BEFORE THE INDUSTRIAL COMMISSION

OF THE STATE OF NORTH DAKOTA

CASE NO. 5964 ORDER NO. 6899

IN THE MATTER OF A HEARING CALLED ON A MOTION OF THE COMMISSION TO CONSIDER THE PROPER SPACING FOR THE DEVELOPMENT OF THE DICKINSON-LODGEPOLE POOL, STARK COUNTY, NORTH DAKOTA, REDEFINE THE LIMITS OF THE FIELD, AND ENACT SUCH SPECIAL FIELD RULES AS MAY BE NECESSARY.

ORDER OF THE COMMISSION

BY THE COMMISSION:

Pursuant to legal notice this cause came on for hearing at 9:00 a.m. on the 24th day of August, 1994, in Bismarck, North Dakota, before an examiner appointed by the Industrial Commission of North Dakota, hereinafter referred to as the "Commission."

NOW, on this 19th day of September, 1994, the Director, on behalf of the Commission as authorized by the Commission, having considered the testimony adduced and the exhibits received at said hearing, and being fully advised in the premises,

FINDS:

- (1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.
- (2) That counsel for Conoco Inc. requests that this case be continued to the regularly scheduled hearing on September 28, 1994.
 - (3) That there were no objections to said request.
- (4) That this case should be continued to the regularly scheduled hearing on September 28, 1994.

IT IS THEREFORE ORDERED:

- (1) That this case is hereby continued to the regularly scheduled hearing on September 28, 1994.
- (2) That Commission Order No. 6607 shall remain in full force and effect until further order of the Commission.

Dated this 19th day of September, 1994.

INDUSTRIAL COMMISSION STATE OF NORTH DAKOTA

By the Director, on behalf of the Commission.

BEFORE THE INDUSTRIAL COMMISSION

OF THE STATE OF NORTH DAKOTA

CASE NO. 5964 (CONTINUED)
ORDER NO. 6932

IN THE MATTER OF A HEARING CALLED ON A MOTION OF THE COMMISSION TO CONSIDER THE PROPER SPACING FOR THE DEVELOPMENT OF THE DICKINSON-LODGEPOLE POOL, STARK COUNTY, NORTH DAKOTA, REDEFINE THE LIMITS OF THE FIELD, AND ENACT SUCH SPECIAL FIELD RULES AS MAY BE NECESSARY.

ORDER OF THE COMMISSION

BY THE COMMISSION:

Pursuant to legal notice this cause came on for hearing at 9:00 a.m. on the 28th day of September, 1994, in Bismarck, North Dakota, before an examiner appointed by the Industrial Commission of North Dakota, hereinafter referred to as the "Commission."

NOW, on this 17th day of October, 1994, the Commission, a quorum being present, having considered the testimony adduced and the exhibits received at said hearing, and being fully advised in the premises,

FINDS:

- (1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.
- (2) That geological and engineering evidence presented to the Commission relative to the matter of well spacing indicates that the Dickinson-Lodgepole Pool, as classified and defined in this order, should be developed on a pattern of one well to 320 acres in order to drain efficiently the recoverable oil from said pool, assure rapid development, avoid the drilling of unnecessary wells, and prevent waste in a manner that will protect correlative rights.
- (3) That proper 320-acre spacing in the Lodgepole Pool in this field will result in the efficient and economical development of the field as a whole and will operate so as to prevent waste and provide maximum ultimate recovery, will avoid the drilling of unnecessary wells, and will protect correlative rights.
- (4) That the unrestricted flaring of gas produced from the Dickinson-Lodgepole Pool could be considered waste, and in order to minimize such, production from the pool should be restricted until the wells producing therefrom are connected to a gas gathering and processing facility.
- (5) That engineering evidence presented to the Commission relative to the characteristics of productive Lodgepole reservoirs in the Dickinson Field area indicates that these reservoirs are undersaturated oil reservoirs with extremely high permeabilities. As a result, unrestricted production will result in a rapid decline in reservoir pressure. Without some form of

pressure maintenance, reservoir pressures in a typical Lodgepole reservoir will quickly fall below bubble point resulting in significant loss of oil reserves.

(6) That certain special field rules are necessary to prevent waste and protect against the contamination and pollution of surface lands and fresh waters.

IT IS THEREFORE ORDERED:

(1) That the Dickinson Field is hereby redefined as the following described tracts of land in Stark County, North Dakota:

TOWNSHIP 139 NORTH, RANGE 96 WEST, 5TH PM ALL OF SECTIONS 5 AND 6,

TOWNSHIP 139 NORTH, RANGE 97 WEST, 5TH PM ALL OF SECTIONS 1, 2, 3 AND 4,

TOWNSHIP 140 NORTH, RANGE 96 WEST, 5TH PM
ALL OF SECTIONS 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 27, 28, 29, 30, 31, 32 AND 33,

TOWNSHIP 140 NORTH, RANGE 97 WEST, 5TH PM
ALL OF SECTIONS 13, 22, 23, 24, 25, 26, 27, 33, 34, 35 AND 36,

together with those additional quarter 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.

