

ASSESSMENT REPORT PASS 1-24 CLAIMS

MAYO MINING DISTRICT NTS 106E/2

A.R. Archer, P. Eng. January 19, 1979



090418



This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of

\$ 16,400 2/2/79

~~Resident Geologist or
Resident Mining Engineer~~

Considered as representation work under Section 50 (1) Yukon Quartz Mining Act

B. R. BAXTER
Supervising Mining Recorder

Commissioner of Yukon Territory

04490

ARCHER, CATHRO
AND ASSOCIATES LTD.
CONSULTING GEOLOGICAL ENGINEERS

Box 4127, WHITEHORSE, Y.T. Y1A 3S8 667-4415

STANDARD BUILDING, VANCOUVER, B.C. 688-2568

1018 STANDARD BUILDING
510 WEST HASTINGS STREET
VANCOUVER, B.C.
V6B 1L8

Assessment Report

on

Airborne Radiometric, Geological,
Geochemical and Ground Radiometric Surveys

Conducted May 27 to June 21, 1978

Pass 1-24 Claims
YA30273 to YA30296

Mayo Mining District
Claim Sheet 106E/2
Latitude 65°10'N, Longitude 134°45'W

January 19, 1979

Alan R. Archer

Consulting Engineer

TABLE OF CONTENTS

<u>Text</u>	<u>Page</u>
Introduction -----	1
Property, Location and Access -----	1
Geology and Mineralization -----	2
Airborne Radiometric Survey -----	4
Ground Radiometric Survey -----	4
Grid Geochemical Survey -----	5
Summary and Conclusion -----	6

<u>Figures in Text</u>	<u>Following Page</u>
Figure P1-WJV 78 - Grid Location Pass Claims - Scale 1"-1/2 mile	1
Photograph 4a and 4b - Pass Property, Facing West and South	3

<u>In Pockets</u>	<u>Pocket Number</u>
Figure P2-WJV 78 - Geology, Pass Claims, Scale 1:5000	1
Figure P3-WJV 78 - Ground Radiometrics, Pass Claims, Scale 1:5000	1
Figure P4-WJV 78 - Uranium Geochemistry, Pass Claims, Scale 1:5000	2
Figure P5-WJV 78 - Airborne Radiometric Survey, Total Count, Pass Claims, Scale 1:5000	2
Figure P6-WJV 78 - Airborne Radiometric Survey, Uranium, Pass Claims, Scale 1:5000	3
Figure P7-WJV 78 - Airborne Radiometric Survey, Throium, Pass Claims, Scale 1:5000	3

INTRODUCTION

The Wernecke Joint Venture (WJV) Pass property covers the lapsed Yogi 1-16 claims staked in 1974 by Great Plains Development Company of Canada Ltd. (Norcen Energy Resources) and Kerr Addison Mines Ltd.. The Yogi claims were allowed to expire following a 1975 program of soil sampling and geological mapping. Radioactive breccia float peripheral to these claims had been recognized by WJV in 1975 and the Pass claims were staked at the start of the 1978 field season. The 1978 WJV program consisted of a detailed airborne radiometric survey, grid geological, geochemical and ground radiometric surveys. Field work was conducted under the writer's supervision during the period May 27 to June 21, 1978 by geologists C. Main, U.Schmidt and J. Chapman and field men G. Matthews, A. Halleran and S. Veerman.

The principal companies in WJV are Chevron Canada Ltd. and Aquitaine Company of Canada Limited.

PROPERTY, LOCATION AND ACCESS

The property consists of 24 contiguous mineral claims recorded in the Mayo Mining District as follows:

<u>CLAIM NAME</u>	<u>GRANT NUMBERS</u>	<u>EXPIRY DATE</u>
Pass 1-24	YA30273-YA30296	26 May, 1979

The property is located at latitude 65°10'N and longitude 134°45'W within NTS claim sheet 106E/2, 190 km northeast of Mayo. Access in 1978 was by helicopter from a base camp at Kiwi Lake, 8 km to the northeast, which may be reached by float or ski equipped fixed-wing aircraft from a charter base in Mayo (see Figure P1-WJV 78 on the following page).

