

BEFORE THE INDUSTRIAL COMMISSION  
OF THE STATE OF NORTH DAKOTA

CASE NO. 11262  
ORDER NO. 13356

IN THE MATTER OF A HEARING CALLED ON  
A MOTION OF THE COMMISSION TO  
CONSIDER THE APPLICATION OF ST. MARY  
LAND & EXPL. CO. FOR AN ORDER  
EXTENDING THE BOUNDARY OF THE  
AMBROSE FIELD TO INCLUDE ALL OF  
SECTIONS 16, 17, 18, 19, 20, 21, 28, 29, 30, 31, 32,  
AND 33, T.163N., R.99W., DIVIDE COUNTY,  
ND, AND FURTHER INCLUDING SECTIONS 16  
AND 21; SECTIONS 17 AND 20; SECTIONS 18  
AND 19; SECTIONS 30 AND 31; SECTIONS 29  
AND 32; AND SECTIONS 28 AND 33 AS 1280-  
ACRE SPACING UNITS WITHIN ZONE I OF  
THE AMBROSE-BAKKEN POOL 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 20th day of July, 2009.
- (2) The witnesses for St. Mary Land & Exploration Company (St. Mary) 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 July 29, 2009; therefore, such testimony may be considered evidence.
- (3) St. Mary made application to the Commission for an order extending the boundary of the Ambrose Field to include all of Sections 16, 17, 18, 19, 20, 21, 28, 29, 30, 31, 32, and 33, Township 163 North, Range 99 West, Divide County, North Dakota (Sections 16, 17, 18, 19, 20, 21, 28, 29, 30, 31, 32, and 33), and further including Sections 16 and 21; Sections 17 and 20; Sections 18 and 19; Sections 30 and 31; Sections 29 and 32; and Sections 28 and 33 as 1280-acre spacing units within Zone I in the Ambrose-Bakken Pool and such other relief as is appropriate.
- (4) Order No. 12523 entered in Case No. 10495, the most recent spacing order for the Ambrose-Bakken Pool, established proper spacing for the development of Zone I at one horizontal well per 1280 acres and Zone II at one horizontal well per 640 acres.

(5) Section 16 is within the Ambrose Field and within Zone II in the Ambrose-Bakken Pool. Sections 17, 20, 21, 28, and 33 are adjacent or adjoining to the Ambrose Field and within the buffer zone of Zone II in the Ambrose-Bakken Pool. Sections 29, 30, and 32 are one section removed from the Ambrose Field and adjacent or adjoining to the buffer zone of Zone II in the Ambrose-Bakken Pool. Section 31 is two sections removed from the Ambrose Field and one section removed from the buffer zone of Zone II in the Ambrose-Bakken Pool.

(6) The W/2 and NE/4 of Section 18 and the NW/4 of Section 19 are within the West Ambrose Field. The Whiting Oil and Gas Corporation #11-18-1 Pederson well has produced 129,057 barrels of oil from the West Ambrose-Duperow Pool on a spacing unit described as the NW/4 of Section 18. The GLG Energy, LP #2 Pederson 12-19 well produced 8,425 barrels of oil from the West Ambrose-Duperow Pool on a spacing unit described as the NW/4 of Section 19.

(7) It is not customary practice of the Commission to move wells that have had production from one field to another. The establishment of Sections 18 and 19 as a 1280-acre drilling unit will allow St. Mary to drill the proposed well and will ease confusion.

(8) St. Mary presented evidence that the Ambrose-Bakken Pool underlies Sections 17, 20, 21, 28, 29, 30, 31, 32, and 33; therefore the boundary of the Ambrose Field should be extended to include such lands.

(9) There are no wells currently permitted to or producing from the Bakken Pool in Sections 16, 17, 18, 19, 20, 21, 28, 29, 30, 31, 32, or 33.

