

BEFORE THE INDUSTRIAL COMMISSION  
OF THE STATE OF NORTH DAKOTA

CASE NO. 21644  
ORDER NO. 23998

IN THE MATTER OF A HEARING CALLED ON A MOTION OF THE COMMISSION TO CONSIDER THE APPLICATION OF SAMSON RESOURCES CO. FOR AN ORDER EXTENDING THE FIELD BOUNDARIES AND AMENDING THE FIELD RULES FOR THE AMBROSE AND/OR BLOOMING PRAIRIE-BAKKEN POOLS TO CREATE AND ESTABLISH TWO OVERLAPPING 2560-ACRE SPACING UNITS COMPRISED OF SECTIONS 5, 6, 7, AND 8; AND SECTIONS 17, 18, 19, AND 20, T.162N., R.98W., DIVIDE COUNTY, ND, AUTHORIZING THE DRILLING OF A HORIZONTAL WELL ON OR NEAR THE SECTION LINE BETWEEN THE EXISTING 640-ACRE AND 1280-ACRE SPACING UNITS OF EACH PROPOSED OVERLAPPING 2560-ACRE SPACING UNIT, AND SUCH OTHER RELIEF AS IS APPROPRIATE.

ORDER OF THE COMMISSION

THE COMMISSION FINDS:

- (1) This cause came on for hearing at 9:00 a.m. on the 16th day of January, 2014.
- (2) The witnesses for Samson Resources Company (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 January 20, 2014; therefore, such testimony may be considered evidence.
- (3) Samson made application to the Commission for an order extending the field boundaries and amending the field rules for the Ambrose and/or Blooming Prairie-Bakken Pools to create and establish two overlapping 2560-acre spacing units comprised of Sections 5, 6, 7, and 8; and Sections 17, 18, 19, and 20, Township 162 North, Range 98 West, Divide County, North Dakota (Sections 5, 6, 7, 8, 17, 18, 19, and 20), authorizing the drilling of a horizontal well on or near the section line between the existing 640-acre and 1280-acre spacing units of each proposed overlapping 2560-acre spacing unit, and such other relief as is appropriate.
- (4) Section 5 is currently a 640-acre spacing unit in Zone I in the Blooming Prairie-Bakken Pool.

(5) Section 8 is currently a 640-acre spacing unit in Zone II in the Blooming Prairie-Bakken Pool.

(6) Sections 17 and 20 are currently a standup 1280-acre spacing unit in Zone IV in the Blooming Prairie-Bakken Pool.

(7) Sections 6 and 7; and Sections 18 and 19 are currently standup 1280-acre spacing units in Zone VII in the Ambrose-Bakken Pool.

(8) Sections 6 and 7, and Sections 1 and 12, Township 162 North, Range 99 West, Divide County, North Dakota, are also a 2560-acre spacing unit in Zone IX in the Ambrose-Bakken Pool.

(9) In 2560-acre spacing units for section line horizontal wells, which necessarily overlap into two fields, the Commission should establish the 2560-acre spacing unit in the first field alphabetically.

(10) Order No. 22966 entered in Case No. 20661, the most recent spacing order for the Ambrose-Bakken Pool, established proper spacing for the development of Zone I at one horizontal well per 640 acres, Zone II at up to three horizontal wells per 640 acres, Zone III at one horizontal well per 800 acres, Zone IV at up to seven horizontal wells per 800 acres, Zones V and VI at one horizontal well per 1280 acres, Zone VII at up to seven horizontal wells per 1280 acres, Zone VIII at a minimum of four horizontal wells, up to twelve horizontal wells, per 2080 acres, Zone IX at one horizontal well per 2560 acres, Zone X at up to thirteen horizontal wells per 2560 acres, Zone XI at two horizontal wells per 4160 acres, and Zone XII at two horizontal wells per 5120 acres.

