



Water Quality, Availability and Potential of Geothermal Energy Utilization, Afra Water, Jordan

Mohammad Aljaradin ¹, Raed Bashitialshaaer ¹, Hossam Alitawi ², Mazen Amaireh²

¹*Department of Water Resources, Lund University, Sweden*

²*Natural Resources and Chemical Eng. Department, Tafila Technical University*

Corresponding author email: Mohammad.Aljaradin@tvrl.lth.se

ABSTRACT

Reusing of 3.3 MCM of water every year from utilizing thermal water of the hot springs downstream will boost the availability of water at the Dead Sea area. This water represent an additional sources of water for agribusiness in which all available springs and similar sources can follow the same way of successful. In this work the water quality of Afra hot springs was analysed at source and compared with the water at downstream at the Dead Sea area. Microbial analysis found no traces for faecal coliform and E.coli bacteria which lower the risk for contract diseases when the water is used for irrigation without any prior treatment. The water at upstream rich with high trace of metals with a significant content of bicarbonate, BOD₅ and COD are high but within Jordanian standards for irrigation purposes. According to the water quality and availability, different suggestions for treatment and uses will be defined in this paper. Furthermore, to evaluate the potential of geothermal energy uses in Afra area where the thermal water at above 45°C.

Keywords: Afra hot spring; water resources; chemical analysis; agriculture; aquaculture system.