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***“A method to compare estimates of rate/time performance derived from petrophysical analysis with actual production to define likely drainage areas and recovery efficiencies”***

### **Abstract**

From a number of Permian Basin producing wells, Grant Zimbrick (Dolan Integration Group) has developed a rate/time model based on ultimate oil produced well-by-well. The same model has been used for the Tensleep of Wyoming with excellent results.

From a basic petrophysical analysis estimated reserves are calculated, assuming reasonable drainage area and recovery efficiency. A theoretical rate/time curve based on the Zimbrick model is then calculated. This is then compared with actual production from the same well. Adjustments to drainage area and/or recovery efficiency are made to achieve correspondence with actual production.

Examples from four Tensleep wells are presented. The results give insight including drainage area, recovery efficiency, as well as the potential for production coming from intervals that have not been perforated.

The Zimbrick model will probably need adjustments for other producing reservoirs.

### **Our Presenter**

***Dr. Michael Holmes, Digital Formation, Inc.***



Michael Holmes has been involved in oil and gas exploration activities for 59 years. He started his career with British Petroleum working in England, Libya, East Africa, and the North Sea. He then joined Shell Canada, working the west coast offshore Canadian Basin. Subsequently he was with Marathon Oil Company, research division, and Berry Wiggins, UK. For the past 30 years he has been in all aspects of exploration and exploitation activities worldwide, with particular emphasis in petrophysics. In 1994 he formed Digital Formation, Inc., a consulting and software development company, with his two sons as partners. Dr. Holmes has a BSc and PhD degrees in geology from the University of London, and an MSc in Petroleum Engineering from the Colorado School of Mines.