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CONSULTING GEOLOGICAL ENGINEERS

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REPORT ON SOIL GEOCHEMISTRY, GEOLOGY AND RADIOMETRIC SURVEY

OTIS 1-64 CLAIMS

Mayo Mining District

Claim Sheet 106E/1

Latitude 65°02' North Longitude 134°24' West

22 March, 1976

Alan R. Archer Consulting Engineer

REPORT ON SOIL GEOCHEMISTRY, GEOLOGY AND RADIOMETRIC SURVEY

OTIS 1 - 64 CLAIMS

Mayo Mining District
Claim Sheet 106E/1

Lat. 65°02'N Long. 134°24'W

22 March, 1976

A.R. Archer Consulting Engineer

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 $ 9850.00

Resident Geologist or ~~Resident Mining Engineer~~

Considered as representation work under Section 53 (4) Yukon Quartz Mining Act.

B.R. BAXTER
Supervising Mining Recorder

for Commissioner of Yukon Territory

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INTRODUCTION

The Otis claims cover an uranium occurrence found by Wernecke Joint Venture (Standard Oil Co. of B.C. Ltd., Aquitaine Co. of Canada Ltd., and Messrs. L & H Clay) in June, 1975 and partially explored by soil sampling, geological mapping and radiometric surveys. This work was performed on a part time basis during the period 23 July - September 5 by a field crew based at Kiwi Lake. The crew consisted of geologists A. Gregson, T. Bremner, J. Slater and field men M. Buttle, J. Dickinson and R. Dennett. The project was managed by Archer, Cathro & Associates Ltd. and supervision was provided by M.P. Phillips and the writer.

PROPERTY, LOCATION AND ACCESS

The property consists of sixty-four contiguous mineral claims (see Figure 01) that are registered in the Mayo Mining District as follows:

CLAIM NAME	RECORD NUMBER	EXPIRY DATE
Otis 1-64	Y97426-Y97489	17 June, 1975

The claims are located at Latitude 65°02' north and longitude 134°24' west on NTS claim sheet 106E/1. Access is by helicopter from Kiwi Lake, fourteen miles to the northwest, which can be reached by float-equipped, fixed wing aircraft from a charter base at Mayo, 120 miles to the southwest.

The Slats claims, which adjoin to the south, were fringe staked by Great Plains Development Co. of Canada Ltd. while the Otis staking was in progress.

GEOLOGY AND MINERALIZATION

The geology of the property is illustrated on Figure 01. The main structural feature is a north striking vertical fault which is either offset or terminated to the south by a west trending fault that dips steeply south. Both faults weather slightly recessively and form strong surface linears. The fault zones are composed of brecciated country rock cemented by quartz, chert and

minor hematite and chlorite. Uranium is found as occasional coarse disseminations of a hard, black, vitreous mineral (probably brannerite) that is usually surrounded by a brick red halo of hematite alteration up to an inch in diameter.

The area is mapped by the Geological Survey of Canada (D.K. Norris, preliminary geology Wind River sheet, released 15 May, 1975) as undivided Lower Proterozoic HO phyllitic argillites and quartzites. Regional mapping by Wernecke Joint Venture (WJV) subdivides G.S.C. Unit HO into 6 units, numbered Units 1 to 6 respectively. Four of the WJV units are found on the Otis claims. These are (1) Unit 3, a fine grained occasionally phyllitic metavolcanic with mudstone interbeds (2) Unit 4, a differential weathering calc-silicate (3) Unit 5, a grey to black phyllitic argillite and (4) Unit 6, a fanglomerate or regolith. The major north striking fault on the Otis claims separates Unit 6 fanglomerate and Unit 4 calc-silicates overlying thin bedded Unit 3 metavolcanics to the west from younger Unit 5 black argillite to the east. Lateral displacement is probably in excess of a mile. The most abundant uranium mineralization occurs immediately north of a west flowing creek where the structure contacts black argillite with calc-silicate. Here, the fault is marked by a steep walled bedrock cut about fifty feet wide and up to twenty feet deep filled with rubble from the walls and the fault zone. Weakly scattered radioactive float is found in the rubble over a horizontal length of 1,200 feet and a vertical range of 400 feet. The float exhibits very distinctive brick red hematite alteration and is estimated to grade in the range of 0.1 to 0.5 per cent U_3O_8. The relative abundance of the mineralized float suggests that no more than six inches out of the fifty foot width is mineralized.

