


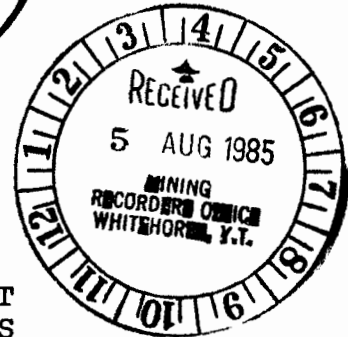
ASSESSMENT REPORTS**MAP No.** 105 D 3 **TYPE OF WORK:** GEOLOGICAL, GEOCHEMICAL

REPORT FILED UNDER	Central Electricity Generating Board Exploration (Canada) Ltd.	
DATE PERFORMED	20 Aug. - 25 July 1985	DATE FILED: 5 August 1985
LOCATION - LAT.	60 ⁰⁰ 'N	
LONG.	135 ⁰²¹ 'W	
CLAIM Nos.	MATT 1-20; YA82715-YA82734	
WORK DONE BY	S.E. Amukun and A.T. Turner	
WORK DONE FOR	C.E.G.B.E.	
REMARKS	Upper Cretaceous granodiorite is highly fractured and cut by Tertiary ring dykes. Tertiary boulder conglomerates and tuff breccias overlie these units. Brecciated volcanic boulders have been found to contain uranium mineralization.	
091653		
091653		
	85 Tex p. 99	

Ground radionetric prospecting and rock and silt geochemical sampling were conducted on and about the property in 1985. Anomalous stream sediment samples with up to 124 ppm U_3O_8 were reported. Radioactive boulder traces up to 300 m long were also discovered.

Microprobe analyses of radioactive rock samples showed uranium to be in the form of amorphous black network infillings. Associated elements are Ce, La, Ti, S and Fe. Rock samples averaged 0.11% U_2O_3 .





GEOLOGICAL AND GEOCHEMICAL REPORT
ON THE MATT 1 - 20 MINERAL CLAIMS
BENNETT LAKE AREA, YUKON TERRITORY

WHITEHORSE MINING DISTRICT
NTS 105D-3W

091653

Latitude 60°00'30" North

Longitude 135°21' West

Based on work completed between
August 20, 1984 and July 25, 1985

for

CENTRAL ELECTRICITY GENERATING BOARD
EXPLORATION (CANADA) LIMITED

by

S. E. Amukun, M.Sc., F.G.A.C.
A. T. Turner, B.Sc., P.Geol.

July 25, 1985

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 \$ 5,000.00.


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

TABLE OF CONTENTS

I	Introduction
II	Location and Access
III	Land Status
IV	Regional Geology
V	Local Geology
VI	1984-85 Work Program
VII	Recommendations
VIII	References

LIST OF APPENDICES

1. Petrographic Studies - Vancouver Petrographics
2. Laboratory Studies - S. Amukun
3. Summary of Expenditures
4. Qualifications of Personnel

LIST OF MAPS

1. Geological Compilation, Whitehorse Map Sheet
2. Geological Compilation, Bennett Lake Complex
3. Local Geology, Matt Claims

LIST OF FIGURES

1. General Location Map
2. Major Access Roads and Supply Centres
3. Matt Claim Location Map

LIST OF TABLES

1. Geological Column, Bennett Lake Complex
2. Radioactive Boulder Summary, Matt Grid
3. Lithological Radiometric Backgrounds, Matt Claims

I INTRODUCTION

During the 1984 uranium reconnaissance program conducted by CEGB Exploration (Canada) Ltd., in the Bennett Lake area of the south central Yukon, approximately 20 weakly radioactive boulders were discovered near the headwaters of MacAuley and Boudette Creeks. Limited rock chip geochemical sampling revealed uranium assay results up to 0.113 percent U_3O_8 in acid to intermediate brecciated volcanic rocks within the Bennett Lake caldera complex. This report documents geochemical studies carried out on the radioactive boulders and the results of follow-up detailed ground radiometric prospecting carried out over the property between August 20, 1984 and July 25, 1985.

II LOCATION AND ACCESS (See Figures 1 and 2)

The Matt 1-20 mineral claims are situated approximately four miles due east of Mount MacAuley at the headwaters of Boudette and MacAuley Creeks adjacent to the Yukon-British Columbia boundary within NTS 105 D-3 West. Charter helicopter service from Whitehorse, approximately 50 miles to the north, provides the easiest access to the area. Supplies and personnel may be transported within 12 miles of the area via a four wheel drive road from the settlement of Robinson southwest along the Weaton River to Skukum Creek.

III LAND STATUS (See Figure 3)

Twenty contiguous mineral claims (Matt 1 - 20) were acquired by staking on July 31, 1984. These claims were recorded at the office of the Mining Recorder on August 16 and metal grant tags with serial numbers YA 82715 - YA 82734 inclusive were issued for each claim. These tags were affixed to each post on July 15, 1985 according to the sequence shown in Figure 3.

IV REGIONAL GEOLOGY (See Maps 1 and 2)

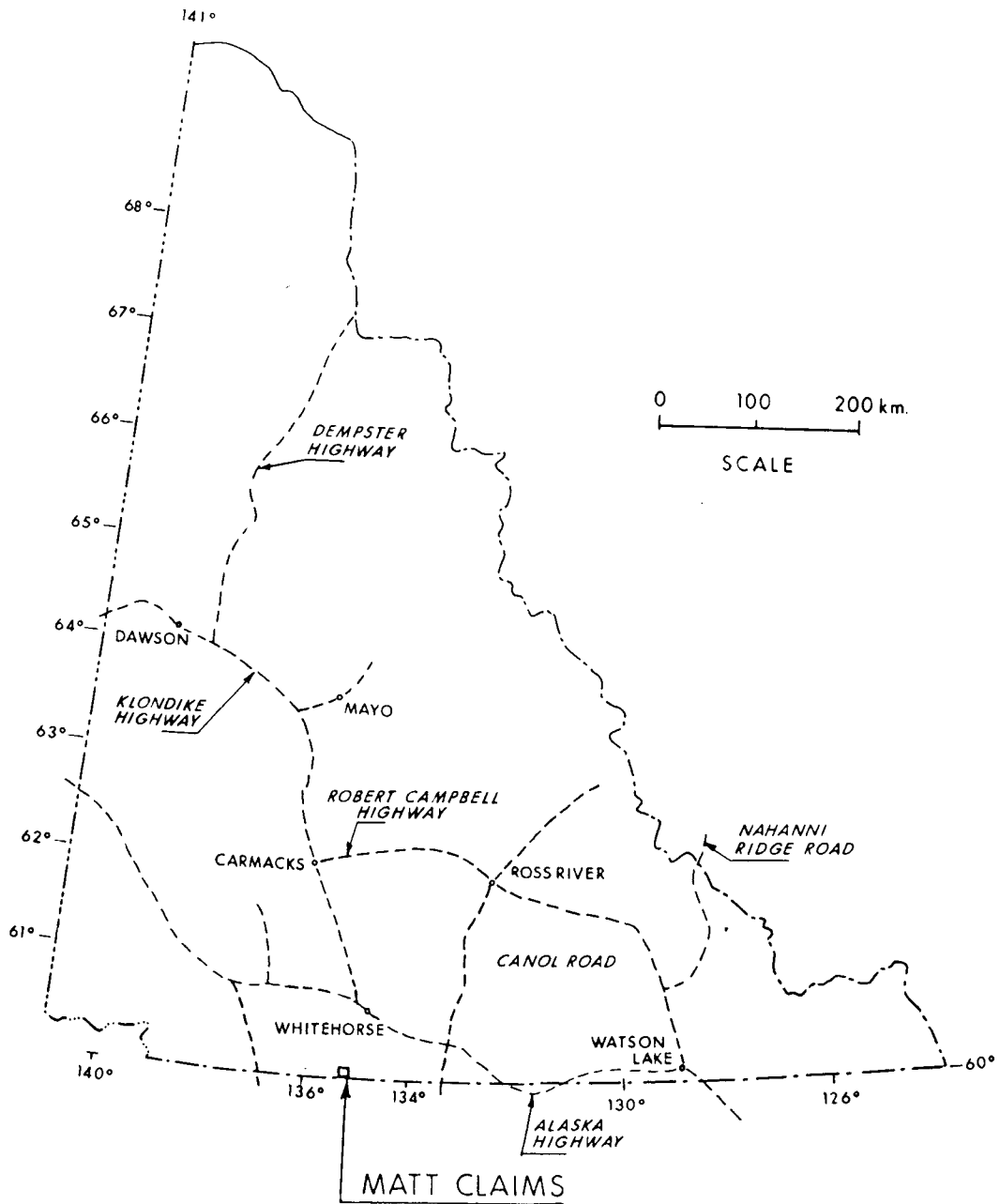
The Bennett Lake caldera complex was mapped in detail by Lambert of the Geological Survey of Canada at a scale of 1:25,000 during 1967 and 1968. This complex is Eocene in age and consists mainly of rhyolite to dacite ash-flow tuffs and breccias which are deposited on granitic rocks of the Coast Plutonic Complex. A simplified description of lithologies found in the Bennett Lake Complex is shown in Table 1. According to Lambert's report, the structure of the complex consists of two nested cauldrons, a central dome, concentric and radial fracture systems and a sub-elliptical rhyolite ring dyke covering an area 30 km by 19 km.



 CEGB EXPLORATION (CANADA) LTD.

YUKON URANIUM PROJECT
GENERAL LOCATION MAP

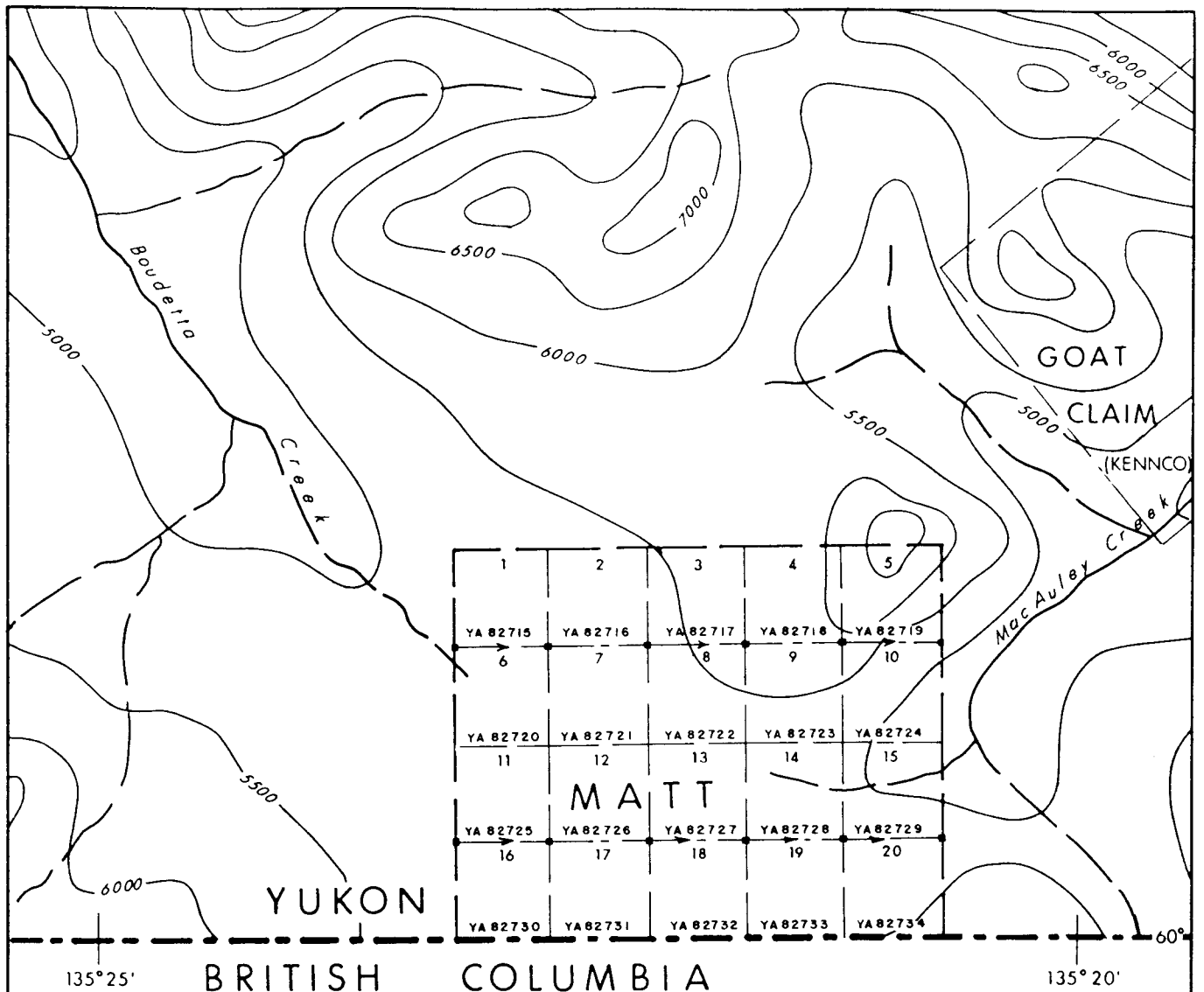
DATE	AUTHOR	FIGURE
Dec. 1984	T.T.	1



 **CEGB EXPLORATION (CANADA) LTD.**

**MAJOR ACCESS ROADS
& SUPPLY CENTRES
YUKON TERRITORY**

DATE	AUTHOR	FIGURE
Dec. 1984	T.T.	2



■ YA 82715 CLAIM POST I.D. TAG

0 1 km.

— 5500 — TOPOGRAPHIC CONTOUR (feet)

□ MATT CLAIM BOUNDARY


 CEGB EXPLORATION (CANADA) LTD.		
YUKON URANIUM PROJECT MATT CLAIM LOCATION MAP		
DATE	AUTHOR	FIGURE
Dec. 1984	T.T.	3

Table 1

Geological Column, Bennett Lake Complex
(after Lambert, 1968)

Unit Number (as on Map 2)

QUATERNARY

Pleistocene and Recent:

- 17 Coluvium, alluvium
- 16 Glacial deposits

TERTIARY-EOCENE

- 15 Rhyolite-basalt dykes and sills
- 14 Rhyolite ring dykes

Skukum Group:

- 13 Boudette Creek Formation: ignimbrite, tuff
- 12 Crozier Tuffs and Lavas: ignimbrite, volcanic breccia
- 11 Crozier Breccias: volcanic and granite fragment breccias
- 10 Jones Creek Formation: rhyolite, tuff, ignimbrite
- 9 Lemieux Creek Formation: boulder conglomerate, minor sandstone, tuff
- 8 MacAuley Creek Formation: ignimbrite, volcanic breccia
- 7 Gault Formation: boulder conglomerate, sandstone, siltstone, tuff
- 6 Cleft Mountain Formation: lithic and feldspar wacke, tuff
- 5 Partridge Lake Formation: lithic and feldspar wacke, tuff

CRETACEOUS AND TERTIARY

Coast Plutonic Complex:
(Paleocene (?) or Earlier)

- 4 Leucocratic granite
(Upper Cretaceous or Lower Tertiary)
- 3 Hornblende-biotite-quartz monzonite
- 2 Hornblende and biotite-hornblende granodiorite

PALEOZOIC OR OLDER

Yukon Group:

- 1 Quartzite, mica schist, gneiss

V LOCAL GEOLOGY (See Map 3)

The oldest rocks exposed on the Matt claims consist of a small block of Yukon Group biotite schist (Unit 1) which was encountered along the northern edge of MacAuley Creek. Upper Cretaceous biotite granodiorite (Unit 3a) of the Coast Plutonic Complex is exposed along a narrow north-south trending band near the west central portion of the property and is largely obscured by alluvium and glacially transported boulders to the west. The intrusive rocks are intensely fractured and brecciated adjacent to the rhyolite ring dyke (Unit 14). The Partridge Lake Formation tuffs and volcanic breccias (Unit 5) and the MacAuley Creek Formation ignimbrites (Unit 8) occupy the central portion of the property and are overlain by granitic boulder conglomerates and tuff breccias of the Lemieux Creek Formation (Unit 9). The youngest rocks mapped on the property are rhyolite dykes (Units 14 and 15) which are believed to represent the margins of the inner caldera.

Rock exposure is less than ten percent over the western third of the property due to glacial overburden, alluvium and snow cover on the north facing slopes. Talus slopes and alluvium tend to mask recessive units along the valley bottoms but at higher elevations exposure is greater than 60 percent.

The dominant structural trend is approximately 170 degrees. Linear trends depicted on airphotographs were confirmed during geological investigations as major joints and faults which are often intruded by rhyolite dykes.

