Where to Go Next? Reservoir Characteristics of the Castle Peak Member of the Green River Formation, Western Uinta Basin, Utah

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Abstract

With some of the most prolific oil EURs in the United States, the stacked reservoirs of the Uinta Basin rival that of the Permian Basin. Currently the main target interval is the Uteland Butte member of the Green River Formations, but as operators successfully develop the Uteland Butte across the basin questions arise about the resource potential of other members within the Green River Formation. To better understand the resource potential, multiple reservoir studies were conducted across the Green River Formation. One of the most promising resource plays is in the Castle Peak member. The Castle Peak has received increasing attention in the last few years as operators have successfully targeted different intervals within the member. To better understand the Castle Peak petroleum system a detailed reservoir characterization study was conducted. The goal of the study was to evaluate source rock, reservoir properties, and productivity across the study area. The study covered 90,000 acres and incorporated over 1,200 open hole logs and over 1,300 feet of core. The study looked at three intervals; 1) the Castle Peak Bar F; 2) the Castle Peak Long Point; and 3) the overlying Black Shale source rock. Through detailed basin modeling, core description, source rock analysis, mineralogy evaluation, conventional rock analysis, and petrophysical modeling a picture of the resource potential of the Castle Peak was developed. The study shows that the Castle Peak Long Point along with the adjacent world class Black Shale source rock will be a strong viable target across the study area. This paper presents the results of the comprehensive study.