(10) St. Mary plans to develop the upper Three Forks Formation in the Bakken Pool underlying Sections 16 and 21; Sections 17 and 20; Sections 28 and 33; Sections 29 and 32; and Sections 30 and 31 by drilling single-lateral horizontal wells from surface locations near the north or south setback requirement on either end of the spacing unit and approximately 1320 feet from the east or west spacing unit boundary. The casing will be set horizontally in the Bakken Pool north or south of the surface location at a legal location and the laterals will then be drilled to bottom hole locations near the opposite north or south setback requirement and approximately 1320 feet from the same east or west spacing unit boundary. Utilization of horizontal drilling technology as proposed would result in the wells being completed at a location or locations not in compliance with current applicable spacing orders for the Ambrose-Bakken Pool. The surface and bottom hole locations herein depicted 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.

(11) St. Mary plans to develop the upper Three Forks Formation in the Bakken Pool underlying Sections 18 and 19 by drilling a single-lateral horizontal well from a surface location near the north or south setback requirement on either end of the spacing unit and approximately 1320 feet from the east or west spacing unit boundary. The casing will be set horizontally in the Bakken Pool north or south of the surface location at a legal location and the lateral will then be drilled to a bottom hole location near the opposite north or south setback requirement and approximately 1320 feet from the same east or west spacing unit boundary. In order to effectively utilize horizontal drilling technology and facilitate the drilling of the proposed exploratory well, and also increase the likelihood of success, it is essential that greater flexibility be afforded in locating the well bore of a horizontal hole than is allowed under the 320 or

640-acre drilling unit pursuant to NDAC Section 43-02-03-18. The surface and bottom hole locations herein depicted may be preliminary and could be changed for various reasons which is permissible as long as the horizontal well design still justifies the proposed drilling unit.

(12) Evidence and testimony presented to the Commission indicates that the proposed horizontal wells will produce oil that might otherwise not be produced.

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

(14) Pursuant to Section 38-08-07 of the North Dakota Century Code, spacing units must be of uniform size and shape for the entire pool, except when found necessary to prevent waste, avoid the drilling of unnecessary wells, or to protect correlative rights, the Commission is authorized to divide any pool into zones and establish spacing units for each zone, which units may differ in size and shape from those established in any other zone.

(15) Zones of different spacing within the Ambrose-Bakken Pool will allow the flexibility needed for utilization of horizontal drilling.

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

(17) If St. Mary'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.

(18) There were no objections to this application.

(19) Establishing Sections 18 and 19 as a 1280-acre drilling unit and establishing Sections 16 and 21; Sections 17 and 20; Sections 28 and 33; Sections 29 and 32; and Sections 30 and 31 as 1280-acre spacing units within the Ambrose-Bakken Pool will prevent waste, avoid the drilling of unnecessary wells, and protect correlative rights.

**IT IS THEREFORE ORDERED:**

(1) Sections 18 and 19, Township 163 North, Range 99 West, Divide County, North Dakota, are hereby established as a 1280-acre drilling unit for the exclusive purpose of drilling a horizontal well within said drilling unit within the Bakken Pool.

(2) 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 drilling unit 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 drilling unit.

(3) For purposes of this order as it pertains to the drilling unit herein established, the 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.

(4) All portions of the well bore not isolated by cement of any horizontal well drilled within the Bakken Pool in the drilling unit herein established, shall be no closer than 500 feet to the boundary of the drilling unit. Measurement inaccuracies in the directional survey equipment need not be considered except when deemed necessary by the Director.

(5) The operator of a horizontally drilled well in the drilling unit herein established 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.

(6) No well shall be drilled or produced in the Bakken Pool in the drilling unit herein established, except in conformity with the regulations above, without special order of the Commission after due notice and hearing.

(7) This order as it pertains to the 1280-acre drilling unit herein established shall remain in full force and effect until further order of the Commission.

(8) 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 1280-acre spacing units for the exclusive purpose of drilling a horizontal well within each said spacing unit within the Ambrose-Bakken Pool and Zone I 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.

