

Stewart

690-06-03-011

Reflection Seismic Survey

Colville Lake, N.W.T. ($67^{\circ}40'N$, $126^{\circ}00'W$)

for

Petrofina Canada Ltd.

by

Geophysical Services Incorporated

March, 1973

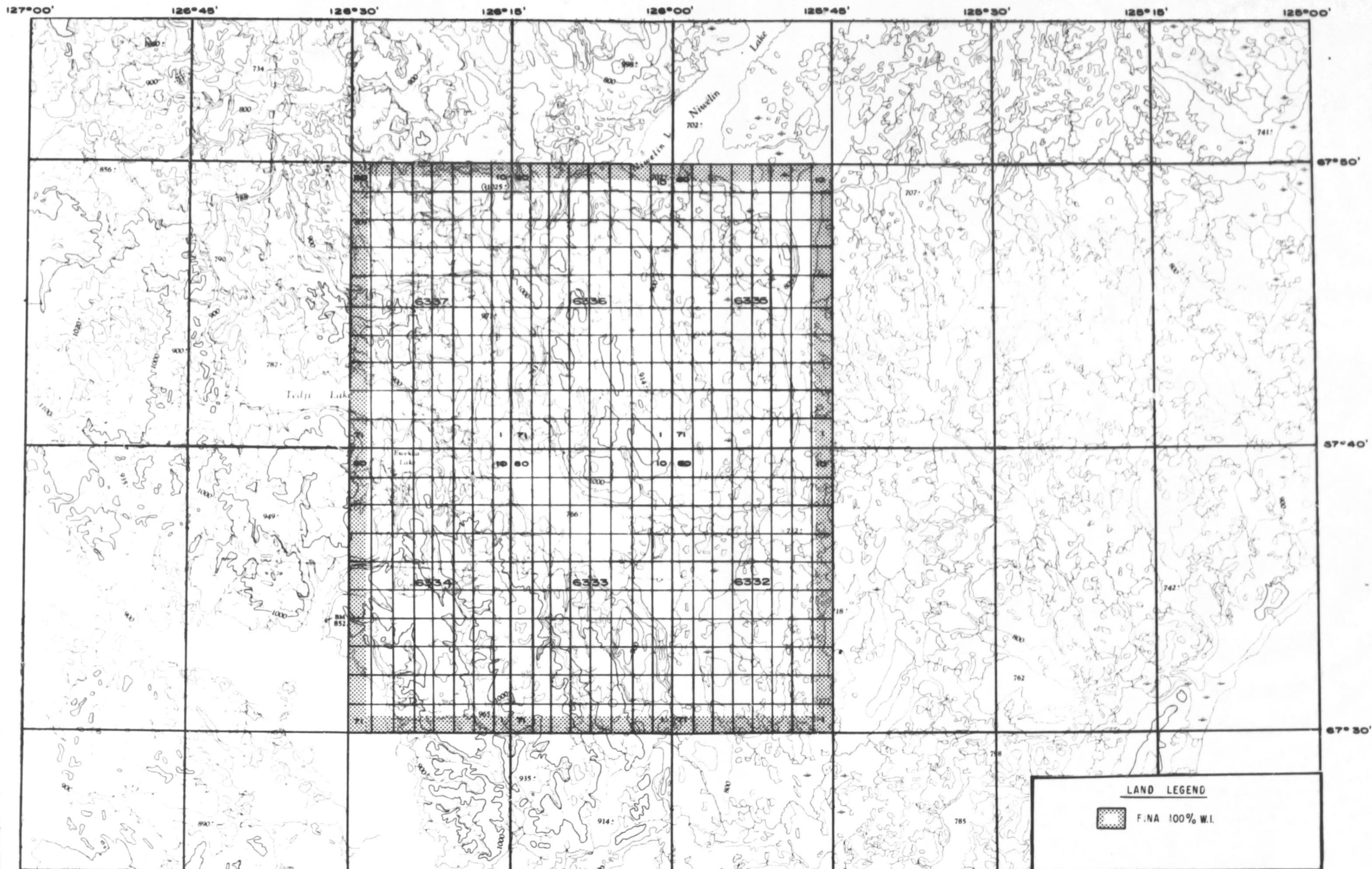
Project 690-6-6-71-5

690-06-03-011



Page No. 1

Type of Survey:	Seismic Reflection Survey
Survey Area:	67°40'N, 126°00'W
Year:	1973
Operator:	Geophysical Services Incorporated
Prime Contractor:	Sigma Explorations Ltd.
Specific Permits:	6332, 6333, 6335, 6336 & 6337
For:	Petrofina Canada Ltd.
Author:	E. W. Redmond
Date of Report:	February, 1974
Project No.:	R-1799-314 (690-6-6-71-5)



TITLE:

COLVILLE LAKE PROJECT

PETROFINA CANADA LTD.
CALGARY ALBERTA

JOB NO.