- (2) That the Dickinson-Lodgepole Pool be, and the same is hereby defined as that accumulation of oil and gas found in the interval from below the base of the Mission Canyon Formation to above the top of the Bakken Formation within the limits of the field as set forth above.
- (3) That effective this date, the proper spacing for the development of the Dickinson-Lodgepole Pool be, and the same is hereby set at one well to 320 acres.
- (4) That all wells hereafter drilled to said pool shall be located not less than 660 feet from a spacing unit boundary nor closer than 1980 feet to a well permitted to or producing from the pool. Wells presently permitted to or producing from the pool that do not conform to this spacing pattern shall be considered exceptions.
- (5) That the Dickinson-Lodgepole Pool is defined as all lands within the Dickinson Field boundary excluding tracts located within the Dickinson-Lodgepole Unit area described in Commission Order No. 6861, Finding (2).
- (6) That spacing units in the Lodgepole Pool in the Dickinson Field shall consist of two adjacent quarter sections, or governmental lots corresponding thereto within the same section. The configuration of spacing units, either vertical or horizontal, shall be determined by the location of the first well in the section, such that the aforesaid well will be nearest to the center of the spacing unit. Spacing units for wells being equi-distant from the mid-section lines shall be designated by the operator; however, the Commission shall have continuing jurisdiction, and

in the event that spacing units hereafter formed by this policy do not coincide with the geological and physical nature of the reservoir, the Commission may alter specific spacing units upon application by any interested party, after due notice and hearing.

- (7) That no well shall be drilled hereafter in the Dickinson-Lodgepole Pool except in conformity with the regulations above without special order of the Commission after due notice and hearing.
- (8) That the following rules concerning the casing, tubing and equipping of wells shall apply to the subsequent drilling and operation of wells in the Dickinson-Lodgepole 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;
 - (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 manner as to adequately protect and isolate all formations containing oil and/or gas, protect the pipe through salt sections encountered, and to isolate the Dakota-Lakota Series. cement shall be allowed to stand a minimum of 24 hours before drilling the plug or initiating tests. After cementing, the casing shall be tested by application of pump pressure of at least 2000 pounds per square inch. If, at the end of 30 minutes this pressure shall have 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; 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.
- (9) That the gas-oil ratio of each well shall be measured during the months of May and November, and the reservoir pressure of flowing wells shall be measured in the months of May and November, and in pumping wells when the rods are pulled but at least once annually and reported to the Director within 15 days following the end of the month in which they are determined. Pressure measurements shall be made at or adjusted to a subsea datum of 7270 feet after the well has been shut in for 48 hours. All gas-oil ratio and reservoir pressure determinations shall be made under the supervision of and by methods approved by the Director. The Director

is authorized to waive these requirements if the necessity therefor can be demonstrated to his satisfaction.

- (10) That wells completed or recompleted in the Dickinson-Lodgepole Pool, after the effective date of this order, shall be allowed to produce at an unrestricted rate for a period of 60 days commencing on the first day oil was 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 produced from such wells shall not exceed an average of 150 barrels of oil 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. Immediately after the completion or recompletion of any well in the Dickinson-Lodgepole Pool, the operator shall file with the Director a completion report (Form 6). Within 30 days, or a reasonable time thereafter, following the filing of a completion report, a hearing shall be docketed to have the operator show cause why the production restrictions imposed herein should not remain in place until such time as a plan of unitization and secondary recovery operations for the reservoir is submitted and considered by the Commission. However, any well not connected to a gas pipeline shall comply with the provisions of paragraph (13) below.
- (11) That 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.
- (12) That in accordance with Commission Order No. 2099, the Dakota-Lakota Series in and under the Dickinson Field, is hereby designated a disposal reservoir, and the Director is authorized to approve requests to utilize wells in the field, as herein defined, for salt water disposal purposes.
- (13) That all wells hereafter completed in the Dickinson-Lodgepole Pool and not connected to a gas pipeline shall be allowed to produce at an unrestricted 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 production rates of the wells shall be in accordance with paragraph (10) above.
- (14) That if the flaring of gas produced with crude oil from the Dickinson-Lodgepole Pool causes, or threatens to cause, degradation of ambient air quality, production from the pool shall be further restricted.
- (15) That this order shall cover all of the Dickinson-Lodgepole Pool common source of supply of crude oil and/or natural gas as herein defined, and shall continue in full force and effect until further order of the Commission or until the last well in the pool has been plugged and abandoned.

Dated this 17th day of October, 1994.

INDUSTRIAL COMMISSION STATE OF NORTH DAKOTA

- /s/ Heidi Heitkamp, Attorney General
- /s/ Sarah Vogel, Commissioner of Agriculture

NORTH DAKOTA INDUSTRIAL COMMISSION

IL AND GAS DIVISION

Wesley D. Norton DIRECTOR

F. E. Wilborn ASSISTANT DIRECTOR

Clarence G Carlson GEOLOGIST Charles Koch ENGINEERING DEPT

Doren Dannewitz FIELD SUPERVISOR

Glenn Wollan RECLAMATION SUP

September 20, 1994

Mr. Lawrence Bender Pearce & Durick P.O. Box 400 Bismarck, ND 58502

RE: CONTINUANCE OF CASE NO. 5964

Dear Mr. Bender:

Pursuant to Section 43-02-03-90 North Dakota Administrative Code, any person moving for continuance of a hearing, and who is granted the continuance, shall submit twenty-five dollars (\$25.00) to the Industrial Commission to cover the cost of republication for the notice of hearing.

At a meeting on September 19, 1994, Wesley D. Norton, on behalf of the Industrial Commission, entered Order No. 6899 granting the request of Conoco Inc. for a continuance of Case No. 5964 to the September 28, 1994 hearings.

Enclosed is Invoice No. 7292 in the amount of \$25.00. Please submit payment at your earliest convenience.

Sincerely,

Tracy Heilman

Information Processor

th enc.

