

BEFORE THE INDUSTRIAL COMMISSION  
OF THE STATE OF NORTH DAKOTA

CASE NO. 19792  
ORDER NO. 22099

IN THE MATTER OF A HEARING CALLED ON A MOTION OF THE COMMISSION TO CONSIDER THE APPLICATION OF SM ENERGY CO. FOR AN ORDER AMENDING THE APPLICABLE ORDERS FOR THE AMBROSE, WEST AMBROSE, AND COLGAN-BAKKEN POOLS (1) TO ALLOW UP TO EIGHT HORIZONTAL WELLS TO BE DRILLED ON SOME OR ALL OF THE 1280-ACRE SPACING UNITS WITHIN SAID POOLS; (2) TO ESTABLISH TWENTY-TWO OVERLAPPING 2560-ACRE SPACING UNITS IN ONE OR MORE OF SAID POOLS AND ALLOW ONE OR MORE HORIZONTAL WELLS TO BE DRILLED THEREON, SAID OVERLAPPING SPACING UNITS DESCRIBED AS SECTIONS 16, 17, 20, AND 21; SECTIONS 17, 18, 19, AND 20; SECTIONS 28, 29, 32, AND 33; SECTIONS 29, 30, 31, AND 32, T.163N., R.99W.; SECTIONS 18 AND 19, T.163N., R.99W. AND SECTIONS 13 AND 24, T.163N., R.100W.; SECTIONS 30 AND 31, T.163N., R.99W. AND SECTIONS 25 AND 36, T.163N., R.100W.; SECTIONS 1, 2, 11, AND 12; SECTIONS 2, 3, 10, AND 11; SECTIONS 3, 4, 9, AND 10; SECTIONS 4, 5, 8, AND 9; SECTIONS 5, 6, 7, AND 8; SECTIONS 13, 14, 23, AND 24; SECTIONS 14, 15, 22, AND 23; SECTIONS 15, 16, 21, AND 22; SECTIONS 16, 17, 20, AND 21; SECTIONS 17, 18, 19, AND 20; SECTIONS 25, 26, 35, AND 36; SECTIONS 26, 27, 34, AND 35; SECTIONS 27, 28, 33, AND 34, T.163N., R.100W.; SECTIONS 18 AND 19, T.163N., R.100W. AND SECTIONS 13 AND 24, T.163N., R.101W.; SECTIONS 13, 14, 23, AND 24; AND SECTIONS 14, 15, 22, AND 23, T.163N., R.101W.; DIVIDE COUNTY, ND; AND (3) GRANTING SUCH OTHER RELIEF AS MAY BE APPROPRIATE.

ORDER OF THE COMMISSION

THE COMMISSION FINDS:

- (1) This cause came on for hearing at 9:00 a.m. on the 27th day of March, 2013.
- (2) The witnesses for SM Energy Company (SM Energy) 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 April 8, 2013; therefore, such testimony may be considered evidence.
- (3) SM Energy made application to the Commission for an order amending the applicable orders for the Ambrose, West Ambrose, and Colgan-Bakken Pools to allow up to eight horizontal wells to be drilled on some or all of the 1280-acre spacing units within said pools; to establish twenty-two overlapping 2560-acre spacing units in one or more of said pools and allow one or more horizontal wells to be drilled thereon, said overlapping spacing units described as Sections 13, 14, 23, and 24; Sections 14, 15, 22, and 23, Township 163 North, Range 101 West; Sections 13 and 24, Township 163 North, Range 101 West and Sections 18 and 19, Township 163 North, Range 100 West; Sections 1, 2, 11, and 12; Sections 2, 3, 10, and 11; Sections 3, 4, 9, and 10; Sections 4, 5, 8, and 9; Sections 5, 6, 7, and 8; Sections 13, 14, 23, and 24; Sections 14, 15, 22, and 23; Sections 15, 16, 21, and 22; Sections 16, 17, 20, and 21; Sections 17, 18, 19, and 20; Sections 25, 26, 35, and 36; Sections 26, 27, 34, and 35; Sections 27, 28, 33, and 34, Township 163 North, Range 100 West; Sections 13 and 24, Township 163 North, Range 100 West and Sections 18 and 19, Township 163 North, Range 99 West; Sections 25 and 36, Township 163 North, Range 100 West and Sections 30 and 31, Township 163 North, Range 99 West; Sections 16, 17, 20, and 21; Sections 17, 18, 19, and 20; Sections 28, 29, 32, and 33; and Sections 29, 30, 31, and 32, Township 163 North, Range 99 West, Divide County, North Dakota; and granting such other relief as may be appropriate.
- (4) Order No. 21817 entered in Case No. 19515, the most recent spacing order for the Colgan-Bakken Pool, established temporary spacing for the development of Zone I at up to four horizontal wells per 800 acres, Zones II and III at up to four horizontal wells per 1280 acres, and Zone IV at one horizontal well per 1600 acres.
- (5) Order No. 20827 entered in Case No. 18451, the most recent spacing order for the West Ambrose-Bakken Pool, established proper spacing for the development of Zone I at one horizontal well per 800 acres, Zone II at one horizontal well per 1280 acres, Zone III at up to four horizontal wells per 1280 acres, Zone IV at up to seven horizontal wells per 1280 acres, Zone V at one horizontal well per 1600 acres, and Zone VI at a minimum of four horizontal wells, up to twelve horizontal wells, per 2080 acres.
- (6) Order No. 20561 entered in Case No. 18292, 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 three horizontal wells per 1280 acres, Zone VIII at up to four horizontal wells per 1280 acres, Zone IX at up to seven horizontal wells per 1280 acres, Zone X at a minimum of four horizontal wells, up to twelve horizontal wells, per 2080 acres, and Zone XI at up to thirteen horizontal wells per 2560 acres.

