CONFIDENTIAL

Office of the Supervising Mining Recorder
AUG 4 1980
WHITEHORSE
Yukon Territory

MOUNTAINEER MINES/PAN OCEAN
FAIRCHILD JOINT VENTURE

REPORT ON 1979 SEASON

FAIRCHILD URANIUM PROGRAM

RECEIVED
25 JUL 1980
MINING RECORDER
LAND AGENT
MAYO, Y.T.
I.A. & N.R.

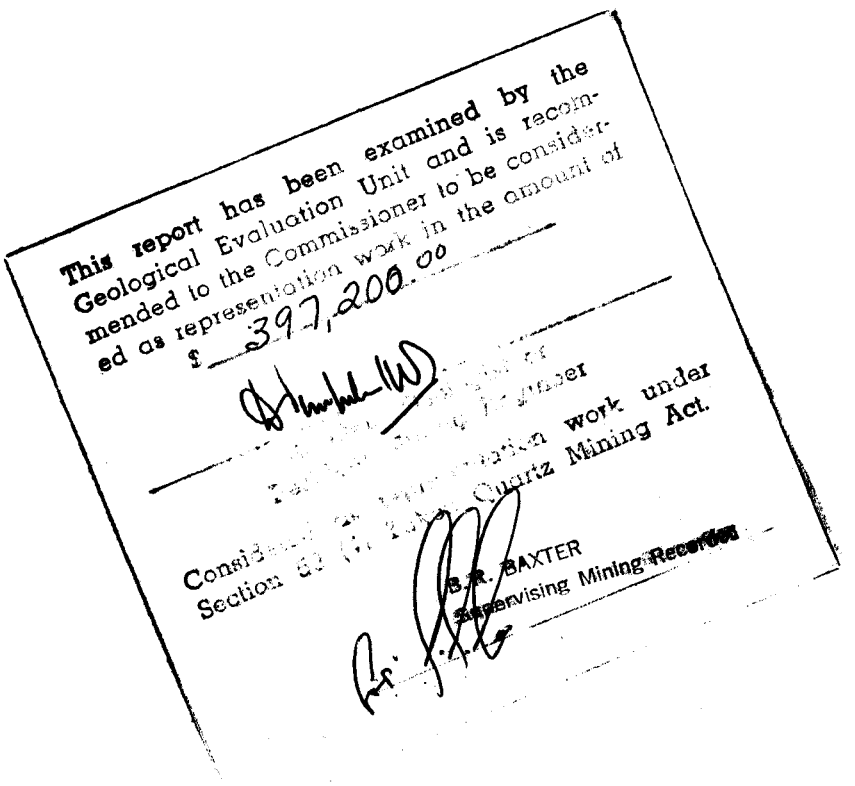
090648

Report Date:
February, 1980

Report No. 4-80

J. F. Touborg
A. K. Chan
PAN OCEAN OIL LTD.
Calgary, Alberta

Pan Ocean



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

$ 397,200.00

[illegible] Engineer

Considered as representation work under Section 53 (1) Taxes Quartz Mining Act.

B.R. BAXTER
Supervising Mining Recorder

INDIAN and NORTHERN AFFAIRS

TRANSMITTAL FORM

M.R. File No. _____

S.M.R. File No. _____

Date Fwd. 31/7/80

FROM: Mining Recorder at MAYO, Y.T.

TO: Supervising Mining Recorder at Whitehorse, Y.T.

Office of the Supervising Mining Recorder
AUG 4 1980
WHITEHORSE
Yukon Territory

FOR ACTION ARE:

☐ NEW APPL'N for PLACER LEASE to PROSPECT: Name:

☐ RENEWAL APPL'N PLACER LEASE to PROSPECT: Name: Lease No. .....

☐ AFFIDAVIT of EXPENDITURE on PLACER LEASE. Name. Lease No. .....

☐ ASSIGNMENT of PLACER LEASE No. .....
From: To:

☐ GROUPING APPL'N UNDER SEC. 52(2) PLACER MINING ACT.
Owner:

☒ DIAMOND DRILL LOGS:
Claims: DEER No. 32 Claim sheet no: 106-E-2

☒ QUARTZ ASSESSMENT REPORT:
Claims: See Attached Sheet Claim sheet no. 106-E-1

Type of report: Geochemical, Geophysical Geological Submitted by: Pan Ocean Oil Ltd.

Cls. work performed on: See Attached Sheet $ Req. for ren. application 397,200.00

S.J. Howes
Signature

REPLY ACTION: Date Ret.

_____
Signature

Pan Ocean Oil Ltd.

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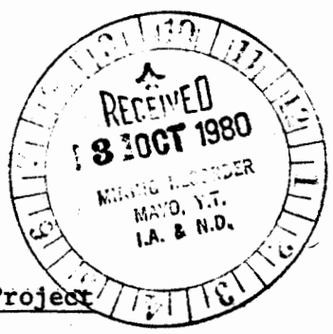
September 29th, 1980

Mr. R. G. Ronaghan,
Mining Recorder,
Mayo Mining District
Department of Indian
& Northern Affairs
P.O. Box 10,
Mayo, Yukon.



Dear Ron:

Re: Fairchild Project

Further to our telephone conversation, I am sending you 2 (two) sets of Fig. 4 of the Mountaineer Mines/Pan Ocean Oil Ltd. Fairchild Joint Venture Report on the 1979 season (Fairchild Uranium Program Report No. 4-80).

We have discovered a mistake in the legend of Fig. 4, West and East sheet. Would you kindly replace the old copies with the revised ones enclosed.

We regret the inconvenience.

Yours truly,

PAN OCEAN OIL LTD.

Jens F. Touborg/jm

Jens F. Touborg
Senior Geologist

JFT/jm
Encls.

30 Oct 80

Attached are maps to go into report as forwarded on 31 July 80 and should still be in your hands. Above letter is self explanatory.

JFR

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Why not a page sourmap showing the location of the showings?

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1. INTRODUCTION

The following reports on a uranium exploration program carried out in 1979 season on the Kiwi Lake uranium holdings of the Mountaineer/ Pan Ocean Fairchild Joint venture.

The Kiwi Uranium holdings are located approx. 150 miles NE of Mayo in the Yukon Territory and consist of 9 contiguous claim blocks.

The program was undertaken from the period June 1 to Sept. 20 and consisted of:

5082 ft. of HQ and NQ Diamond Drilling for a total of 17 holes.

Caterpillar trenching using a Catarpillar D7 model

Detailed and semi-regional geological surveys

Scintillometer prospecting

Grid surveys - Magnetic

Electromagnetic

Spectrometer

Alpha Nuclear radon

Picket gridding, topographical mapping and surveying.

Work was concentrated in the Deer Area as follows:

- Deer I Showing
- Deer Grid
- Flats & South Deer Grids
- West Deer Grid
- Deer II Showing
- Frog Showing

Reconnaissance surveys were carried out in the Mosquito Creek - Deer area and Owl showings.

The above areas are located within the Deer, Frog, Mosquito, Clam, Owl POOL and Frog Claim Groups.

The program was managed by a Pan Ocean group of three geologists (staff) and one geophysicist (summer). Exploration crews of Pamicon Developments Ltd., under the direction of R. Darney and D. Yeager, carried out designated grid surveys and undertook camp management. Drilling and bulldozing was contracted to Caron Diamond Drilling of Whitehorse.

The Fairchild exploration group was based at a central camp at Kiwi Lake. Helicopter service was contracted to Trans North Turbo Air Helicopters.

2. SUMMARY

The Deer Area (Fig's 4 & 5), which hosts radioactive showings and substantial uranium and radon anomalies, was explored in detail in the 1979 season.

The exploration concept derived from 1977-78 seasons reconnaissance and detailed surveys in the Wernecke Mountains included:

- uranium showings were abundant in a laminated siltstone section within the Helikian Fairchild Group of rocks
- that later breccia diatreme intrusions, faulting and shearing had mobilized stratabound uranium into high grade mineralized vein structures.
- the Deer No. 1 showing being the type locality.
- The south slopes of the Deer Mountains are drained by several creeks, many of which are anomalous in U in H_2O, U in sediment and radon.
- Follow up surveys of U and radon geochemical anomalies in the Deer Creek had located the Deer 1 showing in 1978.

A logical consequence of the above was a combined program of detailed exploration of the Deer 1 showing and systematic follow up of all uranium and radon anomalies in the general Deer Area.

Results:

The Deer No. 1 showing is a high grade uranium showing located near the top of Deer Mountain.

A major trenching and diamond drilling program of 11 holes has defined a geological setting as follows:

- Deer Mountain consists of a mica schist and ribbed siltstone complex of the Helikian Fairchild Group.
- The Deer showing is hosted within an alteration segment exhibiting complex alteration zones and polyaxial deformation structures. This alteration segment extends down Deer Mountain with a northwesterly rake and has a banana skin appearance.
- The same alteration segment which grades into an unaltered mica schist rock has a width up to 200 m on surface but has a very irregular outline.
- Diamond drill holes indicate that this zone bottoms at depth 100-200 ft. below surface.
- The high grade uranium mineralization observed in a chlorite rich horizon through surface trenching has no lateral or vertical extent. The detailed drilling program confirmed the presence of alteration rock types i.e., tricolor banded "siltstones" at depth, similar to those found on surface.
- Radioactivity as evidenced by gamma log probing and detailed assaying is of limited nature being confined to thin 5 - 10 ft. sections.

of 15-165 ppm U_3O_8 and up to 24 ppm ThO_2 within the above mentioned altered segment.

- Detailed prospecting in connection with the trenching program did not uncover any showings in addition to those located in the vicinity of the Deer 1 showing during 1978 season.

The South Slopes of Deer Mountain in particular,"Compressor and Radon draw", are characterized by impressive radon anomalies and radio-metric U/T highs. A thorough Caterpillar trenching and pit evacuation program combined with physiographic mapping indicate:

- the radon anomalies are hosted in a highly tectonized mica schist which is transversed by east-west trending joint zones.
- drainage is a major factor in dispersing uranium and radon bearing waters
- absence of radioactive showings

Detailed work carried out in the Flats and South Deer Grid Areas down the south slope of Deer Mountain was intensified in July on the basis of new geological data which led to an unconformity model. The criteria includes:

- Cambrian orthoquartzites unconformably overlying a thick series of Quartet group graphite bearing black shales. The latter (according to general stratigraphy) overlying mica schists and siltstones of the Fairchild group.

- A major fault structure along the south slope of Deer Mountain having down faulted the above block.
- substantial uranium in H_2O, uranium in silt and radon anomalies along this fault scarp.

The 1979 season's diamond drilling and trenching outlined an extremely complicated geological setting including thrust faulting and overturned folding of Cambrian and Helikian strata.

Down-hole gamma log probing, scintillometer scanning of core and detailed radiometric prospecting in trenches were negative and no evidence of uranium mineralization was found.

Alpha Nuclear radon anomalies delineated through detailed grid surveys exhibit strong conformity with topography and are regarded as drainage features.

West Deer Anomaly

Impressive U in H_2O U in silt and radon anomalies were located in West Deer Creek during the 1978 program.

A detailed trenching and grid survey program to trace this anomaly up stream into West Deer Mountain revealed; bedrock includes ribbed siltstones of the Fairchild group, a smal breccia diatreme, a chloritized & sericitised alteration halo and black shales of the Quartet group.

The comprehensive trenching program followed up by detailed scintillometer prospecting failed to return any uranium showings but 1-2 hot spot anomalies were found in the alteration halo.

Trench work within major Alpha Nuclear radon anomalies failed to disclose any bedrock origin of these anomalies and detailed prospecting was negative. The Deer West U geochemical and radon anomalies were regarded as drainage features from a source of disseminated uranium mineralization in breccia bodies and their alteration haloes.

Deer II - Brannerite Showings

Deer II showing on the north side of Deer Mountain was trenched in detail by means of three-level trenches, 15 m apart, driven from Merlyn Cloutier's Draw north along the mountainside. The radioactivity is confined to erratically distributed hot spots in alteration haloes, and to breccia diatreme rock carrying large brannerite crystals. None of the breccia showings have any significant extent and the distribution of radioactivity is erratic.

Frog Showing

The Frog prospect lies 5 km east of Deer 1 showing. In geologic and geochemical setting, it resembles the West Deer anomaly. Located on the northwest side of a knob along the NE bank of Frog Creek, this was hand trenched in 1979 but bedrock was not reached because of thick Felsenmeer. Detailed and repeated prospecting of Frog Mountain in 1979 season failed to turn up any new radioactive showings but a Caterpillar trenching program was carried out to fully investigate the source of the radioactive breccia boulders. Trenches were driven from a zero point well above the radioactive boulders and revealed:

1. An alteration halo within mica schist rock, exhibiting all stages of tricolor "siltstone banding", similar to the Deer zone.
2. Hot spot radioactivity was associated with only the most strongly bleached areas.

Loon

Visits were made to the Loon showing. It appears that radioactivity is associated with quartz veining and that a characteristic alteration halo of bleached micaschists hosts the brannerite mineralization.

South Loon Showings

In the 1978 season, a swarm of minor breccia diatreme bodies were located south of the Loon showing. Several of these carry brannerite mineralization. Preliminary investigations revealed a limited

extent of the mineralization with no radioactivity in the altered host rock siltstones.

Bull Quartz Veins

Within the Deer complex mica schist terrain, there are numerous bodies of bull quartz veins, some of these may be up to 30 ft. in length. All the occurrences found by prospectors in previous seasons were examined, and subjected to detailed scintillometer prospecting. The bull quartz veins appear genetically related to the micaschist host rock, possibly as a result of metamorphic segregation. However, there is no radioactivity associated with these.

Owl Group

The Owl group hosts an interesting geochemical anomaly, but work was hindered by deep overburden. Repeated prospecting traverses were made but no radioactive boulders were found.

Origin of Uranium Mineralization in the Deer Area

Data on hand suggest:

1) All radioactive showings are associated with breccia diatremes and their alteration haloes.
2) Although no breccia body was observed at the Deer 1 showing, the alteration patterns in the shear zone are identical to the diatreme breccia alteration zones seen at Loon, Frog, West Deer and Deer II.
3) There is no evidence of stratabound and/or unconformity controlled uranium mineralization; e.g. bedded rocks such as

grey ribbed siltstones, mica schists, black shales, Cambrian strata, Cambrian and the Quartet unconformities or contacts.

The general Deer area is characterized by:

a) an abundance of radon rich waters along faults and joints

b) impressive drainage influenced uranium geochemical anomalies

It is speculated that secondary radioactive anomalies expressed by uranium in H_2O, silt and radon highs, are related to breccia bodies or their alteration haloes containing uraninite, pitchblende, and brannerite. The abnormal concentration of uranium seen in the Deer 1 showing remains enigmatic.

Work by Other Companies

Exploration for uranium in the Wernecke Mountains was limited to the Pan Ocean/Mountaineer joint venture, and the Archer/Cathro managed Eldorado joint venture on the Pterd claims.

However in view of the evidence to date, there could well be other sources of the radioactivity.

4. RECOMMENDATIONS

It is recommended the project be shelved pending new ideas along structural and geochemical avenues.

Assessment expenditures, to date, are sufficient to maintain the claim groups west of Kiwi Lake in good standing for ten years.

5. PROPERTY DATA

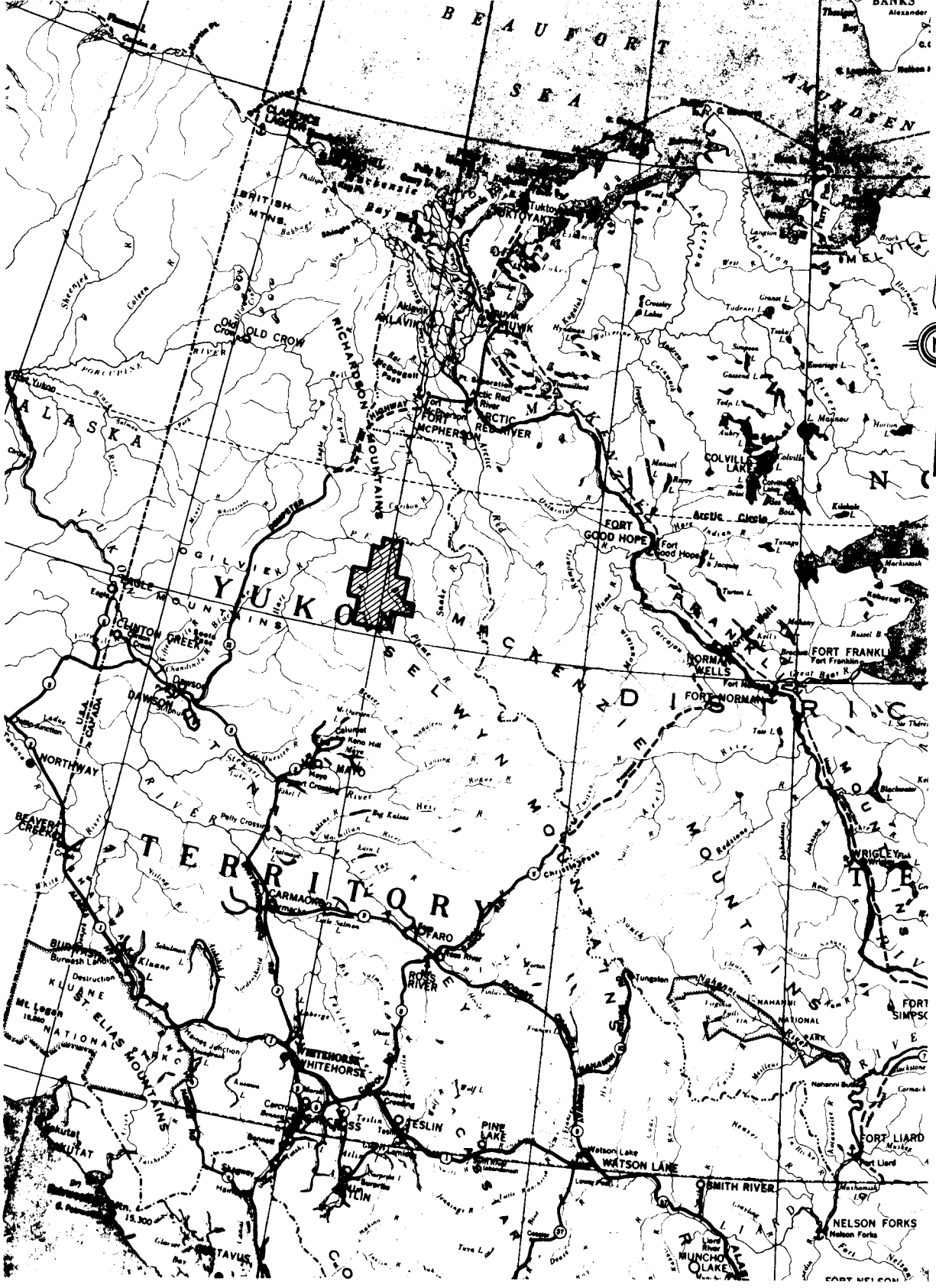
Location

Kiwi Lake is situated at approximately 63°12'N latitude, and 134° 35'W longitude in the north central Yukon Territory (Figure 2). The Deer area lies approximately seven miles due west of Kiwi Lake. Access to the area is by float equipped plane to Kiwi Lake from the community of Mayo, a distance of 120 miles. Both helicopter and fixed-wing aircraft, as well as full expediting services are available in Mayo.

Property

The joint venture holdings in the Kiwi Lake area (Fig. 2) consist of 937 contiguous mineral claims located in nine claim blocks. The holdings cover the north end of Kiwi Lake, and extend in an irregular shape approximately 10 miles west, 6 miles east, and up to 4 miles south and 2 miles north of the Lake.

Claim Names		Grant Numbers
CLAM	1-40	YA16013-YA16052 inclusive
CLAM	41-54	YA16535-YA16548 inclusive
DEER	1-36	YA15391-YA15426 inclusive
FOX	1-36	YA14443-YA14478 inclusive
FROG	1-14	YA15363-YA15376 inclusive
FROG	17-30	YA15377-YA15390 inclusive
FROG	31-38	YA16527-YA16534 inclusive
LOON	1-12	YA7160-YA7171 inclusive
LOON	13-24	YA16549-YA16560 inclusive
LOON	25-232	YA16561-YA16768 inclusive
MOSQUITO	1-24	YA15806-YA15829 inclusive
OWL	1-20	YA14823-YA14842 inclusive
POOL	1-335	YA16769-YA17103 inclusive
WOLF	1-60	YA14183-YA14242 inclusive
LOON	233-284	YA30757-YA30808 inclusive



TO ACCOMPANY REPORT NO. 1-80 BY O.R.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

Figure 1

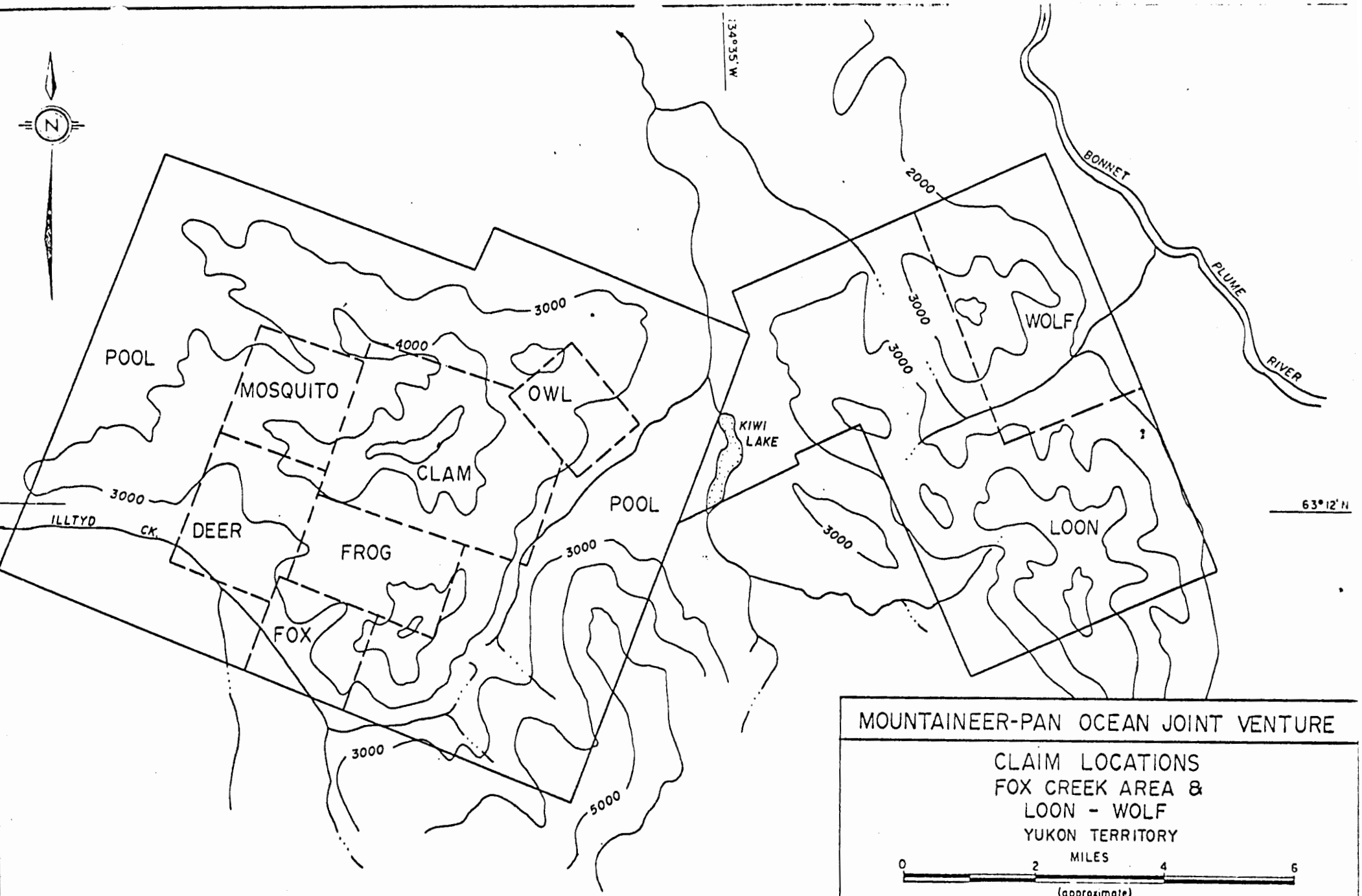
PROPERTY LOCATION

BONNET PLUME PROJECT

REVISED:
TO ACCOMPANY REPORT NO. 22-79 BY G.F.M.
TO ACCOMPANY REPORT NO. 4-80 BY J.F.T., R.J.M., A.K.C.

miles 25 0 25 miles

DATE	SCALE	NTS	DRAWING NO.
JAN. 1980	1:1,584,000	106 E	A-0853



MOUNTAINEER-PAN OCEAN JOINT VENTURE

CLAIM LOCATIONS
FOX CREEK AREA &
LOON - WOLF
YUKON TERRITORY

0 2 4 6 MILES
(approximate)

NTS 106 E 1&2

PAMICON DEVELOPMENTS LIMITED

DRAWN	PROJECT	DATE	FIGURE
Altair	Quartet-Fairchild	DEC. 1977	2

Regional Geology

In the Wernecke Mountains (Fig 3 and Table 1), Helikian rocks are exposed over an area of some 1,500 square miles in a roughly circular fashion centered near longitude 134°00'W and latitude 65°00'N.

The Helikian rocks collectively named the Wernecke terrane, consist of (see Table 1) sedimentary rocks subdivided into the Fairchild, Quartet and Gillespie Groups. These groups, part of which may be Late Aphebian in age (Fairchild), are unconformably overlain by Hadrynian rocks of the Rapitan Group.

The Helikian rocks underwent periods of folding and low-to-medium-grade metamorphism; during Hadrynian time, these rocks were intruded by a large number of breccia diatreme bodies. In conjunction with this intrusive phase, the area was subjected to large scale wrench faulting along WNW trending planes with a complimentary set of fault planes oriented NNE.

Although no detailed data are on hand, it appears that these faults were the principal controls in emplacement of the breccia diatremes.

The breccia bodies (at least 86 separate intrusions have been located to date in the general district) occur in sheet or dykelike zones from a few meters to more than 100 meters' width, and as diatreme-like pipes ranging from 100 to 800 m or more in diameter.

The breccias have irregular boundaries with numerous off-shoots and are characterized by having a large number of inclusions. Further-

more, they are usually surrounded by wide alteration haloes.

These intrusives are most frequently found in the Fairchild and Quartet group of rocks.

Mineralization associated with the breccia bodies is in the form of hydrothermal vein fillings which include hematite, sulphides of iron and copper, uranium as uraninite or pitchblende and brannerite, cobalt and nickel bearing arsenides.

Physiography

The West Deer - Deer - South Deer - Flats and Frog areas cover the Deer Mountain range, its southern slope and a large valley (Flats area) with gentle westerly slope (Fig's 4 and 5). The Deer Mountain range has elevations of up to 3,500 ft. above sea level. Its southern part is cut by gorges and valleys, the most significant ones being West Deer Creek, Deer Creek, Compressor and Radon Draw, and Frog Creek. To the north the range extends for 1-2 km, but the topography falls abruptly down to Mosquito Creek. The area lies above the tree line, although scattered spruce tree vegetation exists in the Flats valley.

The Deer Mountain range lies south of the area affected by the Pleistocene Laurentide ice sheet. Consequently, the mountains contain a weathering cap 0-20 ft. thick of scree and talus, so-called Felsenmeer.

TABLE I

STRATIGRAPHIC COMPILATION

	FAIRCHILD AREA GENERAL/REGIONAL	FAIRCHILD AREA/OTTER MAIN SHOWING	FAIRCHILD AREA/OTTER MAIN SHOWING
			Additional Information from Drill Logs
			Holes O-79-1, 2, 3, 4, 5
LOWER CAMBRIAN - Angular unconformity //////// Dolomite, limestone & shale Dolomite & shale Rapitan formation HR1 Diamictite HR2 mudstone Dolomite	V. Intrusive Breccia Rich in angular clasts Quartz feldspar matrix	(1) Siltstone characterized by grey to green colour, fine lamination slaty sections, noncalcareous, variably magnetic.	
	IV. Black shale series Often pyritiferous	(2) Calcareous siltstone characterized by grey to green colour, nonmagnetic, interlaminated noncalcareous and calcareous siltstone.	(2) Microfolded calcareous siltstone, possibly in a large scale recumbent isoclinal fold (tectonic repetition). Dark green chloritized siltstone characterized by pervasive chloritization of calcareous siltstone and magnetic silts.
HADRYNIAN - ///// Unconformity Breccia diatreme intrusions			
Folding and Metamorphism:			
Gillespie Group (Dolomites (and lime- (stones (Dolomites (and inter- (bedded (slates and (quartzites	III. Dolomite series Massive bedded calcareous rocks with orange weathering	(3) Altered siltstone characterized by buff colouring, silicification and feldspathization due to metasomatic alteration processes.	
	II. Siltstone series consisting of uniform, grey-green fine grained sediments. Variably magnetic, variably calcareous with slaty to phyllitic sections. The series are generally undisturbed but adjacent to the Fairchild fault, there is extensive small scale folding.	(4) Magnetic calcareous siltstone characterized by disseminations of magnetite, grey to green brownish weathering, interlaminated noncalcareous and calcareous siltstone.	
HELIKIAN - Wernecke Supergroup			
Quartet Group (Slates and (argillites (with quartz- (ite beds (Black (shales	I. Ribbed siltstone/dolomite series of interbedded grey siltstone and chocolate brown weathering dolomite forms gently westerly dipping cliffs along Fairchild Lake.	(5) Magnetic siltstone - noncalcareous and characterized by disseminations of magnetite, grey to green brownish weathering and absence of calcareous laminae.	
Fairchild Group: 3 Dolomite			
2 Siltstone			
1 Ribbed siltstone			
		Note: Stratigraphic order of succession is 5-4-3-2-1.	

Source: S. Blusson, GSC pers. com.

Source: 1) S. Blusson, GSC
2) G. F. McArthur, Pan Ocean
3) From geological mapping

Source: Detailed mapping 1979.

Geology of the Deer Area

The Deer area (Fig's 4 and 5) features a complex geological setting including, a series of grey ribbed siltstones with carbonate laminae of the Farirchild group which dominate the mountains north of Mosquito Creek. However, a grey siltstone series oriented with NE strike and steep dip, occurs between Mosquito Creek and Deer 2 showing, and in the valley draining the north slope of Compressor Draw. This siltstone belt is lost within a mica schist area and in a contact aureole of breccia diatremes on Breccia Mountain.

The Deer Mountain Range is dominated by a grey chloritoid and biotite bearing schist which is monotonous in appearance and devoid of any marker horizons. It frequently carries inclusions or relics of a grey siltstone with evidence of transposed schistosity. The schist carries minor veins of pink feldspar or carbonate.

The origin of the schist complex is debatable because of the lack of marker horizons and paucity of in situ fresh outcrops. Some GSC geologists advocate an Aphebian age of this complex because of its high grade metamorphic character.

The grey siltstones and the chloritoid mica schists are structurally overlain by black shales and graphitic schists of the Quartet group, as seen in the type section at Fairchild cirque. However in the Deer area (Flats, South Deer and West Deer grid), the mica schists complex is thrust on top of the Quartet Black shales. GSC observations elsewhere in the Wernecke Mountains suggest an unconformity relationship

(S. Blusson pers. comm.). However, in the Deer area, only a structural contact was observed.

The black shales weather low and occupy a large part of the overburden covered valleys down from the south slope of Deer Mountain. Black shales, and part of an overlying "Halloween sequence" of black shale and dolomite also occurs west of the West Deer grid area.

Breccia diatremes

On a regional scale (see Fig 3) breccia diatremes occupy an E-W structure which extends from Deer Mountain to the Frog area. In the Deer area, several breccia bodies were found as shown on map (Fig 4).

Features associated with the Breccia diatreme bodies include alteration haloes with complex structure and petrology (Fig 8).

The main characteristics of the alteration haloes as seen on the Deer properties are metasomatic alteration with development of chlorite, sericite and/or epidote along deformation planes often crosscutting existing planar structures (schistosity, foliation and/or bedding. The metasomatic banding ranges in scale from millimeter thin - to 5 cm thick laminae. The laminae leave evidence of tectonic deformation (flattening) expressed in microfold structures and tectonic foliation.

Further details are given under description of showings.

Cambrian

Cambrian rocks are exposed in the Flats area and the hills south of the Deer Mountains. The Cambrian rocks comprise a quartzitic section of creamy white quartzite, calcareous quartzite and red-purple brecciated calcareous quartzite overlain by dark grey limestone and red buff and green shale.

In the Deer and Flats area, the Cambrian section occupies an apparent down faulted position lying at 1000 ft. below the Fairchild mica schist complex.

MINERAL SHOWINGS AND GEOCHEMICAL ANOMALIES

1979 FOLLOW-UP PROGRAM

Deer 1 Showing

During 1978 follow up of a geochemical anomaly in Deer Creek, prospecting work carried out up slope located several occurrences of brannerite float. Near the top of Deer Mountain high grade samples of uranium secondaries were dug out of a hand trench. The mineralization was contained within a tricolor banded "siltstone". Hand trenching was insufficient to expose bedrock and instead diamond drilling was attempted in August-September of 1978 season. The drilling failed to delineate the showing at depth, although serious core recovery problems were encountered.

During the 1979 season, a multiple approach program of diamond drilling, Caterpillar trenching, geological mapping and scintillometer prospecting, detailed grid surveys including magnetometer - spectrometer - Alpha nuclear radon - VLF - and Crone EM surveys were undertaken.

A 40 X 40 grid was established with an east-west baseline oriented parallel to the trend of the Deer Mountain ridge and a 0.0 point close to Deer 1 showing.

The grid extended from the west spur of Deer Mountain ("Merl Cloutiers Draw") east through "Compresor-Radon" draw to Schist mountain. To the south the grid was extended down the south slope of Deer Mountain into Flats-South Deer valley.

Following preliminary inspection of the terrain, it was realized that the thick felsenmeer and talus cover rendered detailed geological mapping impossible. It was therefore decided to undertake a major Caterpillar trenching program in order to expose bedrock.

Geology

Geological data from detailed trench mapping at a scale of 1"=30' are presented in Fig. 7. Diamond drill data from holes 79 1-13 and 79 1-12, are given in Fig's 17,18,19,20,21 and App.1.

The Deer No. 1 showing (Fig's 5,6, & 7) lies within a complex alteration segment of tricolor banded "siltstones" oriented N10E/dip 60°NW. This segment up to 200 m wide, has a banana skin appearance on the map and extends with disharmoneous outline down the south slope of Deer Mountain in SW direction. The NW lobe is narrow and terminates abruptly down north slope of Deer Mountain.

