

# **An Overview of the Little Cedar Creek Field Development**

(June 2009)

The Little Cedar Creek Field was discovered by Hunt Oil Company in 1994 with the drilling of the Cedar Creek Land & Timber Company 30-1 No. 1 Well (Permit No. 10560) in Section 30, Township 4 North, Range 12 East, in Conecuh County, Alabama. The well was drilled to a total depth of 12,100 feet and completed in the Smackover Formation as an oil producer. The initial flow rate of the well was 108 barrels of oil per day and 49,000 cubic feet of gas per day on a 12/64-inch choke with a flowing tubing pressure of 248 psi.

Located approximately 10 miles southeast of Evergreen, Alabama, the Little Cedar Creek Field remained a one-well field until Midroc Operating Company of Dallas, Texas, became operator of the field in May 2000. Since that time, Midroc has drilled over 60 wells into the Smackover reservoir and expanded the field limits to include more than 19,500 acres in Township 4 North, Ranges 12 and 13 East, Conecuh County, Alabama. In January 2006, Sklar Exploration Company, LLC drilled its first well in Little Cedar Creek. They have since drilled 11 additional wells in the field. Columbia Petroleum LLC became the third operator active in the field when it drilled its first well in October 2008. Development of this oil reservoir continues, primarily to the northeast and southeast.

The Smackover Oil Pool in the Little Cedar Creek Field consists of two main porosity zones separated by a dense nonproductive zone. The Smackover Oil Pool in the field is officially defined as those strata of the Smackover Formation productive of hydrocarbons in the interval between the depths of 11,490 and 11,580 feet in the Pugh 22-2 Well, Permit No. 13472, which is located in Section 22, Township 4 North, Range 12 East. The highest known water (oil/water contact) in Little Cedar Creek, as indicated on the high resolution induction log for the McCreary 21-1 #1 well, is at a subsea depth of 11,365 feet.

The field is located near the up-dip limit of the Smackover Formation, and the trapping mechanism is interpreted as stratigraphic. There is no faulting or structural

closure based on current well control, and the Smackover displays monoclinial dip to the southwest at a rate of about 200 feet per mile.

The western portion of the Little Cedar Creek field was unitized January 1, 2005. This partial field-wide unit includes over 6,000 acres and was unitized based on a two-phase allocation formula. Phase I is based on 50% net hydrocarbon pore volume and 50% productivity. Phase II, which will begin when 5,622,557 barrels of oil have been produced from the unit, is based on 100% net hydrocarbon pore volume.

The net hydrocarbon pore volume determination for the upper Smackover uses a porosity cutoff of 10%, while the lower Smackover zone uses a porosity cutoff of 6%. Net hydrocarbon pore volume is defined as porosity greater than the applicable cutoff, multiplied by the number of feet of pay meeting the minimum porosity value, multiplied by hydrocarbon saturation as determined by log analysis.

As additional data become available will the drilling of new wells within the unit area, allocations for all unit tracts are recalculated or redetermined. Technical exhibits presented at a public hearing in support of the most recent redetermination of the tract allocations for the unit can be viewed from this webpage.

In October 2007, Midroc Operating Company began a gas-injection secondary recovery project within the Upper Zone of the Smackover Formation in the unitized portion of the field. A response to the gas injection has already been observed in the field. Production from wells surrounding the two injection sites has increased since the project was initiated.

In 2005, Little Cedar Creek became the top oil-producing field in the State, producing 1.17 million barrels of oil. Since that time, annual oil production from the field has steadily increased to more than 2.4 million barrels in 2008. Cumulative production from the field exceeded 7.6 million barrels of oil by end of that year. The significant increase in oil production from this field since 2005 is primarily responsible for reversing the declining trend in the State's oil production.