

Application of Different De-convolution Methods in Well Test Analysis of One Iranian Naturally Fractured Reservoir

Meisam Kamalipour, Abbas Shahrabadi

Iranian Central Oil Field Company

mkamalip@ucalgary.ca

Abstract

De-convolution is a method of converting a variable rate distorted pressure profile into the pressure profile for an equivalent constant rate production sequence. There are two methods used for de-convolving distorted pressure data: Beta De-convolution and material balance de-convolution methods. The application of both methods was tested in well test analysis of a naturally fractured reservoir. The end of well bore storage was estimated by both methods, and then the reservoir data were analyzed by well testing software. The calculated permeability, interaction coefficient and storativity ratio are different in both approaches. The comparison of data shows that the material balance method predicts the pressure response better and is suggested for applying in field cases.

Keywords: Well Bore Storage, Convolution, De-Convolution, Well test Analysis