CANADIAN OCCIDENTAL PETROLEUM LTD.

MINERALS DIVISION

Office of the Regional Manager Mineral Rights
JUL 9 1982
WHITE
Yukon Territory

RECEIVED
9 JUL 1982
MINING RECORDER'S OFFICE
WHITEHORSE, Y.T.

SPRING 1982
TRENCHING PROGRAM
PROJECT THATCH JOINT VENTURE

CLAIM SHEET 115-H-12

LAT.: 61°50'N
LONG.: 137°75'W

CLAIMS:

HATCH	7, 9, 13-16, 19, 21, 23, 25-30, 32, 34	17 claims
THATCH	16, 18, 29-32	6
PATCH	1-16	16
MATCH	1-6	6
		43 claims

BY:

ROBERT M. KUEHNBAUM, M.Sc., F.G.A.C.

DURATION OF WORK

MARCH 25 - APRIL 9, 1982

091063

This report has been examined by
the Geological Evaluation Unit
under Section 53 (4) Yukon Quartz
Mining Act and is allowed as
representation work in the amount
of $ 19,500 —.

P. Watson

for Regional Manager, Exploration and
Geological Services for Commissioner
of Yukon Territory.

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SUMMARY AND RECOMMENDATIONS

A winter trenching program was carried out on the THATCH/HATCH/PATCH Claims, Yukon, in March-April, 1982. Approximately 2,745 cubic yards of overburden were removed in four trenches, two of which uncovered bedrock. The other two trenches are underlain by probably thick fluvio-glacial debris.

The previous suspicion that locally intense and continuous magnetic anomalies reflect underlying magnetite (-pyrrhotite) bearing skarn was confirmed. The skarns are contained within quartzites and greenish "calc-silicate hornfels" (quartzite) that have also undergone metasomatic alteration. They are composed of variable proportions and combinations of garnet, diopside, actinolite, quartz, pyrite, pyrrhotite, magnetite, scheelite and chalcopyrite. Little is known of the attitudes of the skarns, but bedrock and magnetic profiles suggest complex structure, possibly involving at least two phases of deformation.

In Trench 82-T-1, one significant skarn band was exposed. It is 10 to 10.5 ft in apparent width (about 7 ft in true width?) and probably dips to the south. Chip sampling over the zone returned a 10.5 ft interval containing 277 ppm Mo, 776 ppm Cu, 90 ppm Zn, 1.9 ppm Ag, 9 ppm W and 8 ppb Au. Chalcopyrite is present in trace amounts (rarely to 1%), and neither scheelite nor molybdenite was observed. Selected hand specimens contain up to 0.95% Cu and 10.5 ppm Ag. The calc-silicate hornfels contains similar amounts of metal.

In Trench 82-T-3, four zones of skarn were revealed. They vary in apparent width from 3.3 ft to approximately 8 ft. Within the 8 ft skarn, chip samples across 4.5 ft contain 488 ppm Mo, 393 ppm Cu, 193 ppm Zn, 0.4 ppm Ag, 23 ppm W and 20 ppb Au. Other skarns contain up to 770 ppm Cu, 2.6 ppm Ag, 450 ppm W and 115 ppb Au. Calc-silicate hornfels between the skarns contain similar amounts of metals. A composite grab sample of a 2-foot wide pyritic quartz vein contains 0.497 oz/ton Au; other veins were not sufficiently sampled.

Soil sampling shows, in the trenches that reached bedrock, that there is little possibility of unstripped skarn mineralization of economic grade. Similarly, sampling of overburden in the remaining two trenches suggests no apparent, near surface source of mineralization; magnetic susceptibility measurements of soils, however, suggest a slight enrichment in secondary Fe oxides over the magnetic anomalies.

Although no mineralization of economic grade was discovered during the present survey, very little of the potential target area has been tested. Of 10,000 feet of strike length of magnetic anomalies surrounding the central alaskite body, only two trenches, 400 feet apart, have reached skarn. Magnetics imply that the alaskite contact plunges to the south under the trenches, and that better mineralization may occur adjacent to the contact at depth.

In addition, both bedrock trenches uncovered skarn near the ends of magnetic anomalies, and presumably near the ends of skarn bodies that could considerably thicken laterally.

Because trenching has proved to be time-consuming due to ground conditions on THATCH/HATCH, the target magnetic anomalies must be investigated by diamond drilling. This would probably require a minimum of 3,000 ft. Should a drilling program be approved in the future, it would be worthwhile to re-investigate the trenches in the summer season, and to more thoroughly sample the locally gold-bearing quartz veins. More detailed magnetic and MAXMIN (HLEM) surveys should also be considered over the target areas.

1. INTRODUCTION

1.1 Previous Work

The most recent government geological mapping of the Aishihik map sheet (Lat. 61-62°, Long. 136-138°) was carried out by Tempelman-Kluit (1974) who incorporated previous work.

The author knows of no previous work performed on or around the claim group prior to that of Canadian Occidental Petroleum Ltd. During exploration activity on the "Sekulmun" skarn occurrence on the east side of Sekulmun Lake, a considerable number of claims were staked around the entire north end of the lake as far up Thatchell Creek as the present eastern boundary of the THATCH/HATCH claims. At least 286 claims were located (ROUGH 1-207, NEL 1-47 and SE 1-32) in February, 1970, and one of the groups (SE 1-32) was located over what is now the HATCH group. None of the claims was ever transferred from the stakers' names, and all expired the following year (February and March 1971). There is no evidence of work and no renewals were requested.

The THATCH claims were staked in 1971 as a Cu-Mo prospect, covering the probable source area of anomalous Cu, Zn and Mo in stream sediments taken by Canadian Occidental during a reconnaissance geochemical survey in 1971. In 1972 CanadianOxy carried out geological mapping and soil sampling.

The HATCH claims were staked in 1972 to cover both the southeast extension of open Cu-Mo-Zn soil anomalies on THATCH claims (Bhatia and Gleeson, 1972) and an aeromagnetic anomaly considered to reflect an igneous intrusion flanking the south side of the anomalies. In 1973, soil samples were taken over these claims and a magnetometer survey was conducted on the same grid over HATCH and the SE corner of THATCH claims with readings at 200 foot intervals. The surveys outlined stronger Mo anomalies (up to 294 ppm) with coincident strong magnetic anomalies (up to 1700 gammas) in a separate zone south of the THATCH anomalous trend (Saracoglu, 1973). Geological mapping showed the anomaly to be over metasediments and glacial overburden near the contact with a granitic intrusion to the north. The bedrock source of Mo soil anomalies was attributed to micaceous quartzites, assumed to have been mineralized by the adjacent intrusion which itself contains anomalously high molybdenum. The property lay dormant from 1973 to 1981.

During a two day property evaluation carried out in the spring of 1981 (Kuehnbaum, 1981) the area of the geochemical/magnetic anomaly was examined and subcropping magnetite(?)- and pyrrhotite-bearing skarn containing scheelite and molybdenite mineralization was found (up to 0.12% WO_3 and 0.745% Mo in separate hand specimens). Soil samples over the area contained anomalous tungsten (up to 90 ppm).

This new W-Mo skarn-type target was examined in the late summer of 1981 by more detailed geological mapping, soil geochemical, magnetic and VLF-EM surveys. Fill-in lines were cut and two new baselines established. Results of these surveys were presented by Watters (1981). The geophysical surveys indicated conductive, magnetic skarns surrounding and/or lying directly south of an intrusive body (Jagodits, 1982). Roughly co-inciding with some of these magnetic bodies are areas of soils with anomalous contents of W, Mo and Cu (with lesser Zn, Ag and Bi).

In early 1982, it was decided that trenching could be the most efficient way of obtaining grade/thickness data from subcrop; Jagodits (1982) outlined eleven possible trench sites on the basis of intensity of magnetic anomalies, correspondence of conductive structures and/or bodies, and relative depth of overburden. It was also evident that trenching would have to be carried out in the winter since in the summer months access is impossible (due to environmental impact and Land Use Regulations), and because melting permafrost in clay-rich soil could cause severe problems in mobility. In March, 1982, a joint venture agreement was completed between Canadian Occidental Petroleum Ltd. and Eldorado Nuclear Ltd. and the trenching program was initiated. This report outlines the results of the ensuing trenching and sampling program.

1.2 Location and Access

The claims are located in the southwest corner of Yukon Territory about 100 miles (160 km) northwest of Whitehorse (see Fig. 1). and 5 miles (8 km) southwest of Aishihik village. The Aishihik Road, running 80 miles (128 km) north from the Alaska Highway to Aishihik, is maintained only in summer months. The claims can be reached by flying fixed-wing to either the abandoned Aishihik airstrip 8 miles to the northeast of the claims or to the northwest shore of Sekulmun Lake from which the claims are less than a mile to the west up Thatchell Creek. The remaining distance can be covered by helicopter.

1.3 Claim Status

The claim group is recorded on Claim Map 115-H-12 in the Whitehorse Mining District. Details of claim status for those claims still held are given below (Table 1). Figure 2 and Plan O outline presently held claims. Other claim information is appended in the 1972, 1973 and 1981 reports.

The MATCH 1-6 claims were staked during the present survey to cover access to Sekulmun Lake; they were recorded after completion of work and are thus not eligible for assessment credit.

FIGURE 1

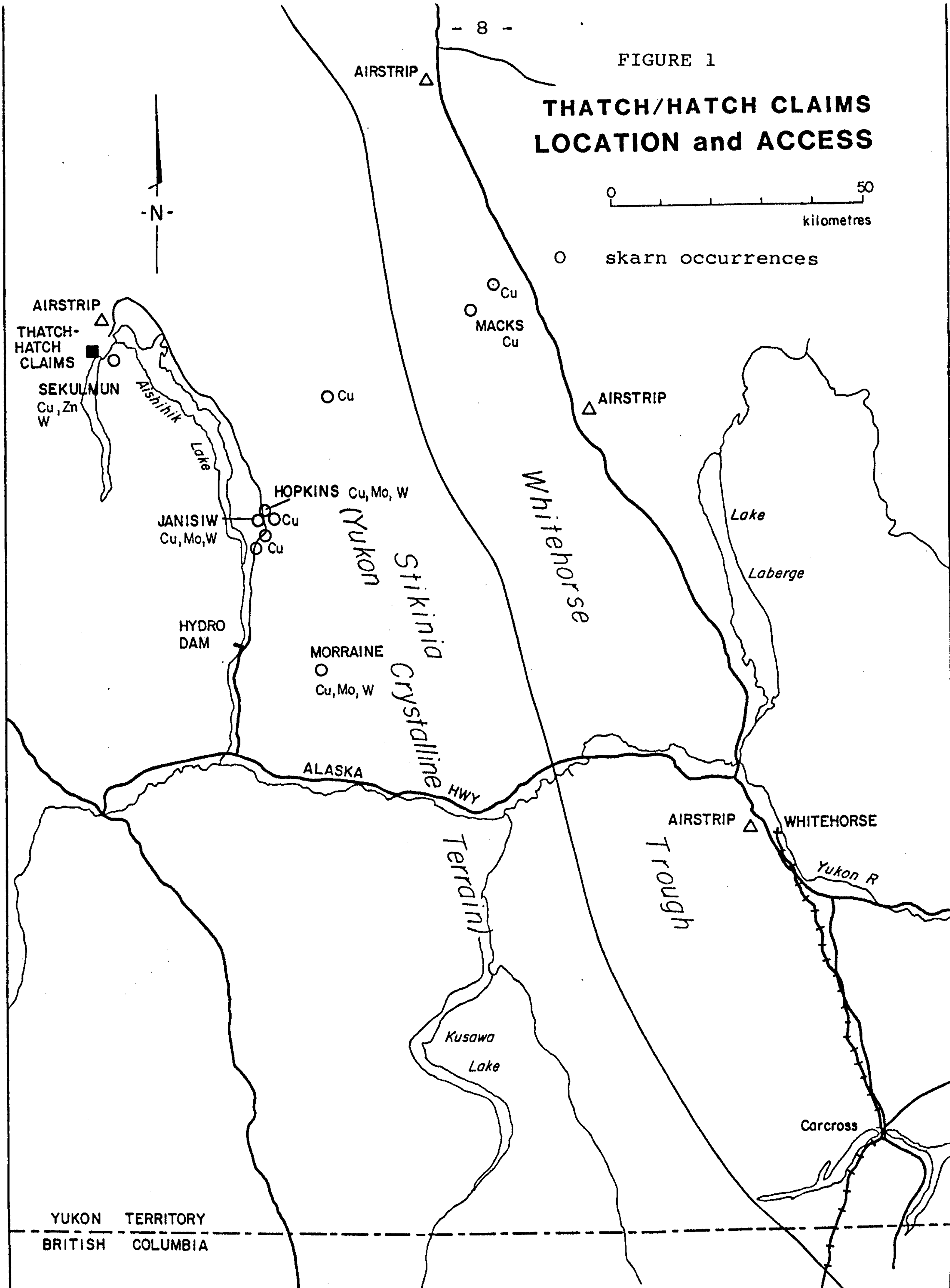

THATCH/HATCH CLAIMS
LOCATION and ACCESS
0
50
kilometres
O skarn occurrences
AIRSTRIP
AIRSTRIP
THATCH-HATCH CLAIMS
SEKULMUN
Cu, Zn W
Aishihik
Lake
Cu
MACKS
Cu
Cu
AIRSTRIP
HOPKINS Cu, Mo, W
JANISIW
Cu, Mo, W
Cu
Cu
HYDRO DAM
MORRAINE
Cu, Mo, W
(Yukon
Stikinia
Crystalline
Terrain)
Whitehorse
Trough
Lake
Laberge
ALASKA
HWY
AIRSTRIP
WHITEHORSE
Yukon R
Kusawa
Lake
Carcross
YUKON TERRITORY
BRITISH COLUMBIA

TABLE 1

CLAIM STATUS

CLAIM NAME	NO. UNITS	TAGS	DATE STAKED	DATE RECORDED	EXPIRY DATE
THATCH 16	1	Y63663	Oct. 3/71	Oct. 27/71	July 27/82
THATCH 18	1	Y63665	Oct. 3/71	Oct. 27/71	July 27/82
THATCH 29-32	4	Y63676-Y63679	Oct. 3/71	Oct. 27/71	July 27/82
HATCH 7	1	Y67650	Oct. 22/72	Nov. 6/72	Nov. 6/82
HATCH 9	1	Y67652	Oct. 22/72	Nov. 6/72	Nov. 6/82
HATCH 13-16	4	Y67656-Y67659	Oct. 22/72	Nov. 6/72	Nov. 6/82
HATCH 19	1	Y67662	Oct. 22/72	Nov. 6/72	Nov. 6/82
HATCH 21	1	Y67664	Oct. 22/72	Nov. 6/72	Nov. 6/82
HATCH 23	1	Y67666	Oct. 22/72	Nov. 6/72	Nov. 6/82
HATCH 25-30	6	Y67668-Y67673	Oct. 22/72	Nov. 6/72	Nov. 6/82
HATCH 32	1	Y67675	Oct. 22/72	Nov. 6/72	Nov. 6/82
HATCH 34	1	Y67677	Oct. 22/72	Nov. 6/72	Nov. 6/82
PATCH 1-16	16	YA74173-YA74188	Oct. 11 & Oct. 14/81	Oct. 15/81	Oct. 15/82
MATCH 1-6	6	YA74599-YA74604	Apr. 1/82	Apr. 19/82	Apr. 19/83
	45				

1.4 Physiography and Vegetation

The THATCH/HATCH claims are situated within the western Yukon Plateau at the west edge of the Aishihik basin and near the eastern limits of the Ruby Mountain Range (Bostock, 1938). Hills in the area are rounded and both hills and valleys are covered extensively with glacial rubble. Elevations on the property range from 3200 to 4600 feet above sea level (maximum relief of 1400 feet). Slopes are generally less than 10 degrees. Overall slope is from west to east with Thatchell Creek draining from the largest of several small kettle(?) lakes on the west edge of the claims into Sekulmun Lake to the east. Local slopes are controlled by north-south ridges north of Thatchell Creek and by an east-west ridge to the south. Drainage on the claims is moderate but gentle slopes on north-facing hills are constantly swampy in summer due to progressive melting of extensive permafrost.

Treeline is roughly at 3900 feet elevation above which grows moss, grass and Labrador Tea. Black spruce with lesser poplars and willows grow below the treeline.

2. WORK COMPLETED - 1982

2.1 Mobilization

A D-8K caterpillar tractor equipped with a 13 1/2 foot blade, single-toothed ripper and ice lugs was used for the trenching. Equipment was leased from General Enterprises Ltd., Whitehorse. Mobilization was accomplished by truck haulage of the tractor and low-boy flatbed trailer with fuel and equipment from Whitehorse to approximately mile 14 of the Aishihik Road. From that point, the bulldozer hauled the flat-bed to the village of Aishihik, thence by a trail to Sekulmun Lake and around the end of the lake, on the ice, to the mouth of Thatchell Creek. From this point, a new trail was cleared with the bulldozer, approximately 1 1/4 miles (2 km) into the property, and the equipment was then hauled in. Mobilization took approximately 3 1/2 days (March 25 to 28). Demobilization from the property to mile 14 of the Aishihik Road took most of 3 days to accomplish (April 7-9). Mob/demob used 58 1/2 hours of caterpillar time.

2.2 Slashing

For the satisfaction of Land Use Regulations, arrangements were made through General Enterprises for Mr. G. Washington, a local trapper/placer miner in Aishihik, to carry out "lop, limb and scatter" operations on trees felled from the mouth of Thatchell Creek to the property. All other felled trees were cleaned and flattened with the bulldozer, or buried.

On April 7, Mr. K. Guttman, Land Management Officer from Haines Jct., visited the property by helicopter. Clean-up had been carried out to his satisfaction.

2.3 Trenching

Permafrost conditions on the property resulted in very slow trenching. It is doubtful whether summer trenching would be more productive on such a short project; much time is required to allow melting.

During trenching, it was necessary to continually rip up and down the trench, as well as in two diagonal directions. This resulted in rather wide trenches with respect to depth (30 to 50 feet for 5 to 6 foot depth), and the cross-profiles of the trenches are saucer-shaped with sloping broken walls; this precluded detailed profiling of the soils and depths of trench bottoms could only be estimated to the nearest foot or six inches (30 or 15 cm) at best.

Four trenches (Fig. 2 and Plans 0 to 4) were dug, for a total of approximately 1,245 linear feet (380 m). This constitutes approximately 2,745 cubic yards (2,100 m^3) of earth moved. Details are given in Table 2. Only two of the trenches reached bedrock. Trenching consumed 87 hours of bulldozer time.

TABLE 2

TRENCHING SUMMARY

Trench	Length (ft)	Avg.width (ft)	Max.depth (ft)	Avg.depth (ft)	Volume (yd^3)
82-T-1	320	27.6	5.5	2.5	568
82-T-2					
North Zone	250	29.9	4.0	2.8	404
South Zone	235	31.9	3.5	2.4	435
82-T-3	230	42.8	5.5	3.3	818
82-T-4	210	44.6	4.0	2.8	520
TOTAL	1,245				2,745

LEGEND

I 82-T-1 1982 trench

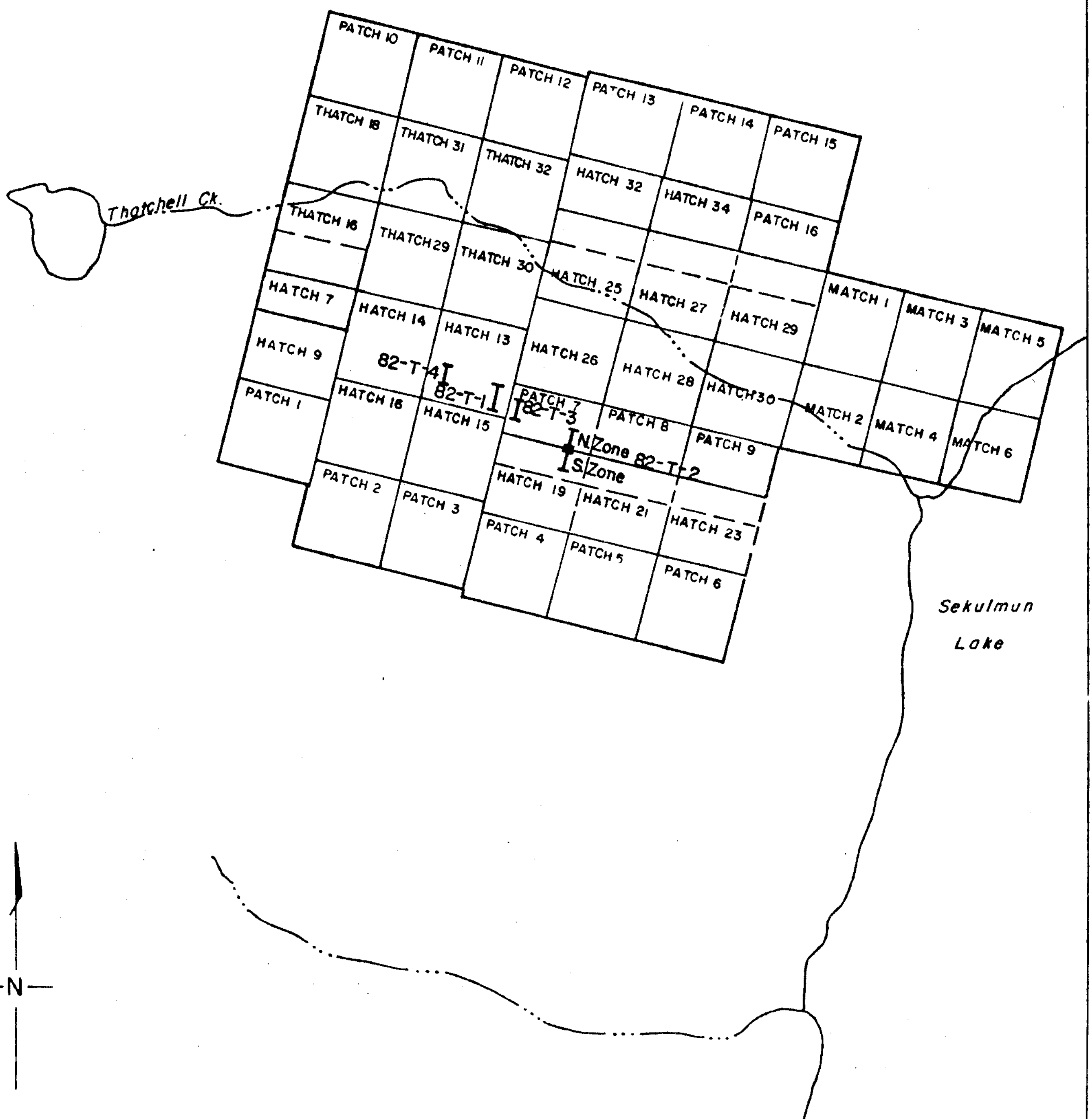
CANADIAN OCCIDENTAL PETROLEUM LTD.
minerals division

PROJECT THATCH
N.T.S. 115 H/12

CLAIM SKETCH and 1982 TRENCH LOCATIONS

0 1/2 1 mi.