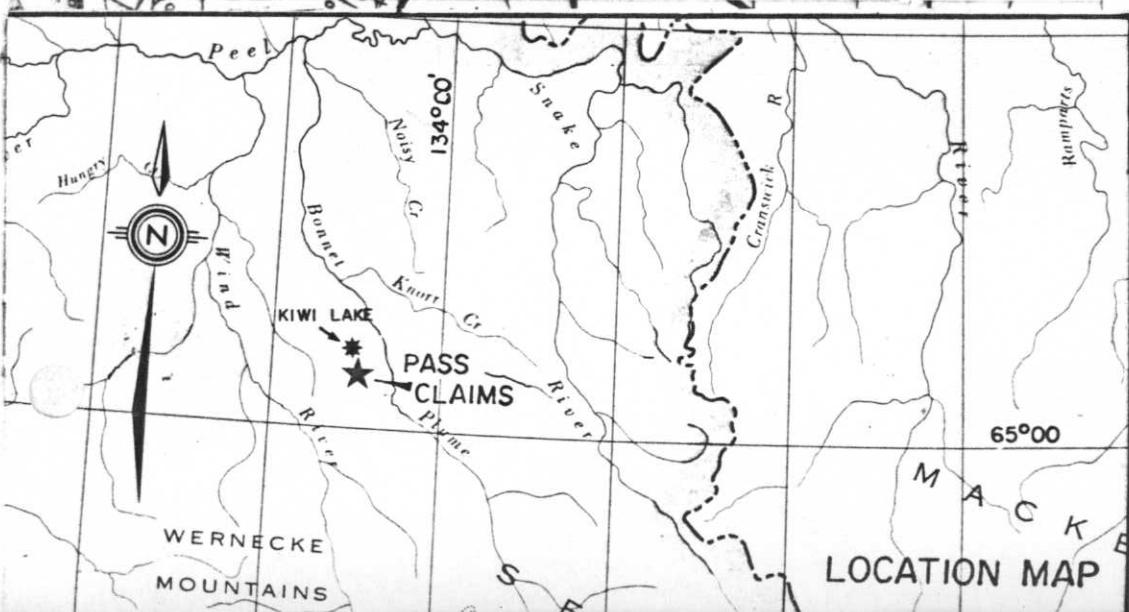
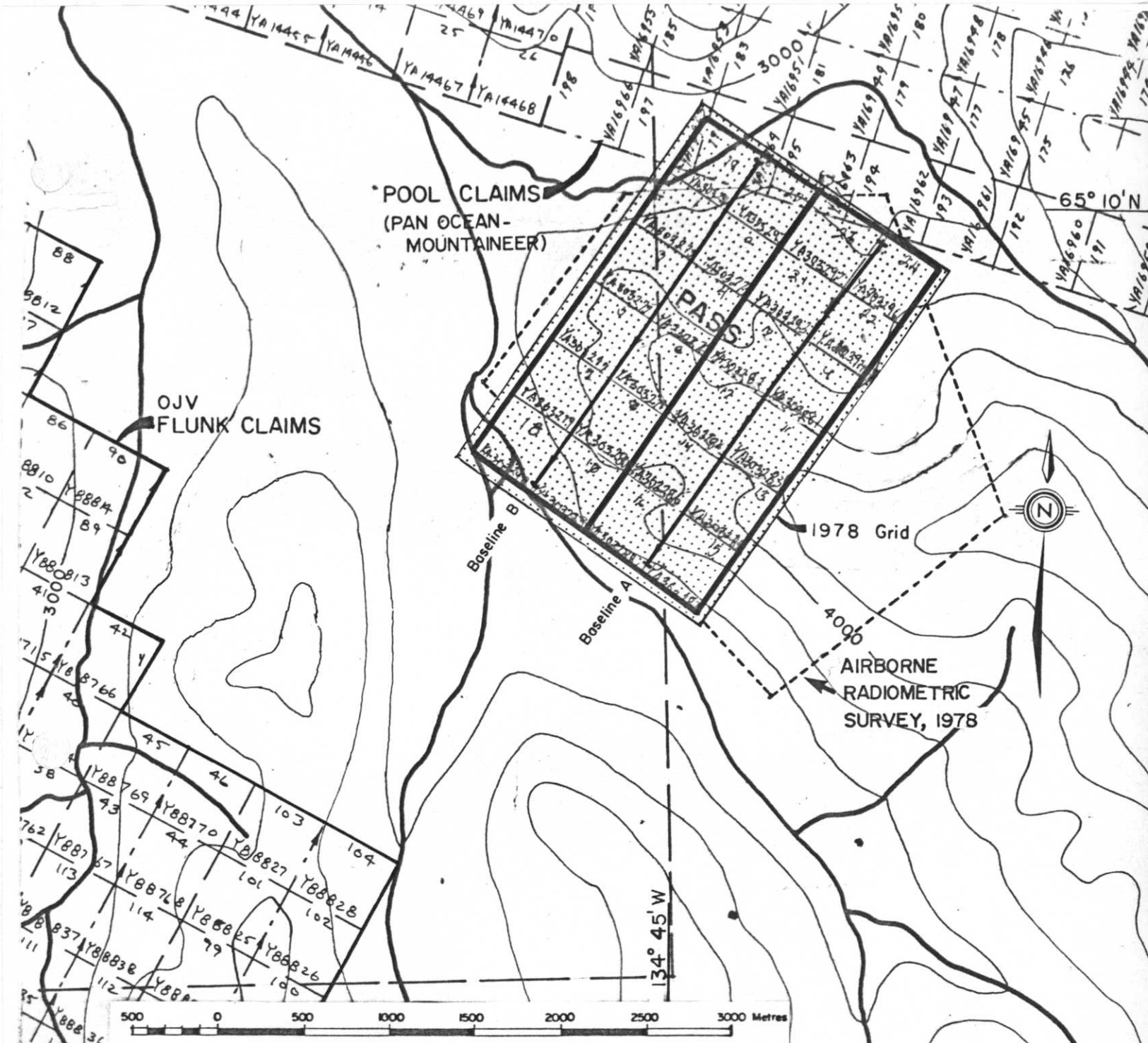


Fig. PI WJV78
 ARCHER, CATHRO & ASSOCIATES
 GRID LOCATION
 AND
 GROUPING PLAN
 PASS CLAIMS
 WERNECKE JOINT VENTURE
 106 E/2
 1/2 mi. = 1 in.

The Pool claims, which adjoin the Pass claims to the north, are part of an 800 claim property owned by Pan Ocean Oil Ltd. and Mountaineer Mines Ltd. that received intensive exploration in 1978, including diamond drilling.

GEOLOGY AND MINERALIZATION

The topography of the property consists of steep unglaciated partially rounded hillsides bounded on the northwest by the flat Illtyd River valley. Outcrop is not abundant and is generally restricted to ridge crests. Overburden cover is better developed than usual for the Wernecke Mountains and consists almost entirely of residual till ranging from boulders down to sand size fragments. Trees are scarce and vegetation is characterized by low bush, moss and lichen.

Geological mapping was accomplished mainly by identifying larger float fragments. The claim block is underlain by Helikian or older Quartet Group (WJV Unit Hs) black shales which have been divided into four sub-units by WJV on the basis of breccia alteration. Breccia bodies are numerous and are best developed in the northwest and northeast part of the claim group.

A brief description of each WJV unit is:

Unit Hb - irregular heterogeneous and heterolithic bodies of fragmented and altered host rock. Fragments are generally angular to sub-rounded. The matrix is often dark, containing hematite, chlorite and varying amounts of carbonate, barite and magnetite. Hematite staining sometimes gives the rocks a pink cast. Fragments of the same composition often appear different due to varying degrees of alteration.

