Permian Basin Thrives in Latest Oil Boom

Oil Daily Tuesday, June 20, 2006

When the last oil boom went bust in the early 1980s, a common bumper sticker in the Permian Basin of West Texas and Southeast New Mexico read: "Dear Lord, please send us another oil boom. We promise not to foul it up next time."

The folks in Midland, Odessa and surrounding towns and communities got their wish, but only after a wait of almost a quarter of a century.

This boom is much different from the three earlier eras when drilling soared in what historically is the largest onshore oilproducing region in the US. The previous booms - in the 1920s, late 1940s and 50s and late 1970s and early '80s - focused more on exploration. This time the focus is on exploiting the ample resources still buried beneath the mesquite-covered sands and cotton fields.

The Permian Basin extends from Yates outside Iraan in the south, east to the Ozona-Sonora area, west to Pecos in Texas and Jal and Lovington in New Mexico, finally playing out to the north a few miles outside of Lubbock.

The '20s and '50s were the glory days. Discovery followed discovery, with giant fields found in a wide swath 250 miles wide and 300 miles long. The region once was the most prolific oil-producing area in the world and still is one of the largest sources of US oil. To date, oil output has exceeded 45 billion bbl, with billions of additional barrels still to be extracted through modern technology.

In the 1920s, boomtowns were born almost overnight, but discovery of the super-giant East Texas field in 1930 brought a halt to the first round of good times as oil prices plunged to 10¢ per barrel. Not until after World War II ended, and workers and equipment again were available, did the Permian Basin see a revival in activities. America's growing demand for oil soared, too, as the automobile became the transportation means of choice.

A flood of imported oil from Saudi Arabia, Venezuela and other places where operating costs were a fraction of those in the US brought an end to the second boom. So much imported oil was coming in that the Texas Railroad Commission, which regulates the industry in the state, limited production operations to eight days a month in the early 1960s.

Geopolitics created the next boom. First the Mideast oil embargo in 1972-73, then the cutoff in Iranian oil output in 1979 created shortages of supplies at the same time demand was climbing. A complex US regulatory scheme that had multiple price provisions confused the situation a bit, but the economics were robust enough to generate the biggest boom yet.

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Fleets of drilling rigs, looking from a distance like miniature Eiffel Towers, sprouted across the rolling dusty prairies, cotton fields and ranchlands. Unfortunately, their search for oil deposits of the size and scale of those found in the past was all for naught. The thousands of wells drilled across the 75,000 square-mile Permian Basin yielded only incremental reserves. The giant fields all had been found.

The good news was prices were strong enough to support more advanced technologies known collectively as enhanced oil recovery (EOR). Waterfloods - injecting water to raise pressure and force remaining oil toward producing wells -had been a standard procedure for decades. In the 1970s, producers began applying a new technique - carbon dioxide miscible flooding ó in combination with waterfloods. The combination of increased pressure and the "fizzing" action of the acidic CO2 pushes even more oil out.

This is a costly process, and only the major oil companies had the resources to fund what were multi-billion-dollar ventures even 25 years ago. Amoco, now part of BP; Royal Dutch Shellís Shell Oil; Arco, subsequently acquired by BP; Chevron; Exxon and Mobil Oil, which merged in 1999, were the big players. In a fortuitous move, they made the massive infrastructure investments when oil prices still were relatively high, about $25/bbl for benchmark West Texas Intermediate. Application of CO2 floods added billions of barrels to the recoverable reserves of the basin. Nevertheless, as returns diminished, the big players changed their strategies and began withdrawing. Amoco and Shell formed a joint venture, Altura, before selling out completely to seek higher returns elsewhere. The other majors also have sold down their positions.

Now the two most significant players are a large independent and a notable newcomer to the oil patch upstream. Occidental Petroleum's Oxy Permian division is the largest CO2 operator by far, primarily as a result of its 2000 acquisition of Altura (OD Mar.21'01,p5). The company produces some 200,000 b/d of crude from its Permian Basin holdings, half from CO2 projects. In second place is Kinder Morgan Energy Partners (KMP), which first acquired a stake in Shell's pipeline system, then bought the remainder, while taking over two of the best known fields in the basin, Yates and Sacroc.

Both companies are confident that the Permian Basin, now in its ninth decade as an oil province, will deliver substantial returns, possibly for another half-century. And they have staked billions to ensure their goals come to fruition.

Barbara Shook, Midland, Texas

This is the first in a series on the Permian Basin today and its outlook for the future. The next two installments will examine the operations of Occidental and Kinder Morgan Energy Partners.