

BEFORE THE INDUSTRIAL COMMISSION
OF THE STATE OF NORTH DAKOTA

CASE NO. 15506
ORDER NO. 17752

IN THE MATTER OF A HEARING CALLED ON A MOTION OF THE COMMISSION TO CONSIDER THE APPLICATION OF BAYTEX ENERGY USA LTD. FOR AN ORDER EXTENDING THE FIELD BOUNDARIES AND AMENDING THE FIELD RULES FOR THE AMBROSE, WHITEAKER, PLUMER, AND/OR BURG-BAKKEN POOLS, OR IN THE ALTERNATIVE TO ESTABLISH BAKKEN SPACING IN THE MUSTA, GARNET, AND/OR MORAINÉ FIELDS, TO CREATE AND ESTABLISH THIRTY-SIX 1280-ACRE SPACING UNITS COMPRISED OF SECTIONS 1 AND 12; SECTIONS 2 AND 11; SECTIONS 3 AND 10; SECTIONS 4 AND 9; SECTIONS 5 AND 8; SECTIONS 6 AND 7; SECTIONS 14 AND 23; SECTIONS 15 AND 22; 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, T.161N., R.99W.; SECTIONS 5 AND 8; SECTIONS 6 AND 7; SECTIONS 13 AND 24; 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 31 AND 32, T.161N., R.98W.; SECTIONS 6 AND 7; SECTIONS 18 AND 19; SECTIONS 30 AND 31, T.161N., R.97W.; SECTIONS 3 AND 10; SECTIONS 4 AND 9; SECTIONS 15 AND 22; SECTIONS 16 AND 21; SECTIONS 27 AND 34; AND SECTIONS 28 AND 33, T.160N., R.98W., DIVIDE COUNTY, ND, AUTHORIZING THE DRILLING OF ONE HORIZONTAL WELL ON EACH 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 31st day of August, 2011.
- (2) The witnesses for Baytex Energy USA Limited (Baytex) 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 September 6, 2011; therefore, such testimony may be considered evidence.
- (3) Baytex made application to the Commission for an order extending the field boundaries and amending the field rules for the Ambrose, Whiteaker, Plumer, and/or Burg-Bakken Pools, or in the alternative to establish Bakken spacing in the Musta, Garnet, and/or Moraine Fields, to create and establish thirty-six 1280-acre spacing units comprised of Sections 1 and 12; Sections 2 and 11; Sections 3 and 10; Sections 4 and 9; Sections 5 and 8; Sections 6 and 7; Sections 14 and 23; Sections 15 and 22; 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 161 North, Range 99 West; Sections 5 and 8; Sections 6 and 7; Sections 13 and 24; 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 31 and 32, Township 161 North, Range 98 West; Sections 6 and 7; Sections 18 and 19; Sections 30 and 31, Township 161 North, Range 97 West; Sections 3 and 10; Sections 4 and 9; Sections 15 and 22; Sections 16 and 21; Sections 27 and 34; and Sections 28 and 33, Township 160 North, Range 98 West, Divide County, North Dakota, authorizing the drilling of one horizontal well on each spacing unit, and such other relief as is appropriate.
- (4) Sections 3 and 10; Sections 4 and 9; Sections 15 and 22; Sections 16 and 21; Sections 27 and 34; and Sections 28 and 33, Township 160 North, Range 98 West, Divide County, North Dakota, are currently standup 1280-acre spacing units in the Skabo-Bakken Pool.
- (5) Sections 13, 16, 21, 24, 27, and 28, Township 161 North, Range 98 West, and Sections 6, 7, 18, and 19, Township 161 North, Range 97 West, Divide County, North Dakota, are currently 640-acre spacing units in Zone I in the Whiteaker-Bakken Pool. There are no wells currently permitted to or producing from the Whiteaker-Bakken Pool in the aforementioned sections.
- (6) Section 5, Township 161 North, Range 98 West, Divide County, North Dakota, was established as a 640-acre spacing unit as an extension to the Whiteaker-Bakken Pool by the permitting of the Baytex #5-161-98H Olson well (File No. 18739), located 550 feet from the north line and 250 feet from the west line of said Section 5. This permit will have to be modified or rescinded.
- (7) Order No. 16342 entered in Case No. 14067, the most recent spacing order for the Whiteaker-Bakken Pool, established proper spacing for the development of Zone I at one horizontal well per 640 acres, Zone II at one horizontal well per 1280 acres, and Zone III at up to three horizontal wells per 1280 acres.
- (8) Sections 19 and 20, Township 161 North, Range 98 West, Divide County, North Dakota, are currently 640-acre spacing units in the Plumer-Bakken Pool. There are no wells currently permitted to or producing from the Plumer-Bakken Pool in the aforementioned sections.
- (9) Order No. 13282 entered in Case No. 11202, established proper spacing for the development of the Plumer-Bakken Pool at one horizontal well per 640 acres.

