

**STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION**

**IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION FOR THE PURPOSE OF
CONSIDERING:**

**DE NOVO
CASE NO. 11525**

**APPLICATION OF YATES PETROLEUM CORPORATION FOR AMENDMENT
OF THE SPECIAL RULES AND REGULATIONS FOR THE NORTH DAGGER
DRAW-UPPER PENNSYLVANIAN POOL, AS PROMULGATED BY DIVISION
ORDER NO. R-4691, AS AMENDED, TO INCREASE THE ASSIGNED
POOLWIDE DEPTH BRACKET OIL ALLOWABLE, AND THE CANCELLATION
OF OVERPRODUCTION, EDDY COUNTY, NEW MEXICO**

**DE NOVO
CASE NO. 11526**

**APPLICATION OF YATES PETROLEUM CORPORATION FOR AMENDMENT
OF THE SPECIAL RULES AND REGULATIONS FOR THE SOUTH DAGGER
DRAW-UPPER PENNSYLVANIAN ASSOCIATED POOL, AS PROMULGATED
BY DIVISION ORDER NO. R-5353, AS AMENDED, TO INCREASE THE
ASSIGNED POOLWIDE DEPTH BRACKET OIL ALLOWABLE, AND THE
CANCELLATION OF OVERPRODUCTION, EDDY COUNTY, NEW MEXICO**

ORDER NOS. R-4691-G and R-5353-L-4

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 8:00 a.m. on September 18, 1996, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 14th day of November, 1996 the Commission, a quorum being present, having considered the testimony and the record and being fully advised in the premises,

FINDS THAT:

(1) Due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) At the time of the hearing, both Case Nos. 11525 and 11526 were consolidated for purposes of testimony.

(3) For the North Dagger Draw-Upper Pennsylvanian Pool (being the subject of Case No. 11525) located in Eddy County, New Mexico:

(a) Division Order No. R-4691, dated December 11, 1973, promulgated temporary special rules and regulations for the North Dagger Draw-Upper Pennsylvanian Pool in Eddy County, New Mexico, thereby establishing standard 320-acre spacing for the pool and a special depth bracket allowable of 427 barrels of oil per day (BOPD) for a standard 320-acre oil spacing and proration unit;

(b) by Division Order No. R-4691-A, dated February 3, 1976, spacing was changed from 320 to 160 acres and the special depth bracket allowable was reduced from 427 barrels per day for a standard 320-acre oil spacing and proration unit to 267 barrels of oil per day for a now standard 160-acre oil spacing and proration unit;

(c) Division Order No. R-4691-B, dated October 12, 1976, left the spacing unchanged for the North Dagger Draw-Upper Pennsylvanian Pool at 160 acres but changed the special depth bracket allowable from 267 barrels per day to 350 barrels of oil per day;

(d) Division Order No. R-4691-C, dated March 15, 1977, made permanent the temporary "*Special Pool Rules for the North Dagger Draw-Upper Pennsylvanian Pool*", as promulgated by said Order No. R-4691, as amended by said Order Nos. R-4691-A and R-4691-B;

(e) Division Order No. R-5565, dated November 1, 1977, increased the limiting gas-oil ratio ("GOR") for said pool from 2,000 cubic feet of gas per day for each barrel of oil to 10,000 cubic feet;

- (f) Division Order No. R-4691-D, dated March 21, 1991, changed once again the special poolwide depth bracket allowable from 350 barrels per day to 700 barrels of oil per day;
- (g) the current pool boundaries for the North Dagger Draw-Upper Pennsylvanian Pool in Eddy County, New Mexico are described as follows:

TOWNSHIP 19 SOUTH, RANGE 24 EAST, NMPM

Section 13:	E/2
Section 22:	SE/4
Sections 24 and 25:	All
Section 26:	N/2
Section 27:	NE/4
Section 34:	E/2
Sections 35 and 36:	All

