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SOME CHARACTERISTICS OF GROUND WATER IN VANATHAVILLU AS DETERMINED BY NUCLEAR TECHNIQUES

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Naturally occuring isotopes, both stable and unstable can be used for solving many problems in hydrology. The main isotopes used are Deuterium, Tritium, Carbon-13, Carbon-14, and Oxygen-18. As a part of the hydrology programme of the Atomic Energy Authority, a study using these isotopes to find characteristics of ground wafers at Vanathavillu has been carried out as a collaborative project between the Department of Irrigation and the Radioisotope Centre.

In this project samples of ground waters were obtained from the wells that have been sunk by the Department of Irrigation. Samples of surface water were also collected from the same area. Contents of Tritium, Carbon-13, Carbon-14 and Oxygen-18 in these samples were measured.

These values have lead to the conclusions that;

(1) Ground water in this area are about twenty five years old.

(2) In some areas, seepage of sea water takes place.

(3) Recharge is presently occuring in the southern part of the basin.

(4) The flow velocity is about 1-2 meters/year.