

IMPERIAL OIL LIMITED  
PRODUCING DEPARTMENT - WESTERN REGION

SEISMIC OPERATIONS - BOVIE LAKE AREA

N.W.T. Permit 1143

February, 1961

By

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June 29, 1961

PEACE RIVER EXPLORATION DISTRICT  
DAWSON CREEK, BRITISH COLUMBIA

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### ENCLOSURES

Seismic Shot Hole Location & Depth Map	In Pouch
Structure Map - Permo-Penn Top	In Pouch

### S U M M A R Y

Report on seismograph operations conducted by Nance Exploration Co., Party 30, on behalf of Imperial Oil Limited in the Bovie Lake Area, N. W. T., during February, 1961, and submitted in support of application for credit. See Affidavit of Work by M. W. Johnson, dated June 21, 1961.

## INTRODUCTION

Access to the area was made via the Ft. Simpson winter tractor trail, then west along the Home Oil road through Celibeta to Fort Liard. The terrain in the area of Permit 1143 is quite rough with gently rolling hills except going into the Muskeg River valley. The elevation varies between 1,050 feet in the north to 1,350 feet in the southeast.

## SEISMOGRAPH OPERATIONS

On February 10, 1961, a conventional truck-mounted seismic crew, operated by Nance Exploration Co. and under contract to Imperial Oil Limited, referred to as Party 30, using standard technique, commenced seismograph operations in Section 25, Grid Area 60°15' N. 123°00' W. Three lines were shot in this area, the first running 12 miles west, the second 4 miles south and the third 5 1/2 miles east and west.

Surface conditions were generally good, gently rolling hills with muskeg flats, small lakes and creeks. The drilling was generally good with the odd bit of gravel and sand and some hard shale was encountered on the west line, near Fort Liard. Mostly 4 1/2 retipped inserts and 4 1/2 retipped rock bits were used. The area was started with three-hole patterns but this was changed to five-hole to increase record quality.

Record quality was generally poor, with the odd good record where lines followed higher ground, and in shale. First break quality was poor due to muskeg and sand. Varying charges did not seem to help so holes were deepened 10 or 15 feet to reach shale, where records were quite good.

On February 18 the crew moved 7 miles north and shot two lines totalling 7 1/2 miles. Surface conditions were quite rough with gently rolling hills and very steep hills going into the Muskeg River valley. An attempt to cross the river had to be abandoned and a crossing was finally made at the junction of the Arrowhead and Muskeg Rivers. Surface conditions were similar to that found on the south lines.

Drilling in this area was fair, mostly clay and boulders with seams of sand and gravel. Some boulders were too hard to drill through making quite a few skids necessary. Retipped bits performed very well. We experimented with three and five-hole patterns, however, there was very little change so three holes were used. Some deep holes were tried in an attempt to hit shale, but only sand was encountered down to seventy feet. The record quality in this area was quite good.

Party 30 completed the program in this area on February 20, 1961. During this program a total of 29 miles of line was shot. 425 holes were shot at 95 locations to obtain 193 profiles.

June 29, 1961

  
G. B. Darling







