









REPORT OF GEOPHYSICAL AND  
SEISMOGRAPH REFLECTION SURVEY

On Federal Permits 3877 and 3878, Spawn Lake Area  
(Kakisa Area), N. W. T. National Topographic  
Grid 85-D-1. During November, 1967.

Prepared By: D. E. Birnie  
Exploration Group Supervisor

April 1, 1968

REPORT OF GEOPHYSICAL SURVEY  
REPORT OF SEISMOGRAPH REFLECTION SURVEY

Conducted By  
United Geophysical Company of America  
for

Pan American Petroleum Corporation

During November, 1967

On Federal Permits 3877 and 3878, Spawn Lake  
Area (Kakisa Area), Northwest Territories  
National Topographic Grid 85-D-1

Prepared By

D. E. Birnie

Exploration Group Supervisor

April 1, 1968

Submitted in accordance with Government Regulations under  
Section 54 (F) of the Territorial Lands Act.

Abstracted for  
Geo-Science Data Index

Date \_\_\_\_\_

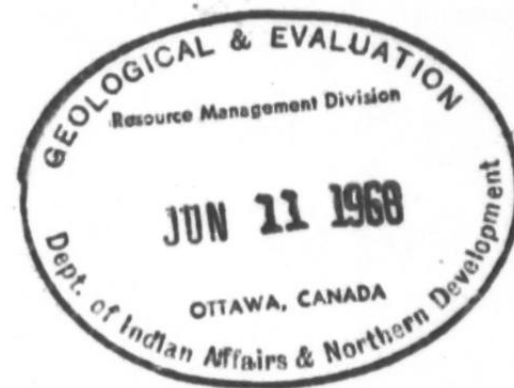


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## TEXT

### INTRODUCTION

During November, 1967 a seismograph reflection survey was carried out on Federal Permits 3877 and 3878 by United Geophysical Co. of America for Pan American Petroleum Corporation.

During the period November 10, 1967 to November 16, 1967 inclusive United Geophysical Co. of America Ltd. spent 7 calendar days in this area working on seismic lines cut and cleared at the same time as the seismic work was being done.

United Geophysical Party 545 was under the supervision of Mr. Johnson, Party Manager.

Pan American's interpretive staff located in Calgary, Alberta spent a total of 60 days on this project. The interpretation was done following completion of the field work and was completed on January 10, 1968. No personnel other than those on the field party and on the interpretive staff worked directly on this project.

Truck mounted wheel equipment was used. The camp was comprised of track mounted trailers.

No unusual operating problems were encountered in this area.

A previous report dated August 30, 1967 was submitted in this area.

### SEISMIC TECHNIQUE

The average depth of shot was 40 feet. Shot depth was determined by near surface lithology with best results obtained when the shot was detonated in the clay below the muskeg.

Normal charge size varied from  $1\frac{1}{4}$  to  $2\frac{1}{2}$  pounds per shot hole. A single hole was used at each shothole location. A spread configuration

as shown on the seismic spread diagram was used to obtain 600% multiple coverage.

The instruments used by United Geophysical Party 545 were the GSC 111 type manufactured by Geo Space Canada Ltd. The data were recorded on techno type analog magnetic tapes.

The 'reflection method was used to obtain the subsurface data throughout the area.

