

MAR 19690030: NORTH EAST ALBERTA

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ECONOMIC MINERALS

FILE REPORT No.

U-AF-047(2)

CANADA SOUTHERN PETROLEUM LTD.

EXPLORATION REPORT

ON

CANADA SOUTHERN PERMIT 89

NORTHEAST ALBERTA

DECEMBER, 1969

INDEXING DOCUMENT NO. 700088

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SCINTILLOMETER SURVEY

CANADA SOUTHERN PETROLEUM PERMIT 89

Northeast Alberta

INTRODUCTION

An airborne scintillometer survey covering this permit was carried out on October 8, 1969. The area covered consists of the north half Twp 105, Twp 106, and the south two-thirds of Twp 107 Range 1 west of fourth meridian. This was considered a preliminary survey to determine if any anomalous radioactivity was present which would justify further investigation by spectrometer and ground work.

Twenty five north-south lines were flown at 1/4 mile intervals with readings recorded every quarter mile. Flight lines are not shown as they would obscure the results of the survey. The survey aircraft was a Bell 204B helicopter, which logged 325 miles at a speed of 80 miles per hour and terrain clearance of 200 feet. This terrain clearance was necessary due to the difficulty of maintaining position on the flight lines accurately at a lower altitude.

Readings were taken with a hand held Model 117B Special Scintillator made by Precision Radiation Instruments, Los Angeles. The range control setting was .05 milliroentgens per hour.

Radiometric values over the property ranged from .02 to .05 MR per hour. The background radiation averaged .025 MR per hour; thus the areas contoured on the attached map, representing readings of .03 or greater, are considered peaks of the background radiation, none of which exceeded .05 MR per hour.

GEOLOGY

This permit lies within the presently defined edge of the Athabasca Sandstone. From seismic evidence by Hobson and MacAuley (1969), the sandstone thickness should be about 1000 feet in the northeast corner of the area, thinning to the southwest corner of the permit to about 200 feet. Porous beds within the sandstone therefore, might occur at shallow depths. If these had provided a path for mineralized solutions, precipitation of uranium compounds might have taken place under favorable physical or chemical conditions.

It was the objective of this survey to determine if any unusual variation in the radioactivity within the permit area might indicated the presence of a uranium accumulation relatively close to the surface. Hopefully, the effect could be detected despite the cover of muskeg, lakes and glacial deposits, and the absence of any surface exposure of Athabasca Sandstone. (See attached Photogeology report). The lack of outcrop shown by the Photogeology map was confirmed during the scintillometer survey.

