

SYRIA | STUDY FOR DAMASCUS WATER SUPPLY FROM COASTAL AREA

PROJECT

CLIENT> DAMASCUS CITY WATER SUPPLY & SEWERAGE AUTHORITY, IB GROMBACH LTD

LOCATION> DAMASCUS (SYRIAN ARAB REPUBLIC)

DURATION> 2002 - 2003

COST> USD 5 Mio.

The water supply of Damascus City and Countryside depends today on local springs and wells. The present deficit is supposed to increase in the years 2020 and 2040 to 323 and res. 732 MCM/y. On the other side the Mediterranean coastal area of Syria from the Turkey border to the north and the Lebanon Border to the south is rich on precipitation. The project intends to withdraw the water surplus from the coastal area (surface runoff, groundwater) and to transport it by a 270 km long pipeline to Damascus.

PARTICULARITIES

An important part of the water surplus within the range of about 7 m³/s will be withdrawn from the karst aquifer. The hydrogeological study is one of the focus points of the study. The objectives are:

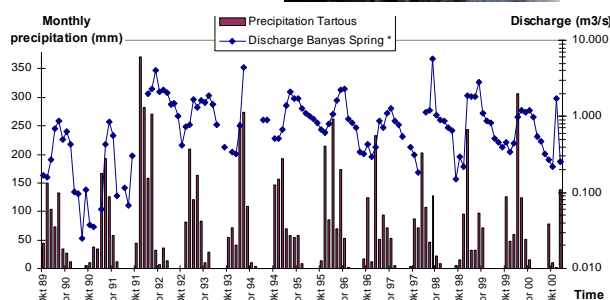
- Assessment of the characteristics of groundwater resources.
- Study of the submarine springs near the coastal line.
- Assessment of the groundwater quantity and quality to be used for DAWSCA by drilling and testing works.
- Define the localities for the groundwater intake.
- Design the facilities (large diameter wells) of the intakes.
- Outline the conflicts with existing groundwater use.
- Outline possible seawater intrusion and define the countermeasures.
- Laying out a seasonal management plan for groundwater withdrawal.

OUR PERFORMANCES

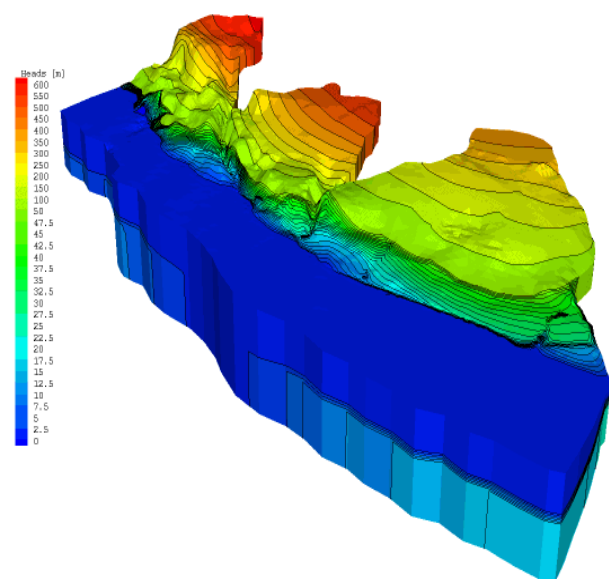
Planning, evaluating and leading the hydrogeological investigation activities.

Constitution and training of a local team with 11 local engineers/hydrogeologists and setting up the requested operational structure, technical skills and know-how.

- Drilling more than 4600 m within 200 days and carrying out more than 500 hours of pumping tests.
- Creation of a hydrogeological numerical model, integrating all the available information of the karst aquifer and running simulations of the groundwater withdrawal; outline of the possible conflicts and elaboration of a strategy for the final intake.
- Drilling of 6 large-diameter test wells up to 250 m depth and running a three months pilot test for a total discharge rate of 1 m³/s, with tracing tests and intense groundwater monitoring.



* Discharge measured at one day (average of several measurements at the same gauge profile)
Coastal Area Authority, Resource and Investment Department, Resource Branch, Surface Measurement Office, Tartous



The numerical modelling of Syrian Coastal Area Aquifer shows a 3-D view of the head distribution in Cenomanian limestone.