Figure 2 R.M.K./sa/ June 1982



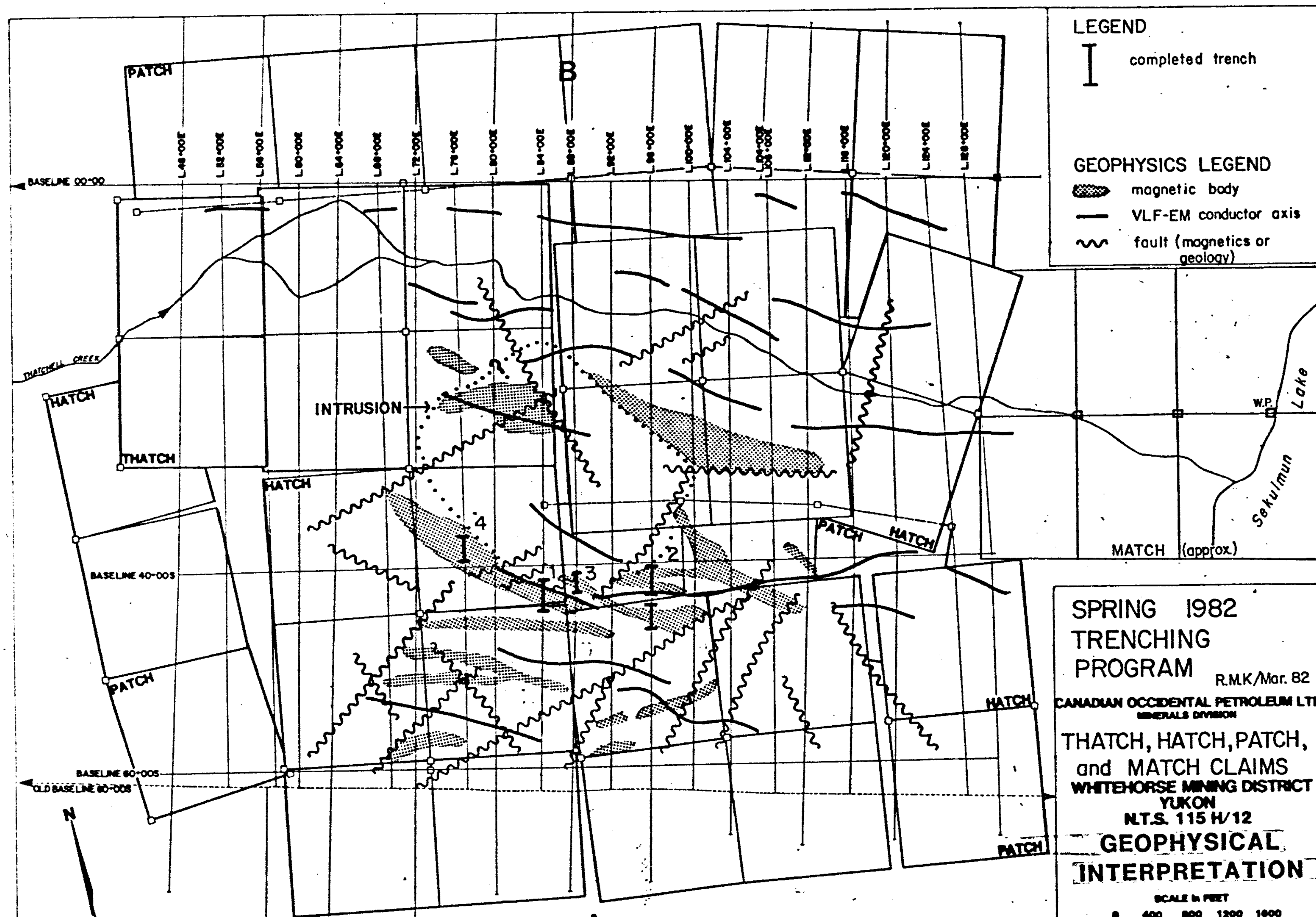

LEGEND
completed trench
GEOPHYSICS LEGEND
magnetic body
VLF-EM conductor axis
fault (magnetics or geology)
B
A
PATCH
HATCH
THATCH
MATCH (approx.)
INTRUSION
BASELINE 00+00
BASELINE 40+00S
BASELINE 60+00S
OLD BASELINE 60+00S
THATCHELL CREEK
Sekulmun Lake
W.P.
N
1
2
3
4
SPRING 1982
TRENCHING
PROGRAM
R.M.K/Mar. 82
CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION
THATCH, HATCH, PATCH,
and MATCH CLAIMS
WHITEHORSE MINING DISTRICT
YUKON
N.T.S. 115 H/12
GEOPHYSICAL
INTERPRETATION
SCALE in FEET
0 400 800 1200 1600

Figure 2A

i

2.4 Mapping and Sampling

R.M. Kuehnbaum and C.J. Richardson chained and mapped the plan outline and longitudinal profiles of all trenches (scale 20' = 1", or 1:240). Flagging tape was affixed with nails to the floor of the trench at 10-foot intervals, and this 'grid' was used for mapping control and soil sampling.

Soil samples (129 in total) were taken at 10-foot intervals down each trench. All samples were analyzed for Cu, Mo and W, and 34 samples from Trench 1 were analyzed for U (fluorimetric). Sampling and laboratory procedures are outlined in Appendix III; results are given in Appendix II.

Total count radiometric readings (BGS-1SL supplied by Eldorado Nuclear Ltd.) were taken at 10-foot intervals at flagged stations in all trenches.

Magnetic susceptibility was measured at frequent intervals (<5 to 10 ft) on all bedrock exposures in the trenches, or at 10-foot intervals over soils in the two trenches that did not reach bedrock.

Geologic mapping in Trenches 1 and 3 was carried out at 1" = 20'. Because of limited and sporadic exposure, detailed sampling was limited to zones around skarn mineralization where sulphides are present. Chip sample intervals were determined by lithology, but rarely exceed 5 ft. Other hand samples of mineralized rock from bedrock or ripped float were collected. A total of 22 chip samples and 17 grab samples were sent for analysis; all were analyzed for Cu, Mo, Zn, W, Ag and Au. Descriptions, certificates of analysis and laboratory procedures are presented in Appendices I, II and III, respectively.

2.5 Claim Tagging and Staking

C.J. Richardson tagged the posts of the PATCH 1-16 claims on March 31 and April 1, 1982.

Richardson also located the MATCH 1-6 claims on April 1, 1982. The claims were so located to cover the route of access (cat trail) to Sekulmun Lake adjacent to Thatchell Creek.

2.6 Property Visits

D. Cruickshank arrived on the property by fixed wing on April 3, 1982, to inspect the progress of the trenching for Eldorado Nuclear; he departed on the same day.

2.7 Table 3 Work Performed on THATCH, HATCH and PATCH Claims, March-April 1982

Type of Work	Man Days	No. Samples	Mo	Cu	Zn	Ag	W	U	Au	Total
			No. of Determinations							
Mapping & Sampling										
Geochemistry										
(i) Rocks		39	39	39	39	39	39	-	39	234
(ii) Soils		129	129	129	-	-	129	34	-	421
		168	168	168	39	39	168	34	39	655
Claim Staking	1									
Claim Tagging	1									

Aircraft Support

(i) Helicopter (Bell 206-B) — 2.9 hrs

(ii) Fixed wing: Beaver — 220 stat. miles, 352 km

Caterpillar D8-K

(i)	Trenching	87 hrs
(ii)	Mob + demob	58 1/2 hrs
(iii)	Standby	3 hrs
(iv)	Operator standby	19 hrs
(v)	Volume overburden displaced:	2,745 cu. yds.(2,100 m^3)

2.8 Personnel

Name/Position	Address	Dates on Property
R.M. Kuehnbaum Project Supervisor	Canadian Occidental Petroleum Ltd. 180 Attwell Drive 4th Floor Rexdale, Ont. M9W 6A9	Mapping & Sampling March 29 - April 7
C.J. Richardson Geologist	(As above)	Staking MATCH Claims April 1 Tagging PATCH Claims March 31, April 1 Mapping March 29,30,April 2-7
D. Cruickshank Geologist	Eldorado Nuclear Ltd. 502 - 45th St. West Saskatoon, Sask. S7L 6H2	Visit, April 13
D. Dixon Caterpillar Operator	General Enterprises, Whitehorse	Trenching March 29 - April 6
G. Washington Slasher	c/o General Enterprises (as above)	Slashing

3. GEOLOGY

3.1 General Comments

Bedrock geology was exposed in only two trenches (82-T-1 and -3). Since the ground remained frozen during the present survey, some of the material mapped as bedrock is in question. It is difficult or impossible in many cases to differentiate between displaced, angular fragments of local origin and of similar composition which are frozen together with clean ice, and fractured in situ bedrock where the fractures are occupied by ice. A brief summer visit would readily clarify this problem.

3.2 Glacial Geology

Watters (1981) has summarized the glacial geology of the Aishihik region and in the area of the claims. Rounded granitic boulders are found on the highest ground and ice covered the entire property. Although a WNW to NNW direction of ice advance is postulated, glacial benches on the western parts of the claims (see Plan 1, Watters, 1981) suggest that retreating ice of the Ruby sheet dammed the drainage from Thatchell valley, producing a lake.

Trenches 82-T-1 and -3 are in locally derived, thin overburden consisting mostly of broken bedrock in a clay-sand matrix with rare, rounded, exotic boulders. Trenches 82-T-2 and -4, however, are underlain by thicker, gravelly rubble with a greater proportion of exotic granitic cobbles; in trench 82-T-2, the soil is more sandy in the northern zone, more clay-rich in the southern zone.

It is possible that the nature and thickness of overburden in the area of the trenches was controlled by a paleo-shoreline at approximately 3950 ft elevation. Most of the outcrop on the claims occurs at elevations over 3950 ft. Outcrops within the body of quartz monzonite occur below 3900 ft elevation, but this could be due to erosion of overburden subsequent to the falling of the level of the ice-dammed lake. The characteristics of magnetic anomalies (Jagodits, 1982) suggests northward thickening overburden towards Thatchell Creek.

3.3 General Geology

The claims are situated within a tectonic subdivision known as the Yukon Crystalline Terrane which consists regionally of rocks resulting from moderate temperatures and pressures of metamorphism, and divisible into four units: biotite schist, overlain sequentially by marble, quartzite, and amphibolite/ultramafic, all referred to as Yukon Group or Yukon Metamorphic Complex (Tempelman-Kluit, 1974, 1981). The rocks are of unknown age but were metamorphosed and folded in the Paleozoic(?) and were subsequently intruded by Triassic to Jurassic hornblende granodiorite and quartz monzonite (I type) and later by Paleocene hornblende-granodiorite and alaskite-biotite granite (also I type). Volcanic rocks overlying the Yukon

Crystalline Terrane include the felsic to intermediate Mt. Nansen Group which is conformably overlain by mafic Carmacks volcanic rocks, both of Paleocene age.

The property is underlain principally by quartzitic rocks of the Yukon Metamorphic Complex (Plan 5). Comprising a minor part of the section are recrystallized limestone (locally with calc-silicate minerals). The complex has been intruded by a quartz monzonite of unknown age, which has given rise to local skarn development in the calcareous units. Late dykes of quartz-feldspar porphyry and quartz veins are locally present (Watters, 1981).

The following Table of Formations is compiled using the results of previous and the present surveys.

3.4 Table of Formations

TERTIARY?

Intrusive Rocks

Qfp	Quartz-Feldspar Porphyry

MESOZOIC OR TERTIARY

Intrusive Rocks

$msQM_z$	Muscovite-Quartz Monzonite
$biQM_z$	Biotite-Quartz Monzonite
gQM_z	Greisenized Quartz Monzonite
QV	Quartz veins (age uncertain)

UPPER PROTEROZOIC-LOWER PALEOZOIC (?)

Yukon Complex Metasedimentary Rocks

Skarn

Sk	Skarn - variable proportions of garnet, diopside, actinolite, quartz, pyrite, pyrrhotite, magnetite, calcite, scheelite, chalcopyrite.

Carbonate Rocks

Ls	Recrystallized limestone
Lsc	Calc-silicate-bearing recrystallized limestone

Clastic Measedimentary Rocks

csh	Calc-silicate Hornfels, Diopsidic Quartzite
qm	Micaceous Quartzite
q	Metasiltstone (Quartzite)
Sq	Quartzitic Mica Schist
Sm	Mica Schist
Gn	Quartz-Feldspar-Biotite Gneiss

3.5 Description of Units (Plans 1 to 5)

Clastic Metasedimentary Rocks underlie most of the property and are abundant in the trenches. Most common is a white to buff-grey, poorly banded meta-siltstone (quartzite - q). The primary bedding of the rock is difficult to distinguish. Micaceous quartzite (qm) contains a fair percent muscovite and/or phlogopite.

Frequently exposed in the trenches is a pale green, very fine-grained, compact silicified quartzite. This has been termed a "diopsidic quartzite" or "calc-silicate hornfels" (csh). Although the derivation of the rock is almost certainly from quartzite, it has probably been affected by some metasomatism during the skarnification process of the carbonate rocks. The "calc-silicate hornfels" is most conspicuous around the skarn zones. It should be noted that the "calc-silicate hornfels" described by Watters (1981) refers incorrectly to recrystallized limestone bearing calc-silicate minerals (garnet, diopside etc.); this mineralogy is probably derived from either regional metamorphic or contact metamorphic processes, and the terminology should not be confused with the traditional usage of calc-silicate hornfels (see Table of Formations).

Watters (1981) has described gneiss (Gn) and mica schist (Sm) on the property. A small amount of quartzitic schist (Sq) was found in Trench 82-T-1.

Carbonate Rocks (Ls and Lsc) described by Watters (1981) are not present in the trenches. It is assumed that they have been completely skarnified in proximity to the quartz monzonite body.

Skarn (Sk) occurs in both trenches 82-T-1 and 82-T-3. The rock is hard, compact, fine- to medium-grained, massive, and has a dense fabric. Since no carbonate minerals are present, replacement of carbonate was extensive and thorough. Minor quartz monzonite is exposed in both trenches as small sills or dykes, but it is likely that most of the heat and hydrothermal activity was derived from the main quartz monzonite body to the north.

Mineralogically, the skarn is highly variable in character. The rock consists of varying proportions of garnet, quartz, diopside, actinolite, magnetite, pyrite and pyrrhotite. Chalcopyrite and scheelite are infrequently present, generally in trace amounts. There is a hiatus between skarns rich in calc-silicate minerals and those rich in magnetite, pyrrhotite or pyrite. A small block of skarn float (82-YP-9034R) from the north end of trench 82-T-3 contains magnetite, but normally magnetite (if present) varies between <1% and 40%. Pyrite and pyrrhotite generally occur as disseminations or along annealed fracture planes (late-stage mineralization?). Pyrrhotite + pyrite generally comprise a few percent of the rock, or less, but may be as abundant as 20-50%. The relationship between the two minerals is obscure.

Quartz Monzonite ($biQM_z$, gQM_z) occurs in both bedrock areas. At the south end of Trench 82-T-1 biotite-quartz monzonite forms a 7-foot wide dyke or sill. Watters (1981) reports muscovite - and muscovite-biotite-quartz monzonite elsewhere on the property.

A small zone of greisenized quartz monzonite outcrops at the south end of Trench 82-T-3. The rock contains abundant (5%) coarse sericite, secondary granular quartz and trace disseminated pyrite. In this locality, there are abundant, subparallel, narrow (1 inch) chloritic quartz veinlets cutting the quartz monzonite; the hydrothermal event responsible for the quartz veins probably caused the sericitic alteration of the intrusive.

Quartz Veins (Q.V.), in trench 82-T-2, occur as 0.5-2.0 foot wide, highly fractured, semi-continuous bodies, striking slightly east of north. Although generally barren and white, they locally contain disseminated pyrite (trace to <3%), molybdenite (traces) and scheelite (trace to <0.1%).

The age and provenance of the quartz veins is uncertain. They are related either to the muscovite-quartz monzonite body to the north or to the quartz-feldspar porphyry dykes reported by Watters (1981). The porphyry dykes are possibly related to the Mt. Nansen Volcanics of Tertiary age.

3.6 Structure

In the trenches little is known about the structure of bedrock. The broken nature of the rock and its generally massive character precluded accurate measurement of attitudes. The skarns, however, strike approximately east-west.

In Trench 82-T-1, two opposing attitudes of primary banding in quartzites were measured. The magnetic profile (Plan 1) indicates that the skarn zone dips moderately to the south. Thus there may be synclinal and anticlinal structures to the south, and the magnetic anomaly at the south end of the trench could represent skarn being folded back to near subcrop. In the trench, a fragment of quartzite displays a primary banding parallel to an S_1 foliation, as well as a faint S_2 foliation defined by recrystallization of micas. There are, consequently, at least two phases of deformation. Watters (1981) reports a "crenulation lineation" that may be the intersection of the two planes of foliation.

Quartzite in the trenches is highly fractured and breaks easily along fracture planes. (This is the cause of uncertainty of mapping bedrock vs. angular float). The skarns tend to be massive and competent. The quartz veins probably occupy fractures or minor faults subparallel to Trench 82-T-3.

4. ECONOMIC GEOLOGY

Sulphides, mostly pyrite and pyrrhotite, are widespread in the bedrock exposed in Trenches 82-T-1 and -3. The minerals of potential interest - chalcopyrite, molybdenite and scheelite - are not abundant in either trench, and results are largely uninteresting.

4.1 Trench 82-T-1 (Plan 1)

The main skarn in Trench 82-T-1 is intermittently exposed, but in two zones appears to be about 10 to 10.5 ft in apparent width; the magnetic profile indicates a moderate dip to the south and the true thickness may be approximately 7 to 7.5 ft. The skarns are relatively rich in pyrite, pyrrhotite and magnetite. In the chip sampled area, rotten soil-like calc-silicate-bearing material is interpreted to be highly oxidized skarn and was consequently sampled.

Neither scheelite nor molybdenite was observed in the skarn zones. Chalcopyrite is present in quantities from trace to about 1% in selected hand specimens.

Assuming that intervals 9004R and 9005R represent the same zone, the average grade of mineralization over 10.5 ft across the main skarn is: 277 ppm Mo, 776 ppm Cu, 90 ppm Zn, 1.9 ppm Ag, 9 ppm W and 8 ppb Au (Table 4). Selected grab samples of skarn float over the main zone contain up to 285 ppm Mo, 9500 ppm (0.95%) Cu, 400 ppm Zn, 10.5 ppm Ag, 18 ppm W and 25 ppb Au (9014-9017R). The calc-silicate hornfels and quartzite enveloping the main skarn zone is geochemically similar to the skarn: average of 225 pm Mo, 242 ppm Cu, 144 ppm Zn, 0.5 ppm Ag, 70 ppm W and <5 ppb Au. No scheelite was observed, although the tungsten content is higher than any zone in the skarn.

