factors which might affect the geochemical characteristics of the soils, referred to here as the geochemical environment, must be undertaken. This environment is defined mainly by the characteristics of the soil. Basically, two distinctly different environments exist in the Dawson Range area, and are described below.

The "slope" environment exists mainly on slopes steeper than 5° and on the hill and ridge tops. The soil is residual or it has been transported a short distance down slope, and is composed mainly of weathered granite. A thin layer of humus and partially decomposed organic material may form the surface horizon. Vegetation may be completely lacking, but generally moss, grass and buckbrush are prominent, with minor spruce. Drainage in these areas is good, due to the slope and the general permeability of the soils.

The "bench" environment, by far the most predominant in this area, occurs over most of the flat or gently sloping areas. Here a thick humus, almost muskeg, layer has developed over the underlying soils. Drainage is poor, and the ground is often frozen quite close to surface. Vegetation consists of thick moss and grass with buckbrush and minor spruce. The underlying soils consist of alternating clay-rich and sand-rich horizons, which are partly colluvial (transported by gravity) and partly alluvial (transported by water).

Soil sampling conditions in "slope" areas are generally very good, except on very steep slopes where talus may be abundant. The "bench" environment, however, presents sampling difficulties. The humus layer is often very thick and hard to penetrate, especially if it is frozen at depth. A meaningful sample from this area, though, must be completely humus-free. As a result, during the survey, several "no sample" stations were encountered. Here, the ground in the vicinity of the station is either frozen or swampy, and a humus-free sample could not be obtained.

The soil samples are all taken from the upper "B" soil horizon, or the layer directly beneath the surface humus-rich "A" horizon. As the soils in this area have been transported only a short distance from the parent bedrock source, the samples collected are expected to reflect fairly accurately metal abundances in bedrock in the general vicinity.

SAMPLE HANDLING, ASSAYS AND TREATMENT OF DATA

After collection, samples were wired in strings of 30 to 40 samples, they were partially dried, and then packed in burlap sacks for shipment to Whitehorse. At Whitehorse the samples were crated and sent via C.P. Air Freight to Chemex Labs in North Vancouver, where they were analyzed for copper and molybdenum.

The analytical procedure at Chemex Labs consists of drying and sieving the samples, saving the -80 mesh fraction. One gram of this fraction is digested using perchlorate and is then dissolved in hot aqua regia. This solution is evaporated to dryness overnight. The residual is dissolved in hydrochloric acid and this solution is brought to volume for final analysis. The solution is run for copper and then molybdenum (using the Loring method) on a Techtron AA-5 Digital atomic absorption unit.

Results are returned to Whitehorse by First Class Mail. The copper and molybdenum values from this project have been plotted at 1 inch to 400 feet, and basic statistics, that is, the mean and standard deviation, of the copper values, have been calculated. The formulae used are as follows:

$$\bar{x} = \frac{\sum P.P.M.}{n}$$

$$s = \left(\frac{n(\sum P.P.M.) - (\sum P.P.M.)^2}{n(n-1)} \right)^{1/2}$$

where:

P.P.M. = copper value in parts per million
n = total number of values
 \bar{x} = arithmetic mean
s = standard deviation

As the majority of molybdenum values is zero, one would expect a mean of zero and standard deviation of less than 1. Thus, values of 2 or 3 P.P.M. Mo are anomalous values for this survey.

INTERPRETATION

Both copper and molybdenum values over the GEP claim group are quite low and flat, as indicated by the statistics:

$$\bar{x} = 21 \qquad s = 8$$

The low standard deviation indicates a low range of values.

With respect to geochemical surveys of this nature, it has been shown through experience that values greater than $\bar{x} + s$ (29 P.P.M. Cu for this survey) are "possibly anomalous" and values greater than $\bar{x} + 2s$ (37 P.P.M. Cu) are "probably anomalous". Using these values for guidance, one copper anomaly, labelled Zone G1, on L30+00N and centred at 10+00E, is evident. This anomaly extends 1100 feet along the line with values greater than $\bar{x} + s$, and 500 feet with values greater than $\bar{x} + 2s$. No molybdenum values exist in the area of this anomaly, although an appreciable molybdenum anomaly, for this area, occurs downslope in a slight basin area around the area of the B.L. at L15+00N.

The copper anomaly is relatively minor both in scope and in the size of values for the Dawson Range area. However, two factors may be influencing this. Firstly, the slope here is gentle, mainly to the southeast, with an unknown thickness of overburden which may be partially masking a mineralization source. Secondly, the bulk of the anomaly may lie to the north or south of the line.

It is felt that this anomaly is representative of a larger zone which extends to the south. A probably high sur-

face soil pH holds the copper in place while the molybdenum is leached downslope. The small molybdenum anomaly downslope indicates a decrease in pH, such that the copper becomes soluble and is leached away while the molybdenum is precipitated. The source of molybdenum ions for this anomaly, according to slope, would be at least 500 feet south of Zone G1, and possibly just to the north of L15+00N.

The rocks in this area are the coarse-grained intrusive of Unit 2, as mapped only from boulders, and they show little alteration. The general rock exposure in the area is not good, however.

The Zone G1 anomaly and associated few high molybdenum values downslope may represent a source of copper-molybdenum ions in bedrock between L15+00N and L30+00N, and also north of L30+00N. Secondary intrusive was not observed in the area, but rock exposure is poor and all boulders in this area were not checked. Further geological and geochemical investigation, possibly in conjunction with a magnetometer survey to help define contacts, is necessary on a detailed grid pattern to more fully assess the potential of the Zone G1 anomaly.