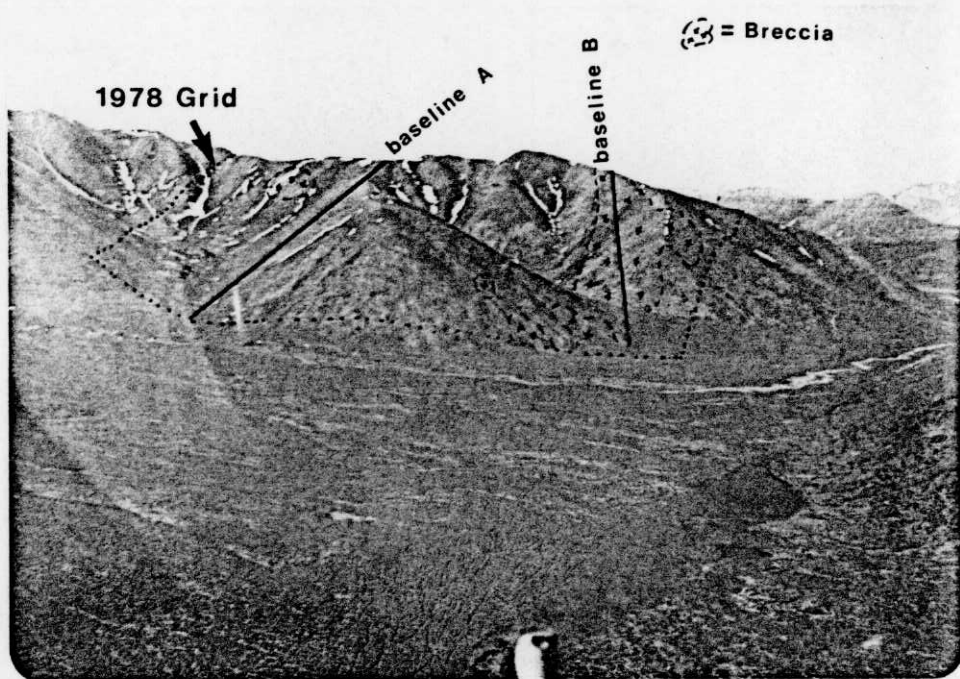
Unit Hsp - dark green banded chloritic phyllite which varies locally from slate to schist. Often "spotted" with porphyroblasts of fine grained mafics.

Unit Hspa - a more altered variant of Hsp. Colouration varies irregularly from bleached white to purple with occasional black slate and green phyllite. Porphyroblasts of chlorite(?) are well developed (to .5 cm). Quartz and quartz-carbonate veins are pervasive.

Unit Hsc - a brown weathering, creamy crystalline dolomite with disseminated magnetite.

Unit Hsca - a brown weathering layered carbonate variably containing well developed (.5 to 1.0 cm) cordierite(?) crystals. Almost always found peripheral to Unit Hb, this rock is probably an alteration product of brecciation.

Prospecting located patchy, disseminated brannerite float in all parts of the property except the southeastern margin, which is underlain by unaltered shale (Unit Hs). The mineralization is most abundant within the breccias and their altered margins. Although selected float specimens assayed up to 24.4% U_3O_8 , the occurrences are small and widespread. The most interesting area, Target Area 1 on Figure P2-WJV 78 (in pocket), is a 400 m by 800 m zone of altered shale (Unit Hspa) on the southern half of the property between the two largest bodies of breccia (see Photograph 4 on the following page). Here, detailed prospecting and hand pitting located scattered, small fragments of sub-surface brannerite rich float at three sites, pit areas 1, 2 and 3, even though surface waist level radiometric response was not above background. The brannerite was mainly in the form of small, flat flakes suggesting formation in tight veinlets or fractures. A 1/2 kg sample of apparently unmineralized soil from pit area 3 was panned and returned about 1 cc of brannerite in a 3 cc heavy fraction. The waist level radiometric background of the site of this soil sample was not anomalous.



PHOTOGRAPH 4a - Pass property (facing west).



PHOTOGRAPH 4b - Pass property (facing south).

AIRBORNE RADIOMETRIC SURVEY

The airborne radiometric survey consisted of horizontal contour flights spaced at vertical elevation intervals of about 150 m (500 feet). The survey covered all of the Pass claims, as outlined on Figure P1-WJV 78. Control was obtained from 1:250,000 government topographic maps. The survey instrumentation consisted of a Scintrex GSA-61 (1853 cc) crystal and GAD-4 spectrometer with Hewlett-Packard 7155A and Gould (Brush) 222 recorders that charted total count, uranium and thorium channels. Figures P5-WJV 78 to P7-WJV 78 (in pocket) illustrate the response for each of the three channels. The original tapes are filed in the Archer, Cathro vault in Whitehorse for safekeeping. The total count and uranium channels show reasonable correlation with each other and outline several weak, poorly defined anomalies with twice background response. There is no recognizable correlation between these anomalies and geologic units or known mineralization. One group of anomalies appears to be related to a major north to northeast trending fault across the east part of the property; however, no evidence of mineralization was found on the ground along this structure.

GROUND RADIOMETRIC SURVEY

Figure P1-WJV 78 illustrates the location of the area (1800 m by 2700 m) that was grid surveyed in 1978. Grid control consisted of two chained slope-corrected baselines with picketed stations at 50 m intervals. Slope-corrected crosslines were established at intervals of 100 m with hip-chain and compass. Baseline stations were marked with 1 m lath pickets and crossline stations with 1/2 m pickets. Radiometric readings were taken at each station and high readings between stations were also recorded. All measurements were taken with a Scintrex BGS-1S broadband (total count) scintillometer equipped with a 12.75 cc NaI(Tl) crystal.

Figure P3-WJV 78 (in pocket) illustrates the ground radiometric response. There is little contrast between rock types. Unit Hb ranges from 50-60 cps; Units Hsp and Hsc from 40-50 cps; and, Units Hspa and Hsca from 35-40 cps. Anomalies are erratic and often extreme (up to 7500/50 cps) and all are caused by isolated fragments of brannerite-rich float.

GRID GEOCHEMICAL SURVEY

Soil samples were collected at each station as illustrated on Figure P4-WJV 78 (in pocket). Samples were taken from a B + C horizon and sent to Chemex Labs Ltd., North Vancouver where they were dried at 50°C, screened to minus 80 mesh, split and weighed, ashed at 550°C, digested twice in 4M nitric acid to dryness, picked up in acidified water, fused with a standard sodium fluoride-based flux and assayed in ppm uranium with a G.K. Turner fluorometer. Out of a total of 471 samples analyzed only 35 exceeded the detection limit of 0.5 parts per million and only 5 reached the maximum value of 2.0 ppm. The ineffectiveness of the soil sampling is probably because brannerite fragments are exceeding the minus 80 mesh size used for soil analysis and are too insoluble to contribute hydromorphic uranium to the finer soil fraction.

