

STUDY ON FORMING WATER RESOURCES IN SAND DUNES AT THE COASTAL IN THACH HA - CAM XUYEN, HA TINH PROVINCE

Vu Ba Thao, Nguyen Thanh Cong, Nguyen Huy Vuong

Summary

Spreading along the coastline, Thach Ha - Cam Xuyen coastal sand dune has a length of approximately 26 km and a total area of 24.7 km². The sand dune aquifer (qh₂) contains a predominantly lithological composition of fine to medium grain sand, with aquifer thickness varying from 10 m - 15 m. Freshwater of this area is being exploited with a flow of 17754 m³.day⁻¹. However, this freshwater source is increasingly depleting due to several reasons, including the increasing demand for water, unreasonable solutions for exploitation, lack of complementary solutions and the ineffective prevention of water loss to the sea. It is necessary to studying the origin of groundwater formation in these sand dunes for proposing a reasonable and long-term exploitation solution as well as effective prevention of water loss into the sea. This paper analyses the formation of water sources in these sand dunes based on the hydrogeological structure analysis, groundwater dynamics monitoring, and condensed water quantity monitoring. The results show that the annual amount of rainfall added to the aquifer is about 6.863 x 10³ m³. The total amount of condensed water (CW) is about (72.95 mm), which is equivalent to 2.7% of the annual rainfall (2661 mm) and 9.1% of the annual evaporation (800 mm), respectively. The results of this study indicate that the condensate has a little effect on groundwater recharge. Nevertheless, the condensed water can increase the moisture content of the sand dune surface layer and reduce evaporation.

Keywords: *Groundwater, sand dune, evaporation, freshwater.*