(10) Sections 17, 18, 31, and 32, Township 161 North, Range 98 West, Divide County, North Dakota, are adjacent to the Plumer Field and within the buffer zone of the Plumer-Bakken Pool. Sections 7 and 8, Township 161 North, Range 98 West, Divide County, North Dakota, are one section removed from the Plumer Field and adjacent to the buffer zone of the Plumer-Bakken Pool. Sections 5 and 6, Township 161 North, Range 98 West, Divide County, North Dakota, are two sections removed from the Plumer Field and adjacent to said Sections 7 and 8.

(11) Baytex presented evidence the Plumer-Bakken Pool underlies Sections 5, 6, 7, 8, 17, 18, 31, and 32, Township 161 North, Range 98 West, Divide County, North Dakota; therefore, the boundary of the Plumer Field should be extended to include such lands. There are no wells currently permitted to or producing from the Bakken Pool in the aforementioned sections except for the Olson #5-161-98H well.

(12) Sections 14, 23, 26, 34, and 35, Township 161 North, Range 99 West, Divide County, North Dakota, are adjacent to the Burg Field and within the buffer zone of Zone I in the Burg-Bakken Pool. Sections 15, 22, and 27, Township 161 North, Range 99 West, Divide County, North Dakota, are one section removed from the Burg Field and adjacent to the buffer zone of Zone I in the Burg-Bakken Pool.

(13) Order No. 17070 entered in Case No. 14794, the most recent spacing order for the Burg-Bakken Pool, established proper spacing for the development of Zone I at one horizontal well per 640 acres and Zone II at one horizontal well per 1280 acres.

(14) Baytex presented evidence the Burg-Bakken Pool underlies Sections 14, 15, 22, 23, 26, 27, 34, and 35, Township 161 North, Range 99 West, Divide County, North Dakota; therefore, the boundary of the Burg Field should be extended to include such lands. There are no wells currently permitted to or producing from the Bakken Pool in the aforementioned sections.

(15) The Musta Field consists of Section 8 and the N/2 of Section 17, Township 161 North, Range 99 West, Divide County, North Dakota. The Commission does not as a matter of practice, establish pools without prior establishment of production in the field. However, in order to ease confusion and provide for orderly development in the area, the Musta-Bakken Pool should be established to prevent waste, avoid the drilling of unnecessary wells, and protect correlative rights. The operator of the first producing well in the Musta-Bakken Pool should submit exhibits to be included in the record for this case similar to those typically submitted in a temporary spacing hearing, subsequent to completing the first producing well in the Musta-Bakken Pool. Extending the Musta Field to include Sections 5, 6, 7, 8, 16, 17, 18, 19, 20, 21, 28, 29, 30, 31, 32, and 33, Township 161 North, Range 99 West, Divide County, North Dakota, will ease confusion and provide for orderly development. There are no wells currently permitted to or producing from the Bakken Pool in the aforementioned sections.

(16) The former Garnet Field consisted of the NW/4 of Section 11, Township 161 North, Range 99 West, Divide County, North Dakota. The Commission does not as a matter of practice, establish pools without prior establishment of production in the field. However, in order to ease confusion and provide for orderly development in the area, the Garnet-Bakken Pool should be established to prevent waste, avoid the drilling of unnecessary wells, and protect correlative rights. The operator of the first producing well in the Garnet-Bakken Pool should submit exhibits to be

included in the record for this case similar to those typically submitted in a temporary spacing hearing, subsequent to completing the first producing well in the Garnet-Bakken Pool. Extending the Garnet Field to include Sections 1, 2, 3, 4, 9, 10, 11, and 12, Township 161 North, Range 99 West, Divide County, North Dakota, will ease confusion and provide for orderly development. There are no wells currently permitted to or producing from the Bakken Pool in the aforementioned sections.

