

DOOR POINT: A BURIED VOLCANO IN SOUTHEAST LOUISIANA

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SHORT NOTE

An exploratory well, the Shell Oil Company, State Lease 3956 No. 1, Offshore St. Bernard Parish, Louisiana, was completed in 1963 at a total depth of 8538 feet. The last 1300 feet of hole was cored and drilled through volcanic material of Late Cretaceous Age. The location of this well is shown on Figure 1.

Pre-drilling seismic data had revealed the presence on this prospect of intrusive material with a density slightly higher than that of the surrounding sediments. Gravity data defined a weak maximum here, and no salt was believed to be present.

The igneous material consisted of angular fragments of altered porphyritic basic rock. In cores it proved to be

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evenly bedded and cemented by sparry calcite. Radioactivity age dating fixed a minimum age of crystallization of this rock at 82 m.y. + 8, or middle Late Cretaceous (Austin). Bulk density of the igneous rock ranged from 2.02 gm/cc near the top of its occurrence to 2.53 gm/cc near the bottom of the well.

Three gas accumulations, with an aggregate thickness of 38 feet, were encountered in the Miocene section between 5092 and 6219 feet in the Shell well. Gas-bearing sands were not present in two other wells drilled later on the same structure (Fig. 2).

Although evidence of Late Cretaceous volcanic activity is widespread in northern Louisiana, as well as in Mississippi, and southeast of Louisiana in the Gulf of Mexico, the Door Point prospect lies within an area that had been previously designated as being free of volcanism.