CONCLUSIONS

The geology of the GEP claim group consists primarily of a hornblende-biotite granite or granodiorite locally intruded by swarms of aplite and pegmatite dikes. The main intrusive is slightly altered over localized areas with evidence of minor sericitization of feldspars and chloritization of hornblende. Rusty staining is also locally present although no areas approaching gossans were noted. Sulfides, in the form of finely disseminated pyrite, were observed in several areas of the intrusive in minor quantities.

The soil sampling program has outlined a zone and several local areas which are statistically anomalous for copper and molybdenum. The anomalous zone (G1) extends for approximately 1200 feet along Line 30+00N to the east of the baseline. As the adjacent lines are spaced 1500 feet to the north and south, the extent of the statistical anomaly to the north and south is indeterminate without further work. A molybdenum high (3-6 P.P.M.) is located on the baseline at the intersection with Line 15+00N. The extent of this zone is unknown to the west. Several isolated statistical copper highs are found on the north end of the grid, but no pattern is evident from present sampling. Further sampling will be required to define the extent and magnitude of the anomalous zones.

RECOMMENDATIONS

The following program is recommended to further assess the potential of the GEP claim group.

Soil sampling and geological mapping should be carried out over an additional 20 miles of line grid, consisting of 1/2 mile lines on a 500-foot spacing to fill in the existing grid system. Estimated costs are as follows:

Transportation (fixed wing, helicopter, truck)	\$ 550.00
Camp Costs (equipment rental, food, etc.)	600.00
Soil Sampling	2,000.00
Geochemical Analysis (1040 determinations for Cu and Mo @ \$1.40)	1,450.00
Geological Mapping	1,000.00
Linecutting	1,700.00
Report Preparation	<u>500.00</u>
	<u>\$7,800.00</u>

SUMMARY OF EXPENDITURES

The geological-geochemical program carried out on the GEP claim group was part of a project covering three blocks of claims on behalf of the same company, Glenlyon Mines Ltd. (N.P.L.) As the three claims groups -- PEG, GEP and MO -- were of similar size (either 30 or 32 claims) and as the programs were carried out consecutively, the various costs incurred have been divided by three for simplicity. Reference is made to Invoice No. 1035, R.G. Hilker Limited, included in the Appendix of this report.

The following costs were incurred during the evaluation program on the GEP claim group:

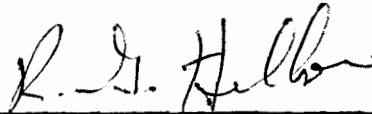
Transportation:

Fixed wing aircraft	\$227.25	
Helicopter	290.60	
Pick-up truck	<u>16.66</u>	\$ 534.51
Camp Costs (equipment rental, food, etc.)		300.00
Radio Rental		53.63
Geochemical Sampling (7.0 linemiles @ \$100)		700.00
Geochemical Analysis - Chemex Labs (317 samples for Cu & Mo @ \$1.40).....		443.33
Geological Mapping		300.00

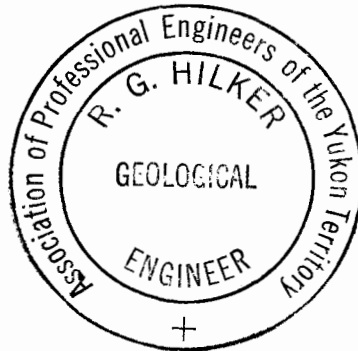
Linecutting (7.0 linemiles @ \$85) \$ 595.00
Report Preparation (includes both pre-
liminary and final drafting) 403.33
Total Costs claimed for
Assessment Work..... \$3,329.80

CERTIFICATION OF EXPENDITURES

I, ROBERT G. HILKER, P.Eng., do hereby certify that the statement of costs incurred during the geological-geochemical evaluation of the GEP claim group as stated above is a true statement to the best of my knowledge.



Robert G. Hilker, P.Eng.
Whitehorse, Yukon Territory
August 21st, 1970

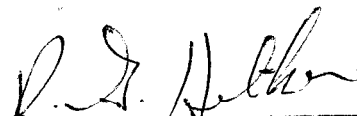


CERTIFICATION OF REPORT

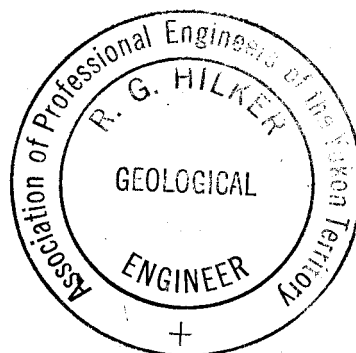
I, ROBERT G. HILKER of #6 Chalet Crescent, Hillcrest, in the City of Whitehorse, in the Yukon Territory, DO HEREBY CERTIFY:

1. THAT I am a Consulting Geologist, with an office located at #8 Northern Metallic Building and postal address P.O. Box 566, in the City of Whitehorse, in the Yukon Territory.
2. THAT I am a graduate of the Michigan Technological University located in 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 member in good standing of The Association of Professional Engineers of the Yukon Territory.
4. THAT I have practised my profession as an engineer and geologist for the past eight years.
5. THAT I have personally supervised the geological-geochemical evaluation conducted by G.G. Carlson on the GEP claim group in the Whitehorse Mining Division of the Yukon Territory, from July 11th to July 16th, 1970.
6. THAT neither I nor G.G. Carlson have any direct or indirect interests in any of the mineral claims, or in any of the securities held by Glenlyon Mines Limited (N.P.L.) nor do we expect to receive any.