(17) Order No. 10384 entered in Case No. 8847, established Sections 3 and 10, Township 161 North, Range 99 West, Divide County, North Dakota, as a 1280-acre drilling unit for the exclusive purpose of drilling one horizontal well within said drilling unit within the Bakken Pool. This drilling unit will be included as a spacing unit in the Garnet-Bakken Pool.

(18) The Moraine Field consists of Sections 25, 26, and 36, and the E/2 of Section 35, Township 161 North, Range 98 West, Divide County, North Dakota. Order No. 9266 entered in Case No. 7871 established temporary spacing for the development of the Moraine-Bakken Pool at one well per 160 acres. This order expired when the Berco Resources, LLC #24-25 Cenergy-Berco-Hanisch well (File No. 10904) was plugged on October 31, 2002. In order to ease confusion and provide for orderly development in the area, temporary spacing in the Moraine-Bakken Pool should be reestablished to prevent waste, avoid the drilling of unnecessary wells, and protect correlative rights. Extending the Moraine Field to include Sections 25, 26, 27, 28, 33, 34, 35, and 36, Township 161 North, Range 98 West, and Sections 30 and 31, Township 161 North, Range 97 West, Divide County, North Dakota, will ease confusion and provide for orderly development. There are no wells currently permitted to or producing from the Bakken Pool in the aforementioned sections. Removing said Sections 27 and 28 from the Whiteaker Field and placing them in the Moraine Field will ease confusion and provide for orderly development.

(19) Baytex proposes to develop the upper Three Forks Formation in the Bakken Pool underlying each proposed standup 1280-acre spacing unit described as Sections 1 and 12; Sections 2 and 11; Sections 3 and 10; Sections 4 and 9; Sections 5 and 8; Sections 6 and 7; Sections 14 and 23; Sections 15 and 22; 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 161 North, Range 99 West; Sections 5 and 8; Sections 6 and 7; Sections 13 and 24; 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 31 and 32, Township 161 North, Range 98 West; Sections 6 and 7; Sections 18 and 19; and Sections 30 and 31, Township 161 North, Range 97 West, Divide County, North Dakota, by drilling a single-lateral horizontal well approximately down the long axis of the spacing unit. 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 proposed spacing unit.

(20) The Commission will take administrative notice of the testimony given in Case No. 12246 which was scheduled on a motion of the Commission to consider amending the current Bakken Pool field rules to eliminate or reduce the setbacks currently established for the heel and toe of horizontal wells in North Dakota, and such other relief as is appropriate, heard on March 23, 2010. Order No. 14498 entered in Case No. 12246 amended all current 660 or 500-foot setback requirements in any established Bakken Pool spacing unit or drilling unit relative to the heel and toe of a horizontal well to 200 feet.

(21) Geological and engineering evidence and testimony presented to the Commission relative to the matter of well spacing indicates the Musta and Garnet-Bakken Pools, as classified and defined in this order, should be developed on a pattern of one horizontal well per 1280 acres, for the effective, economical, and efficient recovery of oil from said pool, to assure rapid development and provide maximum ultimate recovery, to avoid the drilling of unnecessary wells, and to prevent waste in a manner that will protect correlative rights.

(22) There were no objections to this application.

(23) If Baytex 's activities are successful, greater ultimate recovery of oil and gas from the pools 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.

(24) Certain special field rules for the Musta and Garnet-Bakken Pools are necessary to prevent waste and protect against the contamination and pollution of surface lands and fresh waters.

IT IS THEREFORE ORDERED:

(1) Order No. 10384 is hereby rescinded.

(2) Sections 14 and 23; Sections 15 and 22; Sections 26 and 35; and Sections 27 and 34, Township 161 North, Range 99 West, Divide County, North Dakota, are hereby established as standup 1280-acre spacing units for the exclusive purpose of drilling one horizontal well within each said spacing unit within the Burg-Bakken Pool and Zone II 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 5 and 8; Sections 6 and 7; Sections 17 and 20; and Sections 18 and 19, Township 161 North, Range 98 West, Divide County, North Dakota, are hereby established as standup 1280-acre spacing units for the exclusive purpose of drilling one horizontal well within each said spacing unit within the Plumer-Bakken Pool and Zone II 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.

(4) Sections 31 and 32, Township 161 North, Range 98 West, Divide County, North Dakota, are hereby established as a laydown 1280-acre spacing unit for the exclusive purpose of drilling one horizontal well within said spacing unit within the Plumer-Bakken Pool and Zone III is hereby created to include said spacing unit. Existing and future vertical and directional wells drilled within the spacing unit herein established shall not be subject to this order.