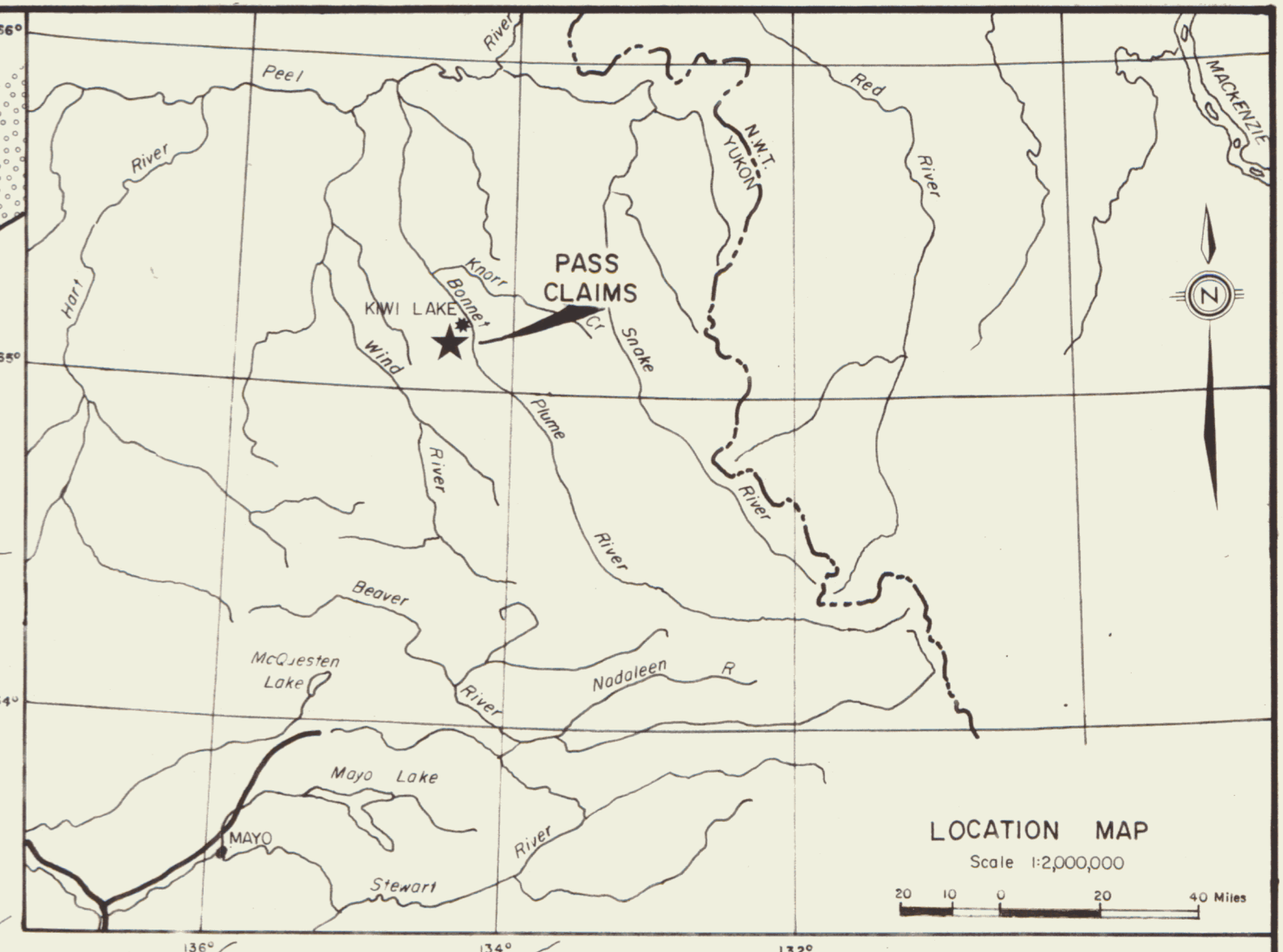
SUMMARY AND CONCLUSIONS

The WJV Pass uranium property was staked in 1978 to cover an area of brannerite-bearing float associated with several breccia bodies. This target had been recognized by WJV in 1975 after it was staked by another party for its base-metal potential. While airborne radiometric surveys and grid soil sampling in 1978 failed to outline any areas of interest, close spaced radiometric prospecting with hand scintillometers located wide spaced mineralized float within several breccia bodies and in altered shales peripheral to them. The most interesting zone is a 400 m by 800 m area of highly jointed and bleached shale (Unit Hspa) lying between two breccia bodies on the southern half of the property. Here, detailed prospecting located numerous brannerite fragments in sub-surface soil and a panning of soil from this area obtained abundant small brannerite fragments.

Further work should consist of exploring Unit Hspa for its potential of hosting a low grade stockwork-type of brannerite deposit. Exploration should consist of grid soil panning to locate the best mineralized areas which can then be evaluated by diamond drilling.

ARA:jm

Respectfully submitted,
ARCHER, SAITHO & ASSOCIATES LTD.,
A. R. ARCHER
GEOLOGICAL,
A.R. Archer, B.A.Sc., P. Eng.
Association of Professional Engineers of the Yukon Territory
ENGINEER



LEGEND

Bedding: inclined, vertical; G-gentle, M-moderate, S-steep
 Foliation: inclined, vertical
 Geological boundary: defined, approximate, assumed
 Fault: defined, approximate

HELIKTIAN, POSSIBLY APHEBIAN

Breccia
 Heterolithic breccia composed of dark grey to pink, angular to rounded fragments in a dark matrix commonly rich in carbonate, hematite, chlorite and minor barite and magnetite; intruded units are usually altered at contacts

GILLESPIE LAKE GROUP
 Hc orange and brown weathering, stromatolitic dolomites with cherty horizons, carbonate debris flows

QUARTZET GROUP
 Hs Interbedded black slates, argillites, quartzites, less commonly green slates and quartzites, cross and graded bedding seen in quartzites and siltstones

Altered Quartzet
 Hsa undifferentiated bleached and altered equivalents of Hs, apple green to light beige, cherty, occasionally limy

Spotted Phyllite
 Hsp dark green banded chloritic phyllite, locally schistose, may contain porphyroblasts minor basic dykes