SHEET NO.

ISSUE NO. 1

DRAWING NUMBER

DATE: December, 1968 SCALE: 1" = 4 miles DWN. BY: J.S. CH'D BY: APP'D BY:

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 - a) Surface Elevation
 - b) Saline River Time Structure
(Base of Ronning)
 - c) Hornby Bay FM (Proterozoic)
- 7) Summary and Conclusions

2) Statistical Data:

The subcontractors "Monthly Seismic Production Report" is enclosed outlining the Fina program in red.

a) Dates:

The G.S.I. party No. 489 commenced drilling operations on the Petrofina program March 3, 1973. Recording operations commenced March 8, 1973. (Mobilization and dispersement information will in all probability be on Sigma file).

b) Production:

Number of miles shot totalled: 37.375
Number of shots totalled: 299
Number of stations totalled: 299
Average daily production: 33.9 s. pts.
Days worked totalled: 9
There were no weather days or down days.

c) Equipment:

Vehicles involved - ski-doos and a mobile recording unit inside a skid trailer camp pulled by tractors. The drilling crew was in a separate camp and their equipment included two "Elgin" (Failing) rigs and one "G.S.I." (Mayhew).

The recording instruments were DFS III's 48 trace Binary Gain - 1" 21 track.

d) Personnel:

Field Supervisor: Mr. L. Morris
Party Chief: Mr. J. McAllister
Party Manager: Mr. W. A. Reid
Surveyor: Mr. M. Hughes

3) Field Procedures:

Recording Particulars:

Field recording	Digital
Field Instruments	(see Equipment)
Energy Source	Dynamite
Recording Filter	Low 12 High 124
Gain	Binary

No. of Geophones:	9
Spread Layout:	5280 - 220 - s.p. 220 - 5280
Stack:	800%
Charge Size:	10 lbs.
Group Interval:	220'

4) Data Processing:

The data processed utilized the following sequence:

- | | |
|--|------------------------------|
| a) Datum Velocity: | 17,500'/sec. |
| b) Datum Elevation: | 1,000' above sea level |
| c) Binary Gain Recovery | |
| d) Deconvolution: | |
| | Type: Time Variant 3 Filters |
| | Operator Length: 60 ms. |
| | Window: .288 - 3.300 sec. |
| | Whitening Factor: 5% |
| e) Time Variant Scaling | |
| f) Trace Gather | |
| g) N.M.O. Removal | |
| h) Static Corrections by Elevation - Uphole Correction | |
| i) Residual N.M.O. - Residual Static Corrections (Automated) | |
| j) Trace Muting | |
| k) Stack: | 800% |
| l) Bandpass Filter | |

<u>Gate Times</u>	<u>Bandpass Response</u>
700	30-70 Hz
1400	25-70 Hz
3000	15-60 Hz

5) Results and Interpretation:

The Lower Paleozoic Bear Rock formation outcrops in this area, therefore only two reflectors were able to be mapped with authority and they were "Saline River" (Base of Ronning formation) and Hornby Bay (Proterozoic).

The initial seismic program in the "Colville Lake" area (our reference to Permits 6332 - 6337 incl.) outlined a structure at both the Saline River and Hornby Bay markers. This outlined structure (9 x 5 miles) was the object of the 1973 survey. Detailed shooting in this survey reduced the area size (to 5 x 4 miles).

The "Base of Ronning" indicates 0.075 seconds of closure which is equivalent to between 600 and 700 feet. The "Near Basement" or Hornby Bay map upholds the structural anomaly over relatively the same area with approximately 0.060 seconds or 600 feet of closure.

Near surface velocities were in the 18,000'/sec. range.

