



EL PASO NATURAL GAS PRODUCTS COMPANY

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WELCH UNIT

PARTICIPATING AREA AND EXPANSION

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AUTHORIZATION

This report was constructed at the request of Mr. John Anderson, of the United States Geological Survey, Roswell, New Mexico.

PURPOSE

The purpose of this report is to describe the geological reasons why the participating area and the three expansions were outlined.

LOCATION

The Welch Unit lies principally in Township 26 South, Range 26 East, Sandoz County, New Mexico. Minor portions of it overlap into Township 25 South, Range 27 East, and Township 26 South, Range 26 East. (See Plate 1)

PARTICIPATING AREA

The original participating area was designated as NW/4 NW/4 of Section 21, Township 26 South, Range 27 East, and was so done as a result of Llano Natural Gas Products Company's well, the Welch Unit #2, which was drilled on this 40 acre tract. The well was completed in the Delaware sandstone, at a total depth of 2115', for a pumping potential of 45 barrels of oil per day. Due to the erratic nature of the sandstone deposition of the Delaware group, it was felt that 40 acres was all that could be considered proven by this well.

ILLEGIBLE

CONCLUSION

The oil production in the Welch Unit is from a stratigraphic trap. This trap consists of a clean phase of upper Delaware sand that is typified by the approximate average porosity of 25% and 50 millidarcys permeability.

As illustrated by the accompanying contour map (plate 1), there is no relationship between accumulation and structural configuration. Productivity of each step-out is dependent on porosity of the permeability conditions. Future development will be regulated by distinguishable change of these conditions.

Prediction of the direction of good developments of permeability and porosity is very difficult, therefore, the assignment of only the proven acreage to the initial participating area is considered advisable.

FIRST EXPANSION

The first expansion was the SW/4 SW/4 of Section 16, Township 26 South, Range 27 East, upon which El Paso Natural Gas Products Company's Welch Unit #3 was drilled and completed for a pumping potential of 60 barrels of oil per day. As this well was commercial, this acreage is considered proven.

SECOND EXPANSION

The second expansion was NE/4 NE/4 of Section 20, Township 26 South, Range 27 East, upon which El Paso Natural Gas Products Company's Welch Unit #4 was drilled and completed for a pumping potential of 42 barrels of oil per day. As this well was also commercial, this acreage is considered proven.

ILLEGIBLE

THIRD EXPANSION

The Welch Unit #5 well was drilled in the NW/4 SW/4 of Section 21, Township 26 South, Range 27 East, and was completed in the Delaware sandstone for a potential of 41 barrels of oil per day. This well proved the 40 acre location.

Using the information derived from the Welch Unit #3 and #5 wells, it was felt that an additional 40 acres (SE/4 SW/4 of Section 16, Township 26 South, Range 27 East) should be included in this third expansion. (See Plate 1 for participating area outline and expansions.)

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