(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) 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 (11) below shall not be subject to this order.

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

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM

ALL OF SECTIONS 13, 14, 15, 16, 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 18, 19, 30 AND 31,

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

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

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

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

ZONE I (Exclusively for horizontal wells)

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM  
ALL OF SECTIONS 16, 17, 20, 21, 25, 28, 29, 30, 31, 32, 33 AND 36,

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

ZONE II (Exclusively for horizontal wells)

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

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

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

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

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

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

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

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

(16) Sections 16 and 21; Sections 17 and 20; Sections 25 and 36; Sections 28 and 33; Sections 29 and 32; Sections 30 and 31, Township 163 North, Range 99 West; and Sections 1 and 12, Township 162 North, Range 99 West, Divide County, North Dakota, are hereby designated 1280-acre spacing units in Zone I in the Ambrose-Bakken Pool.

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

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

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

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

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

(22) 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.

(23) 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.

(24) 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.

(25) 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.

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

- (a) The surface casing shall consist of new or reconditioned pipe that has been previously tested to 1000 pounds per square inch. The casing shall be set and cemented at a point not less than 50 feet below the base of the Fox Hills Formation. Sufficient cement shall be used to fill the annular space outside the pipe to the surface of the ground, or the bottom of the cellar, and sufficient scratchers and centralizers shall be used to assure a good cement job. Cement shall be allowed to stand a minimum of 12 hours before drilling the plug or initiating tests. The quality of cement shall conform to the standards provided under NDAC Section 43-02-03-21;
- (b) The producing or oil string shall consist of new or reconditioned pipe that has been previously tested to 2000 pounds per square inch. Casing shall be set and cemented at a point not higher than the top of the producing formation, or at a point approved by the Director. Sufficient cement shall be used and applied in such a manner as to protect and isolate all formations containing oil and/or gas, protect the pipe through salt sections encountered, and isolate the Dakota-Lakota Series. The cement shall be allowed to stand a minimum of 15 hours before drilling the plug or initiating tests. The quality of cement shall conform to the standards provided under NDAC Section 43-02-03-21. After cementing, the casing shall be tested by application of pump pressure of at least 1500 pounds per square inch. If, at the end of 30 minutes this pressure has dropped 150 pounds per square inch or more, the casing shall be repaired. Thereafter, the casing shall again be tested in the same manner. Further work shall not proceed until a satisfactory test has been obtained;
- (c) All well-head fittings and connections shall have a working pressure in excess of that to which they are expected to be subjected; and,
- (d) All wells shall be equipped with tubing; a tubing packer must also be utilized in flowing wells unless a waiver is obtained from the Director after demonstrating the casing will not be subjected to excessive pressure or corrosion; all tubing shall be of sufficient internal diameter to allow the passage of a bottom hole pressure gauge for the purpose of obtaining bottom hole pressure measurements.

(27) The gas-oil ratio of all wells not connected to a gas gathering system shall be measured annually during the month of May. The reservoir pressure shall be measured within 45 days in all wells hereinafter completed in the Ambrose-Bakken Pool. Drill stem test pressures are acceptable for determining reservoir pressure. Pressure measurements shall be made at or adjusted to a subsea datum of 5740 feet after the well has been shut in for a minimum of 48 hours. All gas-oil ratio and reservoir pressure determinations shall be made by methods

approved by the Director and reported to the Director within 15 days following the end of the month in which they are determined. The Director is authorized to waive these requirements if the necessity therefore can be demonstrated to his satisfaction. All additional gas-oil ratio and reservoir pressure determinations conducted on any well, but not specially required herein, shall be reported to the Director within 15 days following the end of the month in which they are determined.

(28) 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.

(29) 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.

(30) 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.

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

Dated this 20th day of August, 2009.

INDUSTRIAL COMMISSION  
STATE OF NORTH DAKOTA

By the Director, on behalf of the Commission

/s/ Lynn D. Helms, Director