

STATE OF SOUTH DAKOTA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
BOARD OF MINERALS AND ENVIRONMENT

<p>IN THE MATTER OF THE APPLICATION OF NAKOTA ENERGY, LLC, LITTLETON, COLORADO, FOR AN ORDER TO ESTABLISH A FIELD FOR THE PRODUCTION OF OIL AND GAS CONSISTING OF ALL OF SECTION 14 AND THE NORTH HALF OF SECTION 23, TOWNSHIP 6 NORTH, RANGE 5 EAST, MEADE COUNTY, SOUTH DAKOTA, WITH SPACING OF ONE WELL PER 40-ACRE TRACT, EACH WELL TO BE LOCATED NOT CLOSER THAN 500 FEET FROM THE SPACING UNIT BOUNDARY, AND NOT CLOSER THAN 1,000 FEET TO THE NEAREST WELL DRILLED TO OR PRODUCING FROM THE STRATIGRAPHIC INTERVAL DESCRIBED AS FROM THE TOP OF THE SUNDANCE TO THE BASE OF THE MINNELUSA FORMATIONS.</p>	<p style="text-align:center">FINDINGS OF FACT AND CONCLUSIONS OF LAW AND ORDER</p> <p style="text-align:center">CASE NO. 17-2010</p>
--	--

Petitioner Nakota Energy, LLC, ("Petitioner") filed a Petition with the South Dakota Board of Minerals and Environment ("Board") seeking an Order from the Board establishing a field for the production of oil and gas to be known as the Gullickson Field with said Field consisting of all of Section Fourteen (14) and the North Half (N1/2) of Section Twenty-Three (23), Township 6 North, Range 5 East of the Black Hills Meridian (T6N,R5E,BHM), Meade County, South Dakota, and to establish temporary spacing units for the orderly development of the pool or pools of oil or gas or both with the field boundaries with temporary spacing units to consist of one well per 40-acre tract, each well to be located not closer than five hundred (500) feet from the spacing unit boundary on which that well is drilled and not closer than one thousand (1,000) feet from the nearest well drilled to or producing from the stratigraphic interval from the top of the Sundance to the base of the Minnelusa formations. Following due, proper,

and timely notice, the Board held a hearing on this Petition in Pierre, South Dakota, on November 18, 2010. A quorum of the Board was present at the hearing. A majority of the Board voted to adopt the following Findings of Fact and Conclusions of Law and to enter the following Order establishing the Gullickson Field and establishing temporary spacing and field rules for the Gullickson Field.

After considering the testimony and evidence presented by Petitioner and after having afforded other interested parties the opportunity to present evidence and arguments, and good cause appearing for granting the relief hereinafter granted, now, therefore, the Board does hereby make and enter the following:

FINDINGS OF FACT

1. To the extent any Conclusion of Law set forth below may be deemed a Finding of Fact, the same is incorporated herein by reference the same as if set forth in full.
2. Petitioner served a due and timely Notice of Hearing for the hearing held on this Petition on all persons with a pecuniary interest that would be directly and immediately affected by the Order of the Board sought by Petitioner by certified mail, return receipts requested.
3. The Notice of Hearing for the hearing on this Petition was also served by two publications in each of the following newspapers: The Rapid City Journal, Rapid City, Pennington County, South Dakota, with circulation in Meade County, South Dakota; the Capital Journal, Pierre, Hughes County, South Dakota, the capital of the State of South Dakota; and the Meade County Times-Tribune, Sturgis, Meade County, South Dakota, with circulation in Meade County, South Dakota
4. Petitioner filed an Affidavit of Service by Mail with the South Dakota Department

of Environment and Natural Resources, Oil and Gas Section, indicating that service by certified mail, return receipt requested, of the Petition in this matter and the Notice of Hearing for the instant hearing was completed by depositing the same in the United States Mail on October 8, 2010, which date is more than 20 days prior to the deadline for intervention of November 2, 2010, established in that Notice of Hearing.

5. The Petition in this matter, as amended, seeks to establish a new field for the production of oil and gas on the following described property:

All of Section Fourteen (14) and the North Half of Section Twenty-Three (23), Township 6 North, Range 5 East of the Black Hills Meridian (T6N,R5E,BHM), Meade County, South Dakota

to be hereafter known as the Gullickson Field (“the Gullickson Field”).