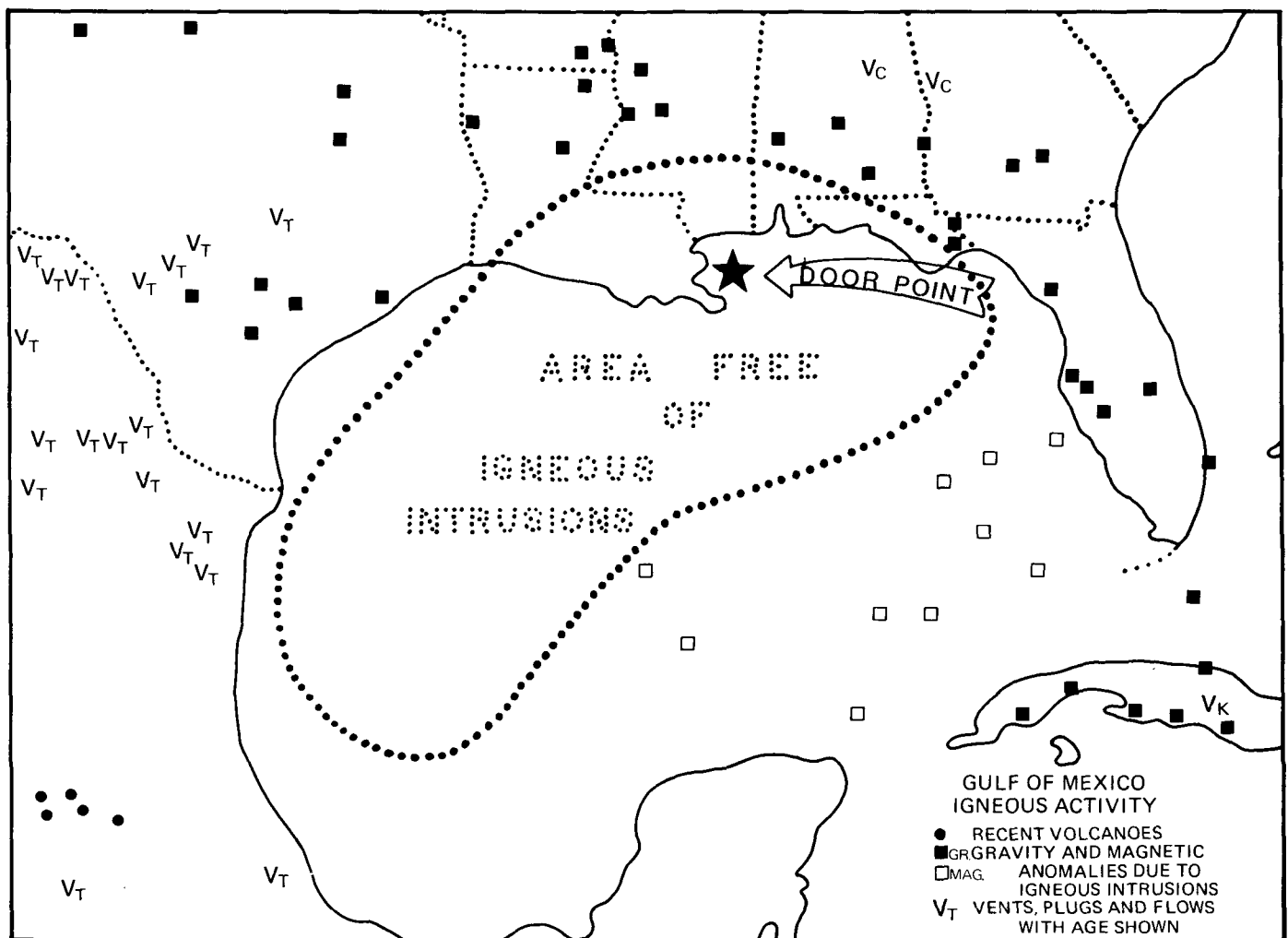


FIGURE 1—Location of Door Point in Relation to Other Manifestations of Igneous Activity in the Gulf Coast and Gulf of Mexico. (Map from P. L. Lyons, G. C. A. G. S. Transactions, Vol. VII, p.8.).

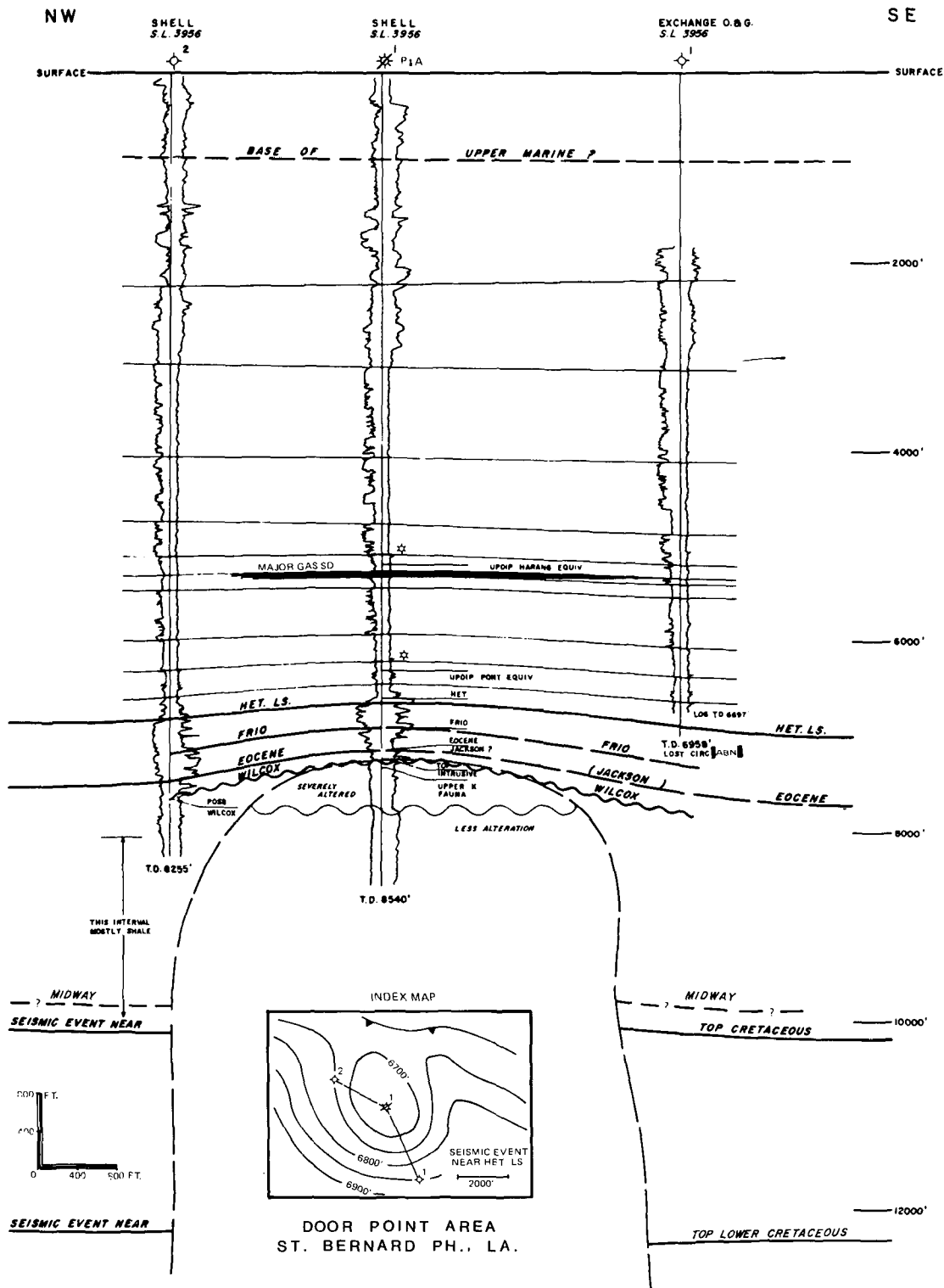


FIGURE 2—Cross Section of Door Point Structure, Based on Seismic and Subsurface Data.