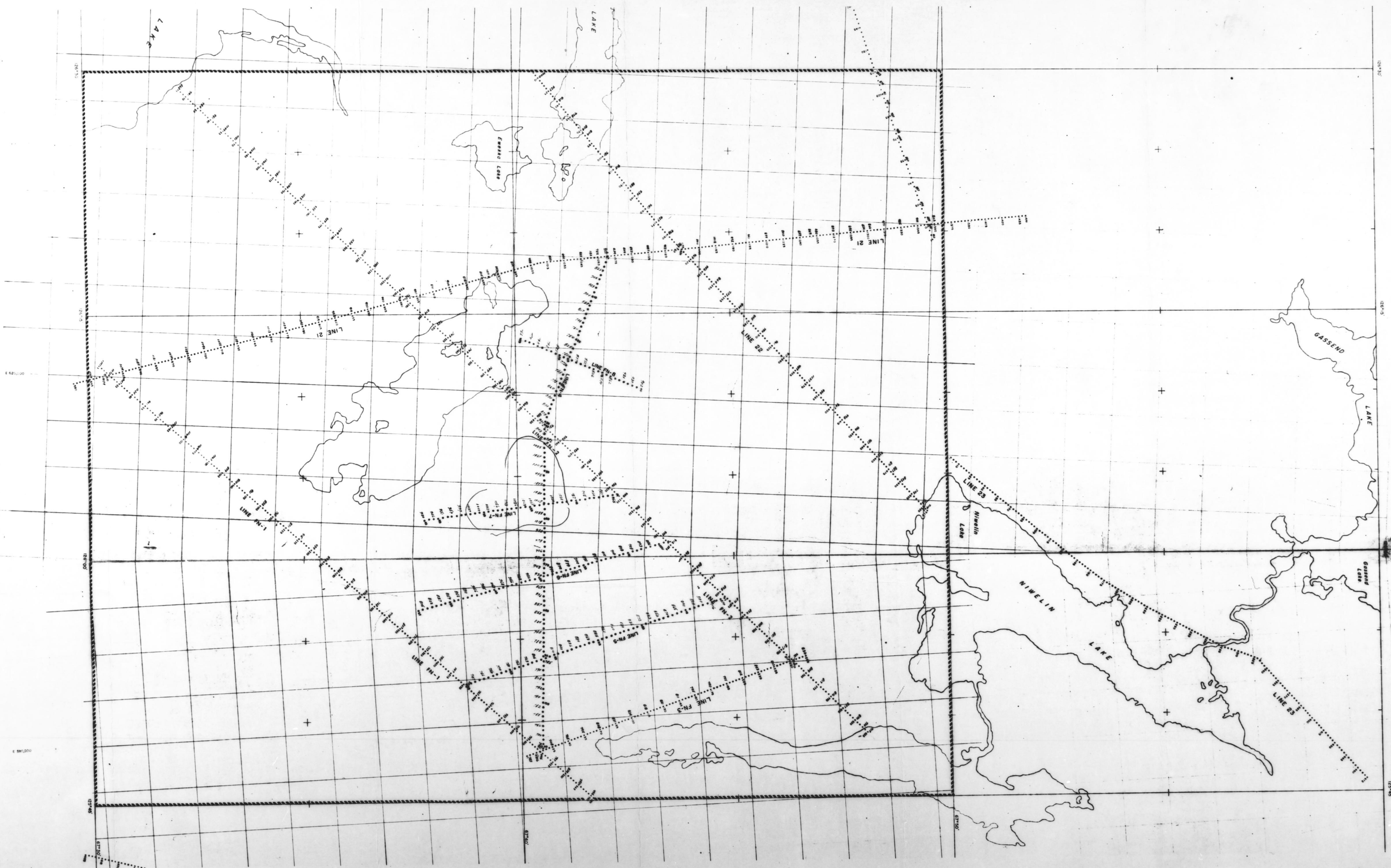
No weathering or glacial drift problems were encountered.

Respectfully submitted

A handwritten signature in cursive script, appearing to read "E. W. Redmond".

E. W. Redmond - Geophysicist

PETROFINA CANADA LTD.