10/17/94

STATE OF NORTH DAKOTA)))	AFFIDAVIT OF MAILING
COUNTY OF BURLEIGH)	

I, Donna Bauer, being duly sworn upon oath, depose and say: That on the 20th day of October 1994, I enclosed in separate envelopes true and correct copies of the attached Order No. 6932 of the North Dakota Industrial Commission, and deposited the same with the United States Postal Service in Bismarck, North Dakota, with postage thereon fully paid, directed to the following persons, all of whom appeared at the hearing of the Industrial Commission in Case No. 5964 :

Mr. John Morrison Fleck, Mather & Strutz Ltd. P. O. Box 2798 Bismarck, ND 58502

Mr. Lawrence Bender Pearce & Durick P. O. Box 400 Bismarck, ND 58502

Mr. Kevin Zorn Conoco Inc. 10 Desta Drive Midland, TX 79705-4500

Mr. Jim Turner Conoco Inc. 10 Desta Drive Midland, TX 79705-4500

> Donna Bauer Oil & Gas Division

On this 20th day of 1994, before me personally appeared 1994 appeared to me known as the person described in and who executed the foregoing instrument and acknowledged that she executed the same as her free act and deed.

Notary Public

BEFORE THE INDUSTRIAL COMMISSION

OF THE STATE OF NORTH DAKOTA

CASE	NO.	5964	•
ORDI	ER N	О	

IN THE MATTER OF A HEARING CALLED ON A MOTION OF THE COMMISSION TO CONSIDER THE PROPER SPACING FOR THE DEVELOPMENT OF THE DICKINSON-LODGEPOLE POOL, STARK COUNTY, NORTH DAKOTA, REDEFINE THE LIMITS OF THE FIELD, AND ENACT SUCH SPECIAL FIELD RULES AS MAY BE NECESSARY. CONOCO INC.

ORDER OF THE COMMISSION

BY THE COMMISSION:

Pursuant to legal notice of September, 1994, in Bismann Industrial Commission of No.	narck, North Dakota,	for hearing at 9:00 a.m , before an examiner er referred to as the "o	appointed to the
NOW, on this a quorum being present, havin at said hearing, and being fu	day of	, 199 nony adduced and the mises,	, the Commission exhibits received
FINDS:			
(1) That due public has jurisdiction of this cause		ven as required by law er thereof.	, the Commission

(2) That Commission Order No. 6861 established and created the Dickinson-Lodgepole Unit in Stark County, North Dakota, including the following described lands:

TOWNSHIP 140 NORTH, RANGE 96 WEST, 5TH PM ALL OF SECTION 31, THE SWSWSWW OF SECTION 29, THE SEWSEWSEW OF SECTION 30, THE WW. THE WWW.SEW, THE WWSWWNEW AND THE

CONOCO INC.

Exhibit No. 10

Case No. 5964

SWMNWMNEW OF SECTION 32,

TOWNSHIP 139 NORTH, RANGE 96 WEST, 5TH PM
THE N½ OF SECTION 5 AND THE N½ AND SE¼ OF LOT 1, THE N½ OF
LOT 2 AND THE NE¼ OF LOT 3 OF SECTION 6.

ALL IN STARK COUNTY AND COMPRISING 1436.45 ACRES; MORE OR LESS.

- (3) That geological and engineering evidence presented to the Commission relative to the matter of well spacing indicates that the Dickinson-Lodgepole Pool, as classified and defined in this order, should be developed on a pattern of one well to 320 acres in order to drain efficiently the recoverable oil from said pool, assure rapid development, avoid the drilling of unnecessary wells, and prevent waste in a manner that will protect correlative rights.
- (4) That proper 320-acre spacing in the Dickinson-Lodgepole Pool in this field will result in the efficient and economical development of the field as a whole and will operate so as to prevent waste and provide maximum ultimate recovery, will avoid the drilling of unnecessary wells, and will protect correlative rights.
- (5) That the W½ and SE¼ of Section 4, Township 139 North, Range 97 West is within the boundary of the Heart River Field and wells in the field produce from the Heath Pool. A dry hole in the W½ of said Section 4 indicates that the Heart River-Heath Pool is not productive in the section. Removing said tracts from the field will not cause waste nor violate correlative rights.
- (6) That the unrestricted flaring of gas produced from the Dickinson-Lodgepole Pool could be considered waste, and in order to minimize such, production from the pool should be restricted until wells producing therefrom are connected to a gas gathering and processing facility.
- (7) That engineering evidence presented to the Commission relative to the characteristics of productive Lodgepole reservoirs in the Dickinson Field area indicates that these reservoirs are undersaturated oil reservoirs with extremely high permeabilities. As a result, unrestricted production will result in a rapid decline in reservoir pressure. Without some form of pressure maintenance, reservoir pressures in a typical Lodgepole reservoir will quickly fall below bubble point resulting in significant loss of oil reserves.
- (8) That certain special field rules are necessary to prevent waste and protect against the contamination and pollution of surface lands and fresh waters.

IT IS THEREFORE ORDERED:

(1) That the Dickinson Field is hereby redefined as the following described tracts of land in Stark County, North Dakota:

TOWNSHIP 139 NORTH, RANGE 96 WEST, 5TH PM ALL OF SECTIONS 5 AND 6,

TOWNSHIP 139 NORTH, RANGE 97 WEST, 5TH PM ALL OF SECTIONS 1, 2, 3 AND 4,

TOWNSHIP 140 NORTH, RANGE 96 WEST, 5TH PM ALL OF SECTIONS 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 27, 28, 29, 30, 31, 32, 33,

<u>TOWNSHIP 140 NORTH, RANGE 97 WEST, 5TH PM</u> ALL OF SECTIONS 13, 22, 23, 24, 25, 26, 27, 33, 34, 35 AND 36,

together with those additional quarter 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.

- (2) That the Dickinson-Lodgepole Pool is defined as all lands within the Dickinson Field boundary excluding tracts located within the Dickinson-Lodgepole Unit area described in Commission Order No. 6861 and FINDING (2) above.
- (3) That the Heart River Field is hereby redefined as the following described tracts of land in Stark County, North Dakota:

TOWNSHIP 139 NORTH, RANGE 97 WEST, 5TH PM ALL OF SECTIONS 5, 7 AND 8.

