Developing the Simon Creek Prospect in Carter County, Oklahoma

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The structural complexity of Southern Oklahoma creates a wealth of exploration opportunities. Enough wells have encountered thrust faults to indicate that there are significant sequences of potential reservoir rock that are virtually untested.

The existing bank of 2-D and 3-D seismic data can aid interpretations. In many instances, however, vertical beds and overturned folds cannot be imaged. The geologist must become comfortable with a structural style and then adhere to the predictability of projecting that style away from existing control. Dipmeter logs and the construction of true scale cross sections are essential.

The future of exploration in Southern Oklahoma will depend upon sound structural mapping and the availability of investment funds for high risk wildcatting. Each exploratory attempt must be integrated into the thinking for future exploration. The successful exploration effort will be a program, rather than a 1-2 prospect project.

Given the volume of oil and gas that has been produced, the volume of source rock, and the presence of high quality reservoir rocks, it should be safe to assume that many exciting discoveries are yet to be found.

The Ward Petroleum Nipp #1-21 is an example of the kinds of thinking, mapping, and selling that is required to explore for these structurally complex traps. Playing off the Joiner City and Southeast Joiner City fields south of the Criner Uplift in southern Carter County, the existing data was projected to predict the possibility of a large trap in the Arbuckle. Although the results were a dry hole, the idea was valid and the partners in the well were not negatively impacted concerning the future potential of the Southern Oklahoma basins.