DATED this 21st day of August, A.D. 1970.



R.G. Hilker, P.Eng.



A P P E N D I X

FIELD DIARY - GEP GROUP - G.G. CARLSON

Saturday, July 11

Weather: Mainly sunny, warm.

Personnel and supplies to Casino airstrip in a.m.:

G. Carlson from Apex Camp by T.N.T.A. Bell B-2.

L. Roy and J. Smith plus supplies from Whitehorse by
Globe Cessna 172 and G.N.A. Aztec.

By 1:00 p.m., personnel and supplies to campsite on GEP claims
using T.N.T.A. Jet Ranger - three trips. (TNTA - Casino -
CJL 335)

Camp erected by L. Roy and J. Smith.

G. Carlson - Traverse - Located claim posts in vicinity of camp
on both claim lines - Determined claim line bearing of 139 to
140° - Grid will be started at P2, GEP 1 & 2; P1, GEP 3 & 4,
cutting at 50° to B.L. - Then cut B.L. - Grid coordinates of
starting point: L90+00N; 15+00W. According to paced distances,
the claim lines are exactly 3,000 feet apart, but the easterly
line is shifted 500 ft. N. with respect to the westerly line
(this will be checked with the grid).

Geology: Abundant boulders, all granitic rich in hornblende
(phenocrysts to 1/2" long) and biotite. Some show rust and
alteration to a minor extent.

Soil Sampling: Conditions very poor to excellent, generally
fair. In the muskeg areas, frost boils are available at some
points. Hopefully, they are quite extensive.

Sunday, July 12

Weather: Mainly sunny and hot.

Cutting, chaining, soil sampling and geology carried out roughly
simultaneously along the line.

Began as planned at P2, GEP 1 & 2; P1, GEP 3 & 4 and finished
L90N from 15+00W to B.L. (0+00W) - then surveyed B.L. from
90+00N to 19+00N.

Linescutting: Very little open ground, with 3' to 6' buckbrush
and willows thick over most areas. As a result, cutting started

.../2

very slowly, with less than one-half mile completed in 4 hours. Consequently, the amount of cutting was reduced, and the final cutting rate of the day was better than 1000 feet per hour. This results in a line which is still well-cleared, with pickets quite visible, but lower undergrowth (2-3 ft. height) is not cut.

Soil Sampling: Sampling conditions are relatively good, considering the area and vegetation. Generally, much digging and poking around is required at each station to find acceptable sample material, but the sampler, with help from the geologist, in bad areas, can keep up with the linecutting. (Happily, the poor sampling areas coincide with the geologically lean areas).

*Geology: The only rocks uncovered to date are intrusive, and may be divided roughly into two groups. The earlier group, the main intrusive in this area of the Klotassin batholith, is a granite-granodiorite with abundant hornblende and lesser biotite. A second phase of this rock is very similar except that it is generally finer grained, although coarse grained varieties occur, and it is biotite-rich, with little or no hornblende. Traces of disseminated pyrite were observed in several boulders of this rock (hornblende-rich variety) in one location. The biotite-rich phase occurs adjacent to the contact, on both sides, with the second intrusive type.

The second type is a medium- to fine-grained granite with zero to only a few percent mafics (biotite). It is cut by abundant aplite and pegmatite dikes of roughly the same composition, and which may well be contemporaneous with the unit. It is highly resistant to weathering and forms the main ridge in the area. Mainly the aplite dikes from this unit cut the first unit near the contact zones.

No major structural features have been observed so far, except for minor shearing in some boulders, although little outcrop has been seen, and mainly frost heaved boulders have been mapped.

* Note: The rock unit numbers recorded in this diary are those used for mapping purposes and do not coincide with the final table of formations or, often, from one claim group to the next.

Monday, July 13

Weather: Overcast, steady drizzle all day with few heavy showers.

Line 90N was completed, from 26+40W to 26+40E, but wet bush prohibited further cutting. Also, posts were located at the south end of the property to ensure the correct location of the B.L. Paced distances indicate the B.L. is well located with respect to the two claim lines, but the claim lines may be averaging over 1500' length.

Geology: No new rock types have been observed, although some of the granites to the south show a relatively high degree of alteration (boulders only).

General field observations have given rise to the following table of formations of rock types on the claim group according to age relations and rock type:

Field Sample Analysis (July 13)

<u>No.</u>	<u>Minerals (%) and Description</u>
C-25	Orthoclase (50); plagioclase (35-40); quartz (10-15); Fe ox.hyd. (Tr.) - probably weath. Py. - med. gr., plag slightly larger than orth. - sericitization of some of orth.
C-24-a	Orth. (40); plag. (30); quartz (30) py (Tr.) weath. - med.-fine gr. cut by coarse gr. vein (1" wide) - composition of each same except more Py. in med.gr. - also iron stain on qtz and fsp. - some sericitization - gives light orangish-white color to rock. - fsp subhedral to euhedral, qtz, irreg. or rounded blebs. - orth. clear to pinkish white; quartz clear to clear-grey.
C-24-b	Orth (60); plag. (30); qtz (10); mafics (Tr.); weath Py (Tr.) - med.-fine gr.; similar orangish alteration as above. - cut by fine-gr. pinkish white aplite (1/2" wide, orth. & qtz rich). - aplite cut by micro fractures, 3/4 - 1" separation, 0 - 1/4" displ.