Morphologically the SW lobe is expressed in a scree filled draw which extends to the bottom of the mountain.

The alteration segment contains a series of highly altered mica schists and grey ribbed siltstones which have been transformed into various types of tricolor banded "siltstones" with layers/laminae rich in chlorite, sericite or feldspar. There is evidence of quartz veining and polyaxial microfolding

Hand specimens reveal development of metamorphic structures such as arrow heads? and various types of foliation. Detailed logging of drill core (Fig's 17-20) indicate widespread folding with development of quartz veins around fold noses.

This alteration segment lies completely enclosed in phyllitic (phyllitic schist) and schistose siltstone (biotite schist).

The contacts are gradational although the boundaries are indicated by shear zones.

The alteration segment leaves evidence of considerable shear folding and metasomatic alteration. The above processes are concentrated within a defined zone and from drill hole information to date appear to bottom at depth.

Compressor Draw - Radon Draw

Down east slope of Deer Mountain into "Compressor draw", trenching within radon anomalies during 1978 season's program revealed the presence of a major deformation zone, "Compressor draw fish scale schist belt". This belt has a WNW-ESE strike and extends along the north slope of Deer Mountain to Merl Cloutiers Draw. It was traced SE into the Flats and South Deer valley.

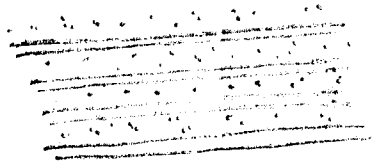
It is characterized by intense tectonism as seen in polyaxial microfold structures, several types of lineation structures and cleavages.

The rock, originally a mica schist - phyllite, weathers in a characteristic fish scale pattern.

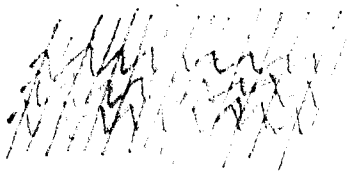
The tectonic belt contains a small breccia body as seen in "Merl Cloutiers Draw".

FIGURE 8

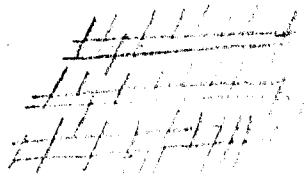
MINOR STRUCTURES



Carbonate Laminae in Siltstone



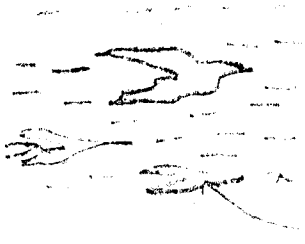
Micro folding and development of schistosity planes across original bedding



Hydrothermal alteration in association with breccia diatreme intrusions
Chloritization
Sericitization (Bleaching)
Quartz veining
Across schistosity planes



Tricolor banded siltstone lamination is regular and may be mistaken as original sedimentary banding



Micro folding and tectonic flattening, resulting in arrowhead structures, foliation

Radon Bearing Lineaments

On the south slopes of Deer Mountain there are subvertical lineaments with east-west strike. These lineaments stand out in the terrain due to a light green grass cover. They are further characterized by radon carrying streams.

Magnetometer Survey

A magnetometer survey (Fig 10) was conducted over the Deer grid using 20 metre station separation over the bulk of the grid and 10 metre separation over the Deer 1 showing area.

Viewed in general, the magnetic anomalies are small both in amplitude and space. However, a magnetic low exists over the Deer 1 showing but the geological reason for this is not clear.

Secondly a magnetic high with ENE strike exists between "Alteration draw" and "Compressor draw". The nature of this magnetic high is not understood. Trenching revealed a monotonous mica schist.

Electromagnetic Surveys

Crone EM surveys were carried out from the Flats valley up slope Deer Mountain, Fig's 15-16 (Extension Grid), and established the presence of a series of multiple conductors coinciding with the SW limb of the alteration segment. The conductive zones may be related to lithological units but neither drill hole nor detailed mapping data leave any explanation for these.

Spectrometer Survey

A spectrometer survey (Fig's 11-12) was done at 40 metre stations over Deer Mountain and extended across to Schist Mountain.

The results are inconclusive in the sense that readings are highly susceptible to vegetation cover and presence of subsurface radon bearing streams.

The total count data, (Fig 11), indicates a broad high over the Deer 1 showing and in an area centered around 2+40S/2+80E.

The U/Th ratio data (Fig 12) reveals a strong anomaly over the Deer 1 showing.

Secondly there are several scattered spot highs SE and S from this showing.

Down slope from the 2+40S/2+80E total count anomaly, there is a strong cluster of U/Th anomalies.

Radon Survey

Alpha nuclear radon gas surveys were carried out on a 40 x 40 metre grid using a 48 hour counting time. The data, including counts per hour values and contours at the 98th, 95th, 90th and 75th percentile level are presented in (Fig 11).

The data reveals a somewhat erratic pattern but anomalous trends exist at 0-480/S/280E and 540S/200E.

Detailed follow up surveys on a 20 x 20 metre grid and additional mapping of physiographic features indicate a strong coincidence between active springs, buried ground water channels and radon anomalies.

Furthermore a strong down drainage dispersion is evident.

ANOMALY FOLLOW-UP

Deer I Showing

Trenching work and detailed surveys (Fig 9) on the Deer No. 1 showing revealed:

1. The zone of high radioactivity is confined to a chlorite rich 1-2 ft., wide layer which occurs at the bedrock - felsenmeer interface. The mineralization is in the form of uranium secondaries which occur in pods in the footwall of same chloritic layer.
2. The showing could not be extended laterally or to depth and appeared to bottom 15 ft. below surface.
3. The mineralized layer is contained within tricolor banded siltstone rocks, some of which carry disseminated brannerite mineralization.
4. A system of NW striking quartz veins intrude the siltstone and exhibit strong chloritic alteration in the wall rocks.

5. The trenches leave evidence of recumbent isoclinal folding on shallow NW plunging fold axis. It appears that this deformation is a result of slumping or creep, e.g. a near surface feature.

Diamond drilling in addition to the holes drilled in 1978 included 11 holes for a total of 3,500 ft. Various structural models or shear zone concepts were tested but the over all results were discouraging for reasons as follows (see Drill sections Fig 's 17-20):

1. The showing could not be extended to depth, and detailed gamma log probing returned only limited hot spot anomalies in tricolor banded siltstones over a 10-ft. section. Best results were 160 ppm U_3O_8/10 ft.
2. The tricolor banded siltstones bottomed at shallow levels.
3. Substantial trench work was carried out along Deer Mountain its north and south slopes (Fig's 5,6,&7) to fully expose the extent of the tricolor banded alteration segment. Detailed prospecting was carried out behind the Caterpillar during trenching operations but nothing was found. It appear that radioactive hot spot anomalies are confined to the altered siltstone.

DIAMOND DRILLING

Deer Grid

Eleven diamond drill holes (D-79-1 to 10 inclusive) for a total of 2,375.5 ft. (724.24 m) were bored to test for uranium mineralizaton in the Deer I showing area. Drill hole locations ar shown in figure 6 and 7 Drill hole and down-hole gamma logs, including all assays, are given in appendix 1 and sections in figures 17 to 20.

Holes 79-1, 2, 3:

Holes D-79-1, 2 & 3 were collared approx. 30 ft. east of the showing to test a radioactive shear zone with apparent horizontal configuration (see 1978 report).

79-1 was collared on the dump material from trenching, and encountered laminated siltstone at 15 ft. The rock type changed to phyllitic siltstone at 102 ft. to the end of the hole at 147 ft. Zones of quartz veining were intersected from 72 to 89.5 ft. and from 99 to 102 ft. The radiometric log of the hole indicated an anomaly of 105 counts per second at 45 ft. but the rest was background reading (40 counts per second).

The following data summarizes the drilling information:

DDH D-79-1

Azimuth	000
Dip	Collar -90°, 147' - 86°
Collar Elevation	4,067 ft. (1,239.94 m) ASL
Collar Location	2.88S 38.86E

Depth	147 ft. (44.81 m) Casing
	16 ft. (4.57 m)
Started	June 3, 1979
Completed	June 6, 1979
Radiometric Log	see Appendix 1
Core size	HQ
Core recovery	77.9%

DDH D-79-2 was drilled from the same collar as D-79-1 to intersect the eastern extension of same radioactive shear zone. Accordingly, the azimuth was set at 100°, and the dip at -67°.

The rock types encountered are similar to those in DDH D-79-1; laminated siltstone was encountered from 7 to 91 ft., with some quartz veining from 60 to 91 ft., and from 91 to 174 ft. The hole terminated in phyllitic siltstone and no radiometric anomaly was recorded.

The following data summarizes the drilling information:

D-79-2

Azimuth	100°
Dip	Collar -67°, 174' -63.25°
Collar elevation	4,067 ft. (1,239.4 m) ASL
Collar location	2.88S 38.86E
Depth	174 ft.
Casing	16 ft.
Started	June 6, 1979
Completed	June 8, 11979

Radiometric Log	see Appendix 1
Core size	HQ
Core recovery	75.2%

DDH D-79-3 was directed southwestward to intersect the radioactive horizontal shear zone at a third point. The azimuth and dip used were 212° and -60°, respectively.

The hole intersected laminated siltstone from 9 to 15 ft., bleached laminated siltstone from 15 to 83 ft., (abundant ground core sections and sandy sections were encountered from 16 to 48 ft.), and laminated siltstone from 83 to 142 ft. (end of hole). Two radiometric peak zones were indicated as 70-72 counts per second at 14-17 ft., and 60-94 counts per second at 54-62 ft.

The following data summarizes the drilling information.

DDH D-79-3

Azimuth	212°
Dip	Collar -60°, 142' -64°
Collar elevation	4,067 ft. (1,239.914 m)ASL
Collar location	2.1881S 38.86E
Depth	142 ft.
Casing	48 ft.
Started	June 8, 1979
Completed	June 10, 1979
Radiometric log	see Appendix 1
Core size	HQ

Core recovery	50.60%

Holes 79-4,5,6

The first three holes failed to intersect any significant uranium mineralization; and it was decided to drill underneath the showing. Accordingly, DDH D79-4 was collared 42 ft. west of the showing with an azimuth of 082° and dip at -60°.

The hole intersected bleached laminated siltstone from 6 to 10 ft., laminated siltstone from 10 to 95 ft., and phyllitic siltstone from 95 to 159 ft. No radiometric anomaly was encountered.

The following data summarizes the drilling information.

DDH D-79-4

Azimuth	082°
Dip	Collar -60°, 159' -60°
Collar elevation	4,040 ft. (1,231.71 m) ASL
Collar location	1.83S 13.58E
Depth	159 ft.
Casing	8 ft.
Started	June 10, 1979
Completed	June 12, 1979
Radiometric log	see Appendix 1
Core size	HQ
Core recovery	76.6%

It was thought that the uranium mineralization was associated with a vertical shear trending 100° (Foster Shear). DDH D-79-5 was planned to intersect the western extension of the showing along this. The hole was collared 42 ft. west of the showing and south of the vertical shear. The hole was drilled vertically.

The rock types intersected were bleached laminated siltstone from 0 to 21 ft. with quartz veining from 10 to 15 ft., laminated siltstone from 21 to 119.5 ft. with quartz veining from 85 to 90 ft., and prominent folding from 113 to 119.5 ft.; phyllitic siltstone from 119.5 ft. to the end of the hole at 170 ft. Minor radioactivity was encountered from 9 to 12 ft., with a 67 cps anomaly

The following data summarizes the drilling information.

DDH D-79-5

Azimuth	000
Dip	Collar 90°
Collar elevation	4,040 ft. (1,231.71 m) ASL
Collar location	1.7N 14.03E
Depth	170 ft.
Casing	16 ft.
Started	June 12, 1979
Completed	June 15, 1979
Radiometric log	see Appendix 1
Core size	HQ
Core recovery	84.3%

All five holes, DDH D-79-1 to 5, were drilled south of the uranium mineralization related vertical shear with no encouraging results. DDH D-79-6 was collared north of the vertical shear.

The hole intersected laminated siltstone at 18-115 ft., with quartz veining from 23 to 41 ft., 65 to 90 ft. and 106 to 115 ft., phyllitic siltstone from 115 to 168 ft. and schistose siltstone from 168 to 380 ft. No radiometric anomaly was encountered.

The following data summarizes the drilling information.

DDH D-79-6

Azimuth	000
Dip	Collar -90°, 200' -81.8°
	380' -72.8°
Collar elevation	4,068 ft. (1,240.24 m) ASL
Collar location	12.18N 35.4E
Depth	380 ft.
Casing	38 ft.
Started	June 15, 1979
Completed	June 20, 1979
Radiometric log	see Appendix 1
Core size	HQ
Core recovery	78.3%

Holes 79-7, 8

Upon the discouraging results of the detailed drilling in the immediate showing's area, it was decided to test alternate targets and meanwhile compiling all geological data from Deer 1.

DDH D-79-7 was collared on a coincident magnetic low zone, a fault structure and a strong Alpha Nuclear radon anomaly. All of these features were characteristic of the Deer 1 showing.

The hole was drilled to a depth of 153 ft., and intersected schistose siltstone only. No radiometric anomalies were detected.

The following data summarizes the drilling information.

DDH D-79-7

Azimuth	140°
Dip	Collar -55°, 153' -53.8°
Collar elevation	4125 ft. (1,247.62 m) ASL
Collar location	10.35N 114.39E
Depth	153 ft.
Casing	9 ft.
Started	June 20, 1979
Completed	June 24, 1979
Radiometric log	see Appendix 1
Core size	HQ
Core recovery	72.4%

DDH D-79-8 was collared approx. 60 ft. NE of DDH D-79-7 in order to test a similar target.

The hole drilled to 142 ft. and encountered schistose siltstone with no significant radioactivity.

The following data summarizes the drilling information.

DDH D-79-8

Azimuth	000
Dip	Collar -90°, 142' 87.5°
Collar elevation	4,113 ft. (1,253.96 m) ASL
Collar location	17.66N 134.72E
Depth	142 ft.
Casing	10 ft.
Started	June 25, 1979
Completed	June 30, 1979
Radiometric log	see Appendix 1
Core size	HQ
Core recovery	77.91%

Hole 79-9

Information from the detailed mapping of the showing and other trenches suggested the presence of a major recumbent fold structure with an axis plunging 23° on an azimuth 280°. Consequently it was decided to test the down plunge extent of this fold structure. Hole D-79-9 was collared down from Deer 1 showing and encountered laminated siltstone from 7.5 to 38 ft., bleached laminated siltstone from 38 to 51.5 ft., laminated siltstone from 51.5 to 71.5 ft., phyllitic siltstone from 71.5 to 150.5 ft., laminated siltstone from 150.5 to 164 ft., phyllitic siltstone from 164 to 209 ft., and schistose siltstone from 209 to 281 ft. A few anomalies were indicated by the probe, 94 cps at 33.6 ft., 73-79 cps

at 94.3-97 ft., and 115 counts per second at 159.9 ft. The following data summarizes the drilling information.

DDH D-79-9

Azimuth	000
Dip	Collar - 90°, 263' -77°
Collar elevation	4,039 ft. (1,231.40 m) ASL
Collar location	10.01N 12.79E Depth
Depth	281 ft.
Casing	9 ft.
Started	June 30, 1979
Completed	July 6, 1979
Radiometric log	see Appendix 1
Core size	HQ
Core recovery	0-62' 62.71%, 0-281' 75.42%

From surface prospecting and readings from the core, comparatively higher radioactivity was recorded in the laminated siltstone than the phyllitic siltstone and schistose siltstone.

Holes 79-10, 11

It was then decided to test the tricolor banded siltstone segment at its widest extent and the drill was moved 30 metres down the mountain.

DDH D-79-10, a vertical hole, encountered laminated siltstone from 11 to 20 ft., a zone of sandy to gravelly bleached siltstone with some quartz veining and a possible fault zone from 20 to 44.5 ft., interbedded bleached and laminated siltstone from 44.5 to 174 ft. with some quartz veining from 68.5 to 74 ft, phyllitic siltstone from 174 to

305 ft. and schistose siltstone from 305 to 344 ft. Minor radioactivity was recorded as 75 counts per second at both 151 and 159 ft.

The following data summarizes the drilling information.

DDH D-79-10

Azimuth	000
Dip	Collar -90°, 330' -78.5°
Collar elevation	3,718.1 ft. (1,133.57 m) ASL
Collar location	58.9S 93.8W
Depth	344 ft.
Casing	12 ft.
Started	July 5, 1979
Completed	July 14, 1979
Radiometric log	see Appendix 1
Core size	HQ
Core recovery	11-174' 42.21%, 11-344' 53.39%

Hole D-79-11 collared at the D-79-10 site was directed at 020° and an angle of -60°. It was planned to drill deep into the mountain to test for mineralization and the extension of the laminated siltstone zone.

Rock types encountered in the holes were bleached siltstone from 10 to 105 ft., laminated siltstone from 105 to 169 ft., and phyllitic siltstone from 169 to 283.5 ft. No significant radioactivity was recorded.

The following data summarizes the drilling information.

DDH D-79-11

Azimuth	020°
Dip	Collar -60°, 270' 0-62°
Collar elevation	3,718.1 ft. (1,133.5 m) ASL
Collar location	58.9S 93.8W
Depth	283.5 ft.
Casing	38 ft.
Started	July 15, 1979
Completed	July 20, 1979
Radiometric log	see Appendix 1
Core size	HQ
Core recovery	10-166' - 34.29%;
	10-283.5' - 45.25%

It apears from that the laminated siltstone is confined to the very top surface. All holes appear to bottom in phyllitic or schistose siltstone.

The radioactive occurrences observed/measured in the drill holes are confined to laminated siltstone sections only in particular those exhibiting maximum degree of alteration, such as bleaching and chloritization. The phyllitic and schistose siltstones are devoid of any radiometric anomalies.

In addition to the detailed gamma log probing and scintillometer testing of drill core sludge and rock samples from DDH-79 1, 3, 5, 6, 9

and 10 were sent out for uranium assaying. All assays are plotted on drill log sheets App.1.

DDH No.	Number of Sludge Samples	Number of Rock Samples
D-79-1	24	7
D-79-3	10	15
D-79-5	1	5
D-79-6	8	20
D-79-9	31	35

All the assay results are insignificant except for one rock8. sample from D-79-1 from 45.5 to 46 ft., which returned 165 ppm of $U^3 0$

GRID ANOMALY FOLLOW-UP

Further to follow-up of anomalous trends on Deer Mountain, the following routine procedure was adopted: that all radon, U/Th and total count highs be trenched to bedrock either by trenching or digging pits. In "Compressor draw", where substantial radon anomalies had been outlined during the 1978 seasons program, trenching revealed the presence of a tetonic belt but no source of the high radon was found.

Prospecting down the north slope of Deer Mountain was negative.

The 2+40S/2+80E total count anomaly and the U/Th highs and Alpha Nuclear radon anomalies down draingage from this, the radon anomalies and U/Th highs down "Compressor draw" radon draw were caterpillar trenched.

Prospecting was totally negative and no radioactive anomalies were found in the monotonous schist terrain.

The source of radon undoubtedly lies in the steep joints which yields radon rich waters.

Flats and South Deer Grids

Flats and South Deer Grid areas are the overburden covered valley floor down the south slopes of Deer Mountain and Schist Mountain (Fig 4).

The Flats area was covered by a separate grid (Fig 23); South Deer grid ties directly onto Deer Grid (Fig 5).

General

The Flats and South Deer Grid area exhibit anomalous U in H_2O, U in silt and radon as seen along the escarpment extending from down slope of Schist Mountain west to down slope Deer Mountain.

In addition there are several streams yielding up to 300 cps on the BGS 1 SL instrument.

Topographically the valley represents a gently sloping plane with drainage flowing west. There are no outcrops between the escarpments from Deer and Schist Mountain and a small hill 1500 m to the south where Cambrian orthoquartzite outcrops.

With the purpose of evaluating the anomalous uranium and radon geochemical anomalies and locating extensions or continuations of the Deer I showing a major exploration program was initiated in July. Until that date there were no geological data on hand and Caterpillar trenching

could not be carried out due to high water levels and unstable ground conditions.

A new exploration model was formulated on the following evidence.

1) The presence of a major fault stucture along the Deer Mountain escarpment - Flats area.
2) An Athabasca type of uranium situation as pictured in table 2 including:
   - uranium mineralized structures in the Fairchild mica schist complex
   - an unconformity separating Fairchild group of rocks from graphite rich black shales of the Quartet group
   - an unconformity separating Quartet group from lower Cambrian orthoquartzite.
   - the projection of the Deer I shear zone underneath Cambrian and Quartet group of rocks.

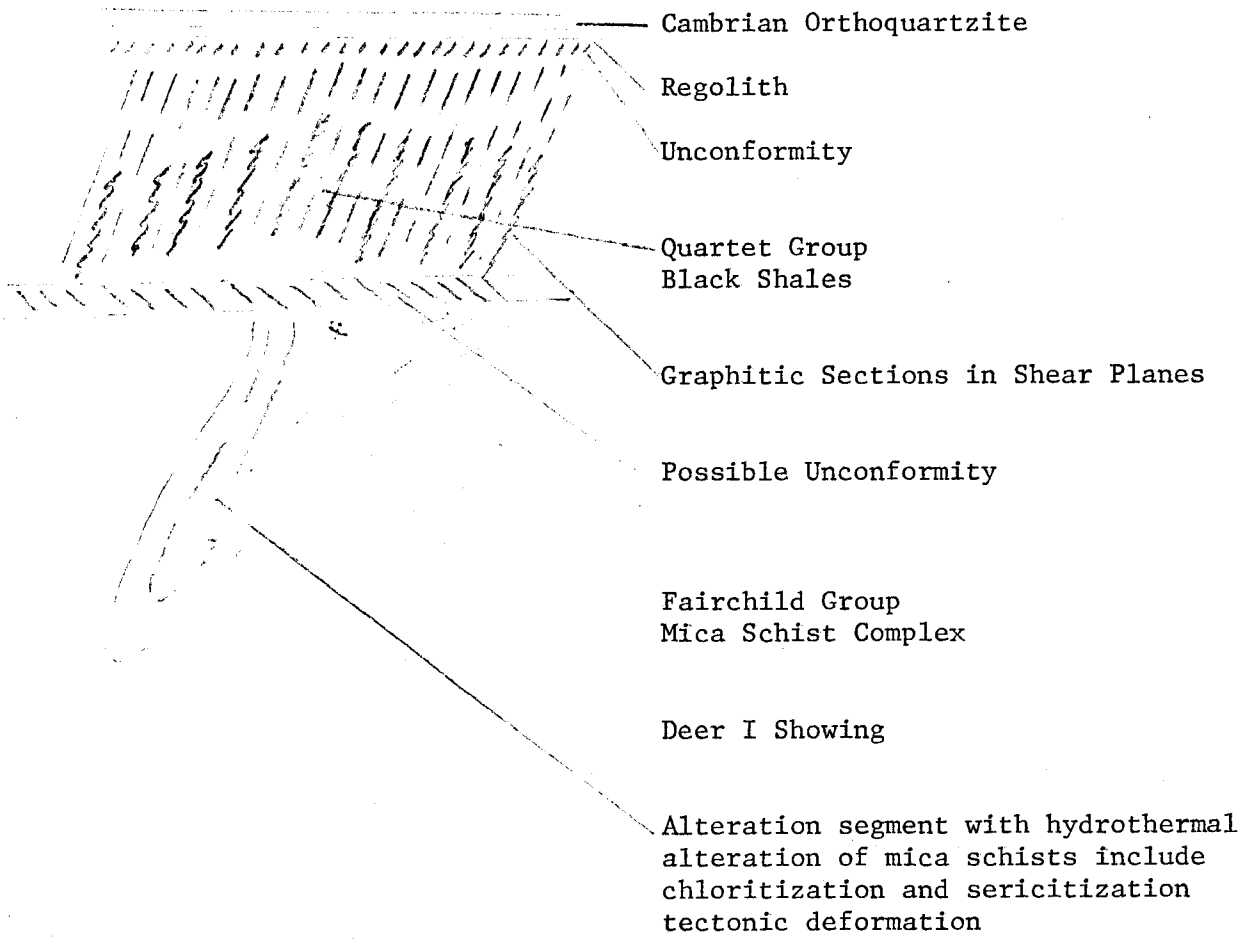
DIAMOND DRILLING FLATS AND SOUTH DEER GRID AREAS

Flats and South Deer Grids

Drilling in the flats area was initiated with a stratigraphic test hole DDH 79-12 on the Cambrian orthoquartzite outcrop (Fig 22). In the process of excavating a water supply sump for this hole, graphitic shales of the Quartet group were exposed between the Cambrian cutcrop and Deer Mountain mica schists complex.

TABLE 2

UNCONFORMITY MODEL



DDH D-79-12 & 13

The following data summarizes the drilling information.

DDH D-79-12

Azimuth	000
Dip	Collar -90°, 231' -85°, 300' -82°
Collar elevation	2,945.7 ft. (898.08 m) ASL
Collar location	160.7S 348.0W
Depth	311 ft.
Casing	20 ft.
Started	July 20, 1979
Completed	July 24, 1979
Radiometric log	see Appendix 1
Core size	HQ
Core recovery	53.1%

DDH D-79-13 was drilled from the same collar as D-79-12, but was directed due north at an angle of -50°. The hole was planned to drill perpendicular to the graphitic shale unit, but was terminated at 397 ft. without penetrating the graphitic shale unit.

D-79-13 intersected Cambrian orthoquartzite from 10 to 37 ft. and graphitic shale and schist from 37 to 397 ft. There were no radioactive anomalies detected in the core and no down hole probe anomalies were found.

The following data summarizes the drilling information.

DDH D-79-13

Azimuth	360°
Dip	Collar -50°, 391 ft. -51°
Collar elevation	2,9145.7 ft. (898.08 m) ASL
Collar location	158.7S 347.5W
Depth	397 ft.
Casing	10 ft.
Started	July 24, 1979
Completed	July 30, 1979
Radiometric log	see Appendix 1
Core size	HQ
Core recovery	31.3%

ASSAYING

No sample was sent for chemical analysis.

INTERPRETATION

The drill holes intersected the Cambrian unconformity but did not reveal any trace of uranium mineralization. However, the more interesting unconformity between the Quartet group of graphitic shales and the unit Fairchild mica schist complex below was not tested.

The data on hand suggest that the Cambrian rock was slightly folded with clay gouge found in DDH D-79-12 at 57-57.5 ft. due to shearing. However, no other significant features were observed.

South Deer Grid

Holes 79-14, 15, 16, 17

The drill was moved into this area to further pursue the same exploration model but closer to the postulated E-W trending escarpment fault and in the vicinity of radon anomalies located at the base of Deer Mountain and "Radon draw".

Four diamond drill holes, (Fig 22), (DDH D-79-14, 15, 16, and 17) for a total of 1,999 ft. (609.45 m) were drilled on this grid.

DDH D-79-14 was drilled due north at an angle of -50°. The hole was abandoned at 265 ft., due to loss of water circulation and broken rods.

The hole intersected schist from 20 to 37 ft., limestone from 37 to 83 ft., schist from 83 to 92 ft., limestone from 92 to 105 ft., schist-gouge-limestone from 105 to 147 ft., siltstone from 147 to 167 ft. calcareous mud-gouge siltstone and limestone from 167 to 207 ft., red shale from 207 to 217 ft., calcareous shale from 217 to 222 ft., red shale from 222 to 240 ft., green shale from 240 to 245 ft., and limestone from 245 to 265 ft. Two radiometric peaks were recorded at 86.6 ft.--67 counts per second--and at 97.6 ft.--130 counts per second. The source of these anomalies could not be traced due to loss of core.

The following data summarizes the drilling information.

DDH D-79-14

Azimuth	360°
Dip	Collar -50°, 265' 56.5°

Collar elevation	3,122.56 ft. (952 m) ASL Collar
location	6+40S 40E
Depth	265 ft.
Casing	140 ft.
Started	July 30, 1979
Completed	August 4, 1979
Radiometric log	see Appendix 1
Core size	HQ
Core recovery	42.6%

DDH D-79-15 was collared 100 m east of D-79-14, in an attempt to penetrate the unit at a different location. The hole was drilled to 252 ft. with HQ equipment, and had to be reduced to NQ from there on. The hole was abandoned at 602 ft., due to a broken rod in a gouge zone.

Rock types intersected in the hole were limestone and schist from 31 to 38 ft., red shale from 38 to 66.5 ft., green shale from 88.5 to 72 ft. gouge zones from 72 to 88.5 ft., green shale from 88.5 to 122 ft., sheared zone from 122 to 180.5 ft., red shale from 180.5 to 208.5 ft., purplish red shale from 200.5 to 212.5 ft., limestone from 212.5 to 487.5 ft., gouge zone from 487.5 to 492 ft., limestone from 492 to 593.66 ft., and gouge zone from 593.66 to 602 ft. No significant radioactivity was encountered.

The following data summarizes the drilling information.

DDH D-79-16

Azimuth	355°
Dip	Collar -60°, 230' -63°
	464 ft. -64°, 501' -64.1°
Collar elevation	3,171.76 ft. (967 m) ASL
Collar location	6+20S 1+40E
Depth	602 ft.
Casing	HW 0-142 ft., NW 0-252 ft.
Started	August 4, 1979
Completed	August 17, 1979
Radiometric log	see Appendix 1
Core size	HQ 0-252 ft., NQ 252 ft., 252-602
Core recovery	67.51%

DDH D-79-16 was collared at 70 m north of D-79-15, and set up to continue penetration of the same rock unit where the previous hole terminated.

The hole drilled to a depth of 250 ft., was entirely in schist with no significant radioactivity.

The following data summarizes the drilling information.

DDH D-79-16

Azimuth	360°
Dip	Collar -50°
Collar elevation	3224.24 ft. (983 m) ASL

Collar location	5+50S 1+40E
Depth	250 ft.
Casing	0-24 ft.
Started	August 17, 1979
Completed	August 21, 1979
Radiometric log	see Appendix 1
Core size	HQ
Core recovery	85.49%

The results from DDH D-79-16 suggest that the hole was collared in the hanging wall of the postulated thrust fault. DDH D-1979- 17 was drilled from the same collar as D-79-16, but vertically down to intersect the postulated fault structure. The hole was cored with an HQ size core from 0 to 27 ft., and reduced to NQ from 272 to 882 ft. The hole was abandoned due to broken rods in the hole.

The rock types in the hole were mica schist from 10 to 245 ft., fault zone (?) from 245 to 267 ft., graphite from 267 to 287 ft., gouge with minor graphite from 287 to 334.5 ft., a sequence of pinkish red-whitish grey-reddish and purple Cambrian orthoquarzite from 334.5 to 357 ft., gouge zone from 357 to 364 ft., sheared zone from 364 to 419.8 ft., limestone from 419.8 to 625.5 ft., green shale from 625.5 to 633 ft., red shale from 633 to 660 ft., limestone from 660 to 689 ft., red shale from 689 to 712.5 ft., green shale from 712.5 to 756 ft., interbedded red shale and limestone from 756 to 767.5 ft., red shale from 767.5 to 779 ft., green shale from 779 to 797 ft., and limestone from 797 to 882 ft.

The probe could only be run down to 195 ft. because of broken rods. The probing did not record any significant radioactivity.

The following data summarizes the drilling information.

DDH D-79-17

Azimuth	000
Dip	Collar -90°, 284' -82°, 620' -79°, 839' -80°
Collar elevation	3,224.24 ft. (983 m) ASL
Collar location	5+50S 1+40E
Depth	882 ft.
Casing	HW 12 ft., NW 270 ft.
Started	August 21, 1979
Completed	September 10, 1979
Radiometric log	see Appendix 1
Core size	HQ 10-172 ft., NQ 272-882 ft.
Core recovery	83.09%

ASSAYING

Radioactivity recorded by the down hole gamma log was extremely low. The core showed no significant radioactivity and no samples were sent out for assay.

INTERPRETATION

The drilling in the Flats and South Deer area revealed an indeed complex thrust faulted structure. The serious mechanical problems encountered during the drilling probably reflects fault gouge from satellite fault structures.

The complexity of the structure is further emphazised by:

- imbricate structure where Deer complex mica schist sections were found sandwiched between Cambrian limestone beds as seen in 79-14.
- A reverse sequence of graphitic black shales overlying Cambrian rocks see DDH 79-17

The thrust faulting is regarded as Laramide in age.

GRID SURVEYS

Flats Grid

A picket (Fig. 4 and 23) grid was established to cover the foot of the Deer Mountain where an EM conductor was outlined. The 0+00 point was located on a station of the previously (1978) surveyed baseline which tied into the Deer grid. From the 0+00 station, a baseline 1.48 km long, at azimuth of 284° was put in partially by surveying and partly by compass and chaining. Crosslines with 40 m stations were then located at 40 m and 120 m spacings from L0+00-L7+20W, and L8+80W- L14+80W, respectively. L0+00 was later extended northward to 8+00N as a baseline for the extension grid to cover the topographic lineament (possible fault) on Deer Mountain.

Crosslines at 80 m intervals and 40 m stations were picketed. The extension grid is overlapping the Deer grid. The main Flats grid covers an area 1,480 m by approximately 560 m, and contains 18.76 km of crosslines in 34 lines. The extension grid is 480 m by 600 m, containing a total of 4,320 m of crosslines in six lines.

The grids were covered by crone electromagnetic - radon and magnetometer surveys; furthermore soil and water sampling, trenching, geological mapping and detailed scintillometer prospecting was carried out.

Geology

The area is flat and covered with overburden 1-3 m thick. The Caterpillar was mobilized to dig five deep trenches into bedrock (Fig 23) These were then mapped at a scale of 1:1,000.

Bedrock encountered includes:

Fairchild Group

Grey to silver grey schist of the Fairchild group; the schist is fine grained, laminated to highly sheared. In general, the lamination is trending E-W dipping 55-75 to the north; schistosity trends NE and dips 40-80° to the north. Occasionally, subhorizontal schistosity was observed. Crenulation and local folding are common with northwesterly plunging fold axes. Minor pink quartz-feldspar veins occur discordant and concordant to the lamination. In the contact area to the (structurally) underlying Quartet black shales, there is a zone of heavily crushed fragments, 3-10 m wide, locally with some hematization and chloritization and grading into a buff-grey to greenish grey, gouge zone. The latter is in sharp, clear contact with the black shales.

The contact strikes E-W and dips at 19-60° to the north.

Quartet Group

Interbedded strata of black shale, graphitic shale and submassive graphite were exposed in the trenches over widths 80-160 m. The formation generally widens towards the west. The shale is moderately sheared with schistosity striking E-W and dipping steeply (70-85°) to the north. Disseminated to submassive graphite is commonly found along shear planes. The black shales contain a few specks of pyrite and limonitization is common. Some minor folds were observed. The trench observations tie in with the detailed drill core data from holes D-79-12 & 13, see App. 2.

