

## Edge Water Drive Detection and Movement from Buildup Data in a Gas Reservoir

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(Received 29 June 2011; Revised 14 November 2011; Accepted 04 January 2012)

**Abstract:** *In the development of gas fields, to provide assurance around delivery of production targets that are contractually agreed upon, several surveillance tools are employed to assist with reservoir management. Such tools include permanent down-hole pressure gauges, wet-gas meters, the production logging tool and the reservoir saturation tool. Surveillance data are collated and analysed to provide assurance while at the same time allowing for the maximum recovery of possible reserves. In this study, pressure transient surveillance data from successive pressure buildup tests conducted on two wells, each located in separate gas reservoirs, were collated and analysed. The data showed that the late time boundary responses indicated by the time-lapsed pressure data were characteristic of an encroaching aquifer. Identification of the recovery mechanism allowed for the early identification of recompletions and opportunities for new wells, and demonstrated the importance of pressure transient data as a reservoir surveillance tool.*

**Keywords:** *Pressure testing, gas reservoir, time-lapsed pressure data, reservoir surveillance*