approach. Recognition of these drainage anomalies often leads to the drilling of new wells or the recompletion of existing wells, thereby increasing the ultimate recovery from a reservoir.

Five examples of drainage anomalies in three offshore Louisiana fields include two from South Pass Block 27 field; one from South Pass Block 24 field; and two from Eugene Island Block 18 field. Three are from reservoirs which were deposited in several depositional environments and two are from single environment reservoirs. Four are oil reservoirs and one is a gas reservoir.

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Regional Stratigraphy of Limestone Marker Beds in Bridge Creek Member, Greenhorn Limestone (Upper Cretaceous), Western Interior United States

Time-parallel limestone beds of the well-known Kansas section have been traced westward in an attempt to determine their total geographic extent, their origin, and their utility in precise regional correlation. The entire sequence of marker beds extends from Canon City, Colorado, to Springer, New Mexico. Certain groups of these markers are traceable southward to White Oaks, New Mexico, northward to the Black Hills, and westward to the northern San Juan basin. The most widespread limestone beds were deposited across areas no smaller than 388,000 sq km (150,000 sq mi). Individual beds are identified positively by position in sequence, relation to adjacent bentonite seams, lithology, and fossils. Each bed is thoroughly bioturbated, and the thickness, fossil content, and field characteristics are remarkably uniform for great distances. Dominant mineralogy is calcite; quartz and pyrite are the only consistent accessory minerals. The limestones are micritic to microsparitic wackestones and, uncommonly, packstones. Principal allochems are planktonic forams, inoceramid bivalve fragments and prisms, calcispheres, and oyster fragments. Fecal pellets are scarce west of the Rocky Mountain front but common in Great Plains sections. Limestone bed contacts are mostly gradational with adjacent shaly strata, and evidence for hardgrounds is lacking.

Limestone beds of the Bridge Creek Member reflect offshore shelf deposition during the late Cenomanian–early Turonian transgressional maximum of the Western Interior sea. Relative proportions of pelagic versus benthonic allochems confirm that limestone beds represent slow deposition caused by reduced detrital influx. Deposition occurred on a nearly planar surface, with local highs marked by areas of condensed sequences.

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Impact of Deep Sea Drilling Project on Paleo-oceanography

The Deep Sea Drilling Project has been largely responsible for the development of a new field of earth sciences—paleo-oceanography. Documentation of the sedimentary and fossil record from the ocean basins during the past decade has vastly increased knowledge of the factual basis for oceanic sedimentology and paleobiogeography. The wealth of new data provides the basis for much innovative research to define and describe the processes important in paleo-oceanography. It has become evident that the ocean system is not in a steady state, but that supply of materials to the ocean and output as sediment are affected by processes both exterior to and interior to the ocean system, operating on a variety of time scales. Furthermore, it has become apparent that processes in the interior of the earth (the driving forces for plate tectonics), affect erosion processes operating to denude the continents, both directly through mountain building and indirectly by causing sea-level and climatic changes. Sea-level changes affect the distribution of materials between the continental shelves and the deep sea; climatic changes operate through feedback mechanisms with the ocean to affect the interior processes and outputs of sediment to the seafloor. Understanding these complex interrelations is the goal of the new field of paleo-oceanography.

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Spectrum of Depositional Models for Clastic Strandline Systems

Studies of charts, maps, and remote-sensing imagery of the world's shorelines, plus field studies of the shorelines of Chile, Europe, the Middle East, and most of North America, indicate that terrigenous clastic, coastal-plain shorelines vary systematically in response to changing hydrographic regime. Hydrographic regime is primarily a function of the interaction of wave-energy conditions (controlled by wave height) and tidal range. On coastal-plain shorelines that are wave dominated, deltas tend toward arcuate or cuspate shapes, with an abundance of beach ridges; whereas barrier islands are long and continuous, with abundant washover effects. On tide-dominated coastal-plain shorelines, deltas are multilobate, and barrier islands are supplanted by offshore, linear sand ridges that trend obliquely or perpendicular to the strandline. Coastal-plain shorelines of mixed energy have complex delta systems and stunted barrier islands cut by numerous tidal inlets which are accompanied by large tidal deltas.

On modern coastal-plain shorelines, coastal environments at the entrance to shoreline embayments, or arcs, contain mostly wave-dominated features. The heads of the embayments, however, are usually tide dominated. As the balance between wave and tidal energy changes along the shoreline arc, delicate readjustments are made among such features as sediment-distribution patterns, relative abundance of washovers, nature and relative abundance of tidal deltas, and barrier-island morphology and stratigraphy.

These observations permit the construction of a spectrum of depositional models, ranging from purely wave-dominated to purely tide-dominated types, that may be applied to ancient depositional basins. Details of sandbody geometry, relative facies abundance, paleocurrent patterns, and other relevant stratigraphic conditions differ significantly among the different models.