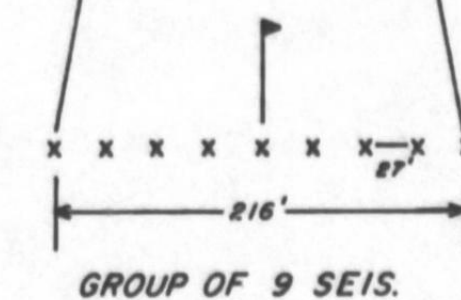
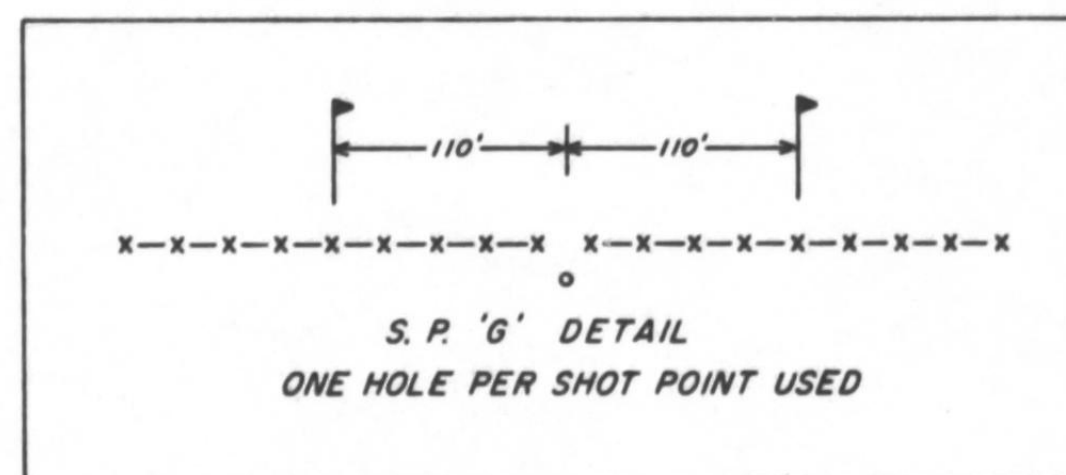
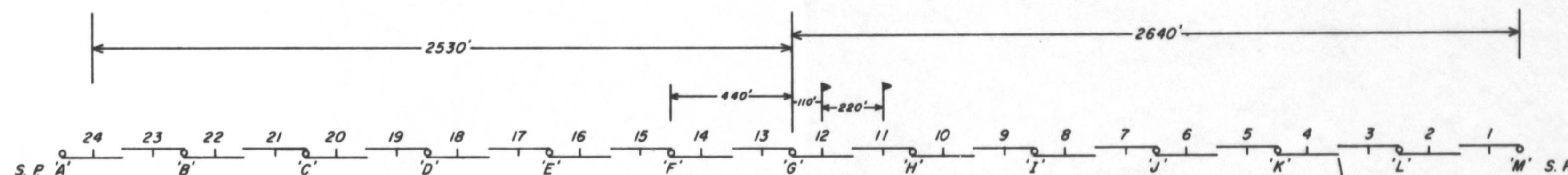
The data that appear on the subsurface map are vertical two-way times between an arbitrary reference plane and the particular horizon mapped.

