

9229-H5-1E

HOME OIL COMPANY LIMITED

EXPLORATION REPORT

WEST CAMERON HILLS, N.W.T.

Program Number: 9229-H5-1E

1200% Reflection Seismic Program, 1983

Operator: Home Oil Company Limited

Prime Contractor: Century Geophysical Corporation of Canada

Exploration Agreement Number 173



Eric Bolton, Home Oil Company Limited September, 1984



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ENCLOSURES

1. Seismic Base Map
2. List of Seismic Lines
3. Geological cross-section
4. J-42 Synthetic seismogram
5. Wabamun to Slave Point isochron
6. Wabamun to Basal Red Beds isochron
7. Slave Point to Basal Red Beds isochron

INTRODUCTION

Home Oil Company Limited farmed-in on Exploration Agreement number 173 originally signed by Coho Resources Limited and Petroleum Royalties Limited. The E.A. lies between 60°00'N - 60°10'N and 118°30'W - 119°15'W in the West Cameron Hills area of the Northwest Territories.

Based on the interpretation by Home Oil of the seismic shot by Coho in 1982 and 1983, Home Oil drilled two wells in early 1984. To detail other anomalies and to in-fill the seismic grid Home shot a further 48km of data (Encl. 1).

GEOPHYSICAL OPERATIONS

A. Acquisition

The 1984 seismic program was recorded by Century Geophysical Corporation of Canada between 3rd February and 6th February 1984. The field parameters used were:

Spread	1608 - 33.5 - X - 33.5 - 1608 meters
Number of channels	96
Shot interval	134m
Source type	dynamite
Source layout	single hole
Charge size	0.5 Kg

Average hole depth	13m
Group interval	33.5m
Geophone type	GSC-20P-30-335, 10HZ
Geophone layout	9 over 33.5m
Coverage	1200%
Field filter	out - 128 Hz, notch out
Record length	3s
Sample interval	2ms

Enclosure 2 is a list of lines shot, shot point numbers and length. The seismic crew was recording while Home Oil was drilling the two wells, so the seismic crew used the camp facilities of the rig. Extra sleeping units were brought in for the seismic crew. Because the program was so short, no local people were employed by Century Geophysical.

B. Processing

The processing was done by the processing department of Home Oil. The route was:

Demultiplex
Time variant scaling
Bandpass filter 8-12-100-125Hz
Transmission loss recovery
Deconvolution spike, 100ms operator
Bandpass filter 5-15-70-90Hz

Linear scaling

CDP sort

NMO

Structural statics - weathering corrections - first break analysis

- datum 650m

- datum velocity 2100 m/s

First break mute

Residual surface consistent statics

CDP coherent statics

Stack 1200%

Normal and reverse polarity sections were displayed at 7 1/2 inches/second and 12 traces/inch. The normal polarity was also displayed at 40 traces/inch.

Frequency domain, depth migration was applied to all lines and displayed normal and reverse polarity, 7 1/2 inches/sec, 12 traces/inch.

Common offset stacks were also plotted to identify the multiple.

INTERPRETATION

Geology

A Keg River basin was postulated to be in the south-centre part of the E.A. The Shell well in A-77 was mapped on the edge of the basin, which was thought to deepen and become more basinal towards the south-east of the E.A.

Home Kakisa River J-42 was drilled on a seismic anomaly which, from modelling, appeared to be a Keg River reef in what was mapped as full basin. Unfortunately, there was no reef and the basinal character was similar to A-77, i.e. basin edge (Encl. 3).

The main targets now are the Slave Point and Sulphur Point. Porosity pods in these zones have been found in all the wells in the area. To increase the permeability of these porosity pods future wells are being proposed into flexure zone, where there could be fracturing.

Geophysics

The new data was tied in with the previous shooting, the correlation being checked using the synthetic from J-42 (Encl. 4).

As with the previous shooting, three events were timed - the Wabamun, the Slave Point and the Basal Red Beds - and from these

three, isochron maps were produced - Wabamun to Slave Point (Encl. 5), Wabamun to Basal Red Beds (Encl. 6) and Slave Point to Basal Red Beds (Encl. 7).

These maps detail similar features to the J-42 anomaly, which we originally thought was a reef, but now know it is not.

The maps also better define the boundaries of a faulted zone seen on the old seismic. Home plans to drill two wells in 1985 into fracture zones mainly for Slave Point and Sulphur Point. If they are successful, the faulted area may be prospective.

CONCLUSION

The new seismic program shot by Home Oil in 1984 detailed various anomalies which we now feel are not prospective after the result of our 1984 drilling. However, the new 1985 drilling may confirm the new play concept and this seismic delineates possible follow-up locations.