- C-24-c Orth. (40); plag. (30); qtz. (30); chlorite (2).
- same as above but coarser grained and apparently richer in qtz. - same alteration as above, biotite to chlorite? - py. alteration not evident.

- named fine grained granite.
- C-23-a;b Orth. (40-60); plag. (20); qtz. (10-20); hb (5-25);
-22-a;b bi (5-25); Py. (0-Tr.); total maf. (20-40)
-26 - probably granite-qtz. monzonite
-21 - for now, it will be named hornblende, hornblende-biotite or biotite-granite
- these rocks may also approach granodiorite composition if the feldspars are more calcic than suspected

PRELIMINARY TABLE OF FORMATIONS (1)

1

Klotassin Batholith: hornblende granite (coarse-grained); with hornblende phenocrysts and biotite forming less than 50% of mafics.

1a - biotite granite; hornblende often absent from this variety. Occurs near the contact with Unit 2.

1b - altered with 1 or 1a; mainly iron staining throughout the rock, with some sericitization and chloritization and crumbly texture (incl. of Yukon gp. in all types)

2

Granite and related aplitic and pegmatitic phases: fine to medium-grained with 0-5% mafics (biotite and/or chlorite). Intrudes Unit 1, forming a high, rounded ridge in the north end of the property. The main body of Unit 2 is intruded by aplite and pegmatite dikes, but these phases are believed to be contemporaneous as the compositions are very similar and contacts often quite gradational. Aplite dikes and possibly also pegmatite dikes of this unit extend into Unit 1. (often high iron content - orange colour).

3

Basic intrusive: fine-grained green-black dikes, observed cutting Unit 1. Width of dikes probably 2 to 4. These rocks are probably related to Tertiary Carmacks volcanics.

Tuesday, July 14

Weather: Low overcast, steady drizzle in a.m., turning to heavy showers in p.m.

Linecutting, chaining and sampling together to complete B.L. to 15+00S; LON, 26+40W to 26+40W and L15N, B.L. to 26+40E. Work forced to stop here due to rain.

Geology: Traversed L90N east of B.L. and then covered day's linecutting - very wet indeed. Most rocks are of Unit 1, cut by fine to medium-grained aplite dikes and basic dikes. The basic dikes, as observed on one outcrop, are very irregular, due both to their nature of emplacement and to later displacement by faulting. Recent faulting seems to be at least partially responsible for the pillar-like granite outcrops in the area. Two major vertical fracture directions, at approximately 30° and 120°, appear in all of these outcrops to a greater or lesser degree, suggesting upthrust. Other non-vertical shear faces are evident.

A relatively large amount of altered granite (Unit 1b) occurs west of the baseline around LON. Alteration products include mainly iron oxides, plus chlorite and probably fine-grained sericite from the feldspars. No visible sulfides are evident, although any originally present would have been destroyed by weathering.

Wednesday, July 15

Weather: Low overcast and rain until late afternoon. Intermittent showers in evening.

Linecutting, chaining and sampling carried out in the evening on L30N from 26+40E to 26+40W.

Geology traverse run across ridge above camp and along all of L30N.

Camp move arranged with T.N.T.A.'s Casino Base. Only suitable time is available on the evening of July 16. Work should be well completed by this time, provided there is no rain during the day.

Thursday, July 16

Weather: Warm, sunny intervals, no rain!

Completed work on GEP grid (7.0 miles) by cutting, chaining and sampling L45N; B.L. to 26+40E and L60N; 26+40E to 26+40W (note

change of L45N from W. of B.L. to E. of B.L.) Geological mapping was also carried out on these lines. This work was completed by approximately 4:00 p.m. at which time camp was broken in preparation for move to PEG group. Move commenced at 5:30 p.m. and completed by 6:45 p.m. (Two trips for move plus third trip to Casino to pick up 6 bundles of laths and leave one bag of samples). The evening was spent erecting the tent and fixing up camp.

Summary - GEP Group

1. Linecutting:

The area of the GEP 1-32 Claim Group is relatively flat for the Casino area, and the baseline roughly follows the top of a long ridge. Over 75% of the lines are in heavy buckbrush and willow undergrowth. As a result, the lines were cut only enough so that pickets could be lined up. Even at that, work progressed slowly due to excessive amounts of rain and some very thick undergrowth in certain places.

2. Soil Sampling:

Soil sampling conditions are good to poor over the grid area. Much of the grid is covered by a loose boulder overburden covered with wet and mossy muskeg-type vegetation. The soils collected over these areas were frequently of alluvial nature and often rich in humus. The major soil types are grey clay and brown to brown-yellow clayey sand. The sand is probably the best geochemical sampling medium while the nature and geochemical response of the clay is uncertain. Comparison of assay results and sample material and environment is necessary for a definite evaluation of the sampling survey.

3. Geology:

The geology of the claim group has been thoroughly described previously. However, the table of formations should be altered to the following:

- | | |
|----|--|
| 1 | hornblende granite |
| 1a | altered hornblende granite |
| 2 | fine-grained leucocratic granite;
associated aplite & pegmatite dikes |
| 3 | basic intr. (Carmacks) |

The previous Unit 1a, biotite granite, is very limited in extent and appears to be simply a small alteration halo within Unit 1 at the contact with Unit 2.

The only area of geological interest occurs in the zone of Unit 1a which occurs irregularly, mainly in boulders, west of the baseline near LON. This has also been described previously.