6. Petitioner seeks to establish temporary spacing units within the Gullickson Field of one well per forty (40) acres, more or less, with each forty (40) acre spacing unit being comprised of one governmental quarter-quarter section.

7. Petitioner seeks to establish field rules for the Gullickson Field pursuant to which no one well may be drilled closer than five hundred (500) feet from the boundary of the spacing unit in which that well is drilled nor less than one-thousand (1000) feet from any existing oil well within said field drilled to or producing from the stratigraphic interval from the top of the Sundance Formation to the base of the Minnelusa Formation.

8. The target formations for the production of oil and gas in the Gullickson Field are the Sundance Formation and Minnelusa Formation.

9. The size, location, slope, shape, and contours of the oil and gas bearing structure in the Sundance Formation within the Gullickson Field area has been delineated through surface

mapping, seismographic investigation, analysis of wellbore logs, and other sources of geological data.

10. The size, location, slope, shape, and contours of structure in the Minnelusa Formation reasonably believed to be a prospect for the development of oil and gas production within the Gullickson Field area has been delineated through surface mapping and seismographic investigation.

11. The Circus Flats Pluton is an igneous pluton that exists as a subsurface feature immediately to the east of the Gullickson Field area.

12. In the far geologic past, the Circus Flats Pluton intruded into the subsurface geological features in the area of the area just to the east of the Gullickson Field thereby affecting the slope and plane of adjacent geologic structures in the Gullickson Field area.

13. The oil bearing structures in the Sundance Formation and in the Minnelusa Formation within the boundaries of the Gullickson Field are anticlines that were created as the result of this intrusion of the Circus Flats Pluton into adjacent geological structures.

14. The prospect of the presence of oil and gas in commercial quantities in the Sundance Formation within the area of the proposed Gullickson Field was first identified through oil shows discovered in the process of the drilling water wells within the boundaries of the proposed Gullickson Field and the presence of oil seeps on the surface of the earth in area to the east of the Gullickson Field, between the Field area and the land area underlain by the Circus Flats Pluton.

15. Surface mapping of geologic structures in the area of the proposed Gullickson Field suggested the presence of the anticline now known to be the oil bearing structure in the

Sundance Formation in that location.

16. Building on these indicators of the presence of oil and gas in the Sundance Formation in this area, a seismological investigation was conducted that delineated the location, shape, contours, and size of the anticline that is the oil bearing structure in the Sundance Formation within the Gullickson Field area.

17. A discovery well has been drilled into the Sundance Formation within the Gullickson Field area.

18. This well is identified as the #1 Traub Well and is located in the Northeast Quarter of the Southwest Quarter (NE1/4SW1/4) of Section Fourteen (14), Township 6 North, Range 5 East, Black Hills Meridian (T6N,R5E, BHM), Meade County, South Dakota.

19. The surface of the earth in the location where the #1 Traub Well described above was drilled is 3,090 feet above sea level.

20. The Kelly Bushing on the drilling rig used in the drilling of the #1 Traub Well was located 4 feet above ground level at the well location, or 3094 above sea level.

21. The top of the Sundance Formation in the #1 Traub Well was located at 290 feet below the Kelly Bushing.

22. The bottom of the Sundance Formation in the #1 Traub Well was located at 602 below the Kelly Bushing.

23. The Sundance Formation from the depth of 290 feet below the Kelly Bushing to the depth of 602 below the Kelly Bushing in the #1 Traub Well is a heterogeneous formation consisting of alternating layers of sandstone and fractured shale, all of which are in communication with one another.

24. Information gathered during the process of the drilling of the #1 Traub Well demonstrates that oil and gas is located throughout the entire cross-section of the Sundance Formation in the #1 Traub Well.

25. An oil sample produced from the #1 Traub Well was submitted for testing to Humble Geochemical Services.

26. The test results disclose that the crude oil from the Sundance Formation recovered from the #1 Traub Well is a medium grade crude oil that is readily commercially marketable.

27. Information from the #1 Traub Well discloses that there is a relatively low percentage of water relative to oil in the oil bearing formation.

28. The Minnelusa Formation within the confines of the Gullickson Field is located approximately 1,000-1,200 feet below the surface of the earth.

29. The Minnelusa Formation is known from studies of the geology in the vicinity of the Black Hills in western South Dakota and from well information from other oil and gas wells drilled into the Minnelusa Formation near the Black Hills in western South Dakota to consist of sandstone, shale, and carbonates that are of the type and quality associated with the production of oil and gas from the Minnelusa Formation.

