

60-6-5-91

Abstracted for
Geo-Science Data Index

Date _____

**REPORT OF GEOPHYSICAL AND SEISMOGRAPH
REFLECTION SURVEY**

On and Off Northwest Territories & Yukon
Permit Nos. 6194 - 6209 and 2447 - 2449.
Cranswick River Area. Nov./69 to April /70

Prepared by: J. L. Hudson
District Geophysicist

October 1970

Abstracted for
Geo-Science Data Index

REPORT OF GEOPHYSICAL SURVEY AND ~~REPORT OF SEISMOGRAPH REFLECTION SURVEY~~

Conducted By

Western Geophysical Company of Canada

for

Amoco Canada Petroleum Company Ltd.

During the Period of November 27, 1969 to April 21, 1970

On and Off Cranswick River N.W.T. and Yukon Permit
No.'s 6194 to 6209, and 2447 to 2449

Prepared By:

J. L. Hudson
District Geophysicist



Submitted in support of application for credit, see affidavit made by _____
of _____ and in accordance with work obligations under Section
54(F) of the Territorial Lands Act.

TABLE OF CONTENT

	Page
TITLE PAGE	1
TABLE OF CONTENT	2
LOCALITY MAP	3
TEXT	
Introduction	4
Statistical Data	4
-- Production	4
-- Crew	5,6,7
-- Field Procedures	8
-- Data Processing	9
-- Results & Interpretation	10
Seismic Spread Diagrams	In Pocket
Location and Surface Contour Map	In Pocket
Subsurface Maps	In Pocket

CRANSWICK RIVER AREA
SCALE 1" = 64000'

132000

120

ATLANTIC
CIRCUIT
①
3388

ATLANTIC
Circ. 1987
6:
2880

Ontario

100

104

8

6

卷之三

114

10

2

2

10

4

1

1

INTRODUCTION

During the period of November 27, 1969 to April 21, 1970 a "Vibroseis" reflection seismograph survey was conducted on and off Cranswick River, N.W.T., and Yukon Permit No.'s 6194 to 6209 and 2447 to 2449. The survey was conducted by Western Geophysical Company of Canada (Party V-12) for Amoco Canada Petroleum Company Ltd. In conjunction with the "Vibroseis" survey, a velocity survey utilizing deep shot holes was conducted by the same crew.

STATISTICAL DATA

Production

Party V-12 spent 115 calendar days working on seismic lines cut and cleared at the same time as the seismic work was being done. Party V-12 surveyed 335 miles of multifold coverage (4 fold and 6 fold). Of this 335 miles, 4.25 miles was shot conventionally obtaining 3 fold coverage. Spread diagrams included in the pocket of this report show the geophone, station and vibrator arrangements for the above coverage.

The average daily production was approximated 3 miles per day. Weather day down time was insignificant, but days lost through equipment failure were numerous.

At the same time Party V-12 ran an uphole velocity survey on 93 shot holes varying in depth from 100 to 800 feet.

WESTERN PARTY V-12

The contract crew was under the supervision of J. T. Coull, and party managed by K. Dobson.

Track mounted equipment consisted of a digital recorder, two dual vibrator units, two cable trucks, a supply unit, a survey unit, a shot hole drill, a water unit and a party manager's unit.

The track mounted camp consisted of three expandable trailer units and a power work shop.

The seismic line cutting and clearings and the fuel run from Road River to the Cranswick Area was done by Macmillan Construction of Peace River, Alberta and involved a portable camp, fuel sleighs and three bulldozers.

The operation was supported by a Twin Otter aircraft out of Inuvik and a helicopter stationed on the crew.

CREW PERSONNEL

1	Party Manager
1	Computer Clerk
1	Observer
1	Assistant Observer
1	Surveyor
1	Assistant Surveyor
2	Surveyor's Helpers
1	Mechanic
1	Driller
1	Driller's Helper
3	Vibrator Operators
2	Cable Truck Drivers
4	Recorder Helpers
1	Shooter
1	Cook
1	Cook's Helper
1	Camp Attendant
1	Mechanic's Helper
1	Supply Man

Total 26 Men

SURVEYING

The survey was conducted using a Wilde theodolite T16 and steel tapes and was based on government controlled triangulation stations in the area.

A tellurometer survey was conducted by Dabbs Control Surveys of Calgary over the area to increase the density of control points. The seismic survey was tied into all the available control.

FIELD PROCEDURES

With the exception of Line CKR-032, all other CKR lines have been surveyed using the "Vibroseis" technique. Line CKR-032 was shot conventionally using one shot hole to an average depth of 60 feet, every 1300 feet. Enclosed spread diagrams show the cable and seismometer layout.

The vibrator energy source at each shot point consisted of two vibrator units, with each unit consisting of a front and back mounted Wabco vibrator. The two vibrator units were separated by 162.5 feet and moved 325 feet in 16 sweeps (total vibrator pattern 487.5 feet). After considerable testing in the area, a 56-14 cps pilot signal was used of a 7 second duration.

The 24 channel data was digitally recorded on 9 track magnetic tapes in the Western format, using binary gain through SDS-1010 amplifiers and summed in a Western summer. Random analogue correlations were made in the field for quality control.

The velocity survey was carried out at various shot points (as shown by a red circle on the location map). Shot holes varied in depth from 100 to 800 feet, with mostly 100 feet holes being drilled. An average charge size of $1\frac{1}{4}$ lbs. was set off at various depths in the hole, and recorded from a seismometer at the top of the hole on a portable interval timer using polaroid film.

DATA PROCESSING

The data processing was performed by Amoco Canada in Calgary.

The digital field tapes had to be reformed from the Western format to SEGA, and cross correlated.

Elevation corrections were applied to a +2000 datum using a 10,000 feet/second replacement velocity.

Normal moveout, trace muting, frequency filtering, trace equalization and stacking were applied to the data.

