In this study, hydrogeological, hydrogeochemical and isotope geochemical features of the geothermal systems of Ivrindi, Havran and Gönen in the province capital of Balikesir were investigated. The geothermal waters in the area are distinguished by surface temperatures between 28.8 and 39.3 °C in Ivrindi, 25 and 57 °C in Havran and 34 and 76 °C in Gönen. In the geothermal field of Ivrindi, the Permian olistolithes form the basement rocks in Early Triassic age which are overlain by an alternation of conglomerates, metagraywackes and siltstones. The both rock series are overlain by Neogene volcanics and lacustrine sediments and Quaternary alluvium. In Havran, the Early Triassic Karakaya formation is the oldest rocks series consisting of mostly ultrabasic rocks which are cut by Oligocene to Miocene granodiorites. In the area, there are Upper Oligocene to Early Miocene dacitic pyroclastic rocks overlain by Middle to Upper Miocene lacustrine sediments. The geothermal waters are associated with NE-SW trending, right lateral and NW-SE trending left lateral strike-slip faults. In the area of Gönen, the Early Triassic basalts, diabases, gabbros, radiolarites and mudstones form the basement rocks which are overlain by the Upper Triassic to Early Cretaceous sandy limestones. Early to Middle Miocene andesitic lava flows overlie the last rock sequence. The andesitic lava flows are overlain by an alternation of conglomerates, sandstones and claystone underlne by rhyolitic pyroclastic materials and Quaternary alluvium. Hydrogeochemically, the geothermal waters of the study areas are considered as Na-HCO3 type waters with an exception of samples from Ivrindi. Moreover, the geothermal waters of the areas of an immature origin. Finally, the geothermal waters have reservoir temperature between 120 to 160 °C. From these points of reviews, the geothermal waters were modelled hydrogeochemically.