A small, 2-foot square bedrock area of calc-silicate-rich skarn (the south zone) occurs about 20 feet south of the main zone. This probably represents a small lens in quartzitic rock. It is not geochemically similar to the main zone skarns (82-YP-9000R).

<u>Trench 82-T-3</u> (Plan 3)

Four skarn zones were exposed in Trench 82-T-3. The uppermost skarn (1) is at least 5.7 ft in apparent width. Although no bedding attitudes could be measured in the vicinity of the skarn, it appears to dip at a fairly shallow angle to he north. Geochemical results are low (Table 5, 82-YP-9012R). It contains very little magnetite or pyrrhotite.

Skarn 2 is 3.3 ft in apparent thickness, and is probably a lens encompassed by quartzite and calc-silicate hornfels. A chip sample yielded very low results (82-YP-9020R, Table 5).

Skarn 3 is probably the principal cause of the total field mangetic anomaly over the trench. The skarn contains abundant magnetite ($\pm$20%?). The apparent width of the zone is probably at least 8 ft, and the magnetic profile suggests a moderate dip to the north (<60°). The zone is incompletely exposed, and two subparallel chip samples of 6.0 ft and 2.6 ft were taken across the zone (82-YP-9026R and 9027R, respectively). These zones average 488 ppm Mo, 393 ppm Cu, 193 ppm Zn, 0.4 ppm Ag, 23 ppm W and 20 ppb Au over an apparent width of approximately 4.5 ft. A grab sample (9023R) taken from the edge of a quartz vein, presumably on the south edge of the skarn zone, contains 260 ppm Mo, 270 ppm Cu, 155 ppm Zn, 0.6 ppm Ag, 7 ppm W and <5 ppb Au. Although there is modest geochemical enrichment, there is little possibility of unexposed material that is ore-grade. Selected hand specimens of rubble above Skarn 3 collected during trenching (82-YP-9036R, 9037R) contain 180-425 ppm Mo, 570-1350 ppm Cu, 70-80 ppm Zn, 1.5-2.5 ppm Ag, 15-300 ppm W and 10-160 ppb Au.

Skarn 4 is probably lens-like. A 3.3 foot chip sample (82-YP-9033R) contains 330 ppm Mo, 770 ppm Cu, 100 ppm Zn, 2.6 ppm Ag, 450 ppm W and 115 ppb Au. Although not ore-grade mineralization, the tungsten content (0.05% WO_3) is the highest of samples taken in the trenches.

The calc-silicate hornfels and quartzite in the skarn zone are frequently geochemically enriched in metals, particularly between Skarns 3 and 4. In this area (samples 82-YP-9028R to 9031R) average metal contents are 485 ppm Mo, 460 ppm Cu, 120 ppm Zn, 1.9 ppm Ag, 96 ppm W and 53 ppb Au across approximately 9 feet of apparent width. Traces of molybdenite and disseminated scheelite were found in this zone. The gold contents vary between 5 and 125 ppb Au. Between Skarns 2 and 3, the average metal contents (samples 82-YP-9021R and -9025 R) are approximately 75 ppm Mo, 275 ppm Cu, 105 ppm Zn, 0.5 ppm Ag, 58 ppm W and 123 ppb Au; the probable apparent width across strike is 9 ft.

Only three samples of quartz vein were taken. Sample 82-YP-9035R grab is from float in the trench above later exposed quartz vein, and contains about 3% coarse-grained pyrite and traces of scheelite. The three rocks are enriched in silver (2.6-8.3 ppm Ag) and tungsten (275-420 ppm W). Sample 82-YP-9024R, a composite grab sample over a 2-foot wide quartz vein with traces of pyrite, molybdenite and scheelite, is highly enriched in gold (0.497 oz/ton Au); no free gold was apparent in either the hand specimen or a panned fraction of the pulp.

In summary, the skarn zones of trenches 82-T-1 and -3, and in some cases their encompassing quartzitic rocks and calc-silicate hornfels, are geochemically enriched in molybdenum, copper, tungsten, silver and (in trench 82-T-3) gold. No material sampled approaches oregrade in either trench. An interesting corollary to the sampling is the apparent local enrichment of gold, molybdenum and tungsten in quartz veins.

TABLE 4

ROCK SAMPLING RESULTS, TRENCH 82-T-1

Sample	Interval	Type	Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
Southern Zone								
82-YP-9000R	grab	sk	245	960	85	3.6	12	5
Main Zone								
-9001R	6.0'	csh	200	320	160	0.8	125	<5
-9002R	0.8'	sk	78	325	66	1.8	6	20
-9003R	1.0'	oxid.sk	710	2200	190	2.9	13	<5
-9004R	0.9'	oxid.sk	260	210	25	0.9	7	5
-9005R	4.2'	sk	300	1600	88	2.3	12	5
-9006R	2.0'	sk	370	1250	195	1.6	8	10
-9007R	2.1'	oxid.sk	240	150	66	2.0	8	15
-9008R	1.5'	sk	95	300	115	0.5	5	5
-9038R	1.3'	csh	250	164	128	0.1	15	<5
-9009R	grab	sk	35	290	195	0.2	22	10
-9014R	grab	sk	210	1480	85	3.5	5	20
-9015R	grab	sk	285	130	365	0.1	18	5
-9016R	grab	sk	55	9500	400	10.5	5	25
-9017R	grab	sk	68	320	195	0.6	11	<5

csh = calc-silicate hornfels
sk = skarn
oxid. = oxidized, rotten

TABLE 5

ROCK SAMPLING RESULTS, TRENCH 82-T-3

Sample	Interval	Type	Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
Quartzite and Skarn, Bedrock Samples								
82-YP-9012R	5.7'	Sk 1	64	700	170	0.9	85	5
-9013R	6.0'	q+csh	28	150	160	0.1	22	<5
-9018R	grab	qm	120	370	100	0.5	5	<5
-9019R	5.7'	csh+qm	96	190	100	0.3	32	5
-9020R	3.3'	Sk 2	31	160	135	0.2	16	5
-9021R	2.4'	q	240	320	88	0.8	70	200
-9022R	grab	q	76	100	120	0.1	11	<5
-9025R	10.0'	qm+csh	35	263	110	0.4	55	105
-9023R	grab	Sk 3	260	270	155	0.6	7	15
-9026R	6.0'	Sk 3	335	240	195	0.3	20	30
-9027R	2.6'	Sk 3	640	285	190	0.4	25	10
-9028R	5.0'	qm+csh	890	500	93	0.5	90	5
-9029R	1.5'	qm+csh	130	360	110	0.4	125	5
-9030R	6.0'	qm	265	600	160	4.0	130	125
-9031R	3.3'	qm	400	165	86	0.6	30	10
-9033R	3.3'	Sk 4	330	770	100	2.6	450	115
Skarn Float								
-9034R	grab	Sk	11	108	550	0.1	3	5
-9036R	grab	Sk 3?	180	1350	80	4.2	300	160
-9037R	grab	Sk 3?	425	570	70	1.5	15	10
Quartz Veins								
-9024R	comp. grab		32	14	40	8.3	300	0.497 oz/ton
-9032R	grab		62	260	23	3.8	420	30
-9035R	grab	float	14	338	13	2.6	275	25
Greisenized Quartz Monzonite								
-9011R	grab		24	160	65	0.7	5	<5

sk = skarn
q = quartzite
qm = micaceous quartzite
csh = calc-silicate hornfels

5. SOIL GEOCHEMISTRY AND GEOPHYSICS

5.1 Trench 82-T-1 (Plan 1)

Spot magnetic susceptibility readings are plotted on bedrock areas. Values on quartzite and calc-silicate hornfels are between 0 and 3.0 x 10^{-3} cgs, reflecting varying pyrrhotite contents. The susceptibility of skarns varies between 0.2 - 33 x 10^{-3} cgs, reflecting locally high magnetite (and pyrrhotite) content; some of the lower readings are suspect and may be due to instrumental malfunction in cold weather. The high readings and, in general, high content of magnetic minerals in the skarns adequately explain the total field magnetic anomaly.

Radiometric values fall between 55 and 90 cps. The profile shows that highs and lows may be explained by bedrock of quartzite and areas of overburden, respectively.

The soils along the sample line in the trench bottom are varying mixtures of sand and clay, and contain abundant angular fragments of quartzite as well as rare rounded cobbles of granitic rocks (principally near surface). The sand and clay are principally derived from glacial activity, but the contained rock chips are probably of very local origin (on the east side of the trench, the skarn comes to within about 0.5 feet of original surface).

From about 41+10S to 41+70S, the soil is distinctly limonite-stained (reddish). This corresponds to the skarn zone, and slightly downslope from it.

Soil geochemistry profiles show strongest response in W, Cu and Mo over the skarn zone (samples taken virtually on or between bedrock areas) in the reddish soil zones: up to 360 ppm MO, 278 ppm Cu and 75 ppm W. At the south end of the trench, there are broad highs of Mo (up to 140 ppm), Cu (up to 192 ppm) and W (up to 50 ppm). The magnetic profile suggests a small skarn body at about 42+75S; the high soil contents of copper, molybdenum and tungsten are probably displaced downhill. Elevated contents of copper (up to 258 ppm), molybdenum (up to 145 ppm) and uranium (up to 11.5 ppm) are present in soils at the extreme north end of the trench; these are unexplained since there is no magnetic disturbance in the area. It is noteworthy that this zone is the only of response for uranium in the trench (0.5-11.5 ppm U_F).

The soil profile shows, from depths of 0.67 ft to 1.8 ft, downward increasing copper contents in the soil (98-235 ppm). Molybdenum content fluctuates (62-145 ppm), and tungsten content (50-900 ppm W) increases abruptly in the basal soil just above bedrock (at 2.0 ft) of sulphide-magnetite-bearing skarn. All samples were taken below the peat and ash layers (maximum of 0.3 ft deep, disrupted by bulldozing). It is evident that there is an upward dispersion of metals through the soil, and that it may be critical to sample near bedrock for best tungsten response; the cause of basal soil tungsten enrichment (900 ppm W) is unclear since there is so little tungsten (average 9 ppm W) in the skarns.

5.2 Trench 82-T-2 (Plan 2)

Stripping was restricted to two zones (northern and southern) in order to sample deeply over two magnetic anomalies.

The southern zone is underlain by a clay-rich C horizon composed of clay and sand with abundant gravel-sized, subrounded to subangular cobbles of quartzite and granite, and small, rounded cobbles of granitic rocks. The soil of the northern zone is a sandy till with well-rounded boulders of granitic rocks (mostly biotite-quartz monzonite and alaskite) with minor, smaller boulders of quartzite. Between 40+20S and 40+60, there are rare, rounded cobbles of whitish-grey recrystallized limestone with epidote-garnet clots (e.g. 82-YP-9010R). All glacial material in the trench is thought to be exotic.

Magnetic susceptibility readings yield an essentially featureless profile in the south zone, with the possible exception of a slight rise (up to 0.2×10^{-3} cgs) over the magnetic anomaly; this may reflect secondary Fe minerals in the soil. The magnetic anomaly (peaking about 3000 nT above background) is indicative of a tabular body dipping about 60°-70° to the north.

The northern zone magnetic anomaly suggests a small (1,000 nT) disturbance at about 41+85S, superimposed on a broader northward increasing gradient. The body probably dips very steeply to the north or is vertical and may lie at

30-50 ft depth. The magnetic susceptibilities of soils (0 - 0.1 x 10^{-3} cgs) are very low.

The radiometric profiles (in both zones) are featureless. Readings vary between 40 and 80 cps.

Soil contents of molybdenum, copper and tungsten are low (7-20 ppm Mo, 22-94 ppm Cu, 6-75 ppm W) in both the northern and southern zones. Profiles indicate erratic distribution of all metals, and there are no areas where co-incident peaks are readily evident. The trenching did not reach depths sufficient to detect the zone of dispersion of the interpreted skarn zones beneath the magnetic anomalies.

5.3 Trench 82-T-3 (Plan 3)

Magnetic susceptibility readings are shown in plan format on bedrock areas. Skarn Zone 1 has a measured susceptibility of 0.1 - 4.1 x 10^{-3} cgs; the magnetic profile does not show a disturbance in this area, probably due to the wide station interval (25 feet). There is no magnetic disturbance above Zone 2, since the magnetite-bearing pods are small and lensoidal. The 1,300 nT positive anomaly above Zone 3 is readily explained by measured magnetic susceptibilities of 0.2 - 33 x 10^{-3} cgs. Skarn Zone 4 is weakly magnetic (1.4 x 10^{-3} cgs) and is not evident on the magnetic profile.

The radiometric response is higher over quartzite bedrock than over the skarn zones. The variation of readings (45-120 cps) is more pronounced than in other trenches.

Buff-red to brick red soils from surface to trench bottom are characteristic over Skarn Zones 2 to 4, and downslope. Virtually all of the soil samples were taken very close to bedrock. The profiles show minor peaks (up to 270 ppm Cu, 315 ppm Mo and 90 ppm W) 10 to 30 ft downslope from Skarn 1. The strongest anomalies are located at and up to 30 feet downslope from the zone of Skarns 2 to 4; part of the dispersion could be due to debris pushed by the bulldozer. In this zone, metal contents peak at 412 ppm Cu, 500 ppm Mo and 300 ppm W. It is apparent that there are no buried skarns.

Because of the broken and covered nature of the trench walls, no soil profile could be taken. Soil samples taken by Watters (1981), however, contained 76-200 ppm Mo, 84-350 ppm Cu and 20-70 ppm W at 41+00, 42+00, and 43+00S, with the highest values at 42+00S. A pit dug at 43+00S shows sharply increasing metal contents beneath the second ash horizon (at about 10" depth), and contents as high as 330 ppm Cu, 160 ppm Mo and 35 ppm W between 0.8 and 2 ft. depth. At 3.5 ft depth (82-YP-9129), metal contents are not significantly different (140 ppm Cu, 220 ppm Mo, 20 ppm W). It is possible, as opposed to data from 82-T-1, that sampling immediately beneath the ash horizon is effective, provided that bedrock is relatively close to surface.

5.4 Trench 82-T-4

The trench did not reach bedrock, and attained a maximum depth of 4 feet. Initial stripping was encouraging since red-stained peat and clay were uncovered in the vicinity of 37+00S; the stained soil, however, disappeared at depth.

The trench is completely underlain by glacial gravel composed of clay, sand, gravel-sized rock fragments and some boulders. The cobbles and boulders are primarily well-rounded to sub-rounded, and consist primarily of a wide variety of granitic rocks (biotite-granodiorite, diorite, quartz diorite, amphibolite). There are rare cobbles of quartzite, micaceous quartzite and quartzitic biotite schist. Because of the obvious exotic nature of the erratics, no rock samples were taken.

The radiometric profile is essentially featureless.

The magnetic body causing the anomaly in the trench area is estimated to be quite deep. There are two possible interpretations: either the anomaly is caused by a deep, essentially vertically dipping body at about 37+60S with a smaller body at 36+40S, or the anomaly could be the composite of a broad, weakly magnetic zone with a more strongly magnetic zone at 37+60S.

Magnetic susceptibility of the soils varies from $0 - 0.3 \times 10^{-3}$ cgs. Although the maximum range is close to the accuracy of the instrument, readings were frequently repeated after zeroing, and found to be identical. Of note, the anomalous zone from 36+80S to 37+80S roughly corresponds to the limonitic zone in the upper soils of the trench. This may well reflect minor magnetite in the soils or, more likely, secondary Fe oxides. The source of the Fe oxides could be from beneath (i.e. the magnetic zone) or from an uphill source. The peak at 38+20S (0.3×10^{-3} cgs) is unexplained.

Soil geochemistry is difficult to interpret. Molybdenum and copper contents are generally low (32-104 ppm Cu, 18-71 ppm Mo), although tungsten is relatively enriched (17-150 ppm W). This essentially parallels the results of 1981 surface soil sampling (Watters, 1981) since the target is basically a magnetic/tungsten-in-soil anomaly, although a soil sample taken at 37+00S in 1981 also contained 49 ppm Mo.

6. CONCLUSIONS AND RECOMMENDATIONS

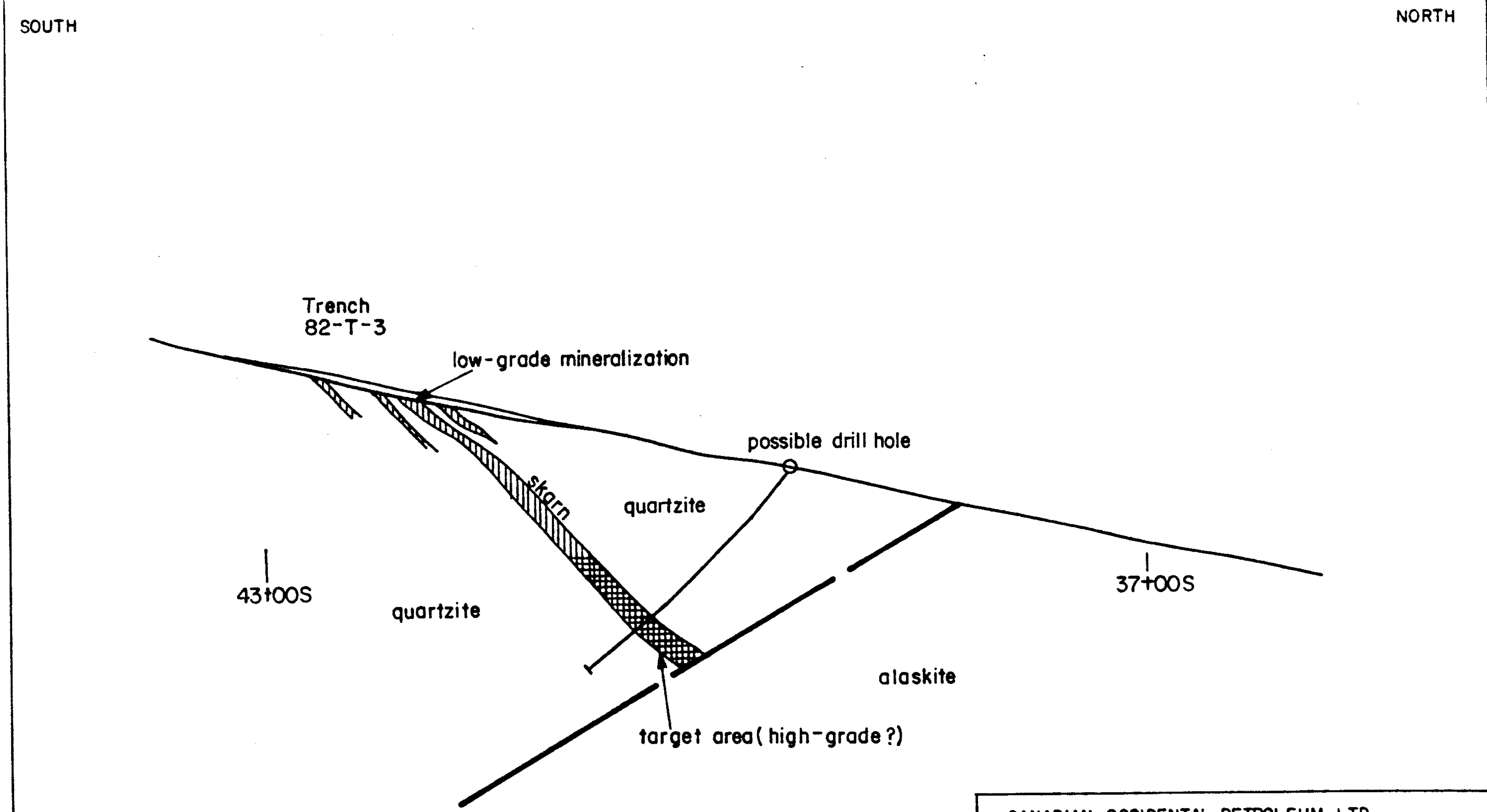
6.1 Discussion and Conclusions

Watters (1981, p.27) discussed skarn mineral occurrences in Yukon Crystalline Terrace in the Aishihik Lake area (Fig. 1). These are principally magnetite-pyrrhotite bearing skarns which are enriched in copper (0.5% - 1.9% Cu over 12 to 61 ft in drill core and chip samples; Tempelman-Kluit, 1973; Archer-Cathro Inventory, 1972; Morin, 1981). In addition, Morin (1981) reports hand specimens with up to 2.0% Cu, 7.2% Zn, 800 ppm W, 3300 ppm Mo, and 1300 ppb Au. At the Sekulmun Lake showing, about 3 miles east of THATCH/HATCH, diamond drilling intersected up to 1.84% Zn over 4.5 ft. In general, the Aishihik area skarns in Yukon Crystalline Terrace are principally copper occurrences with minor enrichment in other metals. Since the skarns have formed as the result of the emplacement of granite rocks of a wide variety of ages and lithologies (Tempelmän-Kluit, 1973), it appears that the dominant metallogenic control is the geochemistry of the host rocks. Although no grades of economic interest have been encountered at THATCH/HATCH, geochemistry suggests metal enrichment, similar to other skarns in the area, although at THATCH molybdenum and copper contents are about equally enhanced in most of the skarn and calc-silicate hornfels and zinc content is uniformly low. Gold and tungsten enrichment is local.