Altered Phyllite
 Hspa alternating beds of black slate and green phyllite partly spotted and bleached, usually peripheral to Hb, cut with many quartz-carbonate veins with rare brannerite

Green Schist
 Hsh tightly kinked grey green to grey blue chlorite schist

Dolomite
 Hsc dark brown weathering, coarse crystalline, creamy dolomite with magnetite, possibly an alteration product of breccia

Alteration Dolomite
 Hsca A brown weathering carbonate rich layered rock usually close to Hb, often contains well developed (5-1 cm) cordierite crystals, probably an alteration product of breccia

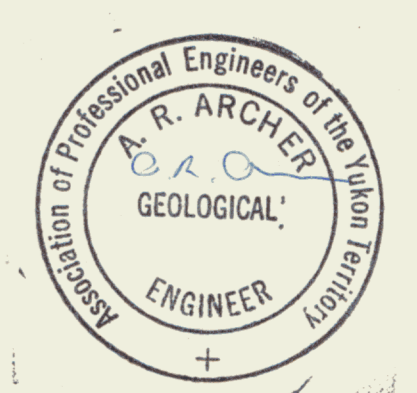
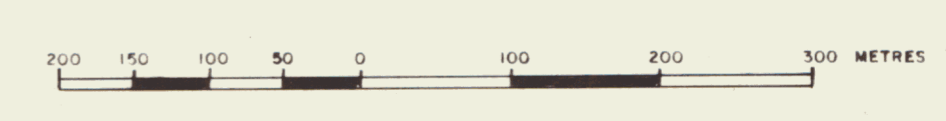
Claim posts located during survey

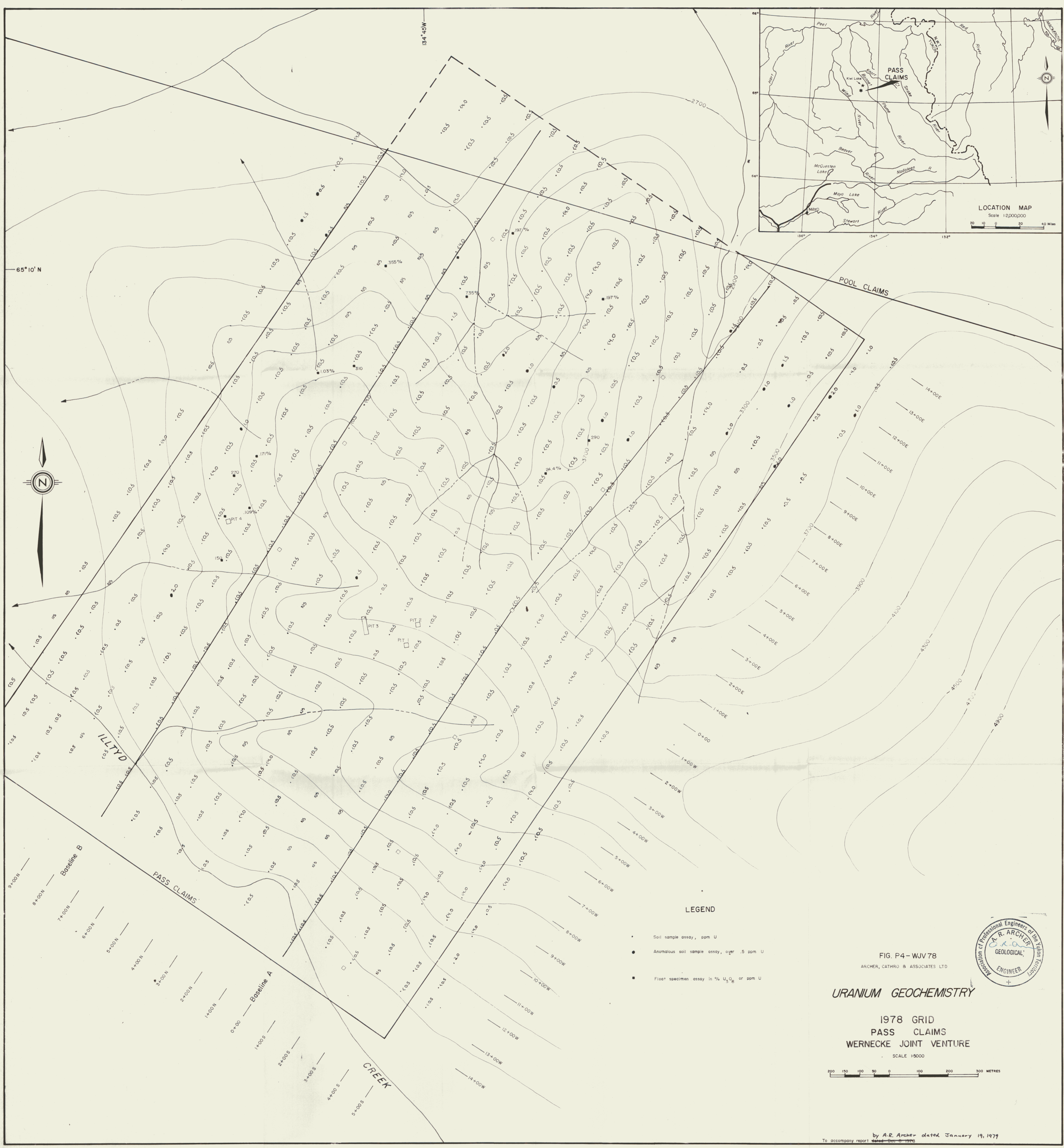
FIG. P2-WUV 78
 ARCHER, FATHOR & ASSOCIATES LTD

GEOLOGY

1978 GRID
 PASS CLAIMS
 WERNECKE JOINT VENTURE

SCALE 1:5000



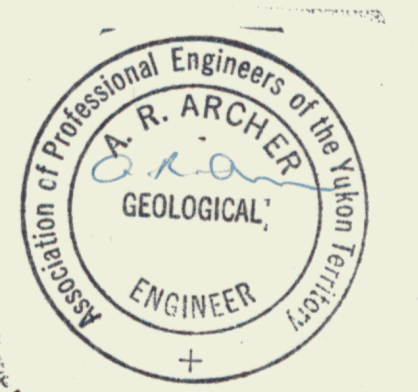
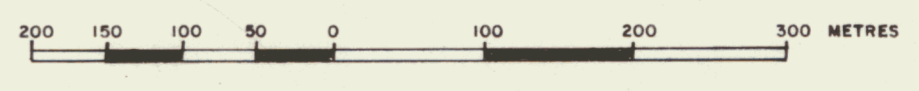