(11) Samson's idealized development plan for the 2560-acre spacing unit described as Sections 5, 6, 7, and 8 is to drill a horizontal well in the first bench of the Three Forks Formation approximately down the north-south section lines between Sections 5 and 8; and Sections 6 and 7. Samson's idealized development plan for the 2560-acre spacing unit described as Sections 17, 18, 19, and 20 is to drill a horizontal well in the first bench of the Three Forks Formation approximately down the north-south section lines between Sections 17 and 20; and Sections 18 and 19. Utilization of horizontal drilling technology as proposed would result in the wells being completed at a location or locations not in compliance with current applicable spacing orders for the Ambrose or Blooming Prairie-Bakken Pools. The horizontal well designs proposed may be preliminary and could be changed for various reasons which is permissible as long as the horizontal well design still justifies the spacing unit.

(12) The Commission believes that lease-line wells should be located approximately on the section lines with some allowance for local reservoir conditions and existing Bakken Pool wells. Current setback requirements in Bakken Pools for standup 1280-acre spacing units require a 500-foot setback from the east and west boundaries, leaving a minimum 1000-foot window between adjacent horizontal wells in adjacent spacing units. Current setback requirements in Bakken Pools for 640-acre spacing units require a 500 or 200-foot setback from the spacing unit boundary depending on the orientation of the well bore, leaving a similar 1000-foot, 700-foot, or 400-foot window between adjacent horizontal wells in adjacent spacing units. The purpose of a lease-line horizontal well is to recover the reserves from these 1000-foot, 700-foot, or 400-foot windows

without unfairly encroaching on an existing horizontal well completed in a spacing unit or unfairly encroaching on the mineral or leasehold interest if the acreage is undeveloped or underdeveloped.

(13) The Commission believes the closer the lateral is to the interior north-south section lines in a 2560-acre spacing unit, the more likely it is to drain reserves equally from the adjoining spacing units.

(14) The Commission must balance its duty to prevent waste and its duty to protect correlative rights. The Commission must weigh all factors and then issue a decision which best protects the correlative rights of all interested parties.

(15) The Commission understands not all development on both sides of a north-south lease-line will be symmetrical in all cases; therefore, the Commission should allow this lease-line development to take place within a 500-foot corridor to best protect the correlative rights of all interested parties.

(16) The Commission should establish a consistent well location corridor for all lease-line wells in 2560-acre spacing units.

(17) There is at least one horizontal well completed in the Bakken Pool in each of the 640-acre spacing units described as Sections 5 and 8; and in each of the standup 1280-acre spacing units described as Sections 6 and 7; Sections 17 and 20; and Sections 18 and 19.

(18) There were no objections to this application.

(19) 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.

**IT IS THEREFORE ORDERED:**

(1) Sections 5\*, 6, 7, and 8\*; and Sections 17\*, 18, 19, and 20\*, Township 162 North, Range 98 West, Divide County, North Dakota, are hereby established as 2560-acre spacing units for the exclusive purpose of drilling one horizontal well on a north-south orientation within each said spacing unit within the Ambrose-Bakken Pool and Zone IX is hereby extended to include said spacing units. Existing and future vertical and directional wells drilled within the spacing units herein established shall not be subject to this order.

\*Sections 5, 8, 17, and 20 are within the Blooming Prairie Field.

(2) The Director is hereby authorized to exercise continuing jurisdiction in this matter to determine whether a horizontal well proposed or drilled upon the 2560-acre spacing units herein established has justified the creation of such unit, to require amendments or modifications to the permit to drill for such horizontal 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 such spacing unit.

(3) 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 (4) below shall not be subject to this order.

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

TOWNSHIP 164 NORTH, RANGE 99 WEST, 5TH PM  
ALL OF SECTIONS 25, 26, 27, 28, 29, 32, 33, 34, 35 AND 36,

TOWNSHIP 164 NORTH, RANGE 98 WEST, 5TH PM  
ALL OF SECTIONS 30 AND 31,

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM  
ALL OF SECTIONS 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35 AND 36,

TOWNSHIP 163 NORTH, RANGE 98 WEST, 5TH PM  
ALL OF SECTIONS 6, 7, 18, 19, 30 AND 31,

TOWNSHIP 162 NORTH, RANGE 99 WEST, 5TH PM  
ALL OF SECTIONS 1 THROUGH 36, INCLUSIVE,

TOWNSHIP 162 NORTH, RANGE 98 WEST, 5TH PM  
ALL OF SECTIONS 6, 7, 18, 19, 30 AND 31.