Very little of the potential target area of THATCH/HATCH has been investigated. In strike length approximately 10,000 feet of presumably magnetite-bearing skarn are thought to surround the central quartz monzonite body. The present work has exposed narrow skarn in two locations approximately 350 feet apart, and the target is thus poorly tested. In addition, there are numerous, more weakly magnetic bodies south of the present trenches (Jagodits, 1982). Limestone is known to be in excess of 50 feet thick (Plan 1, Watters, 1981) in the southwest part of the claims; both trenches 82-T-1 and 82-T-3 expose skarn near the end of two subparallel magnetic anomalies (Plan 6), and the lensoidal ("boudinaged") nature of carbonate rocks in the Yukon Complex Metasedimentary Rocks suggests that the skarns may widen along strike, thus presenting more favourable targets. The distribution of magnetic anomalies south of the present trenches (Jagodits, 1982; Plan 6, this report) suggest that the quartz monozonite body dips to the south. If this is true, ore-grade mineralization could be expected to occur at depth closer to the contact between skarn and intrusive rock (Figure 3). Since the distribution of ore-grade mineralization in many skarn deposits is unpredictable, especially since the structural conditions at the time of the pyrometasomatic process are unknown, the poor results from the 1982 trenching program do not preclude economic mineralization on the THATCH/HATCH claims.

The gold-molybdenite-scheelite-pyrite-bearing quartz veins encountered in trench 82-T-3 are of interest. There are two possible origins of the veins:

a) They are the result of the same hydrothermal processes which produced the skarn mineralization around the quartz monzonite body. This is suggested by the similarities in metal enrichment of the skarn and quartz veins. Samples of the main muscovite-quartz monzonite (actually alaskite) body to the north - sampled by Watters (1981) - have a vaguely saccharoidal texture, and the absence of biotite plus highly variable grainsize imply some sort of hydrous autometamorphism/autometasomatism. Traces of disseminated molybdenite in the quartz monzonite (3-120 ppm Mo, average 40 ppm Mo in 1981 specimens) may have been introduced at this stage. There is little evidence in outcrop for a



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Project Thatch and Match
Whitehorse Mining District, Yukon

Schematic, Geologic Cross Section through Trench 82-T-3 Line 88+00 E

Scale
0 100 200 feet

R.M.K./sa/June 1982

Figure 3

"porphyry-type" system (ie. mineralized fracture-related alteration) but there could be an extensive quartz vein system developed at the margin of the quartz monzonite.

b) Tertiary Mt. Nansen volcanic rocks and coeval (?) miarolitic alaskite (Tgal) outcrop to the south of the THATCH/HATCH claims (Tempelman-Kluit, 1973). Elsewhere in the area, in the Mt. Nansen and Mt. Freegold districts north of Aishihik Lake, base and precious metal-bearing quartz veins occur in Tertiary Mt. Nansen extrusive and intrusive rocks. The gold-quartz mineralization on THATCH/HATCH could thus be the result of a Tertiary event unrelated to the "quartz monzonite".

6.2 Recommendations

1. It is recommended that the quartz veins exposed in trench 82-T-3 be examined and sampled in greater detail to determine if the gold mineralization is consistent and of economic interest. Watters (1981) located several other areas of quartz veins and these should similarly be examined. In addition, it would be worthwhile to re-examine the skarn exposures in the trenches to determine if what is mapped as bedrock is indeed so. Both of these studies could be carried out quickly in the summer months.
2. Because trenching has been shown to be impractical, the next phase of physical work on the THATCH/HATCH claims

would necessitate diamond drilling. Due to the extensive target areas that require examination, and the significant cost of mobilization of equipment, it is recommended that at least 3,000 ft of drilling be carried out (cost: $285,000 to $300,000) as ten holes of 300 feet each. Because Thatchell Creek is frozen to the bottom in winter, drilling would have to be carried out in the summer months, but equipment could be mobilized in late winter via the Aishihik road or by fixed wing to the mouth of Thatchell Creek.

3. Prior to diamond drilling, additional geophysics might be required to detail anomolies. This would include a magnetometer survey on a fill-in grid around BL 40+00S with very close-spaced readings along new and existing lines, and possibly a MAXMIN survey which would give an indication of target depth.

Respectfully submitted,

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Toronto, Ontario
June, 1982

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APPENDIX I

ROCK DESCRIPTIONS

PROJECT THATCH

ROCK DESCRIPTIONS

82-YP-9,000R

Garnet-diopside-amphibole skarn, 2% disseminated pyrrhotite (and trace magnetite?).

Mo	Cu	Zn	Ag	W	(ppm)	Au	(ppb)
245	960	85	3.6	12		5	

82-YP-9,001R
(chip/6.0 ft)

Siliceous calc-silicate hornfels composed of diopside, amphibole, trace garnet, 1-2% disseminated euhedral pyrite.

Mo	Cu	Zn	Ag	W	(ppm)	Au	(ppb)
200	320	160	0.8	125		<5	

82-YP-9,002R
(chip/0.8 ft)

Highly gossanized skarn. Compacted soil-like material - possibly not bedrock.

Mo	Cu	Zn	Ag	W	(ppm)	Au	(ppb)
78	325	66	1.8	6		20	

82-YP-9,003R
(chip/1.0 ft)

Massive pyrite-amphibole skarn. Minor magnetite (<1%). Trace chalcopyrite.

Mo	Cu	Zn	Ag	W	(ppm)	Au	(ppb)
710	2200	190	2.9	13		<5	

82-YP-9,004R
(chip/0.9 ft)

Questionable bedrock of highly gossanized skarn, soil-like. Minor fresh magnetite-pyrite-amphibole skarn.

Mo	Cu	Zn	Ag	W	(ppm)	Au	(ppb)
260	210	25	0.9	7		5	

82-YP-9,005R
(chip/4.2 ft)

Amphibole-pyrite-quartz-garnet-diopside skarn. Minor magnetite, pyrrhotite, chalcopyrite.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
300	1600	88	2.3	12	5

82-YP-9,006R
(chip/2.0 ft)

Pyrite-pyrrhotite-magnetite-amphibole-quartz skarn, local very fine-grained, disseminated chalcopyrite.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
370	1250	195	1.6	8	10

82-YP-9,007R
(chip/2.1 ft)

Rotten calc-silicate skarn, possibly soil.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
240	150	66	2.0	8	15

82-YP-9,008R
(chip/15 ft)

Calc-silicate hornfels and pyrrhotite-magnetite (-pyrite-chalcopyrite)-quartz-amphibole skarn.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
95	300	115	0.5	5	5

82-YP-9,009R
(composite grab)

Pyrite-pyrrhotite-magnetite-amphibole quartz skarn. From small areas of bedrock on sloping trench wall.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
35	290	195	0.2	22	10

82-YP-9,010R
(grab, float)

Sub-rounded cobble of white-grey recrystallized limestone with epidote-garnet patches. Magnetic suscept., 0.0.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
6	9	150	0.1	20	5

82-YP-9,011R
(grab)

Greisenized, massive, medium-grained quartz monzonite. Trace disseminated pyrite. Abundant 1-inch chloritic quartz veinlets.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
24	160	65	0.7	5	<5

82-YP-9,012R
(chip/5.7 ft)

Massive quartz-garnet-dioposide-amphibole- (pyrrhotite-pyrite) skarn. Pyrite and pyrrhotite mostly on fractures. Trace molybdenite and disseminated, fine-grained, blue-white to creamy white scheelite. Magnetic suscept., 8.0 x 10^{-3} cgs.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
64	700	170	0.9	85	5

82-YP-9,013R
(chip/6.0 ft)

Greenish (diopsidic?) quartzite; local micaceous quartzite and minor, thin (<3 inch) garnet-amphibole skarn bands. Vague compositional banding. ± 2% disseminated pyrrhotite, pyrite on fractures. Magnetic susceptibility, 0.2-5.0 x 10^{-3} cgs.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
28	150	160	0.1	22	<5

82-YP-9,014R
(float, grab)

Amphibole-magnetite (few %)-pyrite (2%)-pyrrhotite(?)-quartz skarn. Minor, very fine-grained disseminated chalcopyrite. Massive, compact, fine-grained. 2 mm limonite-jarosite (oxidized sulphide?) coating on fracture surfaces. Magnetic susceptibility = 17 x 10^{-3} cgs. Above mineralized zone in Trench 82-T-1.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
210	1480	85	3.5	5	20

82-YP-9,015R
(float, grab)

Garnet (60%)-magnetite (40%) skarn. Massive, medium-grained, compact, <2% disseminated pyrite and/or pyrrhotite. Above mineralized zone in Trench 82-T-1. Magnetic susceptibility = 32 x 10^{-3} cgs.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
285	130	365	0.1	18	5

82-YP-9,016R
(float, grab)

Pyrrhotite (50%?)-amphibole-magnetite (20%) skarn. Minor pyrite. 1% chalcopyrite. Dense, fine to medium-grained massive. Above mineralized zone in Trench 82-T-1. Magnetic susceptibility = 4.8×10^{-3} cgs.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
55	9500	400	10.5	5	25

82-YP-9,017R
(float, grab)

Massive, fine to medium-grained, compact garnet-quartz-magnetite (10%?)-amphibole-diopside skarn. About 5% pyrrhotite (disseminated on fractures). Magnetic susceptibility = 29×10^{-3} cgs. Above mineralized zone in Trench 82-T-1.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
68	320	195	0.6	11	<5

82-YP-9,018R
(grab)

Diopsidic micaceous quartzite, <1% disseminated pyrrhotite. Minor magnetite, trace chalcopyrite.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
120	370	100	0.5	5	<5

82-YP-9,019R
(chip/5.7 ft)

Diopsidic calc-silicate hornfels and micaceous quartzite, minor (<1%) disseminated pyrrhotite + pyrite. Minor amphibolitic and quartzitic zones.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
96	190	100	0.3	32	5

82-YP-9,020R
(chip/3.3 ft)

Medium-grained, massive garnet-diopside-quartz skarn, ±1% disseminated and fracture-controlled pyrite. Local magnetite-rich zones. Trace yellow-white scheelite.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
31	160	135	0.2	16	5

82-YP-9,021R
(chip/2.4 ft)

Greenish-grey quartzite, 1-2% disseminated fine-grained pyrrhotite.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
240	320	88	0.8	70	200

82-YP-9,022R
(grab)

Quartzite. 1% disseminated pyrrhotite. Trace molybdenite on fractures.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
76	100	120	0.1	11	<5

82-YP-9,023R
(grab)

Garnet-quartz-diopside-amphibole skarn. <1% pyrite, 5% magnetite.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
260	270	155	0.6	7	15

82-YP-9,024R
(grab)

White quartz vein. Broken rubble. Vein ± 2 feet wide. Trace molybdenite, pyrite, scheelite.

Mo	Cu	Zn	Ag	W (ppm)	Au (oz/ton)
32	14	40	8.3	300	0.497

82-YP-9,025R
(chip/10.0 ft)

Sporadic bedrock of green (diopsidic?) micaceous quartzite. Trace disseminated pyrrhotite and magnetite (?), 1-2% pyrite on fractures, trace fine-grained, disseminated scheelite.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
35	263	110	0.4	55	105

82-YP-9,026R
(chip/6.0 ft)

Garnet-diopside-magnetite skarn, 2% pyrite (disseminated and on fractures).

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
335	240	195	0.3	20	30

82-YP-9,027R
(chip/2.6 ft)

Same as 9,026R.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
640	285	190	0.4	25	10

82-YP-9,028R
(chip/5.0 ft)

Diopsidic micaceous quartzite (calc-silicate hornfels); 1-2% pyrrhotite (disseminated and on fractures) + trace pyrite. Locally abundant molybdenite (disseminated and on fractures). Trace scheelite on fractures.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
890	500	93	0.5	90	5

82-YP-9,029R
(chip/1.5 ft)

Same as 9,028R, less sulphides.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
130	360	110	0.4	125	5

82-YP-9,030R
(chip/6.0 ft)

Micaceous quartzite with 1-5% pyrite. Minor garnet-magnetite skarn. Trace very fine-grained, blue scheelite.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
165	600	160	4.0	130	125

82-YP-9,031R
(chip/3.3 ft)

Micaceous quartzite. <1% pyrrhotite. Trace disseminated scheelite.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
400	165	86	0.6	30	10

82-YP-9,032R
(grab)

White chloritic quartz vein, minor pyrite.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
62	260	23	3.8	420	30

82-YP-9,033R
(chip/3.3 ft)

Garnet-amphibole-quartz-magnetite-pyrite skarn. <0.1% fine-grained, disseminated scheelite.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
330	770	100	2.6	450	115

82-YP-9,034R
(grab)

Small block (float or in situ?) of massive magnetite (90%) rock. Very minor quartz, diopside, 2% pyrite.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
11	108	550	0.1	3	5

82-YP-9,035R
(grab, float)

White quartz vein. ± 3% coarse pyrite. <0.1% coarse-grained, disseminated blue-fluorescing scheelite.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
14	338	13	2.6	275	25

82-YP-9,036R
(grab, float)

Massive, medium-grained garnet-diopside-quartz skarn; 2-3% fine-grained disseminated pyrrhotite. Trace chalcopyrite. <0.1% disseminated fine-grained blue-white scheelite. Cut by 1/2" quartz veinlet with 3% coarse-grained pyrrhotite. Magnetic susceptibility = 0.8-2.5 x 10^{-3} cgs. From debris above lower skarn zone, Trench 82-T-3.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
180	1350	80	4.2	300	160

82-YP-9,037R
(grab, float)

Massive, medium-grained garnet-diopside-magnetite skarn with trace disseminated pyrrhotite(?) and trace fine-grained disseminated molybdenite. Magnetic susceptibility = 11 x 10^{-3} cgs. From debris above lower skarn zone, Trench 82-T-3.

Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
425	570	70	1.5	15	10

82-YP-9,038R (chip/1.3 ft)	Pale greenish (diopsidic?) calc-silicate hornfels and micaceous quartzite.

Mo	Cu	Zn	Ag	W	(ppm)	Au	(ppb)
250	164	128	0.1	15		<5	

APPENDIX II

CERTIFICATES OF ANALYSIS

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CERTIFICATE OF ASSAY

TO : CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION,
180 ATTWELL DRIVE, 4TH FLR.,
REXDALE, ONT.
M9W 6A9

ATTN: BOB KUEHNBAUM

CERT. # : A8210934-001-A
INVOICE # : I8210934
DATE : 30-APR-82
P.O. # : NONE
THATCH - ROCKS

Sample description	Prep code	Au FA oz/t					
820YP-9024R	214	0.497	--	--	--	--	--

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TELEX: 043-52597

CERTIFICATE OF ANALYSIS

TO : CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION,
180 ATTWELL DRIVE, 4TH FLR.,
REXDALE, ONT.
M9W 6A9

CERT. # : A8210823-001-A
INVOICE # : I8210823
DATE : 20-APR-82
P.O. # : NONE
THATCH - ROCKS

ATTN: BOB KUEHNBAUM

Sample description	Prep code	Cu ppm	Mo ppm	Zn ppm	Ag ppm	W ppm	Au FA+AA ppb
820YP-9000R	205	960	245	85	3.6	12	5
820YP-9001R	205	320	200	160	0.8	125	<5
820YP-9002R	205	325	78	66	1.8	6	20
820YP-9003R	205	2200	710	190	2.9	13	<5
820YP-9004R	205	210	260	25	0.9	7	5
820YP-9005R 82-	205	1600	300	88	2.3	12	5
820YP-9006R T-1	205	1250	370	195	1.6	8	10
820YP-9007R	205	150	240	66	2.0	8	15
820YP-9008R	205	300	95	115	0.5	5	5
820YP-9009R	205	290	35	195	0.2	22	10
820YP-9010R 82-T-2	205	9	6	150	0.1	20	5
820YP-9011R	205	160	24	65	0.7	5	<5
820YP-9012R	205	700	64	170	0.9	85	5
820YP-9013R	205	150	28	160	0.1	22	<5
820YP-9014R	205	1480	210	85	3.5	5	20
820YP-9015R	205	130	285	365	0.1	18	5
820YP-9016R	205	9500	55	400	10.5	5	25
820YP-9017R	205	320	68	195	0.6	11	<5
820YP-9018R	205	370	120	100	0.5	5	<5
820YP-9019R	205	190	96	100	0.3	32	5
820YP-9020R	205	160	31	135	0.2	16	5
820YP-9021R	205	320	240	88	0.8	70	200
820YP-9022R	205	100	76	120	0.1	11	<5
820YP-9023R	205	270	260	155	0.6	7	15
820YP-9024R	205	14	32	40	8.3	300	>10000
820YP-9025R	205	263	35	110	0.4	55	105
820YP-9026R 82-	205	240	335	195	0.3	20	30
820YP-9027R T-3	205	285	640	190	0.4	25	10
820YP-9028R	205	500	890	93	0.5	90	5
820YP-9029R	205	360	130	110	0.4	125	5
820YP-9030R	205	600	265	160	4.0	130	125
820YP-9031R	205	165	400	86	0.6	30	10
820YP-9032R	205	260	62	23	3.8	420	30
820YP-9033R	205	770	330	100	2.6	450	115
820YP-9034R	205	108	11	550	0.1	3	5
820YP-9035R	205	338	14	13	2.6	275	25
820YP-9036R	205	1350	180	80	4.2	300	160
820YP-9037R	205	570	425	70	1.5	15	10
820YP-9038R 82-T-1	205	164	250	128	0.1	15	<5

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REXDALE, ONT.
M9W 6A9

CERT. # : A8210822-001-A
INVOICE # : I8210822
DATE : 16-APR-82
P.O. # : NONE
THATCH - SOILS

ATTN: BOB KUEHNBAUM

Sample description		Prep code	Cu ppm	Mo ppm	U fluor. ppm	W ppm		
82-YP-9050		202	31	6	0.5	5	--	--
82-YP-9051		202	100	75	2.0	35	--	--
82-YP-9052		202	157	76	2.5	25	--	--
82-YP-9053		202	138	125	2.0	30	--	--
82-YP-9054		202	142	140	2.5	50	--	--
82-YP-9055		202	127	120	2.0	35	--	--
82-YP-9056		202	140	120	2.5	20	--	--
82-YP-9057		202	192	100	3.0	16	--	--
82-YP-9058		202	112	63	2.5	30	--	--
82-YP-9059		202	50	56	0.5	8	--	--
82-YP-9060		202	95	44	1.5	16	--	--
82-YP-9061	82-T-1	202	128	48	2.0	10	--	--
82-YP-9062		202	58	40	1.0	5	--	--
82-YP-9063		202	278	280	2.5	30	--	--
82-YP-9064		202	250	345	2.5	75	--	--
82-YP-9065		202	276	360	2.0	25	--	--
82-YP-9066		202	165	175	2.0	75	--	--
82-YP-9067		202	158	110	2.0	16	--	--
82-YP-9068		202	146	98	2.5	20	--	--
82-YP-9069		202	172	110	2.0	12	--	--
82-YP-9070		202	180	130	2.5	17	--	--
82-YP-9071		202	182	120	2.5	35	--	--
82-YP-9072		202	135	79	1.5	35	--	--
82-YP-9073		202	144	110	2.0	18	--	--
82-YP-9074		202	137	94	2.0	32	--	--
82-YP-9075		202	106	86	1.5	16	--	--
82-YP-9076		202	84	63	1.0	10	--	--
82-YP-9077		202	154	84	1.5	16	--	--
82-YP-9078		202	234	113	9.5	12	--	--
82-YP-9079		202	258	145	11.5	15	--	--
82-YP-9080		202	125	105	2.0	35	--	--
82-YP-9081	82-T-1	202	98	145	1.5	50	--	--
82-YP-9082	profile	202	148	62	1.5	55	--	--
82-YP-9083		202	235	145	3.0	900	--	--
82-YP-9084		202	32	9	--	25	--	--
82-YP-9085		202	40	8	--	18	--	--
82-YP-9086	82-T-2	202	24	9	--	25	--	--
82-YP-9087		202	30	7	--	12	--	--
82-YP-9088		202	46	7	--	16	--	--
82-YP-9089		202	38	11	--	40	--	--