The west trending fault offsets the north striking structure left laterally at least 3,000 feet and is weakly mineralized for some 6,000 feet further

west. This mineralization is very spotty and has never been found in sufficient quantities to allow useful sampling. Radioactive specimens similar in appearance to mineralization in the north striking zone assayed between 0.034 and 0.354 per cent U_3O_8. A fragment of float containing about seventy per cent radioactive mineral, found in the west flowing creek to the north of the fault, assayed 24.1 per cent U_3O_8, 0.8 per cent ThO_2, 0.44 per cent rare earths, 0.2 oz/ton silver and trace gold. Spectrographic analyses of this specimen (#310) and another from the west fault (#733) are attached on the following pages. No other metals of interest were detected.

GEOCHEMISTRY AND RADIOMETRIC SURVEY

A 9,200 foot baseline was established by tape and compass along the surface linear produced by the west trending shear. Stations were marked along the baseline at 100 foot intervals with three foot high lath pickets. Soil samples and radiometric readings were taken on pace and compass crosslines extending 600 feet northeast and 100 feet southwest of baseline stations, as illustrated on Figure 02.

Soil samples were obtained from a C soil horizon by digging a shallow pit with a grub hoe and were analysed at Chemex Labs Ltd. North Vancouver, B.C. for copper, lead, zinc, uranium, vanadium and molybdenum. The uranium analysis was obtained by a standard fluorometric method on an ashed and double acidified, minus 32 mesh fraction. The remaining five elements were determined using atomic absorption spectrometry of a nitric-perchloric extraction of a minus 80 mesh fraction. Lead, zinc, vanadium, and molybdenum values are all background. Copper is erratic with a few very anomalous values (200 to 1,100 ppm) in contrasts to a generally low (6 to 25 ppm) background. The anomalous values are explained by the presence of a few discontinuous malachite stained fractures in Unit 3 immediately north of the main fault. Uranium response

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AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. SP 260

TO: Archer Cathro & Assoc. Ltd.
Box 4127
Whitehorse, Y.T.

INVOICE NO. 14944

RECEIVED Aug. 21/75

ATTN: WJV - OTIS CLAIMS

ANALYSED Sept. 1/75

SAMPLE NO. :	Lower Concentration Limit (PPM)	No. 310
Antimony	50	500
Arsenic	50	500
Barium	5	500
Beryllium	5	20
Bismuth	5	100
Boron	20	50
Cadmium	20	bcl
Calcium	0.05%	0.2%
Chromium	10	50
Cobalt	10	200
Copper	1	100
Gallium	2	bcl
Germanium	20	bcl
Iron	0.05%	2%
Lead	5	5000
Magnesium	0.02%	1%
Manganese	5	5000
Molybdenum	10	500
Nickel	5	100
Niobium	50	1000
Silver	1	5
Strontium	20	100
Tantalum	200	bcl
Tellurium	200	bcl
Thorium	100	> 5000
Tin	10	bcl
Titanium	5	> 5000
Vanadium	10	10
Zinc	50	bcl
Zirconium	20	2000

Specimen of high grade creek float
Assayed
24.1 % U_3O_8
0.8 % ThO_2
0.44 % Rare Earths
Tr. - gold
0.2 oz/ton silver
Tr. - copper

Concentration Range

>5000 ppm => 5000 ppm	50 ppm = 25-100 ppm
5000 ppm = 2500-10000 ppm	20 ppm = 10-50 ppm
2000 ppm = 1000-4000 ppm	10 ppm = 5-20 ppm
1000 ppm = 500-2000 ppm	5 ppm = 2-10 ppm
500 ppm = 250-1000 ppm	2 ppm = 1-4 ppm
200 ppm = 100-400 ppm	1 ppm = 0.5-2 ppm
100 ppm = 50-200 ppm	bcl = below concentration limit

Ranges for Iron, Calcium & Magnesium are reported in %

CTA MEMBER CANADIAN TESTING

CERTIFIED BY: .....

NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: 985-0648
AREA CODE: 604

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CERTIFICATE OF ANALYSIS

CERTIFICATE NO. SP220

TO: Archer, Cathro & Assoc. Ltd.,
Box 4127
Whitehorse, Y.T.

INVOICE NO. 14168

RECEIVED June 17, 1975

ATTN: WJV OTIS CLAIMS

ANALYSED July 8, 1975

SAMPLE NO. :	Lower Concentration Limit (PPM)	A00733
Antimony	50	bcl
Arsenic	50	bcl
Barium	5	200
Beryllium	5	bcl
Bismuth	5	bcl
Boron	20	bcl
Cadmium	20	bcl
Calcium	0.05%	2%
Chromium	10	100
Cobalt	10	bcl
Copper	1	20
Gallium	2	10
Germanium	20	bcl
Iron	0.05%	2%
Lead	5	200
Magnesium	0.02%	0.2%
Manganese	5	1000
Molybdenum	10	bcl
Nickel	5	5
Niobium	50	bcl
Silver	1	bcl
Strontium	20	50
Tantalum	200	bcl
Tellurium	200	bcl
Thorium	100	bcl
Tin	10	10
Titanium	5	5000
Vanadium	10	100
Zinc	50	50
Zirconium	20	100

Specimen of good grade vein mineralization
Assayed 0.354 % U_3O_8

Concentration Range

>5000 ppm =>5000 ppm	50 ppm = 25-100 ppm
5000 ppm = 2500-10000 ppm	20 ppm = 10-50 ppm
2000 ppm = 1000-4000 ppm	10 ppm = 5-20 ppm
1000 ppm = 500-2000 ppm	5 ppm = 2-10 ppm
500 ppm = 250-1000 ppm	2 ppm = 1-4 ppm
200 ppm = 100-400 ppm	1 ppm = 0.5-2 ppm
100 ppm = 50-200 ppm	bcl = below concentration limit

Ranges for Iron, Calcium & Magnesium are reported in %

CTA

AP/kalen

is mostly less than 1 ppm with a few scattered values slightly above threshold (up to 8 ppm). There is no obvious relationship between the erratic anomalous copper and above threshold uranium values with the surface trace of the west trending shear which lies along the baseline.

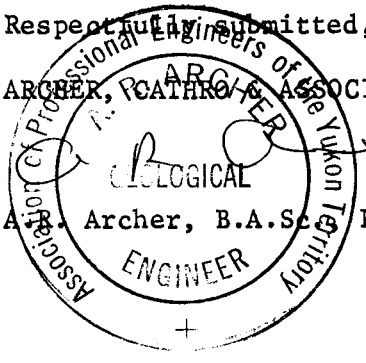
Radioactivity was measured at fifty foot intervals using a Scintrex BGS-1S broadband scintillation counter which is equipped with a 1 inch thallium activated, sodium iodine crystal detector. The readings , as illustrated on Figure 02, are in counts-per-second (cps) at waist level, about three feet above the ground. Background ranges from 50 to 80 cps and is not detectably higher in the vicinity of the shear zone. Several strongly radioactive spot sources were located, and those that were in outcrop were sampled, as shown.

CONCLUSIONS

The continuity and strength of the two shear zones make them interesting exploration targets even though mineralization is very weak. The best radioactivity was found where the north striking shear separates calc-silicates from black argillite and further work should be directed toward this area.

Respectfully submitted,

ARCHER, CATHRO & ASSOCIATES LTD.



A.R. Archer, B.A.Sc., P.Eng.

