

## Results of a 3-D Seismic Shoot at Lopeno Field, Zapata County, Texas

**Richard W. Debus and E. E. Rudder**

Gulf Resources Corporation, San Antonio, TX

In 1994, Mustang Oil & Gas Corporation, Parker & Parsley Petroleum, and POGO Producing Company contracted Grant Geophysical, Inc. to conduct a 3-D seismic survey over Lopeno Field (Upper Wilcox, Zapata County, Texas). At that time, Lopeno Field had produced 111 BCF, but no new wells had been drilled since 1990 and production was falling off rapidly. The three companies thought that the Field still had further potential and that the combination of 3-D seismic, commingling of multiple sands, and larger fracture stimulations would make it an economically viable project again. The 3-D survey was shot and 16 new wells have been put on production to date, adding an estimated 100 BCF to the ultimate recovery (now 250 BCF) of the field. Several additional wells

are planned. This success could easily be deemed to have been derived from the 3-D shoot. In reality, many wells had been planned before the shoot and had not been drilled because of waiting on the pending interpretation of the data and the economics of the time. The Lopeno 3-D shoot did not cause any major alterations to the previous structural interpretation, or find deeper pay. The tool did become extremely useful in the precision selection of locations in an old field where there are concerns about drilling into depleted zones and staying as structurally high as possible in small fault blocks. In this manner, the Lopeno 3-D shoot saved all these companies money and made it worthwhile.