TOWNSHIP 19 SOUTH, RANGE 25 EAST, NMPM

Section 3:	SW/4
Section 8:	NE/4 and S/2
Section 9:	NW/4 and S/2
Section 10:	W/2
Section 14:	NW/4
Sections 15 through 21:	All
Section 22:	N/2 and SW/4
Section 23:	N/2
Section 24:	NW/4
Section 27:	W/2
Sections 28 through 30:	All
Section 31:	N/2 and SW/4
Section 32:	N/2
Section 33:	NW/4

TOWNSHIP 20 SOUTH, RANGE 24 EAST, NMPM

Section 1:	All
Section 2:	N/2
Section 3:	N/2 and SE/4
Section 10:	NE/4
Section 11:	NE/4
Section 12:	NW/4

TOWNSHIP 20 SOUTH, RANGE 25 EAST, NMPM

Section 6:	NW/4
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(h) currently the North Dagger Draw-Upper Pennsylvanian Pool is spaced on 160-acre oil spacing and proration units and, since it is classified an "oil pool", each unit is allowed multiple wells and the simultaneous dedication of production from a single 160-acre unit is permitted, further each 160-acre unit is allowed to produce up to, but not in excess of 700 barrels of oil per day, and the current corresponding maximum casinghead gas allowable provides for 7,000 MCF of gas per day per 160-acre spacing and proration unit (GOR of 10,000 to one times the top oil allowable of 700 BOPD which equals 7,000 MCFPD).

(4) For the South Dagger Draw-Upper Pennsylvanian Associated Pool (being the subject of Case No. 11526) also located in Eddy County, New Mexico:

(a) "*General Rules and Regulations for the Associated Oil and Gas Pools of Northwest and Southeast New Mexico*", as promulgated by Division Order No. R-5353, dated January 17, 1977, caused temporary special rules and regulations for the South Dagger Draw-Upper Pennsylvanian Associated Pool in Eddy County, New Mexico to be enacted, which established 320-acre spacing, designated well locations, set the limiting gas-oil ratio at 8,000 cubic feet of gas for each barrel of oil produced and adopted a special depth bracket allowable for an oil well of 267 barrels of oil;

(b) Division Order No. R-5353-A, dated March 15, 1977, made permanent the above-described temporary pool rules;

(c) by Division Order No. R-5353-L, dated October 26, 1990, it was established that both the North Dagger Draw-Upper Pennsylvanian Pool and said South Dagger Draw-Upper Pennsylvanian Associated Pool were, "in geological and pressure communication and are in fact both part of the same pool"; therefore, the "*Special Rules and Regulations for the South Dagger Draw-Upper Pennsylvanian Associated Pool*" were temporarily changed to parallel the special rules for the adjacent North Dagger Draw-Upper Pennsylvanian pool (Division Order No. R-4691, as amended) to the north;

said Order No. R-5353-L left the spacing unchanged at 320 acres, but modified the designated well locations, changed the limiting gas-oil ratio to 10,000 cubic feet of gas for each barrel of oil produced, and increased the special depth bracket allowable from 267 barrels of oil per day to 700 barrels of oil per day;

(d) Division Order No. R-5353-L-1, dated March 25, 1991, changed the special depth bracket allowable from 700 barrels per day to 1,400 barrels of oil per day;

(e) Division Order No. R-10050, issued in consolidated Case 10869 and 10881 and dated January 26, 1994, specifically allowed the simultaneous dedication of acreage to both oil and gas wells and reduced the limiting gas-oil ratio from 10,000 cubic feet of gas for each barrel of oil produced to 7,000;

(f) the changes/modifications described above were made permanent by Division Order No. R-10050-A, dated October 17, 1995;

(g) the current pool boundaries for the South Dagger Draw-Upper Pennsylvanian Associated Pool in Eddy County, New Mexico are described as follows:

TOWNSHIP 20 SOUTH, RANGE 24 EAST, NMPM

Section 9:	E/2
Section 10:	S/2
Section 11:	S/2
Section 12:	S/2
Sections 13 through 15:	All
Section 16:	E/2
Sections 22 through 26:	All
Sections 34 through 36:	All

TOWNSHIP 20-1/2 SOUTH, RANGE 23 EAST, NMPM

Irregular Sections 35 and 36:	All
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TOWNSHIP 21 SOUTH, RANGE 23 EAST, NMPM

