

QUATERNARY MAPPING/DRIFT PROSPECTING, MORAN HEIGHTS, LABRADOR

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INTRODUCTION

Quaternary mapping at a detailed level commenced in 1984 at the request of Saarberg Interplan. Its objective was to define the source of uranium-bearing boulders on the company's Moran Heights property, which lies approximately 140 km north of Goose Bay, Labrador (Figure 1). Aside from airphoto-based surficial mapping (Fulton *et al.*, 1980), there has been little previous Quaternary work in the area.

Massive to foliated granitoid plutonic rocks underlie the northern part of the study area.

FIELD WORK

Summary of 1984 Results

As a result of field work in 1984, it was concluded that the mineralized boulders occurred in till (Vanderveer, 1985) and not in colluvium as had previously been assumed (Perry, 1980). In addition, two glacial flows were identified, a flow to the east-northeast and a later flow to the north. The later flow has been interpreted as being responsible for the construction of lateral moraines on both sides of the valley and a small moraine (possibly recessional) near the north end of the lake (Vanderveer, 1985).

The 1984 till sample density (Figure 2) was sparse, but the preliminary unregressed results do identify a zone of anomalous geochemical values (ppm) for U (Figure 3), Co, Mo, and Pb (Figure 4).

These anomalies extend in both a down-ice and up-ice direction from the main boulder concentration at Moran Height and appear to be closely related to the northward glacial flow. The extension of the anomaly south (up-ice) of the main boulder field indicates either that the source area lies farther south than the boulders, or that there is more than one source area.

Field Program 1985

Field work this past summer involved the collection of additional till and pebble samples (for lithological analyses) within the area sampled in 1984 (to provide a sample density of one sample per 50 m along grid lines spaced 200 m apart). In addition, the sampling grid was extended toward the north and south (Figure 2). These traverses assisted in refining the location of the till deposits in the area. Through this approach, it was found that the moraine at the north end of the pond is not as extensive as previously assumed from an earlier airphoto analysis. The moraine is limited to the west side of the pond. The main ridge across the north end of this pond is bedrock controlled and has a thin mantle of glacial till.

It is expected that the results from the 1985 sampling program should refine the geochemical pattern of U and other elements in till, and define the southern limit of this dispersal pattern. The pebble lithology studies will be useful in

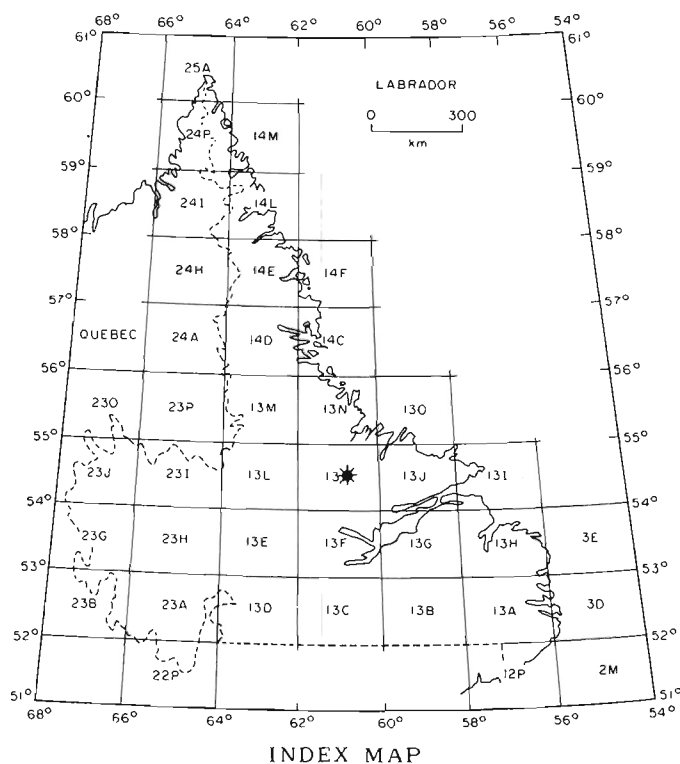


Figure 1: Index Map, Moran Heights area.

The site of investigation lies in a north-northeast-trending valley (at the northeast end of Moran Lake) that is underlain by arkosic sandstone and conglomerate of the Heggart Lake Formation (Ryan, 1979). The valley is bounded by a hillside that rises 160 m on the west side and consists predominantly of mafic lava, breccia and siltstone of the Moran Lake Group. The hillside on the east is partly composed of rocks of the Heggart Lake Formation and rocks of the Moran Lake Group.