- (4) That the Dickinson-Lodgepole Pool be, and the same is hereby defined as that accumulation of oil and gas found in the interval from below the base of the Mission Canyon Formation to above the top of the Bakken Formation within the limits of the field as set forth above.
- (5) That effective this date, the proper spacing for the development of the Dickinson-Lodgepole Pool be, and the same is hereby set at one well to 320 acres.
- (6) That all wells hereafter drilled to said pool shall be located not less than 660 feet from a spacing unit boundary nor closer than 1980 feet to a well permitted to or producing from the pool. Wells presently permitted to or producing from the pool that do not conform to this spacing pattern shall be considered exceptions.

- (7) That spacing units in the Lodgepole Pool in the Dickinson Field shall consist of two adjacent quarter sections, or governmental lots corresponding thereto within the same section. The configuration of spacing units, either vertical or horizontal, shall be determined by the location of the first well in the section, such that the aforesaid well will be nearest to the center of the spacing unit. Spacing units for wells being equi-distant from the midsection lines shall be designated by the operator; however, the Commission shall have continuing jurisdiction, and in the event that spacing units hereafter formed by this policy do not coincide with the geological and physical nature of the reservoir, the Commission may alter specific spacing units upon application by any interested party, after due notice and hearing.
- (8) That no well shall be drilled hereafter in the Dickinson-Lodgepole Pool except in conformity with the regulations above without special order of the Commission after due notice and hearing.
- (9) That the following rules concerning the casing, tubing and equipping of the wells shall apply to the subsequent drilling and operation of wells in the Dickinson-Lodgepole 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 producing or oil string shall consist of new or reconditioned pipe (b) that has been previously tested to 2000 pounds per square inch. Casing shall be set and cement 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 manner as to adequately protect and isolate all formations containing oil and/or gas, protect the pipe through salt sections encountered, and to isolate the The cement shall be allowed to stand a Dakota-Lakota Series. minimum of 24 hours before drilling the plug or initiating tests. After cementing, the casing shall be tested by application of pump pressure of at least 2000 pounds per square inch. If, at the end of 30 minutes this pressure shall have 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; 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.
- (10) That the gas-oil ratio of each well shall be measured during the months of May and November, and the reservoir pressure of flowing wells shall be measured in the months of May and November, and in pumping wells when the rods are pulled but at least once annually and reported to the Commission with 15 days following the end of the month in which they are determined. Pressure measurements shall be made at or adjusted to a subsea datum of 7270 feet after the well has been shut in for 48 hours. All gas-oil ratios and reservoir pressure determinations shall be made under the supervision of and by methods approved by the Director. The Director is authorized to waive these requirements if the necessity therefor can be demonstrated to his satisfaction.
- (11) That no salt water shall be stored in pits in this field, except in an emergency, and approved by the Director.
- (12) That in accordance with Commission Order No. 2099, the Dakota-Lakota Series in and under the Dickinson Field, is hereby designated a disposal reservoir, and the Director is authored to approve requests to utilize wells in the field, as herein defined, for salt water disposal purposes.
- (13) That multiple completion of wells of the purpose of producing oil and/or gas from the various pools encountered in the Dickinson Field, is hereby authorized, subject to the following requirements:
 - (a) Administrative approval may be given by the Director upon the filing of an application in which the applicant states that the requirements described in (b) through (e) below and other applicable rules and orders of the Commission will be complied with;
 - (b) An approved production packer shall be set between each of the producing horizons in a manner which will effectively isolate each during the production process;
 - (c) Production from each producing horizon shall be through separate continuous strings of tubing installed in such a manner with respect to the production packers as will prevent commingling of production in the well bore;
 - (d) An approved well-head of a type which allows independent suspension

and packing of the tubing shall be used; and,

- (e) 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.
- (14) That wells completed or recompleted in the Dickinson-Lodgepole Pool, after the effective date of this order, shall be allowed to produce at an unrestricted rate for a period of 60 days commencing on the first day oil was 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 produced from such wells shall not exceed an average of 150 barrels of oil 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. Immediately after the completion or recompletion of any well in the Dickinson-Lodgepole Pool, the operator shall file with the Director a completion report (Form 6). Within 30 days, or a reasonable time thereafter, following the filing of a completion report, a hearing shall be docketed to have the operator show cause why the production restrictions imposed herein should not remain in place until such time as a plan of unitization and secondary recovery operations for the reservoir is submitted and considered by the Commission.
- (15) That if the flaring of gas produced with crude oil from the Dickinson-Lodgepole Pool causes, or threatens to cause, degradation of ambient air quality, production from the pool shall be further restricted.
- (16) That this order shall cover all of the Dickinson-Lodgepole Pool, common source of supply of crude oil and/or natural gas as herein defined, and shall continue in full force and effect until further order of the Commission.

Dated this	_ day of _	, 199	
		INDUSTRIAL COMMISSION STATE OF NORTH DAKOTA	
		Edward T. Schafer, Governor	

STATE OF NORTH DAKOTA)	AFFIDAVIT	OF	MAILING
COUNTY OF BURLEIGH	j			

I, Donna Bauer, being duly sworn upon oath, depose and say: That on the 21st_day of September 1994, I enclosed in separate envelopes true and correct copies of the attached Order No. 6899 of the North Dakota Industrial Commission, and deposited the same with the United States Postal Service in Bismarck, North Dakota, with postage thereon fully paid, directed to the following persons, all of whom appeared at the hearing of the Industrial Commission in Case No. 5964:

Mr. John Morrison Fleck, Mather & Strutz Ltd. P. O. Box 2798 Bismarck, ND 58502

Mr. Lawrence Bender Pearce & Durick P. O. Box 400 Bismarck, ND 58502

> Donna Bauer Oil & Gas Division

On this 2/st day of finder, 1994, before me personally appeared to me known as the person described in and who executed the foregoing instrument and acknowledged that she executed the same as her free act and deed.

