Abnormal Oil-wells' Pressure Before and After the Wenchuan Earthquake of Zhongba Oil Field in the Northwest of Sichuan Province

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This document analyzed the data of the oil-wells' pressure of Zhongba oil field in the vicinity of the Longmen Shan fault zone, significant changes were found in most oil well before the Wenchuan earthquake. The oil-wells' pressure six deeper wells, which mining depth is 3100m, simultaneously rise greater than 35-130% form Apirl.8 to May.5 and recover from May.6 to earthquake occurred. At the same time, most pressure of 24 oil-wells, which mining depth is 2400m, decline slowly in the range of between 15-83%, few increase before the earthquake, especially, No.52, 63 wells appear to impend anomalies of increase 24% and 15% in May.5 (Figure1). Moreover, the pressure of two gas storage layers' well returned to normal several days before earthquake. After the earthquake, the pressure changes varied, but most increase 7-8days and restore later.



Figure1. The curve of shallow oil wells' pressure change before earthquake

In order to get the abnormal pressure's physical mechanism of two gas storage layers before the earthquake, this document made a discussion from the regional tectonic stress field changes and gas dynamic processes.

Key words: Wenchuan earthquake, the oil-well's pressure, abnormal changes, physical mechanism

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