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YEGUA AND WILCOX POTENTIAL, UPPER TEXAS GULF COAST

In the past, the Yegua and Wilcox Formations, of Eocene age, have been major exploration objectives in the Upper Texas Gulf Coast. The Yegua has been a prolific producer and has received widespread investigation along established trends. It has been only within relatively recent times that attention has been given to the downdip potential, especially as concerns the basal sands in that formation.

The Wilcox has not received the same intense exploration in regard to complete penetration of the entire section. In detail the Wilcox is very difficult to correlate, and markers must be established to guide exploration. Marine wedges, or zones with source-bed connections, exist, and a tentative middle marker has been proposed to identify one such zone.

The configuration of the Wilcox and Yegua depositional basin is considered to be important for downdip exploration. Major regional tectonic features had an effect on deposition as did faults and structural movement contemporaneous with deposition. Dip and east-west sections indicate regional sedimentation changes.

The utilization of regional studies along with detailed local investigation helps to explain existing production. The same tools can be used as a guide for future exploration.

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SUBSURFACE GEOLOGY OF ST. HELENA, TANGIPAHOA, WASHINGTON AND ST. TAMMANY PARISHES, LOUISIANA

St. Helena, Tangipahoa, Washington, and St. Tammany Parishes comprise the eastern half of the "Florida Parishes," an area located between two major producing provinces, the Cretaceous and Wilcox of south Mississippi on the north and the prolific Miocene of south Louisiana on the south.

Strata seen to date range in age from surface Pleistocene terraces and Recent alluvium to the Lower Cretaceous. This paper summarizes the stratigraphy, structure, and oil and gas production of the area, and includes a brief discussion of pertinent oil and gas production in the adjacent Mississippi counties.

Subsurface structure is shown on a series of maps contoured on datums of the top of the *Heterostegina* zone, the Wilcox Group, the Clayton-Selma Chalk, the Eutaw Shale, and the lower Tuscaloosa Formation. Four geological cross sections illustrate stratigraphic, structural, and facies relationships. Structural contours demonstrate downflexing of Tertiary strata; show a shifting of strike to a more northerly trend with progressively deeper strata; and are strongly deflected southward by the Hancock County high. Correlation of electric logs shows pronounced structural thinning on the Hancock structure in the Comanchean, Gulfian, Paleocene, Eocene, and Oligocene Series. Truncation of the upper Wilcox, Claiborne, Jackson, and possibly Vicksburg beneath Miocene strata indicates a major period of growth occurred there sometime prior to the early Miocene.

History of development, production, and structure of Angie-East Angie-Sandy Hook field is summarized. A map showing the structure of the top of the producing ower Tuscaloosa is included.

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SIGNIFICANCE OF LOWER TUSCALOOSA SAND PATTERNS IN SOUTHWEST MISSISSIPPI

The lower Tuscaloosa Formation has been a prolific oil producer in southwest Mississippi. Major fields have been found on both large uplifts and very low-relief structural noses. In every case, development of these fields has been somewhat hampered by the erratic sand development.

Sand patterns in these fields indicate deposition in meandering stream channels in a deltaic environment. Recognition and projection of the patterns reduce dry-hole risk in both field development and exploratory drilling.

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FASHING FIELD, ATASCOSA-KARNES COUNTIES, TEXAS

Fashing field, as presently defined, is 10 miles long and 2 miles wide. The field extends from the southeast corner of Atascosa County to the northwest corner of Karnes County, approximately 50 miles southeast of San Antonio, Texas. Lone Star Producing Company discovered gas in the Edwards limestone (Lower Cretaceous) at Fashing in July, 1956, when its No. 1-A L. T. Urbanczyk well reach the top of the Edwards at 10,210 feet and found 580 feet of productive section that had an initial potential of 26,000 MCFGPD plus 24 barrels of 50.6° gravity distillate per MMCF.

The Edwards structure at Fashing field is dominated by a simple, northeast-trending up-to-the-coast fault with effective closure against the high side. This fault has a maximum vertical displacement of approximately 700 feet at the Edwards level, which decreases to a maximum of 320 feet going up the section to the Carrizo Sand (Eocene) level. The fault is responsible for the Weigang field oil production at the Carrizo level. The fault dips northwest, with the angle of dip decreasing from 50° at the Carrizo to 38° at the Edwards.

Edwards gas production at Fashing comes from two separate zones called the "A" and "B" zones, respectively. The "A" zone has an average porosity of 15.5 per cent, an average permeability of 12.6 millidarcys, and an average connate water saturation of 28 per cent. The "B" zone has an average porosity of 13.2 per cent, an average permeability of 4.4 millidarcys, and an average connate water saturation of 24 per cent.

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PERSON FIELD

Person field is in Karnes County, Texas. It is one of a series of fields located along a northeast-trending regional fault system in which oil and gas condensate are produced from Lower Cretaceous, Edwards, carbonate reservoirs.

The field was discovered by Brazos Oil and Gas Company in 1959. Accumulation is trapped on the upthrown sides of three slightly arcuate up-to-the-coast normal faults which intersect the southeast-dipping Edwards strata. The reservoir is divided into the "Upper Edwards" which averages 175 feet in thickness and contains two porous limestone zones and three porous dolomite zones, and the "Lower Edwards," about 375 feet thick and predominantly limestone.

The oil column is about 120 feet, and the gas column is approximately 350 feet. Total cumulative production as of March 1, 1962, was 1,553 000 barrels of oil Ob-