OTIS 1-64

134°25'

65°02'

Creek

3 Slats

SP 260-310
24.1% U_3O_8

GRID LOCATION

0.354% U_3O_8 SP 220-733

0.034% U_3O_8

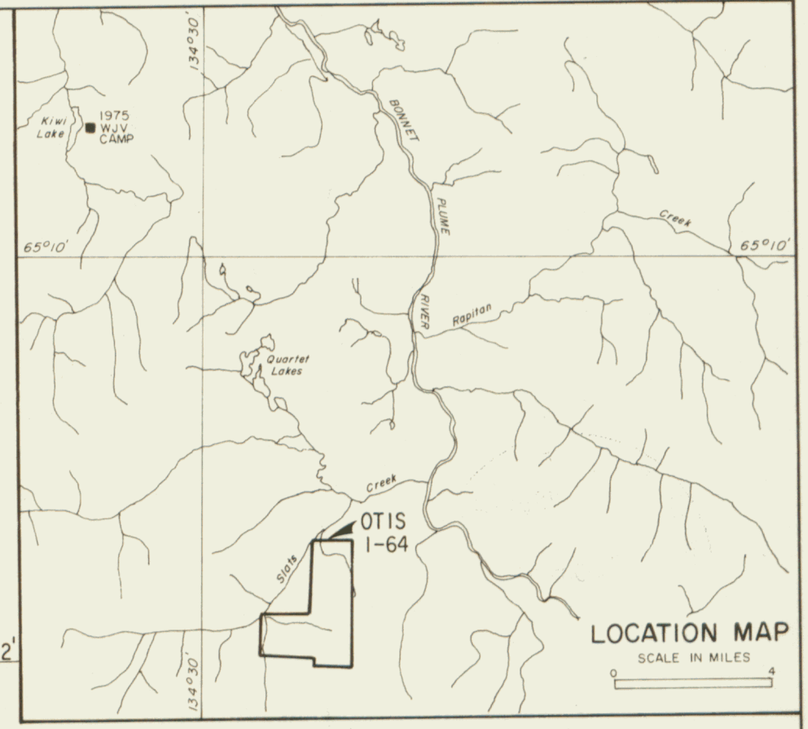
0.51% U_3O_8

SLATS 1-18 (GREAT PLAINS)

2000 2500 3000 3500 4000 4500 5000 5500

LOCATION MAP

SCALE IN MILES 0 4



GEOLOGY

PROTEROZOIC

6	Breccia - pink to grey angular fragments (1/4" to several feet) of metavolcanics and calc-silicates; matrix commonly limy dark green with specular hematite; may include minor Unit 4 intraformational breccia.
5	Phyllite, argillite - grey to black commonly gossaned, sheared along contacts.
4	Calc-silicate - grey differential weathering, green to reddish banded; limy; castellated outcrops and rough blocky talus
3	Metavolcanics - green phyllitic (slaty) to argillitic; occasionally contains finely disseminated magnetite; quartz flooding in shear zones.

LEGEND

▲0.354% U_3O_8	Radioactive occurrence (with assay if sampled)
	Contact - defined, inferred
	Fault - defined
40	Foliation with dip
24	Anticlinal fold axis with plunge
SP 220-733	Reference to spectrographic analysis certificate number & sample number included in appendix in the report

Association of Professional Engineers of the Yukon Territory
A. R. ARCHER
GEOLOGICAL
27 March/76
ENGINEER

