

FIELD PROCEDURES

The reflection survey was carried out obtaining 600% multifold coverage.

The geophone stations were 210 feet apart with nine geophones (Mark - 14 cps.) per group. The shotpoints were 420 feet apart.

The shotpoints consisted mainly of one hole at 60 feet, preloaded with 25 pounds of dynamite. Drillers logs generally show clay and boulders at the top of the hole, bottoming in either shale or sandstone, with gravel showing up near river beds. The drilling was done using air, and caused few problems except in all gravel holes or in sticky wet formations.

The digital recorder consisted of 24 channels with the data recorded in binary gain on nine track magnetic tapes in the Western format. Geospace 1590 amplifiers were used.

The inline refraction profile was shot along a relatively straight existing trail using the same equipment. Approximately 7.5 miles was recorded from shotpoints at both ends of the line using a maximum of 200 pounds of dynamite per shot.

SURVEYING

The survey was conducted using Wilde Model T16 Theodolites and steel tapes and was tied into government triangulation stations, previous years seismic control, one well location and a tellurometer station.

A surveyor was used to direct the bulldozing work on the predozing of the seismic program.

CREW PERSONNEL

1	Party Manager
1	Computer Clerk
1	Observer
1	Assistant Observer
1	Shooter
1	Shooter's Helper
2	Cable Truck Drivers
5	Recorder Helpers
2	Surveyors
2	Rodmen
6	Drillers
6	Drillers Helpers
2	Fuel Truck Drivers
1	Supply Man
1	Water Truck Driver
2	Mechanics
1	Night Man
1	Cook
1	Cook's Helper
1	Camp Attendant
1	Drill Push

40 TOTAL MEN

WESTERN PARTY F-85

The contract crew was under the supervision of J.T. Coull and party managed by E. Lorenowicz.

Field crew equipment consisted of the following:

Track mounted -- Digital recorder, two cable units, one shooter's unit, one survey unit, one supply unit, one personnel carrier, six drills, one water truck.

Wheel mounted -- one 4-wheel drive crew cab, one fuel truck.

Camp equipment consisted of four expandable track mounted trailers, one wheel mounted sleeper, a track mounted power plant and a shop unit.

The seismic line cutting and clearing was done by MacMillan Construction of Peace River, Alberta. Equipment used consisted of a portable camp, fuel sleighs, one personnel truck and three bulldozers.

Line slashing, cleanup and erosion control work was done by Sub Artic Slashing Ltd., Ft. Simpson, N.W.T., out of a tent camp using power chain saws and snowmobiles in the winter and serviced by a helicopter in the spring.

The operation was supported by fixed wing aircraft out of Norman Wells, N.W.T. and a helicopter stationed on the crew.

STATISTICAL DATA

Production

Party F-85 spent 31 calendar days working on seismic lines in the area. The seismic lines were predozed and cleared commencing in January 1972. Party F-85 surveyed eighty-five (85) miles consisting of 7.5 miles of inline refraction and 77.5 miles of 600% multifold reflection coverage.

The location of the program is shown on the surface contour map in the pocket of the Report. Geophone, station and shotpoint arrangements are shown on the spread diagrams in the pocket.

The average daily production on the reflection survey was three miles per day. Four days were required to shoot the inline refraction profile. Weather and equipment down time was insignificant, but moving time over the mountainous terrain cut down production.

CLOVERLEAF
AREA

JOHNSON
RIVER

Scale 1" = 64,000'