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

ZONE I (640H)

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM  
ALL OF SECTIONS 26, 27, 34 AND 35,

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

TOWNSHIP 162 NORTH, RANGE 99 WEST, 5TH PM  
ALL OF SECTIONS 2, 3, 10, 11, 13, 14, 15, 22, 23, 24 AND 36.

ZONE II (3/640H)

TOWNSHIP 162 NORTH, RANGE 99 WEST, 5TH PM  
ALL OF SECTIONS 4, 5, 8 AND 9.

ZONE III (800H-STANDUP)

TOWNSHIP 164 NORTH, RANGE 99 WEST, 5TH PM  
ALL OF SECTIONS 25, 26, 27, 28, 29, 32, 33, 34, 35 AND 36.

ZONE IV (7/800H-STANDUP)

TOWNSHIP 164 NORTH, RANGE 98 WEST, 5TH PM  
ALL OF SECTIONS 30 AND 31.

ZONE V (1280H-STANDUP)

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM  
ALL OF SECTIONS 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 14, 23, 24, 25 AND 36.

ZONE VI (1280H-LAYDOWN-OVERLAPPING 640S)

TOWNSHIP 162 NORTH, RANGE 99 WEST, 5TH PM  
ALL OF SECTIONS 4 AND 5.

ZONE VII (7/1280H-STANDUP)

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM  
ALL OF SECTIONS 15, 16, 17, 20, 21, 22, 27, 28, 29, 30, 31, 32, 33 AND 34,

TOWNSHIP 163 NORTH, RANGE 98 WEST, 5TH PM  
ALL OF SECTIONS 6, 7, 18, 19, 30 AND 31,

TOWNSHIP 162 NORTH, RANGE 99 WEST, 5TH PM  
ALL OF SECTIONS 1, 6, 7, 12, 16, 17, 18, 19, 20, 21, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35  
AND 36,

TOWNSHIP 162 NORTH, RANGE 98 WEST, 5TH PM  
ALL OF SECTIONS 6, 7, 18, 19, 30 AND 31.

ZONE VIII (4-12/2080H-STANDUP)

TOWNSHIP 164 NORTH, RANGE 99 WEST, 5TH PM  
ALL OF SECTIONS 25, 26, 27, 28, 29, 32, 33, 34, 35 AND 36,

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM  
ALL OF SECTIONS 1, 2, 3, 4, 5, 8, 9, 10, 11 AND 12.

ZONE IX (2560H-NORTH/SOUTH ORIENTATION)

TOWNSHIP 163 NORTH, RANGE 100 WEST, 5TH PM  
ALL OF SECTIONS 25\* AND 36\*,

\*Sections 25 and 36 are within the West Ambrose Field.

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM

ALL OF SECTIONS 14, 15, 16, 17, 18\*, 19\*, 20, 21, 22, 23, 26, 27, 28, 29, 30, 31, 32, 33, 34 AND 35,

\*Sections 18 and 19 are within the West Ambrose Field.

TOWNSHIP 162 NORTH, RANGE 99 WEST, 5TH PM

ALL OF SECTIONS 1 AND 12,

TOWNSHIP 162 NORTH, RANGE 98 WEST, 5TH PM

ALL OF SECTIONS 5\*, 6, 7, 8\*, 17\*, 18, 19 AND 20\*.

\*Sections 5, 8, 17, and 20 are within the Blooming Prairie Field.

ZONE X (13/2560H-STANDUP)

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM

ALL OF SECTIONS 13, 14, 23, 24, 25, 26, 35 AND 36.

ZONE XI (2/4160H-STANDUP)

TOWNSHIP 164 NORTH, RANGE 99 WEST, 5TH PM

ALL OF SECTIONS 25, 26, 29, 30\*, 31\*, 32, 35 AND 36,

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM

ALL OF SECTIONS 1, 2, 5, 6\*, 7\*, 8, 11 AND 12.

\*Sections 30, 31, 6, and 7 are within the West Ambrose Field.