Mineralized brecciated volcanic boulders examined along the north facing slope just west of the north-south trending rhyolite dyke have not been found in outcrop to date. These boulders have not been assigned to a particular unit at the time of writing.

VI 1984-85 WORK PROGRAM

The following personnel participated in the 1984-85 project on the Matt claims:

1. Terry Turner - Project Geologist (July 15-18, 1985)
27 Rundleson Way NE
Calgary, Alberta, T1Y 3H7
2. Sam Amukun - Geologist (May 10-19, July 15-18, 1985)
44 Shootfield Crescent
Agincourt, Ontario, M1S 4E2

3. Denis Yaychuk - Geologist (July 15-18, 1985)
3931 Parkdale Road
Saskatoon, Saskatchewan, S7H 5B3
4. Tom Bojczyszyn - Geologist (July 15-18, 1985)
231 - 18 Avenue NE
Calgary, Alberta, T2E 1N3
5. Paul MacDougall - Geologist (July 15-18, 1985)
2 Harbourview Drive
Sidney Mines, Nova Scotia, B1V 3A1
6. Bob McPherson - Geologist (July 15-18, 1985)
326 Point McKay Gardens NW
Calgary, Alberta, T3B 4V8

During the 1984 field season, ground radiometric prospecting supplemented by rock and stream sediment geochemistry was concentrated in unstaked areas near the headwaters of MacAuley and Boudette Creeks. A total of 35 stream sediment samples were collected; the results ranged from 1.4 ppm to 124.8 ppm U_3O_8 . Two anomalous samples (124.8 ppm and 83.2 ppm) are situated along the tributaries of Boudette Creek. On a gently north-sloping ridge (Turmoil Ridge), approximately 20 radioactive boulders were encountered along a 140° trend over a distance of 300 m during the course of prospecting near the MacAuley Creek headwater. The boulders appear to lie just west of a north-south trending rhyolite ring dyke near the margins of the inner caldera as outlined by Lambert. Samples from the radioactive boulders were sent to Vancouver Petrographics for autoradiographs and thin section studies (see Appendix 1).

Detailed laboratory studies were carried out by S. Amukun and a report on this work is presented in Appendix 2. This work includes geochemical analyses by X-Ray Laboratories Limited in Toronto.

Between July 15-19, 1985 detailed radiometric prospecting, mapping and rock chip sampling was concentrated on the ridge where radioactive boulders were discovered during the 1984 field season. EDA GRS 400 differentiating spectrometers were utilized during the radiometric survey. A 173 degree trending baseline was established by erecting cairns at 90 metre intervals along the determined strike of the radioactive boulders. These boulders were spray painted, examined radiometrically and surveyed into the baseline by topofil and compass. Grid coordinates and descriptions of 28 radioactive boulders are shown in Table 2. Radiometric backgrounds for the various rock types encountered during prospecting and mapping have been documented in Table 3. Detailed mapping over the entire ridge was restricted due to sixty percent snow cover. This program will be continued during mid-August.

Table 2

Radioactive Boulder Summary, Matt Grid

<u>Boulder Number</u>	<u>Grid Location</u>	<u>Radiometric Reading(cps)</u>	<u>Bag Count(cps)</u>	<u>Description</u>
1	Ø+9Ø N, Ø+4.5W	1,000	400	dacitic, quartz-feldspar porphyry dyke, angular, 8cmx9cm
2	Ø+7Ø N, Ø+7.7 W	1,350	350	light weathering, dark grey, volcanic breccia, sub-angular, 9cmx7cm
3	Ø+6Ø N, Ø+8.4 W	2,500 - 2,900	300	light weathering, dark grey, volcanic breccia, 40cmx30cm, angular
4	Ø+6Ø N, Ø+8.4 W	1,600	280	dark grey volcanic breccia, angular, 23cmx25cm
5	Ø+6Ø N, Ø+6.6 W	2,100	300	light weathering, volcanic breccia, chlorite streaks, 18cmx30cm, angular
6	Ø+6Ø N, Ø+6.6 W	3,400	1800	very dark grey, light weathering brecciated volcanic with secondary uranium on fractures, 8cmx9cm, angular
7	Ø+6Ø N, Ø+6.9 W	1,000	300	vuggy, volcanic breccia with limonite stains, 18cmx20cm, angular
8	Ø+5Ø N, Ø+4.5 W	1,700	310	light grey volcanic breccia, limonite stains, 23cmx19cm
9	Ø+5Ø N, Ø+2.2 W	1,200	310	rhyolitic volcanic breccia, limonite and magnase stain
10	Ø+5Ø N, Ø+4.8 W	1,000	280	rhyolite, minor sulphides, 33cmx26cm, sub-angular

Boulder Number	Grid Location	Radiometric Reading(cps)	Bag Count(cps)	Description
11	0+50 N, 0+3.8 W	1,100	350	rhyolite, pyrite, limonite stained, 15cmx28cm, well jointed, subangular
12	0+50 N, 0+5.3 W	1,400	275	brecciated rhyolite, limonite stains, manganese, subangular, 33cmx33cm
13	0+40 N, 0+1.1 W	5,000	740	brecciated, dark grey volcanic, secondary uranium, purple fluorite, 25cmx36cm, subangular
14	0+30 N, 0+5.2 W	1,200	240	silicified rhyolite, subconchoidal fractures, 15cmx20cm, angular
15	0+20 N, 0+3.8 W	1,000 - 1,700	250	well jointed, brecciated rhyolite, trace pyrite, 30cmx38cm, subrounded, secondary uranium
16	0+20 N, 0+8.1 E	1,000 - 1,400	240	rhyolite breccia, 22cmx17cm, subrounded
17	0+10 N, 0+5.2 W	1,000 - 1,400	240	pink to purple rhyolite breccia, 28cmx50cm, subrounded
18	0+00, 0+5.6 E	1,000	240	pink rhyolite, brecciated, subangular, 20cmx20cm
19	0+00, 0+6.7 E	1,350	300	brecciated rhyolite, limonite, hematite stained, 30cmx26cm, subangular
20	0+00, 0+9.1 E	1,250	960	poly lithic lapilli tuff, secondary uranium on fractures, 15cmx15cm, subangular to subrounded
21	0+00, 0+2.2 E	2,800	-	secondary uranium on fractures of brecciated rhyolite

<u>Boulder Number</u>	<u>Grid Location</u>	<u>Radiometric Reading (cps)</u>	<u>Bag Count (cps)</u>	<u>Description</u>
22	0+00, 0+24.1 E	800 - 1,000	240	silicified rhyolite, brecciated, 13cmx24cm, subrounded
23	0.00, 0+3.0 E	1,000	890	dacitic, poly lithic lapilli tuff, angular, 4cmx7cm
24	0+90 S, 0+28.2 E	1,400		brecciated rhyolite, angular, 18cmx21cm
25	0+90 S, 0+24.2 E	1,100	310	silicified rhyolite breccia, 22cmx15cm
26	0+90 S, 0+24 E	5,500 (maximum)	1400	secondary uranium, purple fluorite, inter- mediate volcanic
27	1+20 S, 0+28.9 E	1,000	260	vuggy, vesicular dacite, brecciated, subangular, 23cmx26cm
28	0+90 S, 0+21.7 E	1,100	280	limonite-stained, light grey, rhyolite, angular, 22cmx16cm.

Table 3

Lithological Radiometric Backgrounds, Matt Claims

<u>Unit Name and Number</u>	<u>Radiometric Range (cps)</u>	<u>Comments</u>
Rhyolite Dykes (14,15)	450 - 550	Spot high readings to 700 cps
Lemieux Formation (9)	275 - 325	Localized spot readings to 350 cps
MacAuley Creek Formation (8)	300 - 350	Maximum readings to 450 cps
Partridge Lake Formation (5)	275 - 350	Very similar to MacAuley Creek Formation readings
Granodiorite (3a)	250 - 325	Intensely fractured areas often show slightly elevated readings
Yukon Group (1)	250 - 300	Small aplite dykes read up to 500 cps
Radioactive boulders	850 - 3,000	Spot high readings to 10,100 cps when secondary uranium occurs along fractures.

VII RECOMMENDATIONS

The following program is proposed to further define the source, grade and extent of the radioactive boulders:

1. Glacial studies over the western half of the property.
2. Geophysical techniques (mag and VLF) to define geological units and structure.
3. Trenching across the ridge over an area where the greatest concentration of boulders occur.

VIII REFERENCES

Lambert, M. B.

1974: The Bennett Lake Cauldron Subsidence Complex, British Columbia and Yukon Territory; Geological Survey of Canada, Bulletin No. 227.

Turner, A. Terry

1984: 1984 Uranium Reconnaissance Exploration Program, unpublished report, for CEGB Exploration (Canada) Ltd., Calgary, Alberta.

Wheeler, J. O.

1947: Map 1093A, Geology, Whitehorse Map Sheet, Yukon Territory to accompany GSC Memoir 312, scale: one inch equals four miles.

APPENDIX 1

PETROGRAPHIC STUDIES - VANCOUVER PETROGRAPHICS



Vancouver Petrographics Ltd.

JAMES VINNELL, Manager
JOHN G. PAYNE, Ph. D. Geologist

P.O. BOX 39
8887 NASH STREET
FORT LANGLEY, B.C.
VGX 1J0

PHONE (604) 888-1323

Invoice #4699

October 3rd, 1984

OCT 9 1984

Report for: J.A. Climie,
CEGB Exploration Ltd.,
Suite 1680 Western Canadian Place,
700-9th Avenue S.W.,
Calgary, Alberta
T2P 3V4

Samples

3 rock specimens (numbered 7460, 7462 and 3) for petrographic examination and determination of source of radioactivity.

The samples were prepared as polished thin sections.

Autoradiographs of the cut-off blocks were made, in order to locate any specific concentrations of radioactivity for detailed study.

Individual petrographic descriptions of each sample are attached.

Detailed Studies

The autoradiographs of the cut-off blocks give patterns indicating more or less densely disseminated point sources of radioactivity. The intensity of response is low, the exposure time for these results being 5 days.

Sample 7462 gives the weakest pattern. Sample 7460 gives the most clearly defined pattern, with very small spots often closely spaced; these are concentrated in certain areas of the sample. Sample 3 gives a pattern of similar or greater intensity than 7460, with even distribution over the whole surface.

Sample 7460 was selected initially for detailed study on the basis of the assay value of 0.113% U_3O_8 .

The autoradiograph failed to indicate any obvious sizable concentrations of radioactivity, so points for checking by microprobe were selected on the basis of the thin section observations.

The feldspathic lithic fragment material making up the bulk of the rock is homogenous and appears unlikely to represent a source of radioactivity in itself. The most likely sources appeared to be in the network of diffuse interfragmental coatings and matrix impregnations.

Four more or less distinct types of material were chosen for checking:

- i) limonite (dark brown in transmitted light)
- ii) a black (carbonaceous?) coating material
- iii) a golden yellow fibrous/flaky material (Fe-stained sericite or possibly jarosite)
- iv) a sub-opaque brownish-yellow material (fluffy and diffuse in appearance under cross-polarized light) forming scattered clumps (possibly leucoxene?)

The microanalyses showed that the limonite and the Fe-stained sericite contain no uranium. Strong uranium responses were, however, obtained from the other two types of material.

The fluffy brownish material (type iv) thought to be leucoxene proved to consist of major amounts of U and S and minor Fe and K. It is apparently one of the hydrated uranium sulfate minerals, possibly with combined K. Zippeite and uranopilite are possible species. The Fe may be an intergral part of the composition or may represent admixture with the dispersed limonite which is prevalent in the sample.

The black coating material (type ii) also gave a strong U response but appears to be of very heterogenous composition. 3 points within 0.25mm of one another gave the following compositions: S>U>Ce>La>Fe (together with Al and Si which presumably derive from the adjacent feldspar); major U, Ti, S, Si and minor Fe; and major Mo, S. The Mo-rich area is recognizable under the microscope as fine-grained molybdenite. The other points could represent a number of combinations of minerals. The association of U with rare earths and with Ti is intriguing, as is the presence of molybdenite.

The hand specimen of this sample shows yellow, powdery coatings on joint or fracture surfaces. Judging from response to a geiger counter, these appear to be a significant source of radioactivity in the bulk sample. Microanalysis showed major amounts of U and S with possible K (the K peak is partially overlapped by the U peak, hence the uncertainty). The material is therefore again indicated as one of the hydrated sulfates of uranium.

The enclosed photomicrographs illustrate the mode of occurrence of the materials tested by microanalysis in the slides.

In view of the success in locating uranium minerals in Sample 7460, similar work was done on Sample 3, for which no analysis was provided but which gave a comparable, or stronger, autoradiographic response.

The sample was submitted to Cominco Exploration Research Labs for XRF analysis. Results were 1,100 ppm U and <10 ppm Th - a comparable grade to that found in Sample 7460.

Four microscopically distinctive types of material were selected for checking by SEM microanalysis in the polished thin section:

- i) A fluffy brownish material in hairline veinlets, apparently including fine-grained carbonate
- ii) A black (sub-opaque to opaque) material in network veinlets
- iii) A brown flaky-looking mineral (possibly a form of chlorite) in discontinuous fracture fillings

- iv) A grey-brown, sub-opaque, fluffy-looking, leucoxene-like material as dispersed clumps (possible the same, or related to, i)

Of these, only ii) (the black network fillings) was found to contain uranium. In this case the U is associated with Fe and Si, with lesser S and Al. The ratios of these constituents vary considerably at closely adjacent points.

Types I) and iv) give peaks of Fe, K, Al and Si and are probably dominantly iron oxides plus sericite: type iii) shows Fe, Al and Si - compatible with an Fe-rich chlorite.

Summary

The three rocks are all of felsic volcanic type. They are composed dominantly of feldspars and are low in quartz and mafics. Sample 7460 is of strongly potassic composition (K-feldspar > 85% of the total feldspars) whereas Sample 3 is made up of essentially of plagioclase. Sample 7462 is intermediate between these two, with K-feldspar making up about 30% of the total feldspars.

The textures of the three rocks are somewhat obscure. Samples 7460 and 3 are probably lithic tuffs. Sample 7462 is either a coarser (lapilli) tuff or a brecciated feldspar porphyry.

Alteration (carbonatization and chloritization) is quite strongly developed in 7462. A weaker manifestation of similar alteration is present in the other two rocks. Sericite, limonite and rutile/leucoxene appear to be associated components of the alteration phase. Trace remnants of sulfides are present in 7462 and, to a lesser extent, in 3.

Uranium mineralization (without associated Th) is present in samples 7460 and 3 in the form of various (presumed) secondary minerals, especially hydrated sulfates. On the macro-scale these occur as fracture or joint fillings; on the micro-scale they form network-like fragment coatings and more or less diffuse impregnations and disseminations in the fine matrix material between lithic fragments (lapilli).

It is noteworthy that the two mineralized samples are of distinctly different primary rock composition (potassic vs sodic).

Limonite, sericite and other alteration minerals occur closely associated in similar mode, and the radioactive segments of the veinlet/impregnation system cannot always be distinguished optically.


J.F. Harris Ph.D.

PHOTOMICROGRAPHS

All photos are at scale 1 cm = 0.01 mm

Sample 7460

Neg #33-1A Plane polarized light.
Limonite (dark brown) and Fe-stained sericite (orange-brown translucent) rimming fragments and permeating along micro-fractures.

Neg #33-2A Cross polarized light.
Same field as 1A.

Neg #33-3A Plane polarized light.
Uraniferous black opaque/sub-opaque material as coatings to fragments, and fine impregnation of pockets of matrix.

Neg. #33-5A Plane polarized light.
Brown uraniferous material as diffuse impregnations of fine matrix between coarser fragments. Dark shadow, bottom right, is point of location marker for SEM analysis.

Neg #33-7A Reflected light.
Same field as 5A. Shows matrix/fragment relationship more clearly.

Sample 3

Neg #33-10A Plane polarized light.
Gash veinlet with brown chlorite.

Neg #33-11A Cross polarized light.
Same field as 10A. Shows coarser elongate quartz segregations in fine ash tuff.

Neg #33-12A Plane polarized light.
Brown clumpy/fluffy disseminations of limonite/sericite (non-uraniferous).

Neg #33-13A Cross polarized light
Same field as 12A. Shows fine-grained lithic/crystal fragments (right) and large fragment with phenocryst (left).

Neg #33-14A Plane polarized light.
Inter-fragmental (?) network of brown material. Found to be non-uraniferous limonite/sericite.

Neg #33-15A Cross polarized light.
Same field as 14A.

