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No. 1

OIL FIELDS NORTH OF RAWLINS

by

G. B. Morgan
State Geologist
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The Lost Soldier, Mahoney, and Ferris oil fields are located from thirty-five to forty-five miles north and northwest of Rawlins. They lie in what appears to be a continuous anticlinal fold extending from about the northwest portion of T. 25 N., R. 86 W., to the northeast portion of T. 26 N., R. 90 W. The Lost Soldier Field occupies the extreme western limits of the anticline; the Mahoney Dome is located approximately midway; and the Ferris structure is at the extreme eastern end of the fold. The general trend of the axis in the Lost Soldier structure is northwest and southeast, the major axis being N. 36 degrees W. Going east from the Lost Soldier Field, the axis appears to bend northward and to run in an almost easterly direction to the Ferris Field. It is the opinion of some that the three fields above mentioned are domes, or cross folds, located on the one large anticlinal fold, which lies practically parallel to the Ferris Mountains. These fields are without doubt true domes or enclosed structures and it is possible that other and smaller structures will be discovered on this main fold.

THE LOST SOLDIER FIELD

The Lost Soldier oil-producing territory is located in the E½ of Section 10 and the W½ of Section 11, T. 26 N., R. 90 W. The highest part of the field is near the quarter corner between Sections 10 and 11, and at this point the first oil sand is reached at a depth of about 265 feet below the surface. There are about twenty or twenty-one producing wells in this field and the average daily production is probably around 1000 barrels. So far a test well, 1145 feet deep, shows four producing sands, the first at approximately 300 feet depth, containing medium light oil, the second at approximately 600 feet depth, containing similar oil, the third at 900 feet depth, containing a light oil, and the fourth at 1100 feet depth, containing a medium heavy oil. It is possible that these so-called sands are not all true sands, but some may be heavily saturated, sandy shales. It is a well known fact that the saturation in the Lost Soldier Field is very heavy, and the pressure has caused the oil to saturate even the surface shales. Apparently, although there are a number of sandstones from which to draw, the reservoir, or pool, cannot be of very large extent on account of the steep dips to the north, west, and south, which ranges from twenty-five to forty-five degrees. The steeply dipping rocks partially surrounding the field are the Mesaverde sandstones and shales. The floor of the dome has been eroded well down into the shales of the Colorado Group (Upper Cretaceous), and the oil is probably derived from the Frontier formation. The drainage is to the southeast.

There is a four inch pipe line from this field to the Union Pacific Railroad at Fort Steele.

FERRIS FIELD

The Ferris Field, the extreme eastern extension of the main fold, is surrounded on three sides by an escarpment of the Mesaverde in a similar manner as the Lost Soldier with the exception that the escarpment is to the north, east and south, and the rocks dip away from the dome in a northerly, easterly, and southerly direction. The dips here are not so great as they are in the Lost Soldier Field, and indications point to a much larger producing area. Practically the entire surface of the Ferris Field is covered by sand dunes, and it is practically impossible to trace and develop the structure in the field proper except by actual drilling. The field covers the extreme southwestern portion of T. 26 N., R. 86 W., the northwestern portion of T. 25 N., R. 86 W., the southeastern portion of T. 26 N., R. 87 W., and the northeastern portion of T. 25 N., R. 87 W.

It was at first thought that the main axis of the dome ran in a southeasterly

direction through Sections 26, 25, and 36 of T. 26 N., R. 87 W., but it is the belief of some now that the main axis will be found to the south thereof and that there are really two structures in this field, one in the southeastern part of T. 26 N., R. 87 W., and another running through the northeast of T. 25 N., R. 87 W. and the northwest of T. 25 N., R. 86 W. The geologists who hold to the latter theory believe that the axis runs more nearly east and west. They also believe that there is a fault between the two structures, which has thrown the northern part of the field up about 1500 feet. If, as has been indicated, there are really two structures, this fact would explain the discrepancy as to the widely varying depths to the oil sand in different wells.

There are four producing wells in the northern part of the field, a gas well in Section 26, two oil wells in Section 25, and another gas well in Section 36, all in T. 26 N., R. 87 W. The oil wells in the east half of Section 25 are reported to be producing about 200 barrels per day, and the depth to the sand (believed to be the Muddy sand) is approximately 1560 feet. The gas well in Section 36 is 2200 feet deep to the sand. The northern part of this field is controlled by the Producers and Refiners Corporation.

In Section 16, T. 25 N., R. 86 W., the oil sand was struck at a depth of 3010 feet, which is the only well that has been drilled to the sand in the southern portion of the field. Oil was found in this well, but it is not flowing. A stray sand was struck at 2417 feet andanother at 2430 feet, both showing a little oil; but commercial production was not obtained until the lower sand was reached. This appears to be the first Wall Creek sand. The west end of the southern portion will be tested out in a well on Section 3, T. 25 N., R. 87 W., which is now 2600 feet deep. These wells are owned by The General Petroleum Corporation.

It was thought at first that the producing area of the Ferris Field would be of limited extent, but indications now are that it is a fairly large structure and will be very productive.

EAST LOST SOLDIER

About five miles southeast of the Lost Soldier Field proper some prospecting has been done in what is known as the East Lost Soldier, or Big Lost Soldier Field. The United States Petroleum Company has been drilling a test hole for several years on Section 16, T. 26 N., R. 89 W. This well is reported down about 3000 feet with no results as yet. It is probable that the oil sands are very deep in this district.

MAHONEY DOME

The Mahoney Dome is a separate and fairly defined structure in the S½ of T. 26 N., R. 88 W. and the N½ of T. 25 N., R. 88 W. In 1916 the Midwest Refining Company started a test well in the SW¼ of Section 34, T. 26 N., R. 88 W. This well was abandoned in 1917 at a depth of 1682 feet. The sand was encountered at 1686 to 1710 feet, and was dry. It is very problematical whether or not this well was a fair test of the structure. The Wasoming Oil Company is now drilling a test well in the northeast quarter of the same section, which at this time is about 2180 feet deep. A strong gas flow was struck at a depth of 1230 feet, and another and stronger flow at the present depth, reported to be 35,000,000 cubic feet per day. This well will probably completely test out the structure, as the gas is being shut off and deeper drilling is contemplated.

SHERARD DOME

To the southwest of the Mahoney Dome, in the eastern portion of T. 25 N., R. 89 W., and the southwestern part of T. 25 N., R. 88 W., is the so-called Sherard Dome, another structure which has been worked out by the geologists of the Wasoming Oil Company. One well was put down in this structure in Section 11, T. 25 N., R. 89 W., and went to a depth of about 1800 feet, where water was encountered. Another well presumably higher on the structure is being drilled in Section 2 of this township.