(7) SM Energy operates the following standup 1280-acre spacing units in Zone II in the Colgan-Bakken Pool: Sections 13 and 24; Sections 14 and 23; Sections 15 and 22, Township 163 North, Range 101 West; Sections 5 and 8; Sections 6 and 7; Sections 17 and 20; and Sections 18 and 19, Township 163 North, Range 100 West, Divide County, North Dakota.

(8) SM Energy operates the following standup 1280-acre spacing units in Zone III in the West Ambrose-Bakken Pool: Sections 1 and 12; Sections 2 and 11; Sections 3 and 10; Sections 4 and 9; Sections 13 and 24; Sections 14 and 23; Sections 15 and 22; Sections 16 and 21; Sections 26 and 35; Sections 27 and 34; Sections 28 and 33, Township 163 North, Range 100 West; and Sections 18 and 19, Township 163 North, Range 99 West, Divide County, North Dakota.

(9) SM Energy operates the following standup 1280-acre spacing unit in Zone IV in the West Ambrose-Bakken Pool: Sections 25 and 36, Township 163 North, Range 100 West, Divide County, North Dakota.

(10) SM Energy operates the following standup 1280-acre spacing units in Zone VIII in the Ambrose-Bakken Pool: Sections 16 and 21; Sections 17 and 20; Sections 28 and 33; Sections 29 and 32; and Sections 30 and 31, Township 163 North, Range 99 West, Divide County, North Dakota. Said lands comprise Zone VIII in its entirety.

(11) SM Energy's idealized development plan for each standup 1280-acre spacing unit described in paragraphs (7), (8), (9), and (10) above is to drill seven horizontal wells approximately 660 feet apart parallel to the long axis of the spacing unit, four in the middle member of the Bakken Formation alternating with three in the upper Three Forks Formation. 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 Colgan, West Ambrose, or Ambrose-Bakken Pools. The horizontal well design 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) SM Energy's general idealized development plan for each 2560-acre spacing unit described as Sections 13, 14, 23, and 24; Sections 14, 15, 22, and 23, Township 163 North, Range 101 West; Sections 13 and 24, Township 163 North, Range 101 West and Sections 18 and 19, Township 163 North, Range 100 West; Sections 1, 2, 11, and 12; Sections 2, 3, 10, and 11; Sections 3, 4, 9, and 10; Sections 4, 5, 8, and 9; Sections 5, 6, 7, and 8; Sections 13, 14, 23, and 24; Sections 14, 15, 22, and 23; Sections 15, 16, 21, and 22; Sections 16, 17, 20, and 21; Sections 17, 18, 19, and 20; Sections 25, 26, 35, and 36; Sections 26, 27, 34, and 35; Sections 27, 28, 33, and 34, Township 163 North, Range 100 West; Sections 13 and 24, Township 163 North, Range 100 West and Sections 18 and 19, Township 163 North, Range 99 West; Sections 25 and 36, Township 163 North, Range 100 West and Sections 30 and 31, Township 163 North, Range 99 West; Sections 16, 17, 20, and 21; Sections 17, 18, 19, and 20; Sections 28, 29, 32, and 33; and Sections 29, 30, 31, and 32, Township 163 North, Range 99 West, Divide County, North Dakota, is to drill a horizontal well (lease-line well) in the upper Three Forks Formation down the north-south section lines between the corresponding standup 1280-acre spacing units. 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 Colgan, West Ambrose, or Ambrose-Bakken Pools. The

horizontal well design 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.

(13) 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.

(14) SM Energy requested that Three Forks Formation lease-line horizontal wells in the proposed 2560-acre spacing units be located in a 400-foot corridor and middle member Bakken Formation lease-line horizontal wells in the proposed 2560-acre spacing units be located in an 800-foot corridor; with the exception of the two 2560-acre spacing units described as Sections 1, 2, 11, and 12, Township 163 North, Range 100 West; and Sections 17, 18, 19, and 20, Township 163 North, Range 99 West, Divide County, North Dakota, where they requested an 800-foot corridor for a Three Forks Formation lease-line well.

(15) Murex Petroleum Corporation (Murex) appeared at the hearing in opposition to the 400-foot and 800-foot corridors, instead suggesting a 200-foot corridor for a lease-line well.

(16) SM Energy testified they have not drilled any horizontal wells in the middle member of the Bakken Formation in the Colgan, West Ambrose, or Ambrose-Bakken Pools although there have been several drilled in the area. The majority of the development has been in the upper Three Forks Formation. Both SM Energy and Murex agreed the economic viability of horizontal wells in the middle member of the Bakken Formation in this area is uncertain.

(17) SM Energy requested up to two horizontal lease-line wells per 2560-acre spacing unit to allow flexibility to drill middle member Bakken Formation lease-line wells if found economic.

