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RECHARGE OF THE FRESH WATER AQUIFER IN MANNAR ISLAND

BY

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ABSTRACT.

The Mannar island has been traditionally dependent on groundwater as its source of potable water. The fresh water aquifer is in the form of a thin lens floating over a saline layer.

It is known that when this type of Hydrogeological set up exists excessive abstractions from the fresh water lens will result in a rapid upconing of the saline layer situated below.

The aquifer derives its fresh water from the natural recharge of precipitation. Therefore it is imperative to know what percentage of precipitation enters the aquifer through infiltration in order to estimate how much could be abstracted from this lens.



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The National Water Supply & Drainage Board of Sri Lanka uses this lens of fresh water to supply the Mannar town with its pipe borne requirements of potable water and has plans to augment this scheme with additional abstractions from this same source.

Hence the object of this study has been to estimate the recharge to the freshwater aquifer in the Mannar island and on this basis estimate the additional abstractions permissible from the aquifer.

This recharge has been estimated for various conditions that could prevail in the island and based on this it has been observed that an additional abstraction of around $275 \text{ m}^3/\text{day}$ (60,000 gallons/day) per square kilometre of aquifer area should pose no danger to the freshwater aquifer in the island.

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