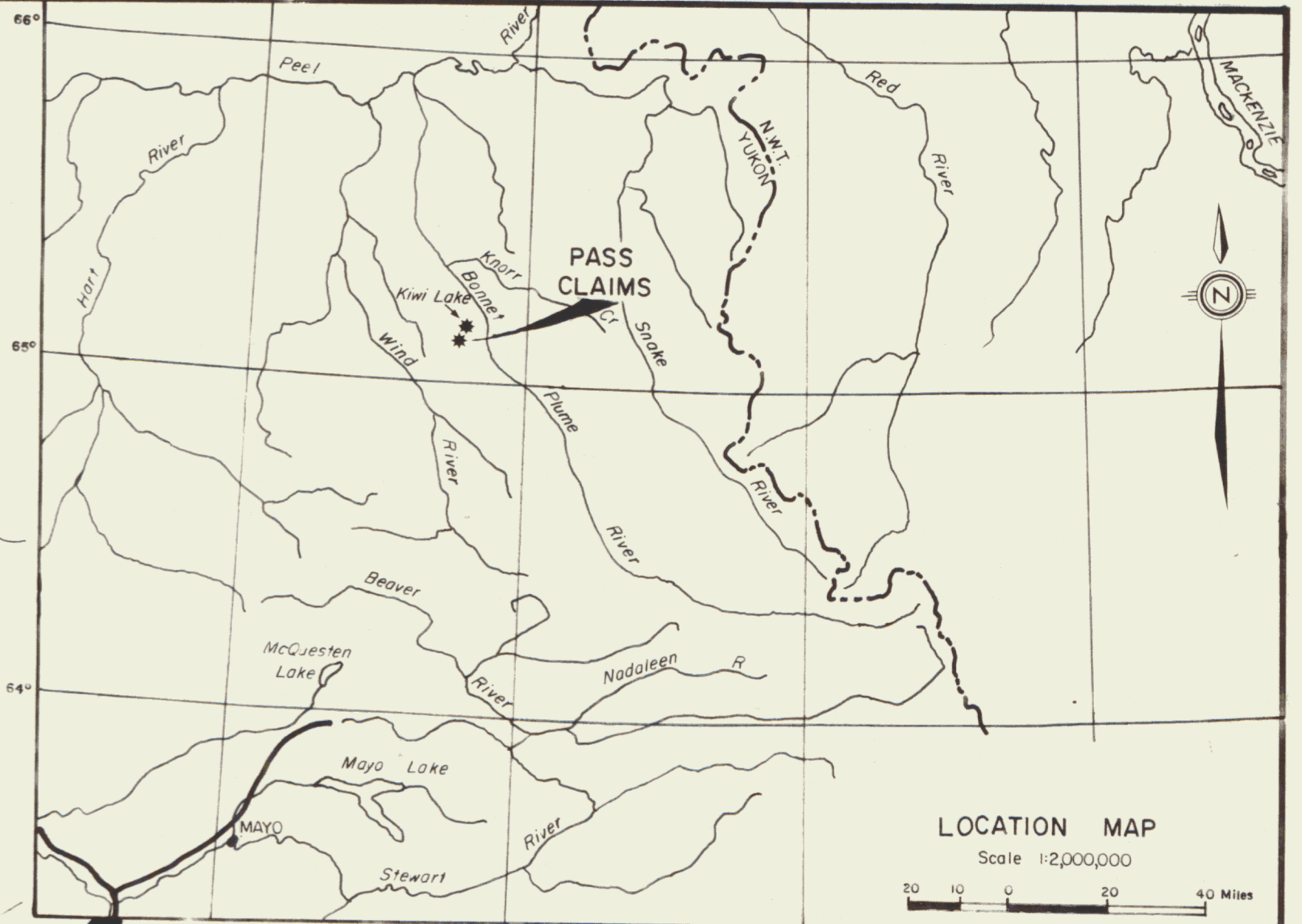
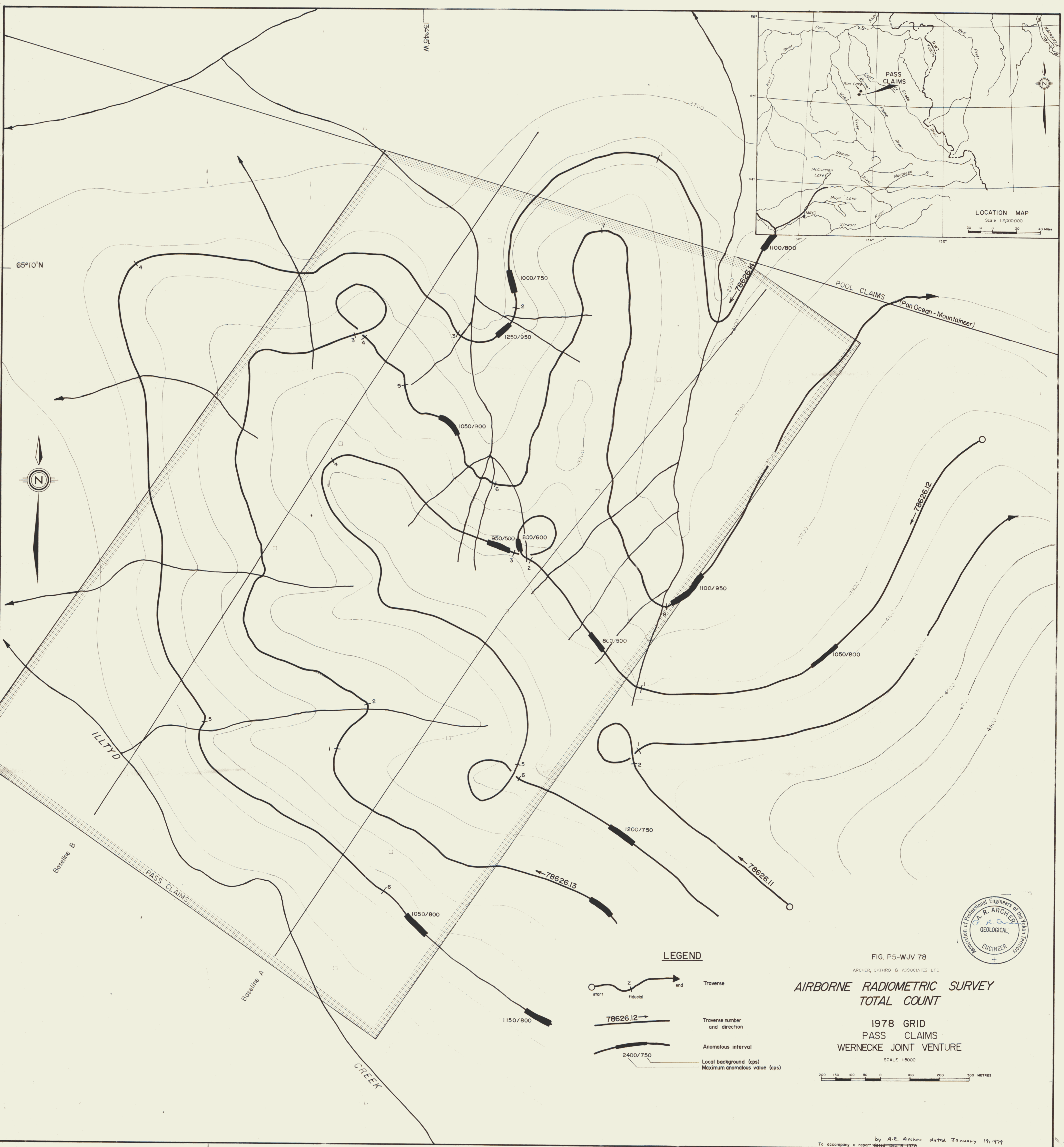
- LEGEND**
- Soil sample assay, ppm U
 - Anomalous soil sample assay, over .5 ppm U
 - Float specimen assay in % U_3O_8 or ppm U