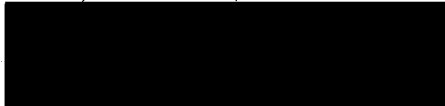
INTERPRETATION OF RESULTS

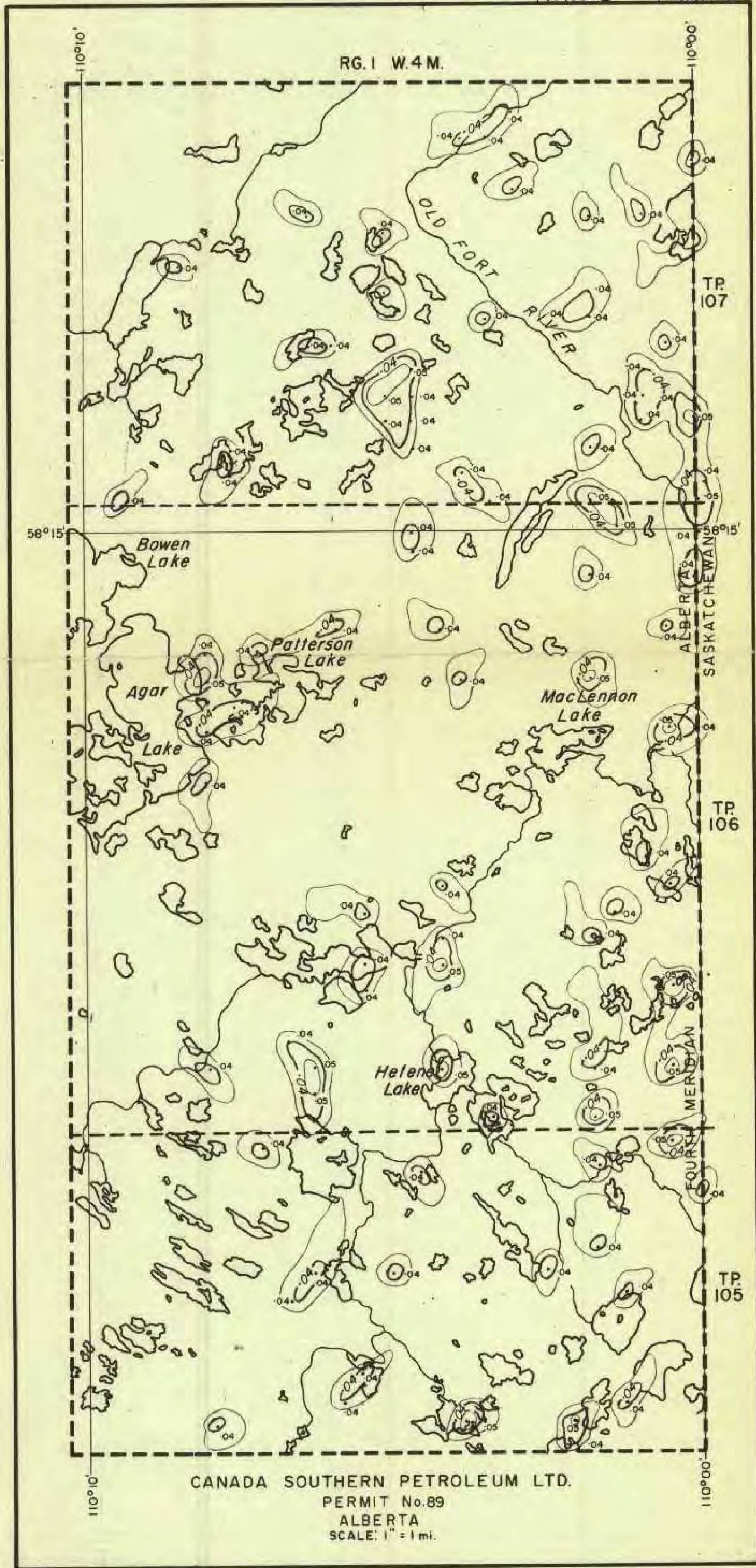
The instrument used has proven effective in recording anomalous radioactivity of twice the background intensity on surveys over similar terrain in Saskatchewan. This area produced no readings above the peaks of background radiation. Much of the area registered readings 0 to .02 milliroentgens per hour. These areas are usually associated with muskeg and lakes and heavy glacial outwash sands. The peak readings of .05 MR per hour are relatively few, which suggests that they might be slightly exceeding the overall peak intensity of the area. These readings then could result from ground moraine containing granitic types of boulders which usually register a small amount of radioactivity. No boulders were observed during the survey, but in view of the abundance of glacial deposits it is likely that they are present but buried.

CONCLUSIONS

The results of this scintillometer survey indicate that no radioactive materials are concentrated on or close to the surface of this permit.

- Enclosures: Photogeology Report and Map
Scintillometer Survey Map
Index Map
Statutory Declaration


Earl Clark, P. Geol.

