

# **Structural Controlled Hydrothermal Dolomite Reservoirs in the Precambrian Dengying Formation of the Central Sichuan Basin, Southwestern China**

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## **Abstract**

The Sichuan basin (southwestern China) is a foreland basin and contains Paleozoic and Mesozoic sediments that include carbonate, siliciclastic, and evaporate sediments. The Dengying Formation presently lies 8,200-19,685ft (2,500-6,000 m) below the surface in the study area in the central part of the Sichuan Basin. The study area (G-M area) is located in the central Sichuan basin, at the border of the Anju and Anyue country. This area is part of the central of Sichuan sedimentary basin, which lies between the Longquan and the Huaying Mountains in the southwestern of China. Upper Edicarian Dengying Formation dolomites form part of the southeastern of the paleo-rifting of Leshan - Longnvsi in central Sichuan basin, the southwestern most of China.

The Dengying Formation is a depositional sequence at the third-order level and thickness is about 1400 m. Regional transgressive cycles separate the Dengying Formation from the Dengying first Member, second division beneath and the overlying Dengying third and fourth division. The Dengying first and second division in the study area comprises an upward - darken succession about 1000 m thick, main formed by grey micritic algal dolomite. The Dengying third member is about 0 to 40m main formed by grey mud and interbedded with dolomitic-mudstone reflecting deposition in relative deep-water environments, respectively. The Dengying fourth division in the study area comprises an upward-shallowing succession about 0 to 336 m thick.