Neg #33-28 Plane polarized transmitted light.
Opaque veinlet filling and crush-zone (?) impregnations. Darkest material in central veinlet found to be uraniferous by SEM analysis.

Neg #33-29 Cross polarized light.
Same field as 28. Note that much of the veinlet material (especially the upper one) is carbonate (light brown colours).

Neg #33-30 Reflected light.
Same field as 28, 29. Shows that opaque filling is actually quite dispersed in the immediate plane of the surface. More coherent appearance in 28 is mass effect, looking through the whole thickness of the slide (c. 30 microns). White flecks (bottom left) are crystalline limonite.

Sample 7460

LITHIC TUFF

Estimated mode

Plagioclase	10
K-feldspar	73
Quartz	3
Sericite	8
Chlorite	1
Rutile)	3
Leucoxene)	
Limonite	2

This rock is made up of a felsitic aggregate, 0.01 - 0.1mm, composed largely of K-feldspar with minor plagioclase and possible small amounts of quartz. It is very weakly sericitized. The fabric shows no parallelism or banded variations but has an overall "pellety" appearance suggestive of fragments set in a finer-grained matrix (both components being of the same composition).

Locally the rock is permeated by fine-grained sericite and limonite which pervade and replace the finer-grained matrix material, making the overall fragmental character much more obvious. It is further emphasized by a network of sub-opaque leucoxene and fine-grained rutile which locally rim the fragments in these areas. This material is also present as disseminated micron-sized granules and small clumps of same.

The texture thus revealed is that of close packed, sub-angular to rounded lithic fragments and disaggregated crystals. These show a wide size range from 0.02 - 3.0mm or more.

A few scattered "phenocrysts" of K-feldspar up to 1mm in size may be constituents of some of the coarser lithic fragments or may be disaggregated crystal clasts.

Sample 7462

BRECCIATED FELDSPAR PORPHYRY

Estimated mode

Plagioclase	50
K-feldspar	22
Quartz	5
Chlorite	12
Carbonate	8
Leucoxene)	
Rutile)	3
Limonite)	
Apatite	trace

The primary rock material in this slide apparently consists of euhedral plagioclase phenocrysts, 0.2 - 2.0mm in size, set in a very fine-grained felsitic matrix. This often shows trachytoid, flow-like features around the phenocrysts, defined by tiny, oriented plagioclase microlites.

The felsite groundmass contains a high proportion of K-feldspar. Quartz, as much smaller crystals than the plagioclase, is a very minor component of the phenocryst assemblage. There are also occasional mafic phenocrysts, now totally pseudomorphed by rosette-textured chlorite.

The rock has been subject to complex brecciation and alteration.

The most prominent manifestation of this is a system of sub-parallel, irregular veinlets of sparry carbonate (unreactive to acid and probably dolomitic in composition). Chlorite is a minor constituent of these veinlets, as is cherty silica.

Chlorite also forms a more pervasive phase, following ramifying microfractures and forming extensive impregnations of the fine matrix in a system of irregular crush zones.

Chlorite and carbonate alteration affects the plagioclase phenocrysts to a varying degree, especially where they are visibly cut by fractures.

Leucoxene, rutile and limonite form irregular patches and clumps throughout. Some of the limonite contains remnants of pyrite and rare chalcopyrite.

This rock is either a brecciated, altered feldspar porphyry or a lithic lapilli tuff.

Sample #3

TUFF

Estimated mode

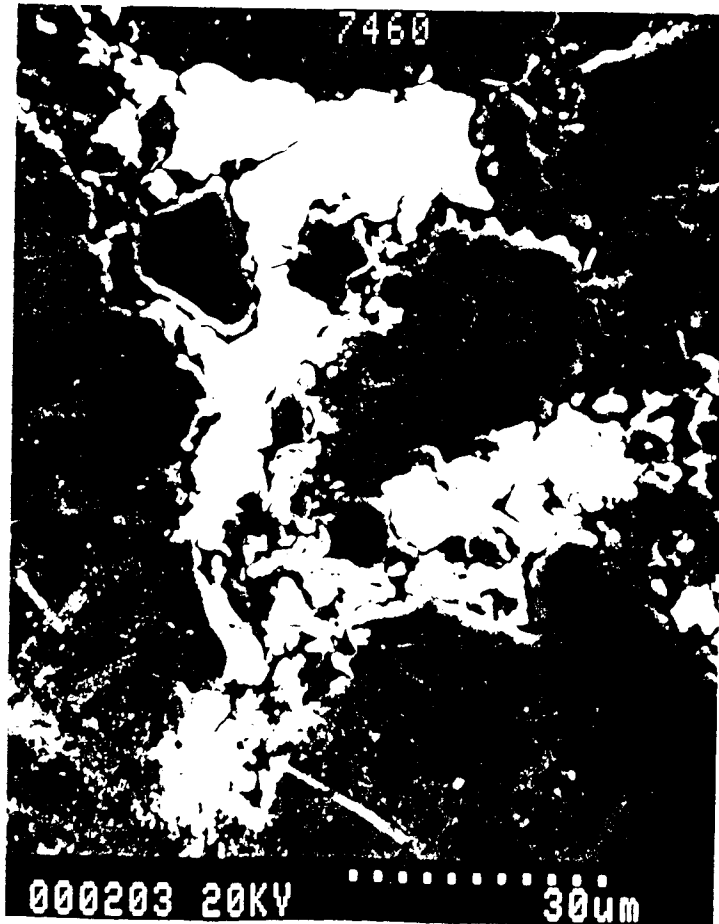
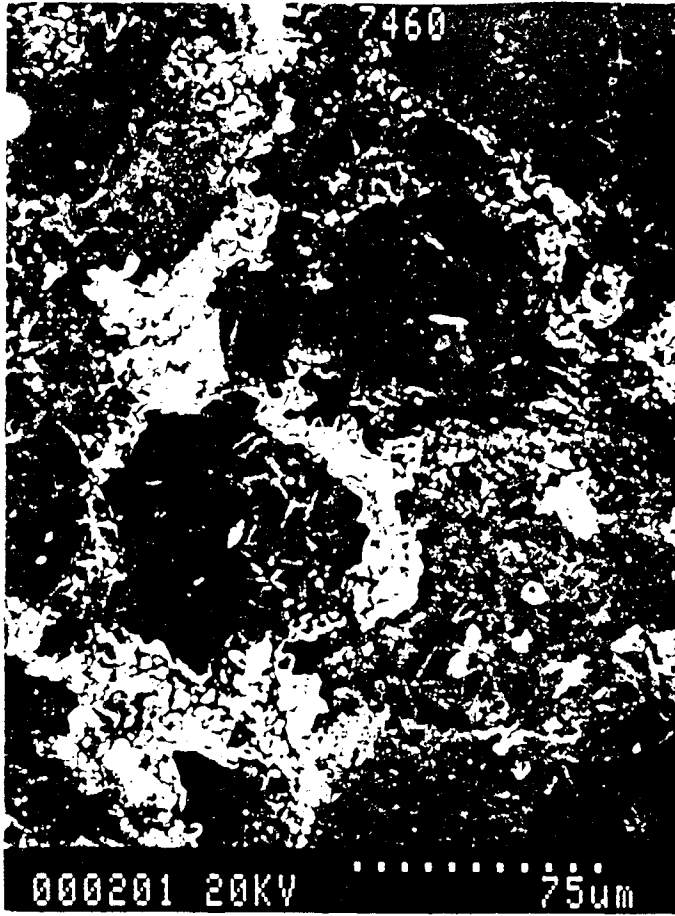
Plagioclase	78
K-feldspar	3
Quartz	7
Chlorite	4
Sericite	2
Carbonate	3
Leucoxene)	2
Rutile)	
Limonite	1

This rock consists essentially of a very fine-grained felsitic aggregate. Much of this is cryptocrystalline to feathery-textured and of a grain size 0.01mm or less, but it also contains fairly abundant, ill-defined, coarser grains of plagioclase up to 0.2mm, and lesser amounts of fine-grained sericitic patches. Sparse euhedral plagioclase crystals up to 2mm in size and rare K-feldspar and chloritized mafic crystals to 1mm occur within the felsitic matrix: these look like phenocrysts but could be scattered crystal clasts in an ashy tuff.

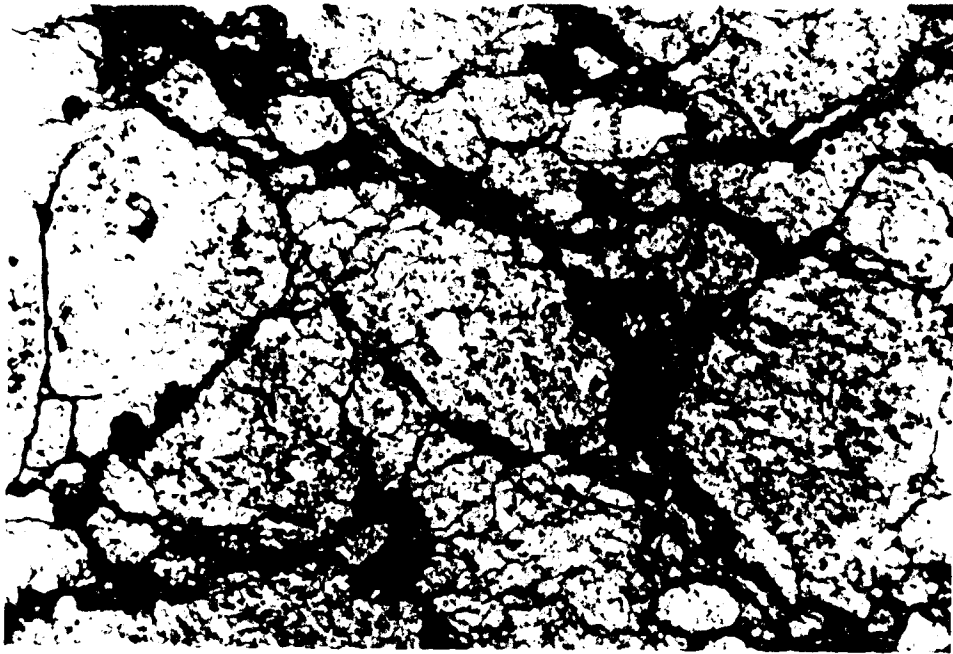
The most prominent textural component consists of numerous, small, sub-parallel lenses and thin discontinuous laminae of cherty or finely granular quartz and albite. These define a weak foliation.

The rock is cut by a network of hair-line fractures partially filled by chlorite, carbonate, leucoxene/rutile and limonite. These same minerals occur throughout the rock as a dusting of minute speckles. Rare traces of pyrite occur as a component of the veinlets.

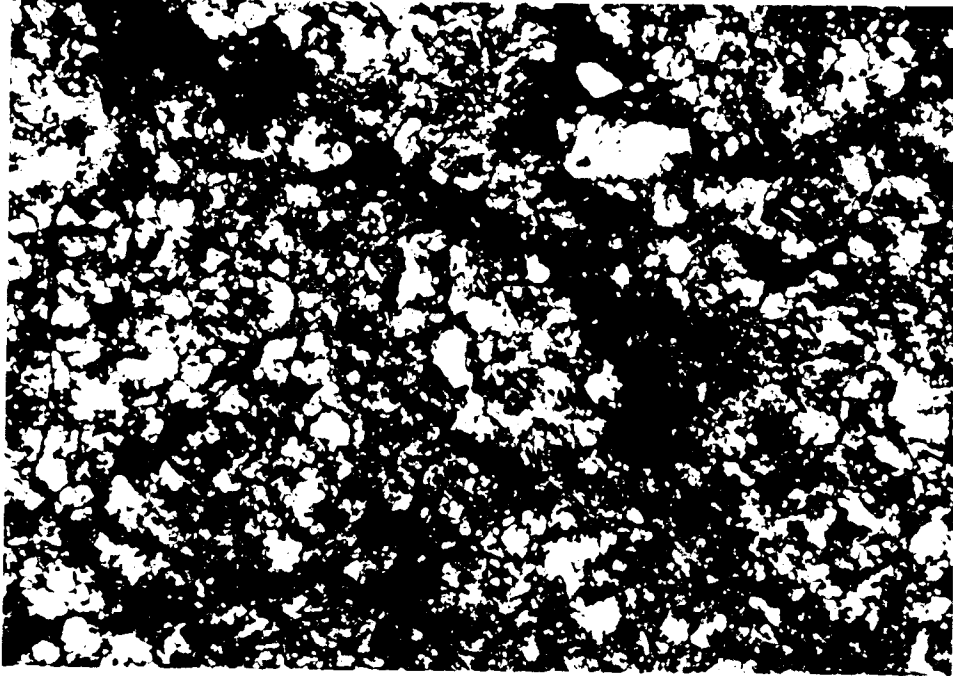
The origin of this rock is somewhat uncertain. There are a few zones of definite fragmental character (on the scale 0.05 - 0.5mm) but these could possibly be crush-zones related to the fracturing. The overall texture is compatible with that of an ashy tuff, the chert-like quartz-feldspar lenses being either of an authigenic feature or representing a component of chemical sedimentation contemporaneous with the ash deposition.