126°

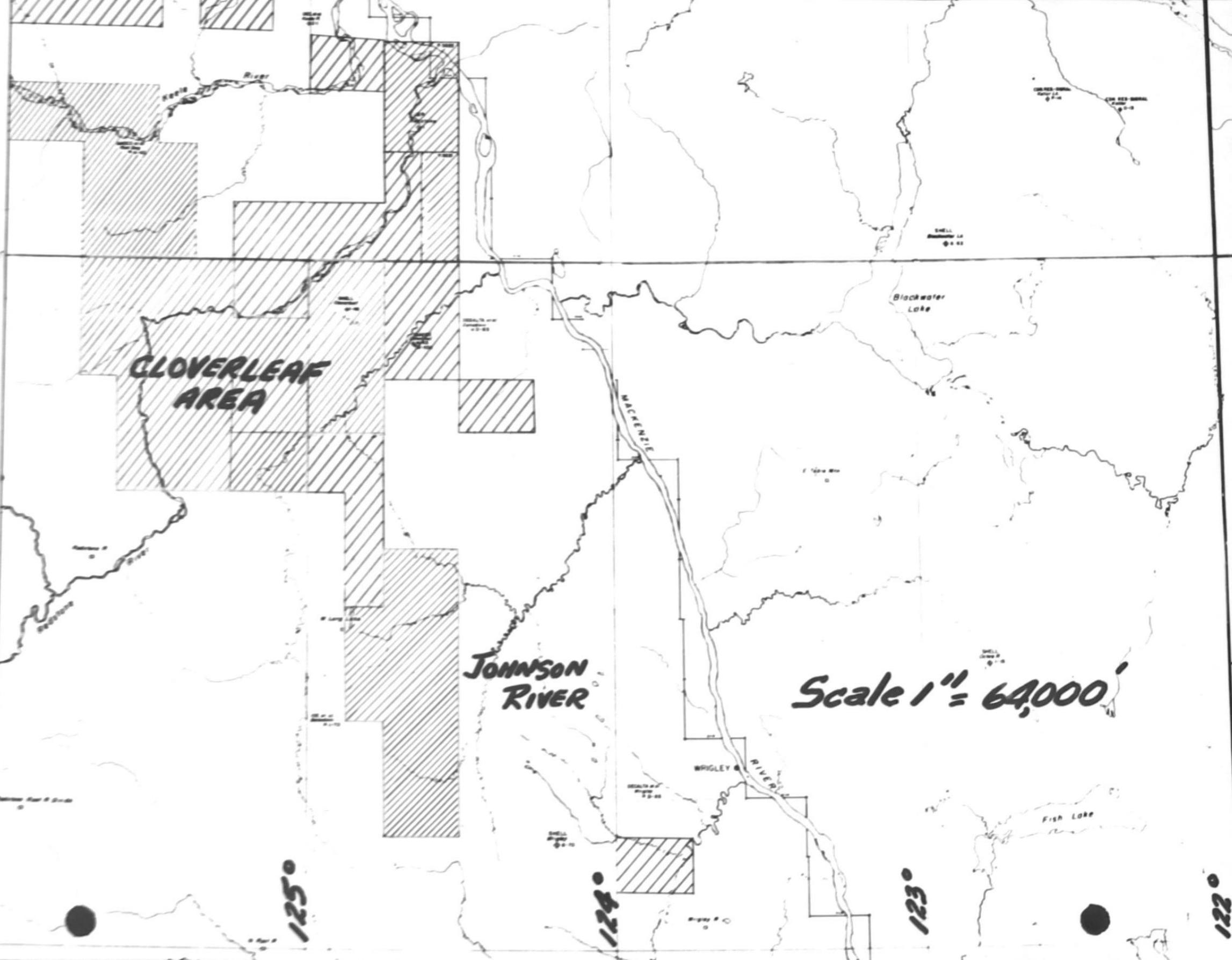
125°

124°

123°

122°

54° 20' 30"



T A B L E O F C O N T E N T S

	<u>Page</u>
Introduction	1
Locality Map	
Statistical Data	2
Production	2
Western Party F-85	3
Crew Personnel	4
Surveying	5
Field Procedures	6
Data Processing	7
Results and Interpretation	8
Seismic Spread Diagram	In Pocket
Refraction Spread Diagram	In Pocket
Location and Surface Contour Map	In Pocket
Subsurface Maps	In Pocket

Abstracted for
Geo-Science Data Index
Date _____

REPORT OF GEOPHYSICAL SURVEY

REPORT OF SEISMOGRAPH REFLECTION AND REFRACTION SURVEY

Conducted By
Western Geophysical Company of Canada Ltd.
for
Amoco Canada Petroleum Company Ltd.

During the Period March 9, 1972 to April 11, 1972

In the Cloverleaf Area of the Northwest Territories, through a seismic option from Aquitaine Co. of Canada Ltd. on Northwest Territories Permit Numbers 5372 to 5383, inclusive, and 5443 of the Cloverleaf - Johnson River Areas.



