Preliminary study of a newly discovered subsurface oil shale deposit in southern Jordan

Hani Alnawafleh[1], Khalid Tarawneh[1], Ali Ghannam[1,2], Lutfi Abu-Sa'ad[1,2]

[1]Al-Hussein Bin Talal University, Jordan, [2]NRA, Jordan

This paper deals with the characterization of a newly discovered subsurface oil shale deposit south-east of Ma'an in Southern Jordan. Oil shale is described as bituminous chalk marl phosphatic rich at the bottom. A total of 115 meters of oil shale were penetrated and recorded. Oil content is about 6% in the first 80 meters and increases to 11% in the remaining part. Petrography indicates that the oil shale of this section is foraminiferal wackestone changing to grainstone in the lowermost part. Amorphous organic matter is filling foram's cavities and dispersed within the mineral matrix that consists mainly of calcite with minor amounts of quartz, clay and apatite. With the exception of the lower-most part, major and minor elements oxides reveals minor variation and indicate stagnant formational conditions. A high terrestrial input contribution is expected.