Notary Public

State of North Dakota County of Burleigh My Commission expires <u></u><u>ょノス・ノルで</u>

NORTH DAKOTA INDUSTRIAL COMMISSION

OIL AND GAS DIVISIO

Wesley D Norton DIRECTOR

F. E. Wilborn ASSISTANT DIRECTOR

Clarence G. Carlson GEOLOGIST Charles Koch ENGINEERING DEPT

Doren Dannewitz FIELD SUPERVISOR

Glenn Wollan RECLAMATION SUP

July 21, 1994

Conoco Inc. 800 Werner Court Casper, WY 82601

Dear Sir:

The proper spacing for the development of the Dickinson-Lodgepole Pool, Stark County, North Dakota, will be considered at the North Dakota Industrial Commission hearing on August 24, 1994.

As you have previously been informed, all exhibits to be used at the hearing are to be prefiled in our office approximately five (5) days prior to the date of hearing.

Thank you for your assistance in this matter.

Sincerely,

F.E. Wilborn

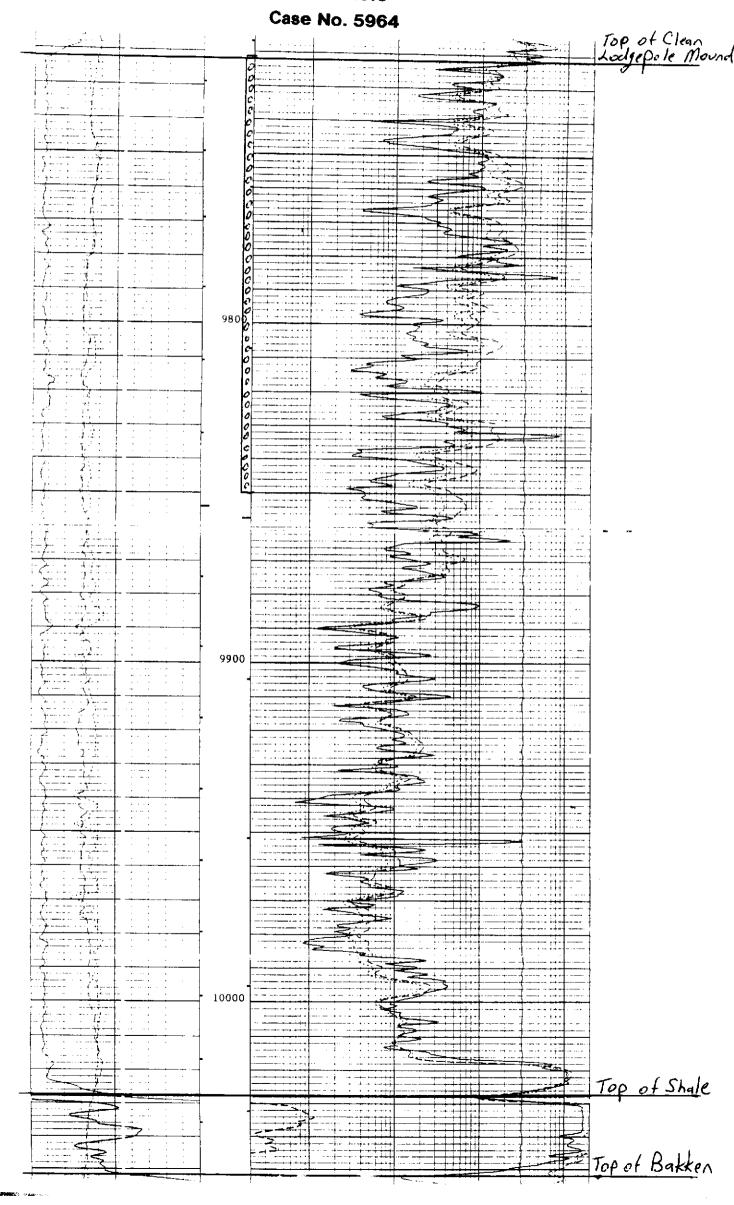
Deputy Enforcement Officer

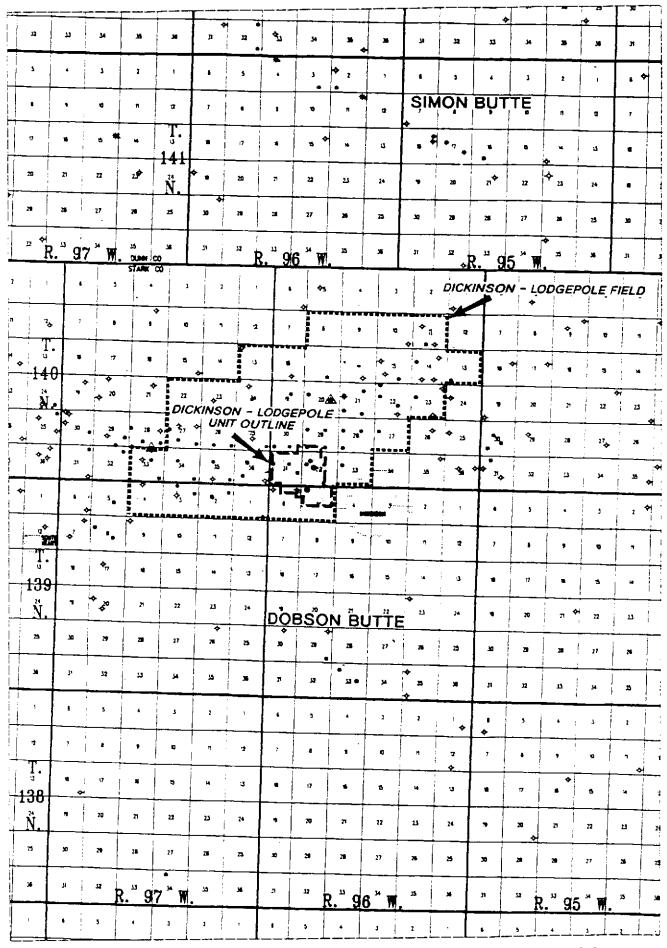
F.E. Wilborn /4h

FEW/th enc.