30. From geologic studies and from the seismographic study conducted within the Gullickson Field, it has been adequately demonstrated to the Board that the geologic structure of the Minnelusa Formation within the Gullickson Field is of such size, shape, slope and contour as to be a reasonable prospect for the production of oil and gas and that this structure is generally of the size and shape of the structure that has been identified in the Sundance

Formation in this location.

31. There are no water wells within the boundaries of the Gullickson Field.

32. The most common source of water for domestic wells in the near vicinity of the Gullickson Field is the Lakota Formation.

33. The intrusion of the Circus Flats Pluton into the geologic structures just to the east of the Gullickson Field area has caused the Lakota Formation to be pushed upward in that area, as compared to the depth of the Lakota Formation elsewhere in the area.

34. Through geologic time, erosion has brought the Lakota Formation to the surface of the earth within the confines of the Gullickson Field area, thereby eliminating the Lakota Formation as a source of domestic water within the Gullickson Field.

35. Absent the Order from the Board sought by Petitioner's Application, the land proposed for spacing in the proposed Gullickson Field is presently subject only to state-wide 40 acre spacing regulations.

36. The #1 Traub Well has shown that crude oil can be produced from the target formations in commercial amounts.

37. There are no adjacent oil fields or pools of oil.

38. Petitioner is the owner of more than a majority of the oil and gas leasehold interest in the area proposed as the new field.

39. Upon the testimony and evidence introduced at hearing, Petitioner has persuasively demonstrated that the geologic structures in the Sundance and Minnelusa Formations from which oil and gas is to be produced is a local geologic structure in the nature of an anticline.

40. The target pool of oil and gas in the Sundance Formation has been adequately delineated as being located within the boundaries of the proposed Gullickson Field.

41. The target pool of oil and gas in the Sundance Formation is reasonably believed to underlie all or substantially all of the lands proposed to be included in the Gullickson Field.

42. The accumulation of oil and gas in the Sundance Formation in the area of the proposed Gullickson Field is a “pool” of oil and gas as defined in Chapter 45-9 of the South Dakota Codified Laws and constitutes a common accumulation of oil or gas or both.

43. From presently available information, and pending the development of further information from production operations of the #1 Traub Well and from the drilling and operation of additional wells in the Gullickson Field area, the Board finds that one well located in a forty (40) acre spacing unit consisting of a governmental quarter-quarter section (a) is not smaller than the size and shape of a spacing unit that will efficiently and economically drain the pool of oil and gas in the Sundance Formation underlying the Gullickson Field and any separate pool of oil and gas that may hereafter be established as existing in the Minnelusa Formation underlying the Gullickson Field area, (b) will result in the efficient and economical development of the pool as a whole, (c) will lead to the drilling of no more wells than are necessary to adequately drain the field, and (d) will establish a spacing pattern necessary to prevent waste, to avoid drilling of unnecessary wells, and to protect the correlative rights of all interested parties.

44. There is not adequate information available at the present time from which to determine whether a pattern of spacing units smaller than forty (40) acres would better serve to avoid waste while still avoiding the drilling of unnecessary wells and protecting correlative rights.

45. Oil has not yet been produced from the #1 Traub Well.

46. There is not sufficient evidence at the present time from which to make a final determination as to the area that can be efficiently and economically drained by one well within the Gullickson Field.

47. As a result, the Board has determined at this time to enter an Order establishing temporary spacing units within the Gullickson Field that are forty (40) acres in size and consist of a governmental quarter-quarter section in order to allow for the orderly development of the pool of oil and gas in the Sundance Formation within the Gullickson Field area and for the orderly development of the separate pool of oil and gas reasonably thought to exist in the Minnelusa Formation within the confines of the Gullickson Field.

48. This temporary forty (40) acre spacing shall remain in effect pending the development of the Field and of further information required for the Board to make a determination as to what the permanent spacing will be within the Gullickson Field.

49. Based upon presently available information, the Board finds that forty (40) acres is not smaller than the maximum area that can be efficiently and economically drained by one well in the pool.

50. The shape of each temporary spacing unit within the proposed Gullickson Field shall be a governmental quarter-quarter section.

51. Based upon presently available information, the Board finds that spacing the Gullickson Field on the basis of forty (40) acres with each spacing unit consisting of a governmental quarter-quarter section is a size and shape of spacing unit that will promote a reasonable uniform spacing plan for the Gullickson Field.