Electromagnetic Surveys

A preliminary VLF-EM survey, employing the Ronka EM-16 was carried out after boulders of graphitic shale had been found in one of the trenches. The survey was done on a few N-S lines put in by compass and chaining. The signal source employed was the transmitter at Seattle, Washington. During the survey, both the in-phase and quadrature were recorded (Fig's 24 and 25), and an electromagnetic conductor was indicated. Subsequently, the Flats Grid was established and the conductor was further evaluated using the Crone E.M. unit which employs lower frequencies. This instrument is designed for both the Horizontal Shootback and the Vertical Loop method.

Details of Work Methods

The Horizontal Shoot back method required two operators who traversed along the same line (perpendicular to the expected strike direction of the conductor). Both operators in turn transmitted and received. The transmitting coil was held horizontally, whereas the receiving coil was held vertically. The dip angle of the field was measured by the two operators. The two dip angles were then added together; a "0" signifies no conductivity. The station measured was the midpoint between the two operators. The separation between the two operators was 100 meters. Readings were taken at two frequencies (1830 Hz and 390 Hz). The conductivity of the body was determined by the ratio of the resultant dip angles with the two frequencies.

The Vertical Loop method required two operators who traversed on adjacent lines (80-120 meters apart). The transmitting operator remained at the same station (over the conductor) with the transmitting coil held vertically, and the receiving operator traversed down the other line with the coil held horizontally. The dip angle of the field was measured. Readings were taken at two of the three frequencies (5000 Hz, 1830 Hz, and 390 Hz). This method was used in detailing deep conductors and also for determining the dip of the body.

Results

A continuous electromagnetic conductor with moderate strong conductivity was outlined for a strike length of 680 metres (Fig's 26,27, 28). Conductive zones run east-west from Line 00-120N to Line 240W--40S, and swing southwestward to L5+60W where the survey ended. The dip of the conductive zone varies from steep north to vertical to steep south. Between L00 and L240W, the axis of the vertical loop conductor closely follows the contact between the schist and the shale but from then on the conductor axis diverges southwestward to the contact area between the shale and the Cambrian rocks at 3+20W. The conductor then opens to the southwest. At the northwest end of the grid, from L1240W-L1480W, a weak EM conductor was found coinciding with the contact between the schist and the shale. In the central area, the overburden is very thick and no EM conductor was outlined. The conductor is believed to be responding to pinch and swell structures in the graphite body within the shale.

Extension Grid

To further test the alteration segment of the Deer I zone, an extension grid was run up Deer Mountain (Fig. 5, 15 & 16). This grid was covered by both horizontal shootback and vertical loop surveys for the purpose of locating fault structures in the area. A conductive zone, 720 meters long and 520 meters wide with multiple conductors was outlined by the horizontal shootback survey. However, the Vertical Loop survey only outlined the conductor intermittently (Fig 15) but this may be

due to the steep terrain and some operator error.

No fault fracture can be interpreted from the EM data, but the conductivity is possibly due to some shallowly seated conductive mineral segments Acc. to P. Cooper. To date there is no geological explanation to these conductive segments.

Alpha Nuclear Survey

The survey was conducted in the east end of the grid, between L00-400W and stations 300N-200S.

The contoured Alpha Nuclear readings in counts per hour are plotted on (Fig 23). They outline an irregular pattern of plus 200 cph, with isolated peak values greater than 500 cph. The highest values were recorded mainly in the schist and decreased towards the shale. Extremely low values are found in the Cambrian rocks. On L00-stations 80N-160N, one of the peak areas coincided with the axis of the vertical loop conductor. However, the values may partially be due to the underlying thick altered siltstone(?) boulders and/or drainage system.

Radiometric Survey

Detailed scintillometer prospecting carried out over the entire grid and in the deep trenches was discouraging. The surface area yielded a very low radioactivity in the 35 to 45 cps range. The Cambrian rocks in the trenches had the lowest radioactivity of 70-85 cps. At the sheared contact area (sometimes gouge zone) radioactivity up to 125 cps

was recorded. In the black shale area, radioactivity was in the range of 120-150 cps. At the gouge zone between the shale and schist, the scintillometer recorded 150-170 cps. The schist showed radioactivity in the 170-250 cps range, this substantially higher than those recorded on the Deer Mountain.

Soil Geochemistry

Forty-one soil samples (app 2) were collected between L0+00-L5+60W, and stations 0+00-1+60N. The samples ranged from fine to coarse-grained, and were obtained from bog brush and caribou moss growth.

Four samples at 0+00W-1+20N, 0+80W-0+40N, 0+80W-0+80N, and 4+80W-1+20N returned 20, 38, 25, and 10.5 ppm uranium, respectively. The rest are below 5 ppm U.

Discussion

The overall results of the detailed surface work was negative. Despite the geologically favorable model, nothing reflecting radioactive boulders, alteration patterns including quartz or carbonate veining was detected.

Apart from the radioactive waters and the radon drainage anomalies, there are no immediate uranium exploration targets in the Flats area.

SOUTH DEER GRID

Introduction

Part of the South Deer Grid (area south of L4+00S of the Deer Grid) was established in September, 1978. Anomalous radon values were recorded in this grid area during the exploration season of 1978. Subsequently, it was recommended to extend the grid for further investigation. Due to some irregularities, the Deer and South Deer grids had to be restablished this summer.

The baseline surveyed in 1978 was extended to 7+20S. Crosslines at 20-metre intervals were run west and east to 1+00W and 11+00E, respectively, with 20-metre picket stations. L6+00E was further extended to 8+00S with crosslines from 6+00E at 20-metre intervals. During mid-August L5+20S to L6+80S were extended westward to 3+40W/3+80W at 40 m intervals to join the Flats Grid.

The South Deer Grid covers an area of approximately 760 m x 1,200 m, and contains 23.7 km of picket lines in 21 lines.

Magnetometer - spectrometer - Alpha Nuclear radon gas - electromagnetic - geochemical soil - and water sampling and physiographic surveys were conducted.

Geology

The grid (Fig 5) covers the bottom of the Deer Mountain south slope, an escarpment and further into the Flats area. No outcrop was observed in the area. Due to the thick overburden, trenching only re-

vealed sporadic bedrock in the central area, but at the southeast corner, sufficient bedrock was exposed on top of a ridge.

The trenches were mapped at a scale of 1:1,000.

From surface trenches mapping, most of the grid is underlain by mica schist. The mica schist is medium grey to silver grey in colour and exhibits crenulation and local brecciation. Schistosity strikes NNE and dips 37-57°W.

The trenches at the SE corner of the grid exposed schist overlying Cambrian rocks with the contact oriented E-W and dipping 84°N. The Cambrian rocks consist of quartzite, some limestone and a red, muddy shale in contact with the black shale of the Quartet group. The shale is sheared and locally crushed, with some limonitization and few specks of pyrite. All rock contacts are muddy and gougy. It is postulated that the schist was thrust on top of the Cambrian rocks, and the shale was also thrust up and/ or folded to be in contact with the Cambrian rocks on surface.

Few graphitic shale floats were uncovered by trenching L1+00W-6+20S area.

Drilling at L40E-6+40S and L140E/6+20S and L140E/5+50S areas revealed the detailed geology.

Magnetometer Survey

The magnetic intensity in the grid ranged from 166 to 378 gammas. In general, the magnetic intensity is flat with no specific pattern. There is only one relatively high zone in the middle of the grid which may possibly join with those in the Deer Grid to from a NE-SW trend.

Alpha Nuclear Survey

An Alpha Nuclear radon survey shows several highs in the western section of the grid. Anomalies are predominantly trending N-S, except for one which trends NE-SW. Most of the zones can be linked by a lower 120 cph contour and form a N-S trending anomaly. Some high peaks coincide with an electromagnetic anomaly. Isolated plus 200 cph values are also found in the eastern section of the grid.

Spectrometer Survey

The grid was covered by spectrometer surveys. The total count value from surveys ranged from 66 to 111 counts per second. In general the readings are low and evenly distributed. Few insignificant isolated zones of 100 plus counts per second were outlined.

Clusters of small U/Th ratio anomalies were indicated in the area. However, many of them are of point source and insignificant.

Electromagnetic Survey

An EM-VLF survey (Fig 29) was carried out on part of the grid employing a Ronka EM-16 electromagnetic equipment. The signal source employed was the transmitter at Cutler, Maine.

A strong EM conductor was outlined on L40W-80E-590S. The conductivity gradually decreased eastward, and finally faded out east of L400E. The conductor trends E-W, and dips steeply to the south. The conductors were further evaluated by Crone electromagnetic surveys (Fig's 30 & 31) employing lower frequencies. The conductor was located slightly north of the VlF conductor. From L00-595S, it started to swing ENN to L120E- 580S, then turned sharply to L160E-560S, then trend ESE to L200E-575S, thin eastward to L240E-375S. Similar to the VlF conductor, the conductivity weakened from west to east and faded out east of L240E-575S. The width of the conductor is not clear, and the dip varied from north-vertical-south.

Discussion

The sequence of exposed rocks, Cambrian rocks Fairchild Group Mica Schist quartet black shale suggests that the area has undergone at least two tectonic disturbances. The first one is the main thrust faulting during which the schist was thrust atop of the Cambrian rocks. This is the same movement found in the Deer West Grid and the Flats Grid. The second event took place to expose the shale in contact with the Cambrian rocks. This can be due to thrusting and/or folding. The. sequence of rock exposure here (from north to south, schist-Cambrian rocks-shale) is reversed from that of West Deer Grid and the Flats Grid (from north to south schist-shale-Cambrian rocks).

Due to insufficient geological data, it is difficult to explain the complex structure in the area.

The source of the radon anomalies is unknown. Some of them are definitely related to drainage pattern, while some are more localized. However, the majority were located in topographical troughs suggesting the anomalies being derived from ground water. The high peak at L4+80S-2+80E coincided with the postulated intersection of the NNE ad NNW trend zones of crushed schist fragments, and may be significant. Few high zones followed the conductive zone, and the reasoning is not know,

There is no correlation between the high total count readings and high U/Th ratio zones. However, four of the high U/Th ratio zones were located in the same area as some of the radon anomalies. The data is influenced by many variables, and it is hard to judge the significance of the coincidence.

The zone of magnetic high, located in the middle of the grid, is isolated from any of the other anomalies.

Conductivity of the electromagnetic conductor decreased from west to east, and faded out east of L400E-645S. The fading out could have been caused by diminishing graphite content and/or thick overburden. The shale found at the SE corner of the grid is depleted of graphite, and this should be the explanation of the lost conductivity.

In summary of the data presented:

1) Viewed from Compressor draw - Radon draw - South Deer and Flats Deer Grid there emerges a semicontinuous belt of Alpha Nuclear radon

anomalies. This corresponds with the outline of the topographical contour.

2) Radon producing fracture zones were the ultimate sources of the dispersed Radon anomalies.

3) VLF - EM conductors reflect graphite rich sections in the Quartet Group of black shales.

4) An incredibly complex geology due to repeated thrust falt movements producing imbricate structures.

WEST DEER GRID

In the course of a follow-up of GSC uranium geochemical anomalies in the general Deer area, 1978 surveys revealed the presence of a geochemically anomalous area around West Deer Creek. A detailed follow-up program was carried out in the 1979 season.

Results

Topography

Topographically (Fig 32) the grid area consists of moss-bush covered hills in the NE, a central NW-SE covered depression containing 3 streams draining to the SE and a lowland-gently rising terrain in the south.

The grid area contains two minute outcrops only, consequently upon completion of the grid surveys a massive trenching program was undertaken to aid in the evaluation work.

Geology

Geologically (Fig 32) the area starting in the NE consists of:

- a breccia body with a tongue shaped protusion to the west. It contains numerous xenoliths of altered siltstone.

- an alteration haloe of altered siltstones, mica schists and grey siltstone surrounding the breccia body
- a mica schist area in the east.
- an overburden grass covered depression devoid of outcrops. Trenching in this area was not possible due to high water level.
- SW of the stream, trenching exposed silver grey mica schists exhibiting microfolding crenulation and intense shearing.

The above mica schist series lies in structural contact with black shales of the Quartet group. The black shale series contains minor dolomitic horizons up to 1 ft. wide. Furthermore, there are up to 10 ft. wide lenses of " dirty" micaceous quartzite. Local development of graphite occurs in shear zones. The black shales are orientated with a uniform NE-SW strike and subvertical dip.

Prospecting

Detailed prospecting surveys were negative and no showings were found.

Two minor hot spot areas were noted in the alteration halo adjacent to the breccia body.

Reconnaissance prospecting carried out in the areas east, north and west of the grid area failed to turn up any showings.

Total count data (Fig 35) reveal highs over the breccia body and its alteration halo in the NW.

The depression zone is characterized by moderate values. The mica schist and black shale areas exhibit low readings.

U/Th ratios (Fig 36) reflect highs over the breccia body zone A down drainage from this.

Alpha Nuclear Surveys (Fig 34)

The data reveal a number of spot highs coinciding with:

a) the breccia body

b) the depression zone.

Electronmagnetic Surveys (Fig 35)

A VLF survey was carried out over the grid area but no conductive zones were found.

Summary

The surveys carried out failed to locate the source of the uranium geochemical and radon anomalies of the 1978 surveys.

It is speculated that the origin of these could be from finely disseminated uranium mineralization in the breccia diatreme body and its alteration halo.

No further uranium exploration surveys are warranted on the anomaly. However in the course of the prospecting surveys a boulder of a highly chloritized alternation rock was found containing small specks of visible gold.

Due to time restraints of the program this find was not followed up but it would be worthwhile to conduct a gold panning prospecting program in future seasons.

FROG SHOWING

The Frog Showing is located 5 km east of Deer 1 showing (Fig.2) in continuation of the Deer Mountain Range. It was found in 1978 in the course of follow-up work on a uranium - in H_2O and radon anomaly which exists in Frog Creek. The latter drains a cirque separating the east slope of Schist Mountain from the Frog Knob which is oriented SW-NE.

Reconnaissance grid surveys and scintillometer prospecting in 1978 outlined an area of brannerite mineralized quartz feldspar boulders around grid point 2+80 E.

In the 1979 season, a thorough prospecting program was carried out on Frog Knob and the East slopes of Schist Mountain where a small breccia body occurs. No new radioactive occurrences were found in addition to the 1978 ones.

It was decided to investigate the boulder showings by a system of Caterpillar trenches as follows:

- 1 contour trench at a level intersecting radioactive boulder finds
- 4 radial trenches located above the radioactive boulders area

The trench geology map see (Fig 38) revealed that a grey quartzitic phyllite forms the host rock of the Frog Knob.

Hot spot radioactivity is of limited nature and is confined to a zone 75 x 75 m^2 at intense alteration in the mature quartzitic phyllite. Within this zone the grey quartzitic phyllite is transformed into a laminated siltstone characterized by tricolor banding including chloritization, sericitization and/or chlorite peppering. In addition, the alteration zone is characterized by yellowish-orange and/or bluish-clays.

The strongest radioactivity up to 800 cps on the BGS-1SL instrument coincides with the yellowish-orange clay alteration.

Although the trenching did not uncover the source of the radioacative breccia boulders located in 1978 it appears that the Frog prospect is similar in character to the Deer II and West Deer breccia showings.

APPENDIX 1

DIAMOND DRILL HOLE LOGS

D-79-1 to 17

DOWN HOLE GAMMA LOGS

D-79-1, 2, 3, 4, 5,
6, 7, 8, 9, 10, 11,
12, 13, 14, 15, 16,
and 17

Pan Ocean

APP I-D79-I

PAN OCEAN OIL LTD.

CALGARY ALBERTA

PROJECT:	
HOLE:	79D1
COMPANY:	PAN OCEAN
DATE:	JUNE 6
COUNTY:	STATE: YUKON
SEC:	TWP: RANGE:

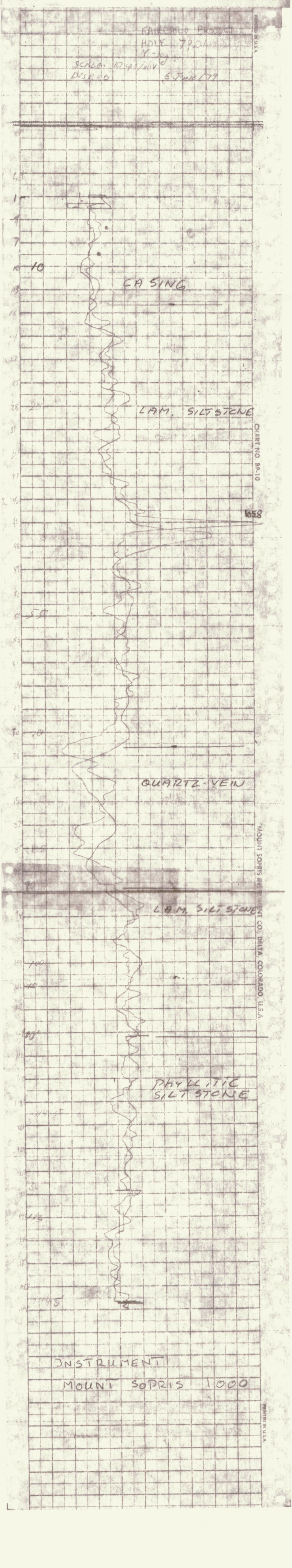
DRILL HOLE DATA

DEPTH DRILLED	149'	COLLAR ELEV.	
DEPTH LOGGED	144.8'	BIT SIZE	
CASING DEPTH	18'	CASING WALL THICK	
TIME SINCE CIRC.		DRILL PIPE THICK	
TYPE FLUID		FLUID LEVEL	
OPEN HOLE	THRU PIPE X	THRU CASING X	
PROBE NO.	228	UNIT NO.	
K-FACTOR		DEAD TIME	
TIME ON		TIME OFF	
CALIBRATOR NO.		CALIBRATION VALUE	
PIPE CORR. FACTOR		WATER FACTOR	
CASING CORR. FACTOR			
OPERATOR	R. MAZUR		
WITNESS	P. COOPER	P. WALKER	

GAMMA RAY		INIT	1	2	3	4	5	6
DEPTH	FROM	1						
	TO							
	NO. OF FT.	144.8						
FULL SCALE CPS		100						
TIME CONST.								
CHART RATIO				RED = UP HOLE				
LOGGING SPEED		9'/MIN		BLACK = DOWN HOLE				

DENSITY								
DEPTH	FROM							
	TO							
	NO. OF FT.							
FULL SCALE CPS								
TIME CONST.								
CHART RATIO								
LOGGING SPEED								

RESISTANCE								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								
SPONTANEOUS POTENTIAL								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								



APPI - 79 D2

PAN OCEAN OIL LTD.

CALGARY — ALBERTA

PROJECT:	
HOLE:	79 D2
COMPANY:	PAN OCEAN
DATE:	JUNE 5 '79
COUNTY:	STATE:
SEC:	TWP: RANGE:

DRILL HOLE DATA

DEPTH DRILLED	174'	COLLAR ELEV.	
DEPTH LOGGED	171'	BIT SIZE	
CASING DEPTH	16'	CASING WALL THICK	
TIME SINCE CIRC.		DRILL PIPE THICK	
TYPE FLUID		FLUID LEVEL	
OPEN HOLE		THRU PIPE X	THRU CASING X
PROBE NO.	228	UNIT NO.	
K-FACTOR		DEAD TIME	
TIME ON		TIME OFF	
CALIBRATOR NO.		CALIBRATION VALUE	
PIPE CORR. FACTOR		WATER FACTOR	
CASING CORR. FACTOR			
OPERATOR	WALKER		
WITNESS	YAGER		

GAMMA RAY		INIT	1	2	3	4	5	6
DEPTH	FROM	2.5'						
	TO							
	NO. OF FT.	171'						
FULL SCALE CPS		100						
TIME CONST.								
CHART RATIO								
LOGGING SPEED								

DENSITY								
DEPTH	FROM							
	TO							
	NO. OF FT.							
FULL SCALE CPS								
TIME CONST.								
CHART RATIO								
LOGGING SPEED								

RESISTANCE								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								
SPONTANEOUS POTENTIAL								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								

79 D 2
8 log

BLACK - DOWN
RED - UP

25'

CASING

LAM. SILTSTONE

32.5

68.5'

QUARTZ VEINING

PHYLLITIC SILTSTONE

128.5'

171.1' END OF HOLE

INSTRUMENT
MOUNT SOPRIS 1000

PRINTED IN U.S.A.

MOUNT SOPRIS INSTRUMENT CO., DELTA, COLORADO, U.S.A.

CHART NO. BP-10

APP / 79 D3

PAN OCEAN OIL LTD.

CALGARY — ALBERTA

PROJECT:	
HOLE:	79 D3
COMPANY:	
DATE:	
COUNTY:	STATE:
SEC:	TWP: RANGE:

DRILL HOLE DATA

DEPTH DRILLED		COLLAR ELEV.	
DEPTH LOGGED	135	BIT SIZE	
CASING DEPTH		CASING WALL THICK	
TIME SINCE CIRC.		DRILL PIPE THICK	
TYPE FLUID		FLUID LEVEL	
OPEN HOLE	THRU PIPE		THRU CASING
PROBE NO.		UNIT NO.	
K-FACTOR		DEAD TIME	
TIME ON		TIME OFF	
CALIBRATOR NO.		CALIBRATION VALUE	
PIPE CORR. FACTOR		WATER FACTOR	
CASING CORR. FACTOR			
OPERATOR			
WITNESS			

GAMMA RAY		INIT	1	2	3	4	5	6
DEPTH	FROM							
	TO							
	NO. OF FT.							
FULL SCALE CPS								
TIME CONST.								
CHART RATIO								
LOGGING SPEED								

DENSITY								
DEPTH	FROM							
	TO							
	NO. OF FT.							
FULL SCALE CPS								
TIME CONST.								
CHART RATIO								
LOGGING SPEED								

RESISTANCE								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								
SPONTANEOUS POTENTIAL								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								

MOUNT SOPRIS INSTRUMENT CO., DELTA, COLORADO, U.S.A.

79 D3
K beg
10 cps / in start
Black dominant

CASING

-20

-40

94 CPS

BLEACHED
LAM. SILTSTONE

-80

LAM. SILTSTONE

-92.5 base

-100

106

PRINTED IN U.S.A.

-120

120 FT

-135.5

135.5

INSTRUMENT
MOUNT SOPRIS 1000

CHART NO. BP-10

APP 1 - 79 D4

PAN OCEAN OIL LTD.

CALGARY ALBERTA

PROJECT:	FAIRCHILD
HOLE:	79 D4
COMPANY:	PAN OCEAN
DATE:	JUNE 12. 1979
COUNTY:	STATE: YUKON
SEC:	TWP: RANGE:

DRILL HOLE DATA

DEPTH DRILLED	159'	COLLAR ELEV.	
DEPTH LOGGED		BIT SIZE	
CASING DEPTH	8'	CASING WALL THICK	
TIME SINCE CIRC.		DRILL PIPE THICK	
TYPE FLUID		FLUID LEVEL	
OPEN HOLE	THRU PIPE X	THRU CASING X	
PROBE NO.	228	UNIT NO.	
K-FACTOR		DEAD TIME	
TIME ON		TIME OFF	
CALIBRATOR NO.		CALIBRATION VALUE	
PIPE CORR. FACTOR		WATER FACTOR	
CASING CORR. FACTOR			
OPERATOR	R MAZUR		
WITNESS	P. WALKER		

GAMMA RAY		INIT	1	2	3	4	5	6
DEPTH	FROM	2.5						
	TO							
	NO. OF FT.	156						
FULL SCALE CPS		100						
TIME CONST.								
CHART RATIO								
LOGGING SPEED								

DENSITY								
DEPTH	FROM							
	TO							
	NO. OF FT.							
FULL SCALE CPS								
TIME CONST.								
CHART RATIO								
LOGGING SPEED								

RESISTANCE								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								
SPONTANEOUS POTENTIAL								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								

CHART NO.

BLACK = DOWN HOLE
RED = UP HOLE

79 D4

2.5'

CASING

32.5

LAMINATED SILTSTONE

62.5

QUARTZ VEIN

92.5

PHYLLITIC SILTSTONE

122.5 FT

152.5

157 FT

INSTRUMENT
MOUNT SOPRIS 1000

PRINTED IN U.S.A.

MOUNT SOPRIS INSTRUMENT CO., DELTA, COLORADO, U.S.A.

CHART NO. BP-10

APP 1 79 D5

PAN OCEAN OIL LTD.

CALGARY ALBERTA

PROJECT:	FAIRCHILD
HOLE:	79 D5
COMPANY:	PAN OCEAN LTD
DATE:	15 JUNE 79
COUNTY:	STATE: YUKON
SEC:	TWP: RANGE:

DRILL HOLE DATA

DEPTH DRILLED	176'	COLLAR ELEV.	
DEPTH LOGGED	167.2	BIT SIZE	
CASING DEPTH	16'	CASING WALL THICK	
TIME SINCE CIRC.		DRILL PIPE THICK	
TYPE FLUID		FLUID LEVEL	
OPEN HOLE		THRU PIPE X	THRU CASING X
PROBE NO.	228	UNIT NO.	
K-FACTOR		DEAD TIME	
TIME ON		TIME OFF	
CALIBRATOR NO.		CALIBRATION VALUE	
PIPE CORR. FACTOR		WATER FACTOR	
CASING CORR. FACTOR			
OPERATOR	PETER WALKER		
WITNESS	R. J. MAZUR		

GAMMA RAY		INIT	1	2	3	4	5	6
DEPTH	FROM	2.5						
	TO							
	NO. OF FT.	167.2						
FULL SCALE CPS		100						
TIME CONST.								
CHART RATIO								
LOGGING SPEED								

DENSITY								
DEPTH	FROM							
	TO							
	NO. OF FT.							
FULL SCALE CPS								
TIME CONST.								
CHART RATIO								
LOGGING SPEED								

RESISTANCE								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								

SPONTANEOUS POTENTIAL								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								

D-79-5
RED = DOWN HOLE
BLACK = UP HOLE - slow

2.5

CASING

LAM. SILTST.

76 cps

67 cps

BLEACH. LAM. SILTST

50'

LAMINATED SILTST

QUARTZ VEIN

LAMINAT SILTST

110 ft

FOLDED ZONE

PHYLLITIC SILTSTONE

167.2'

INSTRUMENT
MOUNT SOPRIS 1000

PRINTED IN U.S.A.

MOUNT SOPRIS INSTRUMENT CO., DELTA, COLORADO, U.S.A.

CHART NO. BP-10

APPL-1926

PAN OCEAN OIL LTD.
CALGARY ALBERTA

PROJECT:	FAIRCHILD
HOLE:	79 D 6
COMPANY:	PAN OCEAN
DATE:	30 JUNE 79
COUNTY:	
STATE:	
SEC:	TWP: RANGE:

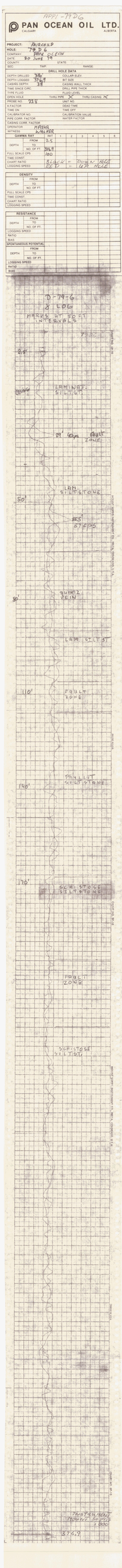
DRILL HOLE DATA

DEPTH DRILLED	3869	COLLAR ELEV	
DEPTH LOGGED	3869	BIT SIZE	
CASING DEPTH	38	CASING WALL THICK	
TIME SINCE CIRC		DRILL PIPE THICK	
TYPE FLUID		FLUID LEVEL	
OPEN HOLE		THRU PIPE X	THRU CASING X
PROBE NO.	724	UNIT NO.	
K.FACTOR		DEAD TIME	
TIME ON		TIME OFF	
CALIBRATOR NO.		CALIBRATION VALUE	
PIPE CORR. FACTOR		WATER FACTOR	
CASING CORR. FACTOR			
OPERATOR	MESWA		
WITNESS	WALKER		

GAMMA RAY		UNIT	1	2	3	4	5	6
DEPTH	FROM	2.5						
	TO	BACK =	ZONAN MED					
	NO. OF FT.	3869						
FULL SCALE CPS		100						
TIME CONST.								
CHART RATIO		2"	=	10'	MED			
LOGGING SPEED		30	=	60'	HOLE			

DENSITY								
DEPTH	FROM							
	TO							
	NO. OF FT.							
FULL SCALE CPS								
TIME CONST.								
CHART RATIO								
LOGGING SPEED								

RESISTANCE								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								
SPONTANEOUS POTENTIAL								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								



App I-D 79-7

PAN OCEAN OIL LTD

CALGARY ALBERTA

PROJECT:	FAIRCHILD
HOLE:	79-7
COMPANY:	PAN OCEAN
DATE:	
COUNTY:	STATE: YUKON
SEC:	TWP: RANGE:

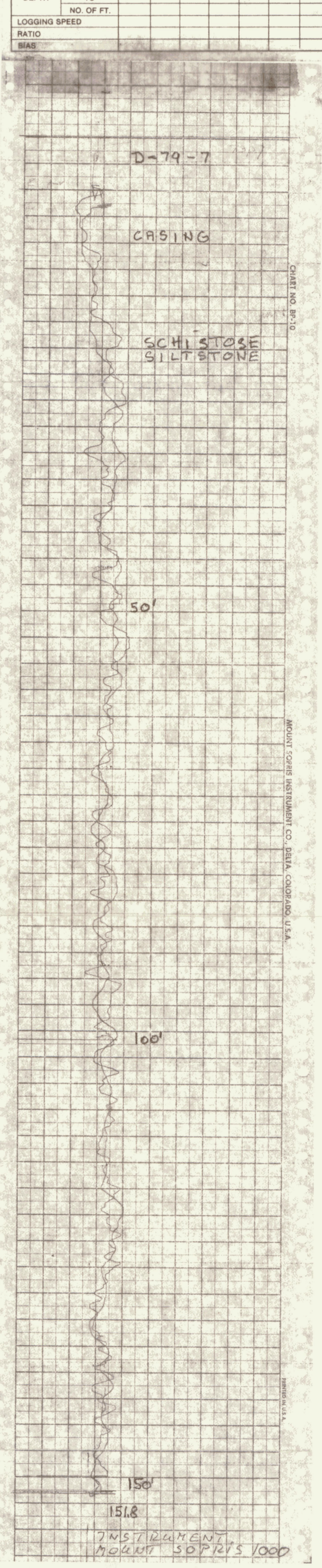
DRILL HOLE DATA

DEPTH DRILLED	153.5	COLLAR ELEV.	
DEPTH LOGGED	151.8'	BIT SIZE	
CASING DEPTH	18'	CASING WALL THICK	
TIME SINCE CIRC.		DRILL PIPE THICK	
TYPE FLUID		FLUID LEVEL	
OPEN HOLE		THRU PIPE X	THRU CASING X
PROBE NO.	228	UNIT NO.	
K-FACTOR		DEAD TIME	
TIME ON		TIME OFF	
CALIBRATOR NO.		CALIBRATION VALUE	
PIPE CORR. FACTOR		WATER FACTOR	
CASING CORR. FACTOR			
OPERATOR	A. CHAN		
WITNESS			

GAMMA RAY		INIT	1	2	3	4	5	6
DEPTH	FROM	2.5'						
	TO							
	NO. OF FT.	151.8						
FULL SCALE CPS		100						
TIME CONST.								
CHART RATIO								
LOGGING SPEED		BLACK = DOWN HOLE RED = UP HOLE						

DENSITY								
DEPTH	FROM							
	TO							
	NO. OF FT.							
FULL SCALE CPS								
TIME CONST.								
CHART RATIO								
LOGGING SPEED								

RESISTANCE								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								
SPONTANEOUS POTENTIAL								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								



APP 1 D 79-8

PAN OCEAN OIL LTD.

CALGARY ALBERTA

PROJECT:	FAIRCHILD
HOLE:	D-79-8
COMPANY:	PAN OCEAN
DATE:	30 JUNE
COUNTY:	STATE: YUKON
SEC:	TWP: RANGE:

DRILL HOLE DATA

DEPTH DRILLED	142'	COLLAR ELEV.	
DEPTH LOGGED		BIT SIZE	
CASING DEPTH	28'	CASING WALL THICK	
TIME SINCE CIRC.		DRILL PIPE THICK	
TYPE FLUID		FLUID LEVEL	
OPEN HOLE	THRU PIPE X	THRU CASING X	
PROBE NO.		UNIT NO.	
K-FACTOR		DEAD TIME	
TIME ON		TIME OFF	
CALIBRATOR NO.		CALIBRATION VALUE	
PIPE CORR. FACTOR		WATER FACTOR	
CASING CORR. FACTOR			
OPERATOR	WALKER		
WITNESS	A CHAN		

GAMMA RAY		INIT	1	2	3	4	5	6
DEPTH	FROM	78M						
	TO							
	NO. OF FT.	42.25M						
FULL SCALE CPS		100						
TIME CONST.								
CHART RATIO		RED=						
LOGGING SPEED				IN HOLE FAST				

DENSITY								
DEPTH	FROM							
	TO							
	NO. OF FT.							
FULL SCALE CPS								
TIME CONST.								
CHART RATIO								
LOGGING SPEED								

RESISTANCE								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								
SPONTANEOUS POTENTIAL								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								

1CM = 1M D-79-8

38M — 78M

SCHISTOSE SILTSTONE

10M

20M

PRINTED

40M

END 42.25M

INSTRUMENT

MOUNT SOPRIS 1000

MOUNT SOPRIS INSTRUMENT CO., DELTA, COLORADO, U.S.A.

PRINTED IN U.S.A.

CHART NO. BP-10

APP 1 - D 79-9

PAN OCEAN OIL LTD.