FIG. P4-WJV78
 ARCHER, CATHRO & ASSOCIATES LTD

URANIUM GEOCHEMISTRY

1978 GRID
 PASS CLAIMS
 WERNECKE JOINT VENTURE
 SCALE 1:5000





LEGEND

- Traverse
- Traverse number and direction
- Anomalous interval
- Local background (cps)
Maximum anomalous value (cps)

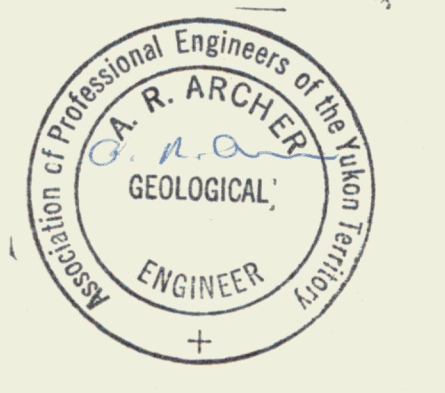
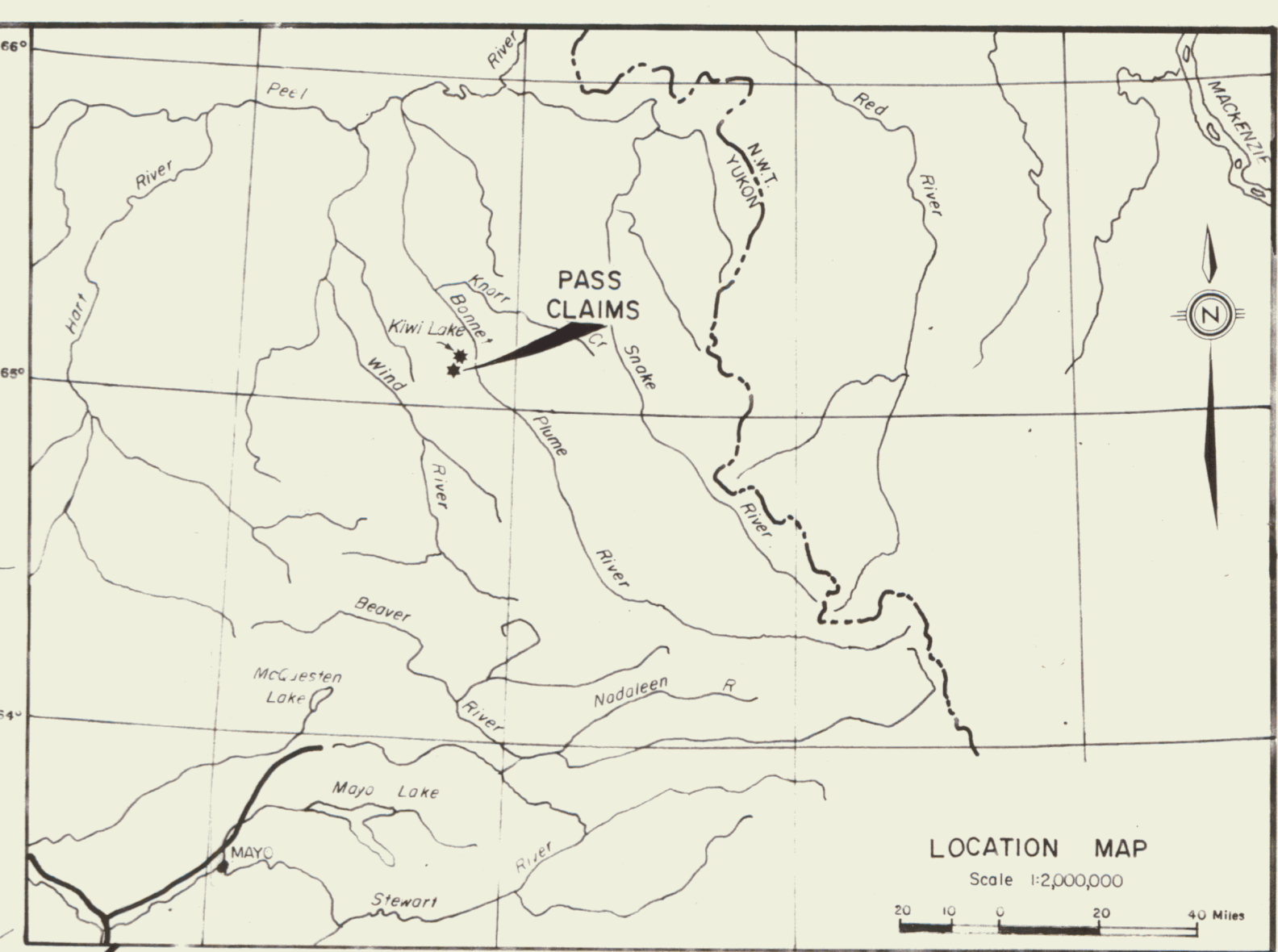


