

BEFORE THE INDUSTRIAL COMMISSION
OF THE STATE OF NORTH DAKOTA

CASE NO. 10419
(CONTINUED)
ORDER NO. 12522

IN THE MATTER OF A HEARING CALLED ON
A MOTION OF THE COMMISSION TO
CONSIDER THE PROPER SPACING FOR THE
DEVELOPMENT OF THE AMBROSE-BAKKEN
POOL, DIVIDE COUNTY, ND, REDEFINE THE
FIELD LIMITS, AND ENACT SUCH SPECIAL
FIELD RULES AS MAY BE NECESSARY.

ORDER OF THE COMMISSION

THE COMMISSION FINDS:

(1) This cause originally came on for hearing at 9:00 a.m. on the 28th day of August, 2008. At that time, counsel for Samson Resources Company (Samson) requested that the case be continued to the regularly scheduled hearing in September 2008. Order No. 12316 continued the case until September 25, 2008. At that time, counsel for Samson requested that the case be continued to the regularly scheduled hearing in October 2008. Order No. 12402 continued the case until October 23, 2008.

(2) The witnesses for Samson provided telephonic testimony in this matter, pursuant to North Dakota Administrative Code (NDAC) Section 43-02-03-88.2. Telephonic Communication Affidavits were received on October 27, 2008, therefore, such testimony may be considered evidence.

(3) Order No. 10971 entered in Case No. 9192 established temporary spacing for the development of Zone I in the Ambrose-Bakken Pool at one horizontal well per 1280 acres and Zone II at one horizontal well per 640 acres.

(4) Case No. 10495, also on today's docket, is a matter to consider the temporary spacing to develop an oil and/or gas pool discovered by the Samson #11-162-99H Larson well, NW/4 NW/4 Section 11, Township 162 North, Range 99 West, Divide County, North Dakota, define the field limits, and enact such special field rules as may be necessary. The Ambrose Field will be extended to include said Section 11.

(5) Samson requested that the Ambrose Field be extended to include the following lands in Divide County, North Dakota:

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 27 AND 34,

TOWNSHIP 163 NORTH, RANGE 98 WEST, 5TH PM
ALL OF SECTIONS 18 AND 19,

TOWNSHIP 162 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 1, 2, 3, 10, 11, 12, 13, 14, 15,

TOWNSHIP 162 NORTH, RANGE 98 WEST, 5TH PM
ALL OF SECTIONS 6, 7 AND 18.

(6) Order No. 10905 entered in Case No. 9290, dated January 19, 2007, established Sections 1 and 12, Township 162 North, Range 99 West, Divide County, North Dakota, as a 1280-acre drilling unit for the exclusive purpose of drilling a horizontal well within said drilling unit within the Bakken Pool. This drilling unit will be included as a spacing unit in the Ambrose-Bakken Pool.

(7) Flexibility with respect to spacing unit size and the location of wells in the Ambrose-Bakken Pool is essential to efficiently produce as much recoverable oil and gas as economically possible.

(8) Granting flexibility in spacing unit size and in locating and drilling horizontal wells will result in economic and efficient development of the oil and gas resources in a manner that prevents waste and protects correlative rights.

(9) If Samson's activities are successful, greater ultimate recovery of oil and gas from the pool will be achieved which will prevent waste and the drilling of unnecessary wells in a manner which will not have a detrimental effect on correlative rights.

(10) Geological and engineering evidence presented to the Commission relative to the matter of well spacing indicates that the Ambrose-Bakken Pool, as classified and defined in this order, should be developed on a pattern of one horizontal well per 1280 acres in Zone I and one horizontal well per 640 acres in Zone II for the effective and efficient recovery of oil from said pool, to assure rapid development, to avoid the drilling of unnecessary wells, and to prevent waste in a manner that will protect correlative rights.

(11) Proper spacing with one horizontal well per 1280 acres allowed in Zone I and one horizontal well per 640 acres allowed in Zone II in the Ambrose-Bakken Pool will result in the efficient and economical development of the field as a whole and will operate so as to prevent waste and provide maximum ultimate recovery, will avoid the drilling of unnecessary wells, and will protect correlative rights.

(12) The unrestricted flaring of gas produced from the Ambrose-Bakken Pool could be considered waste, and in order to minimize such, production from the pool should be restricted until the wells producing therefrom are connected to a gas gathering and processing facility.

(13) Certain special field rules are necessary to prevent waste and protect against the contamination and pollution of surface lands and fresh waters.

(14) Approval of this matter will prevent waste, avoid the drilling of unnecessary wells, and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) Order No. 10905 is hereby rescinded.