The occurrence of pyrite in some samples in the north part of the grid does not assume too great an importance, as it is accompanied only by a small amount of alteration.



INVOICE

CHEMEX LABS LTD. 212 BROOKSBANK AVE., NORTH VANCOUVER, B.C. TELEPHONE 525-0645/9

R.G. Hilker Ltd.,

DATE August 5, 1970

Box 566,

INVOICE NO. 3497

Whitehorse, Yukon

GLENLYON PROJECT

CERTIFICATE NO. 10308-10314

ATTN: _____

ITEM	DESCRIPTION	SUB-TOTAL	TOTAL
	270 samples analyzed for Copper, Molybdenum @ \$1.40		\$ 378.00



INVOICE

CHEMEX LABS LTD. 212 BROOKSBANK AVE., NORTH VANCOUVER, B.C. TELEPHONE 525-0645/9

R. G. Hilker Ltd.,

DATE August 4/70

Box 566

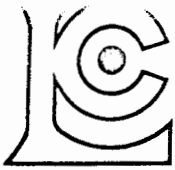
INVOICE NO. 3489

Whitehorse, Y. T.

CERTIFICATE NO. 10291 to 10307

ATTN: _____

ITEM	DESCRIPTION	SUB-TOTAL	TOTAL
	680 Samples analyzed for Copper & Molybdenum @ \$1.40	\$952.00	\$952.00



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NORTH VANCOUVER, B.C.
CANADA
TELEPHONE: 985-0648

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CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 10291

TO: R.G. Hilker Ltd.,
Box 566,
Whitehorse, Y.T.

GLENLYON PROJECT

INVOICE NO. 3489

DATE RECEIVED July 29, 1970

DATE ANALYSED Aug. 4, 1970

ATTN:

SAMPLE NO.:	ppm Copper	ppm Molybdenum
GEP 9301	21	0
9302	22	0
9303	26	0
9304	31	0
9305	26	0
9306	31	0
9307	21	0
9309	22	0
9310	26	0
9311	16	1
9312	18	0
9313	21	0
9314	26	0
9315	20	0
9316	31	0
9317	22	0
9318	30	0
9319	22	0
9320	30	0
9321	26	0
9322	30	0
9323	24	0
9324	28	0
9325	36	2
9326	36	0
9327	28	0
9328	16	0
9329	24	0
9330	22	0
9331	14	0
9332	28	0
9333	22	0
9334	16	0
9335	26	0
9336	41	0
9337	41	1
9338	16	0
9339	24	0
9340	24	0
9341	22	0
Std #22	54	17

Certified by

[Signature]
Dated Aug 7/70



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CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 10292
INVOICE NO. 3405
DATE RECEIVED July 29, 1970
DATE ANALYSED Aug. 4, 1970

TO: R.G. Hilker Ltd.,
Box 566,
Whitehorse, Y.T.

GLENLYON PROJECT

ATTN:

SAMPLE NO.:	ppm Copper	ppm Molybdenum
9342	21	0
9343	28	0
9344	24	0
9345	18	0
9346	24	0
9347	20	0
9348	30	0
9349	28	0
9350	30	0
9351	26	0
9352	31	0
9353	26	0
9354	20	0
9355	20	0
9356	26	0
9357	20	0
9358	22	0
9359	20	0
9360	18	0
9361	20	0
9362	18	0
9363	21	0
9364	16	0
9365	20	0
9366	22	0
9367	21	0
9368	18	0
9369	21	0
9370	18	4
9371	14	0
9372	12	0
9373	8	0
9374	13	0
9375	22	0
9376	16	0
9377	16	0
9378	18	0
9379	20	0
9380	21	0
9381	28	0
Std #22	56	17

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TO: R.G. Hilker Ltd.,
Box 566,
Whitehorse, Y.T.

CERTIFICATE NO. 10293
INVOICE NO. 5400
DATE RECEIVED July 29, 1970
DATE ANALYSED Aug. 4, 1970

ATTN:

GLENLYON PROJECT

SAMPLE NO.:	ppm Copper	ppm Molybdenum
9382	22	0
9383	24	0
9384	18	0
9385	21	0
9386	16	0
9387	13	0
9388	20	0
9389	21	3
9390	24	0
9391	31	6
9392	34	4
9393	21	1
9394	28	1
9395	14	0
9396	13	0
9397	18	1
9398	13	0
9399	22	0
9400	21	0
9401	14	0
9402	22	0
9403	18	0
9404	26	0
9405	18	0
9406	16	0
9407	12	0
9408	21	0
9409	20	0
9410	16	0
9411	22	0
9412	26	0
9413	18	0
9414	20	0
9415	16	0
9416	16	0
9417	26	0
9418	28	0
9419	14	0
9420	16	0
9421	16	0
Std #22	54	17

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CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 10294

INVOICE NO. 3489

TO: R.G. Hilker Ltd.,
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Whitehorse, Y.T.