Prepared By
C.W. Allison
District Geophysicist

Abstracted for
Geo-Science Data Index
Date _____

Submitted in support of application for credit, see Affadavit made by
OF _____
and in accordance with work obligations under Section 64 (F) of the
Territorial Lands Act.

REPORT OF GEOPHYSICAL AND SEISMOGRAPH
REFLECTION AND REFRACTION SURVEY

Cloverleaf Area, Northwest Territories
Permit Numbers 5372 to 5383 and 5443

Prepared by: C.W. Allison
District Geophysicist

60-6-5-115

June 1972

OK.

T A B L E O F C O N T E N T S

	<u>Page</u>
Introduction	1
Locality Map	
Statistical Data	2
Production	2
Western Party F-85	3
Crew Personnel	4
Surveying	5
Field Procedures	6
Data Processing	7
Results and Interpretation	8
Seismic Spread Diagram	In Pocket
Refraction Spread Diagram	In Pocket
Location and Surface Contour Map	In Pocket
Subsurface Maps	In Pocket

Abstracted for
Geo-Science Data Index
Date _____

REPORT OF GEOPHYSICAL SURVEY

REPORT OF SEISMOGRAPH REFLECTION AND REFRACTION SURVEY

Conducted By
Western Geophysical Company of Canada Ltd.
for
Amoco Canada Petroleum Company Ltd.

During the Period March 9, 1972 to April 11, 1972

In the Cloverleaf Area of the Northwest Territories, through a seismic option from Aquitaine Co. of Canada Ltd. on Northwest Territories Permit Numbers 5372 to 5383, inclusive, and 5443 of the Cloverleaf - Johnson River Areas.



Prepared By
C.W. Allison
District Geophysicist

Abstracted for
Geo-Science Data Index
Date _____

Submitted in support of application for credit, see Affadavit made by
OF _____
and in accordance with work obligations under Section 64 (F) of the
Territorial Lands Act.

SP 2



40100'

SP 1



SPREAD 9

24 SPREAD 8 1

24 SPREAD 7 1

24 SPREAD 6 1

24 SPREAD 5 1

24 SPREAD 4 1

24 SPREAD 3 1

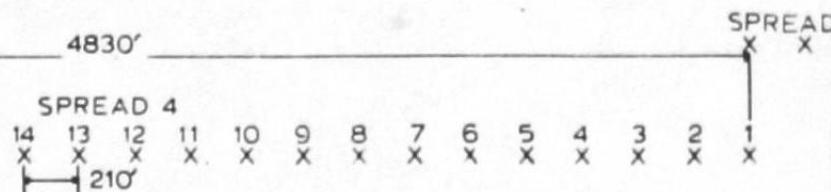
24 SPREAD 2 1

24 SPREAD 1 1

PROCEDURE

BOTH SHOT POINTS WERE SHOT
INTO EACH SPREAD

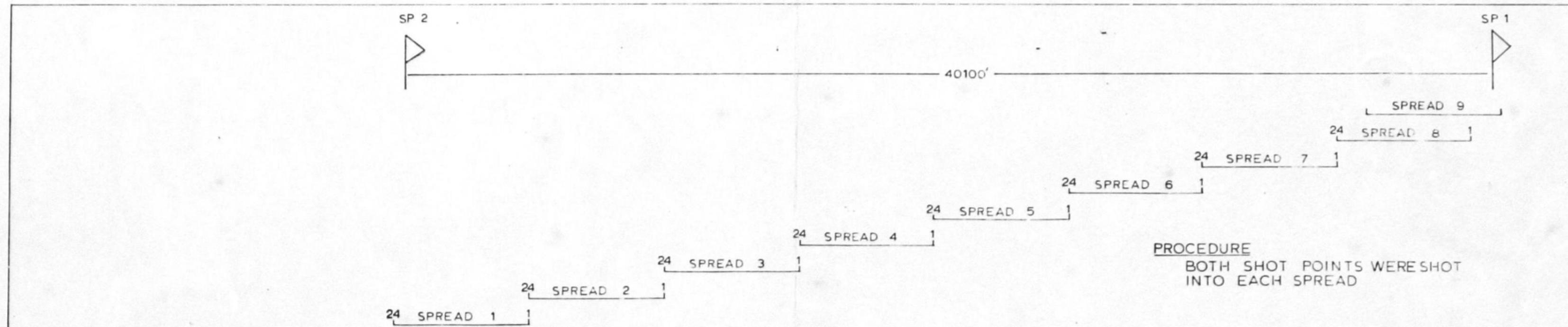
CLOVERLEAF LAKE AREA
CYE RFX1
IN LINE REFRACTION
WESTERN GEOPHYSICAL
F-85
MARCH 1972