DICKINSON STATE NO. 74 SEC. 32-T140N-R96W CONOCO INC.

Exhibit No.3

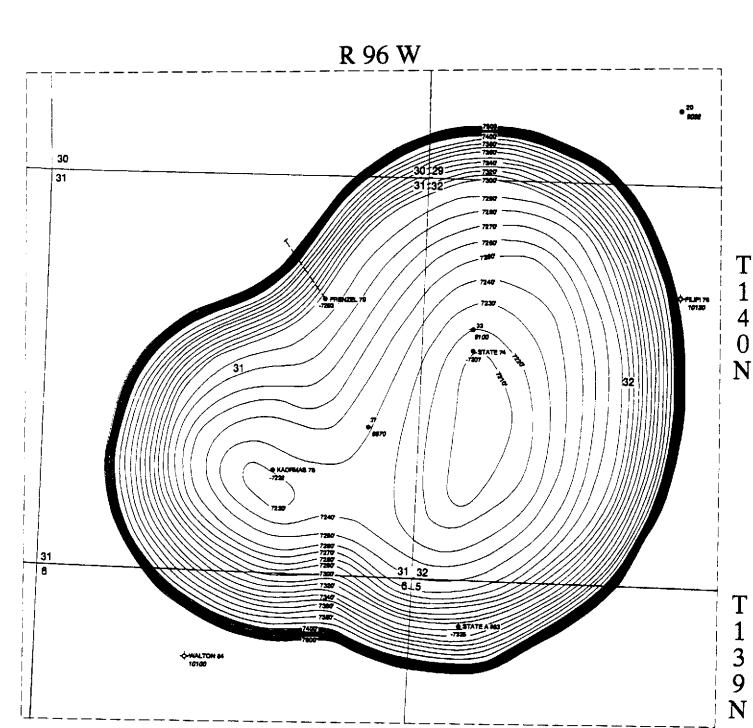




DICKINSON AREA

Stark Co. North Dakota

CONOCO INC. Case No. 5964 **Exhibit No.2**





Contour Interval: 10 Feet Min: -7500' Max: -7210'

SUBSEA TOP OF LODGEPOLE RESERVOIR Dickinson Field Stark Co., North Dakota

CONOCO INC. Case No. 5964 Exhibit No. 5

DICKINSON FIELD LODGEPOLE RESERVOIR RESERVOIR AND FLUID PROPERTIES

PROPERTY	<u>VALUE</u>	SOURCE
Initial Reservoir Pressure	4536 psia @ -7,271' subsea	Pressure Test
Bubble Point Pressure	1,465 psia	PVT Analysis
Oil Formation Volume Factor	1.356 RB/STB @ 4,536 psia 1.420 RB/STB @ 1,465 pisa	PVT Analysis
Solution Gas/Oil Ratio	468 SCF/STB (Above Bubble Point)	PVT Analysis
Oil Gravity @ Standard Conditions	43.85 Degrees API	PVT Analysis
Oil Viscosity	0.29 ср	PVT Analysis
Reservoir Temperature	224 Degrees F	Measurement
Average Porosity	5.372%	Log Analysis
Connate Water Saturation	10.6%	Core Analysis
Residual Oil Saturation to Water	50.5%	Core Analysis
Permeability	100 to 2,000 md	Pressure Tests
Reservoir Drive Mechanism	Solution Gas	
Volumetric Original Oil in Place	19.42 MMBO	
Material Balance Original Oil In Place	18.25 MMBO	

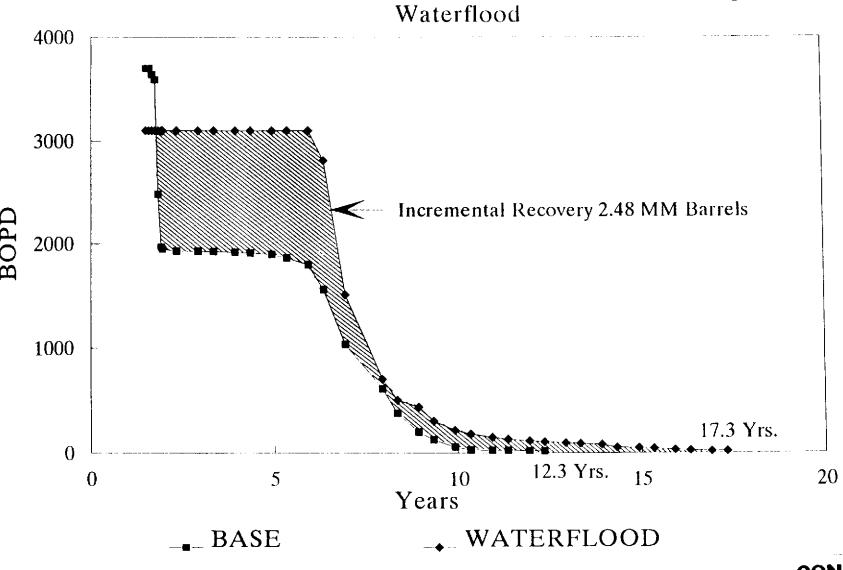
CONOCO INC.