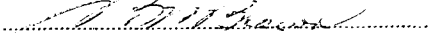
GLENLYON PROJECT

DATE RECEIVED July 29, 1970

DATE ANALYSED August 4, 1970

ATTN:

SAMPLE NO.:	ppm Copper	ppm Molybdenum
9422	14	0
9423	14	0
9424	16	0
9425	21	1
9426	28	0
9427	21	0
9428	20	0
9429	18	0
9430	16	0
9431	20	0
9432	14	0
9433	12	0
9434	20	0
9435	18	0
9436	20	0
9437	41	0
9438	28	0
9439	13	0
9440	13	0
9441	16	0
9442	18	0
9443	28	0
9444	16	0
9445	20	0
9446	14	0
9447	26	0
9448	21	0
9449	18	0
9450	22	0
9451	36	0
9452	26	0
9453	22	0
9454	16	0
9455	20	0
9456	21	0
9457	26	0
9458	16	0
9459	14	0
9460	20	0
9461	18	0
Std #22	52	17

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J 11



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TO: R.G. Hilker Ltd.,
Box 566,
Whitehorse, Yukon

GLENLYON PROJECT

CERTIFICATE NO. 10295
INVOICE NO. 3489
DATE RECEIVED July 29, 1970
DATE ANALYSED Aug. 4, 1970

ATTN:

SAMPLE NO.:	ppm Copper	ppm Molybdenum
9462	7	0
9463	22	0
9464	16	0
9465	18	0
9466	22	0
9467	21	0
9468	13	0
9469	21	0
9470	18	2
9471	20	1
9472	16	0
9473	12	1
9474	13	0
9475	20	2
9476	18	0
9477	24	5
9478	10	0
9479	18	0
9480	14	0
9481	18	0
9482	13	0
9483	30	0
9484	16	0
9485	18	0
9486	12	0
9487	13	0
9488	13	0
9489	18	0
9490	12	0
9491	20	0
9492	16	0
9493	13	0
9494	16	0
9495	18	2
9496	22	1
9497	22	1
9498	20	3
9499	18	3
9500	31	0
9501	22	0
Std #22	52	16

Certified by *[Signature]*



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CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 10296

TO: R.G. Hilker Ltd.,
Box 566,
Whitchose, Yukon

GLENLYON PROJECT

INVOICE NO. 3489

DATE RECEIVED July 29, 1970

DATE ANALYSED Aug. 4, 1970

ATTN:

SAMPLE NO.:	ppm Copper	ppm Molybdenum
9502	30	0
9503	34	0
9504	24	0
9505	24	0
9506	26	0
9507	28	0
9508	24	0
9509	26	0
9510	21	0
9511	21	0
9512	18	0
9513	31	0
9514	28	0
9515	16	0
9516	21	0
9517	30	0
9518	20	0
9519	28	0
9520	22	0
9521	18	0
9522	22	0
9523	16	0
9524	18	0
9525	16	0
9526	13	0
9527	21	0
9528	12	0
9529	10	0
9530	8	0
9531	7	0
9532	16	8
9533	6	0
9534	13	0
9535	18	0
9536	13	0
9537	24	0
9538	16	0
9539	18	0
9540	30	0
9541	20	0
Std #22	54	16

Certified by *[Signature]*



CHEMEX LABS LTD.

NORTH VANCOUVER, B.C.
CANADA
TELEPHONE: 985-0648

• CHEMISTS • GEOCHEMISTS • ANALYSTS • ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 16207

TO: R.G. Hilker Ltd.,
Box 566,
Whitchose, Y.T.

GLENLYON PROJECT

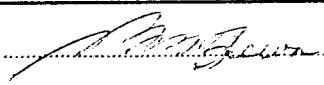
INVOICE NO. 3489

DATE RECEIVED July 29, 1970

DATE ANALYSED August 4, 1970

ATTN:

SAMPLE NO.:	ppm Copper	ppm Molybdenum
9542	21	0
9543	24	0
9544	22	0
9545	23	0
9546	34	0
9547	31	0
9548	33	0
9549	53	4
9550	40	0
9551	41	1
9552	41	0
9553	58	1
9554	30	0
9555	30	0
9556	31	0
9557	30	0
9558	26	0
9559	22	0
9560	18	0
9561	20	0
9562	18	0
9563	16	0
9564	21	0
9565	14	0
9566	14	0
9567	14	0
9568	20	0
9569	20	0
9570	18	0
9571	13	0
9572	8	0
9573	22	0
9574	24	0
9575	22	0
9576	22	0
9577	16	0
9578	14	0
9579	14	0
9580	12	0
9581	12	0
Std #22	52	17

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CANADA
TELEPHONE: 985-0648

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CERTIFICATE OF ANALYSIS

TO: R.G. Hilker Ltd.,
Box 566,
Whitehorse, Y.T.

GLENLYON PROJECT

CERTIFICATE NO. 10293

INVOICE NO. 3489

DATE RECEIVED July 29, 1970

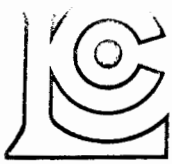
DATE ANALYSED August 4, 1970

ATTN:

SAMPLE NO.:	ppm Copper	ppm Molybdenum
9582	16	0
9587	12	0
9588	12	0
9589	12	0
9590	14	0
9591	14	0
9592	8	0
9593	20	0
9594	16	0
9595	8	0
9596	10	0
9597	10	0
9598	13	0
9599	18	0
9600	20	0
9601	24	0
9602	24	0
9603	28	0
9604	26	2
9605	26	0
9606	28	0
9607	21	0
9608	22	0
9609	20	0
9610	14	0
9611	16	0
9612	12	0
9613	14	0
9614	26	1
9615	16	0
9616	18	0
9617	18	0
9618	18	0
9619	18	0
9620	16	0
9621	24	0
9622	24	0
9623	10	0
9624	10	0
9625	8	0
Std #22	52	16

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1/21



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TELEPHONE: 985-0648

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• GEOCHEMISTS

• ANALYSTS

• ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 10299

INVOICE NO. 3409

TO: R.G. Hilker Ltd.,
Box 566,
Whitehorse, Y.T.