RESULTS AND INTERPRETATION

The uphole velocity survey showed varying velocities (lithology) at the near surface. Very little muskeg (0-5 feet) cover was found in the area. Clay was generally observed at the near surface, followed by shales, and in some cases hard sandstones and limestone. Patches of permafrost were encountered but the depths recorded are inconclusive.

Record quality in the area is fairly good. The Mid Devonian Carbonate (Hume) map shows a fairly continuous reflection. The Base of Ordovician has also been mapped and although a much weaker reflection is fairly continuous. Shallow Cretaceous, Mississippian and Upper Devonian reflections are present.

The data that appears on the subsurface maps are vertical two way structural times between the datum and the horizon mapped.

The object geological zone in the area is the Top of Carbonate (Hume) to Top Silurian (Ronning). No continuous reflection occurs at the Ronning (all within a thick carbonate section), thereby making the Top of Carbonate (Hume) map the main mappable horizon.

The Top of Carbonate map shows a regional dip to the south, with an east-west trending anomalous high towards the southern half of the acreage. Faulting is present over much of the area, especially to the southeast where a high Carbonate is mapped to the south of some major faulting.

The Base of Ordovician shows similar trends, with a slight thickening of the Carbonate interval to the southwest.

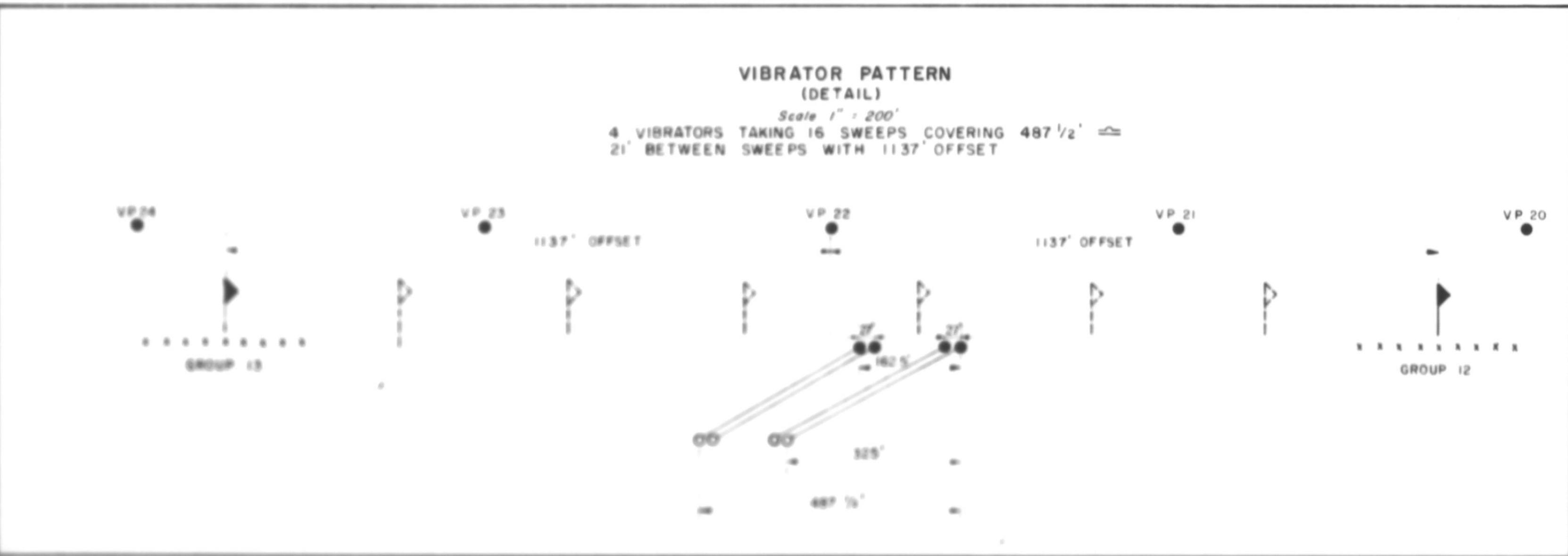
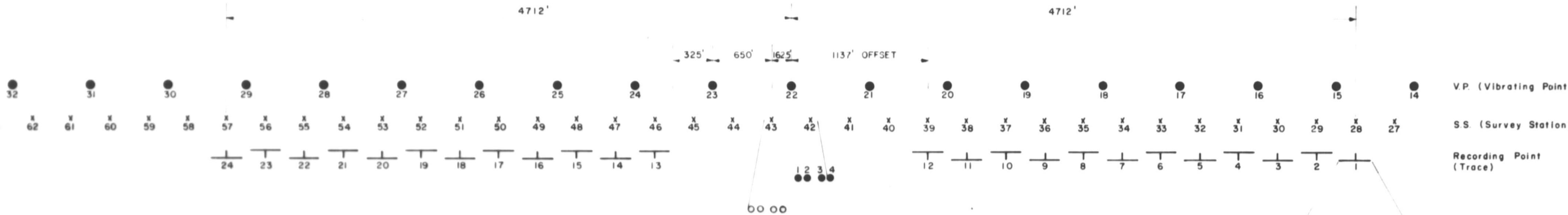
Respectfully submitted by:

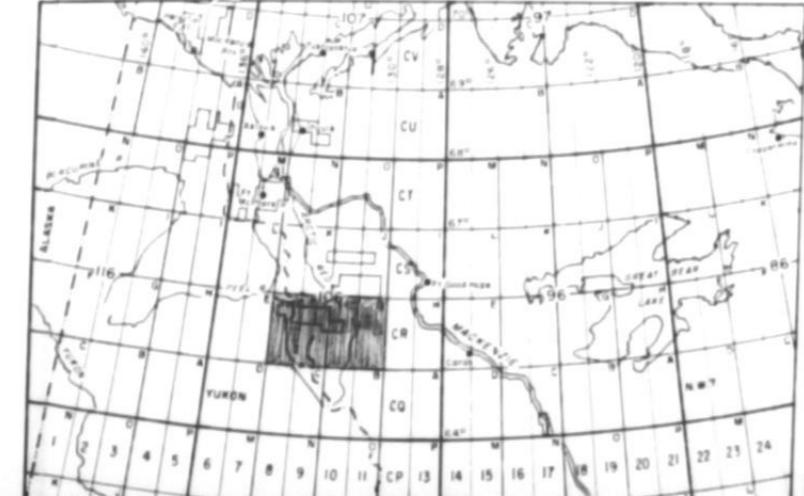
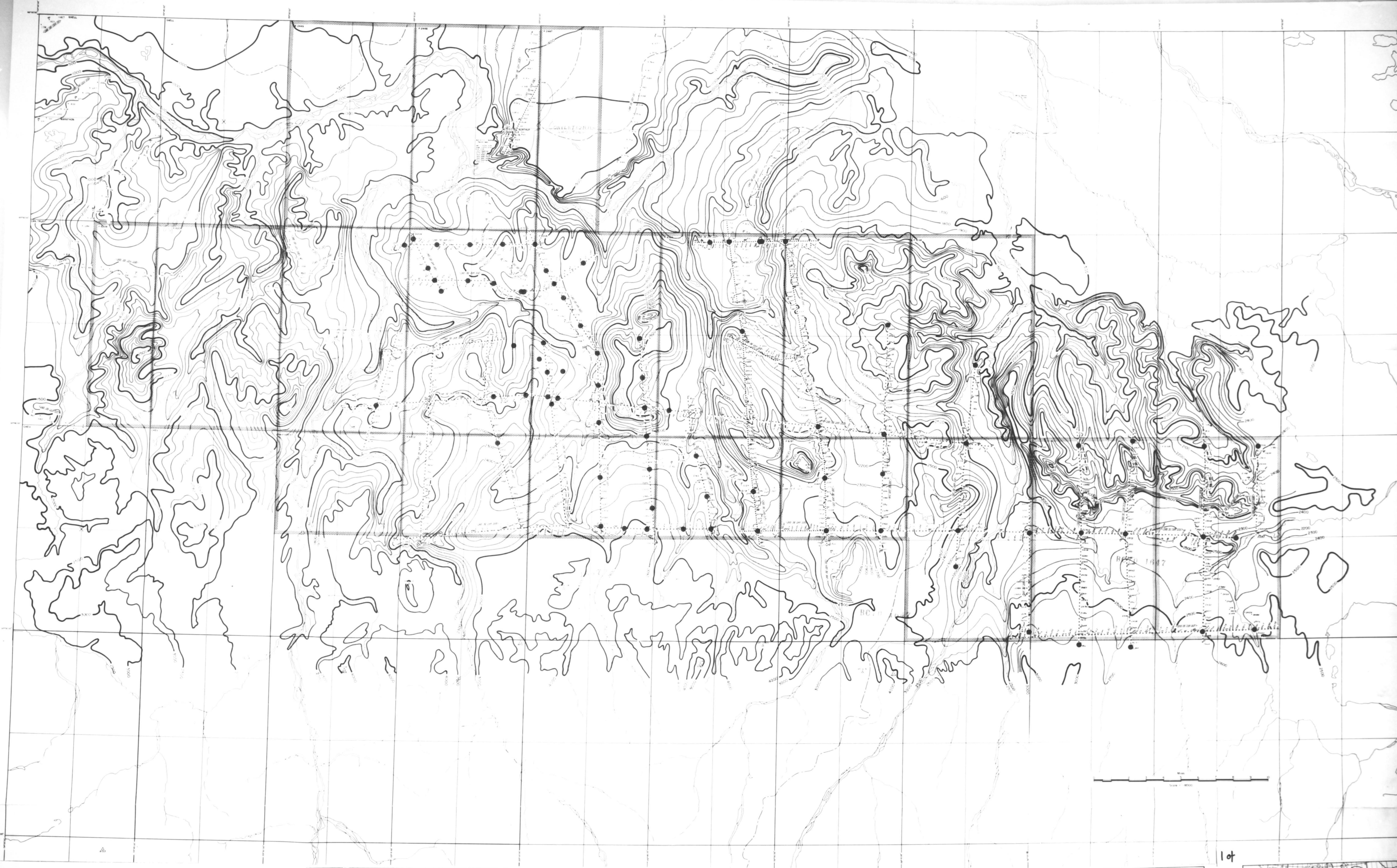
AMOCO CANADA PETROLEUM COMPANY LTD.



J. L. Hudson
District Geophysicist

CRANSWICK RIVER
WESTERN V-12 VIBROSEIS
NOV. 69 - APRIL 70
600% SYMMETRICAL SPREAD
Scale 1" = 650'





MAP EVALUATION

Qualification considers type of map or plan, amount of relief considered critical, quality of data and density of control, (geophysical or geological).

- Geologic data
- Relatively geophysical data
- Quantitatively reliable geophysical data
- Unreliable geophysical data

SHOOTING HISTORY (Not in detail)

INCL DATES SHOT BY SHOT FOR SPAN AND/ OR LINE No's

FINAL REPORT No.

DATE

INTERR

CO AFFIL

APPROX. LOC.

