



INDEX MAP OF OKLAHOMA SHOWING MAPPED AREA

EXPLANATION

Note: On this map, sand trends are undifferentiated east of the Nemaha Fault Zone but consist mostly of lower and middle Red Fork sandstone.

- Boggy formation outcrop belt, exclusive of the Bartlesville sandstone.
- Principal sandstone areas, generalized depositional environments noted on map.
- Principal transport direction
- Red Fork field study area
- Cored well described in appendix

RED FORK OR MANNING? Considered by some geologists to be comprised of Mississippian clastics belonging to the Manning rather than the lower Pennsylvanian Red Fork. These sands can sometimes be correlated very well with Red Fork channel sands in the Arkoma Field and Cherokee trend to the east. Other times, the sandstone appears to lie below the channel horizon as shown in regional cross section B-B' (plate 4, well 3) and in this case, is probably Manning.

FLUVIAL OR MARINE? Depositional origin of sandstones in the Cherokee-Wakita trends has been debated ever since their discovery. Log characteristics indicate the sands generally have a sharp basal contact with shale and have a fining-upward textural profile that is indicative of a point bar or other fluvial-related deposit. Detail mapping indicates fluvial scour and some core analyses are reported to have fluvial characteristics. Other features of these trends support the interpretation of a marine shoreface such as the parallelism of the sand bodies. For purposes of this workshop, two cores were examined in these trends and their depositional origin were found to be inconclusive. Log signatures indicated a traditional fluvial channel sand body but the samples had no organic debris incorporated within the sand or on bedding surfaces, a very common component of any fluvial sand deposit. The sands appeared better sorted and cleaner than other Red Fork channel sands and had no mud clasts near the bottom of the sand body. Little mica was also observed. The later sedimentary features are common with sand bodies of marine origin.

Structural boundaries

- Major faults, exposed at, or interpreted to occur at the surface. Overthrust faults identified with solid barbs on hanging wall block. Normal faults identified by hachures on relatively downthrown block. Arrows indicate relative horizontal movement
- Major subsurface faults. Overthrust faults identified with open barbs on hanging wall block
- Plunge of subsurface structure

Stratigraphic/Structural boundaries

- Surface contact between rock units. May be approximated or locally generalized
- Buried contact, structural contour, or structural trend
- Change in rate of thickening of strata or generalized structural trend

Basement outcrop and subcrop

- Pre-Pennsylvanian strata missing

FLUVIAL-DOMINATED DELTAIC (FDD) OIL RESERVOIRS IN OKLAHOMA:
THE RED FORK PLAY
MAP OF THE LOWER RED FORK SANDSTONE PLAY AREAS

By
R. D. Andrews
1997