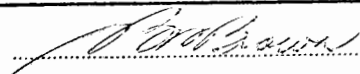
GLENLYON PROJECT

DATE RECEIVED July 29, 1970

DATE ANALYSED Aug. 4, 1970

ATTN:

SAMPLE NO.:	ppm Copper	ppm Molybdenum
9626	34	0
9627	26	0
9628	26	0
9629	28	0
9630	30	0
9631	31	0
9632	24	0
9633	33	0
9634	22	0
9635	26	0
9636	26	0
9637	20	0
9638	28	0
9639	24	0
9640	18	0
9641	30	0
9642	21	0
9643	21	0
9644	24	0
9645	16	0
9646	8	0
9647	18	0
9648	14	0
9649	16	0
9650	18	0
9651	16	0
9652	14	0
9653	20	0
9654	28	4
9655	26	0
9656	24	0
9657	26	0
9659	22	0
9660	64	0
9661	22	0
9662	18	0
9663	18	0
9664	42	0
9665	14	0
9666	14	0
Std #22	52	17

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CANADA
TELEPHONE: 985-0648

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CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 10300

TO: R. G. Hilker Ltd.,
Box 566,
Whitehorse, Yukon

GLENLYON PROJECT

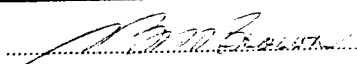
INVOICE NO. 3489

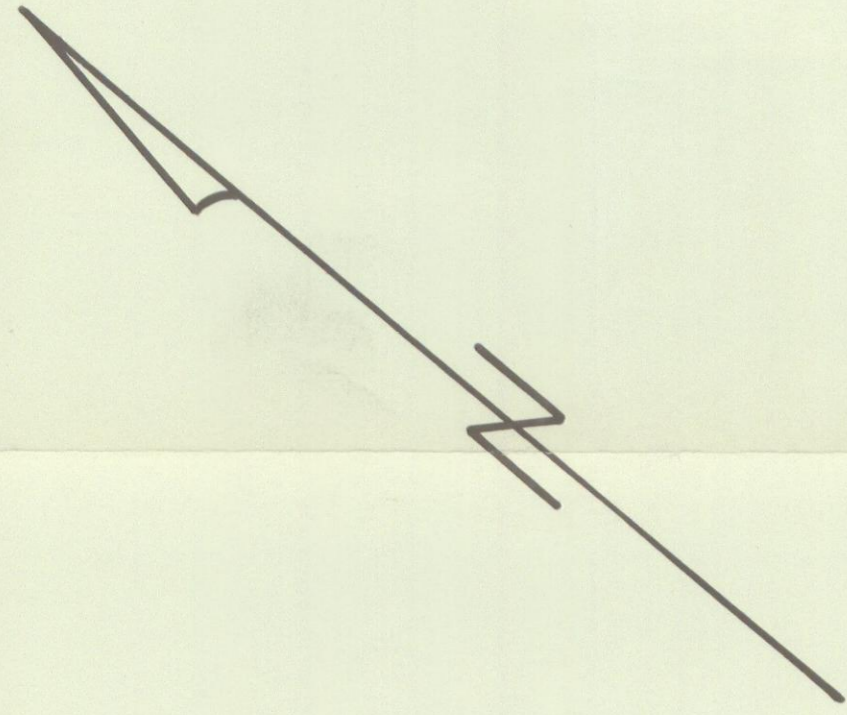
DATE RECEIVED July 29, 1970

DATE ANALYSED August 4, 1970

ATTN:

SAMPLE NO.:	ppm Copper	ppm Molybdenum
9667	26	0
9668	7	0
9669	41	0
9670	33	0
9671	20	0
9672	24	0
9673	3	0
9674	7	0
9675	28	0
9676	18	0
9677	21	0
9678	18	0
9679	10	0
9680	14	0
GEP 9681	18	0
9682	28	0
PEG 9683	21	0
9684	22	0
9685	26	0
9686	21	0
9687	20	0
9688	16	0
9689	26	0
9690	16	1
9691	22	0
9692	21	0
9693	12	0
9694	13	0
9696	12	0
9697	20	0
9698	24	1
9699	22	0
9700	22	0
9701	28	0
9703	28	0
9704	20	0
9706	26	2
9707	16	0
9708	31	0
9709	131	3
Standard Soil #22	54	17

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GEOLOGICAL LEGEND

CENOZOIC

Tertiary

- 4 Carmacks Volcanics - basalt and related basic dikes
- 4a - related andesite-dacite porphyries

MESOZOIC

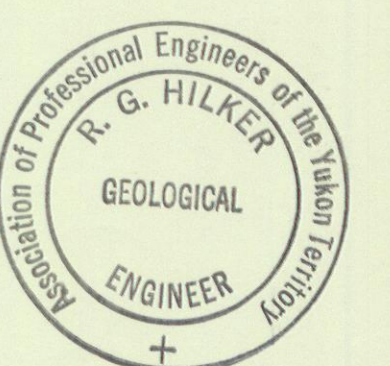
- Jurassic - Upper Cretaceous
- 3 Minor Intrusives - granite-diorite, quartz-feldspar porphyries
- 3a - associated aplite and pegmatite dikes
- 2 Klotassin Batholith - hornblende-biotite-quartz granite, monzonite. Minor dioritic phases.