ON MAP

INTERPRETIVE HISTORY

This map includes information from the following reports:

Map distribution:	Division	General Office
Map prepared:	1	

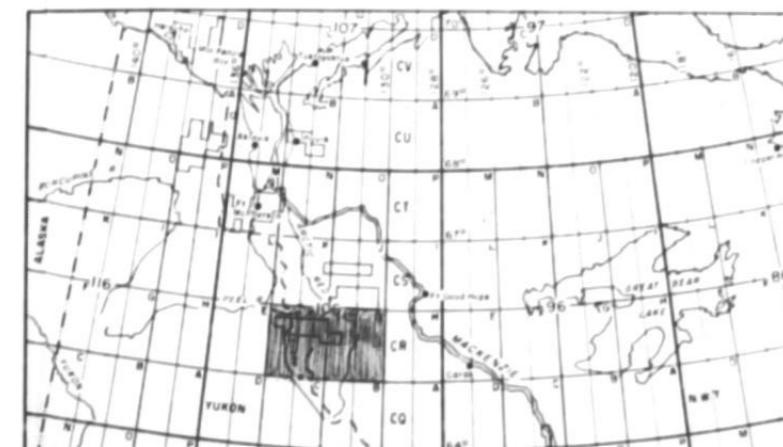
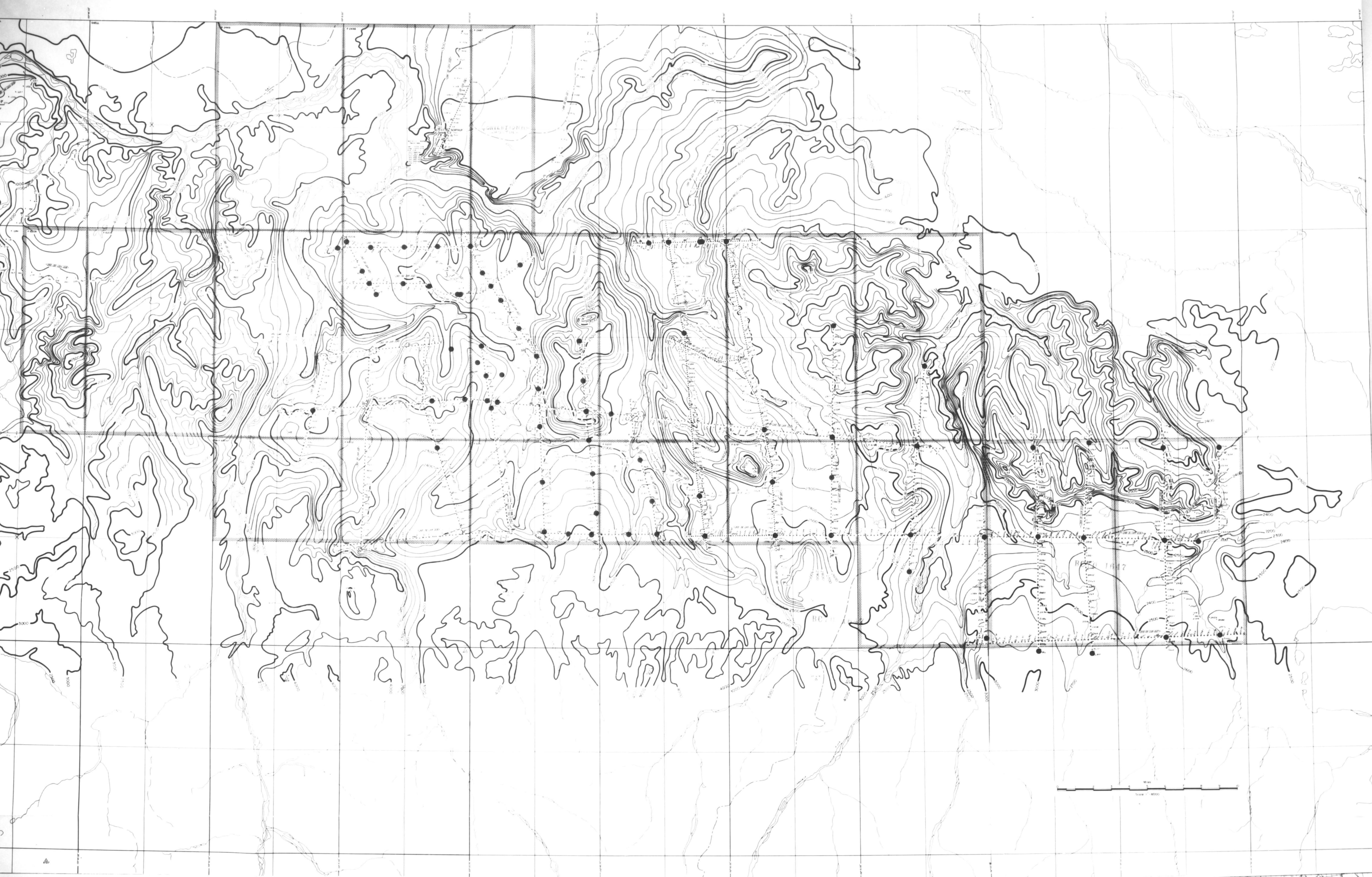
This map checked by: Amoco Geophysical Department

All geological and geophysical data involving the interpretation thereof appearing on this map is the property of Amoco Canada Petroleum Company Ltd. It is to be used only for the purpose for which it was prepared and is not to be reproduced without the written permission of Amoco Canada Petroleum Company Ltd.

AMOCO CANADA
PETROLEUM COMPANY LTD

AREA: Upper Romperts River
PROVINCE: N.W.T.
GRID CR-8,9,10(11)
SCALE: 1:8000
HORIZON: SURFACE TOPOGRAPHY (SHOT HOLE LOGS)
TYPE OF SURFACE: TOPOGRAPHY (SHOT HOLE LOGS)
SHOT BY: WESTERN V-12
DATE: NOV. 1969 - APRIL 1970
INTERR BY: R.S. RYAN
CO AFFIL: AMOCO
REPORT No: 1617
DATE:
REMARKS:

