

ECONOMIC, PETROLEUM AND GROUNDWATER GEOLOGY

Activities of the Groundwater Section,
Nova Scotia Department of Mines,
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A very active field program was undertaken during the summer by the GROUNDWATER SECTION, NOVA SCOTIA DEPARTMENT OF MINES.

Northern Nova Scotia Field Party

A reconnaissance groundwater survey was undertaken in Northern Nova Scotia. This included an extensive sampling program of groundwater from selected aquifers in different geologic units. This was followed up by test drilling at different localities where it was thought that possibilities for large groundwater supplies existed. Geophysical exploration (hammer seismograph) continued in selected localities where favourable glacial and recent aquifer materials were indicated. Ancillary detailed geologic mapping of these deposits was also carried out.

This program was under the direction of MARCUS WARING, a recent graduate of Acadia University. G. M. HUGHES of the ILLINOIS STATE GEOLOGICAL SURVEY, a specialist in sanitary landfill and groundwater pollution problems spent part of the summer also working in conjunction with this problem.

Annapolis Valley Project

This program continuing from last year was brought under the direction of PETER C. TRESMOTT, a doctoral student under the supervision of R. N. FARVOLDEN at the UNIVERSITY OF ILLINOIS.

Mr. Trescott with the assistance of T. W. HENNIGAR, a recent graduate from Acadia University, continued detailed mapping of surficial and bedrock deposits in the Annapolis Valley, supplemented with extensive test boring and groundwater sampling. An analysis of baseflow contribution from groundwater to the Annapolis river was started. It appears that there exists considerable undeveloped groundwater potential for the Valley.

Inverness - Cape Breton

Test wells and an extensive aquifer pumping test program has been started in a glacial river channel between the town of Inverness and Lake Ainslie. This program was the result of a detailed geological and geophysical program carried out last summer.

In this channel extensive deposits of granular, water-saturated deposits have been found.

Cheticamp - Cape Breton

Test wells were drilled to locate an additional groundwater supply well for the fishing industry in this area. This project was carried out for the NOVA SCOTIA WATER AUTHORITY as part of an ATLANTIC DEVELOPMENT BOARD Program.

Nova Scotia's Contribution to the International Hydrologic Decade

Reconnaissance of several small watershed areas was carried out in the Salmon River basin near Truro. This was a joint undertaking between Provincial and Federal Government Agencies. Geologic mapping (Department of Mines) and geophysical surveying NOVA SCOTIA RESEARCH FOUNDATION were carried out.

A small watershed at Fraser's Brook was selected and at the present time stream gauging facilities are being installed by Federal Water Resources. Meteorological instrumentation is being carried out by the Federal Department of Transport. Test drilling and observation wells will be carried out by the Groundwater Section, Department of Mines, later this fall.

This first basin will become part of a series of representative basins across Canada as part of Canada's contribution to the I.H.D.

Additional representative watershed studies and instrumentation are planned for coming years. It is hoped that these studies will lead to a fuller understanding of the role of the different parts of hydrologic regime in a Maritime climate in Nova Scotia. This information is of particular value to groundwater studies in estimating the amount of precipitation available for groundwater recharge and hence groundwater development.

Groundwater Data Processing is being carried out at the Nova Scotia Research Foundation. Both the Northern Nova Scotia and Annapolis Valley programs are joint ARDA projects with the Department of Mines and Nova Scotia Research Foundation administering them.

Observation Wells

Observation wells have been installed at several locations in the Province and further ones are planned.

Staff Additions

S. G. TRASK of Cambridge Station, Nova Scotia, joined the Department of Mines as Well Inspector. His duty will be to administer the Well Drilling Act and aid the collection and collation of basic

groundwater data.

T. W. HENNIGAR, a recent graduate in geology from ACADIA UNIVERSITY, joined the Department of Mines as a groundwater geologist.

Industrial and Municipal Requests for Groundwater

Many industrial and municipal requests have been received regarding groundwater supplies. Particular emphasis lately has been on finding groundwater supplies for Nova Scotia's fishing industry. At the present time the groundwater section has been assisting the town of Port Hawkesbury in alleviating a water shortage.

Meetings and Symposiums

The writer this last winter was appointed as Nova Scotia's representative on the SUBCOMMITTEE ON HYDROLOGY of the ASSOCIATE COMMITTEE ON GEODESY AND GEOPHYSICS OF THE NATIONAL RESEARCH BOARD OF CANADA.

Of recent note was the attendance at Quebec City in June of the SYMPOSIUM ON DESIGN OF HYDROMETEOROLOGICAL NET KS sponsored by the WORLD METEOROLOGICAL ORGANIZATION and the INTERNATIONAL ASSOCIATION OF SCIENTIFIC HYDROLOGY. The writer was appointed Secretary for the sessions on groundwater and soil moisture.