Exhibit No. 6

Case No. 5964

d:\wpdata\kwz\001

Incremental Recovery



CONOCO INC. Exhibit No. 7

DICKINSON FIELD LODGEPOLE RESERVOIR RECOVERY PREDICTIONS

	OIL MMBO	OIL % OF OOIP	GAS BCF
Primary Recovery	5.38	27.7	8.7
Waterflood	7.86	40.5	3.7
Incremental	2.48	12.8	-5.0

CONOCO INC.

Exhibit No.

Case No. 5964

AVERAGE LODGEPOLE FIELD STATISTICAL ANALYSIS

TYPICAL FIELD CHARACTERISTICS:

Producer = 1

Injector = 1

Dry Hole = 1

Areal Extent = 354 Acres

Average Thickness = 37 Feet

Reserves = 794 MBO/371 MMCF

Original Oil in Place = 3 MMBO

Total Exploration &

Development Cost = \$3.5 Million

Assumes field curtailment of 200 BOPD for 1 year

Assumes field is unitized one year from discovery

Assumes waterflood initiated in year 2 at 1000 BOPD

ECONOMIC RESULTS:

C:\DATA\CONOCO.DIX\EXH.1

NPV = \$2 Million

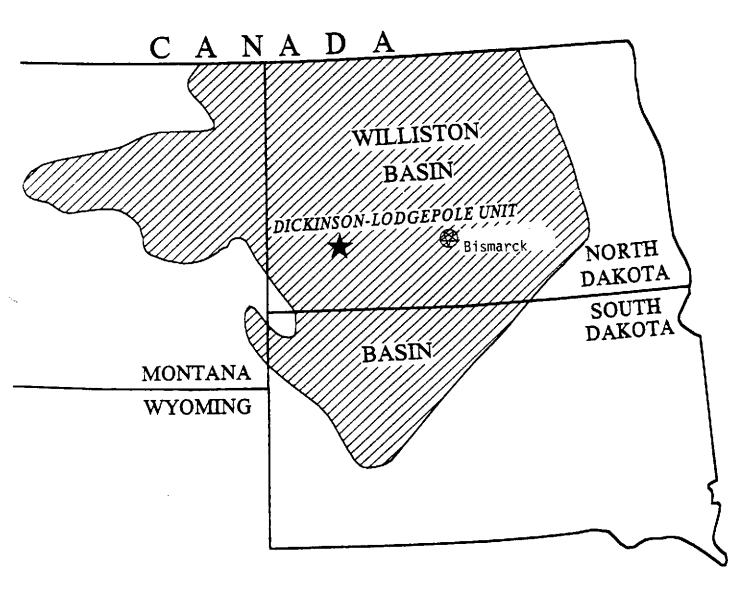
IRR = 62%

CONOCO INC.

Exhibit No. 9

Case No. 5964

DICKINSON-LODGEPOLE UNIT Location Map



CONOCO INC.

Case No. 5964

Exhibit No. 1

THE BISMARCK TRIBUNE

P.O. BOX 1498 BISMARCK, NORTH DAKOTA 58502-1498 (701) 223-2500 IN STATE (800) 472-2273

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CASE NO.

S955: (CONTINUED) ON A MOTION OF THE COMMISSION TO CONSIDER THE APPLICATION OF CONOCO INC. FOR AN ORDER PURSUANT TO NORTH DAKOTA ADMINISTRATIVE CODE SECTION 43-02-03-88.1 AUTHORIZING THE CONVERSION OF THE BERGER NO. 1-23 WELL, LOCATED IN THE NEW OF THE SWIA OF SECTION 23, T.160N., R.95W., STONEVIEW FIELD, DIVIDE COUNTY, NORTH DAKOTA, FOR THE INJECTION OF FLUIDS IN THE STONEVIEW-STONEWALL FORMATION AND PROVIDING SUCH OTHER AND FURTHER RELIEF AS THE COMMISSION DEEMS NECESSARY. CASE NO. 19554. (CONTINUED) ON A MOTION OF THE COMMISSION TO CONSIDER THE APPLICATION OF CONOCO INC. FOR AN ORDER PURSUANT TO NORTH DAKOTA ADMINISTRATIVE CODE SECTION 43-02. 03-88.1 AUTHORIZING THE CONVERSION. OF THE CONOCO HANSON NO. 6-24 WELL-YS IN-ALL OCATED IN THE SE/A OF THE NW/A OF THE CONOCO HANSON NO. 6-24 WELL-YS IN-ALL OCATED IN THE SE/A OF THE NW/A OF THE CONOCO HANSON NO. 6-24 WELL-YS IN-ALL OCATED IN THE SE/A OF THE NW/A OF THE CONOCO HANSON NO. 6-24 WELL-YS IN-ALL OCATED IN THE SE/A OF THE NW/A OF THE CONOCO HANSON NO. 6-24 WELL-YS IN-ALL OCATED IN THE SE/A OF THE NW/A OF THE CONOCO HANSON NO. 6-24 WELL-YS IN-ALL OCATED IN THE SE/A OF THE NW/A OF THE CONOCO HANSON NO. 6-24 WELL-YS IN-ALL OCATED IN THE SE/A OF THE NW/A OF THE CONOCO HANSON NO. 6-24 WELL-YS IN-ALL OCATED IN THE SE/A OF THE NW/A OF THE CONOCO HANSON NO. 6-24 WELL-YS IN-ALL OCATED IN THE SE/A OF THE NW/A OF THE CONOCO HANDON OF THE COMMISSION DEEMS NO. 5-244-TH DAKOTA SUBJECT OF THE NW/A OF THE CONOCO HANDON LODGEPOLE POOL. STARK COUNTY, NORTH DAKOTA DAKOTA SUBJECT THE LIMITS OF THE FIELDS. AND ENACT SUCH SPECIAL FIELD RULES AS MAY BE NECESSARY. CONOCO, INC. Signed by, Edward T. Schafer, Governor Chairman, ND Industrial Commission.