CALGARY ALBERTA

PROJECT:	FAIRCHILD
HOLE:	D-79-9
COMPANY:	PAN OCEAN
DATE:	JULY 6/79
COUNTY:	STATE:
SEC:	TWP: RANGE:

DRILL HOLE DATA

DEPTH DRILLED	201'	COLLAR ELEV.	
DEPTH LOGGED	85.1 M	BIT SIZE	
CASING DEPTH	8'	CASING WALL THICK	
TIME SINCE CIRC.		DRILL PIPE THICK	
TYPE FLUID		FLUID LEVEL	
OPEN HOLE	THRU PIPE	THRU CASING	X
PROBE NO.	361	UNIT NO.	
K-FACTOR		DEAD TIME	
TIME ON		TIME OFF	
CALIBRATOR NO.		CALIBRATION VALUE	
PIPE CORR. FACTOR		WATER FACTOR	
CASING CORR. FACTOR			
OPERATOR			
WITNESS			

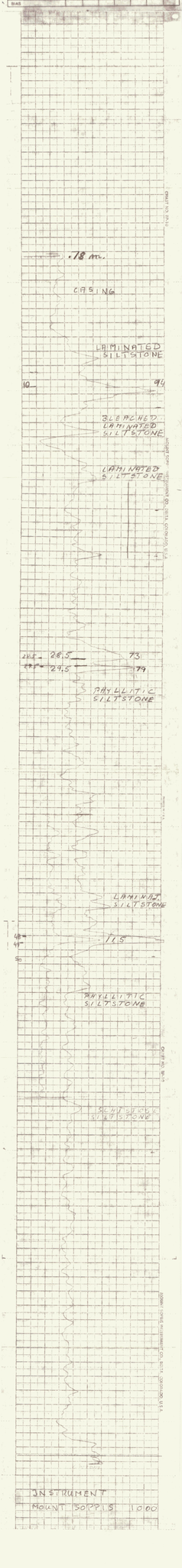
GAMMA RAY		INIT	1	2	3	4	5	6
DEPTH	FROM	.78M		40				
	TO							
	NO. OF FT.	85.1M		60				
FULL SCALE CPS		100'		200				
TIME CONST.								
CHART RATIO		RED		BLACK				
LOGGING SPEED	TIME			6.50 MIN				

UP HOLE

DENSITY		
DEPTH	FROM	MARKS AT 10 METER
	TO	
	NO. OF FT.	MULTIPLES
FULL SCALE CPS		
TIME CONST.		
CHART RATIO		
LOGGING SPEED		

RESISTANCE		
DEPTH	FROM	
	TO	
	NO. OF FT.	
LOGGING SPEED		
RATIO		
BIAS		

SPONTANEOUS POTENTIAL		
DEPTH	FROM	
	TO	
	NO. OF FT.	
LOGGING SPEED		
RATIO		
BIAS		



APP 1 - 79D10

PAN OCEAN OIL LTD.

CALGARY ALBERTA

PROJECT:	FAIRCHILD
HOLE:	79D10
COMPANY:	PAN-OCEAN
DATE:	14 JULY 1979
COUNTY:	STATE: YUKON
SEC:	TWP: RANGE:

DRILL HOLE DATA

DEPTH DRILLED	3441	COLLAR ELEV.	
DEPTH LOGGED	1046M	BIT SIZE	
CASING DEPTH		CASING WALL THICK	
TIME SINCE CIRC.		DRILL PIPE THICK	
TYPE FLUID		FLUID LEVEL	
OPEN HOLE	THRU PIPE	THRU CASING	
PROBE NO.		UNIT NO.	
K.FACTOR		DEAD TIME	
TIME ON		TIME OFF	
CALIBRATOR NO.		CALIBRATION VALUE	
PIPE CORR. FACTOR		WATER FACTOR	
CASING CORR. FACTOR			
OPERATOR	WALKER		
WITNESS	CHAN		

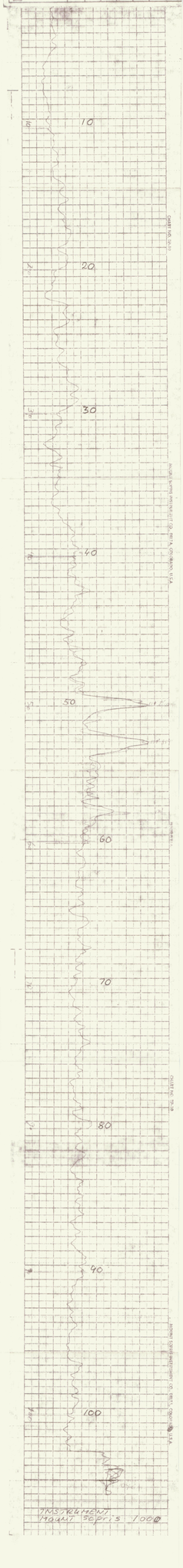
GAMMA RAY		INIT	1	2	3	4	5	6
DEPTH	FROM	78		60				
	TO							
	NO. OF FT.	1046M		40				
FULL SCALE CPS		60		100				
TIME CONST.								
CHART RATIO								
LOGGING SPEED								

TASSEC = 10 METER

DENSITY								
DEPTH	FROM							
	TO							
	NO. OF FT.							
FULL SCALE CPS								
TIME CONST.								
CHART RATIO								
LOGGING SPEED								

RESISTANCE								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								

SPONTANEOUS POTENTIAL								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								



APD 1 - 79-D-11

PAN OCEAN OIL LTD.
CALGARY — ALBERTA

PROJECT:	FAIRCHILD
HOLE:	79-D-11
COMPANY:	PAN OCEAN
DATE:	20 JULY 79
COUNTY:	STATE: YUKON
SEC:	TWP: RANGE:

DRILL HOLE DATA

DEPTH DRILLED	285.5	COLLAR ELEV.	
DEPTH LOGGED	85.6 M	BIT SIZE	
CASING DEPTH	38	CASING WALL THICK.	
TIME SINCE CIRC.		DRILL PIPE THICK.	
TYPE FLUID		FLUID LEVEL	
OPEN HOLE		THRU PIPE ✓	THRU CASING ✗
PROBE NO.		UNIT NO.	
K FACTOR		DEAD TIME	
TIME ON		TIME OFF	
CALIBRATOR NO.		CALIBRATION VALUE	
PIPE CORR. FACTOR		WATER FACTOR	
CASING CORR. FACTOR			
OPERATOR			
WITNESS			

GAMMA RAY		INIT	1	2	3	4	5	6
DEPTH	FROM							
	TO							
	NO. OF FT.	85.6M						
FULL SCALE CPS		60						
TIME CONST.								
CHART RATIO								
LOGGING SPEED								

DENSITY								
DEPTH	FROM							
	TO							
	NO. OF FT.							
FULL SCALE CPS								
RATIO								
CHART RATIO								
LOGGING SPEED								

RESISTANCE								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
BIAS								

SPONTANEOUS POTENTIAL								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								

79-D-11

CASING

10M

20M

30M

LAMINATED SILTSTONE

40M

50M

PHYLLITIC SILTSTONE

60

70M

80M

85.6M

INSTRUMENT

MOUNT SOFFITS 1000

APP 1-79D-12

PAN OCEAN OIL LTD.

CALGARY ALBERTA

PROJECT:	FAIRCHILD
HOLE:	D79-12
COMPANY:	
DATE:	JUN 26/79
COUNTY:	, STATE:
SEC:	TWP: RANGE:

DRILL HOLE DATA

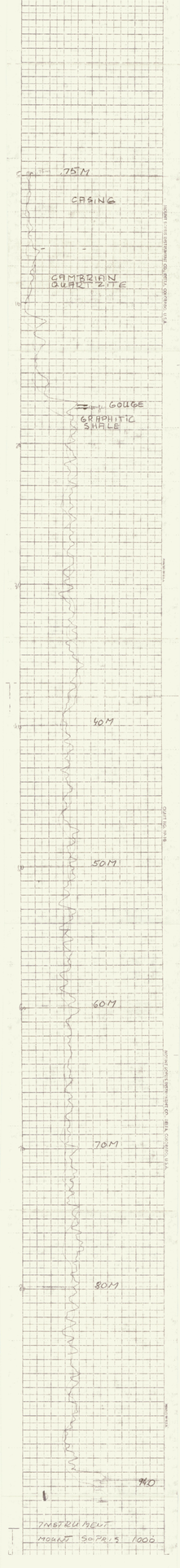
DEPTH DRILLED	311	COLLAR ELEV.	
DEPTH LOGGED	308 94M	BIT SIZE	
CASING DEPTH	20	CASING WALL THICK	
TIME SINCE CIRC.	REDUP	DRILL PIPE THICK	
TYPE FLUID	BLACK DOWN	FLUID LEVEL	
OPEN HOLE	THRU PIPE X	THRU CASING X	
PROBE NO.	212	UNIT NO.	28
K FACTOR		DEAD TIME	
TIME ON		TIME OFF	
CALIBRATOR NO.		CALIBRATION VALUE	
PIPE CORR. FACTOR		WATER FACTOR	
CASING CORR. FACTOR			
OPERATOR	WALKER		
WITNESS	FABBRO		

GAMMA RAY		INIT	1	2	3	4	5	6
DEPTH	FROM							
	TO							
	NO. OF FT.							
FULL SCALE CPS		100 Kilocps						
TIME CONST.								
CHART RATIO								
LOGGING SPEED								

DENSITY								
DEPTH	FROM							
	TO							
	NO. OF FT.							
FULL SCALE CPS								
TIME CONST.								
CHART RATIO								
LOGGING SPEED								

RESISTANCE								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								

CONTAINEOUS POTENTIAL								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								



APP 1 79-D 13

PAN OCEAN OIL LTD.

CALGARY ALBERTA

PROJECT:	
HOLE:	D-79-13
COMPANY:	
DATE:	July 30/79
COUNTY:	STATE:
SEC:	TWP: RANGE:

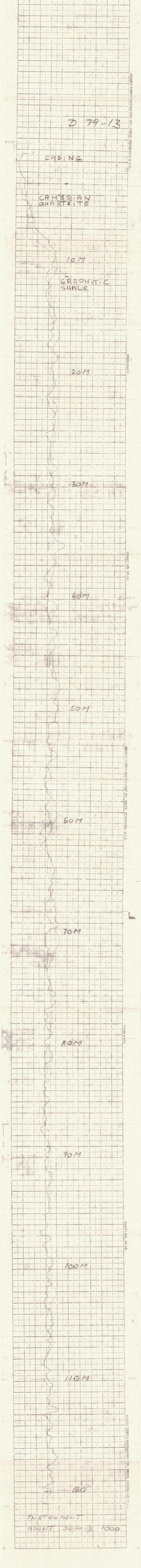
DRILL HOLE DATA

DEPTH DRILLED	397	COLLAR ELEV.	
DEPTH LOGGED		BIT SIZE	
CASING DEPTH	10'	CASING WALL THICK	
TIME SINCE CIRC.		DRILL PIPE THICK	
TYPE FLUID		FLUID LEVEL	
OPEN HOLE	THRU PIPE ✓	THRU CASING ✗	
PROBE NO.	212	UNIT NO.	
K FACTOR		DEAD TIME	
TIME ON		TIME OFF	
CALIBRATOR NO.		CALIBRATION VALUE	
PIPE CORR. FACTOR		WATER FACTOR	
CASING CORR. FACTOR			
OPERATOR	RJMAZUR		
WITNESS	BEATON		

GAMMA RAY		INIT	1	2	3	4	5	6
DEPTH	FROM							
	TO							
	NO. OF FT.							
FULL SCALE CPS								
TIME CONST.								
CHART RATIO								
LOGGING SPEED								

DENSITY								
DEPTH	FROM							
	TO							
	NO. OF FT.							
FULL SCALE CPS								
TIME CONST.								
CHART RATIO								
LOGGING SPEED								

RESISTANCE								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								
SPONTANEOUS POTENTIAL								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								



APPT - 79 D 14

PAN OCEAN OIL LTD.

CALGARY ALBERTA

PROJECT:	FAIRCHILD
HOLE:	79-D-14
COMPANY:	PAN OCEAN
DATE:	AUGUST 4 1979
COUNTY:	STATE: YUKON
SEC:	TWP: RANGE:

DRILL HOLE DATA

DEPTH DRILLED	265'	COLLAR ELEV.	
DEPTH LOGGED	260.4'	BIT SIZE	
CASING DEPTH	152'	CASING WALL THICK	
TIME SINCE CIRC.		DRILL PIPE THICK	
TYPE FLUID		FLUID LEVEL	
OPEN HOLE		THRU PIPE X	THRU CASING X
PROBE NO.	361	UNIT NO.	
K FACTOR		DEAD TIME	
TIME ON		TIME OFF	
CALIBRATOR NO.		CALIBRATION VALUE	
PIPE CORR. FACTOR		WATER FACTOR	
CASING CORR. FACTOR			
OPERATOR	WALKER		
WITNESS	CHAN		

GAMMA RAY		INIT	1	2	3	4	5	6
DEPTH	FROM	25'	98	103				
	TO							
	NO. OF FT.	98	103	260.4				
FULL SCALE CPS		100	100	100				
TIME CONST.								
CHART RATIO								
LOGGING SPEED								

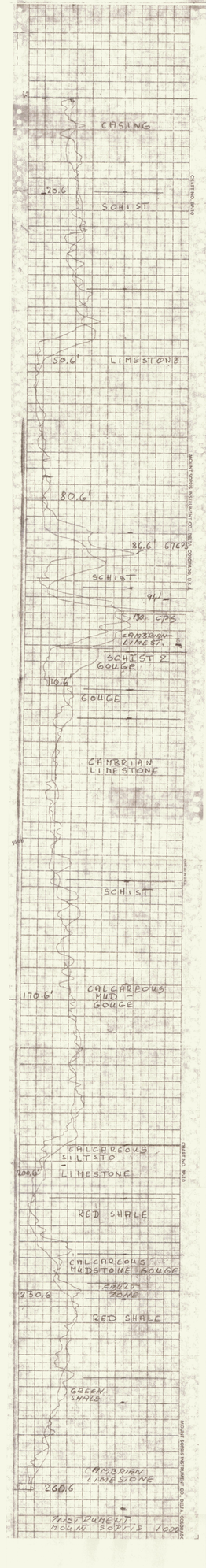
BLACK = DOWN HOLE
RED = UP HOLE - 25 MINUTES FOR 260.5 FT

DENSITY		
DEPTH	FROM	
	TO	NOTE TO ALL DEPTHS ADD 1.7 FEET
	NO. OF FT.	
FULL SCALE CPS		
TIME CONST.		
CHART RATIO		
LOGGING SPEED		

DEPTH SCALE 1cm = 3 Ft

RESISTANCE		
DEPTH	FROM	
	TO	
	NO. OF FT.	
LOGGING SPEED		
RATIO		
BIAS		

SPONTANEOUS POTENTIAL		
DEPTH	FROM	
	TO	
	NO. OF FT.	
LOGGING SPEED		
RATIO		
BIAS		



APRIL 5-7-15

PAN OCEAN OIL LTD.

CALGARY ALBERTA

PROJECT [illegible]
HOLE [illegible]
COMPANY
DATE [illegible]
COUNTY STATE
SEC. TWP. RANGE

DRILL HOLE DATA

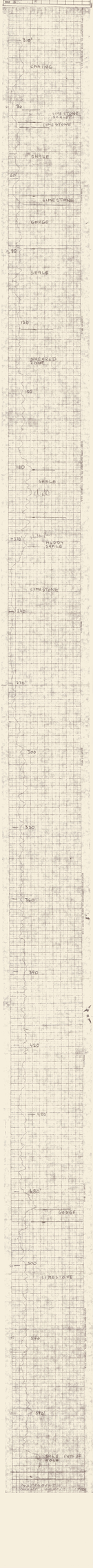
DEPTH DRILLED	[illegible]	COLLAR ELEV.	
DEPTH LOGGED	[illegible]	BIT SIZE	
CASING DEPTH	[illegible]	CASING WALL THICK	
TIME SINCE CIRC.	[illegible]	DRILL PIPE THICK	
TIME FLUID		FLUID LEVEL	
OPEN HOLE		THRU PIPE	THRU CASING
PRESS. NO.	[illegible]	UNIT NO.	
K FACTOR		DEAD TIME	
TIME ON		TIME OFF	
CALIBRATOR NO.		CALIBRATION VALUE	
PIPE CORR. FACTOR		WATER FACTOR	
CASING CORR. FACTOR			
OPERATOR	[illegible]		
WITNESS			

GAMMA RAY		UNIT	1	2	3	4	5	6
DEPTH	FROM	[illegible]						
	TO							
	NO. OF FT.	[illegible]						
FULL SCALE CPS		[illegible]						
TIME CONST.								
CHART RATIO								
LOGGING SPEED		[illegible]						

DENSITY								
DEPTH	FROM							
	TO							
	NO. OF FT.							
FULL SCALE CPS								
TIME CONST.								
CHART RATIO								
LOGGING SPEED								

RESISTANCE								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								

SPONTANEOUS POTENTIAL								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								



APP I D 79-16

PAN OCEAN OIL LTD.

CALGARY ALBERTA

PROJECT:	FAIRCHILD
HOLE:	D 79-16
COMPANY:	PAN OCEAN
DATE:	AUG 21 1979
COUNTY:	STATE:
SEC:	TWP: RANGE:

DRILL HOLE DATA

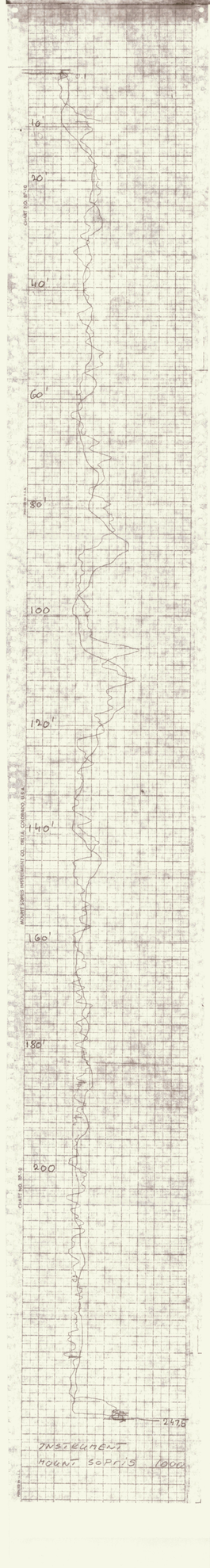
DEPTH DRILLED		COLLAR ELEV.	
DEPTH LOGGED		BIT SIZE	
CASING DEPTH	HW 10	CASING WALL THICK	
TIME SINCE CIRC.		DRILL PIPE THICK	
TYPE FLUID		FLUID LEVEL	
OPEN HOLE	THRU PIPE	THRU CASING	
PROBE NO.		UNIT NO.	
K FACTOR		DEAD TIME	
TIME ON		TIME OFF	
CALIBRATOR NO.		CALIBRATION VALUE	
PIPE CORR. FACTOR		WATER FACTOR	
CASING CORR. FACTOR			
OPERATOR	CHAN		
WITNESS	FAIRBRO		

GAMMA RAY		INIT	1	2	3	4	5	6
DEPTH	FROM	.1						
	TO	2475						
	NO. OF FT.	2425						
FULL SCALE CPS		100						
TIME CONST.								
CHART RATIO		GOING DOWN 7 MIN					BLACK	
LOGGING SPEED		GOING UP					RED	

DENSITY								
DEPTH	FROM							
	TO							
	NO. OF FT.							
FULL SCALE CPS								
TIME CONST.								
CHART RATIO								
LOGGING SPEED								

RESISTANCE								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								

SPONTANEOUS POTENTIAL								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								



APP 1 D-79-17

PAN OCEAN OIL LTD.

CALGARY ALBERTA

PROJECT:	FAIRCHILD
HOLE:	D 79-17
COMPANY:	
DATE:	BLACK DOWN SEP. 12 1979
COUNTY:	RED UP STATE:
SEC:	TWP: RANGE:

DRILL HOLE DATA

DEPTH DRILLED		COLLAR ELEV.	
DEPTH LOGGED	308	BIT SIZE	
CASING DEPTH	HW 12	CASING WALL THICK	
TIME SINCE CIRC.	HQ 2721	DRILL PIPE THICK	
TYPE FLUID		FLUID LEVEL	
OPEN HOLE	THRU PIPE X	THRU CASING X	
PROBE NO.		UNIT NO.	
K-FACTOR		DEAD TIME	
TIME ON		TIME OFF	
CALIBRATOR NO.		CALIBRATION VALUE	
PIPE CORR. FACTOR		WATER FACTOR	
CASING CORR. FACTOR			
OPERATOR	CHAN		
WITNESS	FATSBRO		

GAMMA RAY		INIT	1	2	3	4	5	6
DEPTH	FROM	0						
	TO	308						
	NO. OF FT.	308						
FULL SCALE CPS								
TIME CONST.								
CHART RATIO								
LOGGING ~~SPEED~~		TIME DOWN 5 MIN BLACK 3 MIN RED TOTAL 23 MIN						

DENSITY								
DEPTH	FROM							
	TO							
	NO. OF FT.							
FULL SCALE CPS								
TIME CONST.								
CHART RATIO								
LOGGING SPEED								

RESISTANCE								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								
SPONTANEOUS POTENTIAL								
DEPTH	FROM							
	TO							
	NO. OF FT.							
LOGGING SPEED								
RATIO								
BIAS								



APPENDIX 2

ROCK ASSAYS
AND
GEOCHEMICAL ANALYSES

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 48273

TO: Pamicon Developments Ltd.
208 - 850 W. Hastings St.
Vancouver, B.C.
V6B 1P1

INVOICE NO. 31113

RECEIVED July 9/79

ANALYSED July 16/79

ATTN: ROCKS
CC: Mayo

SAMPLE NO. :	PPM U	PPM Th	PPB Au
024	2.0	To	<10
025	165	Follow.	<10
032	4.0		<10
033	5.0		
034	4.5		
035	6.5		<10
036	4.5		
037	44		
038	6.5		
039	4.5		
040	2.0		
041	3.0		
042	4.5		
043	1.0		
044	42		
045	10.0		
046	7.5		
047	7.0		
058	2.0		
059	4.0		
060	4.5		
061	7.0		
062	2.0		
064	2.0		
065	1.0		
066	0.5		
067	2.5		
068	1.0		
069	1.5		
070	3.0		
071	13.5		
072	22.5		
073	3.5		
074	3.0		
075	25		
076	5.0		
077	3.0		
078	4.0		
079	2.0		
080	3.0		

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: Hart Biddle

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 48274

TO: Pamicon Developments Ltd.
208 - 850 W. Hastings St.
Vancouver, B.C.
V6B 1P1

INVOICE NO. 31113

RECEIVED July 9/79

ANALYSED July 16/79

ATTN: ROCKS
CC: Mayo

SAMPLE NO. :	PPM U	PPM Th
081	4.0	To Follow.
082	2.0	
083	4.0	

CTA
MEMBER
CANADIAN TESTING
ASSOCIATION

CERTIFIED BY: Hawk Biddle

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 48272
INVOICE NO. 31113
RECEIVED July 9/79
ANALYSED July 16/79

TO: Pamicon Developments Ltd.
208 - 850 W. Hastings St.
Vancouver, B.C.
V6B 1P1

ATTN: SLUDGE CC: Mayo

SAMPLE NO. :	PPM U	PPM Th
D-79-1 001	2.0	To Follow.
002	2.0	
003	2.0	
004	2.0	
005	3.5	
006	5.5	
007	4.5	
008	5.5	
009	4.5	
010	3.5	
011	6.5	
012	8.5	
013	4.5	
014	6.5	
015	7.0	
016	5.5	
017	6.5	
018	5.5	
019	5.0	
020	4.0	
021	4.5	
022	4.0	
D-79-1 023	3.0	
D-79-3 048	3.0	
049	4.5	
050	6.5	
051	11.5	
052	6.0	
D-79-3 053	6.5	
D-79-5 063	4.0	
054	5.5	
055	5.0	
056	5.0	
057	6.5	
084	1.5	
085	3.5	
086	6.0	
087	3.0	
088	4.0	
089	2.5	
090	3.5	
D-79-5 091	3.0	

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: Hank Ficklin

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: 9[redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 65529

TO: Pamicon Developments Ltd.
208 - 850 W. Hastings St.
Vancouver, B.C.
V6B 1P1

INVOICE NO. 31207

RECEIVED July 9/79

ANALYSED July 19/79

ATTN: CC: Mayo

SAMPLE NO. :	% U_3O_8	% ThO_2	oz/ton Au
026	<0.001	To	<0.003
027	<0.001	Follow.	<0.003
028	<0.001		<0.003
029	<0.001		<0.003
030	0.001		<0.003
031	<0.001		<0.003

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 48272

TO: Pamicon Developments Ltd.
208 - 850 W. Hastings St.
Vancouver, B.C.
V6B 1P1

INVOICE NO. 31656

RECEIVED July 9/79

ANALYSED Aug. 6/79

ATTN: CC: Mayo SLUDGE

SAMPLE NO. :	PPM Th
D-79-1 001	21
002	38
003	39
004	19
005	24
006	17
007	31
008	23
009	15
010	14
011	29
012	27
013	17
014	16
015	34
016	17
017	23
018	23
019	31
020	21
021	16
022	24
D-79-1 023	28
D-79-3 048	19
049	21
050	22
051	22
052	12
D-79-3 053	15
D-79-5 063	16
054	26
055	16
056	13
057	14
084	9
085	12
086	10
087	6
088	7
089	4
090	7
D-79-5 091	5

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: Hart Biddle

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 48273
INVOICE NO. 31656
RECEIVED July 9/79
ANALYSED Aug. 6/79

TO: Pamicon Developments Ltd.
208 - 850 W. Hastings St.
Vancouver, B.C.
V6B 1P1

ATTN: CC: Mayo ROCKS

SAMPLE NO. :	PPM Th
024	16
025	24
032	13
033	16
034	26
035	48
036	16
037	430
038	73
039	35
040	13
041	14
042	14
043	12
044	600
045	73
046	65
047	20
058	21
059	14
060	29
061	16
062	15
064	9
065	16
066	21
067	13
068	8
069	5
070	4
071	16
072	10
073	10
074	<4
075	7
076	6
077	7
078	4
079	4
080	6

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: Hank Biddle

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted]8 984-0221
AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 48274

INVOICE NO. 31656

RECEIVED July 9/79

ANALYSED Aug. 6/79

TO: Pamicon Developments Ltd.
208 - 850 W. Hastings St.
Vancouver, B.C.
V6B 1P1

ATTN: CC: Mayo ROCKS

SAMPLE NO. :	PPM Th
081	7
082	6
083	8

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: Hart Biddle

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 65529

INVOICE NO. 31550

RECEIVED July 9/79

ANALYSED Aug. 1/79

TO: Pamicon Developments Ltd.
208 - 850 W. Hastings St.
Vancouver, B.C.
V6B 1P1

ATTN:

CC: Mayo

SAMPLE NO. :	% ThO_2
026	Nil
027	Nil
028	Trace
029	Trace
030	Trace
031	Nil

CTA MEMBER CANADIAN TESTING ASSOCIATION

B. Stewart

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE 604
TELEX: 043-52597

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 65639
INVOICE NO. 31377
RECEIVED July 18, 1979
ANALYSED July 25, 1979

TO: Pamicon Developments Ltd.,
208 - 850 W. Hastings Street,
Vancouver, B.C.
ATTN: V6B 1P1

c.c. Mayo

SAMPLE NO. :	% U_3O_8
92A	<0.001
92B	<0.001
93	<0.001
94	0.001
95A	0.002
95B	<0.001
96	0.004
97	0.001
98	<0.001
99A	0.001
99B	<0.001
100	<0.001
101A	0.001
101B	0.001
102	<0.001
103	<0.001
104A	<0.001
104B	<0.001
105	<0.001
106	<0.001
107A	<0.001
107B	<0.001
108	<0.001
109A	<0.001
109B	<0.001
110	0.002
111A	<0.001
111B	<0.001
112	<0.001
113	<0.001
114A	<0.001
114B	<0.001
115A	<0.001
115B	<0.001
116	<0.001
117	<0.001
118A	<0.002
118B	<0.001
119	0.001
120	0.001

CTA MEMBER CANADIAN TESTING ASSOCIATION

Glen Armanini
REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

212 BROOKSBANK AVE
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 65640

TO: Pamicon Developments Ltd.,
208 - 850 W. Hastings St.,
Vancouver, B.C.
ATTN: V6B 1P1

INVOICE NO. 31377

RECEIVED July 18, 1979

ANALYSED July 25, 1979

c.c. Mayo

SAMPLE NO. :	% U_3O_8
121	<0.001
122	0.001
123	0.001
124	<0.001
125	<0.001
126	<0.001

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 65641

TO: Pamicon Developments Ltd.,
208 - 850 W. Hastings St.,
Vancouver, B.C.
V6B 1P1

INVOICE NO. 31377

RECEIVED July 18, 1979

ANALYSED July 25, 1979

ATTN: Sludge c.c. Mayo

SAMPLE NO. :	% U_3O_8
127	0.002
128	0.003
129	0.002
130	<0.001
131	<0.001
132	<0.001
133	<0.001
134	<0.001
135	<0.001
136	<0.001
137	<0.001
138	0.001
139	<0.001
140	<0.001
141	<0.001
142	<0.001
143	<0.001
144	<0.001
145	<0.001
146	0.001
147	<0.001
148	<0.001
149	<0.001
150	0.001
151	<0.001
152	0.001
153	<0.001
154	0.001
155	<0.001
156	<0.001
157	<0.001

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: 9[redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 49507

TO: Pamicon Developments Ltd.,
208 - 850 W. Hastings St.,
Vancouver, B.C.
V6B 1P1

INVOICE NO. 32063

RECEIVED August 9, 1979

ATTN: SLUDGES
c.c. Mayo, Y.T.

ANALYSED August 22, 1979

SAMPLE NO. :	PPM U
188	1.5
189	1.0
190	1.5
191	1.5
192	1.5
193	1.5
194	1.5
195	1.5
196	1.5
197	1.5
198	5.5
199	2.5
200	3.0
201	2.0
202	1.5
203	1.5
204	1.5
205	1.5
206	1.5
207	3.0
208	1.5
209	2.0
210	5.5
159	2.0

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: Hart Biddle

DCG 12

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 50872

TO: Pamicon Developments Ltd.,
208 - 850 W. Hastings Street,
Vancouver, B. C.
V6B 1B1

INVOICE NO. 33073

RECEIVED September 28, 197

ATTN: C. C. Panocean Calgary WATERS

ANALYSED October 5, 1979

SAMPLE NO. :		PPB U
79 FDW	1	1.0
	2	0.8
	3	0.4
	4	0.2
	5	0.4
	6	0.2
	7	1.0
	8	3.2
	9	4.6
	10	8.4
	11	8.8
	12	2.8
	13	2.4
	14	2.4
	15	1.4
	16	2.0
	17	2.0
	18	2.4
	19	2.2
	20	2.4
	21	2.4
	22	2.4
	23	0.4
	24	0.2
	25A	2.2
	25B	0.2
	26	0.2
	27	0.2
	28 no sample	
	29	4.4
	30	3.4
79 FDW	??	2.0
79 FGW	1	10.2
	2	1.0
	3	55
	4	4.0
	5	1.0
	6	0.6
	7	1.0
	8	2.8

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: J. F. Machan

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 50873

INVOICE NO. 33073

RECEIVED September 28, 19

ANALYSED October 5, 1979

TO: Pamicon Developments Ltd.,
208 - 850 W. Hastings Street,
Vancouver, B. C.
V6B 1B1

ATTN: C. C. Panocean Calgary

WATERS

SAMPLE NO. :	PPB U
79 FGW 9	4.4
10	6.2
11	6.2
12	2.6
13	5.0
14	6.0
15	7.6
16	11.0
17	12.8
18	13.8
19	13.6
20	13.2
22	13.8
23	12.4
24	13.0
25	4.8
26	2.0
27	2.0
28	2.0
29	2.0
30	2.0
31	1.0
32	1.8
33	2.6
34	2.0
35	2.4
36	2.0
37	2.0
38	1.4
39	8.2
40	1.4
41	2.0
42	0.6
43	1.0
44	2.0
45	10.0
46	< 0.2
47	0.6
48	0.6
79 FGW 49	0.8

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: J. F. Richard

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 50874

INVOICE NO. 33073

RECEIVED September 28, 19

ANALYSED October 5, 1979

TO: Pamicon Developments Ltd.,
208 - 850 W. Hastings Street,
Vancouver, B. C.
V6B 1B1

ATTN: C. C. Panocean Calgary WATERS

SAMPLE NO. :	PPB U
79 FGW 50	1.6
51	0.8
52	0.8
54A	5.0
54B	4.4
55	6.2
56	8.2
57	7.0
58	6.8
59A	7.8
59B	8.2
61	9.0
62	8.4
63	10.2
64	9.6
66	9.4
67	9.0
68	9.2
69	9.4
79 FGW 70	9.4

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: J. F. McLaren.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 49950

TO: Pamicon Developments Ltd.,
208 - 850 W. Hastings St.,
Vancouver, B.C.
V6B 1P1

INVOICE NO. 32341

RECEIVED August 21, 1979

ATTN: WATERS
c.c. Mayo, Y.T.

ANALYSED August 31, 1979

SAMPLE NO. :	PPB U
79 FLW 100	2.6
101	17.4
103	7.4
105	0.6
107	1.8
109	1.4
111	0.8
113	0.4
115	1.4
117	0.8
119	0.4
121	0.6
122	1.0
123	0.4
124	1.2
125	0.8
126	0.4
127	1.2
128	0.6
129	0.6
130	1.2
131	0.8
132	1.4
133	0.4
135	1.2
137	0.4
138	1.8
79 FLW 139	1.6

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: Hart Biddle

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 50872

TO: Pamicon Developments Ltd.,
208 - 850 W. Hastings Street,
Vancouver, B. C.
V6B 1B1

INVOICE NO. 33073

RECEIVED September 28, 1979

ATTN: C. C. Panocean Calgary

WATERS

ANALYSED October 5, 1979

SAMPLE NO. :	PPB U
79 FDW 1	1.0
	0.8
3	0.4
4	0.2
5	0.4
6	0.2
7	1.0
8	3.2
9	4.6
10	8.4
11	8.8
12	2.8
13	2.4
14	2.4
15	1.4
16	2.0
17	2.0
18	2.4
19	2.2
20	2.4
21	2.4
22	2.4
23	0.4
24	0.2
25A	2.2
25B	0.2
26	0.2
27	0.2
28	no sample
29	4.4
30	3.4
79 FDW ??	2.0
79 FGW 1	10.2
2	1.0
3	55
4	4.0
5	1.0
6	0.6
7	1.0
8	2.8

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: D. G. Mitchell

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 50873

TO: Pamicon Developments Ltd.,
208 - 850 W. Hastings Street,
Vancouver, B. C.
ATTN: V6B 1B1

INVOICE NO. 330 3

RECEIVED September 28, 1979

ANALYSED October 5, 1979

C. C. Panocean Calgary — WATERS

SAMPLE NO. :	PPB U
79 FGW 9	4.4
10	6.2
11	6.2
12	2.6
13	5.0
14	6.0
15	7.6
16	11.0
17	12.8
18	13.8
19	13.6
20	13.2
22	13.8
23	12.4
24	13.0
25	4.8
26	2.0
27	2.0
28	2.0
29	2.0
30	2.0
31	1.0
32	1.8
33	2.6
34	2.0
35	2.4
36	2.0
37	2.0
38	1.4
39	8.2
40	1.4
41	2.0
42	0.6
43	1.0
44	2.0
45	10.0
46	< 0.2
47	0.6
48	0.6
79 FGW 49	0.8

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: D. F. Grabson

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 50874

INVOICE NO. 3307 3

RECEIVED September 28, 1979

ANALYSED October 5, 1979

TO: Pamicon Developments Ltd.,
208 - 850 W. Hastings Street,
Vancouver, B. C.
V6B 1B1

ATTN: C. C. Panocean Calgary

WATERS

SAMPLE NO. :	PPB U
79 FGW 50	1.6
	0.8
52	0.8
54A	5.0
54B	4.4
55	6.2
56	8.2
57	7.0
58	6.8
59A	7.8
59B	8.2
61	9.0
62	8.4
63	10.2
64	9.6
66	9.4
67	9.0
68	9.2
69	9.4
79 FGW 70	9.4

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: D. F. Matson

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: 9[redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 51545
INVOICE NO. 34022
RECEIVED Nov. 16/79
ANALYSED Nov. 26/79

TO: Pamicon Developments Ltd.
208 - 850 W. Hastings St.
Vancouver, B.C.
V6B 1P1

ATTN: CC. Pan Ocean

FLATS GRID
SEE FIG 23 in report.

