APPLICATION OF LANDSAT TM DATA TO MAPPING SURFICIAL GEOLOGY

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Objective
To determine whether LANDSAT TM data can be applied to the mapping of surficial geology in Arctic Canada. The study area was the Ferguson Lake area, District of Keewatin, NWT (Fig. 1).

Results
1) A portion of an existing surficial geology map was digitized and compared to the classification results obtained using LANDSAT TM data. There was a high degree of correlation between the results on the two maps (Renz et al., 1989).

2) The map units included rock, rock and till, striped till, alluvium, esker and beach, and water. Discrepancies between the two maps were generally due to confusions of geologically similar units such as the confusion between rock, and rock and till.

3) The map created from TM imagery had more detail as it was based on a 30 X 30 m pixel classification.

4) Maps created by airphoto interpretation facilitate the incorporation of textural information and the mappers' experience.

5) The TM derived map had the further advantage of easier update capabilities because of its digital nature.

References

Figure 1. Location of study area, Ferguson Lake, District of Keewatin, Northwest Territories.
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PROJECT SUMMARIES

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