ZONE XII (2/5120H-STANDUP)

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM

ALL OF SECTIONS 13, 14, 23, 24, 25, 26, 35 AND 36,

TOWNSHIP 163 NORTH, RANGE 98 WEST, 5TH PM

ALL OF SECTIONS 18, 19, 30 AND 31.

(6) 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 100 feet below the top of the Three Forks Formation within the limits of the field as set forth above, with an exception as noted in Zone IX below.

(7) The proper spacing for the development of Zone I in the Ambrose-Bakken Pool is hereby set at one horizontal well per 640-acre spacing unit.

(8) All portions of the well bore not isolated by cement of any horizontal well in Zone I in the Ambrose-Bakken Pool shall be no closer than 500 feet to the boundary of the spacing unit the lateral is most nearly parallel to and 200 feet to the boundary of the spacing unit the lateral is most nearly perpendicular to. Measurement inaccuracies in the directional survey equipment need not be considered except when deemed necessary by the Director.

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

(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 up to three horizontal wells per 640-acre spacing unit.

(12) All portions of the well bore not isolated by cement of any horizontal well in Zone II in the Ambrose-Bakken Pool shall be no closer than 500 feet to the boundary of the spacing unit the lateral is most nearly parallel to and 200 feet to the boundary of the spacing unit the lateral is most nearly perpendicular to. Measurement inaccuracies in the directional survey equipment when calculating the bottom hole location in a horizontal well need not be considered.

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

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

(15) The proper spacing for the development of Zone III in the Ambrose-Bakken Pool is hereby set at one horizontal well per standup 800-acre spacing unit.

(16) All portions of the well bore not isolated by cement of any horizontal well in Zone III in the Ambrose-Bakken Pool shall be no closer than 500 feet to the east or west boundary and 200 feet to the north or south boundary of the spacing unit. Measurement inaccuracies in the directional survey equipment need not be considered except when deemed necessary by the Director.

(17) Sections 25 and 36; Sections 26 and 35; Sections 27 and 34; Sections 28 and 33; and Sections 29 and 32, Township 164 North, Range 99 West, Divide County, North Dakota, are hereby designated standup 800-acre spacing units in Zone III in the Ambrose-Bakken Pool.

(18) Spacing units hereafter created in Zone III in the Ambrose-Bakken Pool shall be standup spacing units designated by the Commission.

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

(20) The proper spacing for the development of Zone IV in the Ambrose-Bakken Pool is hereby set at up to seven horizontal wells per standup 800-acre spacing unit.

(21) All portions of the well bore not isolated by cement of any horizontal well in Zone IV in the Ambrose-Bakken Pool shall be no closer than 500 feet to the east or west boundary and 200 feet to the north or south boundary of the spacing unit. Measurement inaccuracies in the directional survey equipment when calculating the bottom hole location in a horizontal well need not be considered.

(22) Sections 30 and 31, Township 164 North, Range 98 West, Divide County, North Dakota, are hereby designated a standup 800-acre spacing unit in Zone IV in the Ambrose-Bakken Pool.

(23) Spacing units hereafter created in Zone IV in the Ambrose-Bakken Pool shall be standup spacing units designated by the Commission.

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

(25) The proper spacing for the development of Zone V in the Ambrose-Bakken Pool is hereby set at one horizontal well per standup 1280-acre spacing unit.

(26) All portions of the well bore not isolated by cement of any horizontal well in Zone V in the Ambrose-Bakken Pool shall be no closer than 500 feet to the east or west boundary and 200 feet to the north or south boundary of the spacing unit. Measurement inaccuracies in the directional survey equipment need not be considered except when deemed necessary by the Director.

(27) Sections 1 and 12; Sections 2 and 11; Sections 3 and 10; Sections 4 and 9; Sections 5 and 8; Sections 13 and 24; Sections 14 and 23; and Sections 25 and 36, Township 163 North, Range 99 West, Divide County, North Dakota, are hereby designated standup 1280-acre spacing units in Zone V in the Ambrose-Bakken Pool.

(28) Spacing units hereafter created in Zone V in the Ambrose-Bakken Pool shall be standup spacing units consisting of two adjacent governmental sections.

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

(30) The proper spacing for the development of Zone VI in the Ambrose-Bakken Pool is hereby set at one horizontal well per laydown 1280-acre spacing unit.