33-1A



33-2A



33 3A

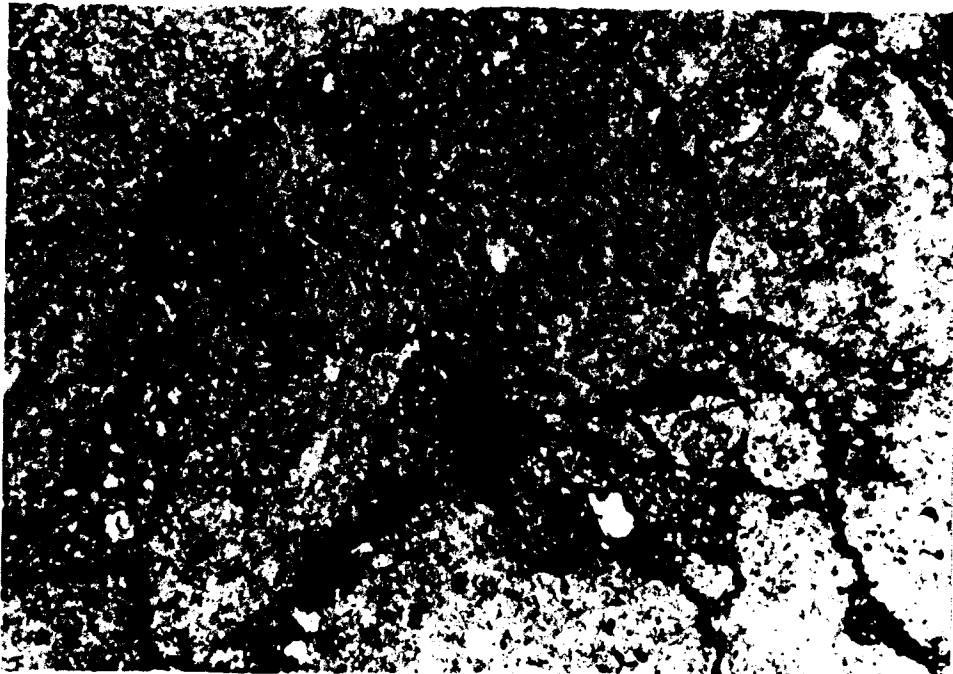


Figure 1

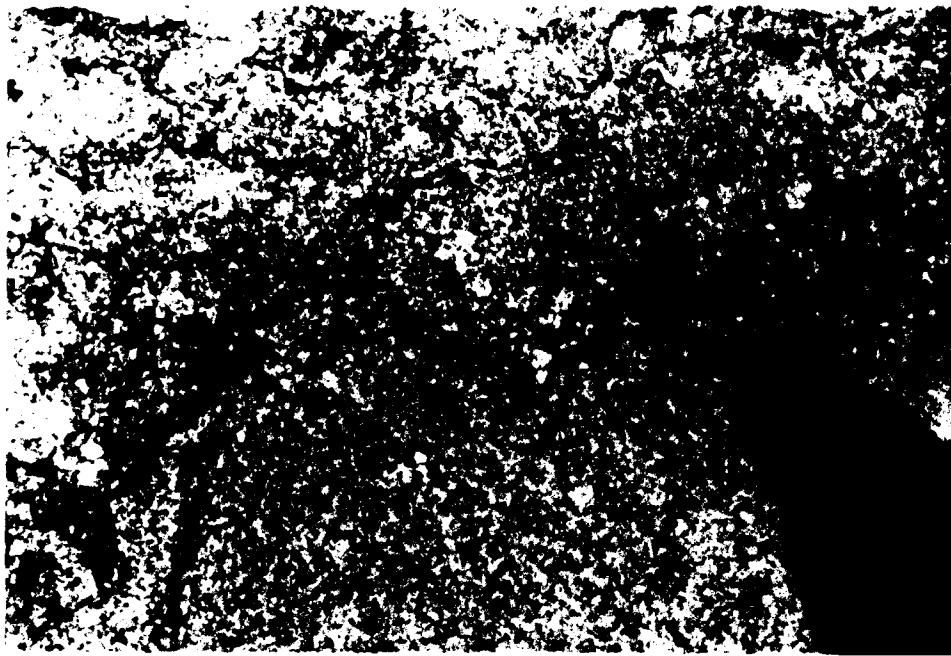


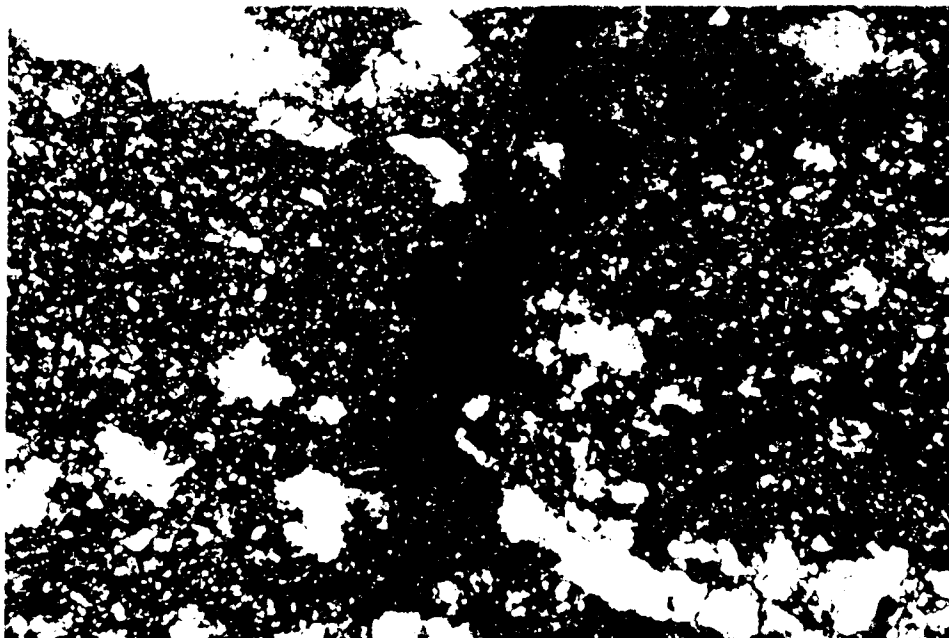
Figure 2



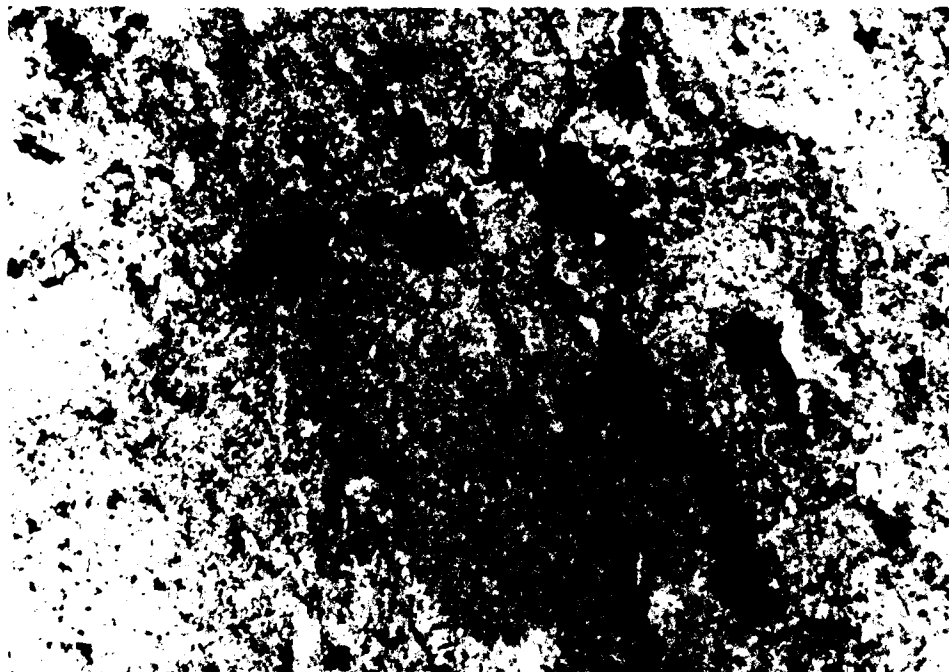
Figure 3



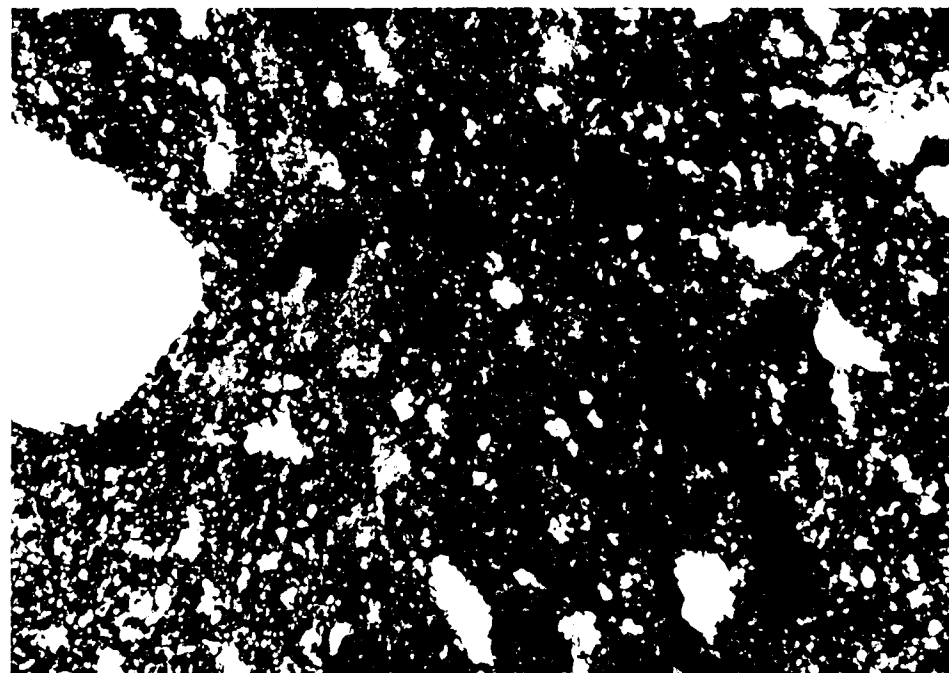
#1111



#1112A



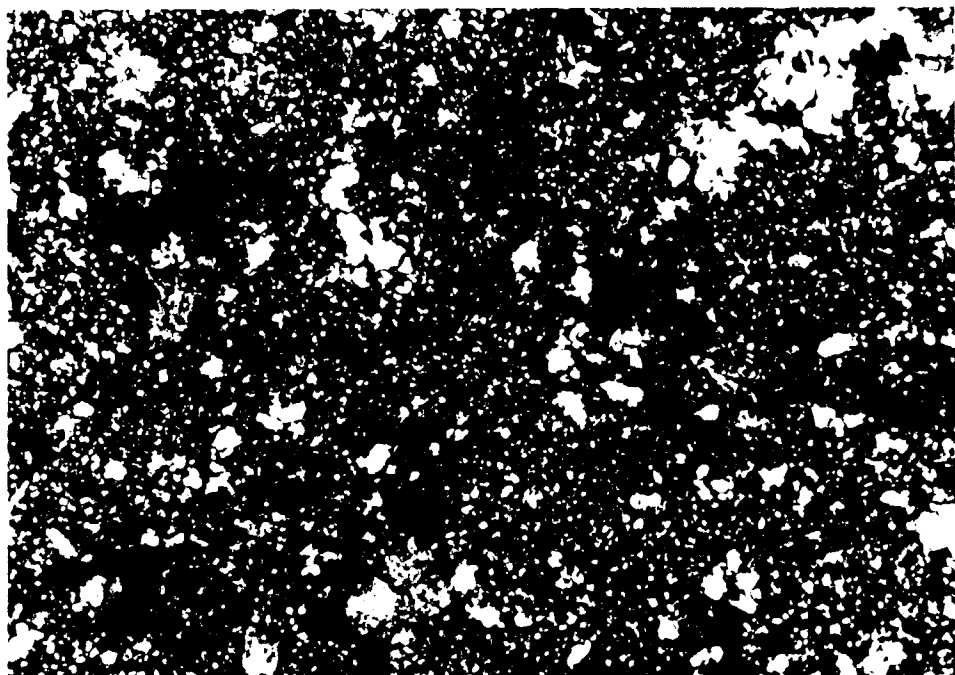
#1113A



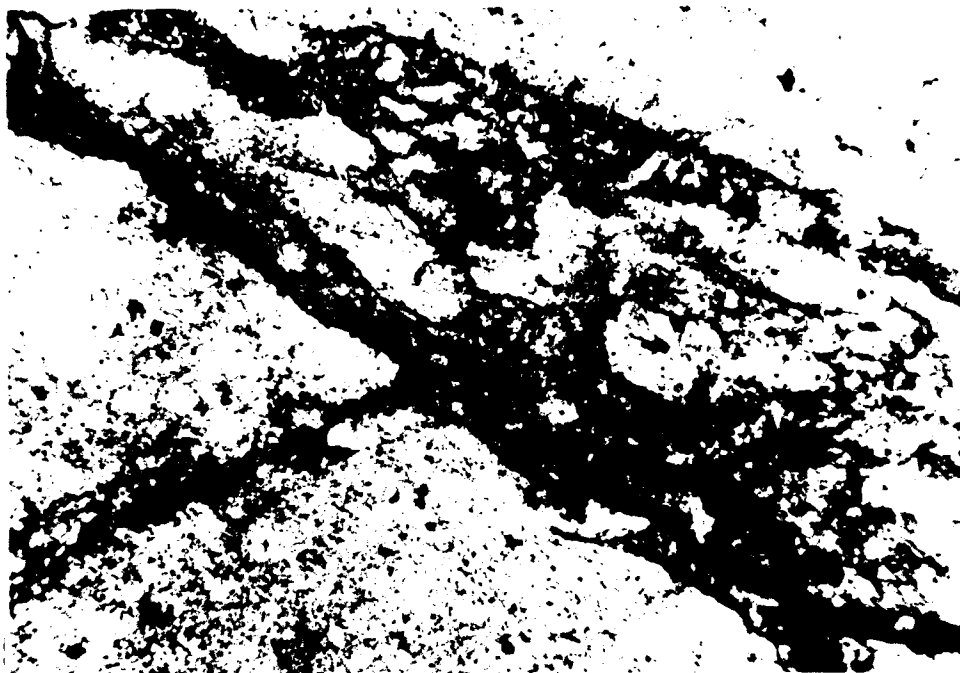
#33 14A



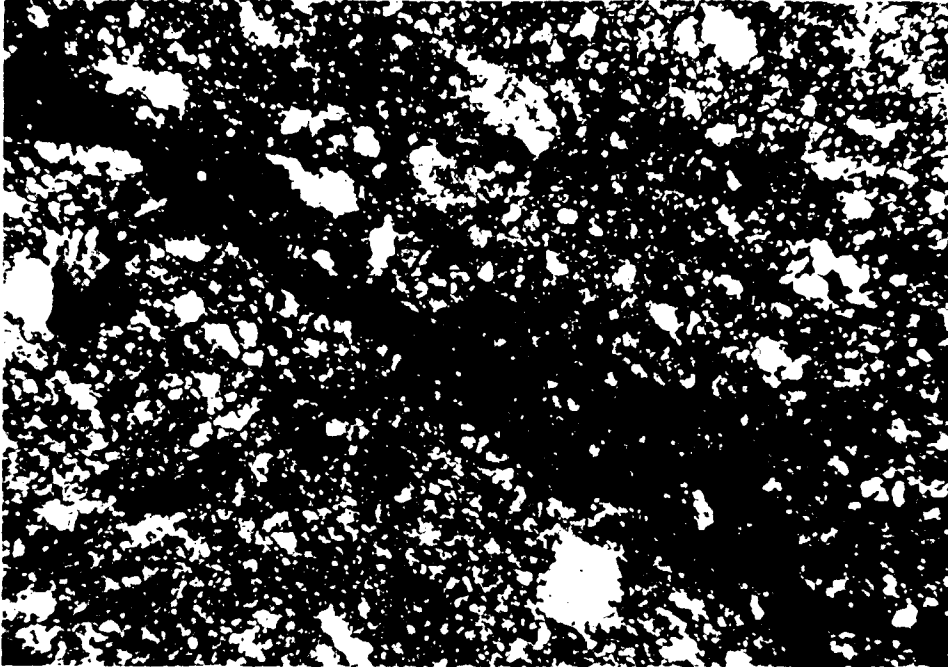
#33 15A



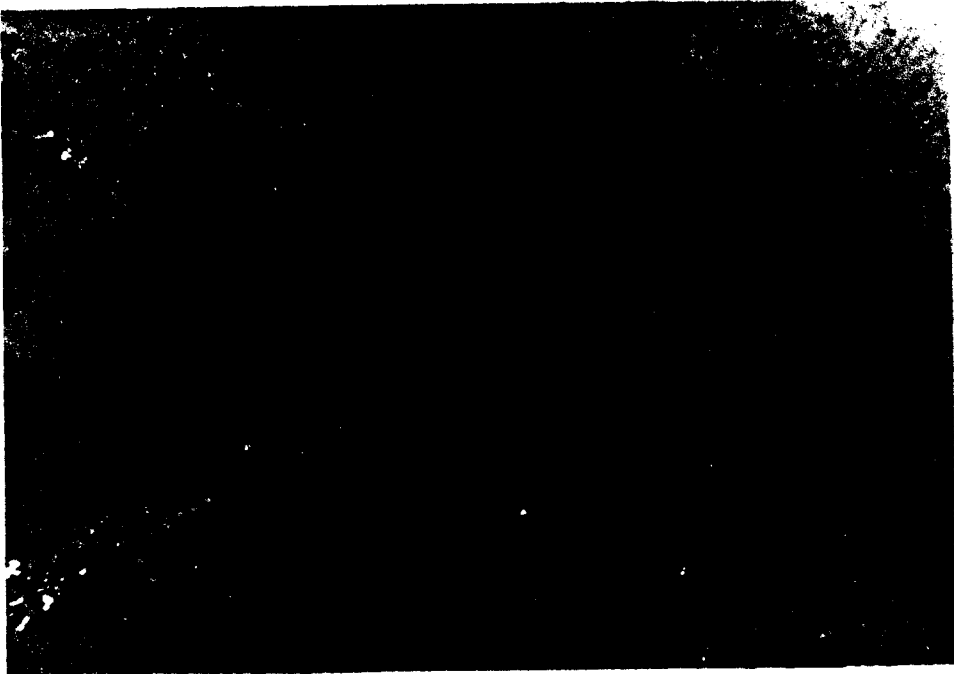
#33 2A



#33-24



#33-30



APPENDIX 2

LABORATORY STUDIES BY S. AMUKUN

LABORATORY STUDIES ON SAMPLES
FROM THE 1984 URANIUM RECONNAISSANCE
EXPLORATION PROGRAM
YUKON TERRITORY

Sam E. Amukun, M.Sc., F.G.A.C.
Tesso International Consulting Company
Agincourt, Ontario
May 1985

TABLE OF CONTENTS

SUMMARY

CONCLUSION

1. INTRODUCTION

- 1.1 Petrography and Ore Microscopy
- 1.2 Scanning Electron Microscopy (SEM) and X-Ray Analys.
- 1.3 Rock Geochemistry

2. PETROGRAPHY AND ORE MICROSCOPY

2.1 Sample 7460

- 2.1.1 Rock Type
- 2.1.2 Mineralogy
- 2.1.3 Description
- 2.1.4 SEM Analysis
- 2.1.5 Interpretation

2.2 Sample 7462

- 2.2.1 Rock Type
- 2.2.2 Mineralogy
- 2.2.3 Description
- 2.2.4 SEM Analysis
- 2.2.5 Interpretation

2.3 Sample 3

- 2.3.1 Rock Type
- 2.3.2 Mineralogy
- 2.3.3 Description
- 2.3.4 SEM Analysis
- 2.3.5 Interpretation

3. ROCK GEOCHEMISTRY

4. REFERENCES

LIST OF FIGURES

No.

