



9229 C131 2E

CANADIAN FOREST OIL LTD.
FINAL PLAN REPORT

Area of Exploration: Crown Acreage northwest of Cdn. Forest I-61
2D shot as part of EL380 program

Operated by: Canadian Forest Oil Ltd.

Operation Number: 9229-C131-2E

Land Use Permit: 9180-C831-3

Type of Operation: 2D Seismic Acquisition
Line: 99-SAW-001

Location: NWT Liard
60 56 32.47 -123 32 05.27
60.43 44.42 -123 39 50.58

Duration of Operation:
Principle Contractor: Schlumberger Geco Prakla & Polaris Explorer,
both of Calgary.

Interest Owners: Canadian Forest Oil Ltd 100%

Author of Report: Kenneth I. Mitchell - Senior Geophysical Specialist
Linda Dickson -Geophysical Technician
Canadian Forest Oil Ltd.

Date of Report: September 1, 2000

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Processed Seismic Line.....	Enclosure 2
Interpreted Seismic Data.....	Enclosure 3
Synthetic Seismograms.....	Enclosure 4

Abstract

A 2D acquisition program in the Maxhamish, B.C. - Fort Liard, N.W.T. was conducted by Canadian Forest Oil Ltd.. Approximately 25 km of 2D Dynamite data was acquired at Sawmill Mountain, as detailed in this report.

In this summer-season program, heliportable acquisition techniques were employed in conjunction with hand cut, avoidance line clearing methods to achieve efficient, safe and low-impact seismic acquisition. Canadian Forest Oil Ltd. assigned Synterra Technologies Ltd and Geco-Prakla (Schlumberger) to oversee the entire program. Impact Exploration Services Inc. secured the original regulatory approvals in the Ft Liard area, and continued to secure amendments and revisions, including addition of the Sawmill area. Geco-Prakla was the principle acquisition contractor, however due to weather considerations and timely crew availability, Polaris Explorer Ltd were hired to assist in completing the shooting phase of the program. Beaver Enterprises provided line clearing and provide camp services. Double R Drilling performed heli shot-hole services. Deh Cho Air was the supplier of helicopter support on all aspects of the job. The approximate elapsed time taken to complete the program was 56 days.

The seismic source was 20kg of dynamite loaded at a 20 m depth. The receiver layout consisted of 480 channels in a split spread configuration at a 15 m group interval, 90 m shotpoint interval and far offset of 3600 m. Geophones used for this survey had a 10 hz resonant frequency. Sample Rate was 2 ms and record length was 6 sec.

Processing was completed by Kelman Seismic Processing of Calgary.

The data quality for this program was fair to good. Many of the lines exhibit noise interference attributed to rugged topography, multiples and near surface effects. The seismic raypaths were subjected to distortion by structures created by compressional tectonics (both near surface and deep subsurface) and near surface velocity variations. Only some of this distortion could be corrected through seismic processing. In addition, gravel deposits located by the Liard River created considerable signal-to-noise loss through poor coupling and raypath scattering. As is common in the Ft Liard area, the Nahanni reflector exhibits spurious end-of-line effects, and this is observed at the north and south ends of 99-SAW-001. The low fold portion of these lines, terminating in rugged topography over near surface gravels are prone to poor resolution of dips. Despite these issues, an interpretation of the Devonian Nahanni reflector has been generated with reasonable confidence. Since this survey was only a single strike line, no time structure map has been prepared.

None of 99-SAW-001 was within, or immediately adjacent to, an Exploration License nor does CFOL claim any of the costs of this program against a DIAND work bonus.

Line statistics are as follows:

<u>Line Name</u>	<u>Work Bonus S.P. Range</u>	<u>Actual S.P. Range</u>	<u>Work Bonus Mileage</u>	<u>Actual Mileage</u>
99-SAW-001	s.p. 191 - 975	s.p. 191 - 977		25.21 km
		Total Mileage		25.21 km

61-00N 123-45W

61-00N 123-30W

60-50N 123-45W

60-50N 123-30W

99-SAW-1

Scale: 1:0

Printed: 13-DEC-2000

Source: NAD83

Projection: Mercator

Origin: Lat: W00°, Lon: 0°

10,000 meters

Figure 1. Location Map

CANADIAN FOREST OIL LTD.

Published: 13-DEC-2000

Significant Dates and Statistics Summary

A summary of the significant dates are chronologically listed below.

April 1, 1999 Application for several lines submitted under N1998B0934
May 17, 1999 Revision 5 applied for by Impact Exploration Services no individual lines listed
May 31, 1999 Amendment for Land Use 1998B0934 authorized to conduct seismic revision dates April 21, 1999
June 1, 1999 Preliminary screening notification from NEB 9229-C131-2E

July 24, 1999 Geco Prakla Advance Party Manager arrives on Project #310537 (Till Sept 2)

August 24, 1999 Surveying Starts

August 25, 1999 Line Clearing commences

September 17, 1999 Line Clearing & Survey completed

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October 24, 1999 initial layout

October 25, 1999 first full day of layout and shooting

October 28, 1999 shooting complete, final pickup, demob.

November 3, 1999 Inspection completed by Indian and Northern Affairs

Weather Summary and Topographic Conditions

August 26, 1999 Fogged in crews, stand by; drill crew got out late p.m.; intermittent rain throughout day

August 27, 1999 Heavy Fog till mid p.m.; crew eventually got out

Sept 8, 1999 Standby - overcast conditions - no production.