(31) All portions of the well bore not isolated by cement of any horizontal well in Zone VI in the Ambrose-Bakken Pool shall be no closer than 500 feet to the east or west boundary and 200 feet to the north or south boundary of the spacing unit. Measurement inaccuracies in the directional survey equipment need not be considered except when deemed necessary by the Director.

(32) Sections 4 and 5, Township 162 North, Range 99 West, Divide County, North Dakota, are hereby designated a laydown 1280-acre spacing unit in Zone VI in the Ambrose-Bakken Pool.

(33) Spacing units hereafter created in Zone VI in the Ambrose-Bakken Pool shall be laydown spacing units consisting of two adjacent governmental sections which overlap 640-acre spacing units.

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



(35) The proper spacing for the development of Zone VII in the Ambrose-Bakken Pool is hereby set at up to seven horizontal wells per standup 1280-acre spacing unit.

(36) All portions of the well bore not isolated by cement of any horizontal well in Zone VII in the Ambrose-Bakken Pool shall be no closer than 500 feet to the east or west boundary and 200 feet to the north or south boundary of the spacing unit. Measurement inaccuracies in the directional survey equipment when calculating the bottom hole location in a horizontal well need not be considered.

(37) Sections 15 and 22; Sections 16 and 21; Sections 17 and 20; Sections 27 and 34; Sections 28 and 33; Sections 29 and 32; Sections 30 and 31, Township 163 North, Range 99 West; Sections 6 and 7; Sections 18 and 19; Sections 30 and 31, Township 163 North, Range 98 West; Sections 1 and 12; Sections 6 and 7; Sections 16 and 21; Sections 17 and 20; Sections 18 and 19; Sections 25 and 36; Sections 26 and 35; Sections 27 and 34; Sections 28 and 33; Sections 29 and 32; Sections 30 and 31, Township 162 North, Range 99 West; Sections 6 and 7; Sections 18 and 19; and Sections 30 and 31, Township 162 North, Range 98 West, Divide County, North Dakota, are hereby designated standup 1280-acre spacing units in Zone VII in the Ambrose-Bakken Pool.

(38) Spacing units hereafter created in Zone VII in the Ambrose-Bakken Pool shall be standup spacing units consisting of two adjacent governmental sections.

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

(40) The proper spacing for the development of Zone VIII in the Ambrose-Bakken Pool is hereby set at a minimum of four horizontal wells, up to twelve horizontal wells, per standup 2080-acre spacing unit.

(41) All portions of the well bore not isolated by cement of any horizontal well in Zone VIII in the Ambrose-Bakken Pool shall be no closer than 500 feet to the east or west boundary and 200 feet to the north or south boundary of the spacing unit. Measurement inaccuracies in the directional survey equipment when calculating the bottom hole location in a horizontal well need not be considered.

(42) Sections 25 and 36, Township 164 North, Range 99 West and Sections 1 and 12, Township 163 North, Range 99 West; Sections 26 and 35, Township 164 North, Range 99 West and Sections 2 and 11, Township 163 North, Range 99 West; Sections 27 and 34, Township 164 North, Range 99 West and Sections 3 and 10, Township 163 North, Range 99 West; Sections 28 and 33, Township 164 North, Range 99 West and Sections 4 and 9, Township 163 North, Range 99 West; and Sections 29 and 32, Township 164 North, Range 99 West and Sections 5 and 8, Township 163 North, Range 99 West, Divide County, North Dakota, are hereby designated standup 2080-acre spacing units in Zone VIII in the Ambrose-Bakken Pool.

