POWELL PARK GAS FIELD,
RIO BLANCO COUNTY, COLORADO

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INTRODUCTION

The deepest hole to date in Colorado is the Phillips-Trident No. 1 Mannel, which was drilled in 1957 to a total depth of 17,033 feet in the Weber formation. The No. 1 Mannel was plugged back to 4097 feet and completed for 7.8 million cubic feet of gas per day from a sand in an interval equivalent to the Lance formation of the Sand Wash Basin. This is a field discovery well and at present constitutes the Powell Park gas field.

LOCATION

Powell Park gas field is located in a Federal Unit operated by Phillips Petroleum Company. The unit acreage was originally acquired by Trident Oil Company (S. W. McLaughlin). The center of the unit is approximately six miles west of Meeker along State Highway No. 64. The unit, located in T. 1 S. and 1 N., R. 94 and 95 W., lies within Powell Park on the eastern edge of the Piceance basin in central Rio Blanco County. Powell Park is bordered on the east by the Grand Hogback, on the south by the Piceance Creek anticline, on the northwest by the White River dome, and on the northeast by the Wilson Creek oil field (see index map). The topography of the Park varies from a very gentle flood plain relief of the White River, which flows from east to west across its southern margin, to very rugged relief on its other margins. The greater portion of the Park area is moderately rugged.

INDEX MAP

STRUCTURE

Along the north flank of the Piceance basin the Powell Park feature is one of a series of folds which are terminated on the eastern end by the steeply dipping Wasatch and Mesaverde beds exposed in the Grand Hogback. These folds were formed during late and post-Eocene time by north-south compressional forces rejuvenating older trends.

Powell Park is a westward plunging nose with local closure and faulting.

DISCOVERY AND DEVELOPMENT

The discovery well, Phillips-Trident No. 1 Mannel, has a surface elevation of 6040 feet and is located in NE sec. 27, T. 1 N., R. 95 W. The well was spudded on November 28, 1956. After surface casing was set, drilling proceeded to a depth of 10,056 feet in the Mancos formation at which point 95% inch casing was set to 10,045 feet. By July 16, 1957 the well was drilled to a total depth of 17,033 feet in the Weber formation. Seventeen full diameter cores were cut and nine sidewall cores were taken during the drilling of the well. Two drill stem tests were taken in the Wasatch formation in which no shows were recorded. One test in the lower Mesaverde and two in the Mancos formation recovered non-commercial shows of gas. Colorado's deepest hole required 207 days to drill, core, and test and 22 additional days for fishing operations and other mechanical difficulties.

Completion efforts were commenced by running a 7-inch liner from 9893 to 11,779 feet. Attempts were then made to make a commercial completion from the interval 11,779-12,250 in the Mancos formation. The interval was treated with acid and tested a maximum of 517 MCFGPD. Four intervals between 5047 and 5483 feet opposite upper Mesaverde sands were perforated and gas in too small a quantity to measure was recovered. Casing was then perforated from 4043-63 feet and the sand was treated with 2500 gallons of mud acid. The well was completed from this interval in a stratigraphic section equivalent to the Lance formation on October 18, 1957, with a calculated absolute open flow potential of 7,800,000 CFGPD. The unconsolidated nature of the pay sand caused some completion difficulties. The well has been shut in since its completion. The nearest gas line is a spur of the Pacific Northwest Pipeline, 8 miles to the southwest.

Unit Well No. 2 Mannel, located in NE sec. 26, one mile east, was drilled in the fall of 1958 as a stepout and confirmation test. The well was drilled to a total depth of 4420 feet and abandoned after having the productive sand of the No. 1 Mannel faulted out.