- 1. Tracor-Northern Spectral Plot of #7460 "Pitch"
- 2. Tracor-Northern Spectral Plot of #7460 "Secondary U"
- 3. XRD Chart of Calcite, Sample 7462
- 4. Chemical Affinity of the 2 Samples from BLCC
- 4 (a) AFM Plot
- 4 (b) Alkalies vs Silica Plot

LIST OF TABLES

1. Chemical Composition and analyses of samples 7460 & 7462
2. A summary of analytical methods used, and the respective detection limits.
3. Major and Significant Chemical differences between well-mineralized and moderately mineralized uranium samples.

LIST OF PHOTOGRAPHS

201. SEM Photomicrograph showing mode of pitchblende occurrence.
202. SEM Photomicrograph showing pitchblende magnified 37.5x
203. SEM Photomicrograph showing mode of uranium molybdate occurrence.

SUMMARY

All the three rocks examined are felsic polyolithic tuffs derived mostly by pyroclastic vulcanism, with a compositional range between dacite and rhyolite and a calc-alkaline chemical affinity. The lack of glass shards and pumice fragments indicate non-welded members.

These calc-alkaline rocks (especially sample 7460) contain primary uranium-molybdenum mineralization of 3030ppm U, 3500ppm Mo, with a strong enrichment of Zr (5390ppm Zr) relative to the non-mineralized tuffs from the complex. The uranium mineralization occurs in form of subhedral pitchblende grains 5 to 10 microns in diameter, and is associated with sericitic alteration of the fine ash matrix. Secondary mineralization represented by a uranium-molybdate phase (umohoite or uranosphaerite), probably formed by remobilization of uranium from pitchblende under more oxidizing conditions which led to the destruction of the organic materials and deposition of limonite. The secondary uranium minerals replace the fine ash matrix or occur in fractures.

In the mineralized samples, the alteration minerals which include sericite and limonite occur 1) along lapilli fragment boundaries, 2) interstitial between sericite/feldspars, 3) in fractures and 4) as disseminations within the fine ash matrix between lithic clasts. Alteration minerals in the non-mineralized sample No. 7462 are quite prominent and are represented by calcite and chlorite. The chloritic alteration is confined to the fine ash matrix of the rock, and to a minor extent along rock fragment border. Larger elongate calcite masses fill vesicles and calcite was remobilized along fractures which occur along boundaries of rock fragments.

CONCLUSION

The mineralized samples from the Bennett Lake Cauldron Complex (BLCC) which were collected from the 1984 uranium reconnaissance exploration program of the Yukon Territory appear to represent a potential uranium environment in that they exemplify favourable features generally considered favourable in search of economic volcanic-hosted uranium mineralization. These features, which the BLCC exhibits in common with other known uranium deposits associated with volcanic rocks of the caldera complexes include:

1. A high silica (felsic) composition with a strong associated enrichment of Mo and Zr, which in addition to Ba, Be, F, Sr, Tn, Y, REE with or without Ag, As, Cu, Hg, Pb, Sb, W and Zn have been reported in known deposits, compare with Cardenas-Flores(1983), Curtis (1981) and Rytuba and Conrad(1981).

2. Calc-alkaline chemical affinity, whose worldwide association (in addition to alkaline/subalkaline and peralkaline suites) is well known, e.g. Dayvault, et al (1984).
3. Presence of co-magmatic granitic rocks which may be anomalously enriched in elements in l. above as well as B, Li, Rb, Sn and W, see Lambert (1974) and Smith (1982).
4. Favourable regional set up, including structure, ring dike intrusives, caldera boundary breccias etc., refer to Lambert (1974) and Smith (1982).

1. INTRODUCTION

Three rock slides numbered 7460, 7462 and 3 and two corresponding rock specimens (7460 and 7462 only) were received from the 1984 Uranium Reconnaissance Exploration program of southern and central Yukon Territory (see Turner, 1984) and were submitted by A. T. Turner of CEGBE (Calgary). Specific detailed studies were conducted as follows:

1.1 Petrography and Ore Microscopy

Silicate oxides and opaque minerals were examined extensively with transmitted and reflected light respectively, in an attempt to locate the source of the radioactivity reported in the field, and to study the textures and mineralogy of the host rocks. Individual petrographic descriptions are presented in section 2.

1.2 Scanning Electron Microscopy (SEM) and X-Ray Analysis

Extensive examination of pitchblende, related uranium secondary and alteration minerals was carried out. In addition very fine-grained aggregates interstitial between fragments, in fractures, and in the fine ash matrix were thoroughly probed, as was the black coating material (pyrobitumen?). Photomicrography and spectral plots of the uranium minerals, as well diagnostic x-ray identification of these minerals was also conducted to document the observations. X-Ray diffraction identification of the carbonate mineral in sample 7462 was necessary.

1.3 Rock Geochemistry

The two rock samples were submitted to X-Ray Assay Laboratories of Toronto for whole-rock analyses and trace element determination by XRF, DCP, Fire Assay DCP, DNC, NA and wet chemical methods. A summary of methods used and detection limits is presented in section 3. Selected mineralogical plots were then prepared to classify the rocks and to establish chemical affinity.

2. PETROGRAPHY AND ORE MICROSCOPY

2.1 Sample 7460

2.1.1 Rock Type: Potassic, polyolithic, non-welded rhyolitic lapilli tuff of pyroclastic origin.

2.1.2 Mineralogy: K-feldspar (70%) sericite and minor plagioclase, quartz (9-12%), zircon, limonite, rutile, pyrite, pitchblende, pyrobitumen (?), uranium molybdate (umohoite or uranosphaerite).

2.1.3 Description: The fragmental rock consists of sub-angular to subrounded 0.5 to 5mm diameter felsic lithic clasts, nearly all of which have the same composition and texture approaching a quartz trachyte, and consisting mostly of K-feldspar, with minor quartz and plagioclase. The average grain size of K-spar and quartz in the lithic fragments is about 0.05mm, but some clasts contain K-feldspar phenocrysts of 0.5 to 1mm in diameter. Rarely, the K-spar phenocrysts contain vugs lined with feldspar(?) microlites.

The rock fragments are set in a fine-grained matrix consisting of sericite, limonite, pyrobitumen (?), pitchblende, and uranium molybdate mineral umohoite or uranosphaerite.

Several textures and microstructures not attributable to the pyroclastic origin are observed in the clasts and matrix as follows:

- i) Rare fluidal textures within oriented feldspar laths.
- ii) The boundaries of fragments are marked by sericitic alteration.
- iii) The fine-grained matrix shows no preferred orientation, banding texture, or structure, but is locally replaced by sericite and associated pyrobitumen (?), pyrite, limonite, pitchblende and uranium molybdate.
- iv) Several fractures occur in the rock, but the most common fractures are located along the boundaries of rock fragments rather than cross-cutting through them; this may be reminiscent of non-welded tuffs. The fractures may be annealed by sericite or limonite and rutile.

2.1.4 S.E.M. Analysis

Zircon: Occurs as euhedral to subhedral crystals of (Trace) 0.05mm size.

Sericite: Sericite is found in the following areas (3-5%)
i) as alteration of fragments along boundaries
ii) minor amounts of sericite is interstitial between feldspars
iii) occurs in fractures with limonite and rutile
iv) replacing feldspars

Rutile: Several anhedral grains of 0.05 to 0.1mm size (Trace)
i) in fractures with sericite or limonite
ii) in sericitic alteration which replaces clasts along boundaries
iii) as inclusions in sphene (?)

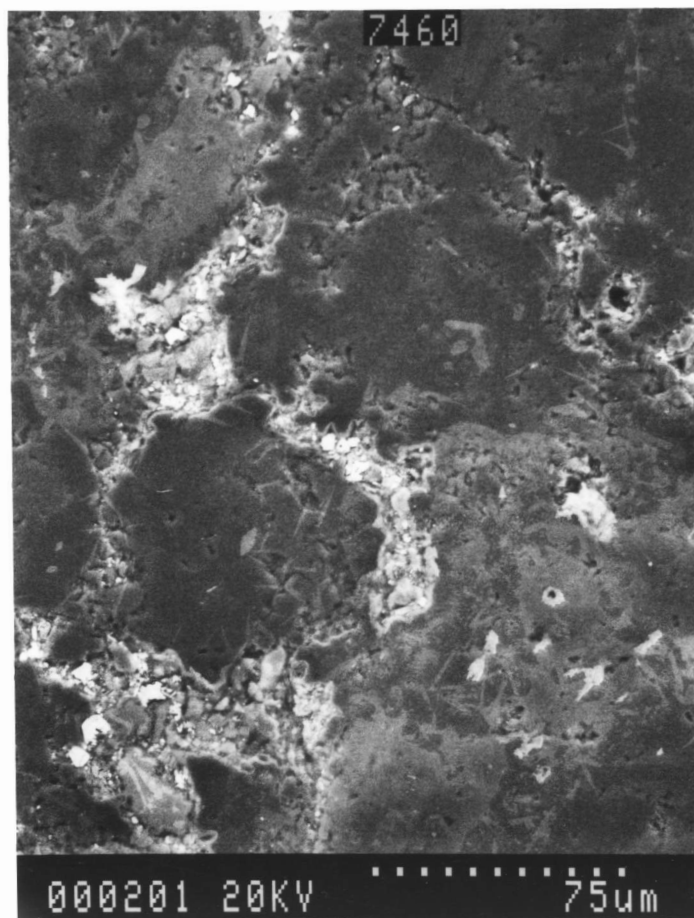
Pyrite: Anhedral grains of only 0.1mm size associated (Trace) with sericitic alteration. It has similar modes of occurrence as rutile (see i) and ii) above).

Limonite: Well-crystalline aggregates of limonite about (1-2%) 0.1mm are mostly located in fractures. Lesser amounts of limonite impregnate sericites along boundaries of clasts.

Pyrobitumen (?): Occurs exclusively in one small area of (minor) the slide ranging from a few mm to a cm in diameter as follows:
i) forms 1 to 2 micron thick films on the trachyte fragments
ii) impregnates the sericitic alteration along the margins of fragments

Pitchblende: Refer to SEM photomicrographs 201, 202 and Energy spectral plot (Fig 1) following. Pitchblende occurs as subhedral to anhedral grains of 5 to 10 micron diameter, disseminated in the pyrobitumen-impregnated area mentioned above, and is associated with the sericitic alteration previously mentioned. It also occurs in interstitial spaces between rock fragments (SEM photo 201). The pitchblende grains are identifiable by their energy spectra (Fig 1), which also indicate minor amounts of iron, and lesser amounts of copper, aluminium, silica, phosphorus and sulfur.

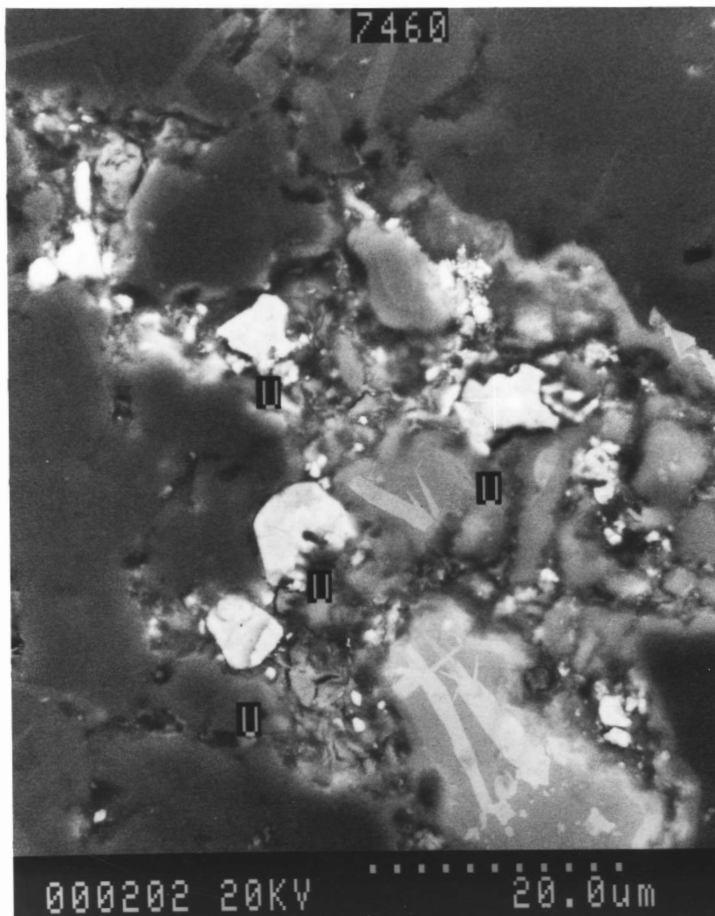
SEM PHOTOMICROGRAPH 201: Mode of Pitchblende Occurrence



Sericitic alteration surrounding a round-shaped trachyte fragment with corroded outline. A few anhedral pitchblende grains (very bright grains with well-defined boundaries) occur in the sericite. The more diffuse white grains are silicates or surface contamination. Their brightness is due to charging effect.

Scale as indicated on the photo in micron.

SEM PHOTOMICROGRAPH 202: Higher Power of Pitchblende



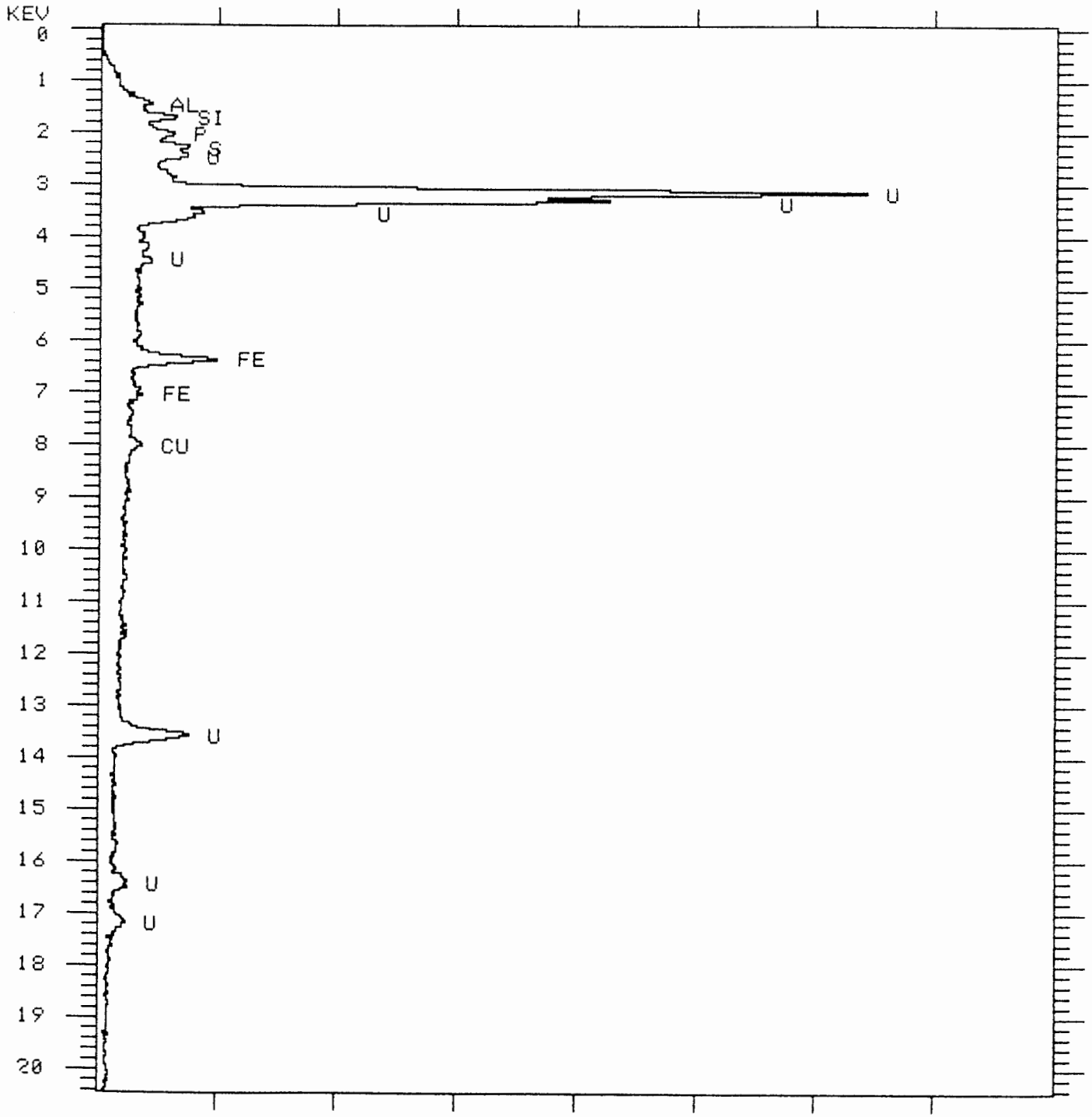
A blow-up (37.5x) of the area shown in the lower left corner of photomicrograph 201. The pitchblende grains identified by their energy dispersive spectra, are marked by a letter U adjacent to the grain. A typical spectra is presented on the next page.