General Description of Operation and Acquisition

Seismic Equipment Used

Polaris Explorer Ltd. shot this survey using an ARAM24 Central Recording Unit. ARAM24 24-bit Delta-Sigma analog to digital converters to ensure quality system response. The system also offers integrated "Positive Operation Lights", indicate remote unit function at the moment of deployment. This facilitates the deployment crew in troubleshooting, further improving overall deployment time.

Acquisition parameters and filter settings are fully described in the "Acquisition Parameters" section, below

Acquisition Parameters

The energy source used for this survey was dynamite. The program configuration and instruments are listed below:

Configuration: 3600—15°-15—3600m
1—240°-241—480

Instruments

Make/model: Aram 24 Mark I
S.R. 2ms
Length: 6 sec
Filter: 3 -164 hz
Notch: out
Format: Seg-Y

Geophones

Type: OYO GS30
Frequency: 10 hz
Damping:
Number/Group 6
Spacing : 3m
Group Length: 15 m

Source

Type: Dynamite
Charge: 20 kg
Depth: 20 m
No inline: 1

Spread

Fold: 4000 pct
S.P. Int: 90 m
Grp. Int: 15 m

Geophysical Data Processing

The data was processed by Kelman Seismic Processing of Calgary employing a standard, structural processing runstream. (See section side labels for full detail.) Surface consistent spiking deconvolution was applied, followed by GLI refraction static analysis and correction. Normal moveout velocity analysis and corrections were run. Two passes of residual statics were performed, the last followed a moveout velocity update. An FK noise attenuation filter was applied. A Post Stack Migration using Kirchhoff summation was used on the data, providing good results, such that it was not deemed necessary to pursue Pre-Stack Migration methods at this time. A copy of the processing side label is found in Enclosure 2.

Geophysical Interpretation

Copies of interpreted seismic data from the program are located in Enclosure 3 of this report. Copies of synthetic seismograms referenced are located in Enclosure 4.

This survey was designed to provide an initial assessment of key structural features of the Devonian Nahanni Formation. The line was programmed in an orientation that is sub parallel to the expected strike of the Nahanni in this area, as identified by surface geology and gross, regional subsurface control. Interpreted seismic lines show CFOL's correlation of the Nahanni, as jump-tied to Ranger-CFOL P66a and CFOL I-61, near-by exploratory wells on EL363 and EL365.

Other formations correlated include the Flett Carbonate, Top of Besa River Shale, Top of Horn River Shales and the Cambro-Ordovician Marker. These correlations are tentative and preliminary. The Flett and Besa River are estimated from surface geologic mapping prepared by the GSC that show the Besa

River outcropping over most of the survey. The Horn River lies immediately above the Nahanni and has been jump-correlated from P-66a and N-61. The Cambro-Ordovician Marker is a seismic reflection package without any direct well log tie or penetration that has strong reflectivity below the Nahanni.

On line 99-SAW-001, the Nahanni is observed to be broken by north and south verging thrust fault. These thrust structures can be prospective if they demonstrate three-way closure against the thrust fault. Recent drilling to the Nahanni, south of this program, has encountered high-deliverability gas reservoirs and created much new industry interest in the area.

As this line is a single strike line, no time structure map can really be prepared. Without other seismic data, this line cannot establish three-way closure against a thrust fault. However, significant fault discontinuities and relative two-dimensional structure can be gleaned from the line profile of 99-SAW-001.

From knowledge of the structural style of the greater Ft Liard area, the author contemplates a model of multiple, curvilinear faults (observed from plan view). These scallop-shaped faults tend to coalesce into several, larger scale fault traces that define the main structural trends in the area. 99-SAW-001 demonstrates the northerly (north to north west) and southerly (south to southeast) vergence of a typical scallop-shaped thrust. From surface geology, and area knowledge, the author speculates that an east-verging component of the thrust faults observed on 99-SAW-001 is likely to be found. If further corroborating information becomes available about the Nahanni structure in dip orientation, this could be an attractive, three way dip closure against a thrust fault.

The 2D seismic data, alone, cannot predict reservoir quality of these Nahanni structures. However, it is anticipated that the best relative permeability on any of these structures will occur where the Nahanni is located closest to the leading edge of a thrust fault. Here, open fractures will be relatively most intense and therefore should enhance reservoir quality. Empirically, it has been observed that loss of Nahanni reflector coherency and continuity near the thrust fault zone is indicative of fracture porosity.

In discussing the potential for Nahanni gas in the Sawmill area, caution is in order with regard to the elevation of the Nahanni: any potential closures may be breached. The Amoco N-19 well is a tangible example of this risk. At N-19, the top-sealing Besa River Shales are likely fractured with numerous thrust faults and thin compared to the same shale at areas with known Nahanni production. N-19 yielded a significant, wet Nahanni reservoir. Further, it is known that the Nahanni formation outcrops at Nahanni Butte, a mere 20 km north of 99-SAW-001. The potential Sawmill Nahanni prospect, if present, may not be a commercial success due to trap and seal issues.

We recommend additional acquisition of seismic data, especially in an east or northeast dip orientation to further delineate this structure. However, we are extremely reluctant to incur any further expenditures until there is much more clarity and certainty that there will actually be an issuance of P&NG rights in this area.



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Scale: 1:0

Printed: 13-DEC-2000

Datum: NAD27

Projection: Mercator

Origin: Lon: W96° Lat: 0°

Revised Manager: 3.6.016

10,000 meters

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