(18) SM Energy testified their development goal is to space the laterals equidistant, with 1200 to 1300 feet between laterals in the same zone and consequently approximately 600 feet between adjacent laterals in separate zones. SM Energy testified this development scenario is based upon reservoir performance and micro-seismic information and believe it will allow them to properly manage the reservoirs and drainage between laterals. SM Energy stated their goal of laterals spaced equidistant will require locating of Three Forks Formation lease-line wells in Sections 1 and 12, Township 163 North, Range 100 West; and Sections 17 and 20, Township 163 North, Range 99 West, Divide County, North Dakota, up to 400 feet off the adjacent section line.

(19) Murex's leasehold interest in Sections 1 and 12, Township 163 North, Range 100 West; and Sections 2 and 11, Township 163 North, Range 100 West, Divide County, North Dakota, is 9.3848% and 0.1%, respectively.

(20) SM Energy testified they believe the fracture half-length is 600 to 700 feet in their fracture stimulated wells and they have seen pressure and fluid communication between wells during fracture stimulation. SM Energy and Murex agreed that fracture growth is likely preferential towards lower pressure in the reservoir. SM Energy believes preferential fracture growth in one direction because laterals in the same zone are too closely spaced will result in under-stimulated reservoir in the opposite direction resulting in bypassed reserves, and they desire to stimulate as much of the reservoir as possible.

(21) SM Energy testified they have only seen minor interference between laterals greater than 1100 feet apart and would not likely drill wells less than 1000 feet apart, since they believe it would cause waste.

(22) Murex believes the majority of reserves in a horizontal well located 400 feet from the interior north-south section lines in a 2560-acre spacing unit will come from the 1280-acre spacing unit in which it is located and that such a well should be an exception location well. Murex 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 both standup 1280-acre spacing units.

(23) SM Energy agreed a horizontal lease-line well located in a 200-foot corridor better protects correlative rights but would not drill said well where it does not meet their goal of spacing the laterals equidistant, with 1200 to 1300 feet between laterals in the same zone.

(24) Murex does not believe a horizontal well located 400 feet from the interior north-south section lines in a 2560-acre spacing unit protects correlative rights.

(25) Murex testified it is premature to consider middle member Bakken Formation wells as lease-line wells.

(26) The Commission agrees that middle member Bakken Formation wells should not be allowed as lease-line wells until their economic viability is established.

(27) 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. The purpose of a lease-line horizontal well is to recover the reserves from this 1000-foot window without unfairly encroaching on an existing horizontal well completed in a 1280-acre spacing unit or unfairly encroaching on the mineral or leasehold interest if the acreage is undeveloped or underdeveloped.

(28) 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.

(29) 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.

(30) The Commission understands SM Energy's goal of equidistant spacing between laterals but was provided insufficient evidence detailing fracture geometry and interference that would justify a horizontal lease-line well in a 2560-acre spacing unit being as far as 400 feet from the interior north-south section lines while still protecting the correlative rights of all interested parties.

(31) Establishment of the proposed 2560-acre spacing units with one horizontal well allowed in the Three Forks Formation will prevent waste, avoid the drilling of unnecessary wells, and best protect the correlative rights of all interested parties.

(32) If SM Energy'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 13 and 24; Sections 14 and 23; Sections 15 and 22, Township 163 North, Range 101 West; Sections 5 and 8; Sections 6 and 7; Sections 17 and 20; and Sections 18 and 19, Township 163 North, Range 100 West, Divide County, North Dakota, are hereby established as standup 1280-acre spacing units for the exclusive purpose of drilling up to seven horizontal wells within each said spacing unit within the Colgan-Bakken Pool and Zone III is hereby redefined 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.

(2) Sections 1 and 12; Sections 2 and 11; Sections 3 and 10; Sections 4 and 9; Sections 13 and 24; Sections 14 and 23; Sections 15 and 22; Sections 16 and 21; Sections 26 and 35; Sections 27 and 34; Sections 28 and 33, Township 163 North, Range 100 West; and Sections 18 and 19, Township 163 North, Range 99 West, Divide County, North Dakota, are hereby established as standup 1280-acre spacing units for the exclusive purpose of drilling up to seven horizontal wells within each said spacing unit within the West Ambrose-Bakken Pool and Zone IV 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.

(3) Sections 16 and 21; Sections 17 and 20; Sections 28 and 33; Sections 29 and 32; and Sections 30 and 31, Township 163 North, Range 99 West, Divide County, North Dakota, are hereby established as standup 1280-acre spacing units for the exclusive purpose of drilling up to seven horizontal wells within each said spacing unit within the Ambrose-Bakken Pool and Zone VII is hereby redefined 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.

(4) Sections 13, 14, 23, and 24; Sections 14, 15, 22, and 23, Township 163 North, Range 101 West; Sections 13 and 24, Township 163 North, Range 101 West and Sections 18 and 19, Township 163 North, Range 100 West; Sections 4\*, 5, 8, and 9\*; Sections 5, 6, 7, and 8; Sections 16\*, 17, 20, and 21\*; and Sections 17, 18, 19, and 20; Township 163 North, Range 100 West, Divide County, North Dakota, are hereby established as 2560-acre spacing units for the exclusive purpose of drilling one horizontal well within each said spacing unit within the Colgan-Bakken Pool and Zone VII is hereby created 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 4, 9, 16, and 21 are within the West Ambrose Field.