SAMPLE NO. :	PPM U
0+00W 0+00N	4.0
0+40	2.0
0+80	2.0
1+20	20.0
0+00W 1+60N	3.0
0+80W 0+00N	5.0
0+40	38
0+80	25
1+20	2.0
0+80W 1+60N	2.0
1+60W 0+00N	1.5
0+40	5.0
0+80	5.0
1+20	4.0
1+60W 1+60N	2.5
2+00W 0+00W	1.5
2+40W 0+00N	1.5
0+40	1.5
0+80	2.5
1+20	1.5
2+40W 1+60N	2.5
3+20W 0+00N	2.5
0+40	2.5
0+80	1.5
1+20	3.0
3+20W 1+60N	3.0
4+00W 0+00N	2.0
0+40	3.0
0+80	4.0
1+20	3.0
4+00W 1+60N	2.0
4+80W 0+00N	3.0
0+40	3.0
0+80	2.0
1+20	10.5
4+80W 1+60N	2.0
5+60W 0+00N	4.0
0+40	2.0
0+80	4.5
5+60W 1+20N	2.5

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: J. F. Madsen

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 51546
INVOICE NO. 34022
RECEIVED Nov. 16/79
ANALYSED Nov. 26/79

TO: Pamicon Developments Ltd.
208 - 850 W. Hastings St.
Vancouver, B.C.
V6B 1P1

ATTN:

CC. Pan Ocean

SAMPLE NO. :	PPM U
5+60W 1+60N	2.5

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: A. J. Gordon

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 49760
INVOICE NO. 32058
RECEIVED Aug. 16/79
ANALYSED AUG. 21/79

TO: Pan Ocean Oil Ltd.
1050 Three Calgary Place
355 - 4th Ave., W
Calgary, Alta
ATTN: WATERS

CC. Mr. Jens Touborg ✓

SAMPLE NO. :	PPB U
79 FL-W-1	0.4
3	1.0
5	10.8
7	0.6
9	0.6
11	0.2
13	0.2
15	0.2
17	0.2
19	1.0
21	0.2
23	0.4
25	0.4
29	0.6
31	0.6
33	0.4
35	0.4
37	0.4
41	0.4
43	—
45	2.2
47	3.4
49	4.4
51	13.6
53	1.4
55	1.4
57	0.8
59	0.8
61	1.4
63	0.6
65	1.4
79 FL-W 67	0.8

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: Hart Biddle

APPENDIX 3

1) List of Personnel
2) Exploration Expeditures
3) Affidavit
4) Engineer's Qualifications

APPENDIX 3

PERSONNEL

FAIRCHILD URANIUM PROJECT

PAN OCEAN

Jens Touborg	Senior Geologist
Allan Chan	Geologist
Rick Mazur	Geologist
Peter Walker	Geophysicist

PAMICON DEVELOPMENTS LTD.

Bob Darney	Manager
Dave Yeager	Assistant Manager
Doug Fulcher	Camp Manager
Neil Debock	Prospector
Barry Gerling	Prospector
Al Fadbro	Prospector
Jae Cowie	Prospector
Kelly Kaye	Prospector
Jeff Hicks	Geophysical Operator
Yves Farges	Suveyor
Dave Runciman	Rod Man
Eric Luxton	Core Grabber
Randy Beaton	Geophysical Operator
Garry Cirotto	Cook
Merlin Legare	Cook
Tony Butchler	Cook

CARON DIAMOND DRILLING

Dave Huston	Foreman
	Runner
	Helper
	Runner
	Helper
Lee Harrin	Cat Skinner
Andy	Cat Skinner

TRANS NORTH TURBO AIR

Pete Kelly	Helicopter Pilot
Mike Mellon	Helicopter Engineer

APPENDIX 3

PAN OCEAN OIL LTD.
FAIRCHILD LAKE EXPENDITURES 1979

Uranium Exploration Costs - Deer Claims

CONTRACT PROJECT MANAGEMENT COSTS
(Incurred by Pamicon Developments Ltd. on behalf of Pan Ocean).

Salaries and Burden	$114,200.29	
Business Expense	30,616.31	
Aviation Expense	17,342.04	
Camp Expense	45,712.52	
Sub - Contract	44,999.16	
Other Expense	123,584.41	
Sub - Total		$376,454.73

COSTS INCURRED DIRECTLY BY PAN OCEAN OIL LTD.

Salaries and Burden	$115,480.31	
Business Expense	15,464.17	
Aviation Expense	247,239.52	
Materials and Supplies	28,246.74	
Drilling	419,190.24	
Logging	25,459.50	
Contract Services	7,886.00	
Geochemical Analysis	7,426.95	
Other Expenses	12,714.76	
Sub - Total		$879,108.19
Administrative Overhead (POOL)	$101,948.05	
		$101,948.05
Total		$1,357,510.97

DWB:lks
July 21/80

APPENDIX 3

CANADA) In the matter of an evaluation programme on the
) POOL 1-335
) OWL 1-20
) CLAM 1-40
) CLAM 41-54
) FROG 1-14
) FROG 17-30
) FROG 31-38
) FOX 1-36
) DEER 1-36
) MOSQUITO 1-24
) Minerals Claims

TO WIT) On behalf of PAN OCEAN OIL LTD.

I, Jens Friis Touborg, for PAN OCEAN OIL LTD. of 300 - Fifth Avenue S.W., Calgary, Alberta, do solemnly declare that an exploration programme consisting of diamond drilling, caterpillar trenching, detailed and regional geological mapping, radiometric investigation including spectrometer - scintillometer - and alpha nuclear radon gas surveys, grid magnetometer, VLF and CRANE EM surveys assaying of drill core and chip samples was carried out on the above stated Mineral Claims during the period May 20, 1979 and September 20, 1979 and that the expenses listed in Appendix "3" hereto attached and by this reference made a part hereof were incurred during the course of this work.

And I make this solemn declaration conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath and by virtue of the Canada Evidence Act.

Declared before me at the City of)
Calgary in the Province of Alberta)
this 24th day of July, 1980)

Jens F. Touborg

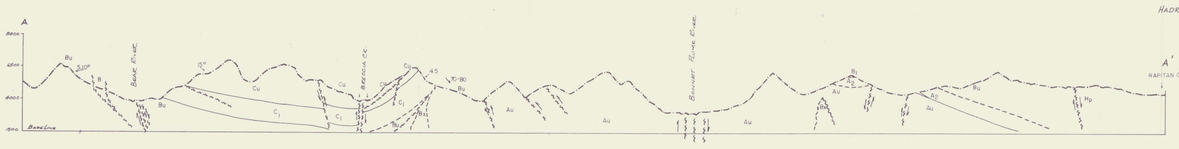
A Notary Public in and for the
Province of Alberta
My Commission expires on
the 31st day of December 1980
J. F. Coutts

Pan Ocean



CROSS SECTION A-A'

(LOOKING NORTH)



LEGEND

	Kd / Ka	Diabase, Kd - Diorite
ORDOVICIAN DEVONIAN	D	Carbonates
CAMBRIAN	€	Undivided clastics and Carbonates
		PINGUICULA GROUP
HADRYNIAN	Hp	Undivided clastics and Carbonates
	Bx	Breccia
		GILLESPIE GROUP
	Cu	Undivided orange weathering dolomite, grey-green weathering dolomite stromatolitic dolomite, oolitic dolomite occasional shale
	Ci	Interbedded orange weathering dolomite and dark siltstone, Transition from Wernecke Group to Gillespie Group
		WERNECKE GROUP
	Bu	Undivided sandstone and shale, occasional massive quartzites
	B2	Lightly pyritic quartzite Minor thin shale
	B1	Black shale, sandstone and shale interbeds
		FAIRCHILD GROUP
	Az	Interbedded brown weathering dolomite and black shale, white limestone marker bed, massively bedded rusty weathering pyritic shale,
	Au	Undivided grey weathering calcareous siltstone, interbedded siltstone and limestone, phyllite minor limestone and quartzite

HADRYNIAN

SYMBOLS

- Geological contact (defined, approx. assumed)
- Thrust Fault (defined, approx.)
- Fault (defined, assumed)
- Bedding attitude defined (G-gentle M-moderate S-steep)
- Bedding overturned
- Bedding tops unknown
- Anticlinal axis (arrow indicates plunge)
- Synclinal axis (arrow indicates plunge)
- Limits of unconsolidated glacial and alluvial deposits

TO ACCOMPANY REPORT NO. 40-8 BY J.F.T. R.J.M & A.K.C.
TO ACCOMPANY REPORT NO. 22-79 BY G.F.M.

MOUNTAINEER - PAN OCEAN JOINT VENTURE

PROJECT AREA
YUKON TERRITORY

REGIONAL GEOLOGY

SCALE IN KILOMETRES
3 2 1 0 1 2 3 4 5

PAMICON DEVELOPMENTS LIMITED

DRAWN:	PROJECT:	DATE:	FIGURE:
ALTAIR.	QUARTET-FAIRCHILD	DEC. 1977	3

Drawing No. 3

DRAWING NO. E-0949

MOSQUITO CREEK

MICA SCHIST COMPLEX

SCHIST MTN.

RIBBED SILTSTONE COMPLEX

DEFORMATION ZONE

COMPRESSOR DRAW

FISH SCALE SCHIST

RADON DRAW

ESCARPMENT

DEER 1 SHOWING

MAGNETIC HIGH UNKNOWN ORIGIN

EM CONDUCTOR

SILTSTONE ALTERATION SEGMENT

PHYLLITIC SILTSTONE

ALTERATION ZONE

MERL CLOUTIER DRAW

DEER 2 SHOWING

UNALTERED MICA SCHIST

BASE LINE

L 1+00 N

L 2+00 N

L 3+00 N

0+00

L 1+00 S

L 2+00 S

L 3+00 S

L 4+00 S

L 5+00 S

L 6+00 S

L 7+00 S

L 8+00 S

MATCH LINE

LEGEND

GEOLOGICAL

- € CAMBRIAN: LIMESTONES, ORTHOQUARTZITES
- BRECCIA DIATREMES:
- ALTERATION ZONES, ASSOCIATED WITH BRECCIAS
- (2) TO COMPRESSOR DRAW, FISH SCALE BELT
- (1) DEER I ZONE, SILTSTONE ALTERATION SEGMENT
- PHYLLITIC SILTSTONE
- DYBASE DYKES
- QUARTZ LENSES
- QUARTET GROUP: BLACK SHALES INCLUDING HALLOWEEN SEGMENT ORANGE DOLOMITE HORIZONS IN BLACK SHALE
- FAIRCHILD GROUP: MICA SCHIST COMPLEXES
- RIBBED SILTSTONE COMPLEXES
- LITHOLOGICAL CONTACTS

GEOPHYSICS AND GEOCHEMISTRY

- SPECTROMETER U/TH RATIOS
- ALPHANUCLEAR RADON ANOMALIES
- URANIUM IN H_2O IN ppb
- URANIUM IN STREAM SEDIMENTS IN ppm
- EM CONDUCTOR
- MAGNETIC TREND

SYMBOLS

- STREAM, SHOWING FLOW DIRECTION
- DEER FLATS ESCARPMENT

Figure 4

EAST SHEET

m 50 0 50 100 150 200 250 m

TO ACCOMPANY REPORT NO. 4-80 BY J.F.T., R.J.M. & A.K.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

COMPILATION

DEER, SOUTH DEER, WEST DEER & FLATS GRID AREA

FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
APRIL '80	1: 2 500	106C	E-0949

DP468A0P00

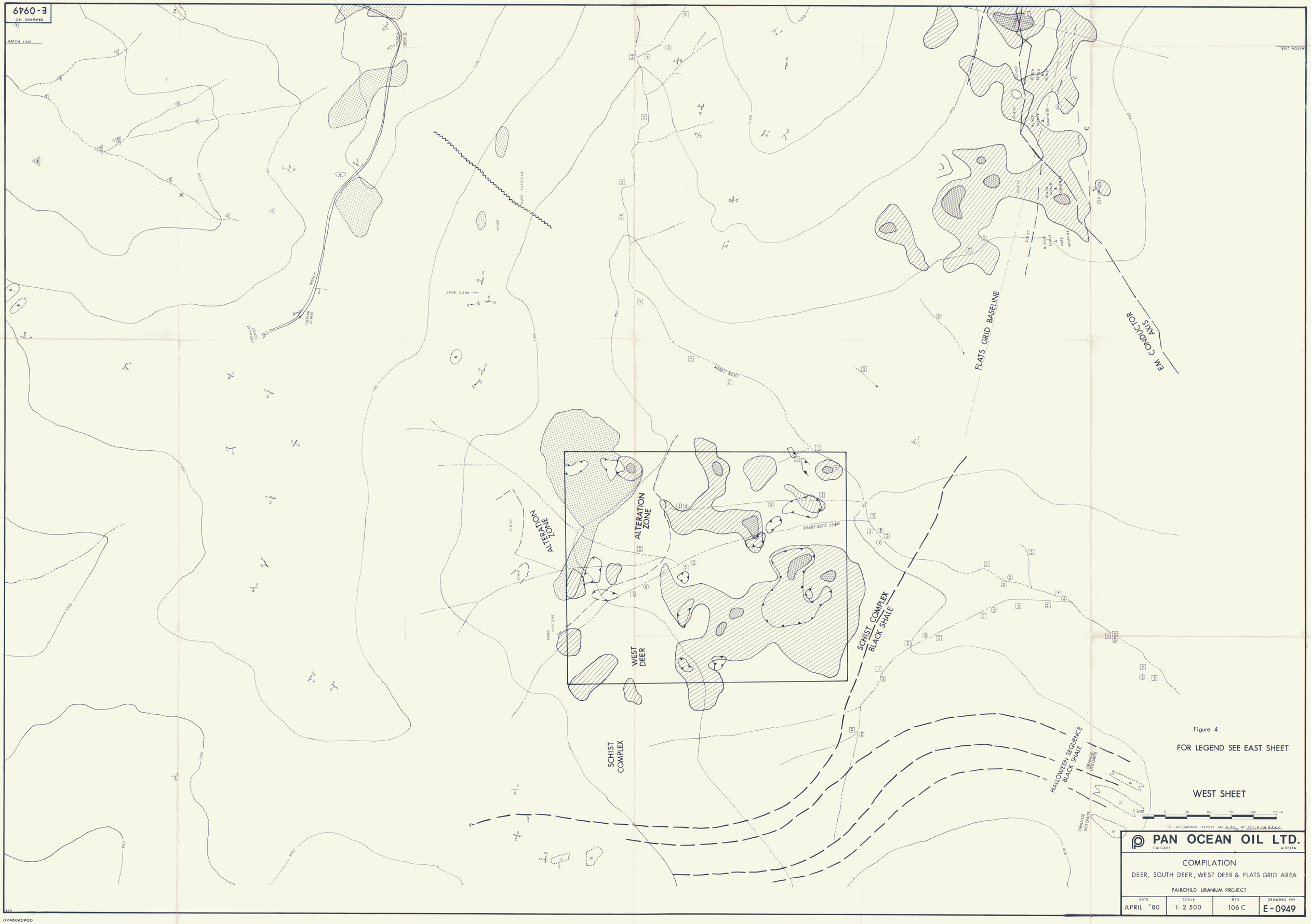


Figure 4

FOR LEGEND SEE EAST SHEET

WEST SHEET

TO ACCOMPANY REPORT NO 4-80 BY J.F.T., R.J.M. & A.K.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

COMPILATION

DEER, SOUTH DEER, WEST DEER & FLATS GRID AREA

FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
APRIL '80	1: 2 500	106 C	E-0949

DP468A0P00

DRAWING NO E-0949

MOSQUITO CREEK

MICA SCHIST COMPLEX

SCHIST MTN.

MICA SCHIST COMPLEX

RIBBED SILTSTONE COMPLEX

RIBBED SILTSTONE COMPLEX

ALTERATION ZONE

DEER 2 SHOWING

DEFORMATION ZONE

COMPRESSOR DRAW

FISH SCALE SCHIST

MERL CLOUTIER DRAW

DEER 1 SHOWING

PHYLLITIC SILTSTONE

SILTSTONE ALTERATION SEGMENT

EM CONDUCTOR

MAGNETIC HIGH UNKNOWN ORIGIN

RADON DRAW

ESCARPMENT

UNALTERED MICA SCHIST

BASE LINE

L 0+00 N

L 1+00 N

L 2+00 N

L 3+00 N

L 0+00

L 1+00 S

L 2+00 S

L 3+00 S

L 4+00 S

L 5+00 S

L 6+00 S

L 7+00 S

L 8+00 S

MATCH LINE

LEGEND

GEOLOGICAL

- € CAMBRIAN: LIMESTONES, ORTHOQUARTZITES
- BRECCIA DIATREMES:
- ALTERATION ZONES, ASSOCIATED WITH BRECCIAS
- (2) TO COMPRESSOR DRAW, FISH SCALE BELT
- (1) DEER I ZONE, SILTSTONE ALTERATION SEGMENT PHYLLITIC SILTSTONE
- (9) DYBASE DYKES
- (99) QUARTZ LENSES
- QUARTET GROUP: BLACK SHALES INCLUDING HALLOWEEN SEGMENT ORANGE DOLOMITE HORIZONS IN BLACK SHALE
- FAIRCHILD GROUP: MICA SCHIST COMPLEXES RIBBED SILTSTONE COMPLEXES
- LITHOLOGICAL CONTACTS

GEOPHYSICS AND GEOCHEMISTRY

- SPECTROMETER U/TH RATIOS
- ALPHANUCLEAR RADON ANOMALIES
- URANIUM IN H_2O IN ppb
- URANIUM IN STREAM SEDIMENTS IN ppm
- EM CONDUCTOR
- MAGNETIC TREND

SYMBOLS

- STREAM, SHOWING FLOW DIRECTION
- DEER FLATS ESCARPMENT

Figure 4

EAST SHEET

200 0 200 400 600 800 1000m

TO ACCOMPANY REPORT NO. 4-80 BY J.F.T., R.J.M. & K.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

COMPILATION

DEER, SOUTH DEER, WEST DEER & FLATS GRID AREA

FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
APRIL '80	1: 1000	106C	E-0949

DP468A0P00


E-0949
DRAWING NO.
MATCH LINE
TRENCH
DEER II
CRENULAT. SCHIST
CRENULAT. SCHIST
TRENCH
SLATY SILTSTONE
SCHIST
BASIC DYKE
DEER CREEK
FLATS GRID BASELINE
EM CONDUCTOR AXIS
SCHIST
BLACK SHALE & GRAPHITE
SCHIST
BLACK SHALE & GRAPHITE
SCHIST
BLACK SHALE & RARE GRAPHITE
ALTERATION ZONE
ALTERATION ZONE
WEST DEER CREEK
SCHIST
SCHIST
RIBBED SILTSTONE
WEST DEER
SCHIST COMPLEX
SCHIST COMPLEX
BLACK SHALE
HALLOWEEN SEQUENCE
BLACK SHALE
ORANGE DOLOMITE
ORANGE DOLOMITE
Figure 4
FOR LEGEND SEE EAST SHEET
WEST SHEET
200 0 200 400 600 800 1000m
TO ACCOMPANY REPORT NO 4-80 BY J.F.T., R.J.M. & A.K.C.
PAN OCEAN OIL LTD.
CALGARY
ALBERTA
COMPILATION
DEER, SOUTH DEER, WEST DEER & FLATS GRID AREA
FAIRCHILD URANIUM PROJECT
DATE
APRIL '80
SCALE
1:1000
NTS
106 C
DRAWING NO.
E-0949

DP468A0P00

DRAWING NO
E-0948

L 1+20 N | L 0+80 N | L 0+40 N | 0+00 | L 0+40 S | L 0+80 S | L 1+20 S | L 1+60 S | L 2+00 S | L 2+40 S | L 2+80 S | L 3+20 S | L 3+60 S | L 4+00 S | L 4+40 S | L 4+80 S | L 5+20 S | L 5+60 S | L 6+00 S | L 6+40 S | L 6+80 S | L 7+20 S

MATCH LINE

MATCH LINE

LEGEND

- x — SAMPLE LOCATION
- TOPOGRAPHIC LINEAMENT
- ESCARPEMENT
- S — SPRING
- DRAINAGE ROUTE
- ALTERATION SEGMENT
- VLF CONDUCTOR
- BOUNDARY: MAGNETIC ZONE
- MAG. HIGH
- MAG. LOW
- NUKE HIGH≥ 200
- TOTAL COUNT≥ 100
- U/TH≥ 50

VALUES IN ppm, ppb

Figure 5

EAST SHEET

-20 0 20 40 60 80 100 m

TO ACCOMPANY REPORT NO. 4-80 BY J.E.T. R.J.M. & A.K.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

COMPILATION

DEER & SOUTH DEER GRID AREA

FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
APRIL '80	1:1000	106 C	E-0948

DP468A0P00

DRAWING NO
E-0948

MATCH LINE

MATCH LINE

BASE LINE

L 1+20 N
L 0+80 N
L 0+40 N
0+00
L 0+40 S
L 0+80 S
L 1+20 S
L 1+60 S
L 2+00 S
L 2+40 S
L 2+80 S
L 3+20 S
L 3+60 S
L 4+00 S
L 4+40 S
L 4+80 S
L 5+20 S
L 5+60 S
L 6+00 S
L 6+40 S
L 6+80 S
L 7+20 S

ALTERATION SEGMENT
ALTERATION SEGMENT

S? S

Figure 5

FOR LEGEND SEE EAST SHEET

WEST SHEET

m 20 0 20 40 60 80 100m

TO ACCOMPANY REPORT NO. 4-80 BY J.F.T. RUMBACK

PAN OCEAN OIL LTD.
CALGARY ALBERTA

COMPILATION

DEER & SOUTH DEER GRID AREA

FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
APRIL '80	1:1000	106C	E-0948

DP468A0P00

DRAWING NO X-0967

MATCH LINE

EM CONDUCTOR

?

OB & SCHIST BOULD.

OB & SHALE-LS SHALE BOULD. BLOCKY-DK. GRAY OOC. LAM.

OB & LS BOULD WITH FEW BLEBS OF PX

RED SHALE STEAM

GOLD STATE SHALE & LS BOULDERS, BUFF-BROWN TO TAN-BUFF LS FRAG. (LIMONITE)

OB & SCH BOULDERS, GRAY SHEARED

SCHIST, MED. DK SILVER GRAY, STRONGLY SHEARED, CONSISTENTLY NOR.-SUB-HORIZONTAL FOLIATION, NO PHYSICAL EVIDENCE OF ANY FRACTURES, BOMB HOUSE TEST: 0% WITH HCl.

TRENCH

MALACHITE STAIN ON SCHIST

OB & LAM. SCH. FRAG

OB & LAM. SCH. BOULDERS

OB & ABUNDANT LAM. SCH. BOULDERS

LAM. SCH. WITH OB

HEAVY OB WITH LOCAL SLIGHTLY BROKEN SCHIST

SCHIST

SCH. SLIGHTLY BROKEN

CRUSHED SCHIST FRAG.

SCHIST SHEARED

MINOR MICRO-FOLDING

SCHIST SLIGHTLY BROKEN SCH.

HEAVY OB

FAIRLY MOD. BROKEN SCH. & OB

FAIRLY BROKEN SCH.

HEAVY OB

SCH. MOD. BROKEN COMMON CRENULATION

OB & CRUSHED SCH FRAG

SCH FRAG IN GRAYISH GREEN MUDDY MATRIX

SCHIST, LOCAL SLIGHTLY BROKEN COMM. CRENULATION

LAM. SCH. FRAG

WHITE FLAKY SERICITE SCHIST

MICA SCHIST COMPLEX

FISH SCALE SCHIST

MICA SCHIST INTENSELY VEINED

MICA SCHIST

LINEATED SCHIST

STRONG LINEATIONS W/CHLTD. DEVELOPED

FINE QUARTZ BLEBS

CONTACT BETWEEN FISH SCALE SCHIST AND SCHIST IS TRANSITIONAL

MICRO-FOLDED & SHEARED SCHIST

SHEAR ZONE RED CLAY GOUGE

FAULT ATT.

MASSIVE SCHIST

L7+20 S

L6+40 S

L5+60 S

L4+80 S

L4+00 S

L3+20 S

L2+40 S

L1+60 S

L0+80 S

0+00

L0+80 N

SOUTH SHEET

Figure 6

m 20 0 20 40 60 80 100 m

TO ACCOMPANY REPORT NO. 4-80 BY J.F.T., R.J.M. & A.K.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

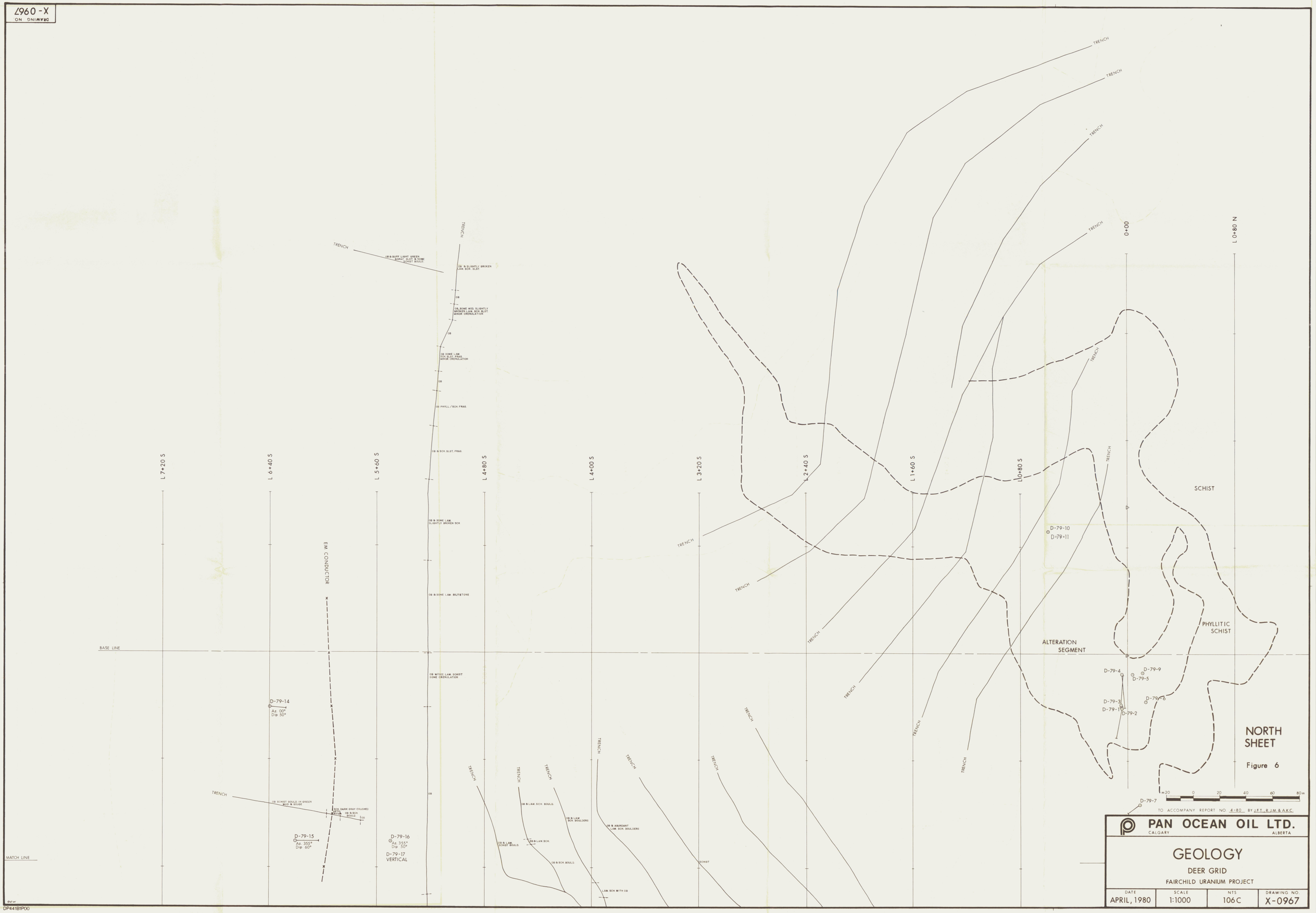
GEOLOGY

DEER GRID

FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
APRIL, 1980	1:1000	106C	X-0967

DP441B1P00


DRAWING NO X-0967
L 7+20 S
L 6+40 S
L 5+60 S
L 4+80 S
L 4+00 S
L 3+20 S
L 2+40 S
L 1+60 S
L 0+80 S
0+00
L 0+80 N
BASE LINE
MATCH LINE
EM CONDUCTOR
TRENCH
SCHIST
PHYLLITIC SCHIST
ALTERATION SEGMENT
D-79-10
D-79-11
D-79-4
D-79-9
D-79-5
D-79-3
D-79-1
D-79-2
D-79-6
D-79-7
D-79-14
Az. 00°
Dip 50°
D-79-15
Az. 355°
Dip 60°
D-79-16
Az. 355°
Dip 50°
D-79-17
VERTICAL
NORTH SHEET
Figure 6
TO ACCOMPANY REPORT NO 4-80 BY J.F.T., R.J.M. & A.K.C.
PAN OCEAN OIL LTD.
CALGARY
ALBERTA
GEOLOGY
DEER GRID
FAIRCHILD URANIUM PROJECT
DATE
APRIL, 1980
SCALE
1:1000
NTS
106C
DRAWING NO.
X-0967
DP441B1P00

SCHISTOSE SILTSTONE

PHYLLITIC SILTSTONE

SILTSTONE ALTERATION SEGMENT

PHYLLITIC SILTSTONE

ALTERATION SEGMENT

PHYLLITIC SILTSTONE

LEGEND

SCHISTOSE SILTSTONE UNIT: GREY CHLORITOID-BICTITE SCHIST MONOTONOUS IN APPEARANCE.

PHYLLITIC SILTSTONE UNIT: GREY BICTITE SCHIST WITH SERICITE AND/OR CHLORITIC ALTERATION.

SILTSTONE ALTERATION SEGMENT: AS PHYLLITIC SILTSTONE BUT DEVELOPMENT OF CHLORITE AND/OR SERICITE LAMINATION.