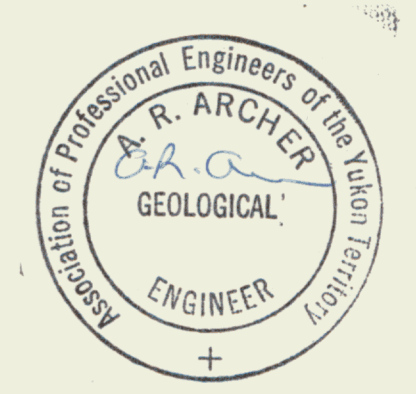
FIG. P5-WJV 78
 ARCHER, CATHRO & ASSOCIATES LTD
AIRBORNE RADIOMETRIC SURVEY
TOTAL COUNT
 1978 GRID
 PASS CLAIMS
 WERNECKE JOINT VENTURE
 SCALE 1:5000

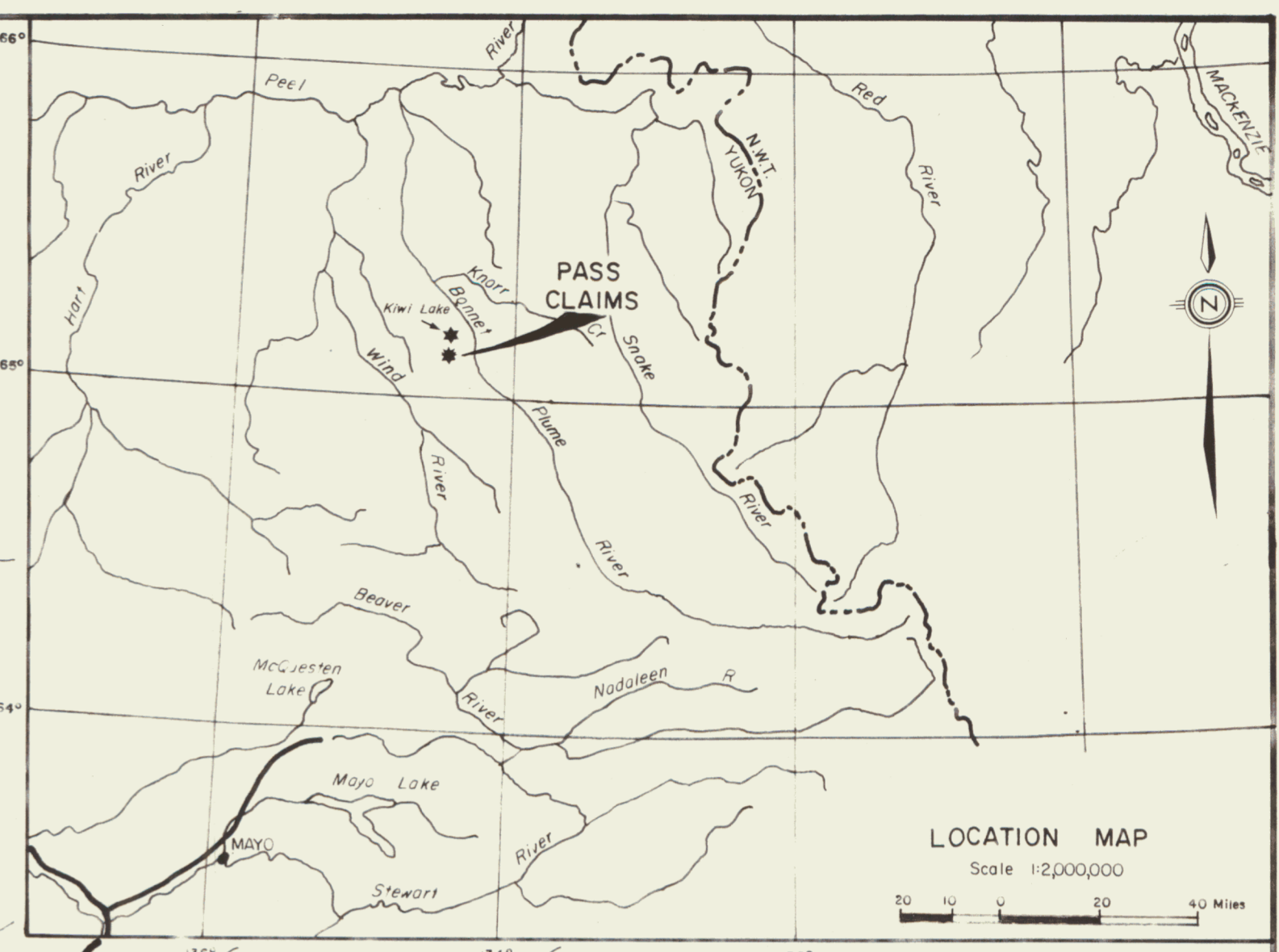


LEGEND

- Traverse
- Traverse number and direction
- Anomalous interval
- Local background (cps)
Maximum anomalous value (cps)

FIG. P6-WJV 78
 ARCHER, CAHRIC & ASSOCIATES LTD
**AIRBORNE RADIOMETRIC SURVEY
 URANIUM**
 1978 GRID
 PASS CLAIMS
 WERNECKE JOINT VENTURE
 SCALE 1:5000





LEGEND

	Traverse
	Traverse number and direction
	Anomalous interval
	Local background (cps) Maximum anomalous value (cps)

FIG. P7-WJV 78
 ARCHER, CATHRO & ASSOCIATES LTD
**AIRBORNE RADIOMETRIC SURVEY
 THORIUM**
 1978 GRID
 PASS CLAIMS
 WERNECKE JOINT VENTURE
 SCALE 1:5000