(5) Sections 1, 2, 11, and 12; Sections 2, 3, 10, and 11; Sections 3, 4, 9, and 10; Sections 13, 14, 23, and 24; Sections 14, 15, 22, and 23; Sections 15, 16, 21, and 22; Sections 25, 26, 35, and 36; Sections 26, 27, 34, and 35; Sections 27, 28, 33, and 34, Township 163 North, Range 100 West; and

Sections 13 and 24, Township 163 North, Range 100 West and Sections 18 and 19, Township 163 North, Range 99 West, Divide County, North Dakota, are hereby established as 2560-acre spacing units for the exclusive purpose of drilling one horizontal well within each said spacing unit within the West Ambrose-Bakken Pool and Zone VII is hereby created 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.

(6) Sections 25\* and 36\*, Township 163 North, Range 100 West and Sections 30 and 31, Township 163 North, Range 99 West; Sections 16, 17, 20, and 21; Sections 17, 18\*, 19\*, and 20; Sections 28, 29, 32, and 33; and Sections 29, 30, 31, and 32, Township 163 North, Range 99 West, Divide County, North Dakota, are hereby established as 2560-acre spacing units for the exclusive purpose of drilling one horizontal well within each said spacing unit within the Ambrose-Bakken Pool and Zone IX is hereby redefined 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 25, 36, 18, and 19 are within the West Ambrose Field.

(7) Provisions established herein for the Colgan-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 (8) below shall not be subject to this order.

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

TOWNSHIP 164 NORTH, RANGE 101 WEST, 5TH PM  
ALL OF SECTIONS 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35 AND 36,

TOWNSHIP 164 NORTH, RANGE 100 WEST, 5TH PM  
ALL OF SECTIONS 29, 30, 31 AND 32,

TOWNSHIP 163 NORTH, RANGE 101 WEST, 5TH PM  
ALL OF SECTIONS 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 21, 22, 23 AND 24,

TOWNSHIP 163 NORTH, RANGE 100 WEST, 5TH PM  
ALL OF SECTIONS 5, 6, 7, 8, 17, 18, 19 AND 20.

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

ZONE I (8/800H-STANDUP)

TOWNSHIP 164 NORTH, RANGE 101 WEST, 5TH PM  
ALL OF SECTIONS 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35 AND 36.

ZONE II (4/1280H-LAYDOWN)

TOWNSHIP 163 NORTH, RANGE 101 WEST, 5TH PM  
ALL OF SECTIONS 7 AND 8.

ZONE III (7/1280H-STANDUP)

TOWNSHIP 163 NORTH, RANGE 101 WEST, 5TH PM  
ALL OF SECTIONS 13, 14, 15, 22, 23 AND 24,

TOWNSHIP 163 NORTH, RANGE 100 WEST, 5TH PM  
ALL OF SECTIONS 5, 6, 7, 8, 17, 18, 19 AND 20.

ZONE IV (8/1280H-STANDUP)

TOWNSHIP 163 NORTH, RANGE 101 WEST, 5TH PM  
ALL OF SECTIONS 1, 2, 3, 4, 9, 10, 11, 12, 16 AND 21.

ZONE V (8/1280H-LAYDOWN)

TOWNSHIP 163 NORTH, RANGE 101 WEST, 5TH PM  
ALL OF SECTIONS 5 AND 6.

ZONE VI (1600H-LAYDOWN)

TOWNSHIP 164 NORTH, RANGE 100 WEST, 5TH PM  
ALL OF SECTIONS 29, 30, 31 AND 32.

ZONE VII (2560H)

TOWNSHIP 163 NORTH, RANGE 101 WEST, 5TH PM  
ALL OF SECTIONS 13, 14, 15, 22, 23 AND 24,

TOWNSHIP 163 NORTH, RANGE 100 WEST, 5TH PM  
ALL OF SECTIONS 4\*, 5, 6, 7, 8, 9\*, 16\*, 17, 18, 19, 20 AND 21\*.

\*Sections 4, 9, 16, and 21 are within the West Ambrose Field.

(10) The Colgan-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 VII below.

(11) The temporary spacing for the development of Zone I in the Colgan-Bakken Pool is hereby set at up to eight horizontal wells per standup 800-acre spacing unit.

(12) All portions of the well bore not isolated by cement of any horizontal well in Zone I in the Colgan-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.



(13) Sections 25 and 36; Sections 26 and 35; Sections 27 and 34; Sections 28 and 33; Sections 29 and 32; and Sections 30 and 31, Township 164 North, Range 101 West, Divide County, North Dakota, are hereby designated standup 800-acre spacing units in Zone I in the Colgan-Bakken Pool.

(14) Spacing units hereafter created in Zone I in the Colgan-Bakken Pool shall be standup spacing units designated by the Commission.

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

(16) The temporary spacing for the development of Zone II in the Colgan-Bakken Pool is hereby set at up to four horizontal wells per laydown 1280-acre spacing unit.

(17) All portions of the well bore not isolated by cement of any horizontal well in Zone II in the Colgan-Bakken Pool shall be no closer than 500 feet to the north or south boundary and 200 feet to the east or west 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.

(18) Sections 7 and 8, Township 163 North, Range 101 West, Divide County, North Dakota, are hereby designated a laydown 1280-acre spacing unit in Zone II in the Colgan-Bakken Pool.

(19) Spacing units hereafter created in Zone II in the Colgan-Bakken Pool shall be laydown spacing units consisting of two adjacent governmental sections.

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

(21) The temporary spacing for the development of Zone III in the Colgan-Bakken Pool is hereby set at up to seven horizontal wells per standup 1280-acre spacing unit.