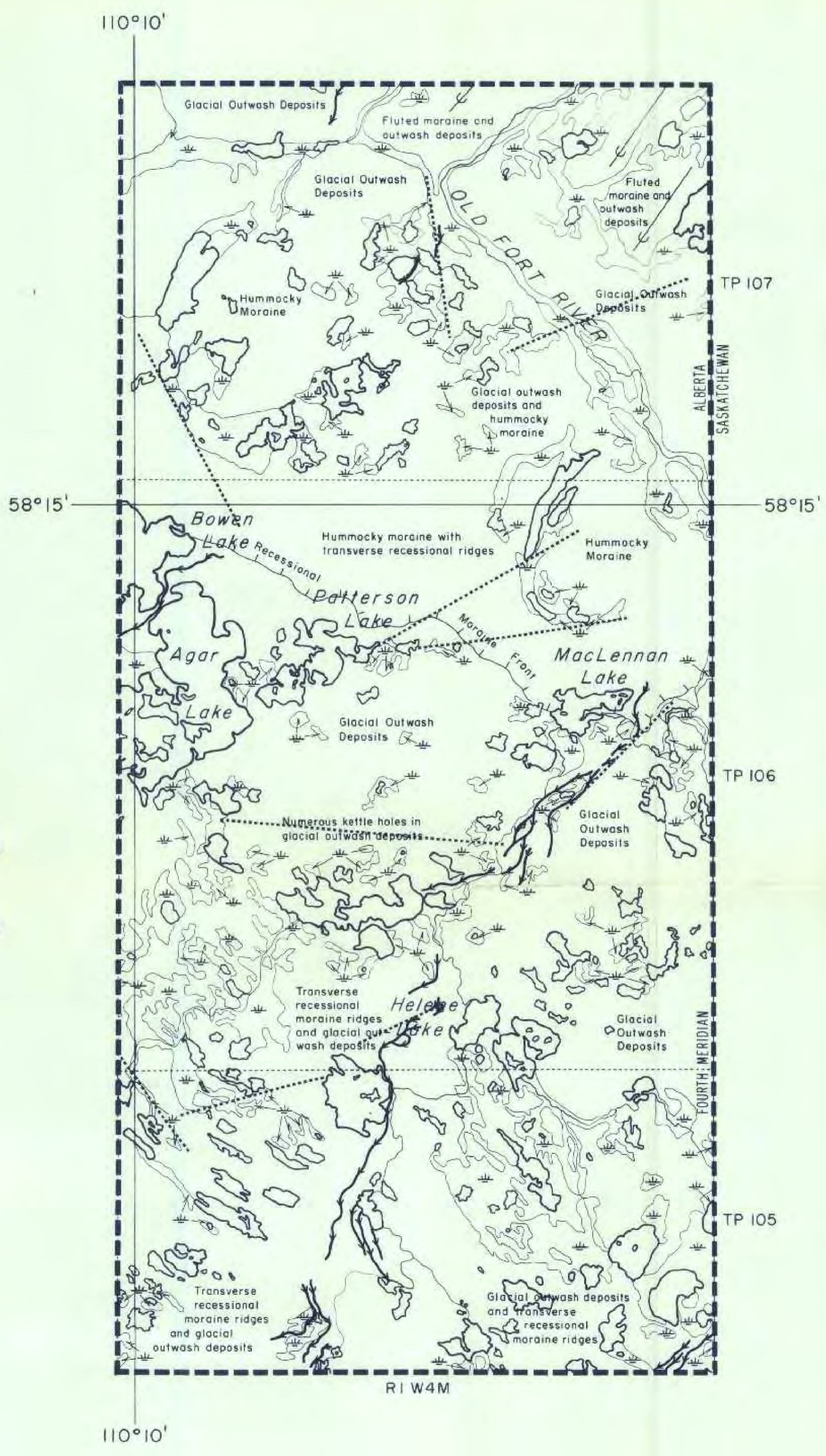


PHOTOGEOLOGIC MAP
CANADA SOUTHERN PETROLEUM LTD.

