
PERMIAN BASIN/MID-CONTINENT EXPLORATIONISTS

Permian Basin and Mid-Continent Exploration Meeting Tuesday, February 19, 1991 6:00 p.m. - Westin Oaks

The February dinner meeting of the Houston Geological Society, Permian Basin and Mid-Continent group, will feature Mr. Wayne K. Camp, who will present his jointly authored paper on a balanced cross section through Wilburton Gas Field, Latimer County, Oklahoma. The computer-balanced cross section allows several new insights into the structural history of this famous gas field. This work was jointly authored by Mr. Wayne K. Camp of Anadarko Petroleum Corporation and Mr. Robert A. Ratliff of Geo-Logic Systems, Inc., and was first presented as a poster session at Mid-Continent meeting of A.A.P.G. in September, 1989.

Reservations must be made by Friday, February 15, 1991, by calling Margaret at Houston Geological Society (785-6402) before 4:00 p.m. Dinner is \$20 for HGS members and \$22 for non-members; no-shows will be billed.

WAYNE K. CAMP—Biographical Sketch

Wayne K. Camp received his B.A. in Geology from the State University of New York at Oneonta in 1976 and his M.S. from Colorado State University in 1979. He joined Phillips Petroleum in 1978, and has been with Anadarko since 1980, where he is currently a Project Geologist. Wayne has spent most of his career working in the Mid-Continent area.

BALANCED CROSS SECTION THROUGH WILBURTON GAS FIELD, LATIMER COUNTY, OKLAHOMA: IMPLICATIONS FOR OUACHITA DEFORMATION AND ARBUCKLE (CAMBRO-ORDOVICIAN) EXPLORATION IN ARKOMA BASIN

A computer-balanced regional cross section allows several new interpretations for the structural development of Wilburton gas field. The gas-productive deep Arbuckle structure is interpreted to be in the hanging wall of a high-angle, south-dipping reverse fault. This fault may be a reactivated normal fault based on Pennsylvanian lower Atokan thickness changes and by analogy to comparable extensional faults to the north. Overlying the Arbuckle fault block is an imbricated thrust sheet containing Pennsylvanian Spiro and Cromwell sandstone reservoirs where gas production has been established from both the hanging wall and footwall fault blocks. The main thrust originates from a detachment zone within Mississippian shales to the south and ramps over the deeper Arbuckle fault block along the

southern margin of the field. Minimum horizontal displacement of the hanging wall Spiro cutoff is 3.5 miles (5.6 km). This estimate is significantly smaller than that shown by previously published sections through the area, yet is still too large to be adequately accommodated by blind thrusting north of Wilburton field. Well and surface data indicate that much of the displacement instead may have been accommodated by north-dipping backthrusts. Although poorly constrained, at least some fault movement on the Arbuckle reverse fault appears to postdate the overlying thrust-faulted structures.