(22) All portions of the well bore not isolated by cement of any horizontal well in Zone III in the Colgan-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.

(23) Sections 13 and 24; Sections 14 and 23; Sections 15 and 22, Township 163 North, Range 101 West; Sections 5 and 8; Sections 6 and 7; Sections 17 and 20; and Sections 18 and 19, Township 163 North, Range 100 West, Divide County, North Dakota, are hereby designated standup 1280-acre spacing units in Zone III in the Colgan-Bakken Pool.

(24) Spacing units hereafter created in Zone III in the Colgan-Bakken Pool shall be standup spacing units consisting of two adjacent governmental sections.

(25) Sections 13, 14, 23, and 24; Sections 14, 15, 22, and 23, Township 163 North, Range 101 West; Sections 13 and 24, Township 163 North, Range 101 West and Sections 18 and 19, Township 163 North, Range 100 West; Sections 4\*, 5, 8, and 9\*; Sections 5, 6, 7, and 8; Sections 16\*, 17, 20, and 21\*; and Sections 17, 18, 19, and 20, Township 163 North, Range 100 West, Divide County, North Dakota, are also designated 2560-acre spacing units in Zone VII in the Colgan-Bakken Pool.

\*Sections 4, 9, 16, and 21 are within the West Ambrose Field.

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

(27) The temporary spacing for the development of Zone IV in the Colgan-Bakken Pool is hereby set at up to eight horizontal wells per standup 1280-acre spacing unit.

(28) All portions of the well bore not isolated by cement of any horizontal well in Zone IV in the Colgan-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.

(29) Sections 1 and 12; Sections 2 and 11; Sections 3 and 10; Sections 4 and 9; and Sections 16 and 21, Township 163 North, Range 101 West, Divide County, North Dakota, are hereby designated standup 1280-acre spacing units in Zone IV in the Colgan-Bakken Pool.

(30) Spacing units hereafter created in Zone IV in the Colgan-Bakken Pool shall be standup spacing units consisting of two adjacent governmental sections.

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

(32) The temporary spacing for the development of Zone V in the Colgan-Bakken Pool is hereby set at up to eight horizontal wells per laydown 1280-acre spacing unit.

(33) All portions of the well bore not isolated by cement of any horizontal well in Zone V in the Colgan-Bakken Pool shall be no closer than 500 feet to the north or south boundary and 200 feet to the east or west 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.

(34) Sections 5 and 6, Township 163 North, Range 101 West, Divide County, North Dakota, are hereby designated a laydown 1280-acre spacing unit in Zone V in the Colgan-Bakken Pool.

(35) Spacing units hereafter created in Zone V in the Colgan-Bakken Pool shall be laydown spacing units consisting of two adjacent governmental sections.

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

(37) The temporary spacing for the development of Zone VI in the Colgan-Bakken Pool is hereby set at one horizontal well per laydown 1600-acre spacing unit.

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

(39) Sections 29, 30, 31, and 32, Township 164 North, Range 100 West, Divide County, North Dakota, are hereby designated a laydown 1600-acre spacing unit in Zone VI in the Colgan-Bakken Pool.

(40) Spacing units hereafter created in Zone VI in the Colgan-Bakken Pool shall be laydown spacing units designated by the Commission.

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

(42) The proper spacing for the development of Zone VII in the Colgan-Bakken Pool is hereby set at one horizontal well per 2560-acre spacing unit.

(43) All portions of the well bore not isolated by cement of any horizontal well in Zone VII in the Colgan-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.

(44) The Colgan-Bakken Pool in Zone VII 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.

(45) Sections 13, 14, 23, and 24; Sections 14, 15, 22, and 23, Township 163 North, Range 101 West; Sections 13 and 24, Township 163 North, Range 101 West and Sections 18 and 19, Township 163 North, Range 100 West; Sections 4\*, 5, 8, and 9\*; Sections 5, 6, 7, and 8; Sections 16\*, 17, 20, and 21\*; and Sections 17, 18, 19, and 20, Township 163 North, Range 100 West, Divide County, North Dakota, are hereby designated 2560-acre spacing units in Zone VII in the Colgan-Bakken Pool.

\*Sections 4, 9, 16, and 21 are within the West Ambrose Field.

(46) Spacing units hereafter created in Zone VII in the Colgan-Bakken Pool shall consist of four adjacent governmental sections designated by the Commission.

(47) Sections 13 and 24; Sections 14 and 23; Sections 15 and 22, Township 163 North, Range 101 West; Sections 5 and 8; Sections 6 and 7; Sections 17 and 20; and Sections 18 and 19, Township 163 North, Range 100 West, Divide County, North Dakota, are also designated standup 1280-acre spacing units in Zone III in the Colgan-Bakken Pool.

(48) Sections 4 and 9; and Sections 16 and 21, Township 163 North, Range 100 West, Divide County, North Dakota, are also designated standup 1280-acre spacing units in the West Ambrose-Bakken Pool.

(49) Sections 3, 4, 9, and 10; and Sections 15, 16, 21, and 22, Township 163 North, Range 100 West, Divide County, North Dakota, are also designated 2560-acre spacing units in the West Ambrose-Bakken Pool.

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

(51) The operator of any horizontally drilled well in the Colgan-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.

(52) 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 Colgan-Bakken Pool.

(53) 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 Colgan-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 Colgan-Bakken Pool as the Commission deems appropriate.

