

Characteristics Of Tectonic and Volcanic Rocks During Carboniferous Period in Junggar Basin, China

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Junggar basin is a large oil and gas bearing basin in weastern China. Volcanic rocks which are main reservoir rocks of more than hundred billian cubic meters gas fields erupted strongly in Carboniferous period. It is still controversy on characteristics of tectonic and volcanic rocks during carbonifereous period in the basin. The following conclusions were be obtained by geochemical characteristics and dating data of volcanic rocks both from basin and outcrops and sesmic from basin.

Two-period(342-330Ma and 318-300Ma) of large sacle volcanos erupted during Carboniferous period. At the early stage of early Carboniferous period(Dunei period,358-342Ma) ,Junggar basin were arounded by Irtysh, Kela-maili, Daerbute, the southern Tien Shan oceans which were at extension stage. Normal faults were be identified from sesmic section in basin. The formation was mainly constituted by sedimetary rocks. At the late stage of early Carboniferous period(Weixian- Serpukhov period,342-318Ma), the background of tectoic and volcano eruption in east of basin was different from other areas with the closing of Irtysh, Kela-maili oceans from east to west. The characteristics of volcanic rocks which were higher proportion of kalium and aluminum elements in oupcrop, east of basin, while lower proportion in north of basin showed that mature continental crust might be formed in the east but not in other areas in where might be island arc period. Similar conclusion might be obtained by geochemical characteristics of volcanic rocks in the basin which showed little loss of Nb and Ta in the east of basin while strong loss of Nb and Ta and enrichment of Ba and Sr and lower LaN/YbN in the north and west of basin. Series thrust faults developed from north to south in the basin particularly strong in the east of basin also obtained same conclusion as above. The sedimetary rocks deposited after large scale volcanos eruption which were main source rocks of hundred billian cubic meters gas reservoir in volcanic. At the late of Carboniferous period(318-299Ma), continental volcanos erupted strongly again.