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Resource assessment of oil and gas plays on University Lands, Permian Basin, West Texas

Oil and gas resources on University Lands, 2.1 million acres in 19 West Texas counties, and production from these resources constitute a major asset of the University of Texas System. Original oil in place (OOIP) of the 102 major University Lands oil reservoirs is calculated to be 7,520 million barrels (MMbbl) as of year-end 1999. Components of the calculated OOIP include residual oil (3,761 MMbbl, 49%), cumulative production (1,702 MMbbl, 23%), remaining reserves (125 MMbbl, 2%), and unrecovered mobile oil (1,932 MMbbl, 26%). Ultimate recovery of the 51 major University Lands gas reservoirs since 1987 is calculated at 2.4 Tcf as of year-end 1999. The gas resource base has been divided into cumulative production since 1987 (1.5 Tcf, 62%) and remaining reserves (0.9 Tcf, 38%).

Major oil and gas reservoirs on University Lands have been delineated into 22 plays that are representative of the entire Permian Basin. Historically the Silurian-Devonian and San Andres-Grayburg plays have been the major oil plays on University Lands. However, greatest potential in terms of unrecovered mobile oil exists in the Clear Fork carbonate and Spraberry-Dean submarine-fan sandstone plays. The Thirtyone deep-water chert play has dominated all other gas plays on University Lands, both in terms of cumulative production since 1987 and remaining reserves.

Although most major oil and gas reservoirs on University Lands are mature, our calculations show that a tremendous resource still exists as a target for reserve growth. Previous advanced reservoir characterization and recovery studies of 16 University Lands oil fields conducted by the Bureau of Economic Geology have played a pivotal role in providing a better understanding of production mechanisms and geology, as well as enabling incremental production. Our updated resource assessment provides a tool for targeting major fields that have similar incremental production opportunities on University Lands and across the Permian Basin.