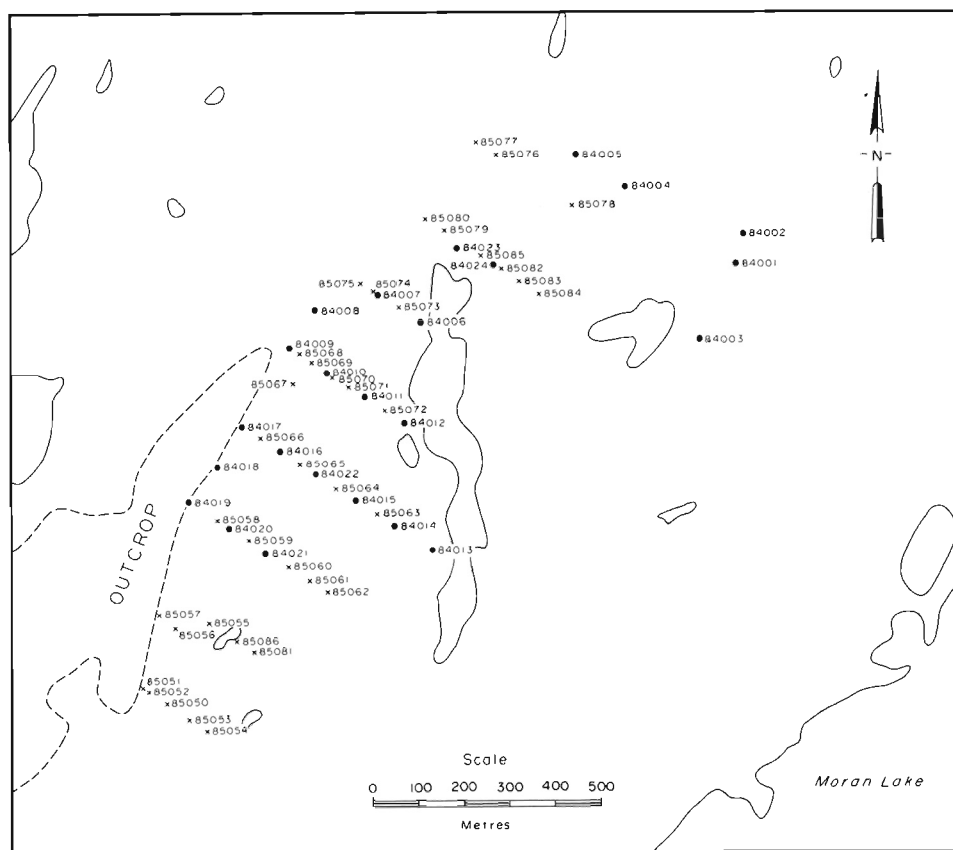


Figure 2: Site locality map, 1984-85 field programs.

- 84019 - Site 019 sampled in 1984
- x 85060 - Site 060 sampled in 1985

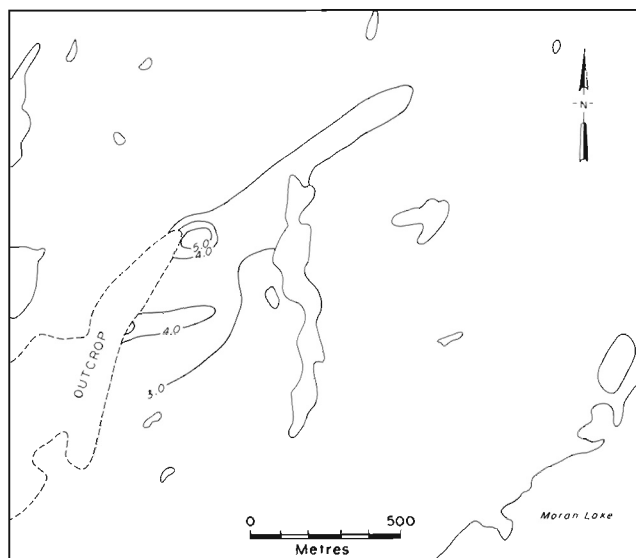


Figure 3: Distribution of U (ppm) in till for 1984 sites. These are raw values without any statistical treatment, e.g., no correction for elemental affinities.

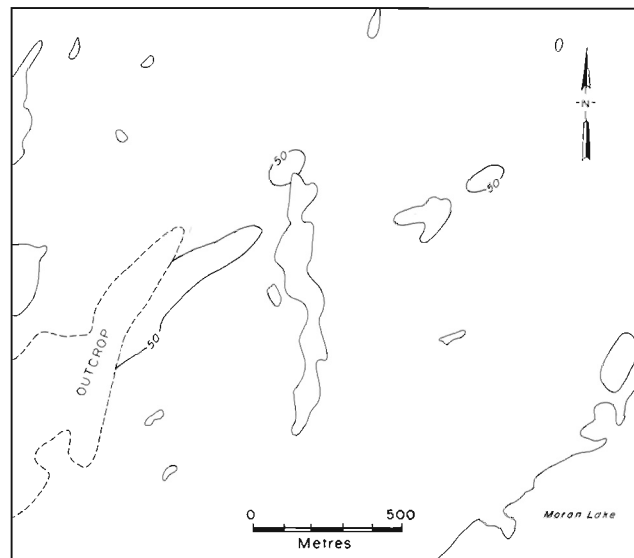


Figure 4: Distribution of Pb (ppm) in till for 1984 sites. These are raw values without any statistical treatment, e.g., no correction for elemental affinities.

defining probable source areas for the till and the mineralized clasts.

Future Plans

Plans include the following: a) completion of the till geochemical, pebble and grain size analyses, b) revision of the Quaternary map for the area, and c) preparation of a joint Newfoundland Department of Mines and Energy-Saarberg Interplan report which will summarize the following: (i) the history of exploration, (ii) current exploration activities, (iii) distribution of the glacial deposits and direction of transport, and (iv) the geochemical dispersal of the mineralization in soils and till.

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Note: Mineral Development Division file numbers are included in square brackets.