(5) Sections 13 and 24; Sections 16 and 21, Township 161 North, Range 98 West; Sections 6 and 7; and Sections 18 and 19, Township 161 North, Range 97 West, Divide County, North Dakota, are hereby established as standup 1280-acre spacing units for the exclusive purpose of drilling one horizontal well within each said spacing unit within the Whiteaker-Bakken Pool and Zone II 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.

(6) Sections 25 and 36; Sections 26 and 35; Sections 27 and 34; Sections 28 and 33, Township 161 North, Range 98 West; and Sections 30 and 31, Township 161 North, Range 97 West, Divide County, North Dakota, are hereby established as standup 1280-acre spacing units for the exclusive purpose of drilling one horizontal well within each said spacing unit within the Moraine-Bakken Pool. Existing and future vertical and directional wells drilled within the spacing units herein established shall not be subject to this order.

(7) Sections 5 and 8; Sections 6 and 7; Sections 16 and 21; Sections 17 and 20; Sections 18 and 19; Sections 28 and 33; Sections 29 and 32; and Sections 30 and 31, Township 161 North, Range 99 West, Divide County, North Dakota, are hereby established as standup 1280-acre spacing units for the exclusive purpose of drilling one horizontal well within each said spacing unit within the Musta-Bakken Pool. Existing and future vertical and directional wells drilled within the spacing units herein established shall not be subject to this order.

(8) Sections 1 and 12; Sections 2 and 11; Sections 3 and 10; and Sections 4 and 9, Township 161 North, Range 99 West, Divide County, North Dakota, are hereby established as standup 1280-acre spacing units for the exclusive purpose of drilling one horizontal well within each said spacing unit within the Garnet-Bakken Pool. Existing and future vertical and directional wells drilled within the spacing units herein established shall not be subject to this order.

(9) The Director is hereby authorized to exercise continuing jurisdiction in this matter to determine whether a horizontal well proposed or drilled upon the 1280-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.

(10) The operator of the first producing well in the Musta and Garnet-Bakken Pools shall submit exhibits to be included in the record for this case, Case No. 15506, similar to those typically submitted in a temporary spacing hearing. Such exhibits must be submitted within 120 days after completing said well.

(11) Provisions established herein for the Burg-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 (12) below shall not be subject to this order.

(12) The Burg Field is hereby redefined as the following described tracts of land in Divide and Williams Counties, North Dakota:

TOWNSHIP 161 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 13, 14, 15, 22, 23, 24, 25, 26, 27, 34, 35 AND 36,

TOWNSHIP 160 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 1 THROUGH 36, INCLUSIVE,

TOWNSHIP 159 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 1 THROUGH 36, INCLUSIVE,

together with those additional sections or governmental lots corresponding thereto as may be proven productive by wells drilled on lands within one mile of the boundaries of the field as set forth above, provided further that such extensions of the field boundaries shall include only sufficient acreage to form a spacing unit for such wells, and any intervening lands.

(13) The Burg-Bakken Pool is hereby redefined as the following described tracts of land in Divide and Williams Counties, North Dakota:

ZONE I (640H)

TOWNSHIP 160 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 17 AND 24,

TOWNSHIP 159 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTION 4,

together with those additional sections or governmental lots corresponding thereto as may be proven productive by wells drilled on lands within one mile of the boundaries of the field as set forth above, provided further that such extensions of the field boundaries shall include only sufficient acreage to form a spacing unit for such wells, and any intervening lands.

ZONE II (1280H-STANDUP)

TOWNSHIP 161 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 13, 14, 15, 22, 23, 24, 25, 26, 27, 34, 35 AND 36,

TOWNSHIP 160 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 1 THROUGH 36, INCLUSIVE,

TOWNSHIP 159 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 1 THROUGH 36, INCLUSIVE.

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

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

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

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

(18) Sections 13 and 24; Sections 17 and 20, Township 160 North, Range 99 West, Divide County; and Sections 4 and 9, Township 159 North, Range 99 West, Williams County, North Dakota, are also designated standup 1280-acre spacing units in Zone II in the Burg-Bakken Pool.

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

(20) All portions of the well bore not isolated by cement of any horizontal well in Zone II in the Burg-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.

