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查干凹陷大地热流

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Terrestrial heat flow in the Qagan sag, Inner Mongolia

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摘要

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摘要

查干凹陷是银根—额济纳旗盆地最具勘探潜力的凹陷, 但是查干凹陷及整个银根—额济纳旗盆地的大地热流研究仍为空白, 严重制约该盆地的油气资源的评价. 本文通过测试19口井107块岩芯的岩石热导率和岩石热导率原位校正, 利用协和平均公式计算得到查干凹陷各地层的岩石热导率大小; 并利用9口井的温度数据, 结合岩石热导率数据对查干凹陷的地温梯度和大地热流进行了计算. 研究表明查干凹陷具有构造稳定区和构造活动区之间的中温型地温场特征, 其平均地温梯度和大地热流分别为33.6°C/km, 74.5 mW/m². 本文的研究成果为查干凹陷及银根—额济纳旗盆地油气资源评价提供地热参数.

关键词 查干凹陷, 银根—额济纳旗盆地, 大地热流, 岩石热导率, 地温梯度

Abstract:

The Qagan sag has the most oil and gas exploration potential among other sags in the Ingggen-Ejin Qi basin, but the terrestrial heat flow research is still blank in the Qagan sag and other sags of the Ingggen-Ejin Qi basin. It seriously restricts the oil and gas resource assessment in the Qagan sag. In the paper, 107 rock thermal conductivity data of 19 wells were measured and in-situ corrected, and the rock thermal conductivities of each stratum were obtained by Union average formula. Based on the 9 wells' temperatures, combined with the above rock thermal conductivity data, the geothermal gradient and terrestrial heat flow data were calculated. The results show that the Qagan sag has the characteristics of medium temperature field in between tectonically stable and active regions, with an average thermal gradient value of 33.6°C/km and an average terrestrial heat flow value of 74.5 mW/m². The paper provides the geothermal data for oil and gas resource assessment of the Qagan sag and other sags of the Ingggen-Ejin Qi basin.

Keywords Qagan sag, Ingggen-Ejin Qi basin, Terrestrial heat flow, Rock thermal conductivity, Thermal gradient

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