3 2 1
X X X
SPREAD 3

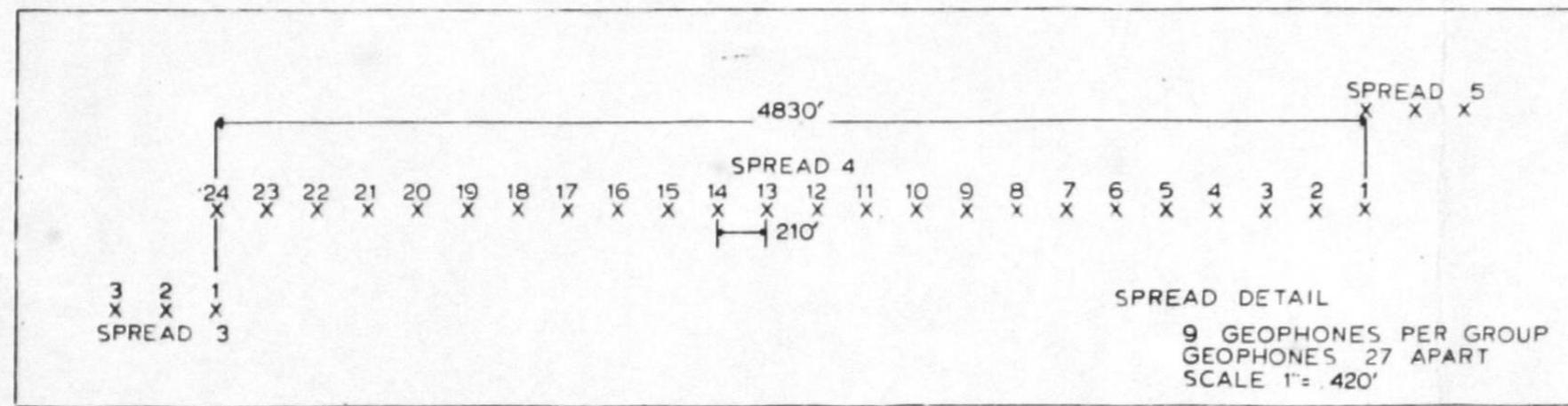
SPREAD DETAIL

9 GEOPHONES PER GROUP
GEOPHONES 27 APART
SCALE 1" = .420'



PROCEDURE

BOTH SHOT POINTS WERE SHOT
INTO EACH SPREAD



CLOVERLEAF LAKE AREA
CYE RFX1
IN LINE REFRACTION
WESTERN GEOPHYSICAL
F-85
MARCH 1972

CLOVERLEAF LAKE AREA
WESTERN F-85
MAR-APR 1972
600% SYMETRICAL SPREAD
SINGLE HOLE PATTERN
SCALE 1: 420

SHOT POINTS

SURVEY STATIONS

RECORDING POINTS (TRACE)

2520

105

210'

27'

9 GEOPHONES PER GROUP 27' APART

RESULTS AND INTERPRETATION

The Top of Mid Devonian Carbonate structure map is the main map in the area. Record quality in the area is generally good. A strong reflection occurs at the Top of the Mid Devonian Carbonate. This reflection was tied into the Cloverleaf well on the east and was identified to the west from an approximate 40,000 foot inline refraction profile. Other reflections occur at the Top of Devonian, Siluro-Ordovician and the Top of Pre Cambrian.

The area has several north south trending anticlinal structures. The structural style is complex with faulting on both the east and west flanks of the structures. The section thickens regionally to the west.

Respectfully submitted by

AMOCO CANADA PETROLEUM COMPANY LTD.



C.W. Allison
District Geophysicist

DATA PROCESSING

The data processing was performed by Amoco Canada Petroleum Company Ltd.

The digital field tapes were reformatted, edited and programmed into composited structural sections with elevation corrections applied to a +1800 foot datum using a 10,000 ft./sec. replacement velocity.