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

(55) The following rules concerning the casing, tubing and equipping of wells shall apply to the subsequent drilling and operation of wells in the Colgan-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 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;

- (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.

(56) 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 Colgan-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 5550 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.

(57) 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.

(58) For the purposes of division of production to owners of interests in spacing units established by this order, and proven productive prior to the date hereof, this order shall be retroactive to the date of first production.

(59) All wells completed in the Colgan-Bakken Pool shall be allowed to produce at a maximum efficient rate through September 30, 2013.

(60) After September 30, 2013, all wells in the Colgan-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.

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

(62) This portion of this order shall cover all of the Colgan-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. If the Colgan-Bakken Pool is still producing, the proper spacing for the pool will be considered by the Commission on or before its regularly scheduled hearing date in January, 2014. If, however, the Colgan-Bakken Pool is no longer producing when the proper spacing is to be considered, the Commission, at its own discretion, may refrain from scheduling a proper spacing hearing and may, without further notice, enter an order dismissing the proper spacing matter.

(63) Provisions established herein for the West 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 (64) below shall not be subject to this order.

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

TOWNSHIP 164 NORTH, RANGE 100 WEST, 5TH PM  
ALL OF SECTIONS 25, 26, 27, 28, 33, 34, 35 AND 36,

TOWNSHIP 164 NORTH, RANGE 99 WEST, 5TH PM  
ALL OF SECTIONS 30 AND 31,

TOWNSHIP 163 NORTH, RANGE 100 WEST, 5TH PM  
ALL OF SECTIONS 1, 2, 3, 4, 9, 10, 11, 12, 13, 14, 15, 16, 21, 22, 23, 24, 25, 26, 27, 28, 33, 34, 35 AND 36,

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM  
ALL OF SECTIONS 6, 7, 18 AND 19,

TOWNSHIP 162 NORTH, RANGE 100 WEST, 5TH PM

ALL OF SECTIONS 1, 2, 3, 4, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35 AND 36.

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

ZONE I (800H-STANDUP)

TOWNSHIP 164 NORTH, RANGE 99 WEST, 5TH PM

ALL OF SECTIONS 30 AND 31.

ZONE II (1280H-STANDUP)

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM

ALL OF SECTIONS 6 AND 7,

TOWNSHIP 162 NORTH, RANGE 100 WEST, 5TH PM

ALL OF SECTIONS 3, 4, 9, 10, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35 AND 36.

ZONE III (4/1280H-STANDUP)

TOWNSHIP 162 NORTH, RANGE 100 WEST, 5TH PM

ALL OF SECTIONS 1, 2, 11 AND 12.

ZONE IV (7/1280H-STANDUP)

TOWNSHIP 163 NORTH, RANGE 100 WEST, 5TH PM

ALL OF SECTIONS 1, 2, 3, 4, 9, 10, 11, 12, 13, 14, 15, 16, 21, 22, 23, 24, 25, 26, 27, 28, 33, 34, 35 AND 36,

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM

ALL OF SECTIONS 18 AND 19.

ZONE V (1600H-LAYDOWN)

TOWNSHIP 164 NORTH, RANGE 100 WEST, 5TH PM

ALL OF SECTIONS 25, 26, 27, 28, 33, 34, 35 AND 36.

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

TOWNSHIP 164 NORTH, RANGE 99 WEST, 5TH PM

ALL OF SECTIONS 30 AND 31,

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM

ALL OF SECTIONS 6 AND 7.

ZONE VII (2560H)

TOWNSHIP 163 NORTH, RANGE 100 WEST, 5TH PM

ALL OF SECTIONS 1, 2, 3, 4, 9, 10, 11, 12, 13, 14, 15, 16, 21, 22, 23, 24, 25, 26, 27, 28, 33, 34, 35 AND 36,

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM

ALL OF SECTIONS 18 AND 19.

(66) The West 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 VII below.

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

(68) All portions of the well bore not isolated by cement of any horizontal well in Zone I in the West 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.

(69) Sections 30 and 31, Township 164 North, Range 99 West, Divide County, North Dakota, are hereby designated a standup 800-acre spacing unit in Zone I in the West Ambrose-Bakken Pool.

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

(71) Sections 30 and 31, Township 164 North, Range 99 West and Sections 6 and 7, Township 163 North, Range 99 West, Divide County, North Dakota, are also designated a standup 2080-acre spacing unit in Zone VI in the West Ambrose-Bakken Pool.

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

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

(74) All portions of the well bore not isolated by cement of any horizontal well in Zone II in the West 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.

(75) Sections 6 and 7, Township 163 North, Range 99 West; Sections 3 and 10; Sections 4 and 9; Sections 13 and 24; Sections 14 and 23; Sections 15 and 22; 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; and Sections 30 and 31, Township 162 North, Range 100 West, Divide County, North Dakota, are hereby designated standup 1280-acre spacing units in Zone II in the West Ambrose-Bakken Pool.

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

(77) Sections 30 and 31, Township 164 North, Range 99 West and Sections 6 and 7, Township 163 North, Range 99 West, Divide County, North Dakota, are also designated a standup 2080-acre spacing unit in Zone VI in the West Ambrose-Bakken Pool.

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

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

(80) All portions of the well bore not isolated by cement of any horizontal well in Zone III in the West 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.

(81) Sections 1 and 12; and Sections 2 and 11, Township 162 North, Range 100 West, Divide County, North Dakota, are hereby designated standup 1280-acre spacing units in Zone III in the West Ambrose-Bakken Pool.