PRECAMBRIAN and LATER

- 1 Yukon Group - biotite-hornblende schists and gneisses

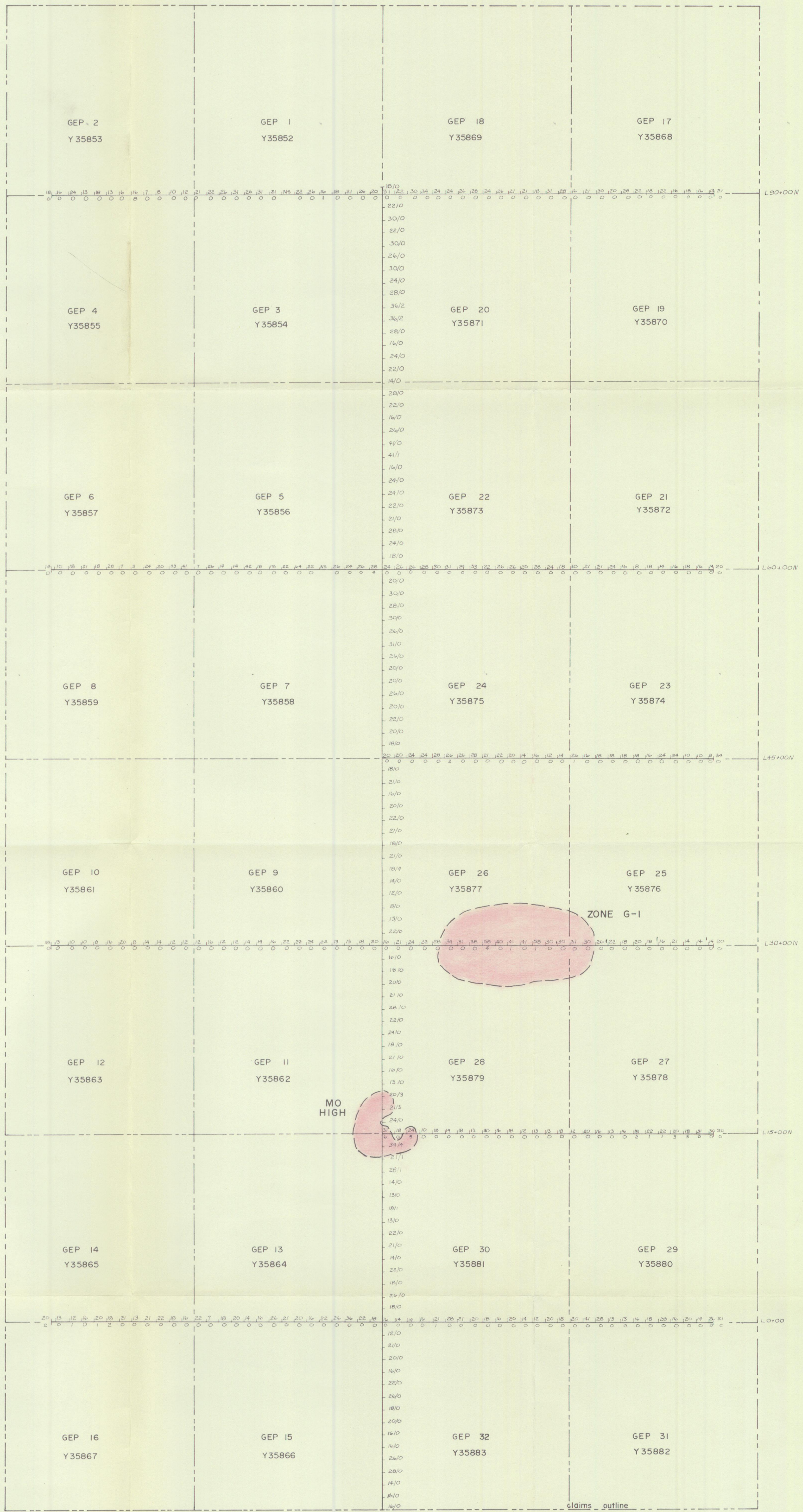
LEGEND

- x isolated boulders
- boulder train
- outcrop
- talus with direction of slope
- assumed geological contact
- creek
- swamp
- claimpost
- ⊠ campsite

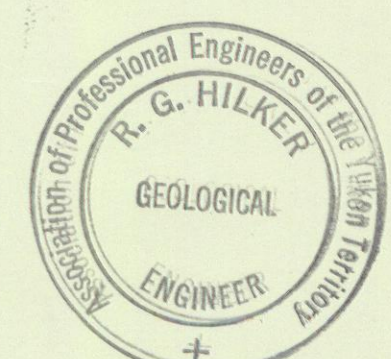


R.G. HILKER LTD.
CONSULTING GEOLOGIST
WHITEHORSE, Y.T.

Sheet 115-J-10
GLENLYON MINES LTD. (NPL)
GEOLOGY
GEP CLAIMS
DATE: AUG. 10/70 SCALE: 1" = 400'



NOTE: 38/0 indicates copper/moly in p.p.m.
 38/0 indicates copper in p.p.m.
 0 indicates moly



R.G.HILKER LTD.
 CONSULTING GEOLOGIST
 WHITEHORSE, Y.T.

Sheet 115-J-10
 GLENLYON MINES LTD. (NPL)
 GEOCHEMICAL SURVEY
 COPPER - MOLY
 GEP CLAIMS
 DATE: AUG. 10/70 | SCALE: 1" = 400'