Signed by, Edward T. Schafer, Governor Chairman, ND Industrial Commission 8/31 - 10633

PAYMENT TERMS

Due 10th of month to du no charges

ERLING DATE: 08/31/94

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NOTICE OF PUBLICATION
NORTH DAKOTA
INDUSTRIAL COMMISSION
BISMARCK, NORTH DAKOTA
The State of North Dakota by its Industrial
Commission hereby gives notice pursuant to
law and the rules and regulations of said Comlaw and the rules and regulations of sald Commission promulgated thereunder of the following public hearing to be held at 9:00 a.m. on Septembar 28, 1994, Pioneer Room, State Capitol, Bismarck, North Dakota. For the purpose of this hearing, the Commission, any member thereof acting as Examiner, or an Examiner appointed by the Commission will receive testimony and exhibits.

ATTENTION PERSONS WITH DISABILITIES: If you plan to attend the hearing and will need special facilities or assistance relating to a disability, please contact the North Daktoa Industrial Commission at 701-224-3722 by September 14, 1994.

14, 1994. STATE OF NORTH DAKOTA TO:

STATE OF NORTH DAKOTA TO:
All named parties and persons having any
right, title, interest, or claim in the following:
cases and notices to the public. CASE NO.
S9842. (CONTINUED) ON A MOTION OF THE
COMMISSION TO CONSIDER THE PROPER
SPACING FOR THE DEVELOPMENT OF THE
DICKINSON-LODGEPOLE POOL, STARK
COUNTY, NORTH DAKOTA, REDEFINE THE
LIMITS OF THE FIELD, AND ENACT SUCH
SPECIAL FIELD RULES AS MAY BE NECESSARY. CONOCO, INC.
Signed by,
Edward T. Schafer, Governor
Chairman, ND Industrial
Commission

Commission (Published Aug. 31, 1994)

CERTIFICATE OF PUBLICATION THE DICKINSON PRESS Dickinson, North Dakota

STATE OF NORTH DAKOTA, County of Stark.

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CERTIFICATE OF PUBLICATION

THE DICKINSON PRESS Dickinson, North Dakota

NOTICE OF PUBLICATION NORTH DAKOTA INDUSTRIAL COMMISSION

BISMARCK, NORTH DAKOTA

The State of North Dakota by its Industrial Commission hereby gives notice pursuant to law and the rules and regulations of said Commission promulgated thereunder of the following public hearing to be held at 9:00 a.m. on August 24, 1994. Pioneer Room, State Capitol, Bismarck, North Dakota. For the purpose of this hearing, the Commission, any member thereof acting as Examiner, or an Examiner appointed by the Commission will receive testimony and exhibits.

ATTENTION PERSONS WITH DISABILITIES: If you plan to attend the hearing and will need special facilities or Assistance relating to a disability, please contact the North Dakota Industrial Commission at 701-224-3722 by August 10, 1994.

STATE OF NORTH DAKOTA TO:

All named parties and persons having any right, title, interest, or claim in the following cases and notices to the public. CASE NO. 5964: ON A MOTION OF THE COMMISSION TO CONSIDER THE PROPER SPACING FOR THE DEVELOPMENT OF THE DICKINSON-LODGEPOLE POOL, STARK COUNTY, NORTH DAKOTA, REDEFINE THE LIMITS OF THE FIELD, AND ENACT SUCH SPECIAL FIELD RULES AS MAY BE NECESSARY. CONOCO, INC. Signed by.

Signed by, Edward T. Schafer, Governor Chairman, ND Industrial Commission (Published July 26, 1994)

STATE OF NORTH DAKOTA,

County of Stark.

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	MARILYN WANNER Notary Public, STARK COU My Commission Expires AF	NTY, N. DAK PRIL 28. 2001

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NOTICE OF PUBLICATION
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The State of North Dakota by its industrial
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following public hearing to be held at 9:00
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State Capitol. Bismarck. North Dakota. For
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THE BISMARCK TRIBUNE

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ND FLAGENO. 5901: ON A MOTION OF THE COMMISSION TO CONSIDER THE APPLICATION OF AMERADA HESSON TO NINCLUDE ALL DIF SECTION 19: APPLICATION OF THE MEDORA FIELD; OR NOT THE MEDORA FIELD; OR **CR54

COMMISSION CASE NO 9312 ON A MOTION OF THE COMMISSION TO CONSIDER THE APPLICATION OF THE WILLIAM HERBERT HUNT TRUST ESTATE
FOR AN ORDER PERMITTING THE
BRILLING OF AN ADDITIONAL WELL ON
A 160 ACRE SPACING UNIT FOR THE LITTLE KNIFE MADISON POOL DESCRIBED
AS THE SWIA OF SECTION 3, THAN,
R. 93W. BILLINGS COUNTY, NORTH
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SECTION 18, T. 163N. R. 93W. DIVIDE
COUNTY, NORTH DAKOTA, AND ALLOW
ING UP TO TWO HORIZONTAL WELLS TO
BE DRILLED THEREON AND FURTHER
ESTABLISHING A PROCEDURE FOR THE
BOMINISTRATIVE DESIGNATION OF
ADDITIONAL 320-ACRE SPACING UNITS
WITHIN THE KIMBERLY-MADISON POOL
OR WITHIN THE COMMISSION MAY
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PAYMENT TERMS

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