Upon the foregoing Findings of Fact the Board does hereby make and enter the following:

CONCLUSIONS OF LAW

1. Any Conclusions of Law contained in the foregoing Findings of Fact are incorporated herein by reference,
2. The Notice of Hearing prepared and served as indicated above is in conformance with the requirements of SDCL § 1-26-17 and ARSD 74:09:01:11.
3. Due, legally sufficient, and timely notice of the time, place and purpose of the hearing on Petitioners Application has been afforded to all interested parties and all respects as required by law and all parties have been afforded an opportunity for hearing after reasonable notice.
4. The Board has jurisdiction over the subject embraced herein and over all interested parties and has the jurisdiction to make and promulgate the Order hereinafter set forth.
5. The land described as:

All of Section Fourteen (14) and the North Half of Section
Twenty-Three (23), Township 6 North, Range 5 East of the Black
Hills Meridian (T6N,R5E,BHM), Meade County, South Dakota

has been demonstrated by the evidence and determined by this Board to be underlain by a common pool of oil and gas as defined in SDCL Chapter 45-9 and to encompass all of the land determined and believed to be underlain by that common pool of oil and gas.
6. To provide for the orderly and uniform development of the pool of oil in both the Sundance Formation and the Minnelusa Formation in the Gullickson Field, to prevent or assist

in preventing the waste of oil or gas produced therefrom, to protect correlative rights, and to avoid the drilling of unnecessary wells, it is necessary to establish the Gullickson Field on the lands above-described and to establish temporary spacing units within said Gullickson Field as next set forth.

7. The Gullickson Field shall be temporarily spaced at one well per forty (40) acre spacing unit with each forty (40) acre spacing unit consisting of a governmental quarter-quarter section

8. The Gullickson Field shall be subject to field rules where by any well to be drilled on a spacing unit in the Gullickson Field shall be located not closer than five hundred (500) feet from the boundary of the spacing unit in which it is drilled and not closer than 1,000 feet from the nearest well drilled to or producing from the stratigraphic interval from the top of the Sundance Formation to the base of the Minnelusa Formation.

9. One well producing oil or gas, or both, from each such forty (40) acres spacing unit is an area that is not smaller than the size of spacing unit that will efficiently and economically drain the recoverable oil or gas, or both, underlying the lands included in the Gullickson Field.

ORDER

Upon the foregoing Findings of Fact and Conclusions of Law, and good cause appearing for granting the relief hereinafter granted, now, therefore, it is hereby

ORDERED that an oil and gas field to be hereafter known as the Gullickson Field is hereby established and that the Gullickson Field shall encompass and contain the following described lands:

All of Section Fourteen (14) and the North Half of Section
Twenty-Three (23), Township 6 North, Range 5 East of the Black
Hills Meridian (T6N,R5E,BHM), Meade County, South Dakota

and it is further hereby

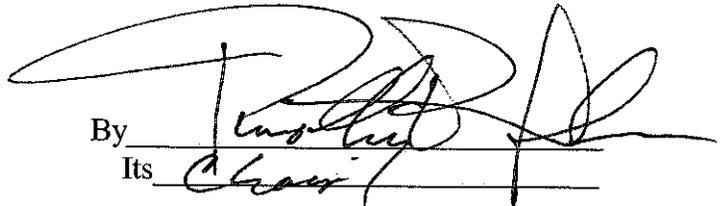
ORDERED that, pending a further Order of this Board, the Gullickson Field shall be, and hereby is, temporarily spaced for purposes of oil and gas production from the Sundance Formation and the Minnelusa Formation at forty (40) acres per spacing unit, with each such forty (40) acre spacing unit to consist of a governmental quarter-quarter section, with one oil and gas well allowed per spacing unit, and with that well to be drilled at a location that is not closer than five hundred (500) feet from the boundary of the spacing unit in which that well is drilled and not closer than one thousand (1,000) feet from the nearest well drilled to or producing from the stratigraphic interval from the top of the Sundance Formation to the base of the Minnelusa Formation.

Dated this 18th day of November, 2010.

SOUTH DAKOTA BOARD OF
MINERALS AND ENVIRONMENT

By

Its



A large, stylized handwritten signature in black ink, written over two horizontal lines. The signature is highly cursive and appears to be the name of the board's chair.