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REXDALE, ONT.
M9W 6A9

CERT. # : A8210822-002-A
INVOICE # : I8210822
DATE : 16-APR-82
P.O. # : NONE
THATCH - SOILS

ATTN: BOB KUEHNBAUM

Sample description	Prep code	Cu ppm	Mo ppm	U fluor. ppm	W ppm		
82-YP-9090	202	38	9	--	25	--	--
82-YP-9091	202	30	8	--	35	--	--
82-YP-9092	202	40	8	--	12	--	--
82-YP-9093	202	31	6	--	22	--	--
82-YP-9094	202	48	9	--	30	--	--
82-YP-9095	202	39	10	--	32	--	--
82-YP-9096	202	35	11	--	30	--	--
82-YP-9097	202	45	17	--	45	--	--
82-YP-9098	202	33	12	--	40	--	--
82-YP-9099	202	38	13	--	32	--	--
82-YP-9100	202	33	11	--	22	--	--
82-YP-9101	202	34	10	--	50	--	--
82-YP-9102	202	33	14	--	32	--	--
82-YP-9103	202	42	13	--	28	--	--
82-YP-9104 82-T-2	202	39	18	--	35	--	--
82-YP-9105	202	33	14	--	45	--	--
82-YP-9106	202	35	13	--	20	--	--
82-YP-9107	202	24	12	--	50	--	--
82-YP-9108	202	94	6	--	6	--	--
82-YP-9109	202	50	8	--	11	--	--
82-YP-9110	202	28	17	--	40	--	--
82-YP-9111	202	33	11	--	40	--	--
82-YP-9112	202	43	12	--	35	--	--
82-YP-9113	202	53	13	--	10	--	--
82-YP-9114	202	39	17	--	40	--	--
82-YP-9115	202	49	13	--	30	--	--
82-YP-9116	202	32	14	--	60	--	--
82-YP-9117	202	26	12	--	20	--	--
82-YP-9118	202	49	9	--	12	--	--
82-YP-9119	202	42	3	--	6	--	--
82-YP-9120	202	38	11	--	35	--	--
82-YP-9121	202	54	12	--	28	--	--
82-YP-9122	202	43	10	--	28	--	--
82-YP-9123 82-T-2	202	32	11	--	30	--	--
82-YP-9124 profile	202	34	9	--	35	--	--
82-YP-9125	202	33	9	--	35	--	--
82-YP-9126	202	119	170	--	20	--	--
82-YP-9127	202	102	120	--	19	--	--
82-YP-9128 82-T-3	202	135	155	--	19	--	--
82-YP-9129	202	140	220	--	20	--	--

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REXDALE, ONT.
M9W 6A9

CERT. # : A8210822-003-A
INVOICE # : I8210822
DATE : 16-APR-82
P.O. # : NONE
THATCH - SOILS

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Sample description		Prep code	Cu ppm	Mo ppm	U fluor. ppm	W ppm		
82-YP-9130		202	145	230	--	20	--	--
82-YP-9131		202	140	250	--	22	--	--
82-YP-9132		202	183	250	--	40	--	--
82-YP-9133		202	270	315	--	32	--	--
82-YP-9134		202	125	270	--	90	--	--
82-YP-9135		202	160	310	--	60	--	--
82-YP-9136		202	170	180	--	35	--	--
82-YP-9137		202	298	390	--	45	--	--
82-YP-9138		202	310	455	--	30	--	--
82-YP-9139	82.T.3	202	233	500	--	75	--	--
82-YP-9140		202	392	345	--	200	--	--
82-YP-9141		202	412	360	--	125	--	--
82-YP-9142		202	310	300	--	300	--	--
82-YP-9143		202	293	300	--	200	--	--
82-YP-9144		202	228	270	--	175	--	--
82-YP-9145		202	153	210	--	200	--	--
82-YP-9146		202	165	245	--	160	--	--
82-YP-9147		202	75	39	--	30	--	--
82-YP-9148		202	34	22	--	35	--	--
82-YP-9149		202	85	52	--	75	--	--
82-YP-9150		202	72	50	--	100	--	--
82-YP-9151		202	104	71	--	75	--	--
82-YP-9152		202	58	32	--	40	--	--
82-YP-9153		202	65	31	--	40	--	--
82-YP-9154		202	86	49	--	125	--	--
82-YP-9155		202	57	32	--	150	--	--
82-YP-9156	82.T.4	202	45	19	--	75	--	--
82-YP-9157		202	52	30	--	45	--	--
82-YP-9158		202	35	18	--	24	--	--
82-YP-9159		202	61	32	--	80	--	--
82-YP-9160		202	58	33	--	115	--	--
82-YP-9161		202	65	42	--	60	--	--
82-YP-9162		202	32	26	--	35	--	--
82-YP-9163		202	53	43	--	17	--	--
82-YP-9164		202	35	51	--	45	--	--
82-YP-9165		202	73	40	--	75	--	--
82-YP-9166	82.T.4	202	142	65	--	13	--	--
82-YP-9167	profile	202	21	29	--	120	--	--
82-YP-9168		202	39	35	--	100	--	--
82-YP-9169	82.T.2	202	35	15	--	25	--	--

Certified by .... HartBichler

CTA
MEMBER
CANADIAN TESTING
ASSOCIATION

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

CERTIFICATE OF ANALYSIS

TO : CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION,
180 ATTWELL DRIVE, 4TH FLR.,
REXDALE, ONT.
M9W 6A9

CERT. # : A8210822-004-A
INVOICE # : I8210822
DATE : 16-APR-82
P.O. # : NONE
THATCH - SOILS

ATTN: BOB KUEHNBAUM

Sample description	Prep code	Cu ppm	Mo ppm	U fluor. ppm	W ppm		
82-YP-9170	202	44	17	--	45	--	--
82-YP-9171	202	33	9	--	25	--	--
82-YP-9172	202	40	15	--	15	--	--
82-YP-9173 82T·2	202	22	13	--	50	--	--
82-YP-9174	202	33	13	--	25	--	--
82-YP-9175	202	40	20	--	60	--	--
82-YP-9176	202	30	14	--	75	--	--
82-YP-9177	202	50	13	--	22	--	--
82-YP-9178	202	23	11	--	30	--	--

Certified by HartBichler

CTA
MEMBER
CANADIAN TESTING
ASSOCIATION

BONDAR-CLEGG & COMPANY LTD.
764 BELFAST ROAD, OTTAWA, ONTARIO, K1G 0Z5 PHONE: (613) 237-3110 TELEX: 053-4455

Geochemical Lab Report

REPORT: 112-0552
FROM: CANADIAN OCCIDENTAL PETROLEUM LIMITED   SUBMITTED BY: CAN OCC

DATE: 25-MAY-82   PROJECT:

ELEMENT	LOWER DETECTION LIMIT	EXTRACTION	METHOD	SIZE FRACTION	SAMPLE TYPE	SAMPLE PREPARATIONS
Au	5 PPB	AQUA REGIA	Fire Assay AA	-200	OTHER	PULVERIZE -200

REPORT COPIES TO: R. KUEHNBAUM   INVOICE TO: R. KUEHNBAUM

REMARKS: 'OTH' REFERS TO COARSE PULP
< MEANS LESS THAN

DETECTION LIMITS FOR GOLD
10 gram sample: 5 ppb.
5 gram sample: 10 ppb.
1 gram sample: 50 ppb.

Sample Wt. 10 g. unless otherwise stated.

NOTE:
Check concentration/sample weight ratio
for effective detection level.

- 61 -

110 -

BONDAR-CLEGG & COMPANY LTD.

764 BELFAST ROAD, OTTAWA, ONTARIO, K1G 0Z5 PHONE: (613) 237-3110 TELEX: 053-4455

Geochemical Lab Report

REPORT: 112-0552 PROJECT: PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	wt/Au GM	NOTES
81-YP-14376 HM		<20		

APPENDIX III

SAMPLING AND LABORATORY PROCEDURES

APPENDIX III - SAMPLING AND LABORATORY PROCEDURES

I. SAMPLING PROCEDURES

A) Soil

1. 'B' or 'C' horizon material was sampled.
2. Three to four handfuls of material are collected into heavy duty, high wet-strength kraft envelopes which are dried in the field and then sent to the laboratory for analysis.

B) Sample Site Information Card

1. At each soil or stream sample site, an 80 column field data card is completed. The sampler records such information as sample number, location and type, depth of stream, sample composition, vegetation, drainage, etc. Separate cards are used for stream and soil samples in order to record pertinent information.

II. LABORATORY PROCEDURES

A) Sample Preparation

(i) Soils

1. Samples are sorted and dried at 50°C for 12 to 16 hours.
2. Dried material is then screened to obtain the -80 mesh (177 micron) fraction. The rest of the material is discarded.
3. -80 mesh fraction material is weighed and analysed for appropriate elements.

(ii) Rocks

1. Entire sample is crushed.
2. If necessary (> 250 gms). The sample is split on a Jones splitter, the reject is retained for a short period.
3. The split fraction is pulverized in a ring grinder such that 90% passes a 200 mesh (74 micron) sieve.
4. The -200 mesh material is weighed and analysed for the appropriate elements.

B) Elemental Analyses

(i) ppm Copper, Lead, Zinc, Silver, Molybdenum (Atomic Absorption)

1. A 1.0 gm portion of -80 mesh soil or stream sediment or -200 mesh rock flour or pulverized "heavies" is digested in concentrated, hot, perchloric-nitric acid ($HClO_4$-HNO_3) for 2 hours.
2. Digested sample is cooled and made up to 25 mls. with distilled water.
3. Solution is mixed and solids allowed to settle.
4. Cu, Pb, Zn, Ag and Mo are determined by atomic absorption, using background correction for Pb and Ag analyses.

Element	Bkgd. Corr.	Flame Type	Wave Length hm	Detection Limit	Chemex Standard	± 1 Std. Deviation
Cu	No	A	324.7	1 ppm	71 ppm	±3
Zn	No	A	213.8	1 ppm	52 ppm	±3
Ag	Yes	A	328.1	0.2 ppm	8.5 ppm	±0.5
Mo	No	N	313.3	1 ppm	25 ppm	±1

A = Air acetylene flame N = Nitrous oxide - acetylene flame

(ii) ppm Tungsten (W) (Colourimetric)

1. 0.5 gm of -80 mesh soil or stream sediment, -200 mesh rock flour or pulverized "heavies" is fused with potassium bisulfate and leached with HCl.
2. The reduced form of W is complexed with toluene 3, 4 dithiol and extracted into an organic phase.
3. The resulting colour is visually compared to similarly prepared standards. (Colourimetric method)
4. Detection limit: 2 ppm W

(iii) ppm Uranium (U) - Fluorimetry

1. 1 gm of -80 mesh soil or stream sediment, -200 mesh rock flour or pulverized "heavies" is digested with hot, $HClO_4$-HNO_3 to strong fumes of $HClO_4$ for approximately 2 hours.
2. The digest is diluted to volume and mixed.
3. An aliquot is extracted into MIBK with the acid of an aluminium nitrate-tetrapropyl ammonium hydroxide salting solution. (TP)
4. Uranium in the MIBK is determined by evaporating a portion of the MIBK in a platinum dish and fusing with a mixture of $Na2CO_3$-K_zCO_3-NaF.
5. The fluorescence of the fused flux is measured to determine the uranium content.
6. Detection limit: 0.5 ppm U

(iv) ppb Gold (Au) - Fire Assay - Atomic Absorption

1. A 10 gm sample of -200 mesh rock is added to a flux of PbO (litharge), soda ash, silica, borax glass, flour (for carbon) and 2 mg Ag, and the material is fused at 1000°C for 40 mins.
2. The melt is poured into a pouring mould, resulting in a glass slag and a lead button.
3. The lead button is cupelled in a bone ash container at 950°C.
4. The resultant prill (Au + Ag) is parted in nitric acid.
5. The Au is dissolved in aqua regia and the digested material is taken up in 25% HCl.
6. Au is analyzed by atomic absorption techniques.

THATCH/HATCH/PATCH CLAIMS

STATEMENT OF EXPENDITURES

MARCH-APRIL, 1982

RECEIVED 9 JUL 1982 MINING RECORDER'S OFFICE WHITEHORSE, Y.T.

Office of the Regional Manager JUL 9 1982 Yukon

D-8K Caterpillar		
Walk-in and trenching	...	$ 19,095.00
Ripper teeth ice lugs	...	911.80
Labour	...	570.00
Mob-demob (Whitehorse to Canyon/return)	...	4,000.00
Skid and trailer rental	...	2,000.00
Food + propane	...	876.76
Air support, helicopter	...	1,641.05
fixed wing	...	558.96
Equipment and supplies	...	371.93
Geochemistry	...	1,343.12
TOTAL	...	$ 31,368.62

Pro-rating of expenditures on Groups A,B and C based on number of cubic yards overburden stripped.

Group A	Trench 82-T-2 (South Zone),	435 yd^3	= 15.9%	$ 4,987.61
Group B	Trench 82-T-1	568		
	82-T-4	520		
		1,088 yd^3	= 39.6%	$12,421.97
Group C	Trench 82-T-3	818		
	Trench 82-T-2 (North Zone)	404		
		1,222 yd^3	= 44.5%	$13,959.04
	GRAND TOTAL	2,745 yd^3		$31,368.62

091063

Shirley Air Services Ltd.

INVOICE

Hangar No. 6A, Municipal Airport
Edmonton, Alberta T5G 2Z3
Phone 453-5121

April 19, 1982

CANADIAN OCCIDENTAL PETROLEUM LTD.
4th Floor - 180 Attwell Dr.
REXDALE, Ontario
M9W 6A9

PAYABLE AT PAR EDMONTON

CUSTOMER'S ORDER NUMBER	HELICOPTERS	PILOT
	206B C-FTTU	G. Cars

DESCRIPTION	CHARGES
Project: THARLT	
March 23, 1982 A84445 2.9 Hr. X $5.15/hr.	$1,493.50
Fuel @ $0.45/l	141.75
Oil 2.9 X $2/hr.	5.80
	$1,641.05

TOTAL: $1,641.05

COPY

B 6589

TERMS NET 30 DAYS — 2% PER MONTH CHARGED ON OVERDUE ACCOUNTS

VENDOR
ACCOUNT CODE: Format | Prime or Cost Centre | Sub. or Exp. Code | Minor Code | J/V or I/C
Accounts Payable: 102 2001 003 980 — Comments 103
102 2001 980 — Comments 103
102 2001 980 — Comments 103
Distribution: 102 1150 785010 9442 — Comments 103
102 — Comments 103
102 — Comments 103
102 — Comments 103
Department Use — Date: Apr 30/82
Accounting Use — Date

Air North Charter and Training Ltd.

24 Hour Telephone Service 668-2228
Box 4998, Whitehorse, Yukon, Y1A 4S2

PHONE 668-2228

AIRCRAFT CHARTER

INVOICE 10643 DATE April 8, 1982

Can-Oxy
Minerals Division
180 Attwell Drive
4th Floor
Rexdale, Ontario

DESCRIPTION	AMOUNT
Re: Beaver	
Pilot: Bendera	
Flying: 220 mi. @ 1.95/mi.	429 00
Fuel: 57 gals. @ 2.28/gal.	129 96
	$558 96

Extn. Ckd. By
Rec'g. Ckd. By
DATE REC'D.
APR 27 1982
Prices & Terms Ckd. By
Except's to P.O. App'd.

THATCH J.V.

A SERVICE CHARGE OF 2 PER CENT PER MONTH ADDED TO ACCOUNTS OVER 30 DAYS

WEEKLY EXTRA WORK RECORD
(Labour — Equipment — Material)

117 INDUSTRIAL ROAD
WHITEHORSE, YUKON
PHONE: 667-6201

Customer's Name: CANADIAN OCCIDENTAL PETROLEUM LTD Address:
Description of work: TRENCHING - SEKULMAN LAKE

Project: 823-103
Date: 13 APR 82
Proposal or Extra No.:
Order No.:

LABOUR HOURS

Name	Trade	S	M	T	W	T (25)	F (26)	S (27)	Total	Charge Out Rate	Total
DIXON	REG.					5	2		7	30 00	210 00
	O.T.										
	REG.										
	O.T.										
		28	29	30	31	1	2	3			
DIXON		4							4	30 00	120 00
	REG.										
	O.T.										
		4	5	6	7	8	9				
DIXON					8				8	30 00	240 00
	REG.										
	O.T.										
	REG.										
	O.T.										
	REG.										
	O.T.										
	REG.										
	O.T.										
Total											
Labour Total A											570 00

EQUIPMENT AND TOOL HOURS

Description	S	M	T	W	T (25)	F (26)	S (27)	Total	Rate	Total
D8K						11	14½	25½	130 00	3315 00
	28	29	30	31	1	2	3			
D8K	10	7	10	10	10	10	10	67	130 00	8710 00
		3						3	60 00	180 00
	4	5	6	7	8	9				
D8K	10	10	10	3	12	8		53	130 00	6890 00
Equipment Total B										19095 00

MATERIAL

Quan.	Material	Amount
	MOB & DEMOB TO TAKEOFF POINT	4000 00
2 WKS	SUPPLY SKID & LIVING QTRS @ 1000	2000 00
4 DAYS	4X4 BEYOND MOB POINT @ 60	240 00

MATERIAL

Quan.	Material	Amount
7	RIPPER TEETH @ 68.00	476 00
256	ICE LUGS @ 0.99	253 44
	IRLY INV. 0044833	117 34
	" " 0044835	90 89
	" " 0044836	59 18
	" " 0044834	30 13
	LAND USE APPLICATION FEE	50 00
	PROPANE	90 00
	GAS	171 33
	GROCERIES	611 41
	GEORGE WASHINGTON SLASHING	1620 00
	SUBTOTAL	3569 82
	25% EXPEDITING, O & P	892 45

4,462.27

Material Total C	10,702 27
Total A	570 00
Total B	19,095 00
Total C	10702 27
Grand Total	
Overhead	
Fee	
Total	30,367 27

Approved by (Signatures)
Customer: SEE AGREEMENT DATED 10 MAR 82
Gen. Cont.:
Owner:

OFFICE COPY

№ 0332 W

CHEMEX LABS LTD.

NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

*** INVOICE ***

o : CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION,
180 ATTWELL DRIVE, 4TH FLR.
REXDALE, ONT.
M9W 6A9

Invoice # : I8210823

Date : 20-APR-82
P.O. # : NONE
Project THATCH - ROCKS

nvoice for analytical work reported on certificate(s) A8210823-001

uantity	Analysed for code	description		unit price	amount
39	002 -	Cu	ppm		
	003 -	Mo	ppm		
	005 -	Zn	ppm		
	006 -	Ag	ppm		
	018 -	W	ppm		
	100 -	AU FA+AA	ppb	13.90	542.10

Sample preparation and other charges :

39	205 -	Rock geochem - RING	2.50	97.50

TOTAL $ 639.60
Discount (20 %) $ 127.92

Please pay this amount ----> $ 511.68

ERMS -- NET 30 DAYS
.0 % per month (24 % per annum) charged on overdue accounts

COPY

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MEMBER
CANADIAN TESTING
ASSOCIATION

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

*** INVOICE ***

To : CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION,
180 ATTWELL DRIVE, 4TH FLR.
REXDALE, ONT.
M9W 6A9

Invoice # : I8210822
Date : 16-APR-82
P.O. # : NONE
Project THATCH - SOILS

Invoice for analytical work reported on certificate(s) A8210822-001 to -004

Quantity	Analysed for code	description		unit price	amount
34	002 -	Cu	ppm		
	003 -	Mo	ppm		
	014 -	U fluor.	ppm		
	018 -	W	ppm	9.65	328.10
95	002 -	Cu	ppm		
	003 -	Mo	ppm		
	018 -	W	ppm	6.40	608.00

Sample preparation and other charges :

129	202 - -80 mesh, save reject	0.80	103.20

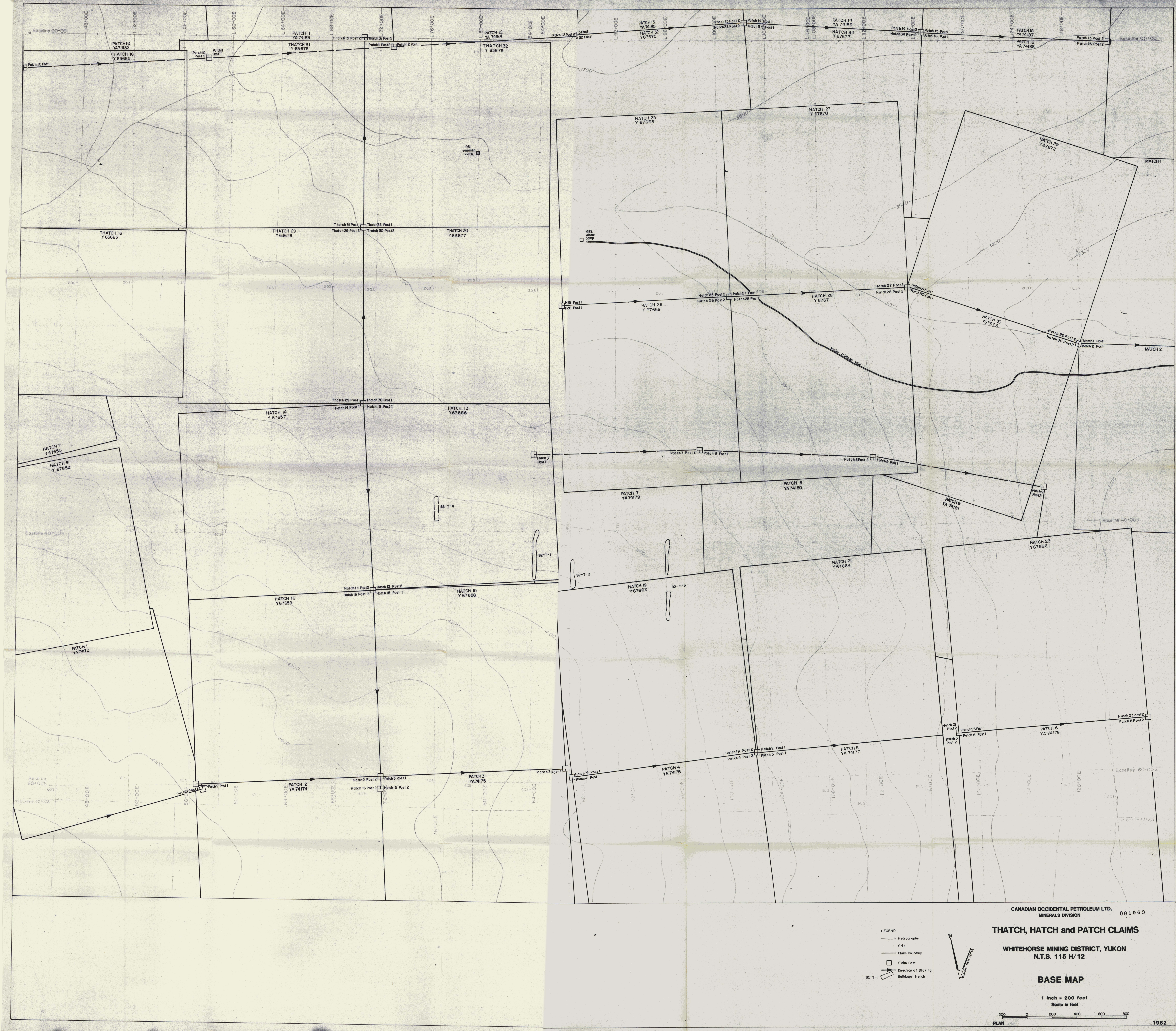
TOTAL $ 1039.30
Discount (20 %) $ 207.86

Please pay this amount ----> $ 831.44

TERMS -- NET 30 DAYS
2.0 % per month (24 % per annum) charged on overdue accounts

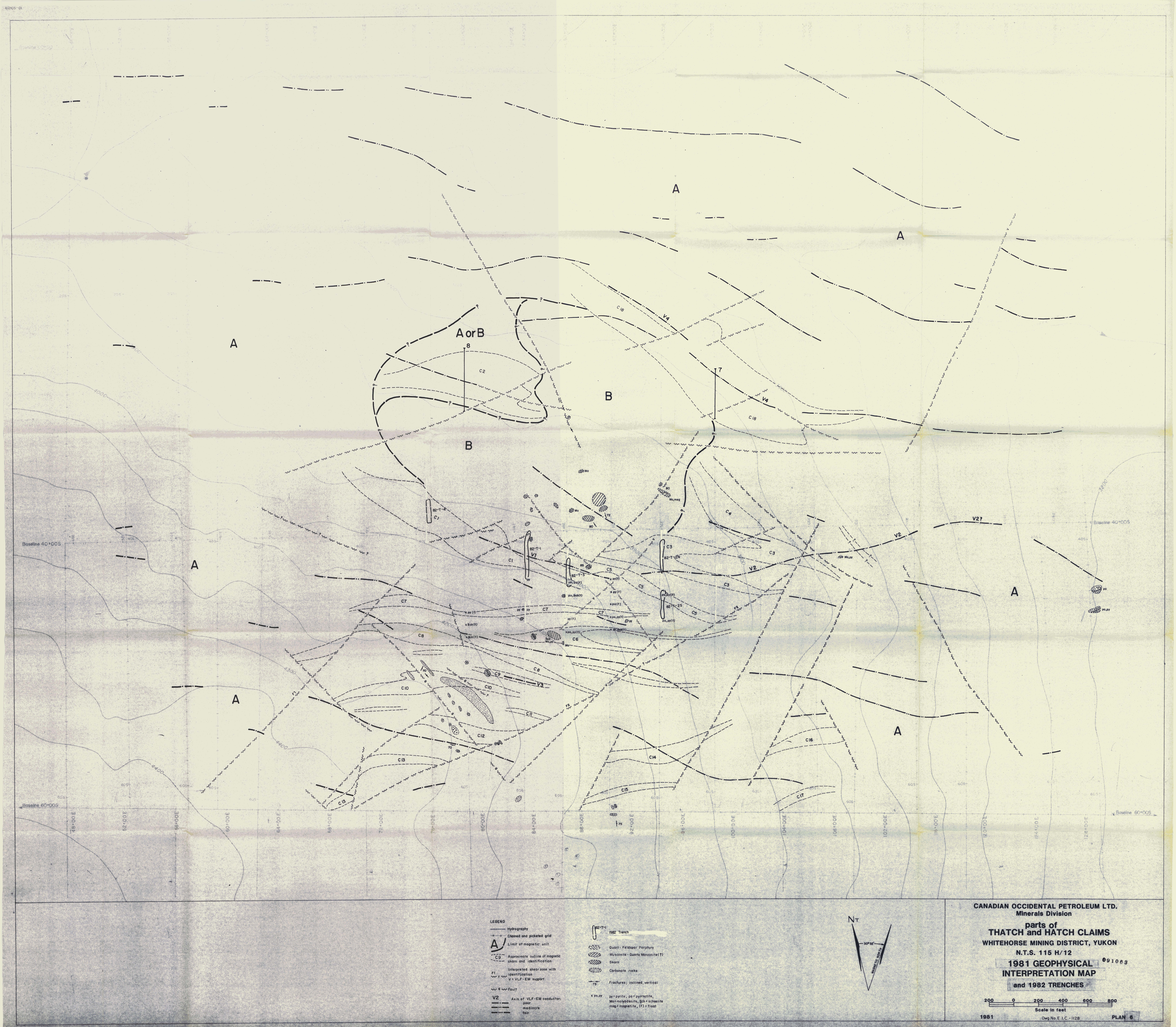
Extn. Ckd. By
Rec'g. Ckd. By
DATE REC'D.
APR 22 1982
Prices & Terms Ckd. By
Except's to P.O. App'd.

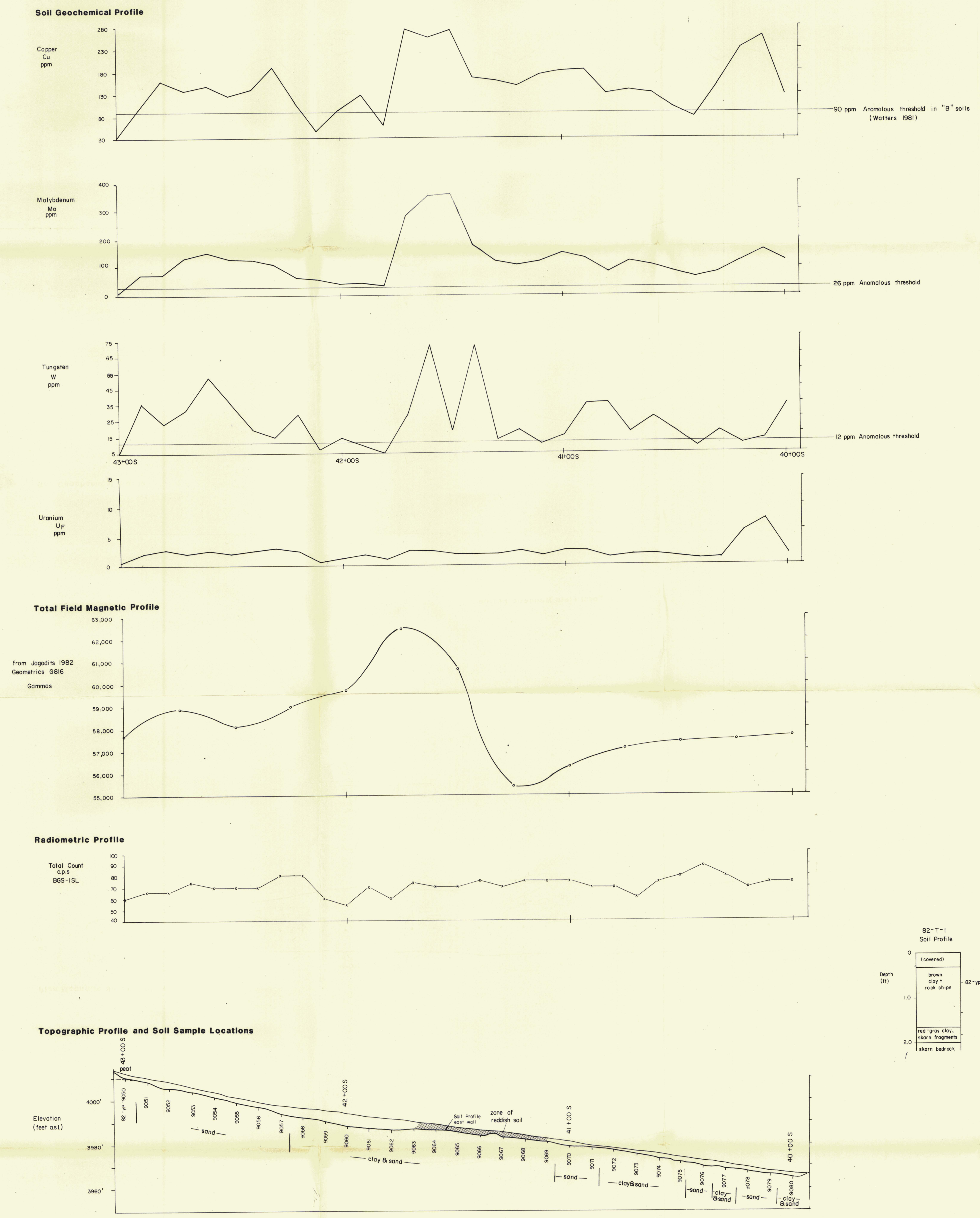
COPY

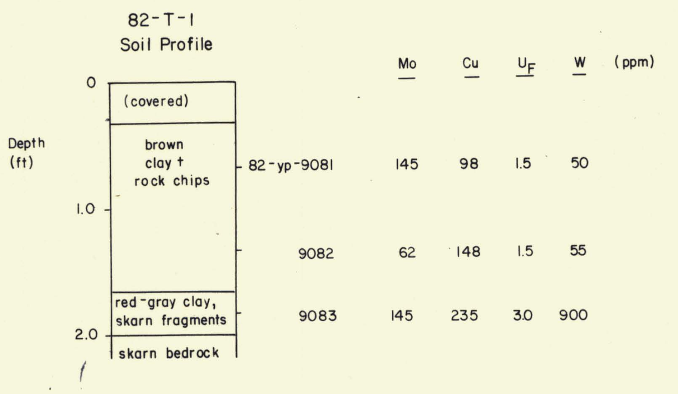


CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION
091063
THATCH, HATCH and PATCH CLAIMS
WHITEHORSE MINING DISTRICT, YUKON
N.T.S. 115 H/12
BASE MAP
1 inch = 200 feet
Scale in feet
200 0 200 400 600 800
PLAN
1982
LEGEND
Hydrography
Grid
Claim Boundary
Claim Post
Direction of Staking
82-T-1 Bulldozer trench
N
Magnetic North 30°32'
Baseline 00+00
Baseline 40+00S
Baseline 60+00S
1981 summer camp
1982 winter camp
winter bulldozer trail
82-T-1
82-T-2
82-T-3
82-T-4
PATCH 10 YA 74182
THATCH 18 Y 63665
PATCH 11 YA 74183
THATCH 31 Y 63678
PATCH 12 YA 74184
THATCH 32 Y 63679
PATCH 13 YA 74185
HATCH 32 Y 67675
PATCH 14 YA 74186
HATCH 34 Y 67677
PATCH 15 YA 74187
PATCH 16 YA 74188
THATCH 16 Y 63663
THATCH 29 Y 63676
THATCH 30 Y 63677
HATCH 25 Y 67668
HATCH 27 Y 67670
HATCH 29 Y 67672
MATCH 1
HATCH 26 Y 67669
HATCH 28 Y 67671
HATCH 30 Y 67673
MATCH 2
HATCH 14 Y 67657
HATCH 13 Y 67656
HATCH 7 Y 67650
HATCH 9 Y 67652
PATCH 7 YA 74179
PATCH 8 YA 74180
PATCH 9 YA 74181
HATCH 23 Y 67666
HATCH 21 Y 67664
HATCH 19 Y 67662
HATCH 16 Y 67659
HATCH 15 Y 67658
PATCH 1 YA 74173
PATCH 2 YA 74174
PATCH 3 YA 74175
PATCH 4 YA 74176
PATCH 5 YA 74177
PATCH 6 YA 74178

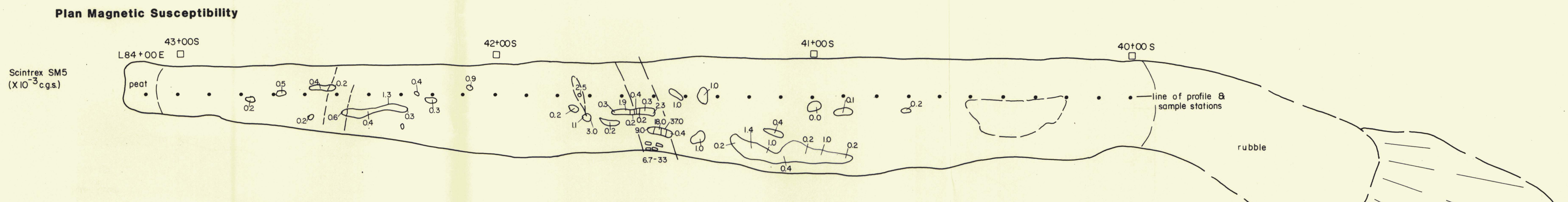

Baseline 00+00
PATCH
THATCH
HATCH
Glacial Bench
Glacial Bench ?
Glacial Bank
Baseline 40+00S
Baseline 60+00S
82-T-1
82-T-2N
82-T-2S
82-T-4
A
A'
LEGEND
Hydrography
Chained and picketed grid
Claim boundary
Soil Geochemical Contour Levels
150 Cu
22 Mo
20 W
14 Pb
140 Zn
0.4 Ag
2 Bi
CANADIAN OCCIDENTAL PETROLEUM LTD.
Minerals Division
parts of
THATCH and HATCH CLAIMS
WHITEHORSE MINING DISTRICT, YUKON
N.T.S. 115 H/12
091063
COMPILATION MAP
1981 SURFACE SURVEYS and 1982 TRENCHING
200 0 200 400 600 800
Scale in feet
S.E.W./sa/Nov.1981
PLAN 5

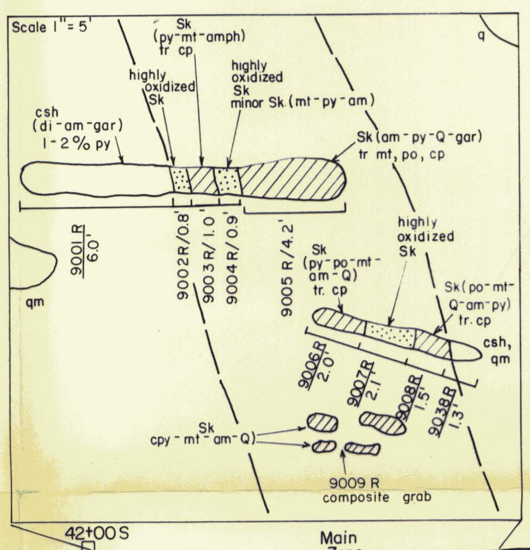

A or B
A
B
V1
V2
V2?
V3
V4
C1
C2
C3
C5
C6
C7
C8
C9
C10
C11
C12
C13
C14
C15
C16
C17
C18
82-T-1
82-T-2N
82-T-3
82-T-2S
Baseline 40+00S
Baseline 60+00S
LEGEND
Hydrography
Chained and picketed grid
Limit of magnetic unit
Approximate outline of magnetic skarn and identification
Interpreted shear zone with identification
V = VLF-EM support
Fault
Axis of VLF-EM conductor:
poor
mediocre
fair
1982 Trench
Quart - Feldspar Porphyry
Muscovite - Quartz Monzonite(?)
Skarn
Carbonate rocks
Fractures; inclined, vertical
py = pyrite, po = pyrrhotite,
Mo = molybdenite, Sch = scheelite
mag = magnetite, (f) = float
CANADIAN OCCIDENTAL PETROLEUM LTD.
Minerals Division
parts of
THATCH and HATCH CLAIMS
WHITEHORSE MINING DISTRICT, YUKON
N.T.S. 115 H/12
091063
1981 GEOPHYSICAL
INTERPRETATION MAP
and 1982 TRENCHES
200 0 200 400 600 800
Scale in feet
1981
Dwg.No. E.I.C.-1128
PLAN 6





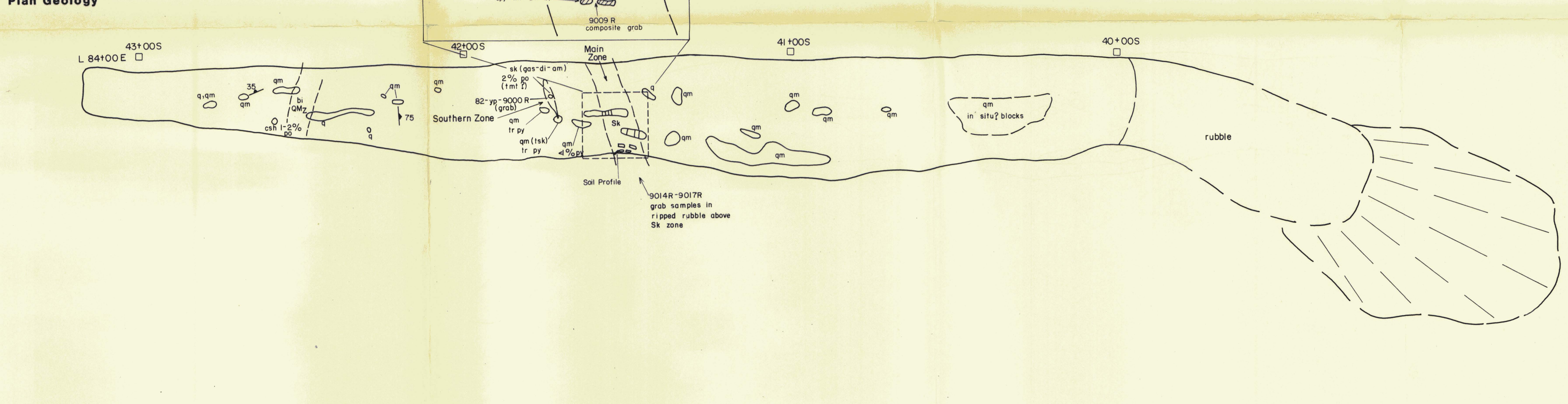
	Mo	Cu	U_F	W (ppm)
82-YP-9081	145	98	1.5	50
9082	62	148	1.5	55
9083	145	235	30	900





Rock Geochemistry

Sample	Interval	Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
82-YP-9000R	grab	245	960	85	3.6	12	5
-9001R	6.0'	200	320	160	0.8	125	<5
-9002R	0.8'	78	325	66	1.8	6	20
-9003R	1.0'	710	2200	190	2.9	13	<5
-9004R	0.9'	260	210	25	0.9	7	5
-9005R	4.2'	300	1600	88	2.3	12	5
-9006R	2.0'	370	1250	195	1.6	8	10
-9007R	2.1'	240	150	66	2.0	8	15
-9008R	1.5'	95	300	115	0.5	5	5
-9038R	1.3'	250	164	128	0.1	15	<5
-9009R	comp. grab	35	290	195	0.2	22	10
-9014R	grab	210	1480	85	3.5	5	20
-9015R	grab	285	130	365	0.1	18	5
-9016R	grab	55	9500	400	10.5	5	25
-9017R	grab	68	320	195	0.6	11	<5



CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION

THATCH, HATCH, PATCH and MATCH CLAIMS
Whitehorse Mining Division, Yukon
N.T.S. 115 H/12

SPRING 1982 TRENCHING PROGRAM
82-T-1 Line 84+00 E

091063

SCALE 1:240

20 0 20 40 60 feet

PLAN 1 **R.M.K./sa/Apr. 1982**

LEGEND

MESOZOIC TERTIARY?

