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惠民凹陷岩浆作用对碎屑岩储层的影响 [点此下载全文](#)

[张小莉](#) [冯乔](#) [查明](#) [巨银娟](#) [杨懿](#)

西北大学大陆动力学国家重点实验室/地质学系, 西安, 710069

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摘要:

岩浆活动对碎屑岩储层的影响主要包括岩浆上拱作用、热烘烤作用和热液作用。岩浆上拱作用往往使上覆岩层中产生裂缝。而热烘烤作用使周围碎屑岩产生不同程度的变质, 如使泥岩变质为板岩。轻微变质的板岩一般为有效封盖层, 变质程度相对高的板岩, 易发育裂缝而成为有效储集层。另外, 岩浆活动造成局部地温梯度高异常, 促使周围烃源岩热演化生成的烃类、有机酸、二氧化碳, 与岩浆携带的无机二氧化碳一起注入周围碎屑岩储层中, 使储层原始孔隙得以保留并产生次生孔隙。在基性岩浆侵入或喷溢活动中, 岩浆中的 Fe^{2+} 、 Mg^{2+} , 有利于周围碎屑岩中的蒙脱石向绿泥石转化。而在酸性介质条件下, 碎屑中长石颗粒蚀变提供的 K^{+} , 有利于蒙脱石向伊利石转化。结果出现火成岩体周围储层中粘土矿物组合具富绿泥石而贫高岭石以及伊利石相对百分含量较高的特征。

关键词: [岩浆侵入](#), [储层](#), [粘土矿物](#), [热烘烤变质作用](#), [次生孔隙](#) [板岩](#)

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Abstract:

The influences of Magma intrusion activity on the clastic rocks include the magma upwarp activity, the baked activity and the hydrothermal activity. Ascending of magma resulted in the fractures in overlying rocks, whereas baking is responsible for various metamorphisms of the country rocks (clastic rock), i.e., mudstone was metamorphosed into slate. Low grade metamorphic slates are often effective caprocks, and highly metamorphized slates are an effective reservoir because of its well developed fracture system. The local geothermal gradient abnormality was derived from magma intrusion and volcanic activity, which often arouses a series of changes around the clastic rocks. Magma intrusion accelerated the thermal evolution course of source rocks. Organic acid, carbon dioxide and hydrocarbon were propitious to preserve the primary pores and produce secondary pores in surrounding clastic rocks. Fe^{2+} and Mg^{2+} derived from basic intrusion rocks and eruption would be propitious to change montmorillonite into chlorite. The results are that the clastic rocks around the igneous rocks are characterized by a high chlorite, poor kaolinite, and higher illite.

Keywords: [Magma intrusion](#) [clastic reservoirs](#) [clay mineral](#) [baked metamorphism](#) [secondary pores](#) [slates](#)

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