

## **KARSTIC AQUIFERS OCCURRENCE IN THE KYPARISSIA FIELD (MEGALOPOLIS BASIN - PELOPONNESUS)**

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A major hydrogeological problem associated with the mining of the lignite of the Kyparissia field has been evident since early investigations of the possible exploitation of the lignite deposits (GOLD Report, 1963), namely that the hydraulic head of the mostly confined karstic aquifer is 50 to 70 m above the working quarry floor and dewatering is therefore necessary before mining of the lignite can be undertaken.

According to the results of all the previous investigations it is reported that the karstic water body underneath the basin filling must be considered to be large and possibly far-reaching with relatively uniform pressure conditions prevailing.

The study of the geology and hydrogeology of the Kyparissia field revealed the presence of fine separate karstic aquifers developed in the Upper Cretaceous limestone bedrock, each having its own individual hydrogeological regime.

- a. The geological study of the area indicated the possibility of the presence of a thrust-slice structure beneath at least part of the Kyparissia field and a few thrust-slices were, in fact, distinguished as individual units in the central and western parts of the Kyparissia field. It is possible that the Upper Cretaceous limestone parts of each one of these thrust-slices may form an individual hydrogeological unit.
- b. The hydraulic head distribution as it recorded in the observation wells sunk into the karstic aquifers developed in the vicinity of the Kyparissia field, the pattern of fluctuations of the groundwater level during the period 1975-81 and the results of the hydrochemical investigation all confirmed the existence of the various limestone subcrops-karstic bodies as individual isolated hydrogeological units.

## **HYDROGEOLOGICAL INVESTIGATIONS AT THE NORTH COAST OF THE CRETE ISLAND WITH THE AID OF THERMAL INFRARED AIRPHOTOGRAPHY**

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The ground water outflow locations in sea coastal environment, of the Northern coastline on the Crete island, are compared with the linear thermal anomalies of the near coastline area, as well as the results of the lineaments analysis on airphotographs of 1: 30.000 scale. The outflow locations, as well as, the linear thermal anomalies are determined with the aid

of thermal infrared airphotos, in correlation with the zones of structural discontinuities, identify linear underground water channel movements. These zones are recognized as photo - lineaments on the airphotos and by field observations, and they are persistent in all petrological formations.

The application of this method can be employed in selecting favourable areas for hydrogeological investigations.

## **CONTRAINTES DANS LE CHOIX D'UN MODÈLE DE SIMULATION DE L'AQUIFÈRE DE SARIGHIOL (MACÉDOINE - GRÈCE)**

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L'aquifère quaternaire de Sarighiol (partie méridionale du grand bassin de Ptolemais) présente des caractères géologiques complexes qui rendent la simulation mathématique difficile. Le milieu aquifère est hétérogène (lentilles de conglomérats ou de sables ou de galets, enchassés dans des sédiments marneux  $\pm$  imperméables). Les limites sont de nature différente, géologiques au S à l'W et à l'E, hydrodynamique au Nord (caractérisée par une crête piézométrique nette entre le bassin de Ptolemais ss au N et celui de Sarighiol au Sud).

Aussi, outre les données chiffrées classiques, requises pour le bon fonctionnement de toute simulation, le modèle doit définir très précisément les conditions aux limites et la géométrie du milieu. Des données géologiques et géophysiques disparates et souvent contradictoires ont été utilisées dans un premier temps pour définir, la forme du bassin et son contenu.

Des résultats obtenus, dépend le choix du modèle le plus performant.

## **GROUNDWATER POTENTIAL INVESTIGATION OF THE VOLVI BASIN (CENTRAL MECEDONIA - CREECE)**

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In the present work the hydrogeological conditions are studied and the groundwater potential of the Volvi basin is determined, with as much approximation as the collected data permitted.