$biQM_Z$	biotite-quartz monzonite

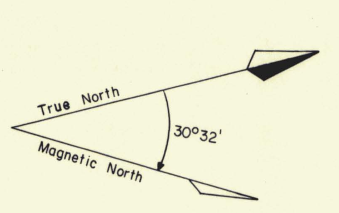
PROTEROZOIC-PALEOZOIC?

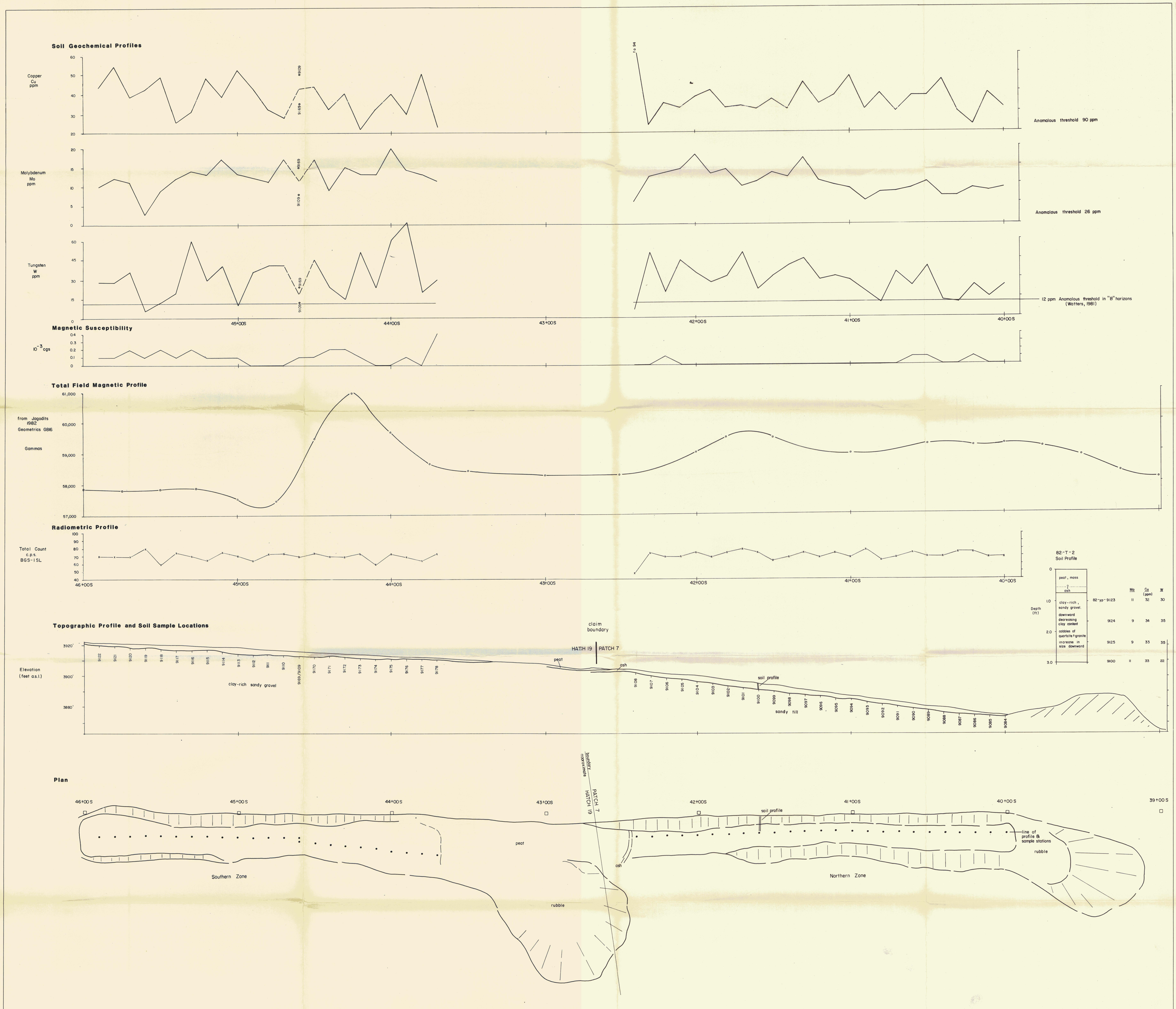
Yukon Series Metasedimentary Rocks

csh	Calc-silicate hornfels, diopsidic quartzite
sk	skarn; variable proportions of garnet, quartz, amphibole, diopside, pyrite, pyrrhotite, magnetite
q	quartzite
qm	micaceous quartzite

Symbols

	geologic contact, defined, approximate
	bedrock exposure
75	attitude of primary bedding
gar	garnet
am	amphibole
Q	quartz
di	diopside
py	pyrite
mt	magnetite
po	pyrrhotite
cp	chalcopyrite
(82-YP)90C1R	rock sample location
	chip sample interval





CANADIAN OCCIDENTAL PETROLEUM LTD. 091063

MINERALS DIVISION

THATCH, HATCH, PATCH and MATCH CLAIMS

Whitehorse Mining Division, Yukon

N.T.S. 115 H/12

SPRING 1982 TRENCHING PROGRAM
82-T-2 Line 96+00E

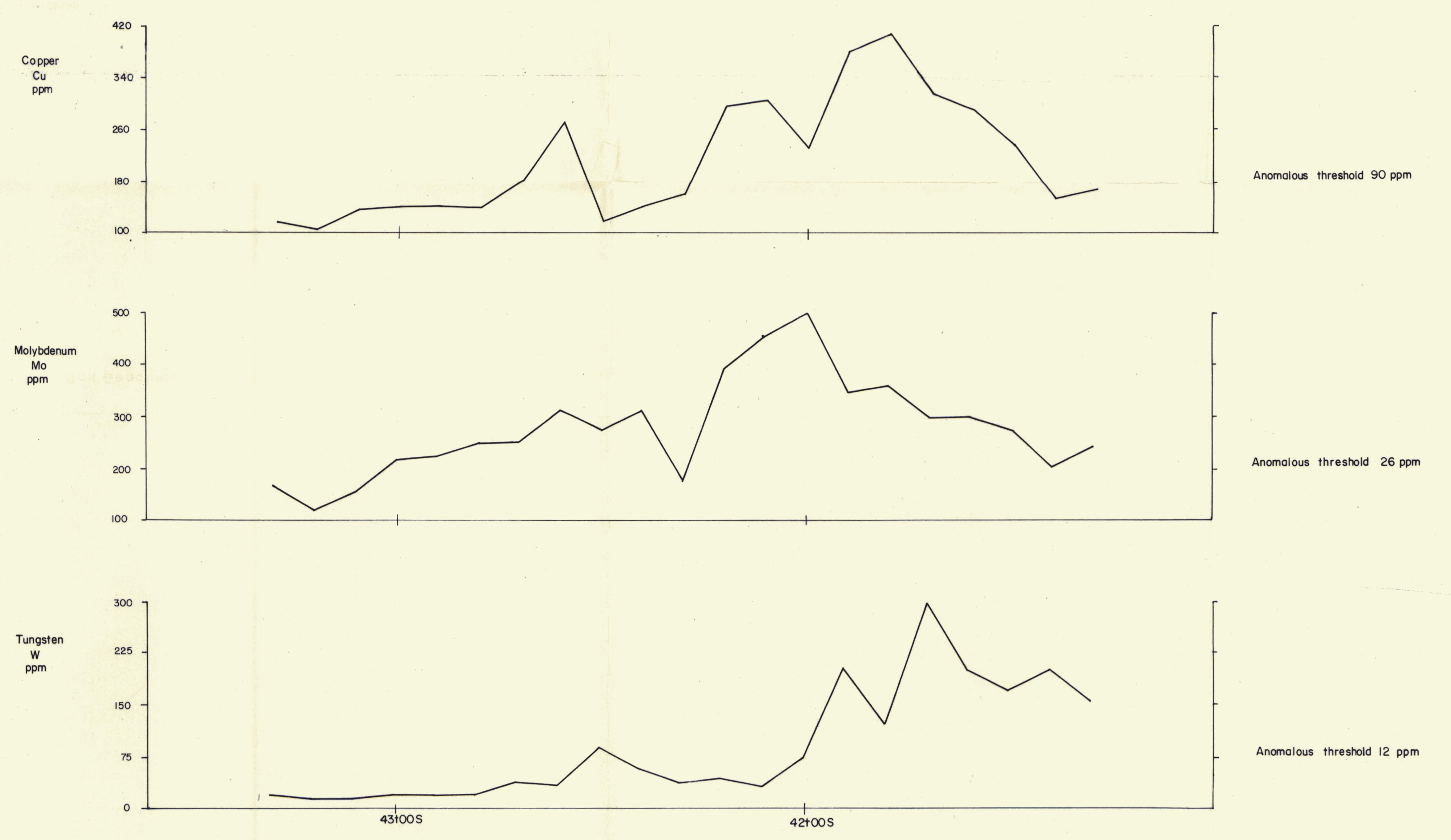
SCALE 1:240

20 0 20 40 60 feet

PLAN 2

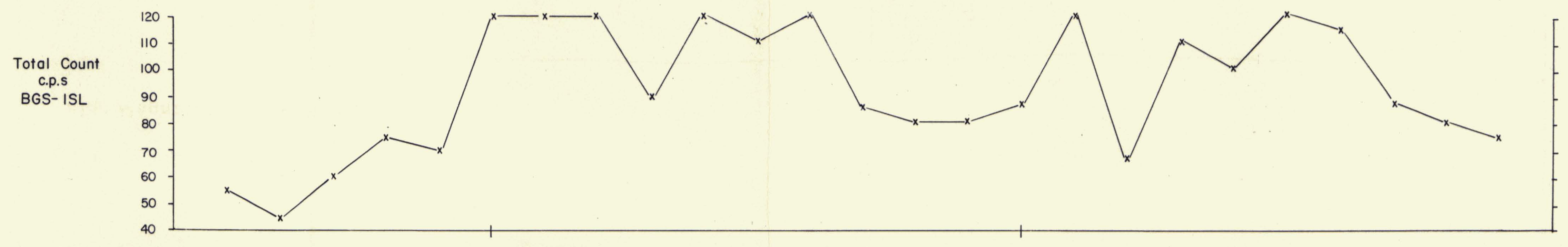
R.M.K./sa/Apr. 1982

Soil Geochemical Profiles

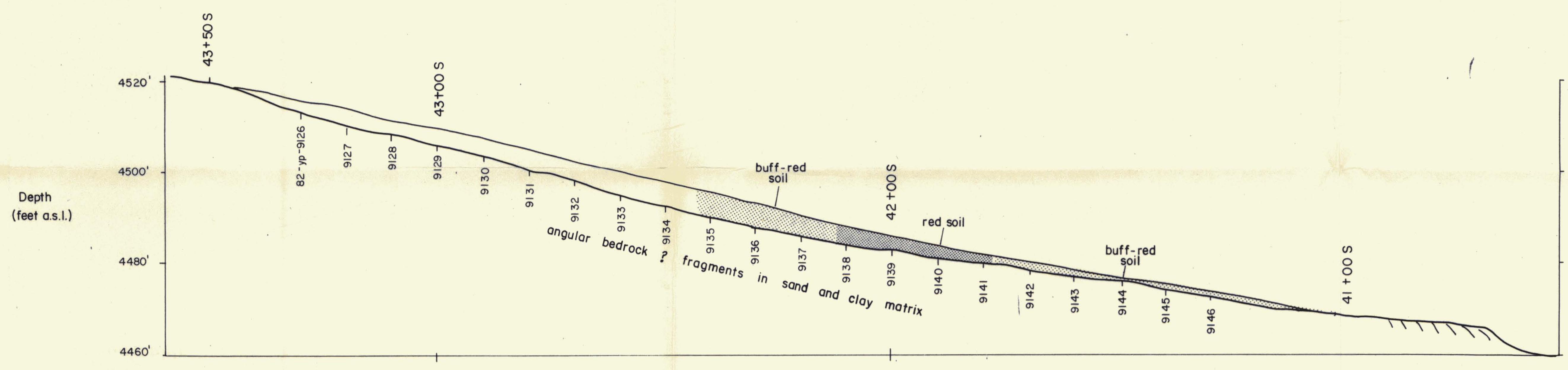


Total Field Magnetic Profile

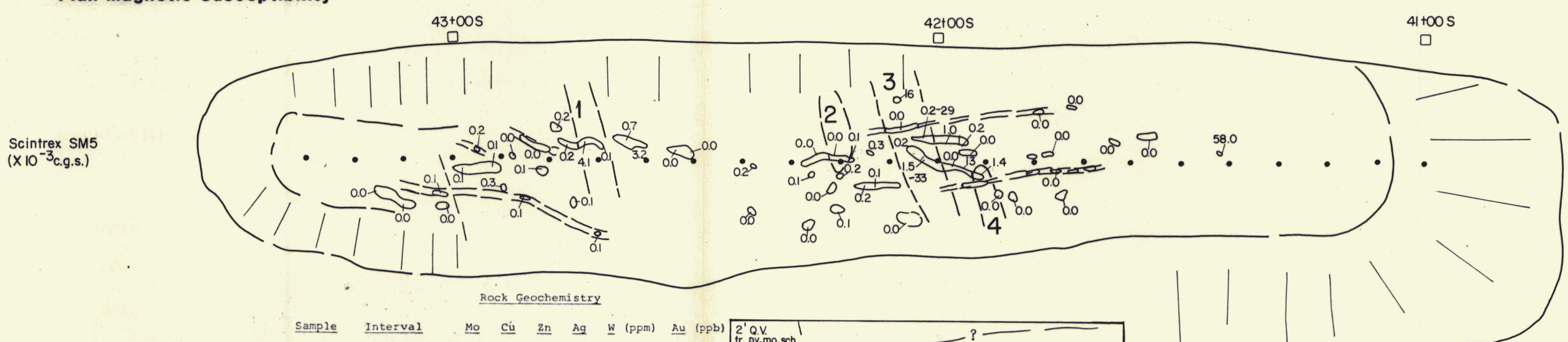
Radiometric Profile



Topographic Profile and Soil Sample Locations

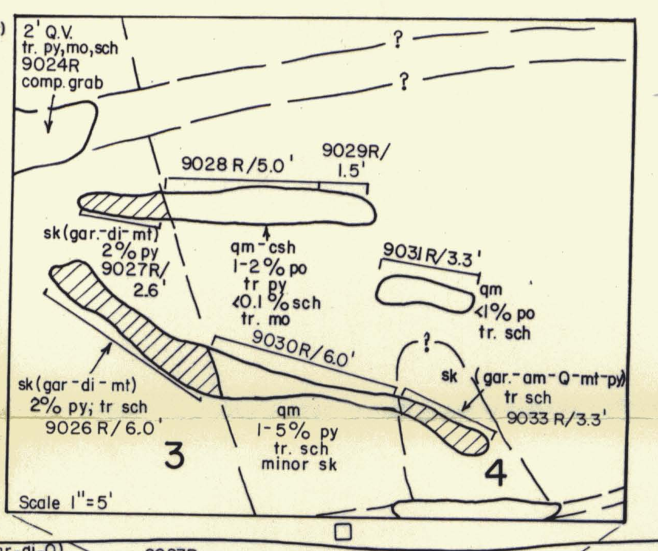


Plan Magnetic Susceptibility

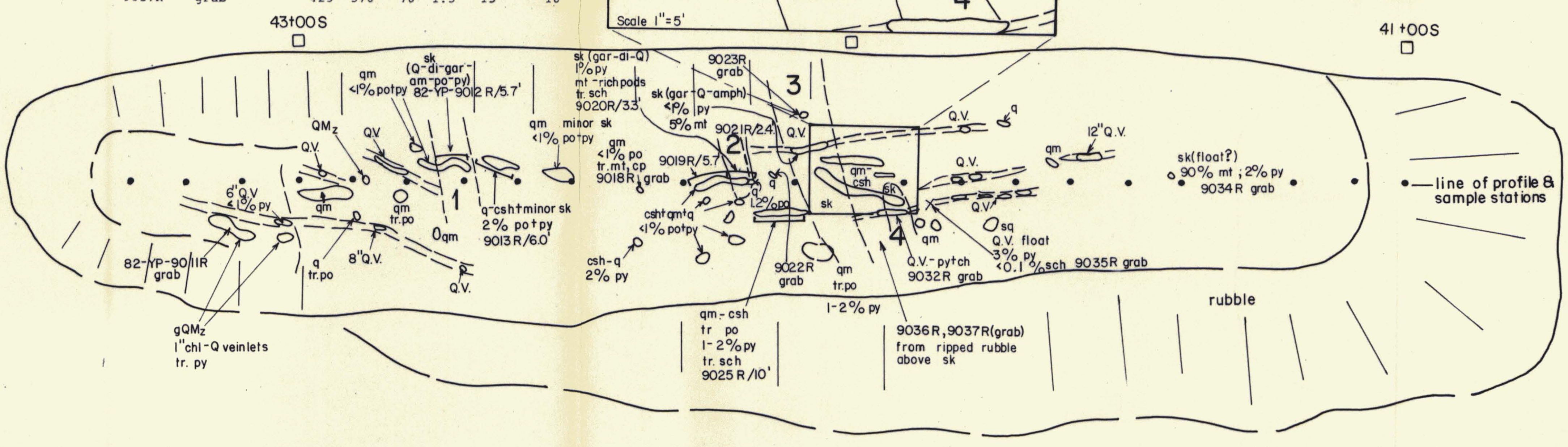


Rock Geochemistry

Sample	Interval	Mo	Cu	Zn	Ag	W (ppm)	Au (ppb)
82-YP-9011R	grab	24	160	65	0.7	5	<5
-9012R	5.7'	64	700	170	0.9	85	5
-9013R	6.0'	28	150	160	0.1	22	<5
-9018R	grab	120	370	100	0.5	5	<5
-9019R	5.7'	96	190	100	0.3	32	5
-9020R	3.3'	31	160	135	0.2	16	5
-9021R	2.4'	240	320	88	0.8	70	200
-9022R	grab	76	100	120	0.1	11	<5
-9023R	grab	260	270	155	0.6	7	15
-9024R	comp. grab	32	14	40	8.3	300	0.497 oz/t
-9025R	10.0'	35	263	110	0.4	55	105
-9026R	6.0'	335	240	195	0.3	20	30
-9027R	2.6'	640	285	190	0.4	25	10
-9028R	5.0'	890	500	93	0.5	90	5
-9029R	1.5'	130	360	110	0.4	125	5
-9030R	6.0'	265	600	160	4.0	130	125
-9031R	3.3'	400	165	86	0.6	30	10
-9032R	grab	62	260	23	3.8	420	30
-9033R	3.3'	330	770	100	2.6	450	115
-9034R	grab	11	108	550	0.1	3	5
-9035R	grab	14	338	13	2.6	275	25
-9036R	grab	180	1350	80	4.2	300	160
-9037R	grab	425	570	70	1.5	15	10



Plan Geology



CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION

091063

THATCH, HATCH, PATCH and MATCH CLAIMS
Whitehorse Mining Division, Yukon
N.T.S. 115 H/12

SPRING 1982 TRENCHING PROGRAM
82-T-3 Line 88+00 E

SCALE 1:240
20 0 20 40 60 feet

PLAN 3

R.M.K./sa/Apr. 1982

Legend

MESOZOIC-TERTIARY?

- Q.V. — Quartz vein
- gQM_z — Greisenized quartz-monzonite

PROTEROZOIC-PALEOZOIC?