- LITHOLOGICAL CONTACT
- SCHISTOSITY OR LAMINATION
- XXX BEDROCK
- 3930 TOPOGRAPHICAL CONTOUR
- CATARPILLAR TRENCH
- SURVEY POINT
- PICKET GRID
- A — A CROSS SECTION
- D-79-10 DIAMOND DRILL HOLE COLLAR
- TALUS TRAIN

Figure 7

EAST SHEET

TO ACCOMPANY REPORT NO. 680 BY J.F.T. & W.R.A.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

DETAILED GEOLOGY
DEER GRID
FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
MAY, 1980	1" = 30'	106C	0968

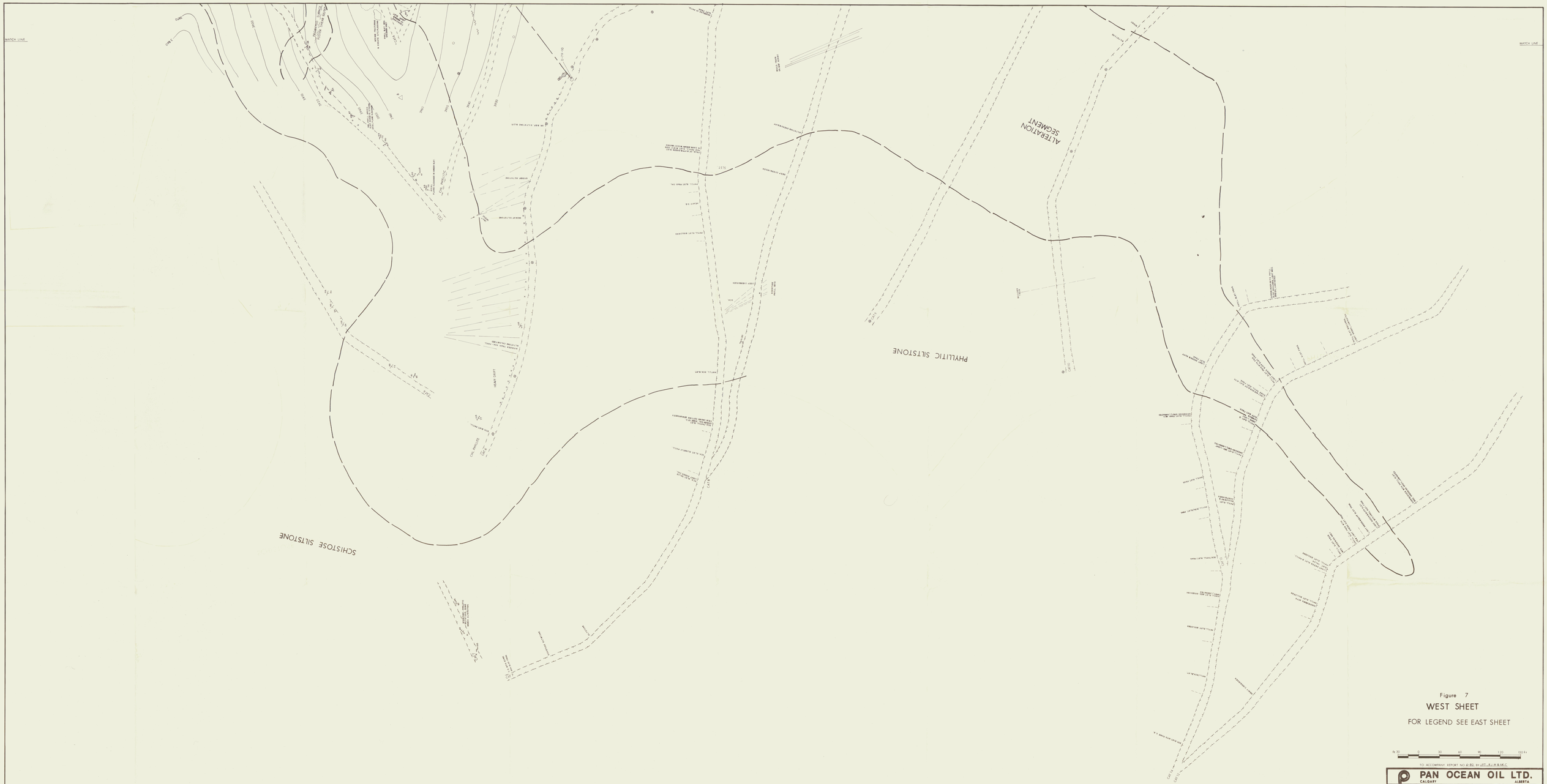


Figure 7

WEST SHEET

FOR LEGEND SEE EAST SHEET

TO ACCOMPANY REPORT NO. E-80 BY J.T., R.J.W. & M.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

DETAILED GEOLOGY

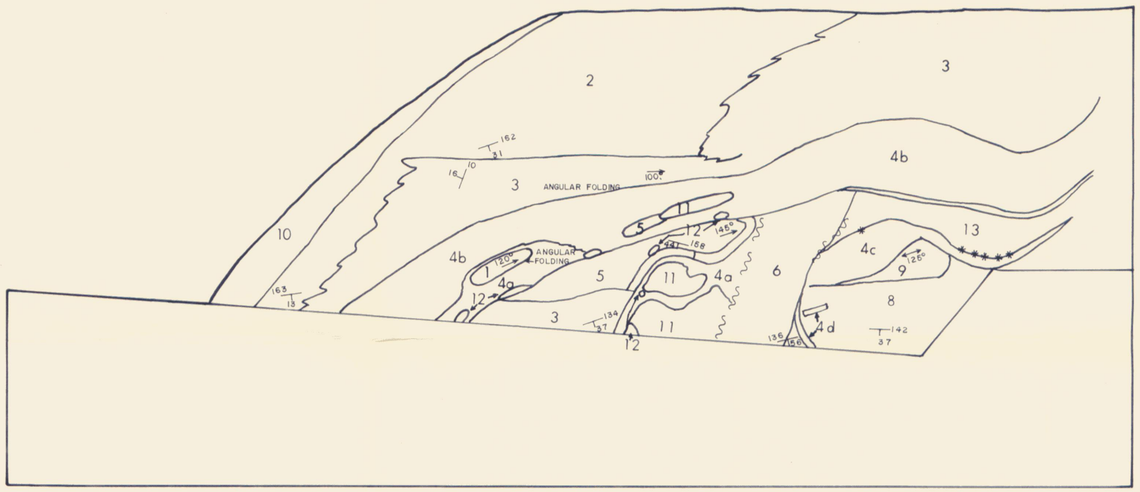
DEER GRID

FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
MAY, 1980	1" = 30'	106C	0968

165°

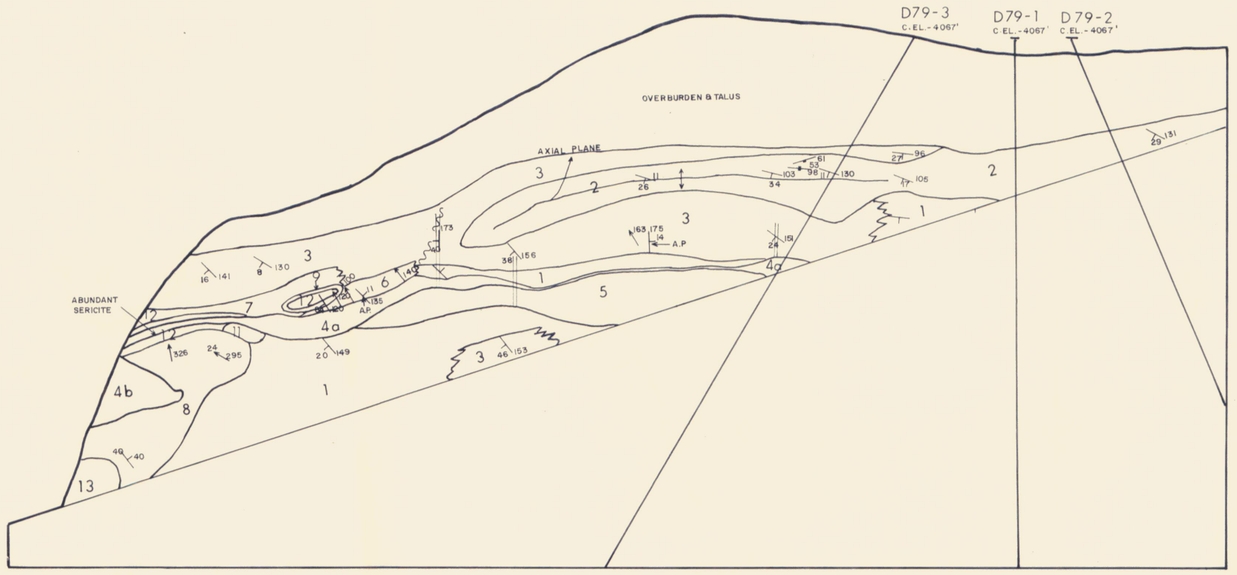
345°



SECTION A-B

95°

275°



SECTION B-C

Figure 9

LEGEND

1	DK. GREEN SILTSTONE (CHLORITIZED)
2	GREY SILTSTONE (UNALTERED)
3	BUFF GREEN SILTSTONE (ALTERED)
4a	CREAM COLORED QUARTZ-FELDSPAR-CHLORITE
4b	WHITE QUARTZ-FP-CHL-RUTILE
4c	RED FELDS QTZ & QTZ SAND
4d	QTZ. HE. VEIN
5	BUFF SILTSTONE (ALTERED) OFTEN QTZ. FOLDED
6	SHEARED ZONE
7	CLAY & SAND W/BROKEN ROCK FRAGMENTS
8	SOFT GREEN CHLORITE SILTSTONE
9	MINERALIZED LAMINATED SILTSTONE
10	GREENISH GREY FAULT GOUGE W/LENSES OF QTZ SAND & RED HEM. CLAY GOUGE
11	BLACK CHLORITE
12	PODS OF RED FELDSPATHIC SAND & SPEC. HEM.
13	CHLORITIZED, MINERALIZED SILTSTONE
14	QTZ-CHL- SER- SPEC. HEM. VEIN
15	PHYLLITIC SILTSTONE
***	SECONDARY URANIUM MINERALIZATION
41/43	STRIKE AND DIP OF AXIAL PLANE FOR SUB-HORIZONTAL ANGULAR FOLD
)	300 cps RADIOACTIVITY

ft 5 0 5 10 15 ft

TO ACCOMPANY REPORT NO. 4-80 BY J.F.T., R.J.M. & A.K.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

DRILL SECTIONS
TRENCH D-79-1
FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
MAY, 1980	1" = 5'	106 C	C-0969



Figure 10
EAST SHEET
TO ACCOMPANY REPORT NO. 4-80 BY J.F.T., R.J.M.&A.K.C.

FOR LEGEND SEE WEST SHEET

PAN OCEAN OIL LTD.
CALGARY ALBERTA

MAGNETOMETER SURVEY

DEER GRID

FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
APRIL '80	1:1000	106C	E-0964

DP468A0P00

DRAWING NO. E-0964

MATCH LINE

MATCH LINE

BASE LINE

L 4+00 N
L 3+60 N
L 3+20 N
L 2+80 N
L2+40 N
L 2+00 N
L 1+60 N
L 1+20 N
L 0+80 N
L 0+40 N
0+00
L 0+40 S
L 0+80 S
L 1+20 S
L 1+60 S
L 2+00 S
L 2+40 S
L 2+80 S
L 3+20 S
L 3+60 S
L 4+00 S
L 4+40 S
L 4+80 S
L 5+20 S
L 5+60 S
L 6+00 S
L 6+40 S
L 6+80 S
L 7+40 S

LEGEND

INSTRUMENT: BASE STATION G826A
SURVEY INSTURMENT G846
CONTOUR INTERVAL: 25 GAMMAS
OPERATOR: P.WALKER
DATE: JULY, 1979

Figure 10

WEST SHEET

-20 0 20 40 60 80 100m

TO ACCOMPANY REPORT NO. 4-80 BY J.F.T. R.J.M. & A.K.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

MAGNETOMETER SURVEY
DEER GRID
FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
APRIL '80	1: 1000	106C	E-0964

DP468A0P00





LEGEND

INSTRUMENT: EXPLORANIUM GR410 A
DATA RECORDED: TOTAL COUNT
CONTOUR INTERVAL: 5 cps (75,80,85, 90,95,100,105)
SAMPLE PERIOD: 30 SECONDS
OPERATOR: J.HICKES
DATE: JULY, 1979

Figure 11

EAST SHEET

m 20 0 20 40 60 80 100m

TO ACCOMPANY REPORT NO. 4-80 BY J.F.T. R.J.M. & K.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

SPECTROMETER SURVEY TOTAL COUNT

DEER GRID

FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
APRIL '80	1:1000	106C	E-0965

DRAWING NO
E-0965

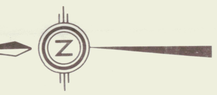
DP468A0P00

DRAWING NO
E - 0965

MATCH LINE

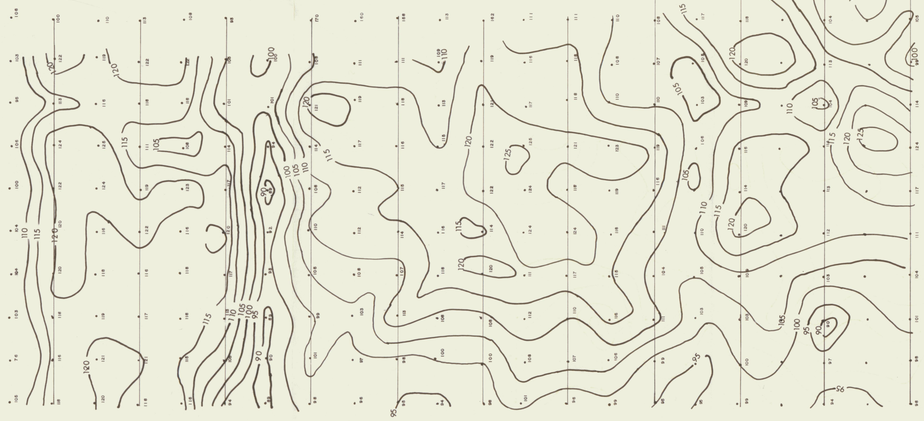
MATCH LINE

BASE LINE





L 3+60 S
L 4+00 S
L 4+40 S
L 4+80 S
L 5+20 S
L 5+60 S
L 6+00 S
L 6+40 S
L 6+80 S
L 7+20 S



L 0+80 N
L 0+40 N
0+00
L 0+40 S
L 0+80 S
L 1+20 S
L 1+60 S
L 2+00 S
L 2+40 S
L 2+80 S
L 3+20 S

LEGEND

INSTRUMENT: EXPLORANIUM GR410A
DATA RECORDED: TOTAL COUNT
CONTOUR INTERVAL: 5cps (75,80,85,90,95,100,105)
SAMPLE PERIOD: 30 SECONDS
OPERATOR: J. HICKES
DATE: JULY, 1979

Figure 11
WEST SHEET

m 20 0 20 40 60 80 100m

TO ACCOMPANY REPORT NO. 4-80 BY J.F.T., R.J.M. & A.K.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

SPECTROMETER SURVEY TOTAL COUNT
DEER GRID
FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
APRIL '80	1: 1000	106C	E - 0965

DP468A0P00

DRAWING NO. E-0966

L 1+20 N
L 0+80 N
L 0+40 N
0+00
L 0+40 S
L 0+80 S
L 1+20 S
L 1+60 S
L 2+00 S
L 2+40 S
L 2+80 S
L 3+20 S
L 3+60 S
L 4+00 S
L 4+40 S
L 4+80 S
L 5+20 S
L 5+60 S
L 6+00 S
L 6+40 S
L 6+80 S
L 7+20 S
L 7+40 S
L 7+80 S

MATCH LINE

Figure 12

FOR LEGEND SEE WEST SHEET

EAST SHEET

m 20 0 20 40 60 80 100 m

TO ACCOMPANY REPORT NO. 4-80 BY JET, RJM & AKC

PAN OCEAN OIL LTD.
CALGARY ALBERTA

SPECTROMETER SURVEY (U/TH)
DEER GRID
FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
APRIL '80	1: 1000	106C	E-0966

DP468A0P00

DRAWING NO. E-0966

MATCH LINE

MATCH LINE

BASE LINE

L 3+00 N | L 2+80 N | L 2+40 N | L 2+00 N | L 1+60 N | L 1+20 N | L 0+80 N | L 0+40 N | 0+00 | L 0+40 S | L 0+80 S | L 1+20 S | L 1+60 S | L 2+00 S | L 2+40 S | L 2+80 S | L 3+20 S

L 3+60 S | L 4+00 S | L 4+40 S | L 4+80 S | L 5+20 S | L 5+60 S | L 6+00 S | L 6+40 S | L 6+80 S | L 7+20 S

LEGEND

INSTRUMENT: EXPLORANIUM GR410A
DATA RECORDED: (U/TH RATIO)
CONTOUR INTERVAL: 5cps (0.3, 0.4, 0.5)
SAMPLE PERIOD: 30 SECONDS
OPERATOR: J. HICKES
DATE: JULY, 1979

Figure 12

WEST SHEET

20 0 20 40 60 80 100 m

TO ACCOMPANY REPORT NO. 4-80 BY J.F.T., R.I.M. & A.K.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

SPECTROMETER SURVEY (U/TH)
DEER GRID
FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
APRIL '80	1: 1000	106 C	E-0966

DP468A0P00

DRAWING NO
X-0962

MATCH LINE

L 1+60 S
L 2+00 S
L 2+40 S
L 2+80 S
L 3+20 S
L 3+60 S
L 4+00 S
L 4+40 S
L 4+80 S
L 5+20 S
L 5+60 S
L 6+00 S
L 6+40 S
L 6+80 S
L 7+20 S

N

LEGEND

INSTRUMENT: ALPHA NUCLEAR CUP
UNIT MEASURED: COUNTS / HOUR
CONTOUR INTERVALS: 120, 200, 300, 400, 500
OPERATOR: AL FADBRO
DATE: JULY, 1979
CONTOURED AT: 98 PERCENTILE (500 CPH)
95 PERCENTILE (300 CPH)
90 PERCENTILE (200 CPH)
75 PERCENTILE (120 CPH)

VALUES CORRECTED FOR INSTRUMENT BIAS AND VARIATION IN RADON FLOW.
STATION VALUES IN COUNTS PER HR.

Figure 13

EAST SHEET

m 20 0 20 40 60 80 100 m

TO ACCOMPANY REPORT NO. 4-80 BY J.F.T., R.J.M. & A.K.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

ALPHA NUCLEAR RADON SURVEY

DEER GRID

FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
APRIL '80	1:1000	106C	X-0962

DP441B1P00

DRAWING NO X-0962

L 5+20 N

L 4+80 N

L 4+40 N

L 4+00 N

L 3+60 N

L 3+20 N

L 2+80 N

L 2+40 N

L 2+00 N

L 1+60 N

L 1+20 N

L 0+80 N

L 0+40 N

0+00

L 0+40 S

L 0+80 S

L 1+20 S

MATCH LINE

BASE LINE

MATCH LINE

Figure 13

FOR LEGEND SEE EAST SHEET

NORTH SHEET

m 20 0 20 40 60 80 100 m

TO ACCOMPANY REPORT NO. 4-80 BY J.F.T., R.J.M. & A.K.C.

PAN OCEAN OIL LTD.

CALGARY ALBERTA

ALPHA NUCLEAR RADON SURVEY

DEER GRID

FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
APRIL '80	1:1000	106C	X-0962

DP441B1P00

DRAWING NO
X-0962



FOR LEGEND SEE EAST SHEET

Figure 13

WEST SHEET

m20 0 20 40 60 80 100m

TO ACCOMPANY REPORT NO 4-80 BY J.F.T. R.J.M. & A.K.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

ALPHA NUCLEAR RADON SURVEY

DEER GRID

FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
APRIL '80	1:1000	106 C	X-0962

DP441B1P00

DRAWING NO
X-0963

L 0+40 W | 0+00 | L 0+40 E | L 0+80 E | L 1+20 E | L 1+60 E | L 2+00 E | L 2+40 E | L 2+80 E | L 3+20 E | L 3+60 E | L 4+00 E | L 4+40 E | L 4+80 E

500
520
540
560
580
600
620
640
660
680
700
720

LEGEND

INSTRUMENT: GEONICS EM-16 UNIT
SOURCE STATION: (CULTER, MAINE)
PROFILE SCALE: 1cm=10°
HORIZONTAL SCALE: 1cm=5m
OPERATOR FACING: SOUTH
OPERATOR: P.WALKER
DATE: AUGUST, 1979

—x— IN PHASE
--o-- QUADRATURE
——— CONDUCTIVE AXIS

Figure 14

m 10 0 10 20 30 40 50m

TO ACCOMPANY REPORT NO. 4-80 BY J.F.T., R.J.M. & A.K.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

VLF PROFILES

DEER GRID

FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
APRIL, 1980	1:5000	106C	X-0963

K-33
DP441B1P00

DRAWING NO. E-0945

L 8+00 N
L 7+40 N
L 7+20 N
L 6+80 N
L 6+40 N
L 6+00 N
L 5+60 N
L 5+20 N
L 4+80 N
L 4+40 N
L 4+00 N
L 3+40 N
L 3+20 N
L 2+80 N
L 2+40 N
L 2+00 N
L 1+60 N
L 1+20 N
L 0+80 N
L 0+40 N
L 0+00
L 0+40 S
L 0+80 S
L 1+20 S
L 1+40 S
L 2+00 S
L 2+40 S
L 2+80 S

3+00 E
2+60 E
2+20 E
1+80 E
1+40 E
1+00 E
0+60 E
0+20 E
0+20 W
0+60 W
1+00 W
1+40 W
1+80 W
2+20 W

LEGEND

INSTRUMENT: CRONE ELECTRO-MAGNETIC UNIT
SURVEY METHOD: HORIZONTAL SHOOTBACK METHOD
PROFILE SCALE: 2.5mm = 1"
HORIZONTAL SCALE: 1cm = 10m
OPERATORS: R.BEATON, K.KAYE
DATE: AUGUST, 1979

——— MEDIUM FREQUENCY 1830 H_z
– – – LOW FREQUENCY 390 H_z
COIL SPACING 80 METERS
—⬭— CONDUCTIVE AXIS

Figure 15

-20 0 20 40 60 80 100 m

TO ACCOMPANY REPORT NO. A-80 BY J.F.F., R.J.M. & A.K.C.

PAN OCEAN OIL LTD.

CALGARY ALBERTA

C.E.M. SHOOTBACK SURVEY

FLATS GRID EXTENSION
FAIRCHILD URANIUM PROJECT

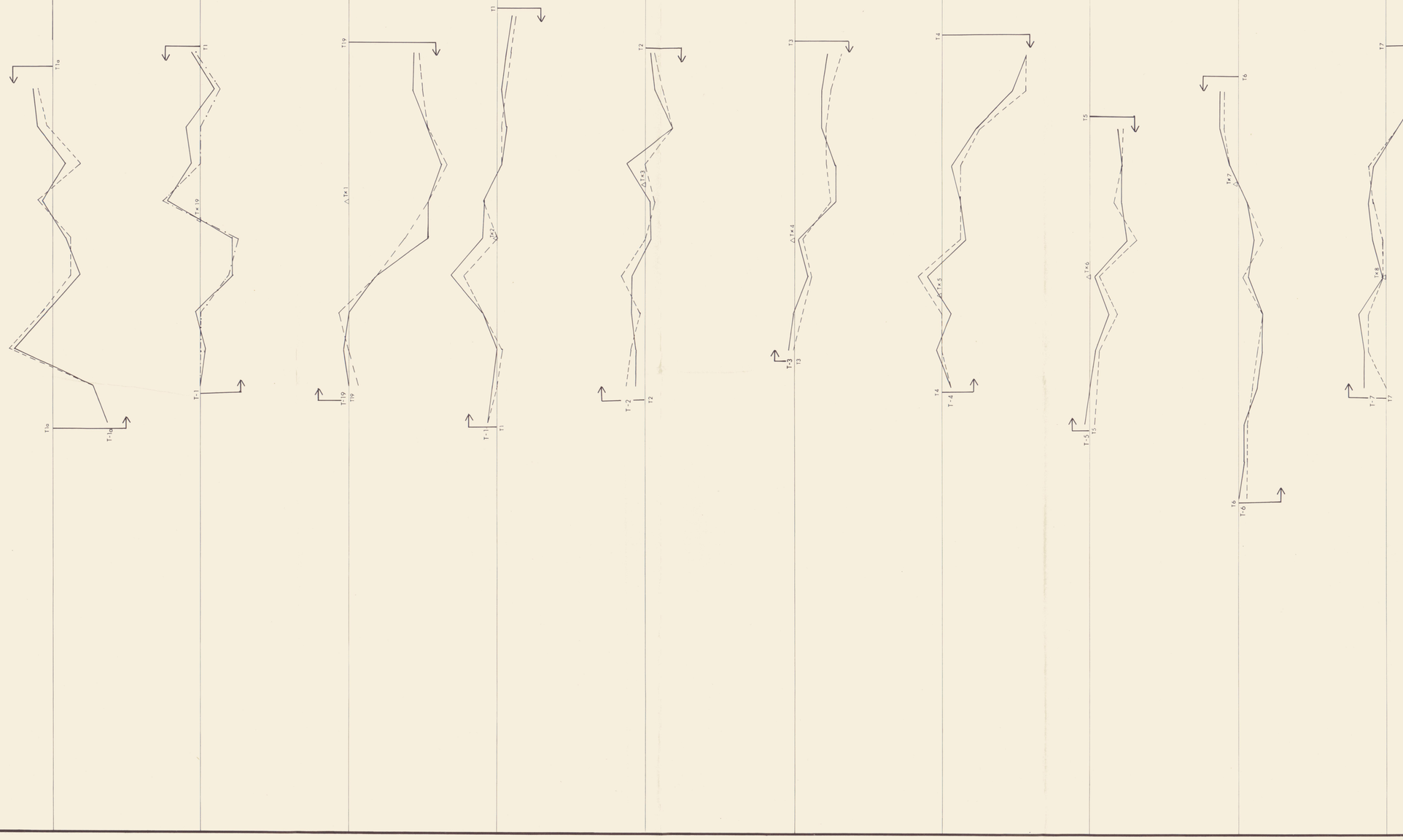
DATE	SCALE	NTS	DRAWING NO.
MARCH '80	2.5mm=1"/1:1000	106 C	E-0944

DP468A0P00

DRAWING NO. X-0943

L8+00N | L7+20N | L6+40N | L5+60N | L4+80N | L4+00N | L3+20N | L2+40N | L1+60N | L0+80N | 0+00

3+00 E
2+40 E
2+00 E
1+60 E
1+20 E
0+80 E
0+40 E
0+00
1+00 W



LEGEND

INSTRUMENT: CRONE ELECTROMAGNETIC UNIT
PROFILE SCALE: 25mm = 1°
HORIZONTAL SCALE: 1cm = 1m
OPERATORS: A. CHAN, K. KAYE, A. FADBRO, R. BEATON
DATE: AUGUST

---- HIGH FREQUENCY 5010 Hz
—— MEDIUM FREQUENCY 1830 Hz
—·—·— LOW FREQUENCY 390 Hz

Figure 16

-20 0 20 40 60 80 100m

TO ACCOMPANY REPORT NO 4-80 BY J.F.T., R.J.M. & A.K.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

C.E.M. VERTICAL LOOP SURVEY
FLATS GRID EXTENSION
FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
MARCH '80	2.5mm=1°/1:1000	106 C	X-0943

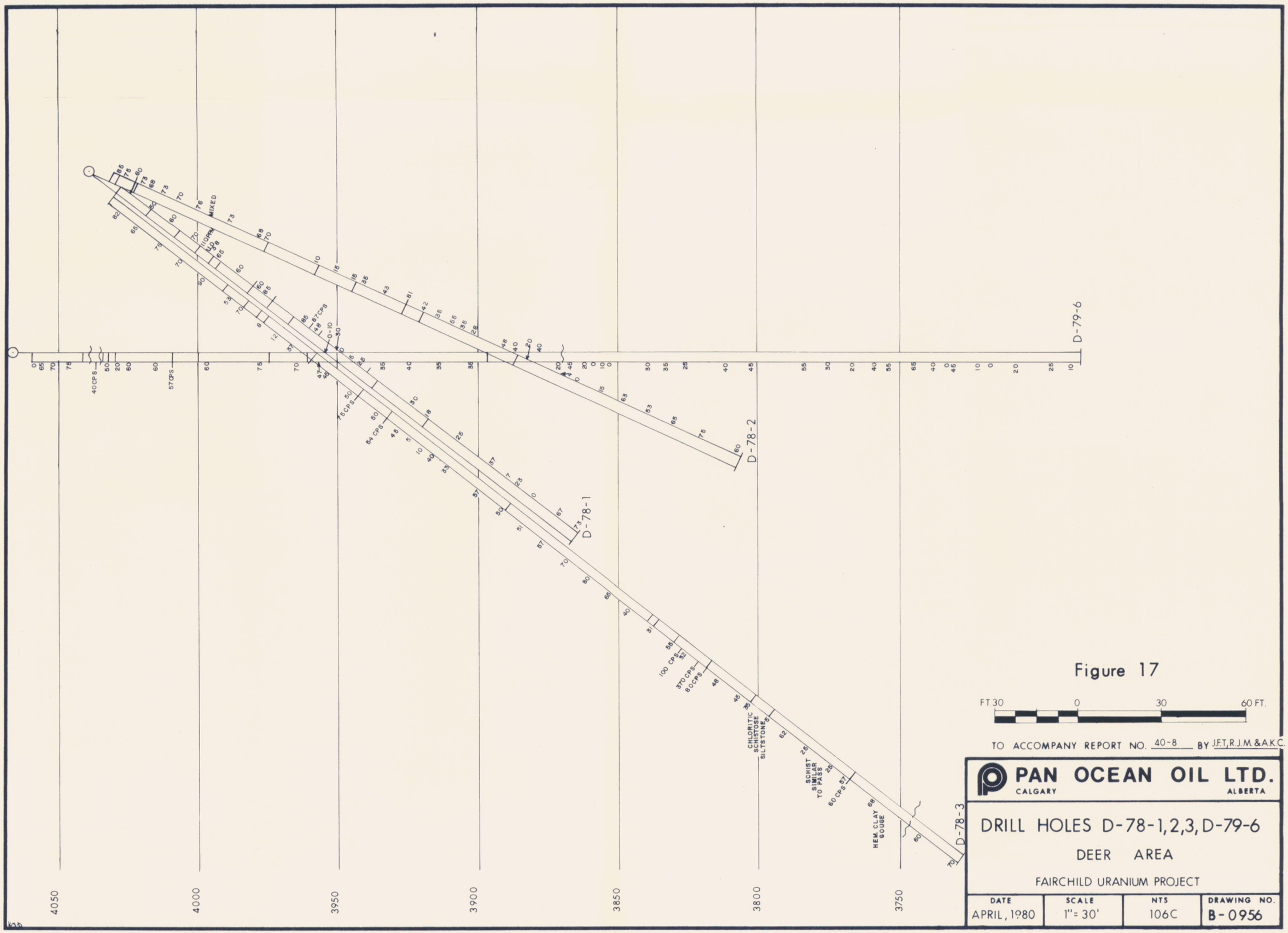


Figure 17

FT. 30 0 30 60 FT.

TO ACCOMPANY REPORT NO. 40-8 BY J.F.T, R.J.M. & A.K.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

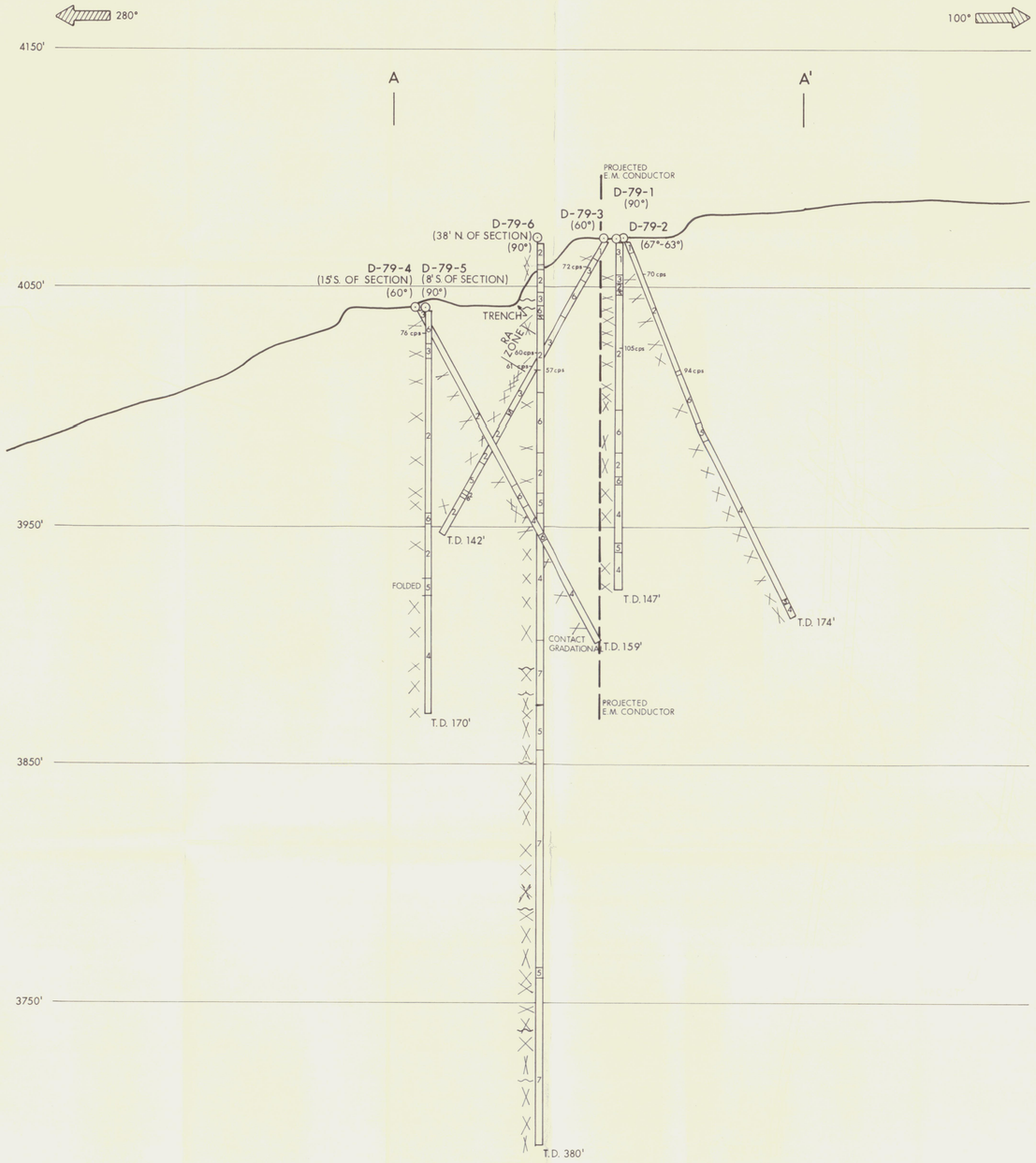
DRILL HOLES D-78-1, 2, 3, D-79-6

DEER AREA

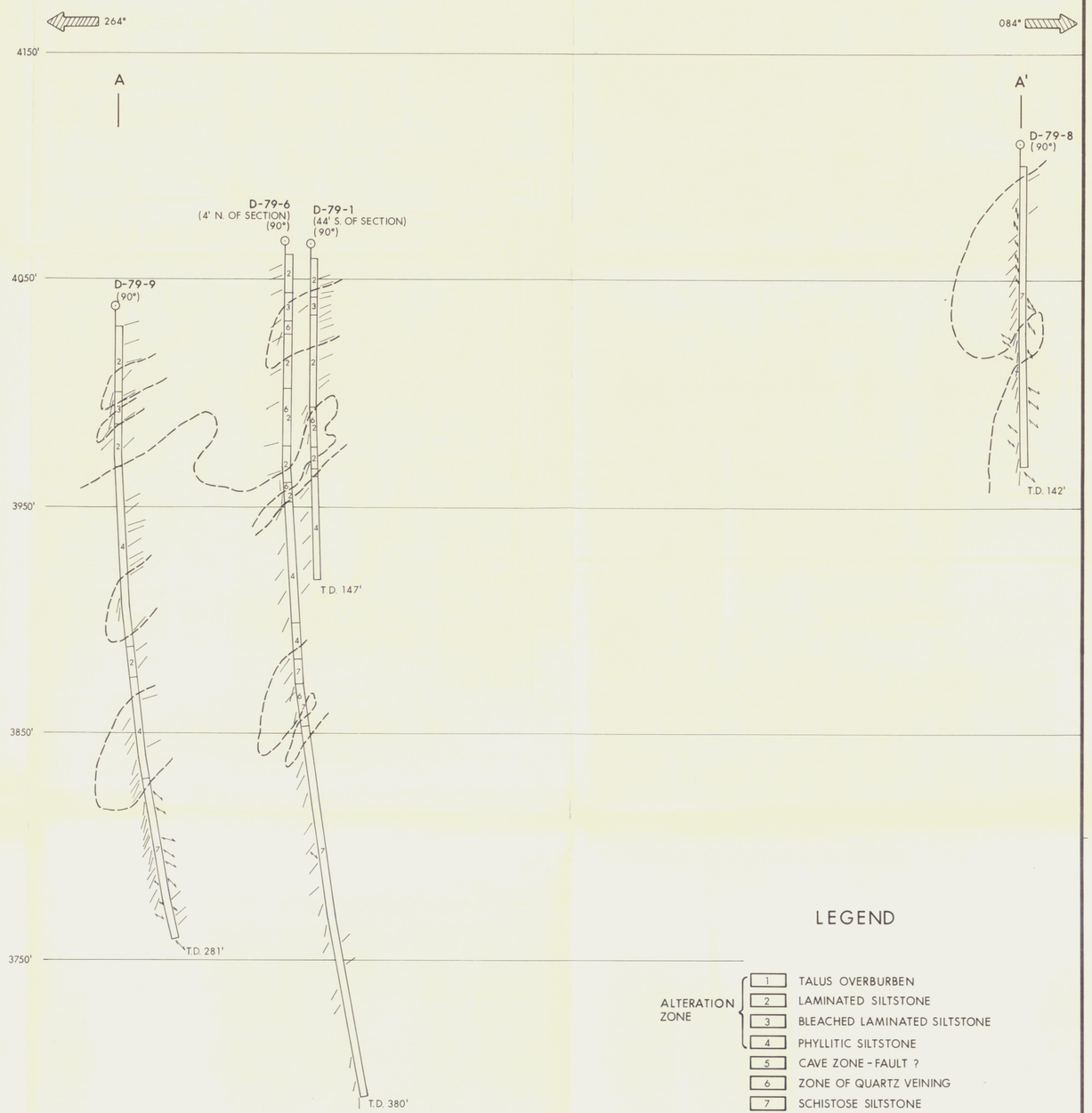
FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
APRIL, 1980	1" = 30'	106C	B-0956

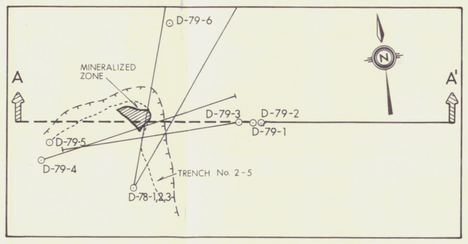
DRAWING NO. D-0957



DDH 79-1 TO 6



DDH 79-1,6,8,9



LEGEND

ALTERATION ZONE
- 1 TALUS OVERBURBEN
- 2 LAMINATED SILTSTONE
- 3 BLEACHED LAMINATED SILTSTONE
- 4 PHYLLITIC SILTSTONE
- 5 CAVE ZONE - FAULT ?
- 6 ZONE OF QUARTZ VEINING
- 7 SCHISTOSE SILTSTONE
- FAULT GOUGE - MINOR, MAJOR
- BEDDING CORE ANGLE
- FOLIATION CORE ANGLE

Figure 18

ft. 30 0 30 60 90 ft.

