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### **Field Studies in the Chandeleur Sound Area, Offshore Louisiana (State Waters)**

The Chandeleur Sound area contains subsurface hydrocarbon reservoirs that mostly originated in a deltaic depositional environment. This environment was generally characterized by prolific organic production combined with rapid sedimentation accompanied by faulting. Subsequently the buried organic matter was converted into hydrocarbons that migrated into the surrounding porous sands and were then trapped by faulting and/or pinch-out of the sands. The Chandeleur Sound area consists of low relief structures, stratigraphic traps, and east striking contemporaneous down to the south faults. It has been an important oil and gas producing area of the state. The varied nature and areal extent of sand deposition, the numerous faults and lack of deep exploration prompted this study to bring together available data scattered in numerous files and therefore very difficult and time consuming to access for future exploration in this area, especially by independent companies.

Twenty-two oil and gas fields have been discovered in the state waters of Chandeleur Sound offshore Louisiana since Phillips Petroleum Company discovered oil and gas by completing their State Lease 2220 Eloi A-1 well in the Eloi Bay Field on December 28, 1953. As of January 1, 2002 there have been 735 wells permitted in these fields with 297 wells still producing. From 1954 through November 2002 there has been 216,245,355 MCF of gas, 505,738 barrels of condensate, 106,237,647 barrels of oil and 55,617,294 MCF of casinghead gas produced. The majority of production has been from the Upper and Middle Miocene with a minor amount from the Eocene. Production is from stratigraphic and structural traps associated with fault closures ranging from 1,900 feet to 13,100 feet. The number of producing sands range from a single sand in eleven fields to as many as thirty two in the Eloi Bay field. The presence of well developed and low resistive sands and the number of stratigraphic traps in the Chandeleur Sound Area suggests that potential traps and accumulation of hydrocarbons may still exist in the area. A good example of new development having favorable results in an old area is the *Cristellaria* "I" gas production established along trend to the northwest in the Bayou Biloxi Field. Most of the drilling in the Chandeleur Sound Area has been primarily for the more shallow normal pressured Upper-Middle Miocene Sands. The lack of deep exploration in the area provides the potential for production from the Lower Middle Miocene and Lower Miocene, and the deep Eocene and Upper Cretaceous sands. Tapping all hydrocarbon reservoirs to increase production is essential for decreasing energy dependence on foreign sources in the interest of homeland security.