(2) Provisions established herein for the Ambrose-Bakken Pool are for the exclusive purpose of drilling horizontal wells. Existing and future vertical and directional wells drilled within the area defined in paragraph (3) below shall not be subject to this order.

(3) The Ambrose Field is hereby redefined as the following described tracts of land in Divide County, North Dakota:

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 13, 14, 15, 16, 22, 23, 24, 25, 26, 27, 34, 35 AND 36,

TOWNSHIP 163 NORTH, RANGE 98 WEST, 5TH PM
ALL OF SECTIONS 18, 19, 30 AND 31,

TOWNSHIP 162 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 1, 2, 3, 10, 11, 12, 13, 14 AND 15,

TOWNSHIP 162 NORTH, RANGE 98 WEST, 5TH PM
ALL OF SECTIONS 6, 7 AND 18,

together with those additional sections or governmental lots corresponding thereto as may be proven productive by wells drilled on lands within one mile of the boundaries of the field 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, and any intervening lands.

(4) The Ambrose-Bakken Pool is hereby redefined as the following described tracts of land in Divide County, North Dakota:

ZONE I (Exclusively for horizontal wells)

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 25 AND 36,

TOWNSHIP 162 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 1 AND 12.

ZONE II (Exclusively for horizontal wells)

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM

ALL OF SECTIONS 13, 14, 15, 16, 22, 23, 24, 26, 27, 34 AND 35,

TOWNSHIP 163 NORTH, RANGE 98 WEST, 5TH PM

ALL OF SECTIONS 18, 19, 30 AND 31,

TOWNSHIP 162 NORTH, RANGE 99 WEST, 5TH PM

ALL OF SECTIONS 2, 3, 10, 11, 13, 14 AND 15,

TOWNSHIP 162 NORTH, RANGE 98 WEST, 5TH PM

ALL OF SECTIONS 6, 7 AND 18,

together with those additional sections or governmental lots corresponding thereto as may be proven productive by wells drilled on lands within one mile of the boundaries of the field 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, and any intervening lands.

(5) The Ambrose-Bakken Pool is hereby defined as that accumulation of oil and gas found in the interval from 50 feet above the top of the Bakken Formation to 50 feet below the top of the Three Forks Formation within the limits of the field as set forth above.

(6) The proper spacing for the development of Zone I in the Ambrose-Bakken Pool is hereby set at one horizontal well per 1280 acres.

(7) All portions of the well bore not isolated by cement of any horizontal well hereafter drilled in Zone I in the Ambrose-Bakken Pool shall be no closer than 500 feet to the boundary of the spacing unit. Measurement inaccuracies in the directional survey equipment need not be considered except when deemed necessary by the Director.

(8) Sections 25 and 36, Township 163 North, Range 99 West; and Sections 1 and 12, Township 162 North, Range 99 West, Divide County, North Dakota, are hereby designated 1280-acre spacing units in Zone I in the Ambrose-Bakken Pool.

(9) Spacing units hereafter created in Zone I in the Ambrose-Bakken Pool shall consist of two adjacent governmental sections.

(10) Zone I in the Ambrose-Bakken Pool shall not be extended except by further order of the Commission after due notice and hearing.

(11) The proper spacing for the development of Zone II in the Ambrose-Bakken Pool is hereby set at one horizontal well per 640 acres.

(12) All portions of the well bore not isolated by cement of any horizontal well hereafter drilled in Zone II in the Ambrose-Bakken Pool shall be no closer than 500 feet to the boundary of the spacing unit. Measurement inaccuracies in the directional survey equipment need not be considered except when deemed necessary by the Director.

(13) Spacing units hereafter created in Zone II in the Ambrose-Bakken Pool shall consist of a governmental section.

(14) The operator of any horizontally drilled well in the Ambrose-Bakken Pool shall cause to be made a directional survey of the well bore. The directional survey contractor shall file a certified survey with the Commission within 30 days after completion of the well in accordance with NDAC Section 43-02-03-25. The survey shall be of sufficient quality to enable the Commission to determine the entire completion location of the well and its terminus.

(15) The Director is hereby authorized to exercise continuing jurisdiction to determine whether any well proposed or drilled upon any spacing unit herein established has justified the creation of such unit, to require amendments or modifications to the permit to drill for such well, and to deny a permit to drill in the event a well is proposed to be drilled in a manner inconsistent with the evidence that justified the spacing requirements in the Ambrose-Bakken Pool.

(16) The Commission shall have continuing jurisdiction in this matter and specifically reserves the authority, upon its own motion or the motion of any interested party, to: (1) review the spacing requirements for the Ambrose-Bakken Pool; (2) determine whether the separate zones of spacing established herein are warranted; and (3) make such further amendments or modifications to the spacing requirements for the Ambrose-Bakken Pool as the Commission deems appropriate.