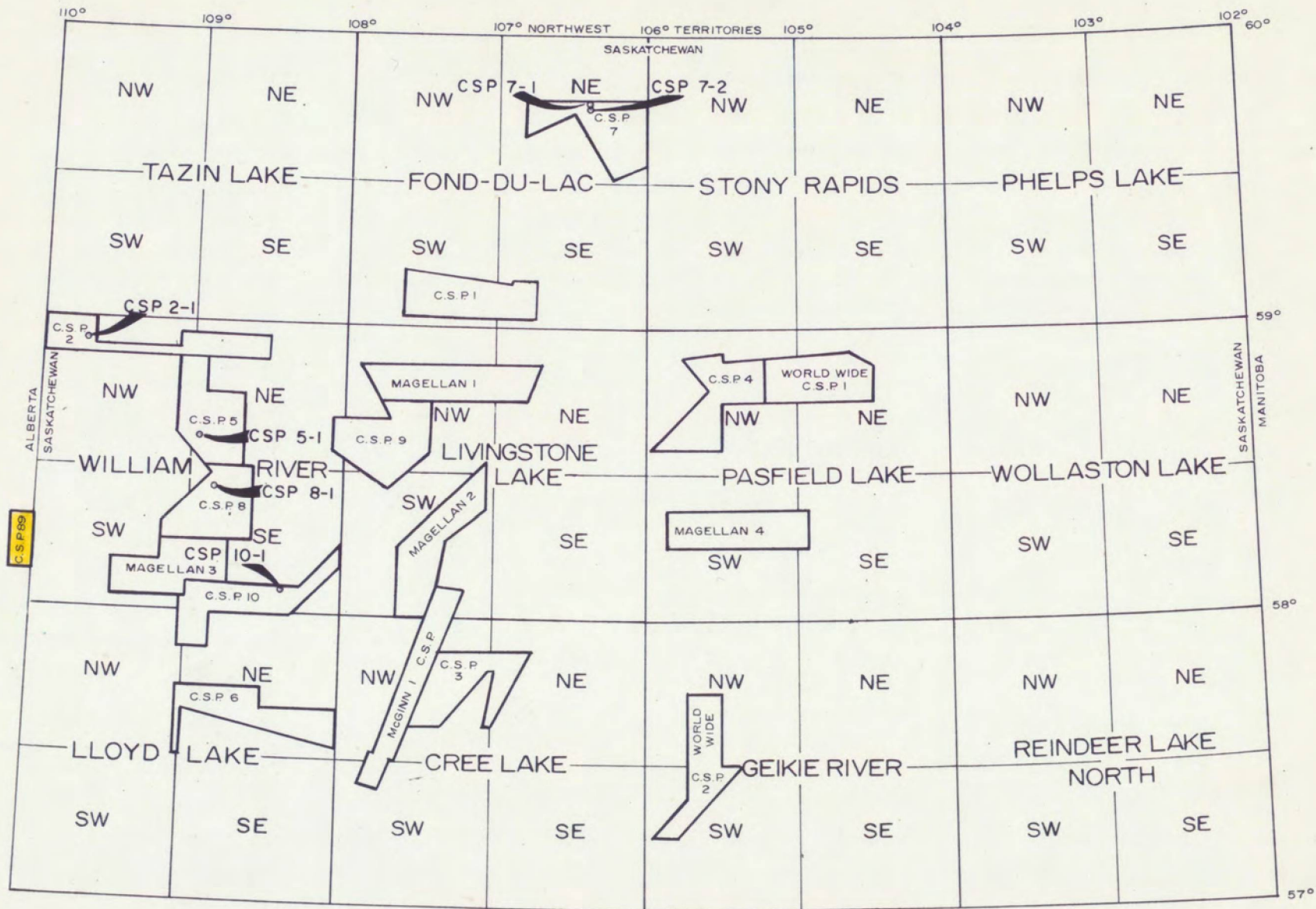
PERMIT NO. 89
NORTH ALBERTA



SCALE
1:63,360 - 1 mile to 1 inch
5,000 3,000 1,000 0 5,000 10,000 FEET
1/2 1/4 0 2 MILES
JULY 1969



- LEGEND**
- Lineament
 - Muskeg
 - Glacial lineation, direction indicated
 - Esker
 - Permit boundary



CANADA SOUTHERN PETROLEUM LTD.

INDEX MAP (FIGURE 3)

19690030