Respectfully submitted,

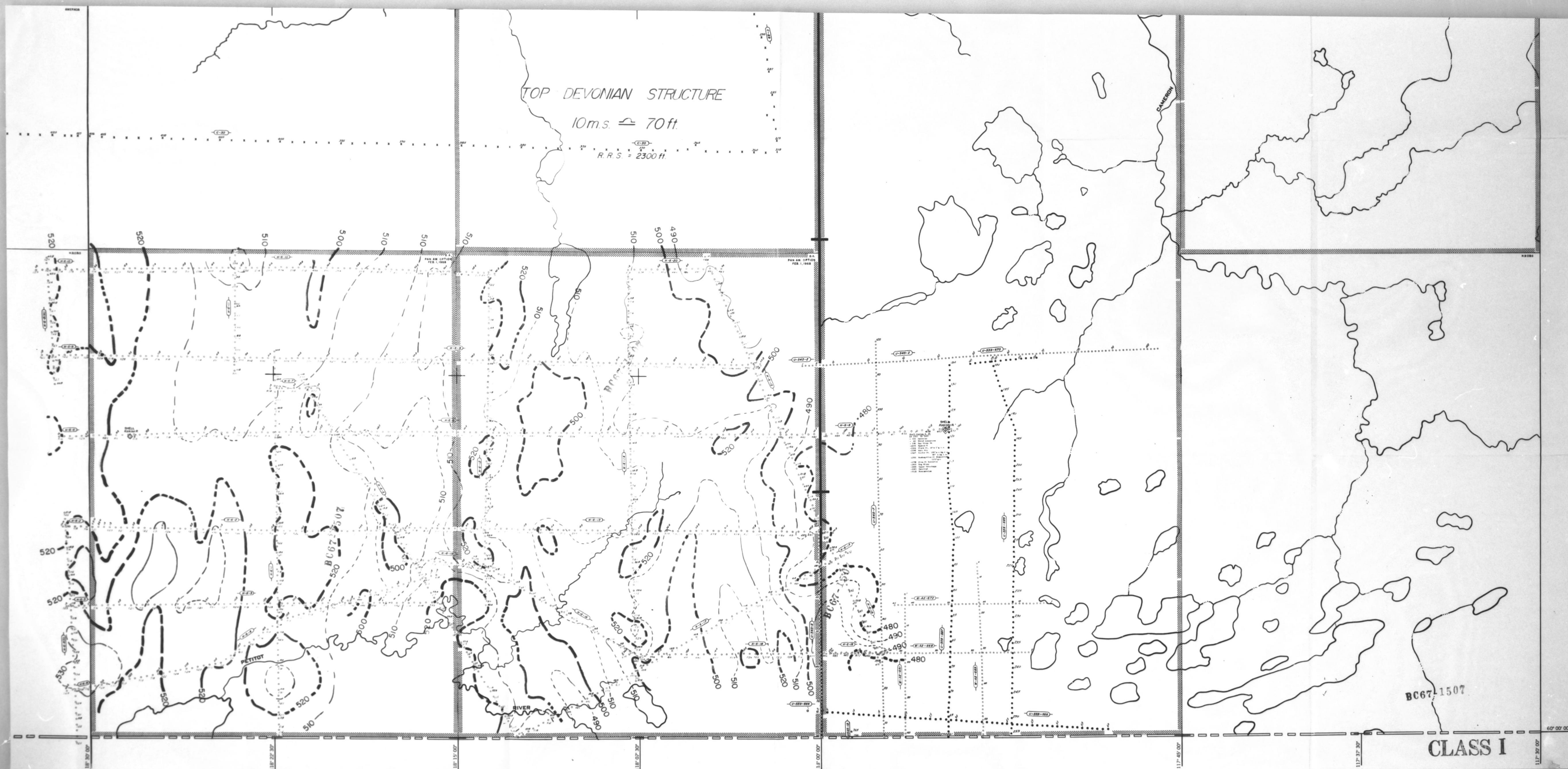
PAN AMERICAN PETROLEUM CORPORATION

By:   
D. E. Birnie  
Exploration Group Supervisor

**SPAWN LAKE**  
**UNITED 545**  
**NOVEMBER, 1967**  
**600% SYMMETRICAL SPREADS**  
**SCALE 1" = 440'**

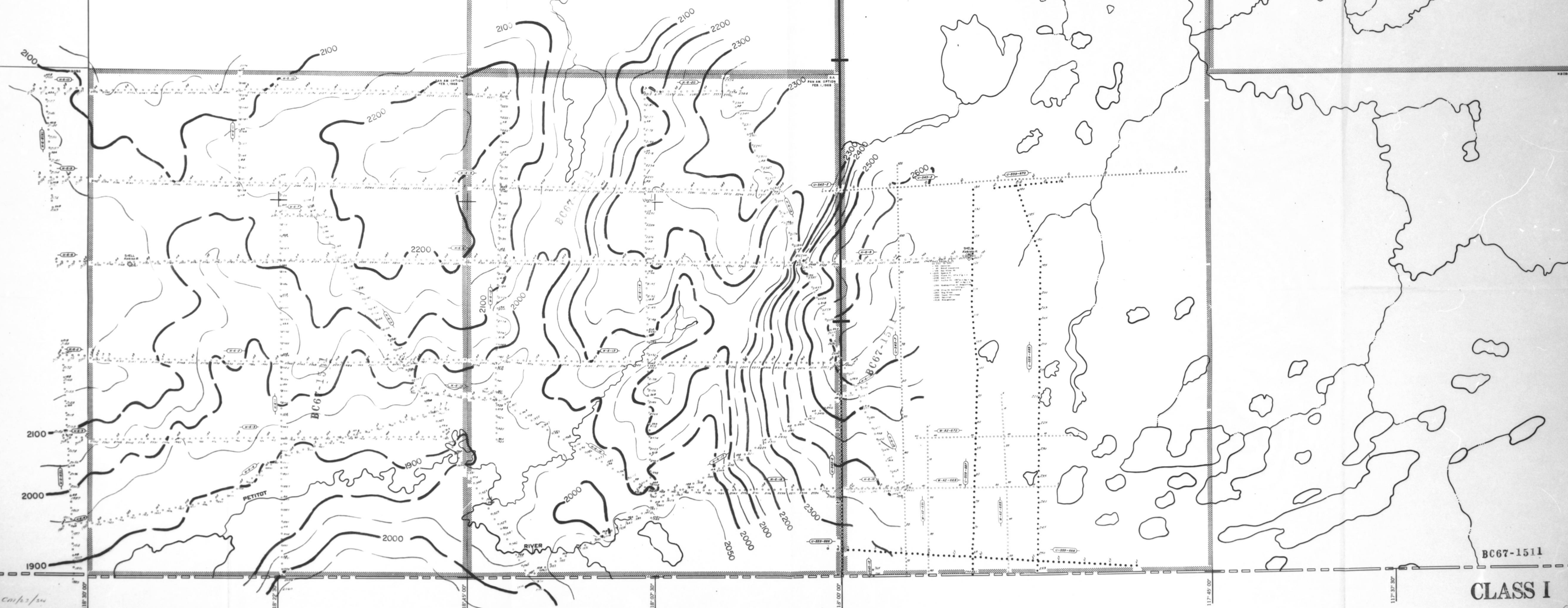








SURFACE ELEVATION



BC67-1511

CLASS I



REPORT OF GEOPHYSICAL SURVEY

REPORT OF SEISMOGRAPH REFLECTION SURVEY

Conducted by

Heiland Exploration Canada (1959) Ltd.

for

Pan American Petroleum Corporation

During January, February and March, 1967

On Federal Permit 3876 and on and off Federal Permits  
3877 and 3878, Spawn Lake Area, (Kakisa Area), N. W. T.  
National Topographic Grid 85-C-4 and 85-D-1.

Prepared by

D. E. Birnie

Exploration Group Supervisor

August 30, 1967



Submitted in accordance with Government Regulations under Section  
54 (F) of the Territorial Lands Act.



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## TEXT

### INTRODUCTION

During January, February and March, 1967, a seismograph reflection survey was conducted on Federal Permits 3876, and on and off Federal Permits 3877 and 3878 by Heiland Exploration Canada (1959) Ltd. for Pan American Petroleum Corporation.

During the period January 1, 1967 to March 28, 1967 inclusive, Heiland Exploration Canada (1959) Ltd. spent 87 calendar days in this area working on seismic lines cut and cleared at the same time as the seismic work was being done.

Heiland Exploration Party 6 was under the supervision of Mr. J. Milne, Party Manager.

Pan American's interpretive staff located in Calgary, Alberta spent a total of 120 days on this project. The interpretation was done following completion of the field work and was completed on August 23, 1967. No personnel other than those on the field party and on the interpretive staff worked directly on the project.

