

BEFORE THE INDUSTRIAL COMMISSION
OF THE STATE OF NORTH DAKOTA

CASE NO. 261
ORDER NO. 289

IN THE MATTER OF A HEARING CALLED ON A
MOTION OF THE COMMISSION TO CONSIDER THE
PROPER SPACING FOR THE DEVELOPMENT OF
THE SHORT CREEK FIELD, BURKE COUNTY,
NORTH DAKOTA, REDEFINE THE LIMITS OF SAID
FIELD, AND ENACT SUCH SPECIAL FIELD RULES
AS MAY BE NECESSARY.

ORDER OF THE COMMISSION

BY THE COMMISSION:

Pursuant to legal notice this cause came on for hearing at 9:30 a.m.
on the 16th of December, 1958, at Bismarck, North Dakota, before the Industrial
Commission of North Dakota, hereinafter referred to as the "Commission."

NOW, on this 26th day of December, 1958, the Commission, a quorum
being present, having considered the testimony adduced and the exhibits
received at said hearing, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the
Commission has jurisdiction of this cause and the subject matter thereof.

(2) That geological and engineering evidence presented to the
Commission bearing on the matter of well spacing indicates that the Madison
Pool, as classified and defined by this order, should be developed on a
pattern of one well to one hundred and sixty (160) acres in order to drain
efficiently the recoverable oil from said pool, assure orderly and uniform
development, avoid the drilling of unnecessary wells, and prevent waste in a
manner to protect correlative rights.

(3) That one hundred and sixty (160) acre spacing in the Madison
Pool in this field will result in the efficient and economical development of
the Madison Pool as a whole and will operate so as to prevent waste and
provide maximum ultimate recovery, will avoid the drilling unnecessary wells
and will protect correlative rights.

(4) That certain special field rules are necessary to prevent waste and
protect against the pollution of surface waters.

IT IS THEREFORE ORDERED:

(1) That the Short Creek-Madison Pool is hereby classified and defined
as that common source of supply of crude oil and natural gas found in the
Madison Formation in and under the following described tracts of land in
Burke County, North Dakota, to wit:

TOWNSHIP 164 NORTH, RANGE 93 WEST, 5TH PM
THE S/2 OF THE S/2 OF SECTION 25 AND ALL OF SECTION 36,

TOWNSHIP 163 NORTH, RANGE 93 WEST, 5TH PM
ALL OF SECTION 1,

TOWNSHIP 164 NORTH, RANGE 92 WEST, 5TH PM

THE S/2 OF THE S/2 OF SECTION 30, AND ALL OF SECTION 31,
TOWNSHIP 163 NORTH, RANGE 92 WEST, 5TH PM
ALL OF SECTION 6,

together with those additional quarter sections or governmental lots corresponding thereto as may be proven productive by wells drilled as direct offsets to wells included in the limits as set forth above, provided further, that such extensions of the field boundaries shall include only sufficient acreage to form a spacing unit for such wells.

(2) That effective this day, 160-acre spacing is hereby established for the Short Creek Field in Burke County, North Dakota.

(3) That all wells drilled in the Short Creek Field, as described above, shall be located in the approximate center of the southeast quarter of each quarter section or governmental lots corresponding thereto.

(4) That no well shall be drilled or produced in the above described field except in conformity with the spacing pattern set forth above without special order of the Commission after due notice and hearing.

(5) That all operators presently producing oil and gas from wells in the Short Creek Field, shall, within thirty (30) days from the date of this order, submit plats showing spacing units for each well, and thereafter, a plat showing acreage contained in each spacing unit shall accompany the application to drill on such spacing unit.

(6) That the following special field rules, be and the same are hereby enacted and shall apply to the subsequent drilling and operation of wells in the Short Creek Field.

(a) The casing program of all wells drilled hereafter in said field shall include at least two strings of pipe set in accordance with the following program:

(i) The surface string shall consist of new or reconditioned pipe that has been previously tested to one thousand pounds (1000) per square inch. The casing shall be set and cemented at a point not higher than four hundred (400) feet below the surface of the ground. Cementing shall be by the pump and plug method, and sufficient cement shall be used to fill the annular space back of the pipe, to the surface of the ground, or the bottom of the cellar. Cement shall be allowed to stand a minimum of twelve (12) hours before drilling the plug or initiating tests.

(ii) The producing or oil string, shall consist of new or reconditioned pipe that has been previously tested to three thousand (3000) pounds per square inch. Cementing shall be by the pump and plug method and sufficient cement shall be used to fill one and one-half (1 1/2) times the annular space between the shoe and a point one thousand feet (1000) above the shoe, and the cement shall be allowed to stand twenty-four (24) hours before drilling the plug or initiating tests.

(b) The producing or oil string, shall be set below the top of the producing formation and the string shall be tested by either lowering the fluid level or by application of pump pressure. If the test is made by lowering the fluid level, the well shall be bailed dry or at least to a point midway to the bottom of the string and the top of the cement behind the string, and shall be allowed to stand a minimum of two (2) hours. If, after that period the fluid level shows a rise equivalent to two (2) percent of the distance bailed, the string shall be repaired so as to exclude water. Thereafter the casing shall again be tested in the same manner. If the test is made by application of pump pressure, a pressure of at least fifteen hundred (1500) pounds per square inch shall be applied. If, at the end of thirty (30) minutes this pressure drops

one hundred and fifty (150) pounds per square inch or more, the string shall be repaired so as to exclude water. Thereafter the casing shall again be tested in the same manner. Further work shall not proceed until a satisfactory test has been obtained.

(c) All christmas tree fittings and well-head connections shall have a working pressure of at least two thousand (2000) pounds per square inch or a test pressure of at least four thousand (4000) pounds per square inch.

(d) The gas-oil ratio of each well in the field shall be determined four times annually during the months of March, June, September, and December and reported to the State Geologist within fifteen (15) days after the end of the month in which they are determined. All measurements shall be made under the supervision of the State Geologist or his designated representative.

(e) Any well with a gas-oil ratio of over two thousand (2000) cubic feet per barrel shall have the allowable oil production adjusted in accordance with Rule 506 in Industrial Commission's Order No. 1, General Rules and Regulations for the Conservation of Crude Oil and Natural Gas in the State of North Dakota.

(f) The reservoir pressure of all flowing wells, and the static and working fluid levels of all pumping wells, shall be determined semi-annually during the months of March and September. The results thereof shall be reported to the State Geologist on or before the 15th of the month following the month in which the measurements were made. All pressure determinations shall be measured at, or adjusted to a datum of four thousand feet (4000) below sea level and after the well has been shut in for a period of approximately forty-eight (48) hours. All reservoir pressure measurements or fluid level determinations, shall be made under the supervision of the State Geologist, or his designated representative, and by methods approved by the State Geologist.

(7) That this order shall cover all of the Short Creek Field, as classified and defined above, and shall continue in force until further order of the Commission.

DONE, at Bismarck, North Dakota, this 26th day of December, 1958.

THE NORTH DAKOTA
INDUSTRIAL COMMISSION

/s/ John E. Davis
John E. Davis, Governor

/s/ Leslie R. Burgum
Leslie R. Burgum, Attorney General

/s/ Math Dahl
Math Dahl, Commissioner of Agriculture & Labor