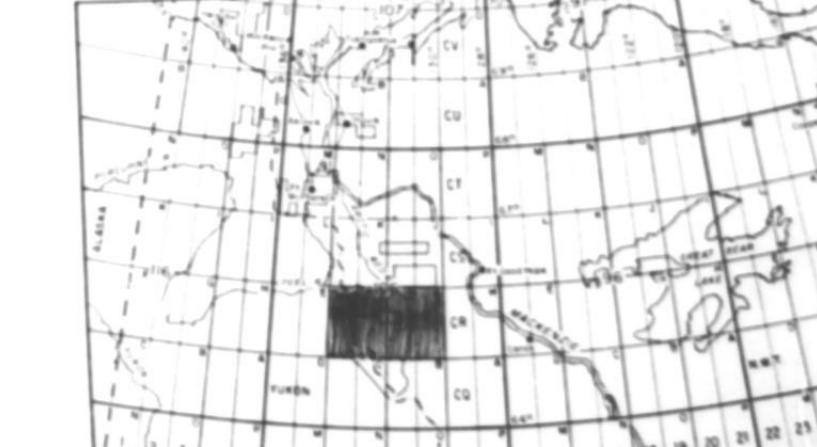




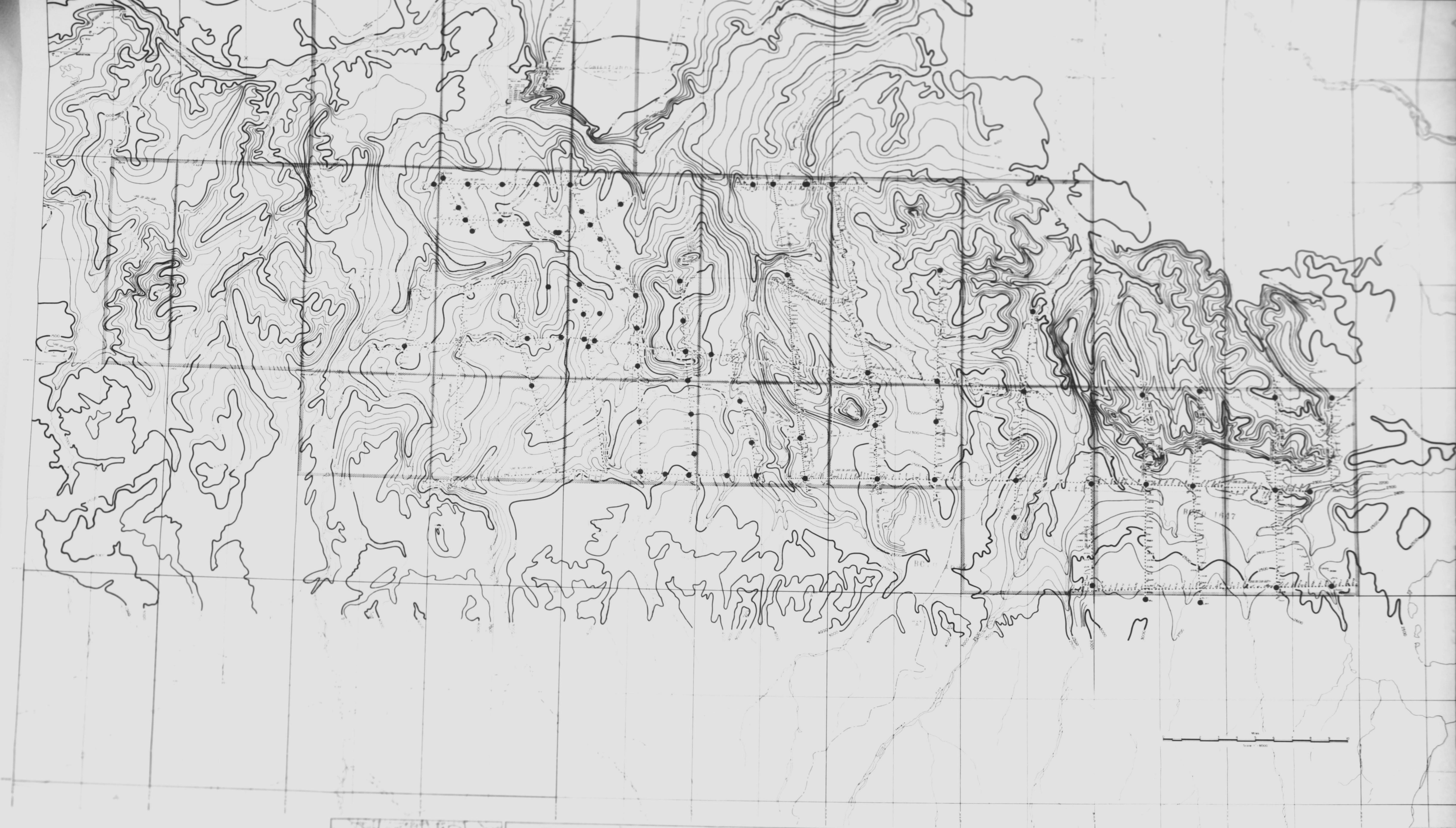
MAP EVALUATION

AIL)	INTERPRETIVE		
SPAND/OR LINE No's	FINAL REPORT No.	DATE	INTERP.
805-811, 820, 829 CEM 4, 5, F 11, 21 CEM 1-3 CEM 1-3 14, 16-25, 32	7016	FEB 4, 1970	W F METZLER

 AMOCO CANADA PETROLEUM COMPANY LTD.		
AREA	Upper Ramparts River	GRID CR-8,9,10(11)
PROVINCE	N W T	SCALE 1"=8000'
HORIZON	SURFACE TOPOGRAPHY (SHOT HOLE LOGS)	
TYPE OF MAP	CONTOUR INT 100 FT.	
SHOT BY	WESTERN V-12	FOR
INCL DATES	NOV, 1969 - APRIL, 1970	
INTERP BY	R S RYAN	CO.AFFIL AMOCO
REPORT No.	DATE	
REMARKS		