Truck mounted wheel equipment was used. The camp was comprised of portable skid units.

No unusual operating problems were encountered in this area.

No other reports have been submitted in this area.

### SEISMIC TECHNIQUE

The average depth of shot was 40 feet. Shot depth was determined by near surface lithology with best results obtained when the shot was detonated in the clay below the muskeg. Gravel formations showed up on drill logs from surface to 40 feet in depth.



## TEXT

### INTRODUCTION

During January, February and March, 1967, a seismograph reflection survey was conducted on Federal Permits 3876, and on and off Federal Permits 3877 and 3878 by Heiland Exploration Canada (1959) Ltd. for Pan American Petroleum Corporation.

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Normal charge size varied from  $1\frac{1}{4}$  to  $2\frac{1}{2}$  pounds per shot hole. A single hole was used at each shothole location. A spread configuration as shown on the seismic spread diagram was used to obtain 400% multiple coverage.

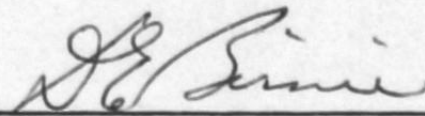
The instruments used by Heiland Exploration Party 6 were the PT-100 type manufactured by Southwestern Industrial Electronics. The data were recorded on techno type analog magnetic tapes.

The reflection method was used to obtain the subsurface data throughout the entire area.

The data that appear on the subsurface map are vertical two-way times between an arbitrary reference plane and the particular horizon mapped.

Respectfully submitted,

PAN AMERICAN PETROLEUM CORPORATION

By:   
D. E. Birnie  
Exploration Group Supervisor