(21) Sections 13 and 24; Sections 14 and 23; Sections 15 and 22; Sections 25 and 36; Sections 26 and 35; Sections 27 and 34, Township 161 North, Range 99 West; Sections 1 and 12; Sections 2 and 11; Sections 3 and 10; Sections 4 and 9; Sections 5 and 8; Sections 6 and 7; 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; Sections 30 and 31, Township 160 North, Range 99 West, Divide County; Sections 1 and 12; Sections 2 and 11; Sections 3 and 10; Sections 4 and 9; Sections 5 and 8; Sections 6 and 7; 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 159 North, Range 99 West, Williams County, North Dakota, are hereby designated standup 1280-acre spacing units in Zone II in the Burg-Bakken Pool.

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

(23) Section 17; Section 24, Township 160 North, Range 99 West, Divide County; and Section 4, Township 159 North, Range 99 West, Williams County, North Dakota, are also designated 640-acre spacing units in Zone I in the Burg-Bakken Pool.

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

(25) The operator of any horizontally drilled well in the Burg-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.

(26) 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 Burg-Bakken Pool.

(27) 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 Burg-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 Burg-Bakken Pool as the Commission deems appropriate.

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

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

(30) 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 Burg-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 6500 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.

(31) 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.

(32) All wells in the Burg-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.

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

(34) This portion of this order shall cover all of the Burg-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.

(35) Provisions established herein for the Plumer-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 (36) below shall not be subject to this order.

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

TOWNSHIP 161 NORTH, RANGE 98 WEST, 5TH PM
ALL OF SECTIONS 5, 6, 7, 8, 17, 18, 19, 20, 29, 30, 31 AND 32.

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

ZONE I (640H)

TOWNSHIP 161 NORTH, RANGE 98 WEST, 5TH PM
ALL OF SECTIONS 29 AND 30.

ZONE II (1280H-STANDUP)

TOWNSHIP 161 NORTH, RANGE 98 WEST, 5TH PM
ALL OF SECTIONS 5, 6, 7, 8, 17, 18, 19 AND 20.

ZONE III (1280H-LAYDOWN)

TOWNSHIP 161 NORTH, RANGE 98 WEST, 5TH PM
ALL OF SECTIONS 31 AND 32.

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

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

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

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

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

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

(44) All portions of the well bore not isolated by cement of any horizontal well in Zone II in the Plumer-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.

(45) Sections 5 and 8; Sections 6 and 7; Sections 17 and 20; and Sections 18 and 19, Township 161 North, Range 98 West, Divide County, North Dakota, are hereby designated standup 1280-acre spacing units in Zone II in the Plumer-Bakken Pool.

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

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

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

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

(50) Sections 31 and 32, Township 161 North, Range 98 West, Divide County, North Dakota, are hereby designated a laydown 1280-acre spacing unit in Zone III in the Plumer-Bakken Pool.

(51) Spacing units hereafter created in Zone III in the Plumer-Bakken Pool shall be laydown spacing units consisting of two adjacent governmental sections.

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

(53) The operator of any horizontally drilled well in the Plumer-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.

(54) 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 Plumer-Bakken Pool.

(55) 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 Plumer-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 Plumer-Bakken Pool as the Commission deems appropriate.

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

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

(58) 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 Plumer-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 6400 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.

(59) 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.

(60) All wells in the Plumer-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 Plumer-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 Plumer-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.

(63) Provisions established herein for the Whiteaker-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 Whiteaker Field is hereby redefined as the following described tracts of land in Divide County, North Dakota:

TOWNSHIP 162 NORTH, RANGE 98 WEST, 5TH PM
ALL OF SECTIONS 25, 26, 27, 28, 29, 32, 33, 34, 35 AND 36,

TOWNSHIP 162 NORTH, RANGE 97 WEST, 5TH PM
ALL OF SECTIONS 30 AND 31,

TOWNSHIP 161 NORTH, RANGE 98 WEST, 5TH PM
ALL OF SECTIONS 1, 2, 3, 4, 9, 10, 11, 12, 13, 14, 15, 16, 21, 22, 23 AND 24,

TOWNSHIP 161 NORTH, RANGE 97 WEST, 5TH PM
ALL OF SECTIONS 6, 7, 18 AND 19,

together with those additional sections or governmental lots corresponding thereto as may be proven productive by wells drilled on lands within one mile of the boundaries of the field as set forth above, provided further that such extensions of the field boundaries shall include only sufficient acreage to form a spacing unit for such wells, and any intervening lands.