(17) No well shall be drilled or produced in the Ambrose-Bakken Pool, as defined herein, except in conformity with the regulations above without special order of the Commission after due notice and hearing.

(18) The following rules concerning the casing, tubing and equipping of wells shall apply to the subsequent drilling and operation of wells in the Ambrose-Bakken Pool:

- (a) The surface casing shall consist of new or reconditioned pipe that has been previously tested to 1000 pounds per square inch. The casing shall be set and cemented at a point not less than 50 feet below the base of the Fox Hills Formation. Sufficient cement shall be used to fill the annular space outside the pipe to the surface of the ground, or the bottom of the cellar, and sufficient scratchers and centralizers shall be used to assure a good cement job. Cement shall be allowed to stand a minimum of 12 hours before drilling the plug or initiating tests. The quality of cement shall conform to the standards provided under NDAC Section 43-02-03-21;
- (b) The producing or oil string shall consist of new or reconditioned pipe that has been previously tested to 2000 pounds per square inch. Casing shall be set and cemented at a point not higher than the top of the producing formation, or at a point approved by the Director. Sufficient cement shall be used and applied in such a manner as to protect and isolate all formations containing oil and/or gas, protect the pipe through salt sections encountered, and isolate the Dakota-Lakota Series. The cement shall be allowed to stand a minimum of 15 hours before drilling the plug or initiating tests. The quality of cement shall conform to the

standards provided under NDAC Section 43-02-03-21. After cementing, the casing shall be tested by application of pump pressure of at least 1500 pounds per square inch. If, at the end of 30 minutes this pressure has dropped 150 pounds per square inch or more, the casing shall be repaired. 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 well-head fittings and connections shall have a working pressure in excess of that to which they are expected to be subjected; and,
- (d) All wells shall be equipped with tubing; a tubing packer must also be utilized in flowing wells unless a waiver is obtained from the Director after demonstrating the casing will not be subjected to excessive pressure or corrosion; all tubing shall be of sufficient internal diameter to allow the passage of a bottom hole pressure gauge for the purpose of obtaining bottom hole pressure measurements.

(19) The gas-oil ratio of all wells not connected to a gas gathering system shall be measured annually during the month of May. The reservoir pressure shall be measured within 45 days in all wells hereinafter completed in the Ambrose-Bakken Pool. Drill stem test pressures are acceptable for determining reservoir pressure. Pressure measurements shall be made at or adjusted to a subsea datum of 5740 feet after the well has been shut in for a minimum of 48 hours. All gas-oil ratio and reservoir pressure determinations shall be made by methods approved by the Director and reported to the Director within 15 days following the end of the month in which they are determined. The Director is authorized to waive these requirements if the necessity therefore can be demonstrated to his satisfaction. All additional gas-oil ratio and reservoir pressure determinations conducted on any well, but not specially required herein, shall be reported to the Director within 15 days following the end of the month in which they are determined.

(20) No salt water, drilling mud, crude oil, or waste oil shall be stored in pits in this field, except in an emergency, and approved by the Director.

(21) All wells in the Ambrose-Bakken Pool shall be allowed to produce at a maximum efficient rate for a period of 60 days commencing on the first day oil is produced through well-head equipment into tanks from the ultimate producing interval after casing has been run; after that, oil production from such wells shall not exceed an average of 200 barrels per day for a period of 60 days; after that, oil production from such wells shall not exceed an average of 150 barrels per day for a period of 60 days, thereafter, oil production from such wells shall not exceed an average of 100 barrels of oil per day; if and when such wells are connected to a gas gathering and processing facility the foregoing restrictions shall be removed, and the wells shall be allowed to produce at a maximum efficient rate. The Director is authorized to issue an administrative order allowing unrestricted production at a maximum efficient rate for a period not to exceed 120 days, commencing on the first day oil is produced through well-head equipment into tanks from the ultimate producing interval after casing has been run, if the necessity therefor can be demonstrated to his satisfaction.

(22) If the flaring of gas produced with crude oil from the Ambrose-Bakken Pool causes, or threatens to cause, degradation of ambient air quality, production from the pool shall be further restricted.

(23) This order covers all of the Ambrose-Bakken Pool, common source of supply of crude oil and/or natural gas as herein defined, and continues in full force and effect until further order of the Commission or until the last well in the pool has been plugged and abandoned.

Dated this 25th day of November, 2008.

INDUSTRIAL COMMISSION
STATE OF NORTH DAKOTA

By the Director, on behalf of the Commission

/s/ Lynn D. Helms, Director