

CERAMAH TEKNIK TECHNICAL TALK

Listen, Listen, Listen, GROUNDWATER is definitely better

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The talk on “Listen, Listen, Listen, GROUNDWATER is definitely better” was delivered by Ir. Dr. Azuhan Mohamed (Erinco/DID) on 13th March, 2013 at the Dept. of Geology, Univ. Malaya, K.L. Sdr Azuhan is fully qualified to talk on the subject of groundwater since he has spent a large part of his working life working on groundwater.

Sdr Azuhan gave a very comprehensive and “entertaining” talk on why groundwater is a better resource as compared to surface water (large resource, good water quality, easy and low cost abstraction, continuous recharge, etc.). He also touched on the common misconceptions among lay-man and professionals with regard to groundwater. He laments that in spite of numerous works/campaigns conducted on groundwater, there still exist resistance and reluctance to the greater development of groundwater resources, including from the business and political sectors. For example, a recent major project on the exploration and tapping of groundwater from deep-seated bedrock/hard rock aquifer was suddenly aborted mid-stream, to the disappointment of the professionals involved in the project. Further details of the talk are contained in the abstract below. As usual, a lively Q&A session followed the presentation.

On behalf of the Society, we thank Sdr Azuhan for his most enlightening and entertaining talk.

Tan Boon Kong,

Chairman, W/G on Engineering Geology, Hydrogeology & Environmental Geology

Abstract: Water is a gift of God. Water exists in four forms: solid, liquid, gas and in the form of “H” separated from “OH”. The fourth form refers to water that is baked into the molecular structure of rock which is located between 400 km and 640 km deep in the earth. The paths taken by rain droplets include: (i) evaporate before reaching the ground; (ii) intercept by vegetation – evaporated, consumed and flow down to the ground; (iii) reaches the ground – flow as surface runoff or infiltrated into the ground and subsequently percolated to groundwater bodies or aquifers; and (iv) joins surface water bodies – rivers, lakes, wetlands and oceans. In Malaysia, visible water resources account for more than 98 per cent of raw water for public water supply. In countries with high annual rainfall, groundwater is an out-of-sight, out-of-mind water resource and is assumed to be viable only for low rainfall countries. There are many benefits of groundwater development and they include shorter transmission pipelines and inundation free water resources development. The former utilises the pipeline function of aquifers whereby water is transferred from recharge areas to abstraction points and the latter utilises the massive storage capacity function of aquifers. It is estimated that more than 95 per cent of the readily available global freshwater resources is in the ground. There are many methods of groundwater abstractions and the suitable method depends on the desired quantity and quality of water as well as geological conditions. River bank filtration (RBF) is gaining acceptance to enhance water supply services by improving water quality, permitting water abstraction during river low flows and overcoming water intake damages by floating logs. RBF utilises the “filter plant” function of aquifers. RBF involves the use of groundwater abstraction methods. The suitable method of abstraction and the success of RBF depend on the conditions of local geology and river. Detailed study that is undertaken by a team of multi-discipline groundwater professionals will ensure sustainable groundwater development. There are many barriers to groundwater development in the country and include opposition from business as usual sector (river abstraction and dam construction) and public perception on the safety of groundwater use as well as professionals perception on the sustainability of groundwater use. With respect the latter, the presenter noted that geoscientists and engineers are divided in addressing all geo-hazards except groundwater related hazards. It is now time for change – develop groundwater to improve water supply services and mitigate the impacts of climate change. This change can be realised if there is a political will – groundwater is high on the development agenda.