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

ZONE I (640H)

TOWNSHIP 161 NORTH, RANGE 98 WEST, 5TH PM
ALL OF SECTIONS 3, 4, 9, 10, 15 AND 22,

together with those additional sections or governmental lots corresponding thereto as may be proven productive by wells drilled on lands within one mile of the boundaries of the field as set forth above, provided further that such extensions of the field boundaries shall include only sufficient acreage to form a spacing unit for such wells, and any intervening lands.

ZONE II (1280H-STANDUP)

TOWNSHIP 161 NORTH, RANGE 98 WEST, 5TH PM
ALL OF SECTIONS 1, 2, 11, 12, 13, 14, 16, 21, 23 AND 24,

TOWNSHIP 161 NORTH, RANGE 97 WEST, 5TH PM
ALL OF SECTIONS 6, 7, 18 AND 19.

ZONE III (3/1280H-STANDUP)

TOWNSHIP 162 NORTH, RANGE 98 WEST, 5TH PM
ALL OF SECTIONS 25, 26, 27, 28, 29, 32, 33, 34, 35 AND 36,

TOWNSHIP 162 NORTH, RANGE 97 WEST, 5TH PM
ALL OF SECTIONS 30 AND 31.

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

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

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

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

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

(71) All portions of the well bore not isolated by cement of any horizontal well in Zone II in the Whiteaker-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.

(72) Sections 1 and 12; Sections 2 and 11; Sections 13 and 24; Section 14 and 23; Sections 16 and 21, Township 161 North, Range 98 West; Sections 6 and 7; and Sections 18 and 19, Township 161 North, Range 97 West, Divide County, North Dakota, are hereby designated standup 1280-acre spacing units in Zone II in the Whiteaker-Bakken Pool.

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

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

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

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

(77) Sections 25 and 36; Sections 26 and 35; Sections 27 and 34; Sections 28 and 33; Sections 29 and 32, Township 162 North, Range 98 West; and Sections 30 and 31, Township

162 North, Range 97 West, Divide County, North Dakota, are hereby designated standup 1280-acre spacing units in Zone III in the Whiteaker-Bakken Pool.

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

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

(80) The operator of any horizontally drilled well in the Whiteaker-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.

(81) 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 Whiteaker-Bakken Pool.

(82) 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 Whiteaker-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 Whiteaker-Bakken Pool as the Commission deems appropriate.

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

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

(85) 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 Whiteaker-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 6300 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.

(86) 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.

(87) All wells in the Whiteaker-Bakken Pool shall be allowed to produce at a maximum efficient rate for a period of 30 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; 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 90 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.

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

(89) This portion of this order shall cover all of the Whiteaker-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.

(90) Provisions established herein for the Moraine-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 (91) below shall not be subject to this order.

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

TOWNSHIP 161 NORTH, RANGE 98 WEST, 5TH PM
ALL OF SECTIONS 25, 26, 27, 28, 33, 34, 35 AND 36,

TOWNSHIP 161 NORTH, RANGE 97 WEST, 5TH PM
ALL OF SECTIONS 30 AND 31.

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

(93) The temporary spacing for the development of the Moraine-Bakken Pool is hereby set at one horizontal well per standup 1280-acre spacing unit.

(94) All portions of the well bore not isolated by cement of any horizontal well in the Moraine-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.

(95) Sections 25 and 36; Sections 26 and 35; Sections 27 and 34; Sections 28 and 33, Township 161 North, Range 98 West; and Sections 30 and 31, Township 161 North, Range 97 West, Divide County, North Dakota, are hereby designated standup 1280-acre spacing units in the Moraine-Bakken Pool.

(96) Spacing units hereafter created in the Moraine-Bakken Pool shall be standup spacing units consisting of two adjacent governmental sections.

(97) The Moraine-Bakken Pool shall not be extended except by further order of the Commission after due notice and hearing.

(98) The operator of any horizontally drilled well in the Moraine-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.

(99) 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 Moraine-Bakken Pool.

(100) 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 Moraine-Bakken Pool; and (2) make such further amendments or modifications to the spacing requirements for the Moraine-Bakken Pool as the Commission deems appropriate.

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

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

(103) 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 Moraine-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 6500 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.

(104) 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.

(105) 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.

