

A deep test to the Madison Formation in 1935 found no significant shows below the Dakota. By 1943, the Big Muddy field was essentially depleted after having produced about 30 MMBO. Dakota and Muddy Formation production was discovered in the South Glenrock fields around 1950, and water flooding began in the 1960s. Encouraged by a 1973 low-tension pilot test at Big Muddy, Conoco and DOE teamed up for an unsuccessful Frontier surfactant flood in the 1980s.

In 2007, Rancher Energy purchased the Big Muddy, South Glenrock and South Cole Creek fields for CO<sub>2</sub> tertiary recovery. Nitec LLC estimated that CO<sub>2</sub> flooding could potentially recover in excess of 10,000 b/d each from South Glenrock and Big Muddy fields. Rancher acquired a take-or-pay CO<sub>2</sub> contract and conducted pipeline and facility FEED studies. In 2009 Rancher attempted to join forces with Elk Petroleum, whom they saw as being likely to get a better CO<sub>2</sub> contract.

In 2011, Queensland-based Linc Energy purchased the fields from a reorganized Rancher, which was recovering from a hostile takeover. Best known for its underground coal gasification (UCG) technology, Linc hoped to conduct miscible floods using waste CO<sub>2</sub> from their UCG projects in the Powder River Basin. Linc acquired an interruptible CO<sub>2</sub> contract from Exxon, built a line tap, and planned to truck CO<sub>2</sub> from Jeffrey City to Glenrock. Linc planned CO<sub>2</sub> injection rates of up to 30 MMCFD after completion of the CO<sub>2</sub> injection infrastructure. In 2011, Linc unsuccessfully attempted a Dakota CO<sub>2</sub> cycling (huff-n-puff) project in South Glenrock using 500 tons of CO<sub>2</sub>.

Linc has lost interest in the Glenrock fields, and has closed their Wyoming and Denver offices. The fields are under caretaker status while Linc attempts to market the properties. In what may be a sign of the future for the Glenrock area, Chesapeake is developing a Shannon horizontal resource play down dip from conventional production in the Cole Creek South field in the Barron Flats Unit.

#### **A HISTORY OF TEAPOT DOME, NATRONA CO., WYOMING**

Mark Milliken  
1319 Hornchurch Ave.  
Casper, WY 82609  
mmilliken@blm.gov

#### **FIELDTRIP DISCUSSION**

At the turn of the 19<sup>th</sup> century, the U.S. was comfortably ensconced in its supply of coal. Defense, transportation, and power generation were coal-fired from home-grown reserves

that knew no limits. That all changed early in the 20<sup>th</sup> Century when oil-fired battleships were perfected. To insure a strategic supply of bunker oil, four Naval Petroleum Reserves were set aside by Executive Orders in Wyoming, California, and Alaska. Located about 35 miles north of Casper, Teapot Dome was designated NPR3. Unknown at the time, the battleship was to be rendered obsolete by the airplane shortly after the NPRs were formed.

When it came time to dole out government leases, Secretary of Interior Albert Fall contacted his old friend Harry Sinclair. Sinclair leased NPR-3 with the expectation of establishing a central Wyoming oil storage facility and shipping point for eastern markets. Congress investigated Fall when he suddenly became quite wealthy from what turned out to be Sinclair's graft. Fall and Sinclair were subsequently imprisoned, and the Sinclair leases cancelled. Casper's Harding (later Garfield) School was named after the President under whom the famous scandal occurred. Hoping to avoid another scandal and with no demand for bunker oil, Congress shut the field in. The Navy developed only those areas of NPR-3 subject to drainage from offsetting properties.

With the '70s Arab oil embargos, the U.S. saw huge monetary assets in the NPRs. Both NPR1 (Elk Hills, CA) and NPR3 were opened to full field development in 1976. In 1977, NPR oversight was transferred from to the new Dept. of Energy. DOE raised NPR3 production to a maximum of 5000 BOPD in 1979. With rapidly declining production, DOE formed the Rocky Mountain Oilfield Testing Center (RMOTC) in 1995. The field became a government-sponsored test facility for new oilfield technology. By 2007, Congress began demanding that RMOTC become a profitable entity. Faced with such an impossible task, DOE sold the property to Stranded Oil Resources Corp. for \$45.2 million in 2015.

#### **W. N. "NEIL" MCMURRY AND THE DEVELOPMENT OF WYOMING'S NATURAL GAS**

Ann Chambers Noble  
P. O. Box 36  
Cora, WY 82925  
ANoble1227@aol.com

#### **KEYNOTE ADDRESS**

W. N. "Neil" McMurry grew up in Casper, Wyoming, during the Great Depression, leaving shortly after high school to join the U.S. Army to serve his country during World War II. He was a B-17 gunner in Europe, flying two missions on D-Day. He returned home to a young wife, baby, and no job – but immediately set out to find work. His first job was operating