massive sandstone unit, and lignite isopleth maps. Dendritic, contributary sandstone belts of low to moderate sinuosity comprise the dominant geometry displayed by these terrigenous clastic rock bodies, even with the basal Wilcox progradational interval. Nine distinct sandstone belts between 6 and 10 mi (9.6 and 16 km) wide are noted in the lower Wilcox: seven of these same belts occur in the upper Wilcox. The Meridian has a much higher overall sandstone content than the Wilcox units, averaging 70%, but the 90% sandstone contour line highlights 8 sandstone belts occupying roughly the same positions as maximum sand belts in the lower Wilcox.

A bifurcating, distributary net sandstone pattern characteristic of upper delta plain facies is noted for the basal Wilcox, lower Wilcox, and upper Wilcox stratigraphic intervals of southern Bolivar, Yazoo, Sharkey, Issaquena, and Washington Counties. Lignite isopleth maxima of 17 and 18 lignites, respectively, for the lower and upper Wilcox of central Washington County lend further support for this interpretation. The principal distal deltaic sand bodies of the Wilcox high-constructional Holly Springs delta system, however, have been mapped by other researchers 75 to 125 mi (120 to 200 km) downdip from this area.

Lignite prospecting in the Wilcox-Meridian section of North Mississippi can be greatly aided through an understanding of the geographic and stratigraphic distribution of the major depositional systems.

CLEAVES, A. W., Mississippi Min. Resources Inst., Univ. Mississippi, University, Miss., and M. C. BROUSSARD, Amoco Prod. Co., New Orleans, La.

Chester and Pottsville Depositional Systems, Outcrop and Subsurface, in Black Warrior Basin, Mississippi and Alabama

Terrigenous clastic depositional systems of the Upper Mississippian Chester Group and the overlying Lower Pennsylvanian Pottsville Group in the Black Warrior basin of Alabama and Mississippi were deposited in distinctly different tectonic settings. The predominantly deltaic Chester sandstone units accumulated on the stable northern shelf of the basin and had a cratonic source to the north or northwest. Detailed subsurface mapping of these cratonic delta systems indicates that the northern shelf can be subdivided into a terrigenous clastic western element (Parkwood and Floyd Formations) and a largely carbonate eastern element (Bangor, Hartselle, Monteagle, and Pride Mountain Formations). Total thickness of the Chester interval on the shelf averages 1,200 ft (366 m). Pottsville sediments, in contrast, had a principal source to the southwest of the Black Warrior basin. They represent the thick clastic wedge shed from the Ouachita orogenic belt. Pottsville deposition occurred in a rapidly subsiding foreland basin and involved a maximum sediment accumulation exceeding 12,000 ft (3,658 m) in the basinal core.

Within the Chester Group four cycles of deltaic progradation have been identified through data gathered from 600 well logs. Two deltaic depocenters, a carbonate shelf and ramp, and a shallow basin carbonaceous shale unit comprise the principal depositional systems along the northern margin of the basin.

With the surface and shallow subsurface Pottsville of the Black Warrior basin in Alabama, the 2,000-ft (610 m) stratigraphic interval can be subdivided into a minimum of seven vertical genetic components. In contrast with the Chester units, however, laterally extensive coal seams rather than marine transgressive limestone tongues form the bounding elements. On the surface, the lowest Pottsville unit has no productive coal seams and is dominated by massive, quartzarenite sandstone bodies interbedded with dark gray shale.

COATES, E. J., C. G. GROAT, and GEORGE F. HART, Louisiana State Univ., Baton Rouge, La.

Subsurface Wilcox Lignite in West-Central Louisiana

The Wilcox Group in west-central Louisiana is a wedge of terrigenous clastic sediments which prograded into the northern margin of the ancestral Gulf of Mexico. Subsurface correlations provide the basis for dividing the Wilcox Group into three primary intervals—lower Wilcox, upper Wilcox, and Carrizo Formation. Furthermore, lower Wilcox is subdivided into four regional lithologic units, informally referred to as intervals 1, 2, 3, and 4.

Lignites occur as component facies of fluvial, deltaic, and lagoonal rocks. Lignites are identified from electric log response based on "operational" definition. Associated environmental interpretations are derived from log responses characteristic of deltaic environments. Expected properties of lignites are predicted from their geologic setting analogous to modern peat deposition and other ancient lignite accumulations.

The Carrizo Formation represents a meander-belt facies within an alluvial plain. The Carrizo Formation is devoid of any significant lignite accumulation because of the destruction of overbank deposits.

The upper Wilcox is a lagoon–barrier bar complex characterized by fine-grained deposition updip and strike-oriented accumulation of coarse sediment downdip. The interval is basically not lignitiferous. A maximum of 8 seams occur updip of major strike-oriented sand accumulation. These lignites are expected to be lagoonal and of poor quality.

The lower Wilcox is a typical progradational deltaic complex to the east and marginal delta plain to the west. The lower Wilcox is the major lignitiferous interval of the Wilcox Group. Thirty-five lignite seams are found within the interval, are associated with interdistributary flood-basin deposits, and should be of good quality, based on similarity to deposits elsewhere.

DAVIES, DAVID K., and WILLIAM R. ALMON, Davies, Almon, & Associates Inc., Houston, Tex.

Reservoir Quality, Pliocene-Pleistocene Sandstones, Offshore Gulf of Mexico

Significant variations in the quality of sandstone reservoirs commonly reflect the amount of clay content which is controlled by the environment of deposition and diagenesis.

In the Pliocene-Pleistocene sandstones, offshore Gulf of Mexico, the clay content varies significantly between sands deposited in delta and submarine fan environments. The overall shapes of the gamma ray and SP curves for both environments are commonly similar,