20



MAP EVALUATION

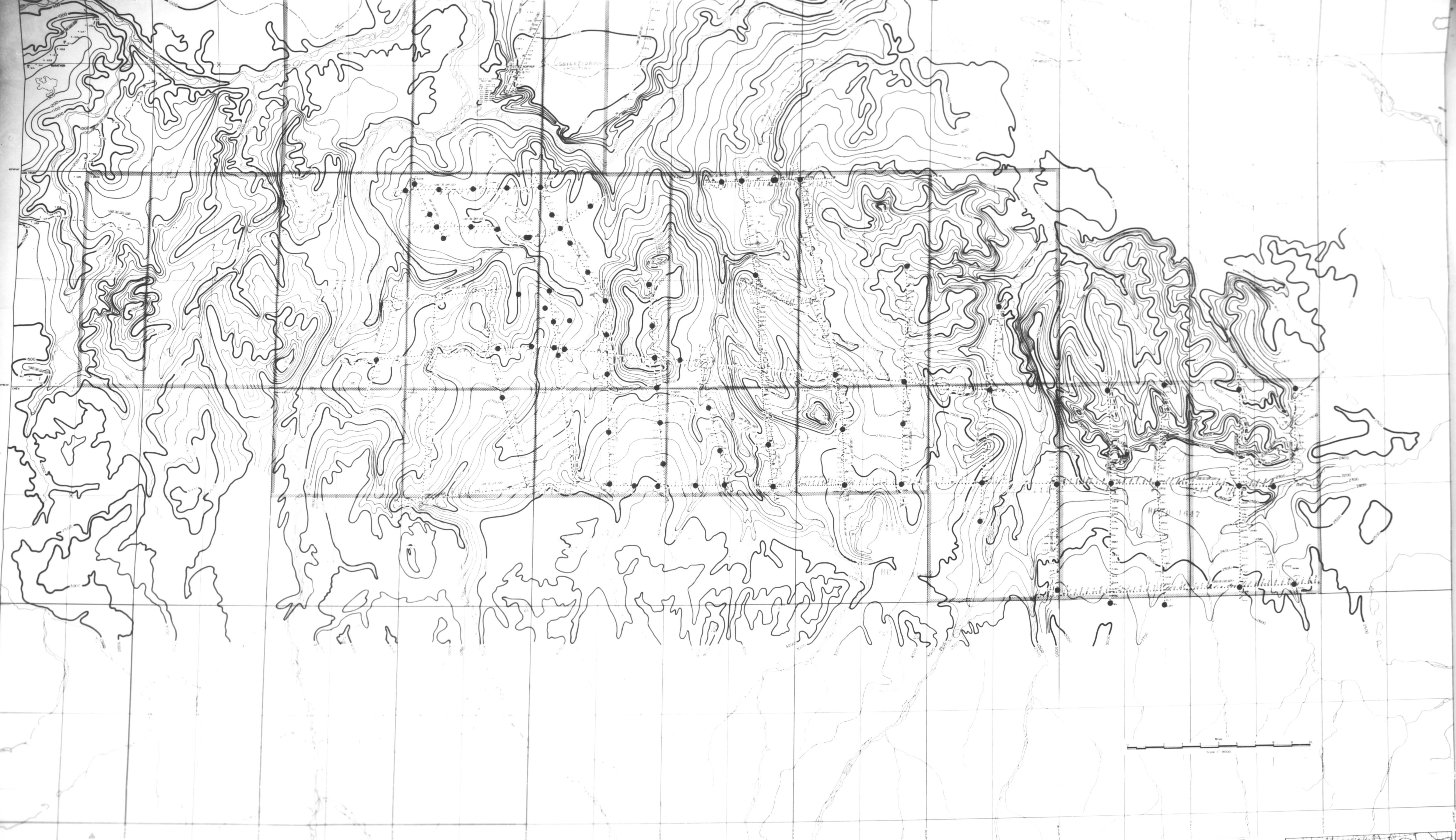
Quantitative evaluation of area of map. Quality of surface topographic data, quality of data and density of control, topographic or geological.

Geological data
Geophysical data
Geophysical, geological data
Geological, geophysical data
Geophysical, geological data

SHOOTING HISTORY (Not in detail)

REL DATES SHOT BY SHOT FOR SP SPAN OR LINE NO. FINAL REPORT No.