Scale as indicated on the photo in micron.

Fig. 1 : TRACOR-NORTHERN SPECTRAL PLOT

1ST HALF: # 7460 PITCH LT= 100 SECS 0.040 KEV

COUNTS F.S.= 8192



Pitchblende with minor iron, and lesser amounts of copper, aluminium, silica, phosphorus and sulfur

Uranium Molybdate: Refer to SEM photomicrograph 203 and
(Trace) Energy spectral plot (Fig 2) following. This mineral occurs as very fine-grained aggregates interstitial between fragments within the sericitic alteration and associated limonite deposition.

In transmitted light it appears as a dark, yellowish brown mineral (not quite opaque) with similar optical characteristic to some varieties of rutile.

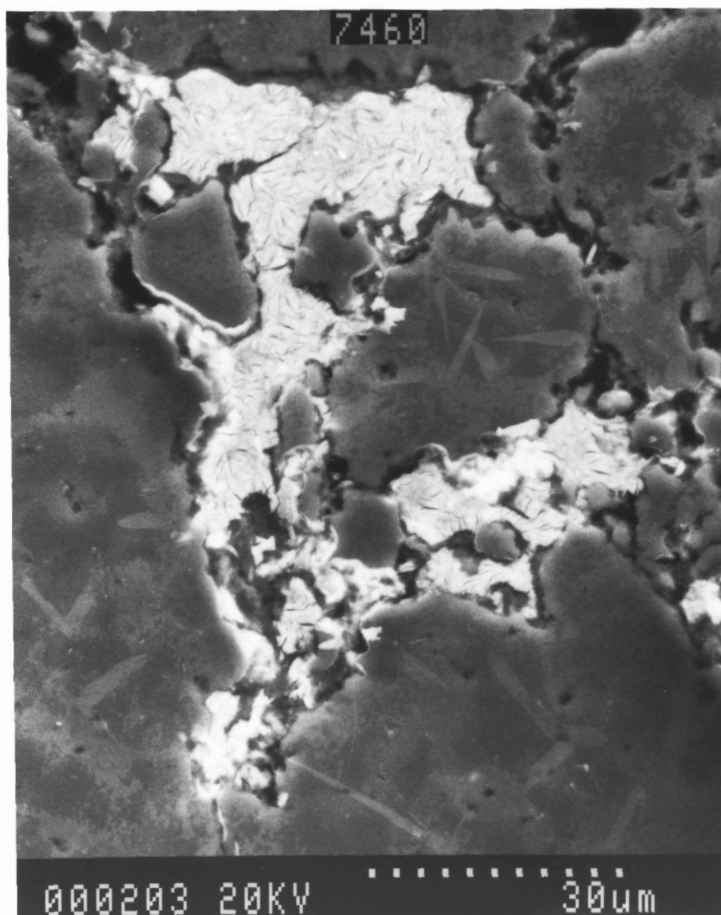
In crossed polars (transmitted light), it has a brighter, yellowish brown colour.

Extinction cannot be observed under crossed polars.

In reflected light (crossed polars), greenish yellow internal reflections are typical of uranium minerals,; thus it is somewhat different from very fine-grained aggregates of rutile.

The largest aggregates of uranium molybdate are about 30 microns long (see SEM photomicrography 203). This mineral whose energy dispersive spectra is presented below (Fig 3) indicates anomalous amounts of Mo, and U, with minor amounts of iron, aluminium, silica, titanium, lead and copper. It is diagnosed as either umohoite or uranosphaerite.

SEM PHOTOMICROGRAPHY 203: Mode of Uranium Molybdate Occurrence



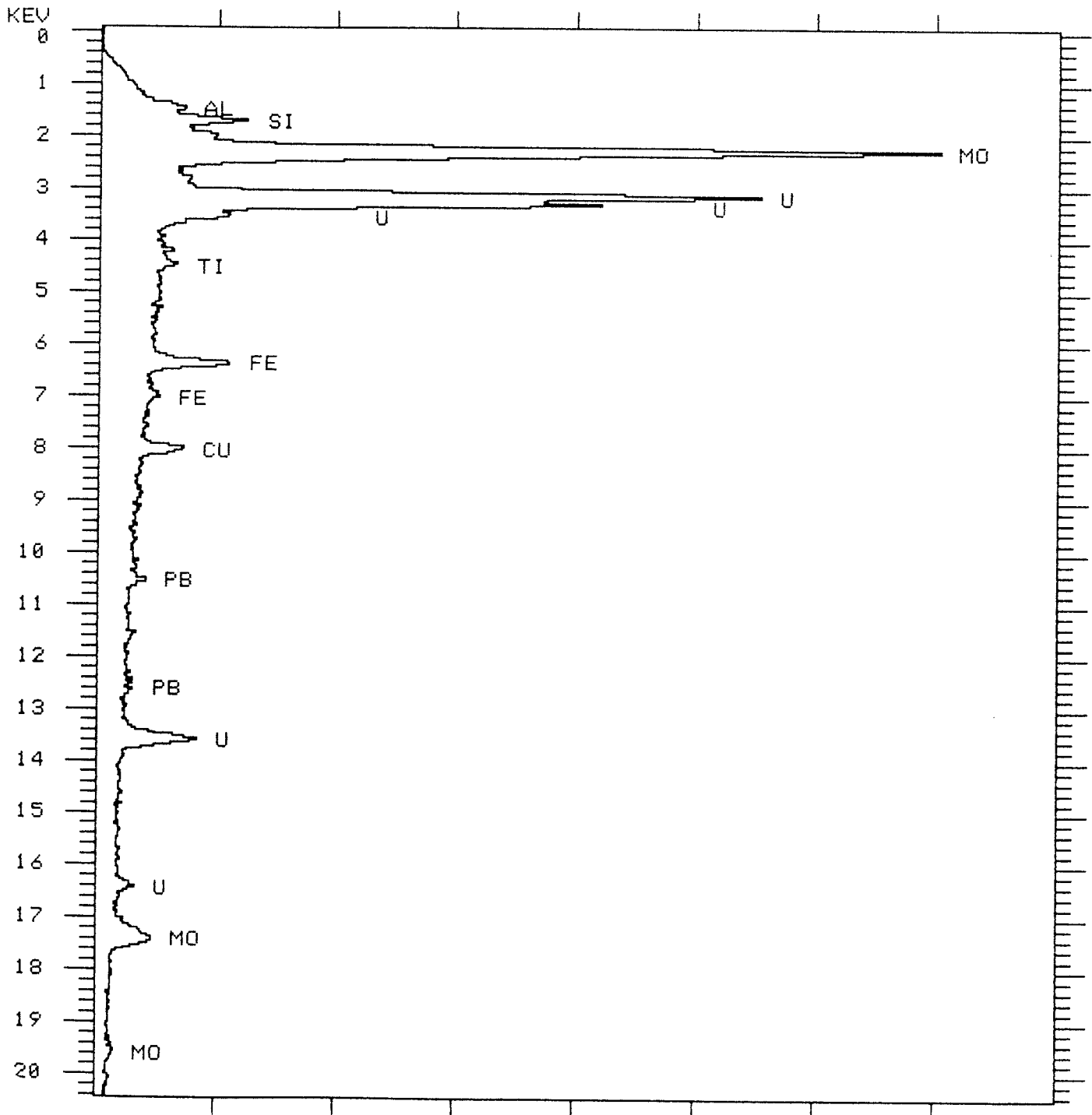
Uranium molybdate interstitial between trachyte fragments. Nearly all the white area is uranium molybdate. The exceptions could be the brighter white grains right of the centre of the photograph. A platy or flaky morphology is inferred near the top of the photograph, as is spheroidal aggregates of uranium molybdate. The energy dispersive spectra presented on the next page was collected from this part of the sample. The mineral is probably uranosphaerite or umohoite with Cu and Fe in solid solution, and minor Al, Si, Ti and Pb.

Scale as indicated on the photo in micron.

Fig. 2: TRACOR-NORTHERN SPECTRAL PLOT

1ST HALF: 7460 SECONDARY U LT= 100 SECS 0.040 KEV

COUNTS F.S.= 8192



Umahoite or Uranosphaerite with anomalous amounts of uranium and molybdenum, and lesser amounts of iron, aluminium, silica, titanium, lead and copper.

2.1.5 Interpretation

The lack of glass shards and pumice fragments probably indicates a non-welded origin of the host rocks.

The primary uranium mineralization is associated with sericitic alteration of the fine ash matrix and is represented by pitchblende which occurs only in a small area impregnated by pyrobitumen. The secondary uranium mineralization represented by a uranium molybdate phase probably formed by remobilization of uranium from pitchblende when more oxidizing conditions probably prevailed and induced the destruction of organic material and deposition of limonite. The primary and secondary uranium minerals replace the fine ash matrix or occur in fractures and may very likely be derived by hydrothermal alteration and subsequent tectonic remobilization.

2.2 SAMPLE 7462

2.2.1 Rock Type: Polyolithic, non-welded dacitic lapilli tuff, probably a flow breccia, or a brecciated crystal tuff.

2.2.2 Mineralogy: K-feldspar (20%), plagioclase (40%), sanidine (?), chlorite (10%), quartz (5-10%), calcite (10%), rutile, ilmenite, magnetite, limonite, pyrite, marcasite. No uranium minerals observed.

2.2.3 Description: The rock consists of felsic and trachytic polyolithic rock fragments and euhedral feldspar phenocrysts, set in a very fine-grained felsic matrix predominated by chlorite which replaces the matrix. The size of the rock fragments ranges from 0.2 to 304mm, while the feldspar phenocrysts range from 0.5 to 1.5mm.

Several textures and microstructures not attributable to the pyroclastic origin occur in the different types of rock fragments, and will be described under each clast description following:

- a) The first type of rock fragment is the most abundant, constituting more than 95% of the rock. It is characterized by about 30% K-spar phenocrysts in a ground mass composed of a felty mat of feldspar microlites and minor amounts of fine-grained quartz (about 1%). The resorbed orthoclase with sanidine (?) and minor plagioclase phenocrysts are 0.5-1.5mm in length, and are euhedral to anhedral. One example of myrmekitic K-spar was noted whereas sodic plagioclase phenocrysts are rare.

The groundmass of this type of rock clast which constitutes about 70% of the clast consists of a felty mat of feldspar microlites, locally subparallel

feldspar microlites, with trace amounts of interstitial euhedral quartz grains 10-20 micron in diameter.

Chlorite which makes up to 6-8% of the clast is fine-grained and replaces the matrix. Minor amounts of chloritization along the edges of the rock fragments were also observed. Chlorite is also observed replacing feldspars, and occurring along fractures which often run along the boundaries of rock fragments. The chlorite is of the green pleochroic iron-rich variety.

Calcite makes up to 2% of the clast is well-crystalline and was positively identified by powder XRD methods, see enclosed chart (Figure 4). This carbonate is located in discontinuous fractures and anheal elongate vesicles. Individual fractures are usually subparallel, are up to 0.5mm wide, and often occur along the boundaries of rock clasts.

- b) The second textural type of fragment is characterized by very fine granular grains of quartz and feldspar in the 0.005 to 0.01 mm size range. Into this groundmass are scattered up to 3mm long, highly stretched fragments (no phenocrysts) whose length to width ratio is about 4:1. This clast could possibly represent a recrystallized glass shard!
- c) The third textural type of fragment consists of a well-crystalline groundmass with granular feldspars in the 0.1mm size, but without feldspar microliths or phenocrysts.

2.2.4 SEM Analysis

Rutile: Anhedral grains associated with chlorite and (minor) calcite with a grain size of up to 0.5mm.

Ilmenite: Anhedral grains of up to 0.5mm in size which are (minor) interstitial between fragments and borders calcite-filled fractures. Some ilmenite grains are partially replaced by limonite, and a few grains rarely contain marcasite inclusions.

Limonite: Associated with ilmenite and rutile and (minor) impregnates irregular patches up to 1 mm in diameter, and often replaces ilmenite or magnetite.

Magnetite: Subhedral grains of 0.05mm in diameter. (trace)

Pyrite: Occurs in the groundmass of the trachyte fragments as subhedral grains of up to 0.1mm in size. Locally it is rimmed by limonite.

Marcasite: Rare anhedral inclusions in fine-grained (trace) ilmenite or magnetite.

2.2.5 Interpretation

This rock appears to be a felsic flow breccia or a brecciated crystal tuff in which pervasive fractures and accompanying chlorite and carbonate (calcite) alteration is confined to the fine ash matrix of the tuff. The rock fragments exhibit only moderate chloritization along their borders.

The larger elongate masses of calcite probably fill vesicles, and the calcite was probably remobilized along fractures which mostly permeate the boundaries of rock fragments.

The anomalous uranium content indicated in the field is probably related to the chlorite-calcite alteration, but no uranium minerals were actually observed in the petrographic or SEM analysis of the section.

Volcanic glass shards are not common, and pumice fragments have not been observed. Welding, if any, is probably less dense or absent, although calcite-filled vesicles indicate the possible presence of gas bubbles at the time of deposition, and fairly high temperature conditions.

2.3 SAMPLE 3

2.3.1 Rock Type: Sodic, polyolithic, non-welded rhyolitic lapilli tuff to tuff-breccia of pyroclastic (ash flow) origin.

2.3.2 Mineralogy: Plagioclase (<75%), K-spar (5-10%), quartz (10-15%), sericite (1-3%), carbonate (>5%), chlorite (>5%), limonite (3-5%), rutile (1-2%), zircon, pyrite, pitchblende, uranium secondaries.

2.3.3 Description:

This fragmented rock resembles sample 7460 in texture and uranium mineralization, but it differs compositionally in that it is predominantly sodic. The rock consists essentially of a cryptocrystalline to very fine-grained (less than 0.01mm) felty groundmass which predominates over a framework of felsic and mafic clasts, coarser grains of plagioclase (0.1-0.3mm), and euhedral feldspar phenocrysts (2-5mm in size). In the cryptocrystalline matrix are scattered areas of intense sericite-limonite-calcite alteration which carry uranium mineralization.

Several non-genetic textures are observed in the slide specimen as follows:

- a) A crude, discontinuous foliation is defined by siliceous, quartz-feldspathic laminae.
- b) A network of microfractures annealed by minute flakes of carbonate, chlorite and limonite.
- c) Rare fluidal textures within orientated feldspar and chlorite microlites.

2.3.4 SEM Analysis

The opaque and ore minerals observed in this slide appeared to be similar (with a few exceptions) to those observed in slide 7460. Since slide 7460 was extensively examined, scanned and probed in detail, and since no distinctly peculiar textures or alteration minerals were noted in this slide, detailed description was considered unnecessary.

2.3.5 Interpretation

The most distinct feature of this rock is the abundance of cryptocrystalline to very fine-grained siliceous to cherty (ash) matrix over rock clasts, reminiscent of ash flow tuffs. The origin of the rock is, however, complicated by the presence of fairly abundant larger crystals and grains of plagioclase and K-spar in the 1-2mm size range.

The lack of shards and pumice fragments again probably indicate a non-welded less densely welded tuff. The mode of uranium mineralization is similar to that of sample 7460 with a similar composition but not that of dacitic sample 7462, a situation perhaps analogous to that of Rytuba and Conrad (1982) who have reported that "in general, early high silica comendite ash-flow tuffs containing about 75% SiO₂ and 11.2% Al₂O₃ (which ended with the venting of ash flows lower in SiO₂ (68-70%) and higher in Al₂O₃ (12.6-13.6%)), show strong enrichment of U, Zr, etc., and a depletion of Ba, Mg, Ca, P, Sr, Ti, etc."

3. ROCK GEOCHEMISTRY

The two rock samples received were submitted for whole-rock and trace element analyses. The results are presented on the following page in Table 1. A summary of the analytical methods used and the respective detection limits is presented in Table 2.

