

Reservoir Characteristics of a Shale Gas Reservoir in the Longmachi Formation at Jiaoshiba Field, Fuling, China

Yongsheng Ma and Peirong Zhao

Sinopec

Abstract

The Longmachi Formation, which was widely deposited at deep shelf environment in Southern China, is now the most fruitful shale gas target sequences outside North American. Graptolite zone shows that the formations age ranged from late Ordovician (Hirnantian) to Llandovery (Rhuddanian, Aeronian and Telychian). The lower part of the sequence is organic rich black shale (TOC > 2%, Ro = 2.2 to 3.06%), the upper part of the sequence is grey-green shale. Thickness of the black shale is about 38m. Brittle mineral content of the shale is 55 to 65%. Abundant porosity ($\Phi=4.82$) developed in the reservoir, in which the types of porosity are organic and non-organic. With a wide range of interconnected fracture network, the average horizontal permeability is 0.25 md high. Those favorable properties of the shale leads to an excellent performance of the 43 production wells, individual-well production rate ranges from 120-550X10³m³ per day.