Causes of high viscosity oil in Lunnan area, Tarim basin

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The high viscosity oil whose gum and asphaltene content is higher is widespread in Lunnan area, which has close relationship with the save after accumulation. According to the analysis of tectonic evolution, it had happened two intense tectonic movements in late carboniferous and Permian in this area. The destruction effect of the tectonic movement of late carboniferous was particularly strong, it not only flattened the carboniferous and the Silurian , but also denudated directly into Ordovician which is the hydrocarbon accumulation reservoir. The Permian tectonic movement is also very strong , and led to the emergence of a large number of fractures , the four fault zone in two broken bases of buried hill is formed in this period , in addition , the tectonic movement denudated Permian and most of Carboniferous. Two-stage tectonic movement lead to the serious biodegradation damage in Ordovician oil , and it appeared 25-norhopane which indicates strong biodegradable. After later crude oil had accumulate in the traps which had been suffered strong biodegradable and even produced asphalt, it will gradually dissolve these asphalt, and eventually lead to high viscosity oil with high content of gum and asphaltene.