(43) A mirror offset horizontal well to the Le Mans #11-2-163-99H well (File No. 20341) shall be drilled and completed in the standup 800-acre spacing unit described as Sections 26 and 35, Township 164 North, Range 99 West; Divide County, North Dakota; a mirror offset horizontal well to the Biscayne #0310-04TFH well (File No. 21363) shall be drilled and completed in the standup 800-acre spacing unit described as Sections 27 and 34, Township 164 North, Range 99 West;

Divide County, North Dakota; a mirror offset horizontal well to the Skyline #4-9-163-99H well (File No. 20646) shall be drilled and completed in the standup 800-acre spacing unit described as Sections 28 and 33, Township 164 North, Range 99 West; Divide County, North Dakota; and a mirror offset horizontal well to the Thomte #8-5-163-99H well (File No. 20837) shall be drilled and completed in the standup 800-acre spacing unit described as Sections 29 and 32, Township 164 North, Range 99 West, Divide County, North Dakota, within twelve months of completing the first horizontal well in each respective standup 2080-acre spacing unit. A minimum of four horizontal wells shall be drilled and completed within each proposed standup 2080-acre spacing unit within twenty-four months from when the first horizontal well is completed in each respective standup 2080-acre spacing unit. If these conditions are not met, the Commission shall schedule the matter for consideration to reduce the size of the spacing unit.

(44) Spacing units hereafter created in Zone VIII in the Ambrose-Bakken Pool shall be standup spacing units designated by the Commission.

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

(46) The proper spacing for the development of Zone IX in the Ambrose-Bakken Pool is hereby set at one horizontal well per 2560-acre spacing unit drilled on a north-south orientation.

(47) The Ambrose-Bakken Pool in Zone IX is hereby defined as that accumulation of oil and gas found in the interval from the base of the Bakken Formation to 100 feet below the top of the Three Forks Formation in those 2560-acre spacing units described in paragraph (49) below. The Ambrose-Bakken Pool in the spacing units described in paragraph (50) below is as described in paragraph (6) above.

(48) All portions of the well bore not isolated by cement of any horizontal well in Zone IX in the Ambrose-Bakken Pool shall be located approximately down the north-south axis and no closer than 200 feet to the north or south boundary of the spacing unit. Measurement inaccuracies in the directional survey equipment need not be considered except when deemed necessary by the Director.

(49) Sections 16, 17, 20, and 21; Sections 28, 29, 32, and 33; Sections 29, 30, 31, and 32, Township 163 North, Range 99 West; and Sections 25\* and 36\*, Township 163 North, Range 100 West and Sections 30 and 31, Township 163 North, Range 99 West, Divide County, North Dakota, are hereby designated 2560-acre spacing units in Zone IX in the Ambrose-Bakken Pool.

\*Sections 25 and 36 are within the West Ambrose Field.

(50) Sections 14, 15, 22, and 23; Sections 15, 16, 21, and 22; Sections 17, 18\*, 19\*, and 20; Sections 26, 27, 34, and 35, Township 163 North, Range 99 West; Sections 1 and 12, Township 162

\*Sections 18 and 19 are within the West Ambrose Field.

North, Range 99 West and Sections 6 and 7, Township 162 North, Range 98 West; Sections 5\*\*, 6, 7, and 8\*\*; and Sections 17\*\*, 18, 19, and 20\*\*, Township 162 North, Range 98 West, Divide County, North Dakota, are hereby designated 2560-acre spacing units in Zone IX in the Ambrose-Bakken Pool.

\*\*Sections 5, 8, 17, and 20 are within the Blooming Prairie Field.

(51) Spacing units hereafter created in Zone IX in the Ambrose-Bakken Pool shall consist of four adjacent governmental sections designated by the Commission.

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

(53) The proper spacing for the development of Zone X in the Ambrose-Bakken Pool is hereby set at up to thirteen horizontal wells per standup 2560-acre spacing unit.

(54) All portions of the well bore not isolated by cement of any horizontal well in Zone X in the Ambrose-Bakken Pool shall be no closer than 500 feet to the east or west boundary and 200 feet to the north or south boundary of the spacing unit. Measurement inaccuracies in the directional survey equipment when calculating the bottom hole location in a horizontal well need not be considered.

(55) Sections 13, 24, 25, and 36; and Sections 14, 23, 26, and 35, Township 163 North, Range 99 West, Divide County, North Dakota, are hereby designated standup 2560-acre spacing units in Zone X in the Ambrose-Bakken Pool.

(56) Spacing units hereafter created in Zone X in the Ambrose-Bakken Pool shall be standup spacing units consisting of four adjacent governmental sections.

