

Genetic Type and Source of the Gas in Well Wangs Jia Tun Region

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High gas rate is obtained in Wangjiatun region in Yingcheng Member. The carbon isotope and gas component is used to identify that the methane and ethane belong to coal-related gas, while propane belong to petroliferous pyrolysis gas. The coal-related gas occupies 96%, and the petroliferous pyrolysis gas occupies 4%. The direct and indirect comparison of the gas in Wangjiatun region shows that its methane carbon isotope is close to that of the adsorbed gas in the source rock of Shahezi Member in Xujiaweizi area, being -26‰. A comprehensive study concludes that the methane gas mainly comes from the coal measure strata in this area and Shahezi Member in Songzhan area, being major source rock. The coal measure strata in Shahezi Member in Xujiaweizi Rift is minor source rock. The propane in the gas might be mainly sourced from the mudstone of Dengloulou Member in Songzhan and Anda Rift. Estimation according to the gas expulsion strength shows that about 90% of the gas comes from this area and Songzhan and Xujiaweizi area.