

APPENDIX A

Publisher's note: The following material was written by C. A. Warner in 1951 and has not been previously published elsewhere.

FIFTY YEARS OF PROGRESS IN EXPLORATION AND PRODUCTION TECHNOLOGY

The increase in domestic production from an unrestricted rate of 174,000 barrels per day in 1900 to a controlled rate of 5,414,000 barrels per day in 1950 is certainly evidence of progress in the art of locating, exploring and producing the hidden reserves of oil and gas. There has been no change in the basic principles of mechanically tapping the reservoir and of securing the production from it by natural flow or by some artificial means. There have, however, been many significant advances in the manner of carrying out those basic principles.

At the beginning of the twentieth century, although there was some knowledge and appreciation of the fact that a relationship existed between certain types of structure and oil bearing reservoirs and there was a full appreciation of the fact that surface seepages of oil and gas were indicative of an underground accumulation, geology had little real application to the finding of oil; and, indeed for many years thereafter, geologists were regarded with increasing tolerance as a species of necessary evil. At that early date, geophysics as we commonly understand it today, was unknown to the industry. Nevertheless, exploration had been undertaken in many parts of the country and production was being secured in 14 states, including Texas.

Drilling was then being carried on largely by the use of standard cable tools almost identical with those used 90 years before in the drilling of wells for salt water in West Virginia. In the Corsicana area, however, the rotary rig was in considerable favor with operators as a rapid and cheap method of drilling even though it had been classed by the United States Geological Survey as objectionable owing to the heavy water pressure put on the oil sand in drilling it.

The rotary rigs of 1900 included a 12-inch rotary with grip rings and driven by #103 chain, light pumps such as 5x8x10, a 9x12 single cylinder 25-horse power engine, a two post single speed draw works with 2-3/4" or 3" shaft, and a 30-or 35-horse power boiler. There were no unitized draw works, tool joints, drill collars, grip stems, drive bushings, etc., and certainly none of the various electrical and mechanical devices now considered so necessary and commonplace. The drill pipe was line pipe coupled with ordinary collars. Coring, when done, was accomplished by using a joint of pipe with adamantite spotted on it at intervals. Sampling was done by the simple method of holding a container, generally an oil can nailed on a stick, up against the mouth of the