

Two Dimension Resistivity Imaging/Tomography for Hydrogeological Study in Bazian Basin - West Sulaimani City, Kurdistan Region-Iraq

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Abstract

Two dimension resistivity imaging tomography was employed for evaluating the hydrogeological condition of the Bazian basin- Iraqi Kurdistan region. Three profiles having lengths equal to 25, 26.5 and 24.5 km were laid out parallel to the general strike of the outcrops. The constructed isopach map of the recent sediments within the Recent sub basin shows large thickness of about (52-165) m of these sediments that overlies Kolosh Formation. Two different aquifers were detected within the recent sediments. The first is shallow aquifer buried below depths (2-15) m and has a thickness ranges between (4-35) m. Geologically, it is composed of clay and gravel while in some limited locations the rock fragments of Sinjar Formation are a main constituent of this aquifer. The second is a deep confined aquifer covered by 10-40 m of clay and underlined by impermeable Kolosh Formation. It is buried below depths equal to (10-80) m and has thickness ranges between (29-108) m. The main composition of this aquifer is gravel with clay while in some location the main constituent changes to Sinjar rocks.