

3-D Seismic Redevelopment of Louisiana's Tuscaloosa Trend Port Hudson Field Case History

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The Port Hudson field is a salt-cored anticline which produces from the Cretaceous Tuscaloosa Formation 15 miles north of Baton Rouge, Louisiana. Approximately 480 BCF and 45 MMBO have been produced in the last 18 years from depths between 15,400 and 17,400 feet. An extensive grid of 2-D seismic was acquired over the field during the 1970's and early 1980's. In October of 1994 interpretation of a new 60 sq. mile 3-D dataset was completed.

The Amoco Tuscaloosa asset group to date has defined 9 new prospect locations based primarily on the highly detailed

structural and stratigraphic mapping possible with the new dataset. Seven of the locations have been drilled with a 100 percent success ratio and added new proven gross reserves of 200 to 300 BCFE. The remaining 2 locations will be drilled by the spring of 1996 and bring the total drilling investment to \$50 million. The key learning point to be made with this case history is that the tremendous improvement in imaging with 3-D can lead to entirely new depositional and structural models even in heavily drilled areas.

Integrated Use of Air Sparging, Soil Vapor Extraction and Pump and Treat Technologies to Remediate Chlorinated Hydrocarbon Contaminated Water Bearing Units at a HDPE Facility

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Disposal practices prior to RCRA caused the release of chlorinated hydrocarbons (CHCs) into the shallow ground water under a temporary pond at the facility. This impact was discovered through a due diligence survey and properly reported to the Louisiana Department of Environmental Quality (LDEQ). Through a phased investigation the company, in cooperation with LDEQ, has determined that the upper three water bearing units have been affected by multiple contaminants forming a DNAPL plume.

Remedial actions were proposed to the Agency and implemented with approval during 1994-95. The remedial system includes soil vapor extraction and air sparging for the uppermost zone and pump and treat for contaminated water removal in the second zone. Throughout 1995, the systems efficiency was evaluated and continuous adjustments were made to improve the recovery. A balanced approach to minimize downward movement of contaminants and achieve

optimum recovery included: startup of system components, manipulation of recovery rates and installation of additional equipment.

Data assimilated over the past year of operation suggests the effective recovery of CHCs. Monitoring of the impacted zones shows a downward trend in contamination levels, however it is evident that control of the impacted zones is incomplete. Proposed alterations to the system include additional recovery wells, pump tests, and continued evaluations to improve the system. Further efforts will be required by the Agency to address the remaining contaminants.

This paper will address the implementation of the Corrective Action Program and present the current state of operations and proposed augmentations to improve the system.