Scale 1: 50,000

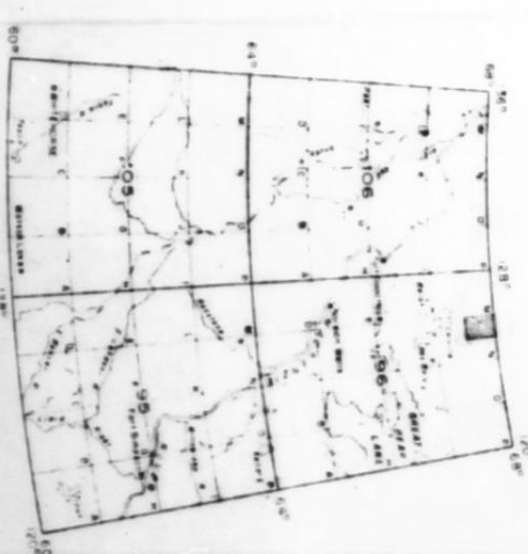
S SIGMA EXPLORATIONS LTD. - CALGARY, ALBERTA
A SUBSIDIARY OF GTS CORPORATION

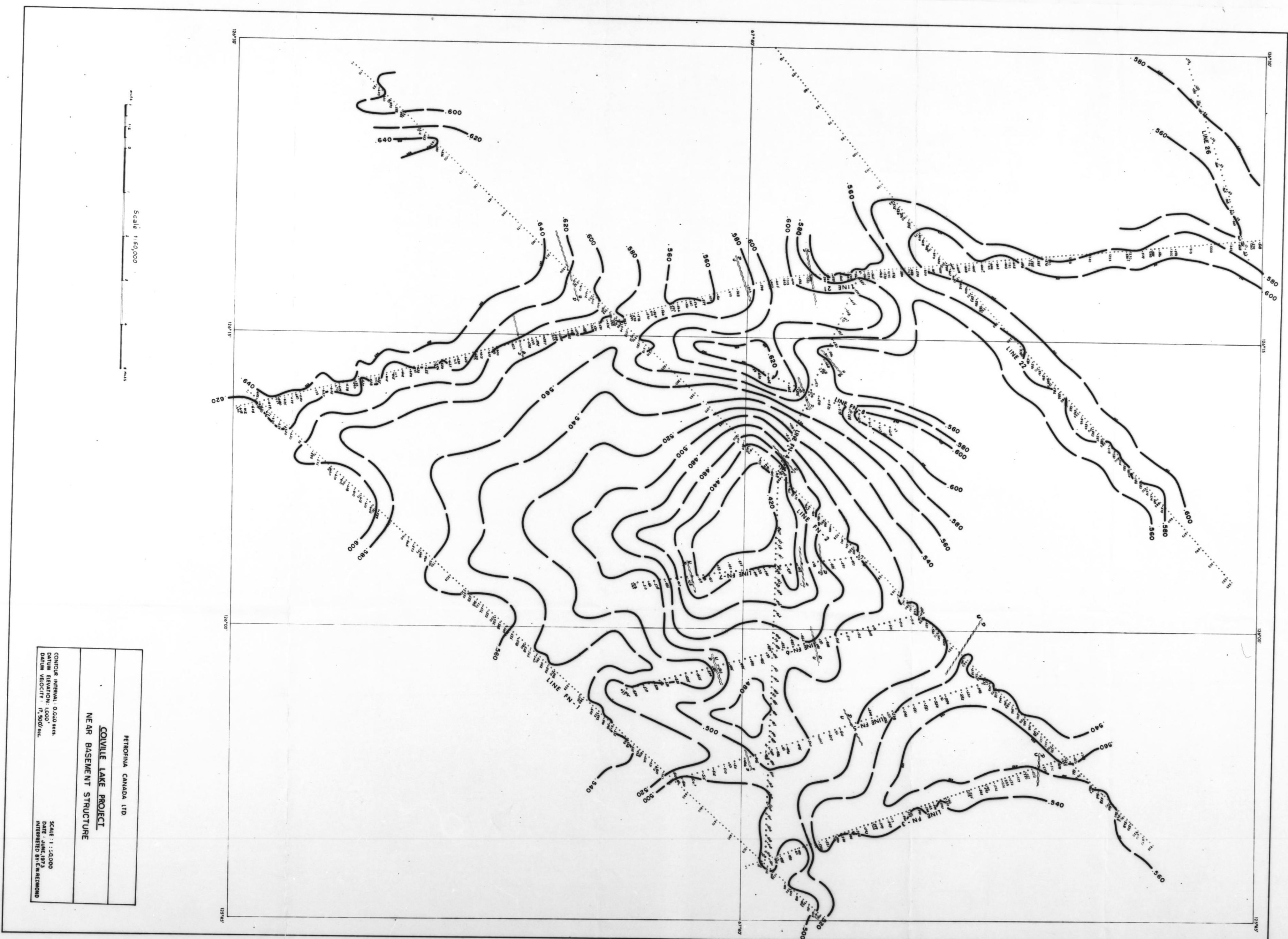
COLVILLE LAKE PROSPECT
N.W.T.