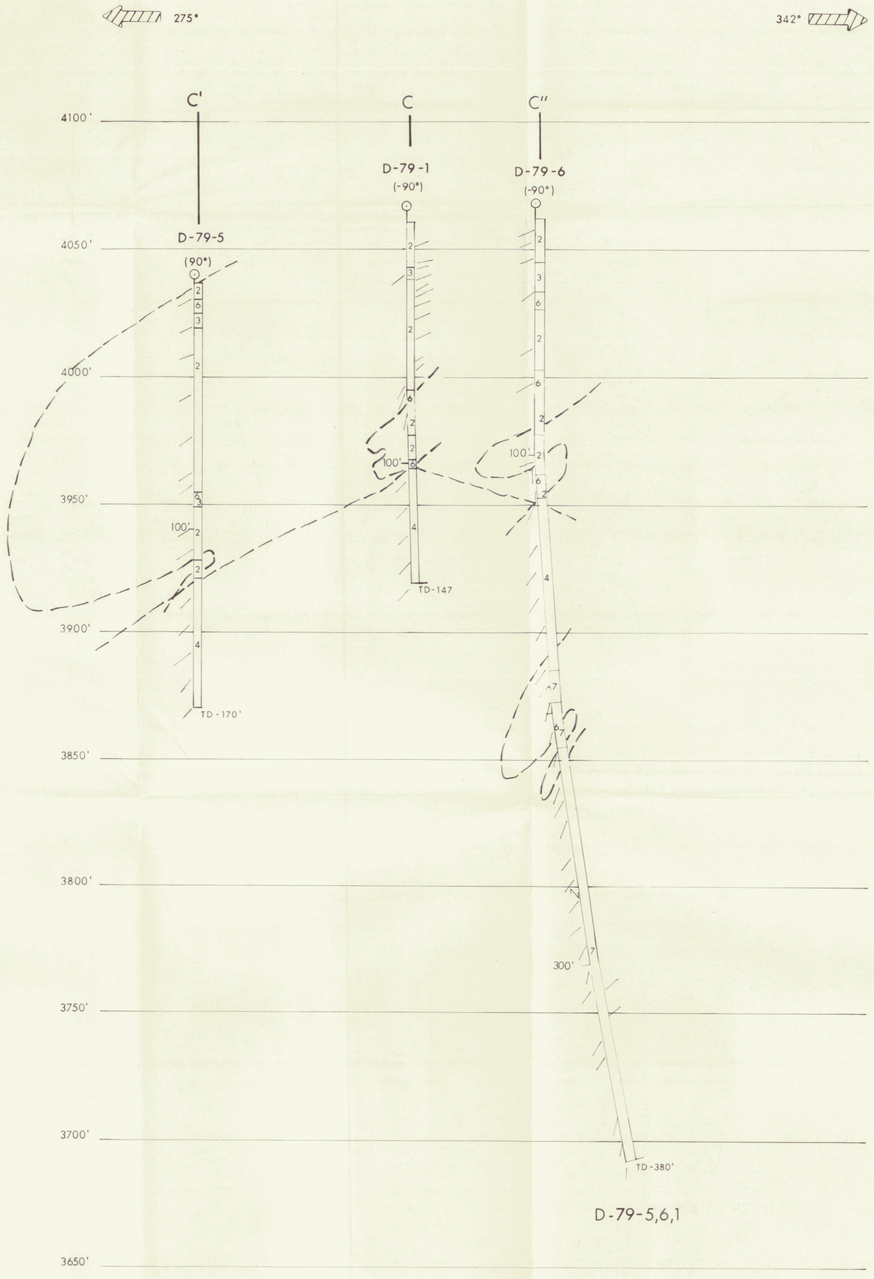
TO ACCOMPANY REPORT NO 4-80 BY J.F.T., R.J.M. & A.K.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

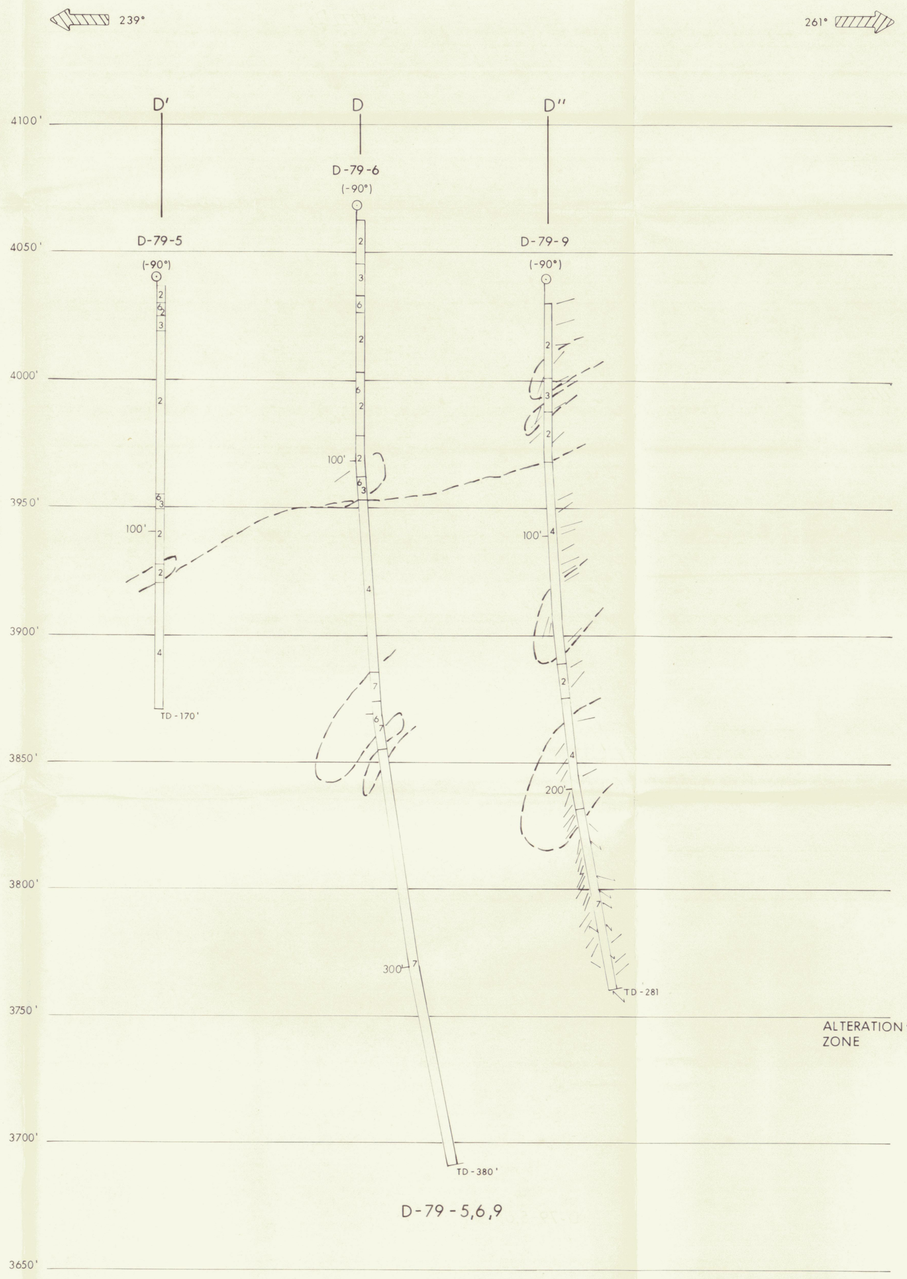
DRILL HOLE SECTIONS
DEER AREA
FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
APRIL, 1980	1"=30'	106 C	D-0957

DRAWING NO. D-0958



D-79-5,6,1



D-79-5,6,9

LEGEND

- 2 LAMINATED SILTSTONE
- 3 BLEACHED LAMINATED SILTSTONE
- 4 PHYLLITIC SILTSTONE
- 6 ZONE OF QUARTZ VEINING
- 7 SCHISTOSE SILTSTONE

ALTERATION ZONE

- LAMINATION CORE ANGLE
- FOLIATION CORE ANGLE

Figure 19

ft 30 0 30 60 90 ft

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CALGARY ALBERTA

DRILL HOLE SECTIONS

DEER AREA

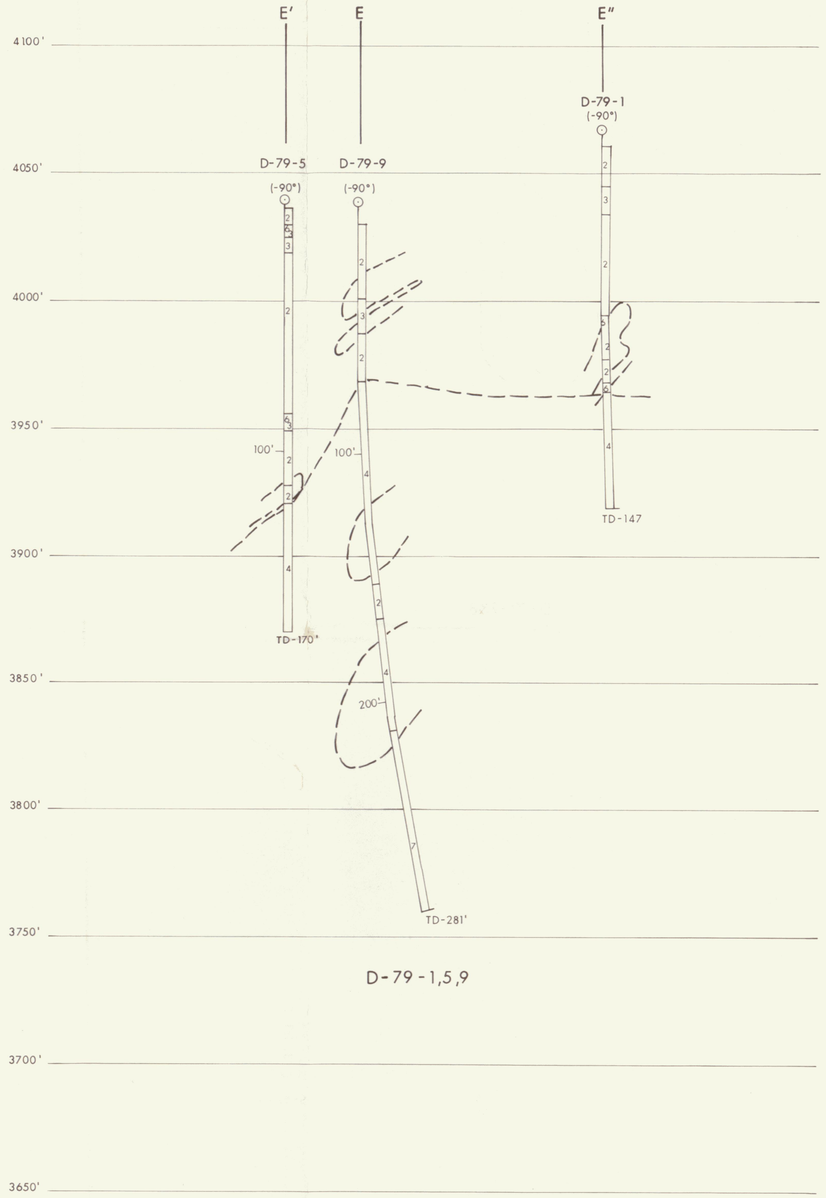
FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
APRIL, 1980	1" = 30'	106C	D-0958

DRAWING NO. D-0959

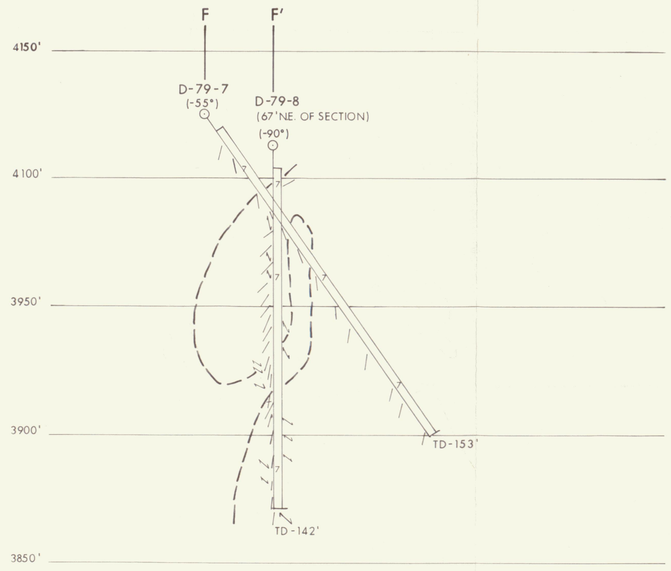
167°

112°



D-79-1,5,9

140°



D-79-7&8

LEGEND

ALTERATION ZONE

- 2 LAMINATED SILTSTONE
- 3 BLEACHED LAMINATED SILTSTONE
- 4 PHYLLITIC SILTSTONE
- 6 ZONE OF QUARTZ VEINING
- 7 SCHISTOSE SILTSTONE

LAMINATION CORE ANGLE

FOLIATION CORE ANGLE

Figure 20

ft 30 0 30 60 90 ft.

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PAN OCEAN OIL LTD.
CALGARY ALBERTA

DRILL HOLE SECTIONS

DEER AREA

FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
APRIL, 1980	1"=30'	106 C	D-0959

DRAWING NO. D-0960

232°

52°

4100'

4050'

4000'

3950'

3900'

3850'

3800'

3750'

3700'

3650'

3600'

3550'

3500'

B

D-79-10
(-90°)

SANDY, BUFFED LIGHT GREEN SILTSTONE

TD-344'

B'

D-79-6
(34' SE OF SECTION)
(-90°)

D-79-5
(25' SE OF SECTION)
(-90°)

D-79-9
(-90°)

TD-170'

TD-281'

TD-380'

D-79-5,6,9

LEGEND

ALTERATION ZONE
- 2 LAMINATED SILTSTONE
- 3 BLEACHED LAMINATED SILTSTONE
- 4 PHYLLITIC SILTSTONE
- 6 ZONE OF QUARTZ VEINING
- 7 SCHISTOSE SILTSTONE

BEDDING CORE ANGLE

FOLIATION CORE ANGLE

POSSIBLE FAULT

Figure 21

ft. 30 0 30 60 90 ft.

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DRILL HOLE SECTIONS

DEER AREA

FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
APRIL, 1980	1" = 30'	106 C	D-0960

DRAWING NO. E-0944



D-79-12,13

D-79-14,15,16,17

Figure 22

ft 30 0 30 60 90 120 ft

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PAN OCEAN OIL LTD.
CALGARY ALBERTA

DRILL HOLE SECTIONS
FLATS AND SOUTH DEER GRIDS
FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
APRIL, 1980	1" = 30'	106C	E-0945

DP468A0P00

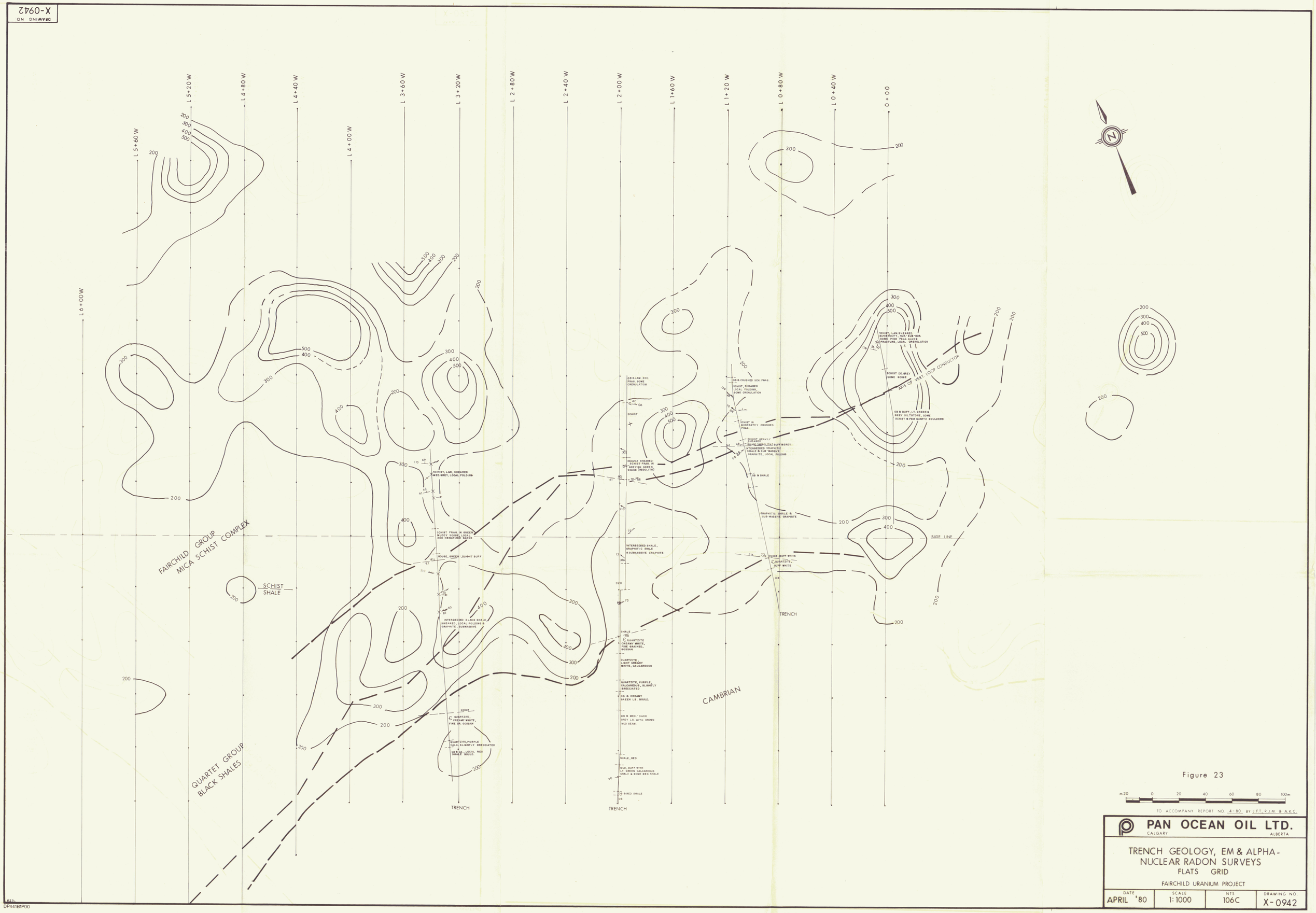
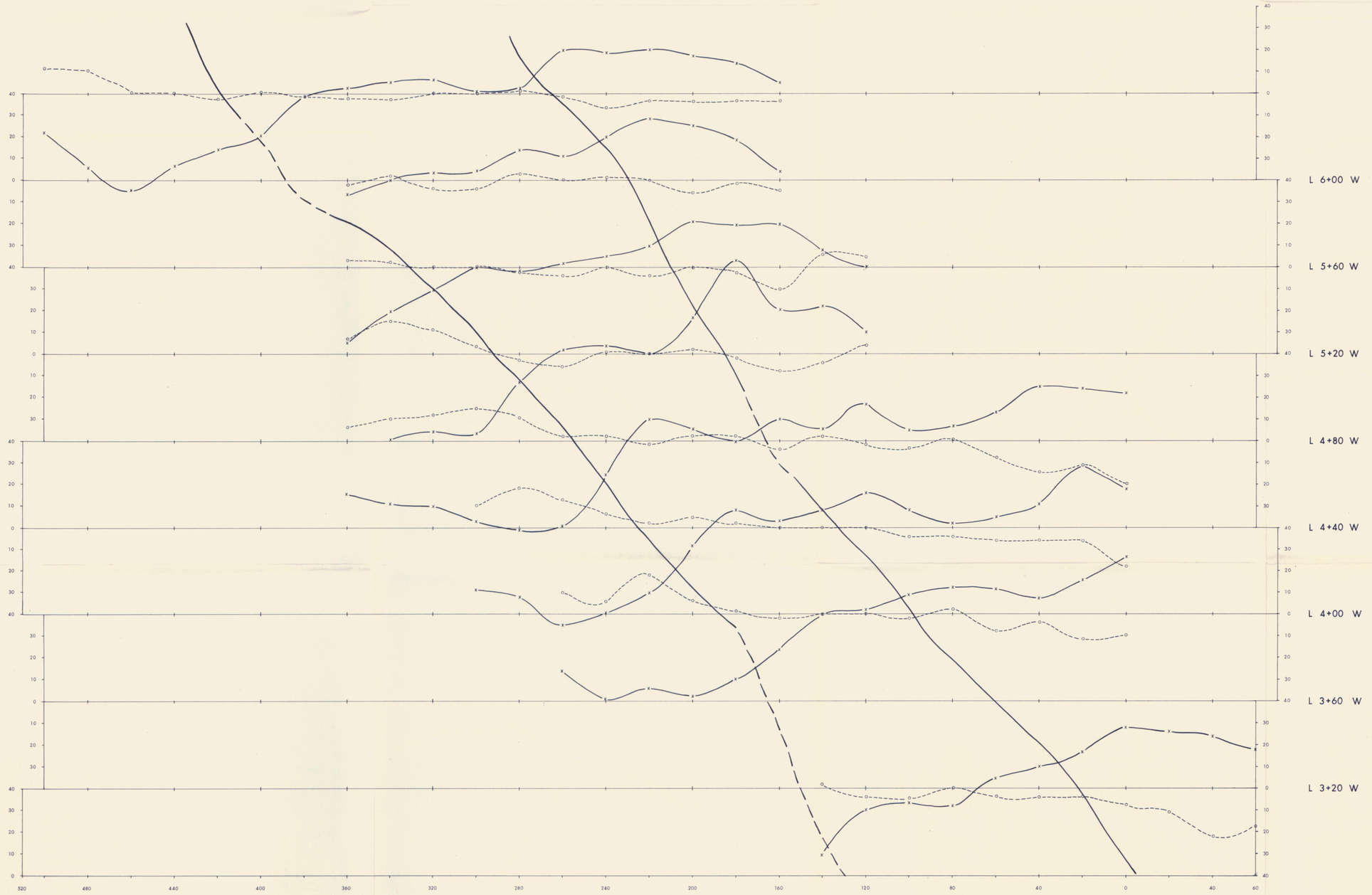

DRAWING NO
X-0942
L 6+00 W
L 5+60 W
L 5+20 W
L 4+80 W
L 4+40 W
L 4+00 W
L 3+60 W
L 3+20 W
L 2+80 W
L 2+40 W
L 2+00 W
L 1+60 W
L 1+20 W
L 0+80 W
L 0+40 W
0+00
FAIRCHILD GROUP
MICA SCHIST COMPLEX
SCHIST
SHALE
QUARTET GROUP
BLACK SHALES
CAMBRIAN
TRENCH
TRENCH
TRENCH
BASE LINE
AXIS OF VERT. LOOP CONDUCTOR
N
m 20 0 20 40 60 80 100m
TO ACCOMPANY REPORT NO. 4-80 BY J.F.T., R.J.M. & A.K.C.
PAN OCEAN OIL LTD.
CALGARY ALBERTA
TRENCH GEOLOGY, EM & ALPHA-
NUCLEAR RADON SURVEYS
FLATS GRID
FAIRCHILD URANIUM PROJECT
DATE APRIL '80
SCALE 1:1000
NTS 106C
DRAWING NO. X-0942
DP441B1P00

Figure 23

DRAWING NO. D-0937



LEGEND

INSTRUMENT: GEONICS EM-16 UNIT
SOURCE STATION: (CULTER, MAINE)
PROFILE SCALE: 1cm = 10°
HORIZONTAL SCALE: 1cm = 5m
OPERATOR FACING: SOUTH
OPERATOR: P. WALKER
DATE: AUGUST, 1979

—x— IN PHASE
----o---- QUADRATURE
——— CONDUCTIVE AXIS

Figure 24

m20 0 20 40 60 80 100m

TO ACCOMPANY REPORT NO. 40-8 BY J.F.T. R.J.M. & A.K.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

FLATS GRID VLF PROFILES

FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
MARCH, 1980	1 : 1 000	106C	D-0937

GEW

DRAWING NO. D-0938

L 1+00 E

L 2+00 E

L 3+00 E

L 4+00 E

L 5+00 E

L 6+00 E

L 7+00 E

L 8+00 E

L 9+00 E

L 10+00 E

60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260

Figure 25

LEGEND

INSTRUMENT: GEONICS EM-16 UNIT
SOURCE STATION: (CULTER, MAINE)
PROFILE SCALE: 1cm=10°
HORIZONTAL SCALE: 1cm=5m
OPERATOR FACING: SOUTH
OPERATOR: P. WALKER
DATE: AUGUST, 1979

—x— IN PHASE
– – o – – OUT OF PHASE
——— CONDUCTIVE AXIS

m 10 0 10 20 30 40 50m

TO ACCOMPANY REPORT NO. 40-8 BY J.F.T., R.J.M. & A.K.C.

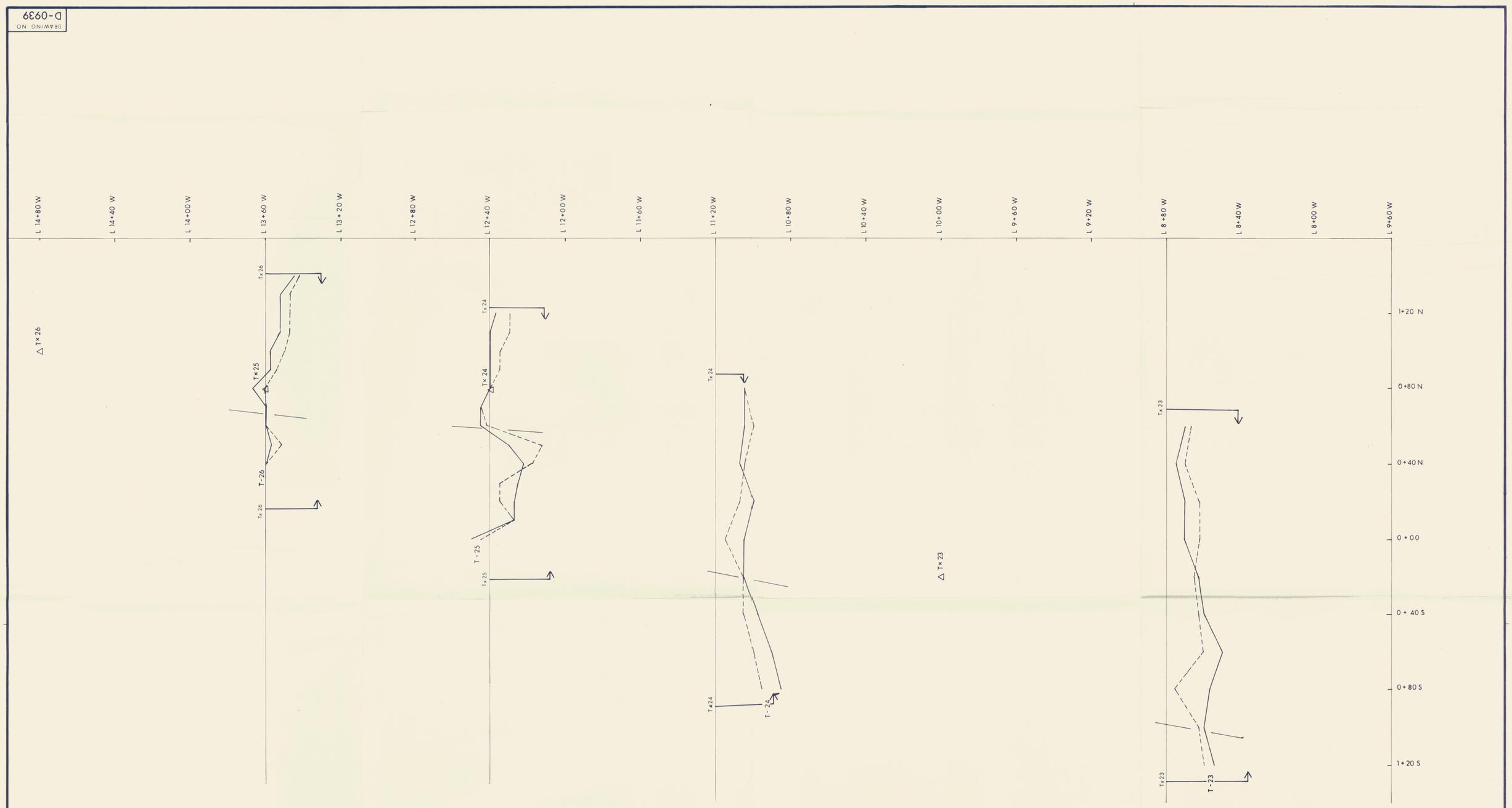
PAN OCEAN OIL LTD.
CALGARY ALBERTA

FLATS GRID VLF SURVEY

FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
MARCH, 1980	1 : 500	106C	D-0938

drw



LEGEND

MEDIUM FREQUENCY 1830 Hz

LOW FREQUENCY 390 Hz

Figure 26

m 20 0 20 40 60 80 100m

INSTRUMENT: CRONE ELECTROMAGNETIC UNIT

PROFILE SCALE: 25mm = 1°

HORIZONTAL SCALE: 1cm = 1m

OPERATORS: A. CHAN
K. KAYE
A. FADBRO
R. BEATON

DATE: AUGUST

TO ACCOMPANY REPORT NO. 40-8 BY J.F.T., R.J.M & A.K.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

C.E.M. VERTICAL SURVEY

FLATS GRID

FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
MARCH '80	25mm = 1°/1:1000	106 C	D-0939

DRAWING NO
X-0940

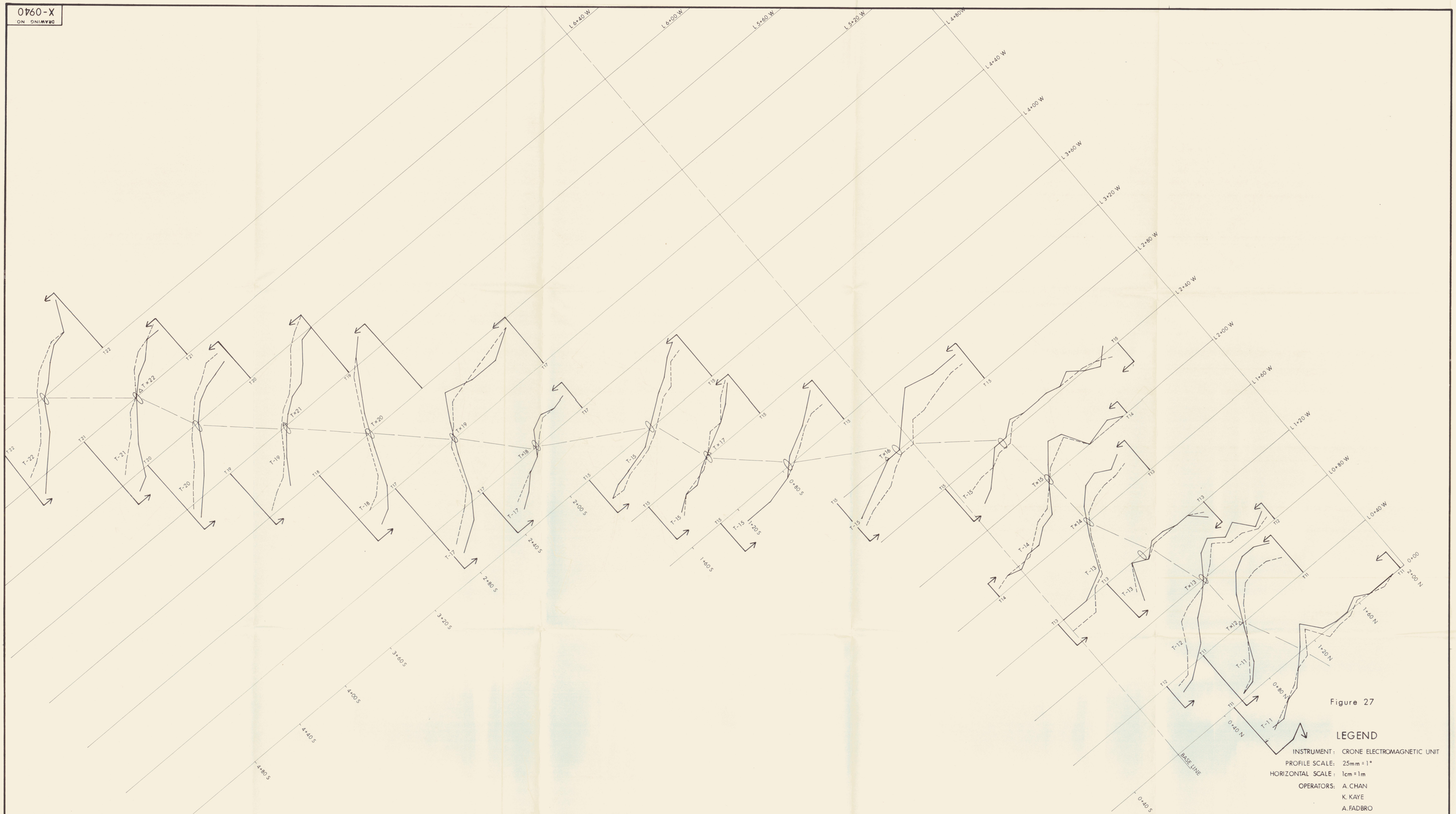


Figure 27

LEGEND

INSTRUMENT: CRONE ELECTROMAGNETIC UNIT
PROFILE SCALE: 25mm = 1°
HORIZONTAL SCALE: 1cm = 1m
OPERATORS: A. CHAN
K. KAYE
A. FADBRO
R. BEATON
DATE: AUGUST
——— MEDIUM FREQUENCY 1830 Hz
– – – – LOW FREQUENCY 390 Hz
—⬭— CONDUCTIVE AXIS

m 20 0 20 40 60 80 100m

TO ACCOMPANY REPORT NO. 4-80 BY J.F.T., R.J.M. & A.K.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