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

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

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

(85) All portions of the well bore not isolated by cement of any horizontal well in Zone IV in the West 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.

(86) Sections 1 and 12; Sections 2 and 11; Sections 3 and 10; Sections 4 and 9; Sections 13 and 24; Sections 14 and 23; Sections 15 and 22; Sections 16 and 21; Sections 25 and 36; Sections 26 and 35; Sections 27 and 34; Sections 28 and 33, Township 163 North, Range 100 West; and Sections 18 and 19, Township 163 North, Range 99 West, Divide County, North Dakota, are hereby designated standup 1280-acre spacing units in Zone IV in the West Ambrose-Bakken Pool.

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

(88) Sections 1, 2, 11, and 12; Sections 2, 3, 10, and 11; Sections 3, 4, 9, and 10; Sections 13, 14, 23, and 24; Sections 14, 15, 22, and 23; Sections 15, 16, 21, and 22; Sections 25, 26, 35, and 36; Sections 26, 27, 34, and 35; Sections 27, 28, 33, and 34, Township 163 North, Range 100 West; and Sections 13 and 24, Township 163 North, Range 100 West and Sections 18 and 19, Township 163 North, Range 99 West, Divide County, North Dakota, are also designated 2560-acre spacing units in Zone VII in the West Ambrose-Bakken Pool.

(89) Sections 4\*, 5, 8, and 9\*; and Sections 16\*, 17, 20, and 21\*, Township 163 North, Range 100 West, Divide County, North Dakota, are also designated 2560-acre spacing units in the Colgan-Bakken Pool.

\*Sections 4, 9, 16, and 21 are within the West Ambrose Field.

(90) Sections 17, 18\*\*, 19\*\*, and 20, 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 also designated 2560-acre spacing units in the Ambrose-Bakken Pool.

\*\*Sections 18, 19, 25, and 36 are within the West Ambrose Field.

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

(92) The proper spacing for the development of Zone V in the West Ambrose-Bakken Pool is hereby set at one horizontal well per laydown 1600-acre spacing unit.

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

(94) Sections 25, 26, 35, and 36; and Sections 27, 28, 33, and 34, Township 164 North, Range 100 West, Divide County, North Dakota, are hereby designated laydown 1600-acre spacing units in Zone V in the West Ambrose-Bakken Pool.

(95) Spacing units hereafter created in Zone V in the West Ambrose-Bakken Pool shall be laydown spacing units designated by the Commission.

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

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

(98) All portions of the well bore not isolated by cement of any horizontal well in Zone VI in the West 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.

(99) Sections 30 and 31, Township 164 North, Range 99 West and Sections 6 and 7, Township 163 North, Range 99 West, Divide County, North Dakota, are hereby designated a standup 2080-acre spacing unit in Zone VI in the West Ambrose-Bakken Pool.

(100) A mirror offset horizontal well to the Nomad #0607-5H well (File No. 22988) shall be drilled and completed in the standup 2080-acre spacing unit in Sections 30 and 31, Township 164 North, Range 99 West, Divide County, North Dakota, and a mirror offset horizontal well to the Nomad #6-7-163-99H well (File No. 21579) shall be drilled and completed in the standup 800-acre spacing unit in Sections 30 and 31, Township 164 North, Range 99 West, Divide County, North Dakota, within twelve months of completing the Nomad #0607-5H well. If these conditions are not met, the Commission shall schedule the matter for consideration to reduce the size of the spacing unit.

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

(102) Sections 30 and 31, Township 164 North, Range 99 West, Divide County, North Dakota, are also designated a standup 800-acre spacing unit in Zone I in the West Ambrose-Bakken Pool.

(103) Sections 6 and 7, Township 163 North, Range 99 West, Divide County, North Dakota, are also designated a standup 1280-acre spacing unit in Zone II in the West Ambrose-Bakken Pool.

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

(105) The proper spacing for the development of Zone VII in the West Ambrose-Bakken Pool is hereby set at one horizontal well per 2560-acre spacing unit.

(106) All portions of the well bore not isolated by cement of any horizontal well in Zone VII in the West 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.

(107) The West Ambrose-Bakken Pool in Zone VII 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.

(108) Sections 1, 2, 11, and 12; Sections 2, 3, 10, and 11; Sections 3, 4, 9, and 10; Sections 13, 14, 23, and 24; Sections 14, 15, 22, and 23; Sections 15, 16, 21, and 22; Sections 25, 26, 35, and 36; Sections 26, 27, 34, and 35; Sections 27, 28, 33, and 34, Township 163 North, Range 100 West; and Sections 13 and 24, Township 163 North, Range 100 West and Sections 18 and 19, Township 163 North, Range 99 West, Divide County, North Dakota, are hereby designated 2560-acre spacing units in Zone VII in the West Ambrose-Bakken Pool.

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

(110) Sections 1 and 12; Sections 2 and 11; Sections 3 and 10; Sections 4 and 9; Sections 13 and 24; Sections 14 and 23; Sections 15 and 22; Sections 16 and 21; Sections 25 and 36; Sections 26 and 35; Sections 27 and 34; Sections 28 and 33, Township 163 North, Range 100 West; and Sections 18 and 19, Township 163 North, Range 99 West, Divide County, North Dakota, are also designated standup 1280-acre spacing units in Zone IV in the West Ambrose-Bakken Pool.