SURFACE ELEVATION MAP

DATE FEB 1974
SCALE 1:50,000

000





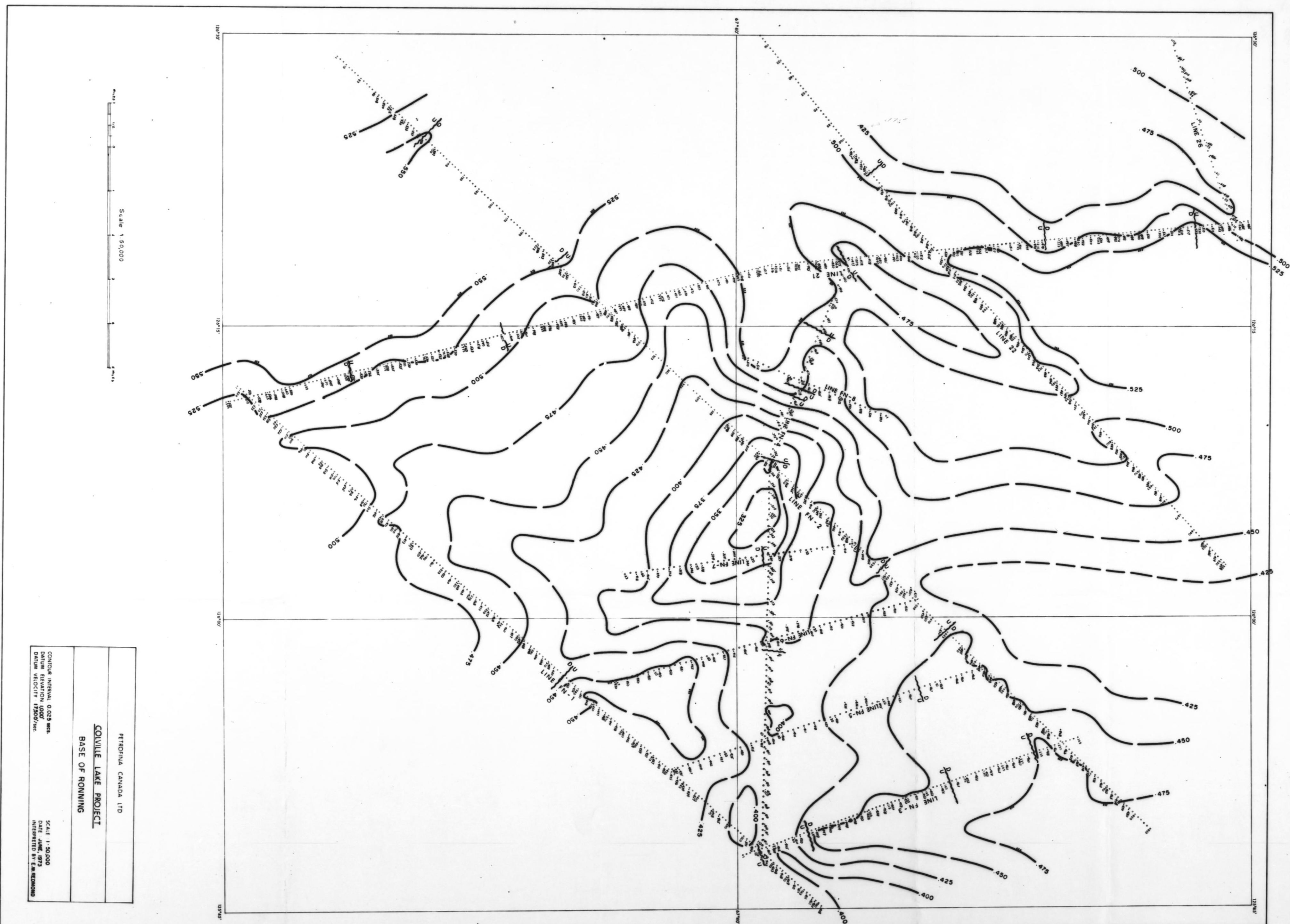
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WEST CANADIAN GRAPHIC INDUSTRIES LTD.
80-81 Avenue S.W. CALGARY 1, ALBERTA
Phone 263-255

MICROMAT
106 M.M.

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May 1974



FINA PROGRAM

MONTHLY SEISMIC PRODUCTION REPORT																															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	NO
[Detailed data entry grid for seismic production report]																															
[Summary statistics and totals]																															

REMARKS: [Handwritten notes and observations]

FOR CALGARY OFFICE ONLY

CLIENT: [Name]
PARTY NO.: [Number]
DATE: [Date]
TIME: [Time]