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

(58) The proper spacing for the development of Zone XI in the Ambrose-Bakken Pool is hereby set at two horizontal wells per standup 4160-acre spacing unit.

(59) All portions of the well bore not isolated by cement of any horizontal well in Zone XI in the Ambrose-Bakken Pool shall be located approximately down the north-south axis and no closer than 200 feet to the north or south boundary of the spacing unit. Measurement inaccuracies in the directional survey equipment need not be considered except when deemed necessary by the Director.

(60) Sections 25, 26, 35, and 36, Township 164 North, Range 99 West and Sections 1, 2, 11, and 12, Township 163 North, Range 99 West; and Sections 29, 30\*, 31\*, and 32, Township 164 North, Range 99 West and Sections 5, 6\*, 7\*, and 8, Township 163 North, Range 99 West, Divide County, North Dakota, are hereby designated standup 4160-acre spacing units in Zone XI in the Ambrose-Bakken Pool.

\*Sections 30, 31, 6, and 7 are within the West Ambrose Field.

(61) A horizontal well shall be completed in the standup 800-acre spacing unit described as Sections 26 and 35, Township 164 North, Range 99 West, Divide County, North Dakota, prior to completing any horizontal well in the standup 4160-acre spacing unit described as Sections 25, 26, 35, and 36, Township 164 North, Range 99 West and Sections 1, 2, 11, and 12, Township 163 North, Range 99 West, Divide County, North Dakota.

(62) In order to protect correlative rights and to justify the standup 4160-acre spacing units described as Sections 25, 26, 35, and 36, Township 164 North, Range 99 West and Sections 1, 2, 11, and 12, Township 163 North, Range 99 West; and Sections 29, 30\*, 31\*, and 32, Township 164 North, Range 99 West and Sections 5, 6\*, 7\*, and 8, Township 163 North, Range 99 West, Divide County, North Dakota, the two horizontal wells shall be drilled consecutively and target the same zone.

\*Sections 30, 31, 6, and 7 are within the West Ambrose Field.

(63) Spacing units hereafter created in Zone XI in the Ambrose-Bakken Pool shall be designated by the Commission.

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

(65) The proper spacing for the development of Zone XII in the Ambrose-Bakken Pool is hereby set at two horizontal wells per standup 5120-acre spacing unit.

(66) All portions of the well bore not isolated by cement of any horizontal well in Zone XII in the Ambrose-Bakken Pool shall be located approximately down the north-south axis and no closer than 200 feet to the north or south boundary of the spacing unit. Measurement inaccuracies in the directional survey equipment need not be considered except when deemed necessary by the Director.

(67) Sections 13, 14, 23, 24, 25, 26, 35, and 36, Township 163 North, Range 99 West; and Sections 13, 24, 25, and 36, Township 163 North, Range 99 West and Sections 18, 19, 30, and 31, Township 163 North, Range 98 West, Divide County, North Dakota, are hereby designated standup 5120-acre spacing units in Zone XII in the Ambrose-Bakken Pool.

(68) In order to protect correlative rights and to justify the standup 5120-acre spacing units described as Sections 13, 14, 23, 24, 25, 26, 35, and 36, Township 163 North, Range 99 West; and Sections 13, 24, 25, and 36, Township 163 North, Range 99 West and Sections 18, 19, 30, and 31, Township 163 North, Range 98 West, Divide County, North Dakota, the two horizontal wells shall be drilled consecutively and target the same zone.

(69) Spacing units hereafter created in Zone XII in the Ambrose-Bakken Pool shall consist of eight adjacent governmental sections designated by the Commission.

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

(71) 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.

(72) 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.

(73) 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.

(74) 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.

(75) 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. After cementing, the casing shall be tested by application of pump pressure of at least 1000 pounds per square inch. If, at the end of 30 minutes this pressure has dropped 100 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;
- (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.

(76) 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 in any well completed in the Ambrose-Bakken Pool if deemed necessary by the Director. 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. 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.

(77) 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.

(78) 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.

(79) 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.

(80) This order shall cover 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 14th day of March, 2014.

INDUSTRIAL COMMISSION  
STATE OF NORTH DAKOTA

By the Director, on behalf of the Commission

/s/ Lynn D. Helms, Director