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A Fracture Analysis of the Beekmantown Group Carbonates of Eastern New York State

Fractures, within potential natural gas or petroleum reservoirs, are essential both for the migration and concentration of economically recoverable amounts of these resources and for their successful extraction. Faulting and fracturing of the Beekmantown Group Dolomites in the Quebec Lowlands, for example, has resulted in the formation of productive natural gas reservoirs in that area. The largest, the St. Flavien field, has produced some 7.75 bcf of natural gas. The importance of fractures to the successful development of natural gas or petroleum reservoirs makes it essential to have accurate quantitative information about the fractures. The examination of cores is an excellent way of collecting fracture information, since the data can be taken directly from the depth and formation of interest. The collection of fracture data from core also enables geologists to track changes and trends in fracture density and orientation, fracture width and degree of healing. Fracture data, from the cores from a series of eleven bore holes from Montgomery, Fulton, Herkimer, Schoharie and Saratoga Counties, was recorded and analyzed for fracture spacing, fracture width and degree of fracture healing. It was found that the normal faults that bisect the Mohawk River Valley were the major controlling factor influencing the degree of fracture development within the carbonate rocks of the Beekmantown Group in this area. Beekmantown Group core samples from Jefferson, Essex, Warren and Washington counties were then examined to determine if faulting was the controlling factor influencing the degree of fracturing in those areas, as well.