40

Table 1: Chemical composition and analyses of samples 7460 and 7462

Major Elements (%)	SAMPLE No.	
	7460	7462
SiO ₂	77.4	62.2
Al ₂ O ₃	10.9	14.7
CaO	0.10	3.60
MgO	0.20	1.00
Na ₂ O	0.74	5.52
K ₂ O	6.24	1.66
Fe ₂ O ₃ *	1.12	5.54
MnO	0.02	0.11
TiO ₂	0.10	0.93
P ₂ O ₅	0.03	0.36
H ₂ O ⁺	1.3	1.9
H ₂ O ⁻	0.2	0.1
CO ₂	< 0.1	2.3
S	NIL	0.02
LOI	1.85	3.85
TOTALS**	99.5	99.6

Minor and Trace Elements (ppm)

Au ⁺ (ppb)	< 20	< 20
Cr	< 10	< 10
Rb	350	90
Sr	40	330
Y	60	30
Zr	5390	210
Nb	< 10	< 10
Co	6	11
Ni	6	5
Cu	9.5	15.0
Zn	25.0	160.
Mo	3500	150.
Ag	60.0	2.
Pb	300	34
Th	28	12
U	3030.	571.

Notes:

- * Total iron as Fe₂O₃
- ** Total does not include the waters, CO₂ and S
- + Au reported in ppb

Table 2: A summary of analytical methods used, and the
respective detection limits

	METHOD	DETECTION LIMIT
AU PPB	FADCP	2.000
H2O+ %	WET	0.100
H2O- %	WET	0.100
CO2 %	WET	0.100
WRMAJ %	WR	0.010
S %	XRF	0.010
WRMIN PPM	WR	10.000
CO PPM	DCP	1.000
NI PPM	DCP	1.000
CU PPM	DCP	0.500
ZN PPM	DCP	0.500
MO PPM	DCP	1.000
AG PPM	DCP	0.500
PB PPM	DCP	2.000
TH PPM	NA	1.000
U PPM	DNC	0.100

The distinctive result is the anomalous concentration of molybdenum (3500 ppm Mo) and zirconium (5390 ppm Zr) previously unreported.

The chemical affinity defined by the Irvine and Baragar's (1971) plot (Figure 59) confirms the results of a calc-alkaline suite reported by Lambert (1974). The subalkaline trend defined by Irvine and Baragar's (opit.cit.) alkalis vs silica plot (Figure 56) is consistent with the results of the petrographic studies.

The positive observation of the results from the technological aspects of mining includes the low concentration of thorium (up to 28 ppm Th) and phosphorus (up to 0.36% P₂O₅ in the less mineralized specimen 7462).

Other well defined differences between the uranium mineralized (7460) and non-mineralized (7462) specimen are summarized below in Table 3.

Table 3

Major and Significant Chemical Differences between Well-mineralized and Moderately Mineralized Uranium Samples

<u>Element</u> %ppm	<u>Depleted</u>		<u>Enriched</u>	
	<u>Sample No.</u>	<u>Conc.</u>	<u>Sample No.</u>	<u>Conc.</u>
SiO ₂	7462	62.2	7460	77.4
Al ₂ O ₃	7460	10.9	7462	14.7
CaO	7460	0.10	7462	3.60
MgO	7460	0.20	7462	1.00
Na ₂ O	7460	0.74	7462	5.52
K ₂ O	7462	1.66	7460	6.24
FE ₂ O ₃	7460	1.12	7462	5.54
P ₂ O ₅	7460	0.03	7462	0.36
CO ₂	7460	<0.1	7462	2.3
LOI	7460	1.85	7462	3.85
Rb	7462	90	7460	350
Sr	7460	40	7462	330
Zr	7462	210	7460	5390
Zn	7460	25	7462	160
Mo	7462	150	7460	3500
Ag	7462	2	7460	60
Pb	7462	34	7460	300
Th	7462	12	7460	28

Fig. 4 : Chemical Affinity of the 2 samples from BLCC

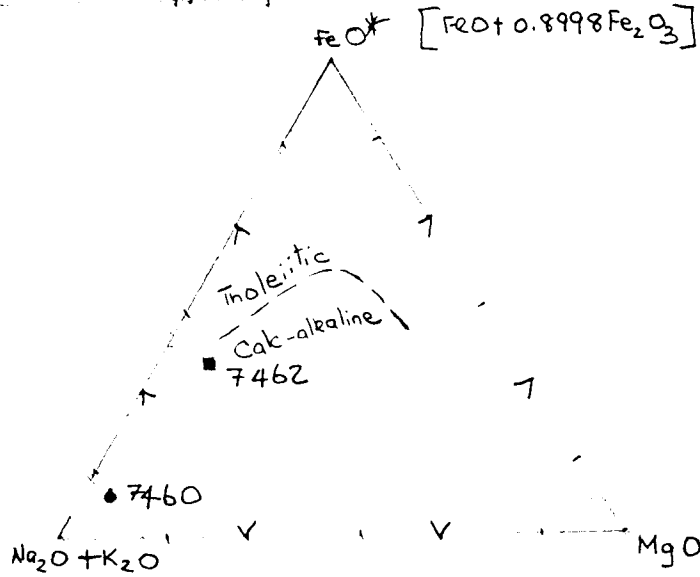


Fig. 4.(a): AFM diagram for samples 7460 and 7462 after Irvine and Baragar (1971)

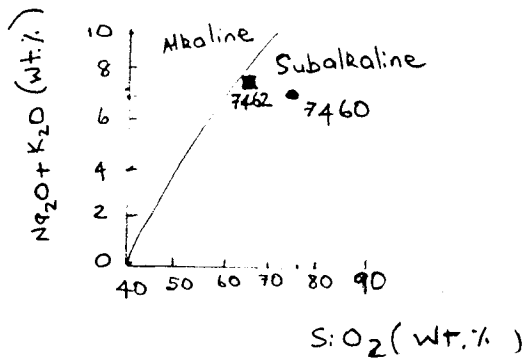


Fig. 4(b): Alkalies vs Silica of the 2 samples (7460, 7462) after Irvine and Baragar (1971)

4. REFERENCES

- Cardenas-Flores, David
1983: Volcanic Stratigraphy and Uranium-molybdenum Mineralization of the Sierra de Pena Blanca District, Chihuahua, Mexico.
- Curtis, Laurence
1981: Uranium in Volcanic and Volcaniclastic Rocks - Example from Canada, Australia and Italy, in A.A.P.G. Studies in Geology, No. 13 (edited by P.C.Goodell and A.C.Waters).
- Dayvault, R. D.; Castor, S. B.; and Berry, M. R.
1981: Uranium Associated with Volcanic Rocks in and near the McDermitt Caldera, Nevada and Oregon, U.S.A. in A.A.P.G. Studies in Geology, No. 13 (edited by P.C.Goodell and A.C.Waters).
- Goodell, Philip C., and Waters, Aaron C. (editors)
1981: Uranium in Volcanic and Volcaniclastic Rocks; A.A.P.G. Studies in Geology, No. 13. Papers from the Symposium on Uranium in Volcaniclastic Rocks, conducted at the Annual Meeting of the Southwest Section of the American Association of Petroleum Geologists, El Paso, Texas; published by the Energy Minerals Division of the A.A.P.G.
- Irvine, T.N., and Baragar, W.R.A.
1971: A Guide to the Chemical Classification of the Common Volcanic Rocks. Canadian Journal of Earth Sciences, Volume 8, pp.523-548.
- Lambert, M.B.
1974: The Bennett Lake Cauldron Subsidence Complex, British Columbia and Yukon Territory; Geological Survey of Canada, Bulletin No. 227.
- Rytuba, James J., and Conrad, Walter K.
1981: Petrochemical Characteristics of Volcanic Rocks associated with Uranium Deposits in the McDermitt Caldera Complex, in A.A.P.G. Studies in Geology, No. 13 (edited by P.C.Goodell and A.C.Waters).
- Smith, M.J.
1982: The Skukum Volcanic Complex, 105D SW: Geology and Comparison to the Bennett Lake Cauldron Complex; Yukon Exploration and Geology, D.I.A.N.D. (1982).
- Turner, A. Terry
1984: 1984 Uranium Reconnaissance Exploration Program, Yukon Territory; An Unpublished Internal Report, Private Files of Central Electricity Generating Board Exploration (Canada) Ltd., Calgary, Alberta.

X-RAY ASSAY LABORATORIES LIMITED
1885 LESLIE STREET, DON MILLS, ONTARIO M3B 3J4
PHONE 416-445-5755 TELEX 06-986947

APR 16 1985

CERTIFICATE OF ANALYSIS

TO: C.E.G.B. EXPLORATION CANADA LIMITED
ATTN: A.T. TURNER
1680-700-9 AVENUE SOUTH WEST
CALGARY, ALBERTA
T2P 3V4

CUSTOMER NO. 1099
DATE SUBMITTED
18-MAR-85

REPORT 24041

REF. FILE 19574-84

2 ROCKS

WERE ANALYSED AS FOLLOWS:

	METHOD	DETECTION LIMIT
AU PPB	FADCP	2.000
H2O+ %	WET	0.100
H2O- %	WET	0.100
CO2 %	WET	0.100
WRMAJ %	WR	0.010
S %	XRF	0.010
WRMIN PPM	WR	10.000
CO PPM	DCP	1.000
NI PPM	DCP	1.000
CU PPM	DCP	0.500
ZN PPM	DCP	0.500
MO PPM	DCP	1.000
AG PPM	DCP	0.500
PB PPM	DCP	2.000
TH PPM	NA	1.000
U PPM	DNC	0.100

X-RAY ASSAY LABORATORIES LIMITED

DATE 16-APR-85

CERTIFIED BY *[Signature]*

NOTE: AU DETECTION LIMIT IS VARIABLE
DUE TO SMALL SAMPLE SIZE.

SAMPLE	AU PPB	H2O+ %	H2O- %	CO2 %	S %
7460	<20	1.3	0.2	<0.1	NIL
7462	<20	1.9	0.1	2.3	0.02

SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	MO PPM
7460	6	6	9.5	25.0	3500
7462	11	5	15.0	160.	150

SAMPLE	AG PPM	PB PPM	TH PPM	U PPM
7460	60.0	300	28	3030.
7462	2.0	34	12	571.

X	X	RRRRR	A	LL
XX	XX	RR RR	AAA	LL
XX	XX	RR RR	AA AA	LL
XXX		RR RR	AA AA	LL
XXX		RRRRR	AAAAAAA	LL
XX	XX	RR RR	AA AA	LL
XX	XX	RR RR	AA AA	LLLLLLLL
X	X	RR R	AA AA	LLLLLLLL

XRF - WHOLE ROCK ANALYSIS

C. E. G. B. EXPLORATION CANADA LIMITED
 Attn: A. T. TURNER
 1680-700-9 AVENUE SOUTH WEST
 CALGARY, ALBERTA
 T2P 3V4

CUSTOMER No. 1099

DATE SUBMITTED
 18-MAR-85

REPORT 24041

REF. FILE 19574

DATE REPORTED 16-APR-85

XRF W. R. A. SUMS INCLUDE ALL ELEMENTS DETERMINED.
 FOR SUMMATION ELEMENTS ARE CALCULATED AS OXIDES.

SAMPLE	SI02	AL203	CAO	MGO	NA2O	K2O	FE2O3	MNO	TI02	P2O5	LOI	SUM
7460	77.4	10.9	0.10	0.20	0.74	6.24	1.12	0.02	0.10	0.03	1.85	99.5
7462	62.2	14.7	3.60	1.00	5.52	1.66	5.54	0.11	0.93	0.36	3.85	99.6

SAMPLE	CR	RB	SR	Y	ZR	NB
7460	<10	350	40	60	5390	<10
7462	<10	90	330	30	210	<10

APPENDIX 3

SUMMARY OF EXPENDITURES

Statement of Expenditures

Salaries (34 man days total)	\$ 5,030.00
Helicopter Costs (Trans North, Whitehorse)	3,767.20
Geochemical Costs (X-Ray Assay Laboratories)	174.00
Petrographic Studies (Vancouver Petrographics)	670.33
Lodging, Meals, Supplies	589.43
Equipment Rentals (6 spectrometers for 4 days)	<u>168.00</u>
Total:	<u>\$10,398.96</u>

APPENDIX 4

QUALIFICATIONS OF PERSONNEL

I, Samuel E. Amukun, do hereby certify that:

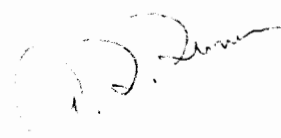
- I am presently residing at 44 Shootfield Crescent, Agincourt, Ontario, M1S 4E2
- I am a fellow member of the Geological Association of Canada
- I have been actively involved in mineral exploration in Uganda and Canada since 1969
- I carried out laboratories studies on the radioactive boulders from the Matt 1 - 20 mineral claims and participated in the geological mapping and radiometric prospecting surveys on these claims.

APPENDIX 4

QUALIFICATIONS OF PERSONNEL

I, Arthur Terry Turner, do hereby certify that:

- I am presently residing at 27 Rundleson Way, N.E., Calgary, Alberta, T1Y 3H7
- I am a member of the Association of Professional Engineers, Geologists and Geophysicists of Alberta
- I have been actively involved in mineral exploration in Canada, Australia and New Guinea since 1966
- I supervised and participated in the 1984-85 exploration program on the Matt 1 - 20 mineral claims.





GEOLOGICAL COLUMN

- TERTIARY OR EARLIER
- 11 Granite porphyry, rhyolite
- SKUKUM GROUP
- 10 Andesite, basalt, rhyolite, and trachyte breccias, tuffs, and flows, granitic agglomerate; minor greywacke
 - 9 Pink quartz monzonite
- CRETACEOUS
- COAST INTRUSIONS
- 8 Granodiorite, granite, quartz monzonite, quartz diorite, and allied rocks; 8a, hornblende-biotite-oligoclase granodiorite; 8b, leucocratic granite, biotite granite; 8c, biotite-hornblende-quartz diorite; 8d, hornblende diorite; 8e, gneissic 'granitic breccia'; 8g, pegmatitic syenite
- HUTSHI GROUP
- 7 Basalt andesite, quartz latite, and rhyolite flows, breccias, and tuffs; conglomerate; minor greywacke and argillite 7a, basalt dyke; 7b, altered volcanic rocks probably belonging to Hutshi group

Geology by J.G. Fyles, 1946; J.R. Johnston, 1947; and J.O. WHEELER, 1948-1951
To accompany G.S.C. Memoir 312 by J.O. Wheeler (GSC Map 953A)

LEGEND

- Uranium Exploration Area
- × CEGB Silt Sample Location, Number and result (ppm U₃O₈)
- ⊗ CEGB Rock Sample Location, Number and result (ppm or % U₃O₈)
- Uranerz - CEGB stream sediment location and result (ppm U₃O₈)
- ⊞ CEGB Study Area
- ⊞ Uranerz - CEGB Exploration Area (1980 - 83)

URANIUM EXPLORATION ACTIVITY

NUMBER	CLAIM NAME	COMPANY
12	Ben	E & B Exploration Limited Welcome North Mines Limited
13	Mun	E & B Exploration Limited
14	West	E & B Exploration Limited
15	Part	E & B Exploration Limited
16	Ram	E & B Exploration Limited
17	Cro	E & B Exploration Limited

091653

CEGB EXPLORATION (CANADA) LTD.