FIG. O-1

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REGIONAL GEOLOGY

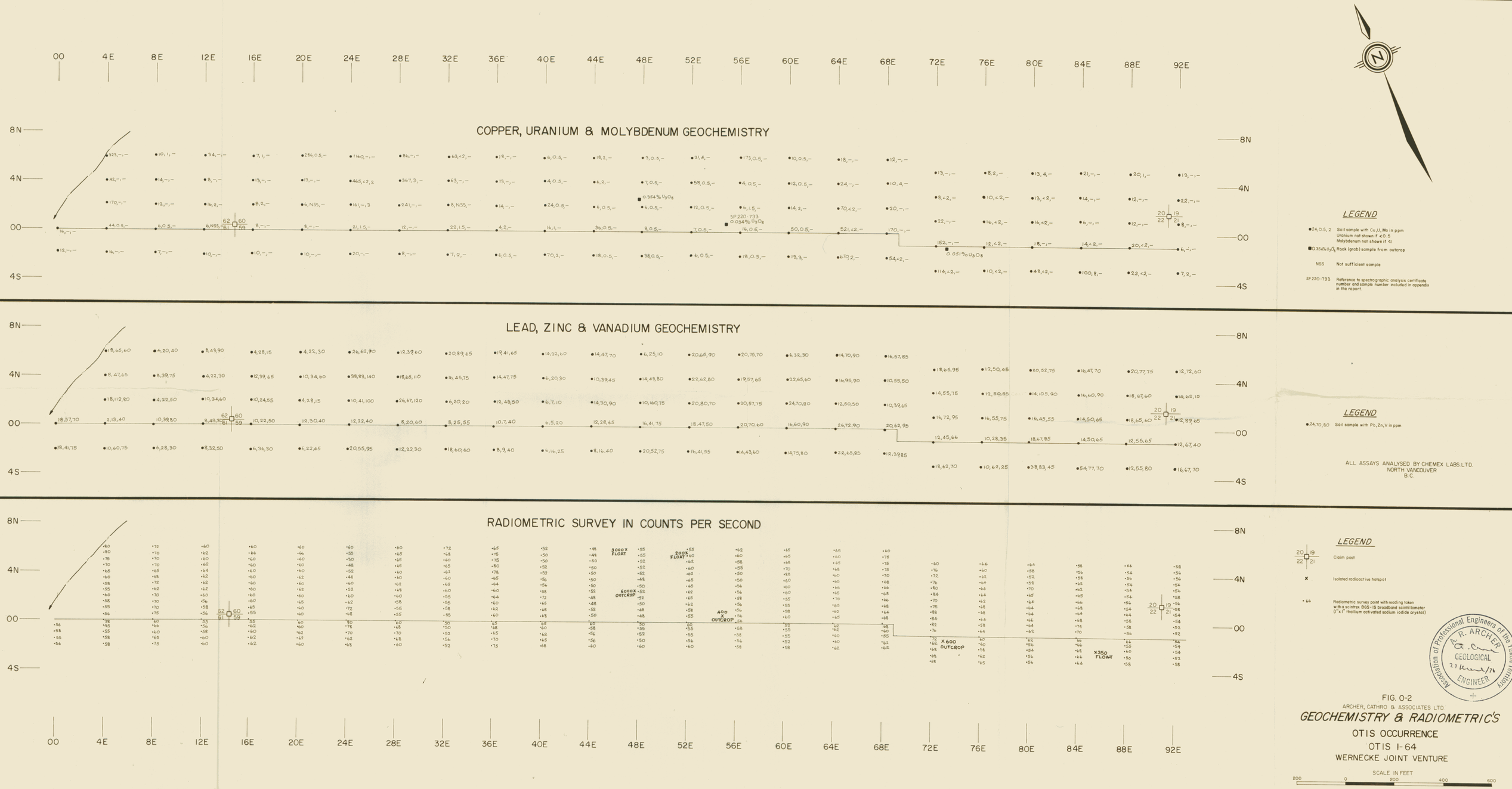
OTIS OCCURRENCE

OTIS 1-64

WERNECKE JOINT VENTURE

SCALE IN MILES 1/2 0 1/2 1

To accompany report dated March, 1976



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ENGINEER

FIG. 0-2

ARCHER, CATHRO & ASSOCIATES LTD.

GEOCHEMISTRY & RADIOMETRIC'S

OTIS OCCURRENCE

OTIS 1-64

WERNECKE JOINT VENTURE

SCALE IN FEET

200 0 200 400 600

To accompany report dated March, 1974