(111) Sections 4\*, 5, 8, and 9\*; and Sections 16\*, 17, 20, and 21\*, Township 163 North, Range 100 West, Divide County, North Dakota, are also designated 2560-acre spacing units in the Colgan-Bakken Pool.

\*Sections 4, 9, 16, and 21 are within the West Ambrose Field.

(112) Sections 17, 18\*\*, 19\*\*, and 20; 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 also designated 2560-acre spacing units in the Ambrose-Bakken Pool.

\*\*Sections 18, 19, 25, and 36 are within the West Ambrose Field.

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

(114) The operator of any horizontally drilled well in the West 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.

(115) 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 West Ambrose-Bakken Pool.

(116) 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 West 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 West Ambrose-Bakken Pool as the Commission deems appropriate.

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

(118) The following rules concerning the casing, tubing and equipping of wells shall apply to the subsequent drilling and operation of wells in the West 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 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;
- (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.

(119) 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 West 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 5600 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.

(120) 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.

(121) All wells completed in the West Ambrose-Bakken Pool shall be allowed to produce at a maximum efficient rate through September 30, 2013.

(122) After September 30, 2013, all wells in the West 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 wellhead 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 wellhead equipment into tanks from the ultimate producing interval after casing has been run, if the necessity therefor can be demonstrated to his satisfaction.

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

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

(125) 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 (126) below shall not be subject to this order.

(126) 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.

(127) 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, 25 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, 28, 29, 30, 31, 32 AND 33,

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

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

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)

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

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM  
ALL OF SECTIONS 16, 17, 18\*, 19\*, 20, 21, 28, 29, 30, 31, 32 AND 33.

\*Sections 25, 36, 18, and 19 are within the West Ambrose 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.

(128) 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.

(129) 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.

(130) 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.

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

(132) Sections 14, 23, 26, and 35, Township 163 North, Range 99 West, Divide County, North Dakota, are also designated a standup 2560-acre spacing unit in Zone X in the Ambrose-Bakken Pool.

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

(134) 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.

(135) 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.

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

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

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

(139) 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.

(140) 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.

(141) 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.

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

(143) 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 also designated standup 2080-acre spacing units in Zone VIII in the Ambrose-Bakken Pool.

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

(145) 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.

(146) 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.

(147) 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.

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

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

(150) 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.

(151) 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.

(152) 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.

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

(154) 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 also designated standup 2080-acre spacing units in Zone VIII in the Ambrose-Bakken Pool.

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

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

(157) 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.

(158) 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.

(159) 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.

(160) 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.

(161) Section 4; and Section 5, Township 162 North, Range 99 West, Divide County, North Dakota, are also designated 640-acre spacing units in Zone II in the Ambrose-Bakken Pool.

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

(163) 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.

(164) 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.

(165) Sections 15 and 22; Sections 16 and 21; Sections 17 and 20; 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, 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 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.

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

(167) Sections 16, 17, 20, and 21; Sections 17, 18\*, 19\*, and 20; 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 also designated 2560-acre spacing units in Zone IX in the Ambrose-Bakken Pool.

\*Sections 18, 19, 25, and 36 are within the West Ambrose Field.

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

(169) 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.

(170) 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.

(171) 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.

(172) 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.

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

(174) 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 also designated standup 800-acre spacing units in Zone III in the Ambrose-Bakken Pool.

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

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

(177) 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.

(178) 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.

(179) 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.

(180) Sections 16, 17, 20, and 21; Sections 17, 18\*, 19\*, and 20; 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 18, 19, 25, and 36 are within the West Ambrose Field.

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

(182) Sections 16 and 21; Sections 17 and 20; Sections 28 and 33; Sections 29 and 32; and Sections 30 and 31, Township 163 North, Range 99 West, Divide County, North Dakota, are also designated standup 1280-acre spacing units in Zone VII in the Ambrose-Bakken Pool.

(183) Sections 25 and 36, Township 163 North, Range 100 West; and Sections 18 and 19, Township 163 North, Range 99 West, Divide County, North Dakota, are also designated standup 1280-acre spacing units in the West Ambrose-Bakken Pool.

(184) Sections 25, 26, 35, and 36, Township 163 North, Range 100 West; and Sections 13 and 24, Township 163 North, Range 100 West and Sections 18 and 19, Township 163 North, Range 99 West, Divide County, North Dakota, are also designated 2560-acre spacing units in the West Ambrose-Bakken Pool.

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

(186) 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.

(187) 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.

(188) 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.

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

(190) Section 26; and Section 35, Township 163 North, Range 99 West, Divide County, North Dakota, are also designated 640-acre spacing units in Zone I in the Ambrose-Bakken Pool.

(191) Sections 13 and 24; Sections 14 and 23; and Sections 25 and 36, Township 163 North, Range 99 West, Divide County, North Dakota, are also designated standup 1280-acre spacing units in Zone V in the Ambrose-Bakken Pool.

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

(193) 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.

(194) 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.

(195) 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.

(196) 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.

(197) 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 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;

(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.

(198) 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.

(199) 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.



(200) All wells in the Ambrose-Bakken Pool shall be allowed to produce at a maximum efficient rate through September 30, 2013.

(201) After September 30, 2013, 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.

(202) 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.

(203) This portion of 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 5th day of July, 2013.

INDUSTRIAL COMMISSION  
STATE OF NORTH DAKOTA

By the Director, on behalf of the Commission

/s/ Lynn D. Helms, Director