1969-04-12	WESTERN V-12	1000	1969-04-12
1969-04-13	WESTERN V-12	1000	1969-04-13
1969-04-14	WESTERN V-12	1000	1969-04-14
1969-04-15	WESTERN V-12	1000	1969-04-15
1969-04-16	WESTERN V-12	1000	1969-04-16
1969-04-17	WESTERN V-12	1000	1969-04-17
1969-04-18	WESTERN V-12	1000	1969-04-18
1969-04-19	WESTERN V-12	1000	1969-04-19
1969-04-20	WESTERN V-12	1000	1969-04-20
1969-04-21	WESTERN V-12	1000	1969-04-21
1969-04-22	WESTERN V-12	1000	1969-04-22
1969-04-23	WESTERN V-12	1000	1969-04-23
1969-04-24	WESTERN V-12	1000	1969-04-24
1969-04-25	WESTERN V-12	1000	1969-04-25
1969-04-26	WESTERN V-12	1000	1969-04-26
1969-04-27	WESTERN V-12	1000	1969-04-27
1969-04-28	WESTERN V-12	1000	1969-04-28
1969-04-29	WESTERN V-12	1000	1969-04-29
1969-04-30	WESTERN V-12	1000	1969-04-30
1969-05-01	WESTERN V-12	1000	1969-05-01
1969-05-02	WESTERN V-12	1000	1969-05-02
1969-05-03	WESTERN V-12	1000	1969-05-03
1969-05-04	WESTERN V-12	1000	1969-05-04
1969-05-05	WESTERN V-12	1000	1969-05-05
1969-05-06	WESTERN V-12	1000	1969-05-06
1969-05-07	WESTERN V-12	1000	1969-05-07
1969-05-08	WESTERN V-12	1000	1969-05-08
1969-05-09	WESTERN V-12	1000	1969-05-09
1969-05-10	WESTERN V-12	1000	1969-05-10
1969-05-11	WESTERN V-12	1000	1969-05-11
1969-05-12	WESTERN V-12	1000	1969-05-12
1969-05-13	WESTERN V-12	1000	1969-05-13
1969-05-14	WESTERN V-12	1000	1969-05-14
1969-05-15	WESTERN V-12	1000	1969-05-15
1969-05-16	WESTERN V-12	1000	1969-05-16
1969-05-17	WESTERN V-12	1000	1969-05-17
1969-05-18	WESTERN V-12	1000	1969-05-18
1969-05-19	WESTERN V-12	1000	1969-05-19
1969-05-20	WESTERN V-12	1000	1969-05-20
1969-05-21	WESTERN V-12	1000	1969-05-21
1969-05-22	WESTERN V-12	1000	1969-05-22
1969-05-23	WESTERN V-12	1000	1969-05-23
1969-05-24	WESTERN V-12	1000	1969-05-24
1969-05-25	WESTERN V-12	1000	1969-05-25
1969-05-26	WESTERN V-12	1000	1969-05-26
1969-05-27	WESTERN V-12	1000	1969-05-27
1969-05-28	WESTERN V-12	1000	1969-05-28
1969-05-29	WESTERN V-12	1000	1969-05-29
1969-05-30	WESTERN V-12	1000	1969-05-30
1969-05-31	WESTERN V-12	1000	1969-05-31
1969-06-01	WESTERN V-12	1000	1969-06-01
1969-06-02	WESTERN V-12	1000	1969-06-02
1969-06-03	WESTERN V-12	1000	1969-06-03
1969-06-04	WESTERN V-12	1000	1969-06-04
1969-06-05	WESTERN V-12	1000	1969-06-05
1969-06-06	WESTERN V-12	1000	1969-06-06
1969-06-07	WESTERN V-12	1000	1969-06-07
1969-06-08	WESTERN V-12	1000	1969-06-08
1969-06-09	WESTERN V-12	1000	1969-06-09
1969-06-10	WESTERN V-12	1000	1969-06-10
1969-06-11	WESTERN V-12	1000	1969-06-11
1969-06-12	WESTERN V-12	1000	1969-06-12
1969-06-13	WESTERN V-12	1000	1969-06-13
1969-06-14	WESTERN V-12	1000	1969-06-14
1969-06-15	WESTERN V-12	1000	1969-06-15
1969-06-16	WESTERN V-12	1000	1969-06-16
1969-06-17	WESTERN V-12	1000	1969-06-17
1969-06-18	WESTERN V-12	1000	1969-06-18
1969-06-19	WESTERN V-12	1000	1969-06-19
1969-06-20	WESTERN V-12	1000	1969-06-20
1969-06-21	WESTERN V-12	1000	1969-06-21
1969-06-22	WESTERN V-12	1000	1969-06-22
1969-06-23	WESTERN V-12	1000	1969-06-23
1969-06-24	WESTERN V-12	1000	1969-06-24
1969-06-25	WESTERN V-12	1000	1969-06-25
1969-06-26	WESTERN V-12	1000	1969-06-26
1969-06-27	WESTERN V-12	1000	1969-06-27
1969-06-28	WESTERN V-12	1000	1969-06-28
1969-06-29	WESTERN V-12	1000	1969-06-29
1969-06-30	WESTERN V-12	1000	1969-06-30
1969-07-01	WESTERN V-12	1000	1969-07-01
1969-07-02	WESTERN V-12	1000	1969-07-02
1969-07-03	WESTERN V-12	1000	1969-07-03
1969-07-04	WESTERN V-12	1000	1969-07-04
1969-07-05	WESTERN V-12	1000	1969-07-05
1969-07-06	WESTERN V-12	1000	1969-07-06
1969-07-07	WESTERN V-12	1000	1969-07-07
1969-07-08	WESTERN V-12	1000	1969-07-08
1969-07-09	WESTERN V-12	1000	1969-07-09
1969-07-10	WESTERN V-12	1000	1969-07-10
1969-07-11	WESTERN V-12	1000	1969-07-11
1969-07-12	WESTERN V-12	1000	1969-07-12
1969-07-13	WESTERN V-12	1000	1969-07-13
1969-07-14	WESTERN V-12	1000	1969-07-14
1969-07-15	WESTERN V-12	1000	1969-07-15
1969-07-16	WESTERN V-12	1000	1969-07-16
1969-07-17	WESTERN V-12	1000	1969-07-17
1969-07-18	WESTERN V-12	1000	1969-07-18
1969-07-19	WESTERN V-12	1000	1969-07-19
1969-07-20	WESTERN V-12	1000	1969-07-20
1969-07-21	WESTERN V-12	1000	1969-07-21
1969-07-22	WESTERN V-12	1000	1969-07-22
1969-07-23	WESTERN V-12	1000	1969-07-23
1969-07-24	WESTERN V-12	1000	1969-07-24
1969-07-25	WESTERN V-12	1000	1969-07-25
1969-07-26	WESTERN V-12	1000	1969-07-26
1969-07-27	WESTERN V-12	1000	1969-07-27
1969-07-28	WESTERN V-12	1000	1969-07-28
1969-07-29	WESTERN V-12	1000	1969-07-29
1969-07-30	WESTERN V-12	1000	1969-07-30
1969-07-31	WESTERN V-12	1000	1969-07-31
1969-08-01	WESTERN V-12	1000	1969-08-01
1969-08-02	WESTERN V-12	1000	1969-08-02
1969-08-03	WESTERN V-12	1000	1969-08-03
1969-08-04	WESTERN V-12	1000	1969-08-04
1969-08-05	WESTERN V-12	1000	1969-08-05
1969-08-06	WESTERN V-12	1000	1969-08-06
1969-08-07	WESTERN V-12	1000	1969-08-07
1969-08-08	WESTERN V-12	1000	1969-08-08
1969-08-09	WESTERN V-12	1000	1969-08-09
1969-08-10	WESTERN V-12	1000	1969-08-10
1969-08-11	WESTERN V-12	1000	1969-08-11
1969-08-12	WESTERN V-12	1000	1969-08-12
1969-08-13	WESTERN V-12	1000	1969-08-13
1969-08-14	WESTERN V-12	1000	1969-08-14
1969-08-15	WESTERN V-12	1000	1969-08-15
1969-08-16	WESTERN V-12	1000	1969-08-16
1969-08-17	WESTERN V-12	1000	1969-08-17
1969-08-18	WESTERN V-12	1000	1969-08-18
1969-08-19	WESTERN V-12	1000	1969-08-19
1969-08-20	WESTERN V-12	1000	1969-08-20
1969-08-21	WESTERN V-12	1000	1969-08-21
1969-08-22	WESTERN V-12	1000	1969-08-22
1969-08-23	WESTERN V-12	1000	1969-08-23
1969-08-24	WESTERN V-12	1000	1969-08-24
1969-08-25	WESTERN V-12	1000	1969-08-25
1969-08-26			