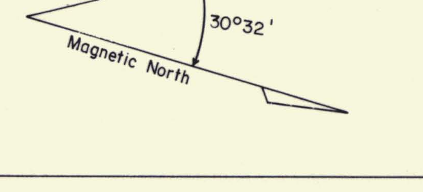
Yukon Series Metasedimentary Rocks

- csh — calc-silicate hornfels
- sk — skarn; variable proportions of gar, Q, am, di, mt, py, po
- sq — quartzitic biotite schist
- q — quartzite
- qm — micaceous quartzite

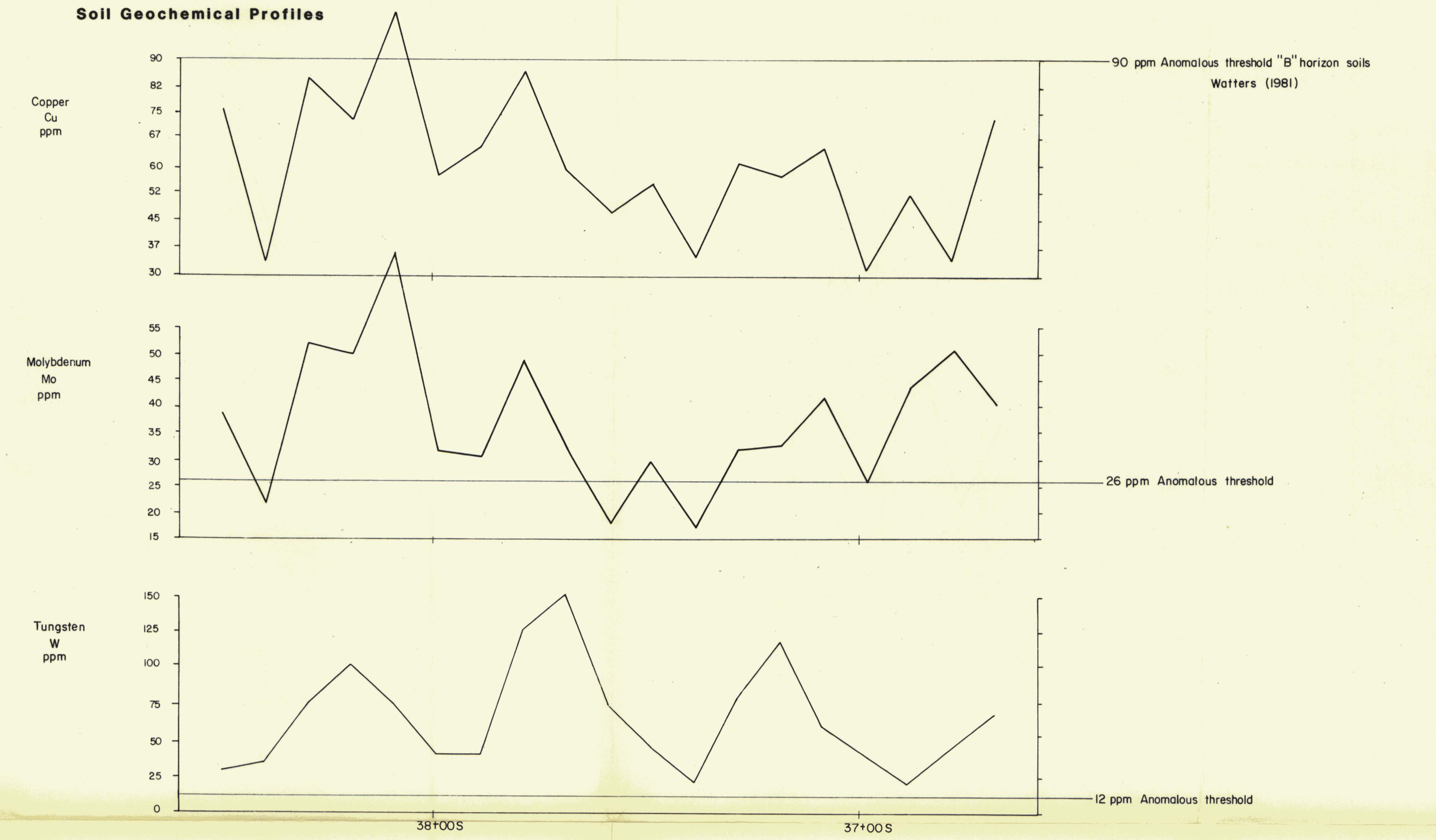
Symbols

gar	garnet
chl	chlorite
am	amphibole
Q	quartz
py	pyrite
po	pyrrhotite
mt	magnetite
cp	chalcopyrite
sch	scheelite
mo	molybdenite

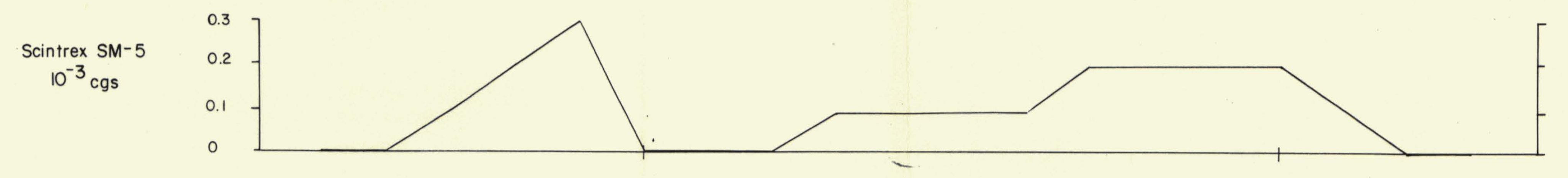
- geologic contact; defined, approximate
- bedrock exposure
- (82-YP) 9012R — rock sample location
- chip sample interval
- 1, 2 — skarn zones discussed in text



Soil Geochemical Profiles

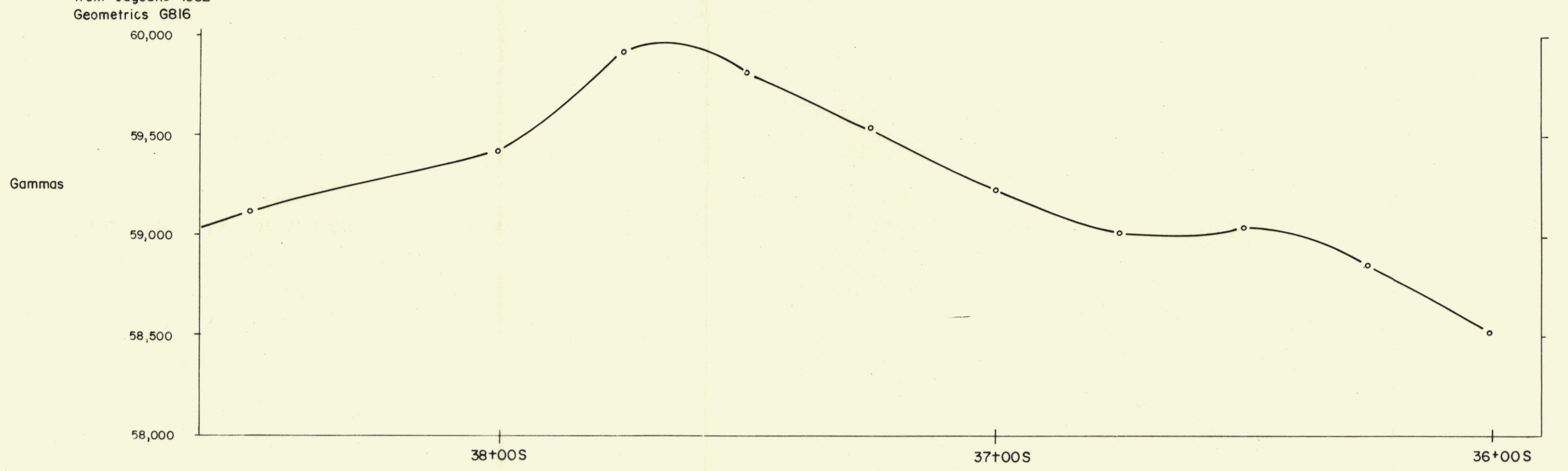


Magnetic Susceptibility

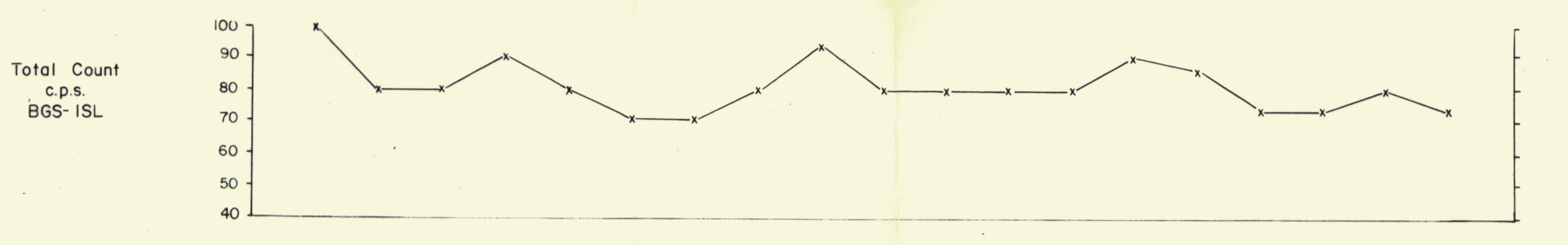


Total Field Magnetic Profile

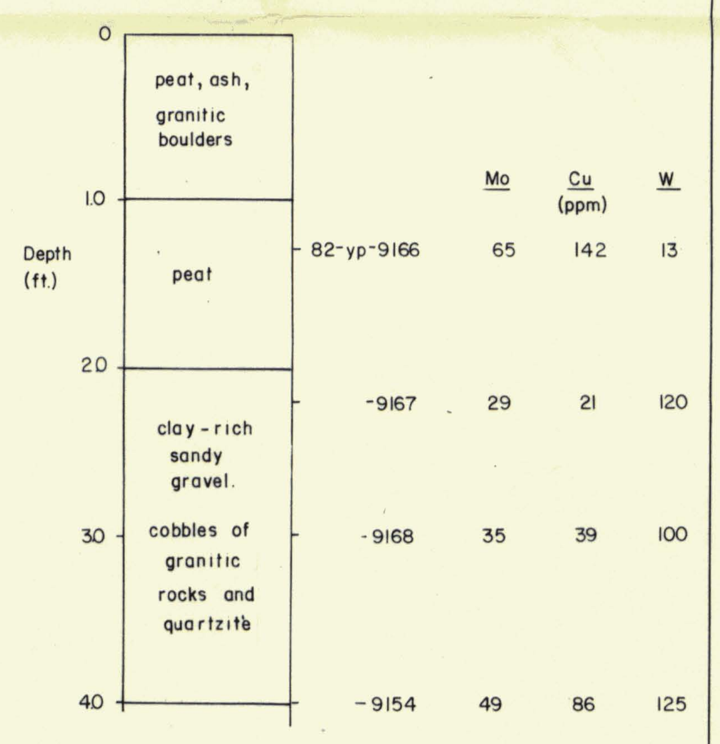
from Jagodits 1982
Geometrics G816



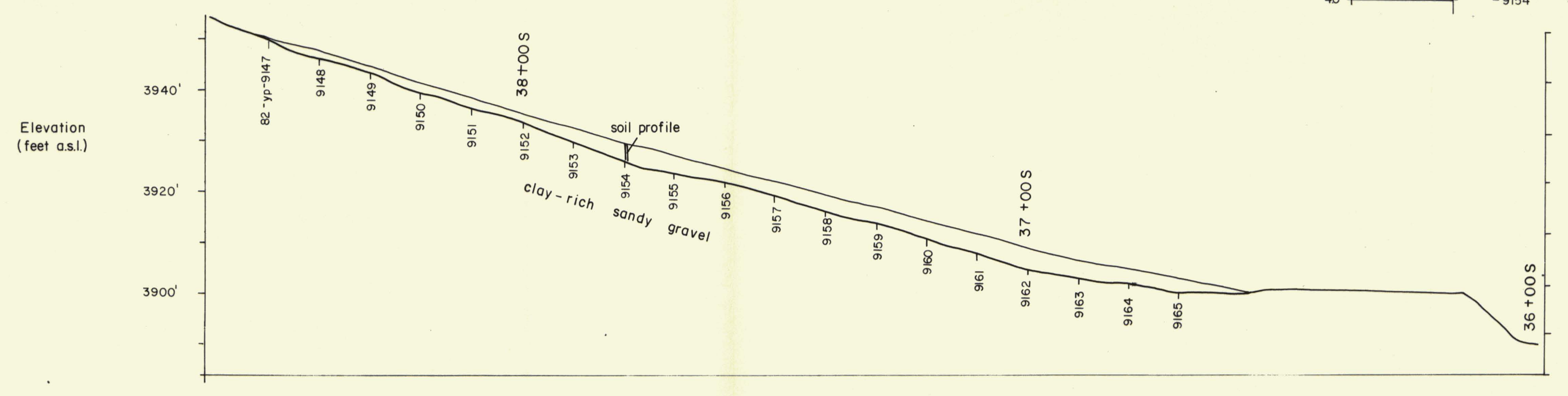
Radiometric Profile



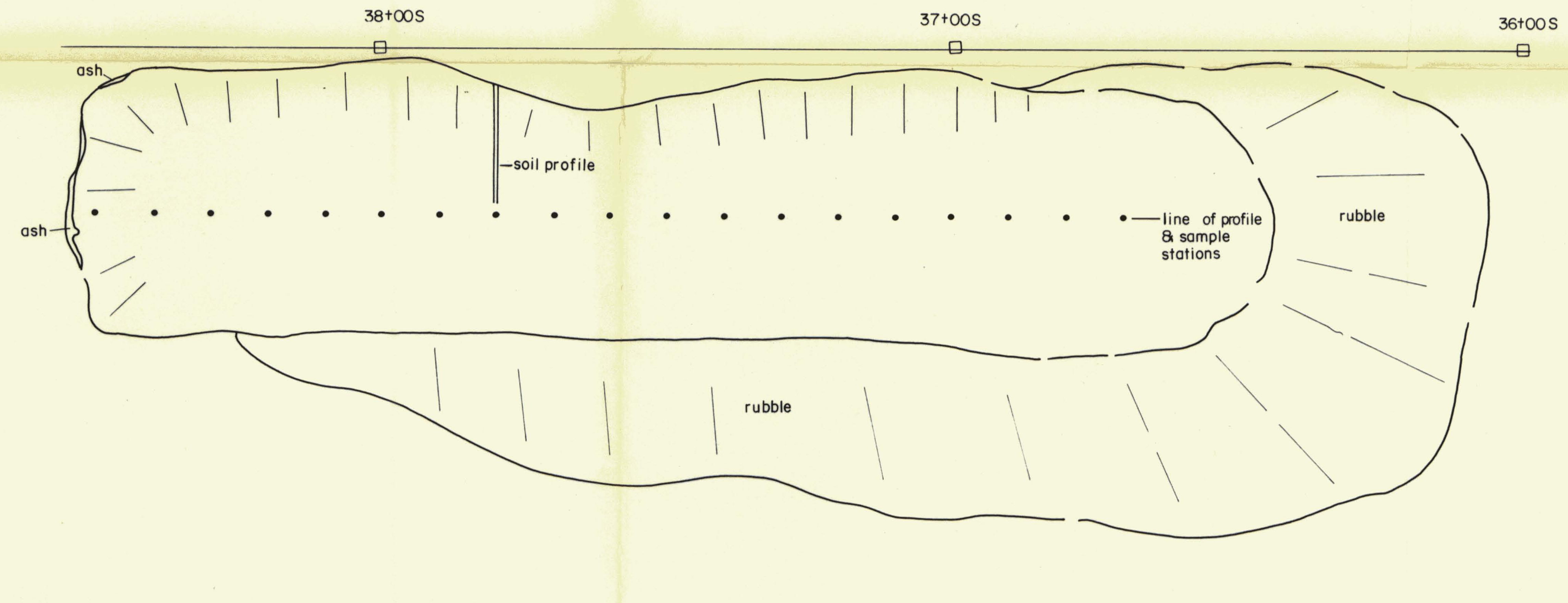
82-T-4
Soil Profile



Topographic Profile and Soil Sample Locations



Plan

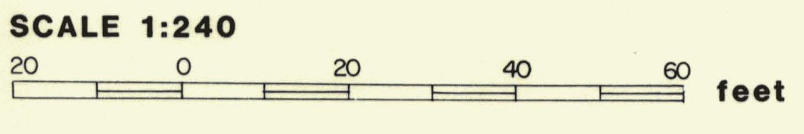


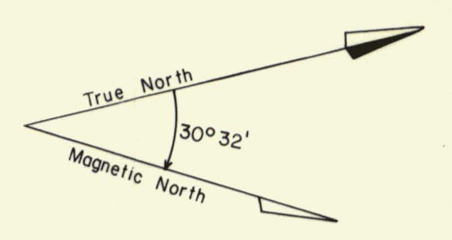
CANADIAN OCCIDENTAL PETROLEUM LTD. 091063
MINERALS DIVISION

THATCH, HATCH, PATCH and MATCH CLAIMS
Whitehorse Mining Division, Yukon
N.T.S. 115 H/12

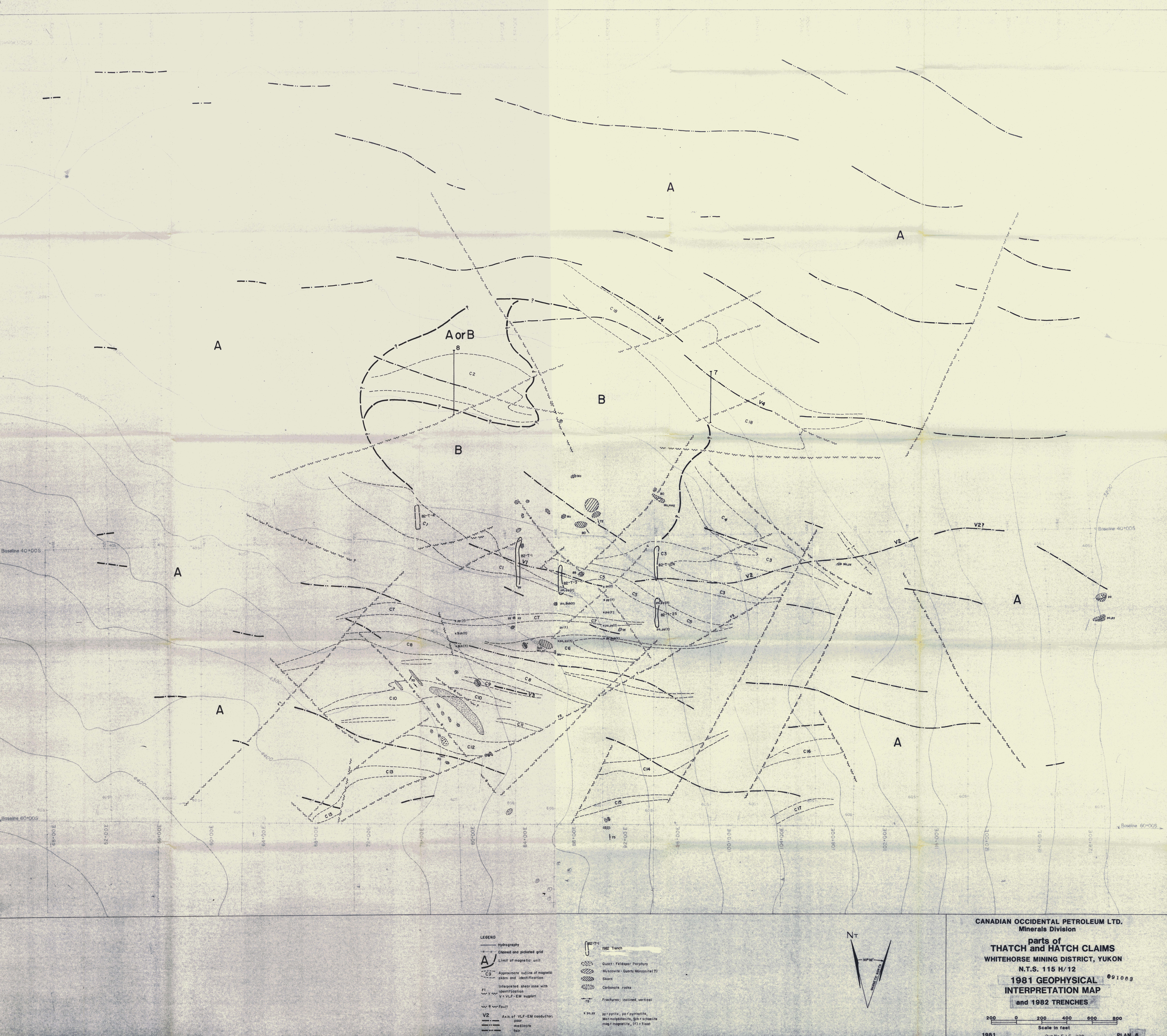
SPRING 1982 TRENCHING PROGRAM
82-T-4 Line 76+00 E

SCALE 1:240





PLAN 4 **R.M.K./sa/Apr. 1982**



LEGEND

- Hydrography
- Chained and picketed grid
- A — Limit of magnetic unit
- C9 — Approximate outline of magnetic skarn and identification
- F1 V — Interpreted shear zone with identification; V = VLF-EM support
- G — Fault
- V2 — Axis of VLF-EM conductor: poor; mediocre; fair
- 82-T-1 — 1982 Trench
- Quart - Feldspar Porphyry
- Muscovite - Quartz Monzonite (?)
- Skarn
- Carbonate rocks
- 75 — Fractures; inclined, vertical
- x po, py — py = pyrite, po = pyrrhotite, Mo = molybdenite, Sch = scheelite, mag = magnetite, (f) = float

CANADIAN OCCIDENTAL PETROLEUM LTD.
Minerals Division

parts of THATCH and HATCH CLAIMS

WHITEHORSE MINING DISTRICT, YUKON

N.T.S. 115 H/12

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1981 GEOPHYSICAL INTERPRETATION MAP

and 1982 TRENCHES

200 0 200 400 600 800
Scale in feet

1981 PLAN 6