Water Supply In Arid zone – “Arava Valley”

presentation for the Mexico Convention

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1. General Data
- Geography
  Stretched for 170 km between the Dead Sea and the Red Sea.
  Height range from –400 m to 0 m (+170 in between).
- Population- about 50,000 situated in 4 groups: Kikar Sedom, Arava Tichona, Arava Dromit and the city of Eilat.
- Desert – average annual rain is 30 to 50 mm per year
- Isolated area.
- Intensive agriculture
- Tourism

2. water supply
The Arava is isolated from the Israeli National Water Supply System and uses only local water resources (aquifers and sea water desalination).

Hydrology
There are 3 main basins:
Alluvial – shallow aquifer (100 to 400 m) and local. This aquifer is almost optimally used.
Cenomanian – regional and half deep (300 to 700 m). This aquifer has not reached the optimum target.
Nubian Sandstone – regional and deep (700 to 1,300 m). This aquifer has not reached the optimum target.
3. Central Control

The system is controlled and operated from a central Scada system in the city of Eilat.

The system includes:
* 150 wells
* 25 reservoirs
* 20 pumping stations

Scada – Supervisory Control and Data Equisition
4. Development

Mekorot plans to invest about 110 million (until 2020) dollar in developing the water systems in the Arava.

The main projects are:
- New wells in the Cenomanian and the Nubian Sandstone aquifers.
- Supplying desalinated water to all indoor uses.
- Connecting between the water systems in the 3 sub-areas.
- Constructing 3 reservoirs (covered) to improve reliability and to reduce energy cost.
- Expansion of the desalination plants in Eilat.
- Upgrading old infrastructure.

5. Typical Issues

- Sustainability – long term warranty.
- Water supply reliability.
- Water quality: Salinity
  - Iron & Manganese
  - Hydrogen sulfide
  - Temperature
- Economics and social sensitivity.
Thank You!