A grayscale map of a region with a grid overlay. A large, irregularly shaped area in the center is shaded dark gray, representing a specific region of interest. The map shows various geographical features like rivers and roads. The grid lines are spaced at approximately 10 km intervals.

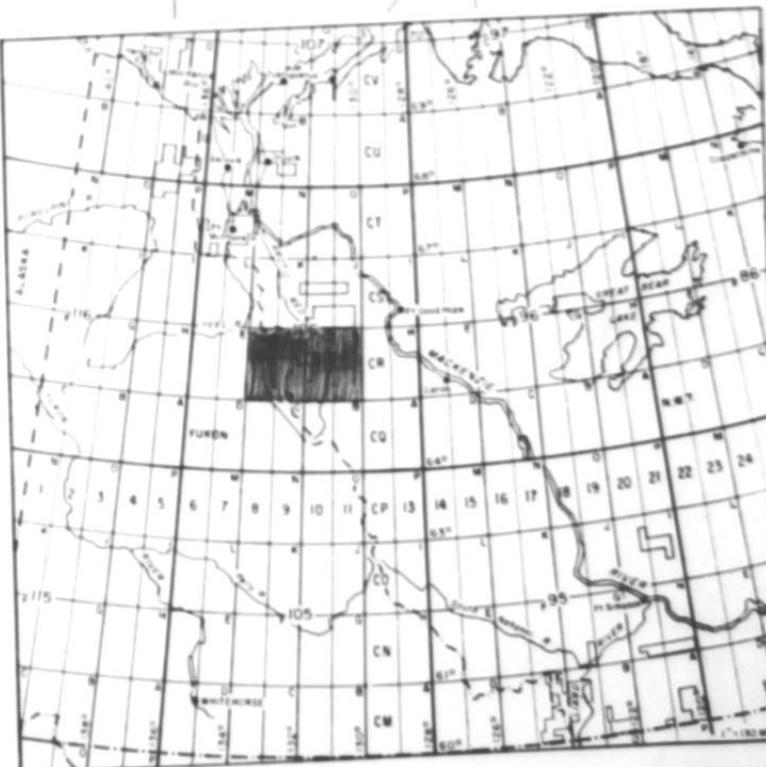
4488

第13章 人生哲理与智慧

第14章 项目管理与控制 14.3 项目管理的理论

INTERPRETIVE HISTORIES

		AMOCO CANADA
PETROLEUM COMPANY LTD		
AREA	Upper Ramps River	
PROVINCE	NWT	
HORIZON	SURFACE TOPOGRAPHY (SHOT HOLE LOGS)	
TYPE OF MAP	CONTOUR INT 100 ft.	
SHOT BY	WESTERN V-12	FOR
INCL DATES	NOV, 1969 - APRIL, 1970	
INTERP BY	R S RYAN	CO AFFIL AMOCO
REPORT No.	DATE	
REMARKS		
RCG 4 1647		
GEOLOGICAL INT	DATE	
FROM GEOPH REPORT NO(s)		
DATED		
REMARKS		
CLASS I		



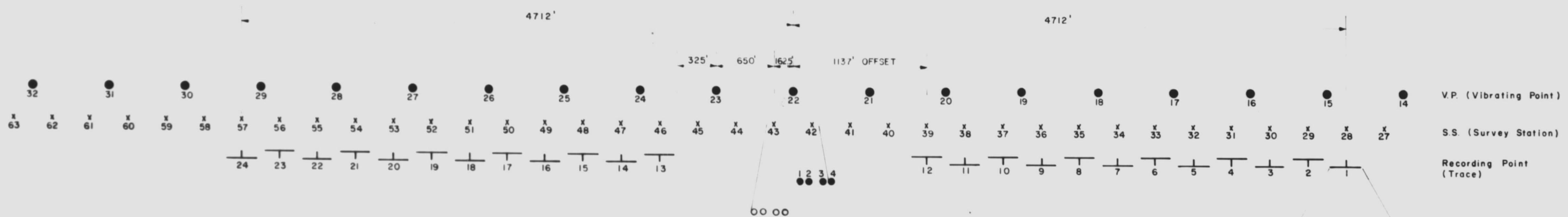
CRANSWICK RIVER

WESTERN V-12 VIBROSEIS

NOV. 69 - APRIL 70

600% SYMMETRICAL SPREAD

Scale 1" = 650'



VIBRATOR PATTERN

(DETAIL)

Scale 1" = 200'

4 VIBRATORS TAKING 16 SWEEPS COVERING 487 1/2' \approx
21' BETWEEN SWEEPS WITH 1137' OFFSET

