Polymer Gel Treatments in Raman Oil Field

Murat Demir ¹, Yıldız Şen Karakeçė ¹, Özlen Eriçok ¹, Uğur Karabakal ², Teoman Küçükkara ¹

¹ Turkish Petroleum Corporation, Department of Production, Ankara
² Turkish Petroleum Corporation, Research Center, Ankara

Raman field which is located in southeastern Turkey is the first discovered petroleum field in Turkey (1948). Raman field has naturally fractured limestone reservoir and strong aquifer pressure support. 18° API gravity oil is produced in the field. However, average water cut has exceeded 90% in recent years because of the fractures communicating between the aquifer and the oil zone, which required some remedial treatment such as polymer gels to reduce the WOR. 5,900 bbl/d oil is produced with a water-cut of 93% from 170 oil producing wells by the end of January 2011. Both to reduce water-cut value and to increase net oil production, polymer gel treatments which have become a more convenient method as they can penetrate deep into the reservoir without a complete shutoff applied in the field starting 2007. First pilot water shutoff polymer gel treatment was performed in 7 wells in September 2007 in Raman Field. Due to encouraging results of pilot application, polymer gel injection treatment has been spread out the whole Raman Field. Total 57 wells 25 of which were abandoned before treatment were injected polymer gel to the end of 2010. All the abandoned wells except one were put on production after gel treatment. After treatments, reduction in dynamic levels, gross production and water-cut value and increase in net oil production have been observed in most of the wells. About 540,000 barrels of additional oil were produced from 57 polymer gel injected wells by the end of January 2011.

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