INTRODUCTION

Although oil and natural gas have always been an integral part of the Oklahoma economy, many are unaware of their history in the State and the underlying global issues that ultimately control the industry’s health. Following the old axiom that states “the past is the key to the future”, we can extrapolate past trends into the future and glean valuable insights into what is in store for both the State and global energy communities.

This paper presents highlights from three articles published in the Oklahoma Geology Notes: “Oklahoma Oil: Past, Present and Future” (Fall 2002 issue), “Oklahoma Natural Gas: Past, Present and Future” (Winter 2002 issue) and “Oklahoma Oil and Natural Gas, Our Place in the Big Picture” (Spring 2003 issue). These articles were written from a Statewide perspective for the general public and are not intended to characterize any particular region, geologic play, or operator. Because much explanatory material has been omitted, the reader is encouraged to refer to the complete articles on the Fossil Fuels page of the Oklahoma Geological Survey website @ ogs.ou.edu.

Oklahoma Oil

Oil seeps were recognized in Oklahoma long before the arrival of European settlers, who mined some seeps for asphalt. The first subsurface oil was recovered by accident, in 1859, from a well drilled for salt near present-day Salina (Mayes County). The first intentional oil find came from a well drilled in 1889 in an area of seeps near Chelsea (Rogers County) (Franks, 1980), and the first paying well, the Nellie Johnstone No. 1, was drilled in 1896 near Bartlesville (Washington County). Completed in 1897 as the discovery well for the giant Bartlesville-Dewey Field, this well ushered in the oil era for the Oklahoma Territory and added impetus towards the granting of Statehood in 1907.

Historical production (Fig. 1) shows peak annual production of 278 million barrels, 762,000 barrels of oil per day (BOPD), was reached in 1927, with several intermediate highs and lows occurring since that time (Claxton, 2002). Drilling activity underlying State oil production (Fig. 2) has experienced three major drilling booms. The first occurred just after Statehood, and was the most active from 1913 through 1920. This spate of drilling, which made Oklahoma the largest oil-producing entity in the world, was followed by a lull that lasted through most of WWII. The second boom, which reached its peak from 1953 through 1956, gradually declined to post-war lows from 1971 through 1973.

The first drilling boom was driven by the number and size of discoveries made early in the 20th century. The second resulted from increased demand for petroleum products during conversion to a peacetime economy. The third and most recent boom resulted from increased oil prices arising from political tension in the Middle East; however, its root cause was a gradual shift of the world’s productive capacity and reserves from consuming countries to less-developed producing countries represented by OPEC (Fig. 3).

In Oklahoma, by the late 1960s, oil exploration had been underway for at least 50 years and from an exploratory standpoint the most productive plays had matured. Most geologic plays reach a point at which the potential reward no longer justifies the risk and expense of large-scale exploration, and activity moves elsewhere. For Oklahoma as a whole, that point was reached in the late 1960s. The price of crude oil had remained nearly flat for decades and discovery sizes no longer justified widespread exploration. The State’s productive capacity was maintained by its old, large, long-lived fields where thousands of wells continued to produce, commonly in enhanced recovery projects involving water injection.

It was in this environment that the last major drilling