Irregular Sections 1 and 2:	All
Sections 11 and 12:	All
Section 14:	All

(h) currently the South Dagger Draw-Upper Pennsylvanian Associated Pool is spaced on 320-acre spacing and proration units with the option for multiple oil wells and multiple gas wells and allows for the simultaneous dedication of both oil and gas wells to the same 320-acre unit, further each 320-acre unit is allowed to produce up to, but not in excess of 1,400 barrels of oil per day, and the current corresponding maximum gas allowable provides for 9,800 MCF of gas per day for each 320-acre unit (GOR of 7,000 to one times the top oil allowable of 1,400 BOPD which equals 9,800 MCFPD).

(5) At this time the applicant in Case No. 11525, Yates Petroleum Corporation ("Yates"), seeks to amend the "*Special Rules and Regulations for the North Dagger Draw-Upper Pennsylvanian Pool*", as promulgated by said Division Order No. R-4691, as amended, changing the special poolwide depth bracket allowable for a standard 160-acre oil spacing and proration unit in said pool from 700 barrels of oil per day to 4,000 barrels of oil per day, thereby increasing the corresponding maximum gas allowable from the current 7,000 MCF of gas per day for each 160-acre unit to 40,000 MCF of gas per day for each 160-acre unit (GOR of 10,000 to one times the proposed top oil allowable of 4,000 BOPD). The applicant further seeks the cancellation of any and all overproduction cumulated in said pool on the date the requested 4,000 barrel depth bracket allowable becomes effective.

(6) In Case No. 11526 Yates seeks to amend the "*General Rules and Regulations for the Associated Oil and Gas Pools of Northwest and Southeast New Mexico*", as promulgated by Division Order No. R-5353, as amended, changing the special poolwide depth bracket oil allowable for a standard 320-acre spacing and proration unit in said pool from 1,400 barrels of oil per day to 8,000 barrels of oil per day, thereby increasing the corresponding maximum gas allowable from the current 9,800 MCF of gas per day for each 320-acre unit to 56,000 MCF of gas per day for each 320-acre unit (GOR of 7,000 to one times the proposed top oil allowable of 8,000 BOPD). The applicant further seeks the cancellation of any and all overproduction cumulated in the pool on the date the requested 8,000 barrel depth bracket allowable becomes effective.

(7) At the time of the hearing: (a) Conoco, Inc. appeared in objection to both applications and presented opposing evidence and testimony; (b) Nearburg Exploration Company and Mewbourne Oil Company, both of which are operators in both the subject pools, entered appearances in both cases through legal counsel; (c) Marathon Oil Company, an operator in the South Dagger Draw-Upper Pennsylvanian Associated Pool only, entered an appearance in Case No. 11526 through legal counsel; and, (d) James T. Jennings, an interest owner in both pools, also entered appearances in both cases through legal counsel.

(8) The North Dagger Draw-Upper Pennsylvanian Pool is the northern-most pool and the South Dagger Draw-Upper Pennsylvanian Associated Pool is the middle pool of an extensive dolomite hydrocarbon reservoir fairway in Eddy County, New Mexico, currently subdivided into three pools:

(a) as stated the northern-most portion, which is structurally the lowest part of this extensive continuous dolomite reservoir, is classified as an oil pool and is designated as the "North Dagger Draw-Upper Pennsylvanian (Oil) Pool";

(b) the middle portion of this continuous reservoir declines structurally from southwest to northeast and represents an extensive transition area from the gas pool to the south (Indian Basin) and the oil pool to the north (North Dagger Draw), this transitional area is classified as an associated oil and gas pool and is designated as the "South Dagger Draw-Upper Pennsylvanian Associated Pool"; and,

(c) the southern portion of which is structurally the highest and is classified as a gas pool being designated as the "Indian Basin-Upper Pennsylvanian Gas Pool", its current rules as promulgated by Division Order No. R-8170, as amended, provides for 640-acre gas spacing and proration units with the option for multiple gas wells in a single such unit with a current maximum gas allowable for this prorated gas pool of 6,000 MCFPD per 640-acre gas spacing and proration unit.