C.E.M. VERTICAL LOOP SURVEY

FLATS GRID
FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
APRIL, 1980	2.5mm=1° 1:1000	106 C	X-0940

gew
DP441B1P00

DRAWING NO. X-0941

L 7+60 W | L 7+40 W | L 7+20 W | L 7+00 W | L 6+80 W | L 6+60 W | L 6+40 W | L 6+20 W | L 6+00 W | L 5+80 W | L 5+60 W | L 5+40 W | L 5+20 W | L 5+00 W | L 4+80 W | L 4+60 W | L 4+40 W | L 4+20 W | L 4+00 W | L 3+80 W | L 3+60 W | L 3+40 W | L 3+20 W | L 3+00 W | L 2+80 W | L 2+60 W | L 2+40 W | L 2+20 W | L 2+00 W | L 1+80 W | L 1+60 W | L 1+40 W | L 1+20 W | L 1+00 W | L 0+80 W | L 0+60 W | L 0+40 W | L 0+20 W | 0+00 | L 0+20 E | L 0+40 E | L 0+60 E | L 0+80 E

3+20 N
2+80 N
2+40 N
2+00 N
1+60 N
1+20 N
0+80 N
0+40 N
0+00
0+40 S
0+80 S
1+20 S
1+60 S

Figure 28

EAST SHEET

LEGEND

INSTRUMENT: CRONE ELECTROMAGNETIC UNIT
SURVEY METHOD: HORIZONTAL SHOOTBACK METHOD
PROFILE SCALE: 2.5mm = 1°
HORIZONTAL SCALE: 1cm = 10 m
OPERATORS: R.BEATON, K. KAYE
DATE: AUGUST, 1979
——— MED. FREQ. 1830 Hz.
– – – – LOW FREQ. 390 Hz.
COIL SPACING 80 m
CONDUCTIVE AXIS

m20 0 20 40 60 80m

TO ACCOMPANY REPORT NO. 4-80 BY J.F.T, R.J.M. & A.K.C

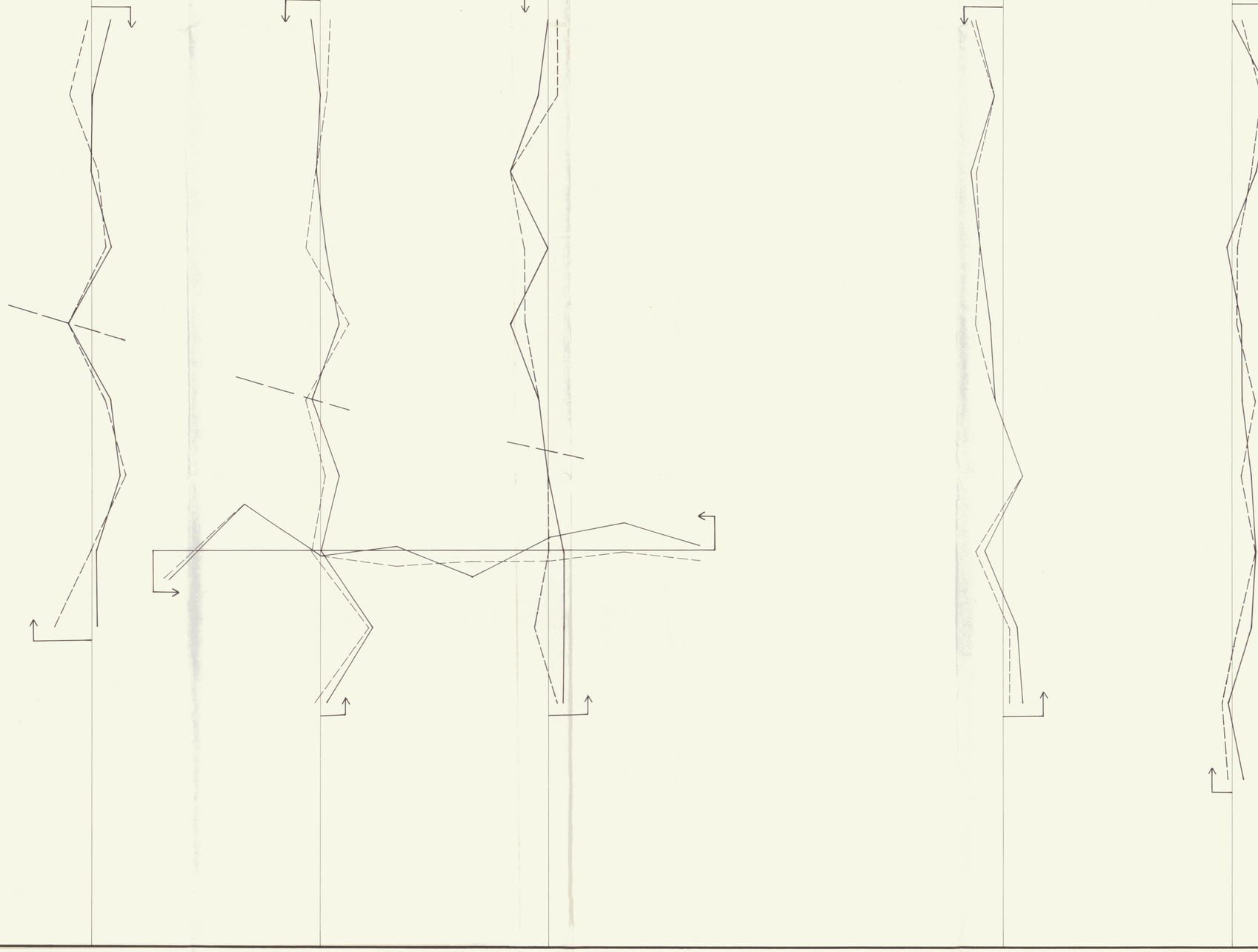
PAN OCEAN OIL LTD.
CALGARY ALBERTA

C.E.M. SHOOTBACK SURVEY
FLATS GRID
FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
MARCH, 1980	2.5mm=1° 1:1000	106C	X-0941

DRAWING NO
X-0941

L 15+60 W | L 15+20 W | L 14+80 W | L 14+40 W | L 14+00 W | L 13+60 W | L 13+20 W | L 12+80 W | L 12+40 W | L 12+00 W | L 11+60 W | L 11+20 W | L 10+80 W | L 10+40 W | L 10+00 W | L 9+60 W | L 9+20 W | L 8+80 W | L 8+40 W | L 8+00 W



3+20 N
2+80 N
2+40 N
2+00 N
1+60 N
1+20 N
0+80 N
0+40 N
0+00
0+40 S
0+80 S
1+20 S

Figure 28

WEST SHEET

LEGEND

INSTRUMENT: CRONE ELECTROMAGNETIC UNIT
SURVEY METHOD: HORIZONTAL SHOOTBACK METHOD
COIL SEPARATION: 80 METERS
PROFILE SCALE: 25 mm = 1°
HORIZONTAL SCALE: 1cm = 10m
OPERATORS: R.BEATON, K. KAYE
DATE: AUGUST, 1979

——— MED. FREQ. 1830 Hz.
– – – – LOW FREQ. 390 Hz.
COIL SPACING 80 m
— — CONDUCTIVE AXIS

m 20 0 20 40 60 80 100m

TO ACCOMPANY REPORT NO. 4-80 BY J.F.T., R.J.M. & A.K.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

C.E.M. SHOOTBACK SURVEY
FLATS GRID
FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
MARCH, 1980	2.5mm=1° 1:1000	106 C	X-0941

G.E.W.
DP441B1P00

DRAWING NO. E-0947



Figure 29

LEGEND

INSTRUMENT: GEONICS EM-16 UNIT
SOURCE STATION: (CULTER, MAINE)
PROFILE SCALE: 1cm=10%
HORIZONTAL SCALE: 1cm=5m
OPERATOR FACING: SOUTH
OPERATOR: P. WALKER
DATE: AUGUST, 1979

——— IN PHASE DIP ANGLE
– – – – – QUADRATURE
——— CONDUCTIVE AXIS

-20 0 20 40 60 80 100m

TO ACCOMPANY REPORT NO. 4-80 BY J.F.T. & P.M. & A.K.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

VLF EM-16 PROFILES

SOUTH DEER GRID

FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
APRIL, 1980	1cm=10% 1:1000	106 C	E-0947

DP468A0P00

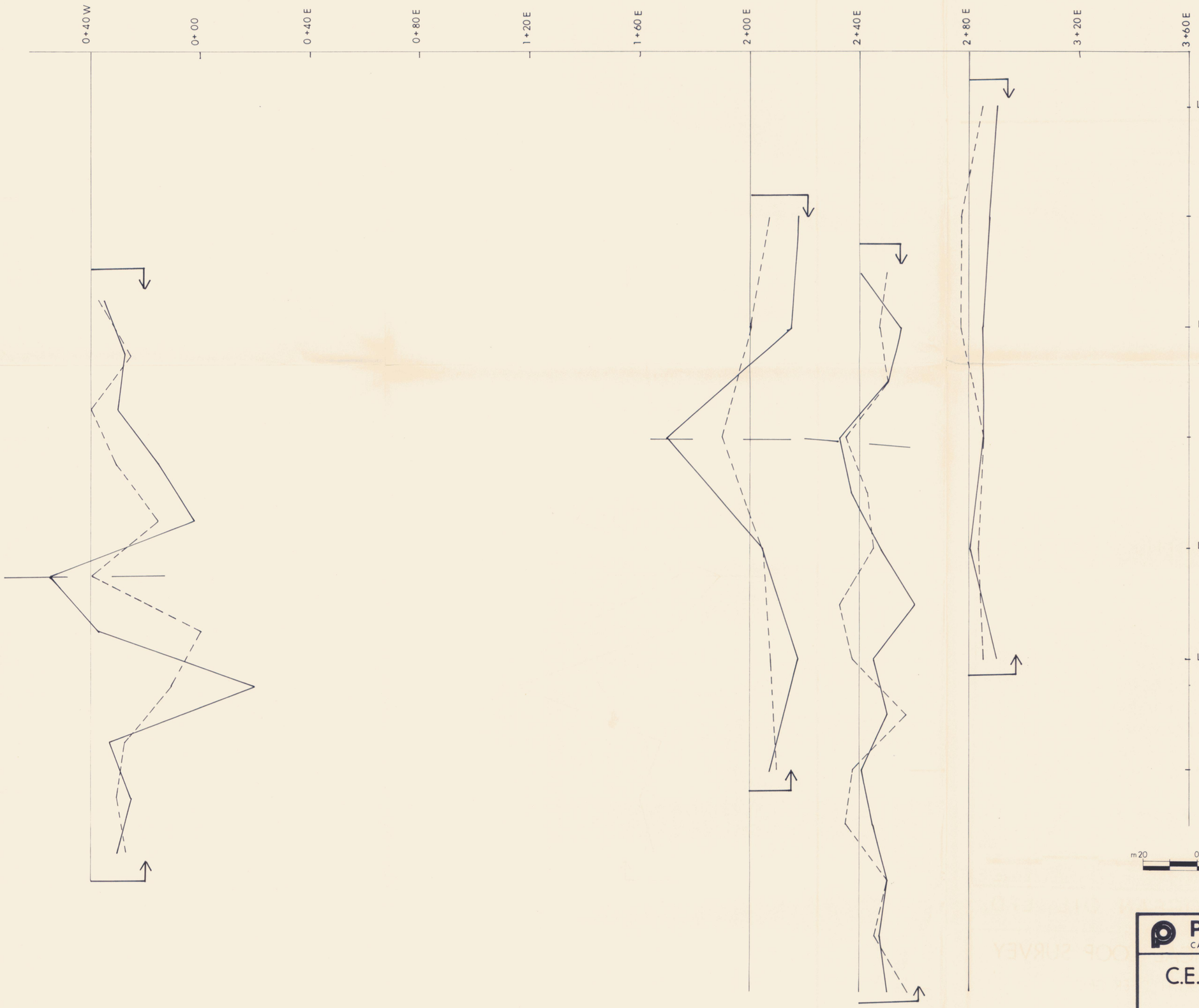


Figure 30

LEGEND

INSTRUMENT: CRONE ELECTROMAGNETIC UNIT

SURVEY METHOD: HORIZONTAL SHOOT-BACK METHOD

COIL SEPARATIONS: 80 m

PROFILE SCALE: 2.5 mm = 1°

HORIZONTAL SCALE: 1cm = 10m

OPERATORS: R. BEATON, K. KAYE

DATE: AUGUST, 1979

——— MEDIUM FREQUENCY 1830 Hz

– – – – LOW FREQUENCY 390 Hz

——— CONDUCTIVE AXIS

m 20 0 20 40 60 80 100m

TO ACCOMPANY REPORT NO. 4-80 BY J.F.T., R.J.M. & A.K.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

C.E.M. SHOOTBACK SURVEY

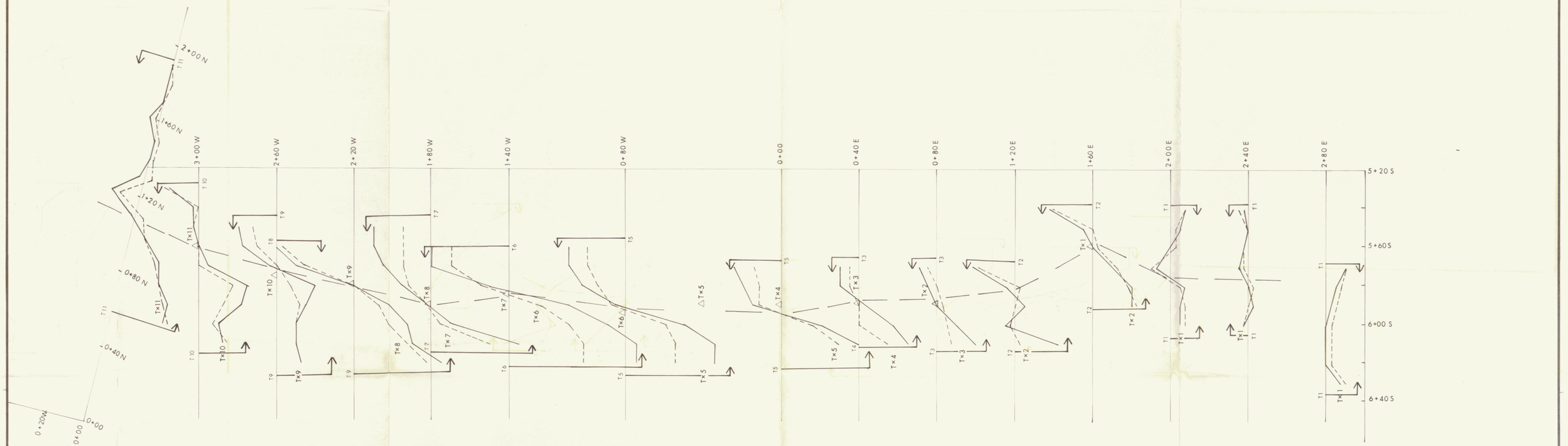
SOUTH DEER GRID

FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
MARCH '80	2.5mm=1°/1:1000	106 C	C-0946

K.D.

DRAWING NO
D-0961



LEGEND

INSTRUMENT: CRONE ELECTROMAGNETIC UNIT
PROFILE SCALE 25mm = 1°
HORIZONTAL SCALE: 1cm = 1m
OPERATORS: A. CHAN
K. KAYE
A. FADBRO
R. BEATON
DATE: AUGUST

——— MEDIUM FREQUENCY 1830 Hz
– – – – – – LOW FREQUENCY 390 Hz

Figure 31

m 20 0 20 40 60 80 100m

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PAN OCEAN OIL LTD.
CALGARY ALBERTA

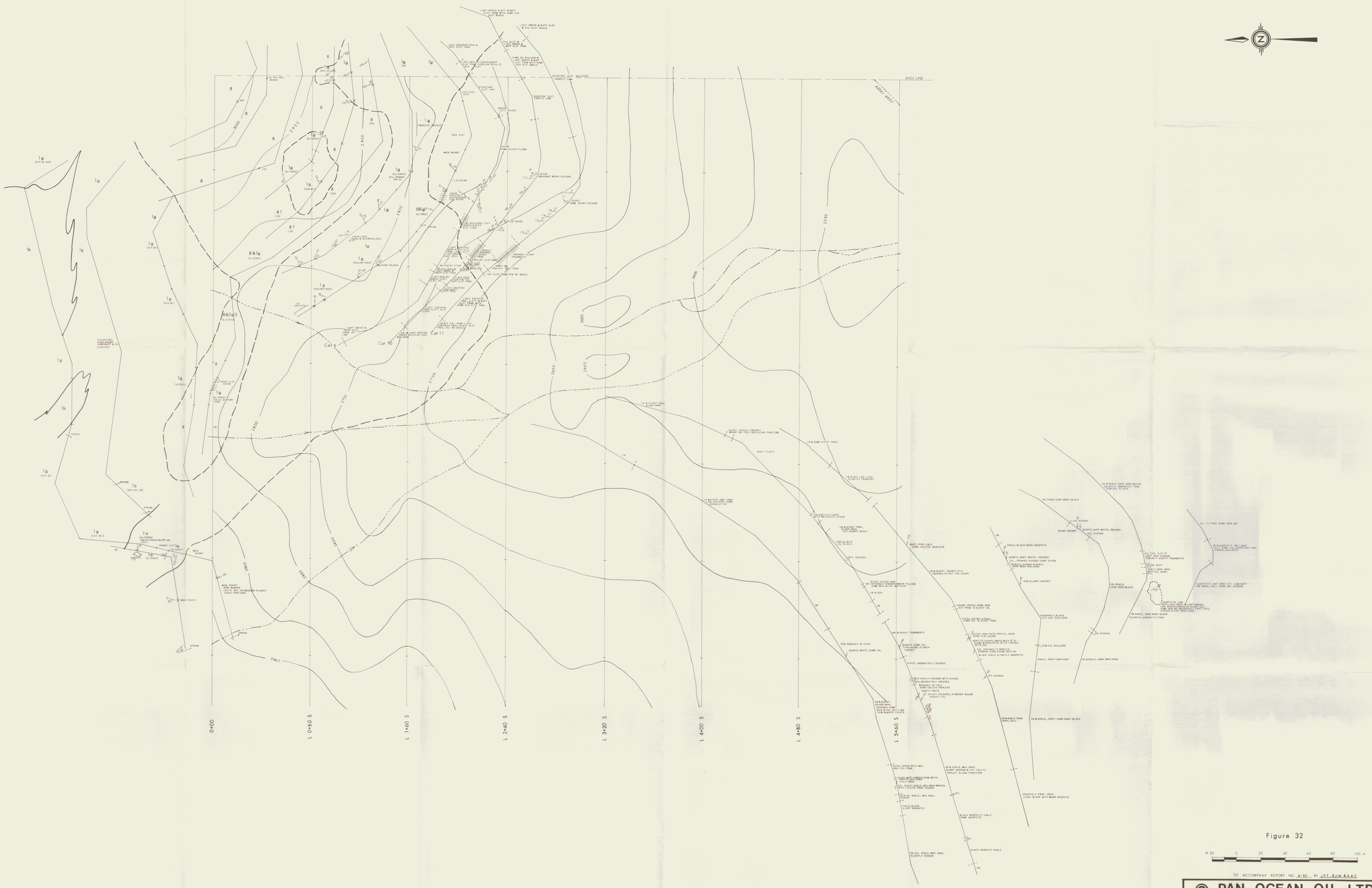
C.E.M. VERTICAL LOOP SURVEY

SOUTH DEER GRID

FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
MARCH '80	25mm=1°/1:1000	106 C	D-0961

DRAWING NO. E-0955


BASE LINE
0+00
L 0+80 S
L 1+60 S
L 2+40 S
L 3+20 S
L 4+00 S
L 4+80 S
L 5+60 S
Cat 9
Cat 10
Cat 11
2300
2400
2500
2600
2650
2700
2750
2800
2900
3000
1g
1b
1a
8
8&1g
8?
SPRING
MICA SCHIST
SCH. SLST.
MICA SCHIST
LIGHT GREEN SLATY & BUFF SLST FRAG WITH SOME SCH SLST BOULD
LIGHT GREEN & BUFF SLST & SCH. SLST BOULD
LIGHT GREENISH GRAY & BUFF SLST FRAG
SCH. SLST & LIGHT GREEN & BUFF SLST FRAG
LIGHT GREEN & BUFF SLST FRAG
SOME BIG BOULDER & LIGHT GREEN & BUFF SLST FRAG WITH SOME SCH. SLST BOULD.
LIGHT GREENISH GRAY SLATY SLST FRAG
LIGHT GREEN & BUFF SLST FRAG AS LAM
LIGHT GREENISH GRAY SLATY & BUFF SLST FRAG WITH SOME SCH SLST FRAG
LIGHT GREENISH GRAY SLATY SLST
LIGHT GREENISH GRAY SLATY SLST FRAG
LIGHT GREENISH GRAY SLATY SLST FRAG
LIGHT GREEN & BUFF SLST FRAG AS LAM
LIGHT GREENISH GRAY SLATY SLST FRAG
LIGHT GREENISH GRAY SLATY SLST FRAG
LIGHT GREEN & BUFF SLST FRAG AS LAM
LIGHT GREEN & BUFF SLST FRAG AS LAM
LIGHT GREENISH GRAY SLATY SLST FRAG
LIGHT GREENISH GRAY SLATY SLST FRAG
LIGHT GREENISH GRAY SLATY SLST FRAG

DRAWING NO. D-0953

0+00

L 0+40 S

L 0+80 S

L 1+20 S

L 1+60 S

L 2+00 S

L 2+40 S

L 2+80 S

L 3+20 S

L 3+60 S

L 4+00 S

L 4+40 S

L 4+80 S

L 5+20 S

L 5+60 S

DEER CREEK

BASELINE

N

LEGEND

INSTRUMENT: BASE STATION G826A
SURVEY INSTURMENT G846
CONTOUR INTERVAL: 25 GAMMAS
OPERATOR: P. WALKER
DATE: JULY, 1979

——— MAGNETIC CONTOUR
——— TOPOGRAPHICAL CONTOUR
– – – – – STREAM

Figure 33

m 20 0 20 40 60 80 100 m

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PAN OCEAN OIL LTD.
CALGARY ALBERTA

MAGNETIC SURVEY

WEST DEER GRID

FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
APRIL '80	1: 1000	106C	D-0953

DRAWING NO. D-0954

0+00

L 0+40 S

L 0+80 S

L 1+20 S

L 1+60 S

L 2+00 S

L 2+40 S

L 2+80 S

L 3+20 S

L 3+60 S

L 4+00 S

L 4+40 S

L 4+80 S

L 5+20 S

L 5+60 S



N

LEGEND

INSTRUMENT: ALPHA NUCLEAR CUP
UNIT MEASURED: COUNTS/HOUR
CONTOUR INTERVALS: 120, 200, 300, 400, 500
OPERATOR: AL FADBRO
DATE: JULY, 1979

——— ALPHA NUCLEAR CONTOUR
——— TOPOGRAPHICAL CONTOUR
—·—·— STREAM

Figure 34

m 20 0 20 40 60 80 100m

TO ACCOMPANY REPORT NO. 4-80 BY J.F.T., R.J.M. & A.K.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

ALPHA NUCLEAR RADON SURVEY

WEST DEER GRID

FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
APRIL '80	1:1000	106C	D-0954

DRAWING NO. D-0952

0+00

L 0+40 S

L 0+80 S

L 1+20 S

L 1+60 S

L 2+00 S

L 2+40 S

L 2+80 S

L 3+20 S

L 3+60 S

L 4+00 S

L 4+40 S

L 4+80 S

L 5+20 S

L 5+60 S

BASELINE

DEER CREEK

N

LEGEND

INSTRUMENT: EXPLORANIUM GR410A
DATA RECORDED: TOTAL COUNT
CONTOUR INTERVAL: 5cps (70,75,80,85,90,95,100)
SAMPLE PERIOD: 30 SECONDS
OPERATOR: J. HICKES
DATE: JULY, 1979
——— SPECTROMETER CONTOUR
——— TOPOGRAPHICAL CONTOUR
- - - - - STREAM

Figure 35

m 20 0 20 40 60 80 100m

TO ACCOMPANY REPORT NO 4-80 BY J.F.T., R.J.M. & A.K.C.

PAN OCEAN OIL LTD.
CALGARY ALBERTA

SPECTROMETER SURVEY (TOTAL COUNT)

WEST DEER GRID

FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
APRIL '80	1: 1000	106C	D-0952

DRAWING NO. D-0951

0+00

L 0+40 S

L 0+80 S

L 1+20 S

L 1+60 S

L 2+00 S

L 2+40 S

L 2+80 S

L 3+20 S

L 3+60 S

L 4+00 S

L 4+40 S

L 4+80 S

L 5+20 S

L 5+60 S

BASELINE

DEER CREEK

RJJ

LEGEND

INSTRUMENT: EXPLORANIUM GR410A
DATA RECORDED: U/TH RATIO
CONTOUR INTERVAL: 5cps (0.3, 0.4, 0.5)
SAMPLE PERIOD: 30 SECONDS
OPERATOR: J. HICKES
DATE: JULY , 1979

———— SPECTROMETER CONTOUR
———— TOPOGRAPHICAL CONTOUR
— — — — STREAM

Figure 36

m 20 0 20 40 60 80 100 m

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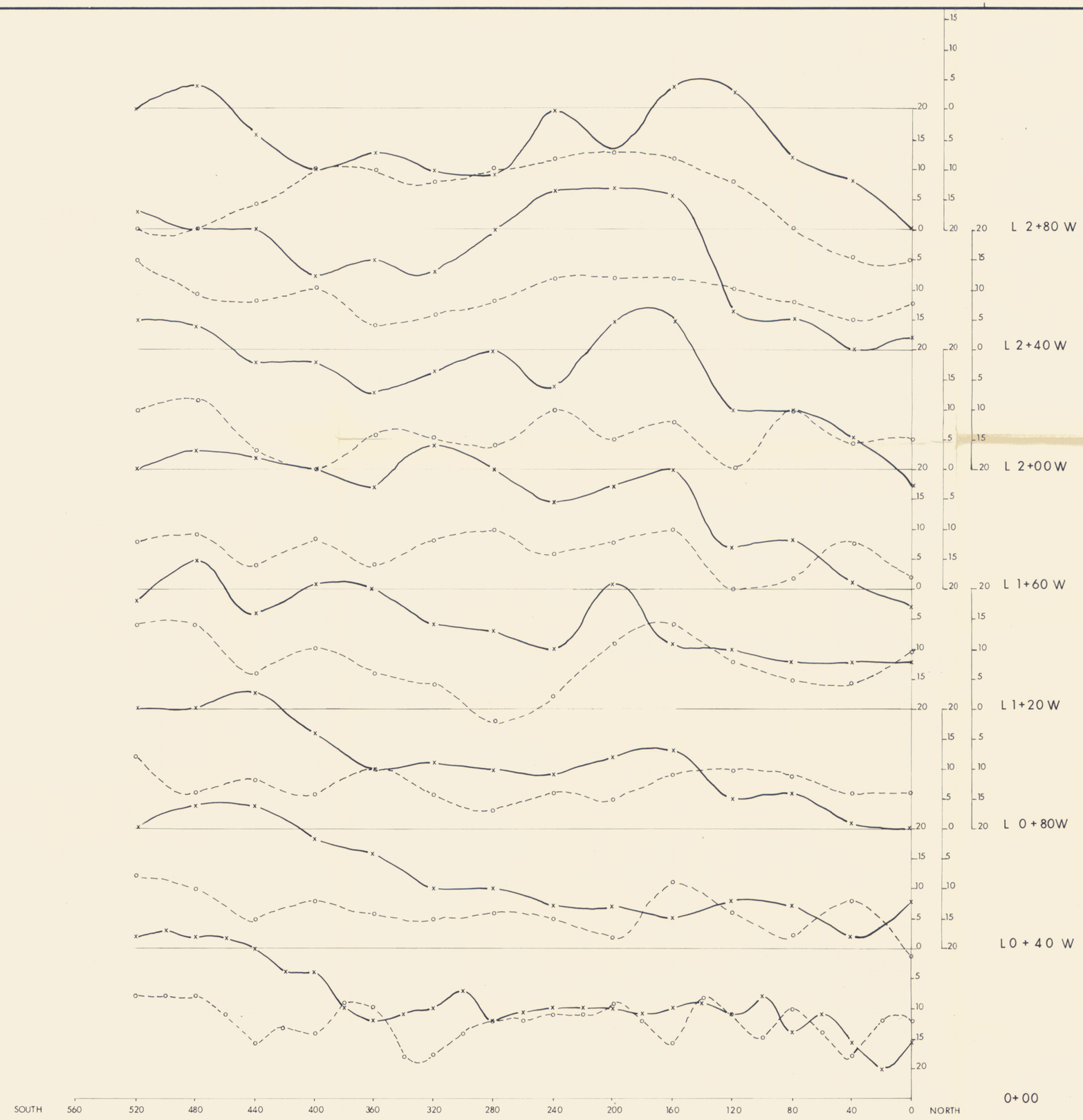
PAN OCEAN OIL LTD.
CALGARY ALBERTA

SPECTROMETER SURVEY (U/Th RATIOS)

WEST DEER GRID

FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
APRIL '80	1: 1000	106C	D-0951



LEGEND

INSTRUMENT: GEONICS EM-16 UNIT
SOURCE STATION: (CULTER, MAINE)
PROFILE SCALE: 1cm=10°
HORIZONTAL SCALE: 1cm=5m
OPERATOR FACING: SOUTH
OPERATOR: P. WALKER
DATE: AUGUST, 1979
——x—— IN PHASE
– – –o– – – QUADRATURE

Figure 37

m 40 0 40 80 120 160 200m

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PAN OCEAN OIL LTD.
CALGARY ALBERTA

VLF PROFILES

WEST DEER GRID

FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
MARCH '80	1: 2000	106 C	C-0950

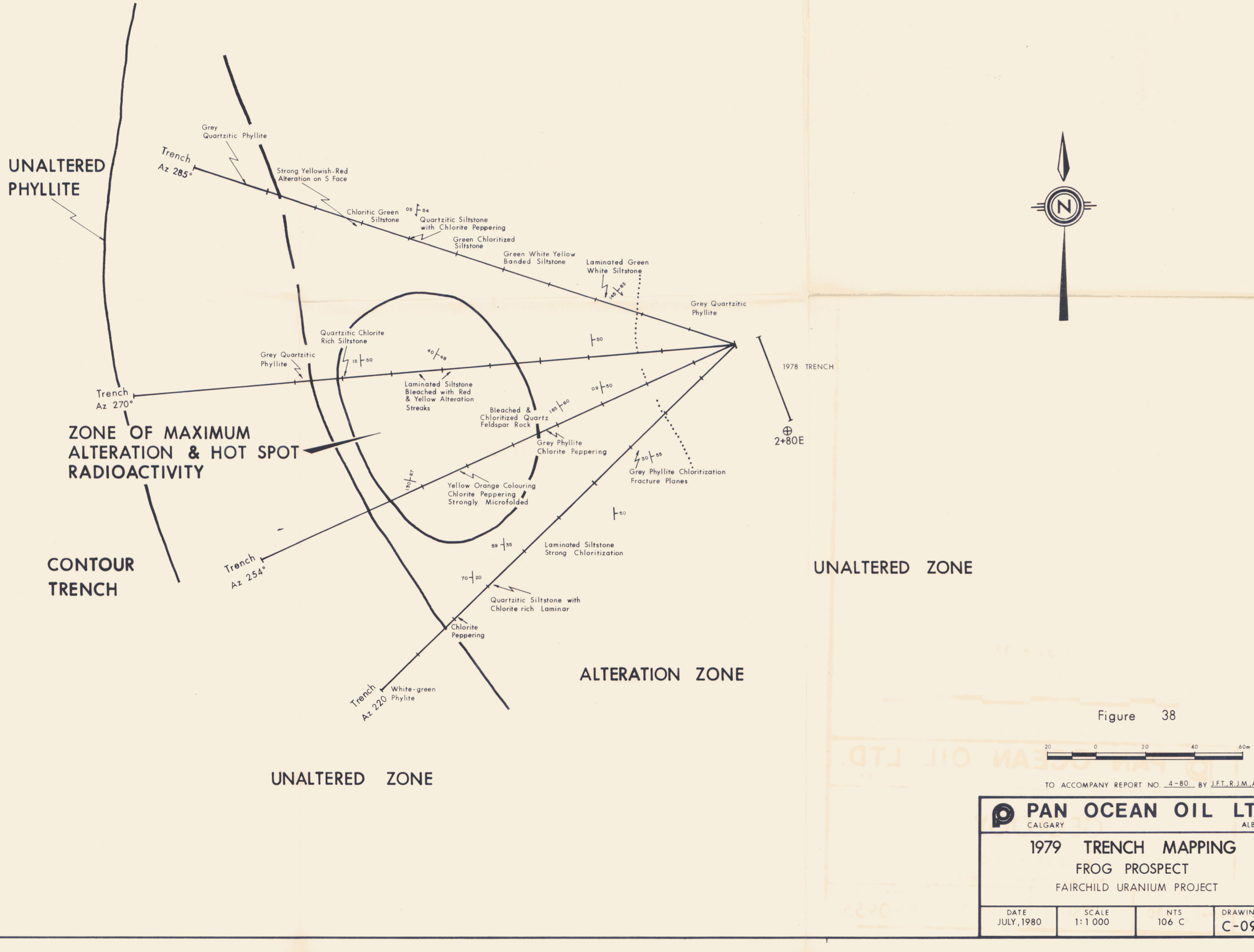

Figure 38

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PAN OCEAN OIL LTD.
CALGARY ALBERTA

1979 TRENCH MAPPING

FROG PROSPECT

FAIRCHILD URANIUM PROJECT

DATE	SCALE	NTS	DRAWING NO.
JULY, 1980	1:1 000	106 C	C-0972

D.A.