

**AAPG Annual Convention
Salt Lake City, Utah
May 11-14, 2003**

Christian J. Heine¹, John Melvin², Yasir Mubarak² (1) Saudi Aramco, Reservoir Characterization Specialist, Dhahran, Saudi Arabia (2) Saudi Aramco,

Comparison of Modern Eolian Sand Deposits, with Core and Image Log Data from the Permian Unayzah Formation, Saudi Arabia

“Present is key to the past”. This paper relates the observations made in a series of recently excavated sand dunes, to core and image logs from the Permian Unayzah Formation. The high angle, slip face deposits of the transverse dunes were easily identifiable in core, on image logs and outcrop. The sheet sand deposits on the other hand were difficult to recognize in core or image log before visiting the modern. The modern sheet sand excavation was 10m high, 250m parallel to wind transport direction (south) and 350m perpendicular to transport (east-west). In the exposure parallel to the wind direction, low angle, 1-4 degree dipping, wind ripple laminated bed sets were deposited unconformably on a similarly low angle underlying bed set often with a slightly different orientation. The underlying bed set was eroded by wind prior to deposition. In the wall perpendicular to the wind direction, long, thin sand lenses 1-3m thick in the center thinning laterally to zero away from the center like a “smile” were clear from a distance. These features were difficult to see up-close because of the near horizontal nature of the bedding and the low angularity of the erosional contacts at the unconformity. The image log data showed all the features observed in the modern dune exposures. Preserved bed sets ranging from 1-3m with a constant dip magnitude and direction. Dip magnitudes ranged from 1-4 degrees, while the dip direction remained constant within each bed-set, an unconformity (truncation) at the top, followed by another bed set differing only a few degrees in the transport direction.