(9) For the North Dagger Draw-Upper Pennsylvanian Pool in Case No. 11525 the geologic and reservoir engineering presentations submitted by both Yates and Conoco indicate that:

- (a) the subject North Dagger Draw-Upper Pennsylvanian Pool is an oil pool which also produces significant amounts of water along a structural axis oriented northeast to southwest consisting of brittle, vugular dolomite with erratic porosity and permeability developed in compartments which vary in size and shape in a complex reservoir;
- (b) the dolomite is usually thickest along the top of the structure and thins to the southeast and northwest;
- (c) vugs, fractures, and vertical permeability provide the necessary flow channels to permit good pressure communication within compartments in the North Dagger Draw-Upper Pennsylvanian Pool, which is evidenced by the fact new wells will encounter 800 to 1000 psi less than original reservoir pressures; communication between compartments is poorer than within compartments but does occur;
- (d) the withdrawals of reservoir fluids have caused pressure declines throughout the North Dagger Draw-Upper Pennsylvanian Pool;
- (e) fluid distribution within this reservoir is atypical with zones of water above oil;
- (f) reservoir energy is from a gas solution drive with the possibility of weak water influx. Although there is no definable oil-water contact, there is an economic datum of -4,300 feet, below which perforated wells are uneconomic because of excess water production; and
- (g) a number of those wells that were drilled and completed in late 1994 and early 1995 within the North Dagger Draw-Upper Pennsylvanian Pool in Sections 21, 27, 28, and 29 of Township 19 South, Range 25 East, NMPM, Eddy County, New Mexico, initially produced at high rates and, unlike wells drilled earlier in the life of this reservoir, have not experienced a rapid decline in production rates.

(10) For the South Dagger Draw-Upper Pennsylvanian Associated Pool in Case 11526 the geologic and reservoir engineering presentations submitted by both Yates and Conoco in this matter and the record of Division Case Nos. 10869 and 10881 indicate that:

- (a) the South Dagger Draw-Upper Pennsylvanian Associated Pool reservoir is a brittle, vugular dolomite with erratic porosity and permeability developed in compartments which vary in size and shape but exhibit enough vertical communication throughout the reservoir to produce a pool with a very large gas cap with a thin oil rim;
- (b) reservoir rock is similar to reservoir rock in the North Dagger Draw Pool;
- (c) many wells in the South Dagger Draw-Upper Pennsylvanian Associated Pool have been routinely perforated in the overlying gas column as evidenced by completion and producing records;
- (d) the South Dagger Draw-Upper Pennsylvanian Associated Pool is a complex reservoir with a gas-cap expansion, solution-gas drive mechanism;
- (e) the "gas-cap" in the South Dagger Draw-Upper Pennsylvanian Associated Pool is in pressure communication with the oil column and extends throughout the pool with a transitional gas-oil contact at approximately -4000 feet;
- (f) within this associated pool, it is essential that gas rates be restricted in order for operators to have the opportunity to produce the oil rim which is difficult to predict prior to drilling;
- (g) a number of wells that were drilled and completed within the South Dagger Draw-Upper Pennsylvanian Associated Pool in late 1994 and early 1995 initially produced at high rates and, unlike wells drilled earlier in the life of this reservoir, have not experienced a rapid decline in production rates.

(11) Major areas of disagreement involve the size of the compartments within the dolomite reservoir and the ability of the wells in different compartments to interfere with each other. The evidence indicates that each 40-acre tract is not a separate reservoir unto itself but is part of a complex system of irregular reservoir compartments, some of which do communicate with each other as evidenced by unanticipated low pressure. Communication between compartments, when present, is poorer than communication within compartments.

(12) There was major disagreement on whether producing wells at the maximum rate was more efficient than producing wells at current allowable and whether waste was occurring by restricting flow rates. Yates testified that the current producing allowables impede the recovery efficiency of North Dagger Draw Wells. Their exhibits demonstrated that the oil cut was improved at producing rates exceeding the current allowable. A linear correlation between oil cut and rate was used to support a 4000 bbl/d allowable. "An increase in oil cut is an improvement in recovery efficiency" is certainly true in situations where water is displacing oil such as a waterflood or a natural waterdrive. However, neither party presented evidence to support a waterdrive. Both parties said there was gas solution drive with possible weak water influx. The evidence was insufficient to prove that waste was occurring at current allowable rates.