(106) All wells in the Moraine-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.

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

(108) This portion of this order shall cover all of the Moraine-Bakken Pool, common source of supply of crude oil and/or natural gas as herein defined, and continues in full force and effect until the 28th day of February, 2013. If the Moraine-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, 2013. If, however, the Moraine-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.

(109) The operator of the first producing well in the Musta-Bakken Pool shall submit exhibits to be included in the record for this case, Case No. 15506, similar to those typically submitted in a temporary spacing hearing. Such exhibits must be submitted within 120 days after completing said well.

(110) Provisions established herein for the Musta-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 (111) below shall not be subject to this order.

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

TOWNSHIP 161 NORTH, RANGE 99 WEST, 5TH PM

ALL OF SECTIONS 5, 6, 7, 8, 16, 17, 18, 19, 20, 21, 28, 29, 30, 31, 32 AND 33.

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

(113) The temporary spacing for the development of the Musta-Bakken Pool is hereby set at one horizontal well per standup 1280-acre spacing unit.

(114) All portions of the well bore not isolated by cement of any horizontal well in the Musta-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.

(115) Sections 5 and 8; Sections 6 and 7; Sections 16 and 21; Sections 17 and 20; Sections 18 and 19; Sections 28 and 33; Sections 29 and 32; and Sections 30 and 31, Township 161 North, Range 99 West, Divide County, North Dakota, are hereby designated standup 1280-acre spacing units in the Musta-Bakken Pool.

(116) Spacing units hereafter created in the Musta-Bakken Pool shall be standup spacing units consisting of two adjacent governmental sections.

(117) The Musta-Bakken Pool shall not be extended except by further order of the Commission after due notice and hearing.

(118) The operator of any horizontally drilled well in the Musta-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.

(119) 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 Musta-Bakken Pool.

(120) 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 Musta-Bakken Pool; and (2) make such further amendments or modifications to the spacing requirements for the Musta-Bakken Pool as the Commission deems appropriate.

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

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

(123) 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 Musta-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 6200 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.

(124) 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.

(125) 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.

(126) All wells in the Musta-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.

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

(128) This portion of this order shall cover all of the Musta-Bakken Pool, common source of supply of crude oil and/or natural gas as herein defined, and continues in full force and effect until the 28th day of February, 2013. If the Musta-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, 2013. If, however, the Musta-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.

(129) The operator of the first producing well in the Garnet-Bakken Pool shall submit exhibits to be included in the record for this case, Case No. 15506, similar to those typically submitted in a temporary spacing hearing. Such exhibits must be submitted within 120 days after completing said well.

(130) Provisions established herein for the Garnet-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 (131) below shall not be subject to this order.

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

TOWNSHIP 161 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 1, 2, 3, 4, 9, 10, 11 AND 12.

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

(133) The temporary spacing for the development of the Garnet-Bakken Pool is hereby set at one horizontal well per standup 1280-acre spacing unit.

(134) All portions of the well bore not isolated by cement of any horizontal well in the Garnet-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.

(135) Sections 1 and 12; Sections 2 and 11; Sections 3 and 10; and Sections 4 and 9, Township 161 North, Range 99 West, Divide County, North Dakota, are hereby designated standup 1280-acre spacing units in the Garnet-Bakken Pool.

(136) Spacing units hereafter created in the Garnet-Bakken Pool shall be standup spacing units consisting of two adjacent governmental sections.

(137) The Garnet-Bakken Pool shall not be extended except by further order of the Commission after due notice and hearing.

(138) The operator of any horizontally drilled well in the Garnet-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.

(139) 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 Garnet-Bakken Pool.

(140) 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 Garnet-Bakken Pool; and (2) make such further amendments or modifications to the spacing requirements for the Garnet-Bakken Pool as the Commission deems appropriate.

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

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

(143) 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 Garnet-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 6250 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.

(144) 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.

(145) 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.

(146) All wells in the Garnet-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.

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

(148) This portion of this order shall cover all of the Garnet-Bakken Pool, common source of supply of crude oil and/or natural gas as herein defined, and continues in full force and effect until the 28th day of February, 2013. If the Garnet-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, 2013. If, however, the Garnet-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.

Dated this 16th day of September, 2011.

INDUSTRIAL COMMISSION
STATE OF NORTH DAKOTA

By the Director, on behalf of the Commission

/s/ Lynn D. Helms, Director