1984 URANIUM RECONNAISSANCE
EXPLORATION PROGRAM
YUKON TERRITORY
GEOLOGICAL COMPILATION
WHITEHORSE MAP SHEET

SCALE	1:250,000	AUTHOR	T.T.	DATE	Feb. 1985
NTS	105 D	DRAWN BY	J.S.	MAP	1

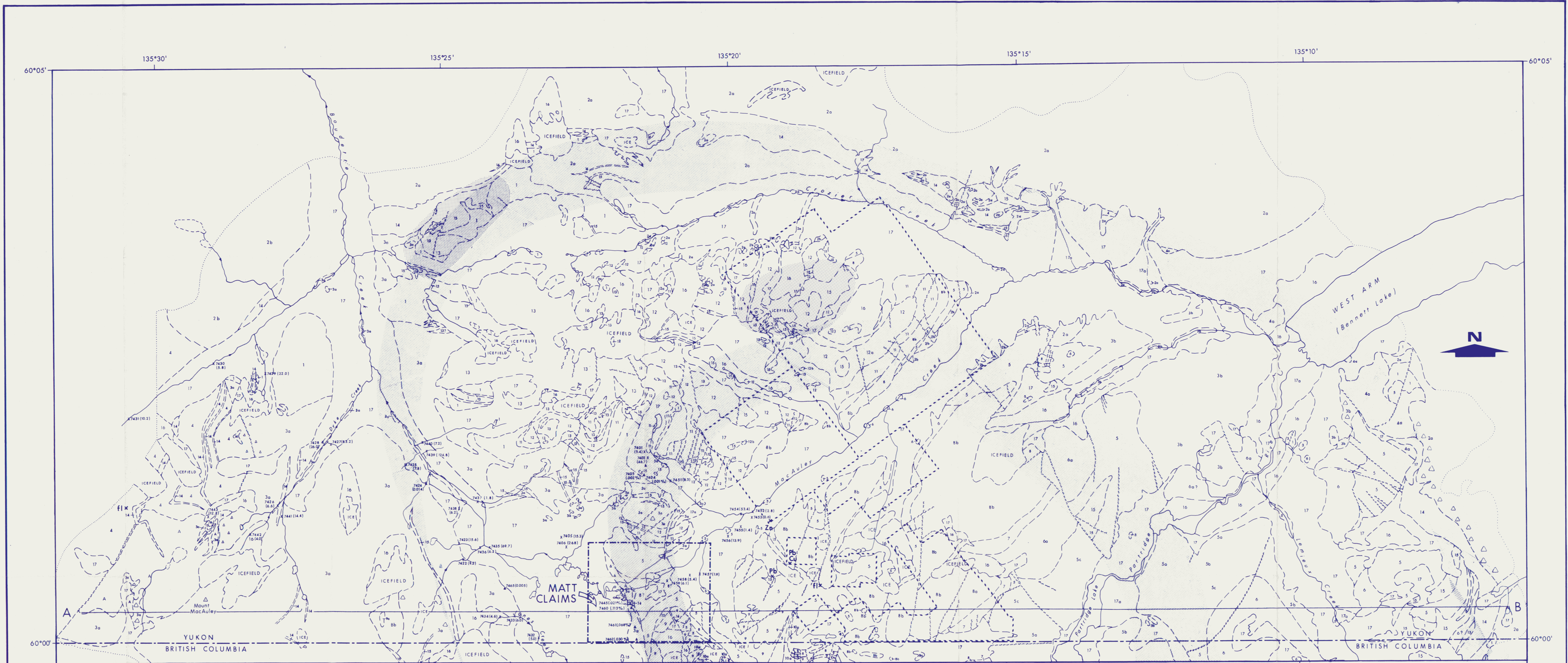
REFERENCE

- Road, loose surface gravel and drained 2 lanes
- Road, paved
- Trail
- Railway (narrow gauge)
- Abandoned railway grade
- Telephone or telegraph line
- Building
- School
- Post Office
- Provincial boundary and monument
- Height in feet above mean sea level
- Glacier
- Intermittent stream
- Marsh or swamp
- Sand or gravel
- Contours (Interval 500 feet)
- Contours (Elevation approximate)
- Wooded areas

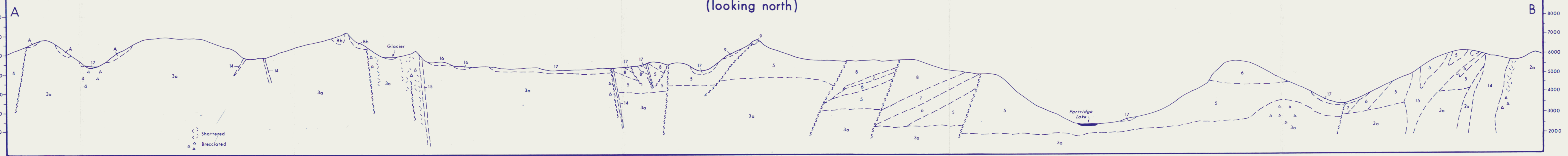
MAP 953A
WHITEHORSE
YUKON TERRITORY
(FIRST EDITION)

Scale: 1/250,000 or Approximately 4 Miles to 1 Inch





EAST-WEST CROSS-SECTION
(looking north)



GEOLOGICAL LEGEND

- QUATERNARY
PLEISTOCENE AND RECENT
- 17 Colluvium and undifferentiated surficial deposits; 17a, siltstone, sand, silt gravel
 - 16 Glacial deposits: moraine, sand, gravel
- TERTIARY
- Eocene
- 15 Rhyolite, dacite, andesite, basalt and tuff dykes, silt and minor lavas; ages equivalent to 5 to 14 or younger
 - 14 Rhyolite ring dyke and related intrusives
- SKUKUM GROUP (5-13)
- 13a BOUDETTE CREEK FORMATION, ignimbrite, minor tuff, 13a, granite boulder conglomerate
 - 12 CROZIER TUFFS AND LAVAS, tuff, ignimbrite, 12a, rhyolite lavas, 12b, siltstone gneiss, 12c, volcanic breccia, probably equivalent to 10
 - 11 CROZIER BRECCIAS, volcanic and granite fragment breccias and conglomerates with minor sandstone and tuff, 11a, siltstone, considered to be equivalent to 9 but may in part be equivalent to 7
 - 10 JONES CREEK FORMATION, 10a, basalt with minor volcanic breccias, 10b, rhyolite lavas and related dykes, 10c, tuff ignimbrite, sandstone
 - 9 LEMIEUX CREEK FORMATION, granitic boulder conglomerate, minor sandstone, tuff and ignimbrite (locally intertuffing with 8), 9a, tuff breccia and andesite breccia (age relative to 5, 7, and 8 uncertain), 9b, granitic-volcanic boulder conglomerate, 9c, granitic breccia
 - 8 MACAULEY CREEK FORMATION, 8, undifferentiated 8a, Member B, ignimbrite, densely welded, minor tuff, volcanic breccia and lavas 8a, Member A, ignimbrite, partly welded
 - 7 GAULT FORMATION, granitic boulder conglomerate, sandstone, minor siltstone, silt, tuff and volcanic breccia
 - 6 CLEFT MOUNTAIN FORMATION, 6, undifferentiated 6a, Member D, lithic and feldspar wacke, tuff 6d, Member D, ignimbrite; 6c, Member C, andesite lavas 6b, Member B, felspathic dacite lavas; 6a, Member A, ignimbrite
 - 5 PARTRIDGE LAKE FORMATION, 5, undifferentiated tuff, minor lavas, volcanic breccia and granite breccia; may contain part of 8a near MacAuley Creek valley; 5d, Granitic boulder conglomerate and breccia; age uncertain; 5c, Member C, ignimbrite, non-to partly welded, lapilli tuff, tuff breccia 5b, Member B, ignimbrite, partly welded, minor dacite and andesite lavas; 5a, Member A, ignimbrite, non-welded
- CRETACEOUS AND TERTIARY
- COAST PLUTONIC COMPLEX
- PALEOCENE (?) OR EARLIER
- 4 Leucocratic granite, 4a, possible ring fracture intrusion (age uncertain relative to 3)
- UPPER CRETACEOUS OR LOWER TERTIARY
- 3 3a, hornblende-biotite quartz monzonite; 3b, pink quartz monzonite; 3c, fine grained biotite quartz monzonite; 3d, hornblende and biotite-hornblende granodiorite; 2b, biotite and hornblende-biotite granodiorite
 - 2 2a, biotite and hornblende-biotite granodiorite
 - 1 YUKON GROUP
Quartzite, mica-quartz schist, mica (or hornblende) quartz-feldspar gneiss, altered gneissic quartz diorite, minor marble

- A Ignimbrite, minor tuff; considered to be related to 13
 - B Ba, tuff, Bb, ignimbrite, considered to be related to 10 or 13
 - C Ca, tuff, Cb, andesite, Cc, rhyolite, considered to be related to 10
 - D Da, tuff, ignimbrite, volcanic breccia, dacite and rhyolite lavas; minor siltstone, granite boulder-bearing sandstone, Db, ignimbrite, probably related to 10
 - E Ea, volcanic breccia; Eb, andesite
- Geological Boundary, Overburden-Bedrock Interface
 - Fault
 - xfl Mineral Occurrence (fluorite)
 - ▲▲ Brecciated granitic rocks
 - Margin of Couldron
 - Eruptive Centre
 - Limit of Mapping

Geology from M.B. Lambert, Bulletin 227

- Claim Boundary
- MATT Claim Boundary
- X7457 (1.9) Silt Sample Location, Number and Result (ppm U)
- A7461 (0.6%) Rock Sample Location, Number and Result (%U₂O₈)

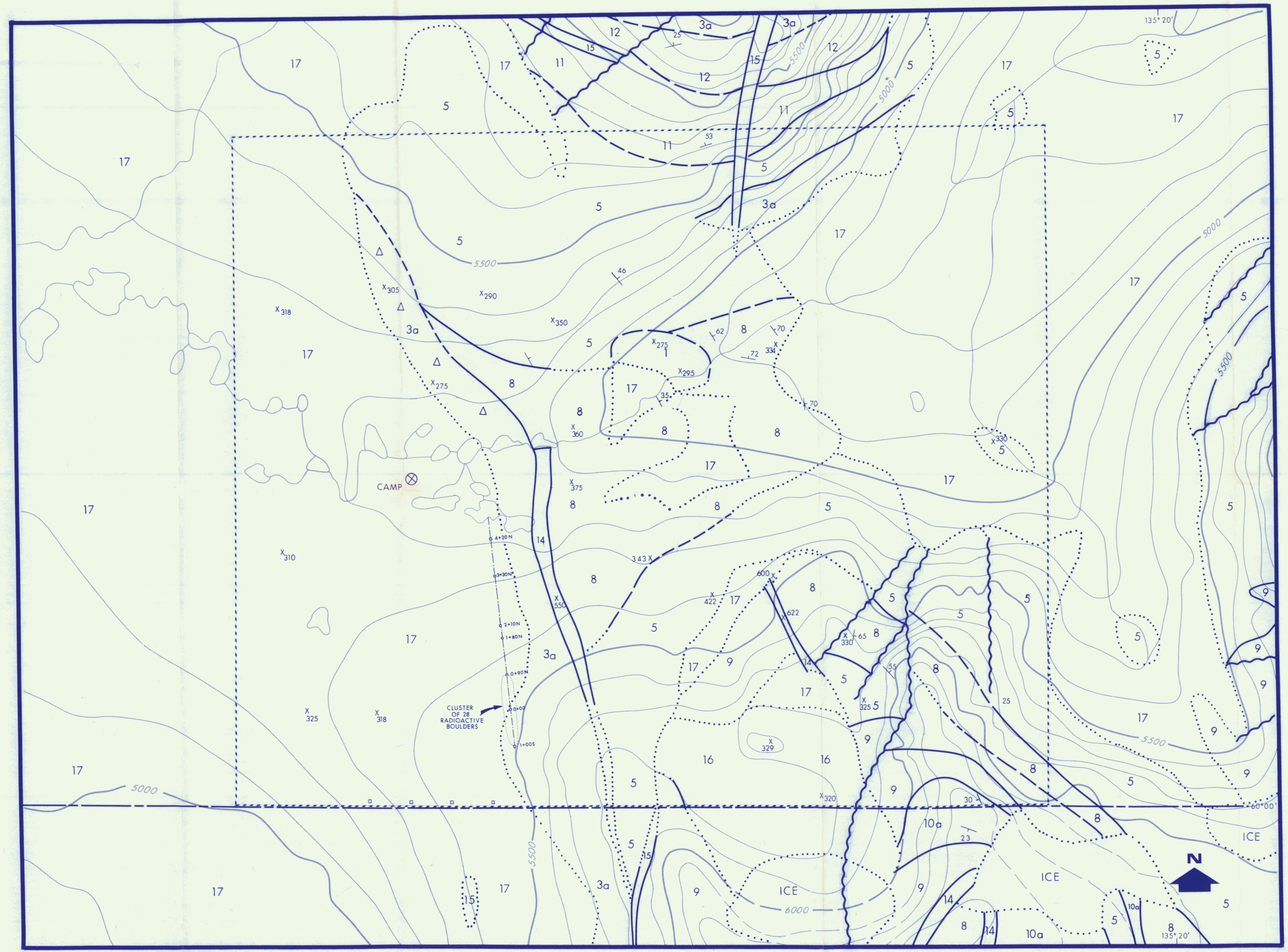
091653

CEGB EXPLORATION (CANADA) LTD.

1984 URANIUM RECONNAISSANCE
EXPLORATION PROGRAM
YUKON TERRITORY

GEOLOGICAL COMPILATION
BENNETT LAKE COMPLEX

SCALE 1:25,000	AUTHOR T.T.	DATE Dec. 1984
NTS 105 D/3	DRAWN BY J.S.	MAP 2



GEOLOGICAL LEGEND

- QUATERNARY**
PLEISTOCENE AND RECENT
 17 Colluvium and undifferentiated surficial deposits; 17a, alluvium, sand, silt, gravel
 16 Glacial deposits; moraine, sand, gravel
- TERTIARY**
EOCENE
 15 Rhyolite, dacite, andesite, basalt and tuff dykes, sills and minor lavas; ages equivalent to 5 to 14 or younger
 14 Rhyolite ring dyke and related intrusives
- SKUKUM GROUP (5-13)**
 13 BOUDETTE CREEK FORMATION: ignimbrite; minor tuff; 13a, granite boulder conglomerate
 12 CROZIER TUFFS AND LAVAS: tuff, ignimbrite; 12a, rhyolite lavas; 12b, siltstone grit; 12c, volcanic breccia; probably equivalent to 10
 11 CROZIER BRECCIAS: volcanic and granite fragment breccias and conglomerates with minor sandstone and tuff; 11a, siltstone; considered to be equivalent to 9 but may in part be equivalent to 7
 10 JONES CREEK FORMATION: 10a, basalt with minor volcanic breccias; 10b, rhyolite lavas and related dykes; 10c, tuff ignimbrite, sandstone
 9 LEMIEUX CREEK FORMATION: granitic boulder conglomerate; minor sandstone, tuff and ignimbrite (locally interfingers with 8); 9a, tuff breccia and andesite breccia (age relative to 6, 7, and 8 uncertain); 9b, granitic-volcanic boulder conglomerate; 9c, granitic breccia
 8 MACAULEY CREEK FORMATION: 8, Undifferentiated 8b, Member B; ignimbrite, densely welded, minor tuff, volcanic breccia and lavas 8a; Member A; ignimbrite, partly welded
 7 GALT FORMATION: granitic boulder conglomerate, sandstone, minor siltstone, shale, tuff and volcanic breccia
 6 CLEFT MOUNTAIN FORMATION: 6, Undifferentiated 6a, Member E; lithic and feldspar wacke, tuff 6d; Member D; ignimbrite; 6c; Member C; andesite lavas 6b; Member B; felsophyric dacite lavas: 6a, Member A; ignimbrite
 5 PARTRIDGE LAKE FORMATION: 5, Undifferentiated tuff minor lavas, volcanic breccia and granitic breccia; may contain part of 8a near Macauley Creek valley; 5d, Granitic boulder conglomerate and breccia; age uncertain; 5c, Member C; ignimbrite, non-to partly welded, lapilli tuff; tuff breccia 5b; Member B; ignimbrite, partly welded; minor dacite and andesite lavas: 5a; Member A; ignimbrite, non-welded
- CRETACEOUS AND TERTIARY**
COAST PLUTONIC COMPLEX
PALEOCENE (?) OR EARLIER
 4 Leucocratic granite, 4a, possible ring fracture intrusion (age uncertain relative to 5)
UPPER CRETACEOUS OR LOWER TERTIARY
 3 3a, hornblende-biotite quartz monzonite; 3b, pink quartz monzonite; 3c, fine grained biotite quartz monzonite
 2 2a, hornblende and biotite-hornblende granodiorite 2b, biotite and hornblende-biotite granodiorite
YUKON GROUP
 1 Quartzite, mica-quartz schist, mica (or hornblende) quartz-feldspar gneiss, altered gneissic quartz diorite, minor marble

- A Ignimbrite, minor tuff, considered to be related to 13
 B Ba, tuff; Bb, ignimbrite, considered to be related to 10 or 13
 C Ca, tuff; Cb, andesite; Cc, rhyolite, considered to be related to 10
 D Da, tuff, ignimbrite, volcanic breccia, dacite and rhyolite lavas; minor siltstone, granite boulder-bearing sandstone; Db, ignimbrite probably related to 10
 E Ea, volcanic breccia; Eb, andesite
- Geological Boundary, Overburden Bedrock Interface
 - - - Fault
 Δ Breccia granitic rocks
 - - - MATT Claim Boundary
 □ Cairn
 --- 6000 --- Topographic Contour (feet), Contour Interval 100 ft.
 | Baseline (173° Orientation)
 X 420 Radiometric Reading, EDA GRS 400 Spectrometer, counts per second

Geology from M.B. Lambert, Bulletin 227

091653

CEGB EXPLORATION (CANADA) LTD.

LOCAL GEOLOGY
MATT CLAIMS
BENNETT LAKE AREA
YUKON TERRITORY

SCALE 1:5,000	AUTHOR T. T.	DATE June 1985
NTS 105 D/3	DRAWN BY J. S.	MAP 3