(13) Conoco presented exhibits of North Dagger Draw proration units which compared recoverable reserves based on volumetric calculations, with estimates of ultimate primary recovery based on decline curve analysis. Their analysis showed that decline curve reserves will exceed volumetric reserves in the overproduced proration units. Conoco concluded that the high oil recovery represents oil drained from the offset Conoco proration units. The Conoco volumetric calculations of original oil-in-place (OOIP) could be drastically underestimated. Frequently carbonate reservoirs include vuggy porosity which is not measured with conventional logs. Hence, an estimate of volumetric recoverable reserves using conventional logs could be too low.

Porosity estimates with imaging logs, which include vuggy porosity, are more accurate than porosity measured with conventional logs. More accurate porosity measurements are needed to revise the volumetric recoverable reserves. Additionally, original oil-in-place is a critical factor for studies involving primary and secondary reserves.

(14) There is no current effort toward cooperative reservoir management in the North Dagger Draw and South Dagger Draw pools. Oil recovery is estimated at 10% to 15% of the original oil-in-place by Yates and 20% by Conoco. There are no plans to form a cooperative entity to explore options to produce more of the oil-in-place through waterflooding, pressure maintenance or carbon dioxide injection. The only effort made to date is one pilot waterflood whose results have been described as "disappointing." Both parties are in agreement that 85% of the OOIP will be left in the ground which constitutes waste. These two pools comprise the largest oil-producing entity in New Mexico and efforts must be made to acquire additional information from cooperative committees and explore improved oil recovery options. To date, pool development has been competitive. So that waste does not occur in the future, efforts aimed at cooperation should be pursued immediately.

(15) Division Orders Nos. R-4691-E and R-5353-L-2, dated August 14, 1996, restricted total production from overproduced proration units in the North Dagger Draw and South Dagger Draw-Upper Pennsylvanian Pools to a maximum of one-half of the overproduced unit's allowable, being either 350 BOPD and/or 3,500 MCFGPD for the North Dagger Draw-Upper Pennsylvanian Pool or 700 BOPD and/or 4,000 MCFGPD for the South Dagger Draw-Upper Pennsylvanian Associated Pool.

(16) On August 16, 1996, the Division issued Orders Nos. R-4691-F and R-5353-L-3 staying Orders Nos. R-4691-E and R-5353-L-2. Said Staying Orders were lifted by the Commission on September 19, 1996.

(17) The North Dagger Draw-Upper Pennsylvanian Pool is currently overproduced as of the status date in the following manner and all in Township 19 South, Range 25 East, NMPM, Eddy County, New Mexico:

OPERATOR	AFFECTED 160- ACRE SPACING/ PRORATION UNIT	SECTION	VOLUME OF OVERPRODUCTION (BARRELS)	DATE OF OVERPRODUCTION STATUS
Yates	NW/4	21	3,179	6/30/96
Yates	SW/4	21	96,221	6/30/96
Yates	SE/4	21	41,100	6/30/96
Yates	NW/4	29	underproduced	6/30/96
Yates	NE/4	29	82,958	6/30/96
Yates	SW/4	29	55,428	6/30/96
Yates	SE/4	29	153,641	6/30/96
Yates	NW/4	28	111,280	6/30/96
Yates	NE/4	28	152,855	6/30/96
Yates	SW/4	28	121,446	6/30/96
Yates	SE/4	28	239,671	6/30/96
			Sub-total: 1,057,773	
Nearburg	NW/4	27	134,490	5/31/96
Nearburg	SW/4	27	40,031	5/31/96
			Sub-Total: 174,521	
			TOTAL: 1,232,294	

(18) As soon as is reasonably possible following the issuance of this order, the Supervisor of the Division's Artesia District Office should: (a) identify and/or verify all units in both pools that are currently overproduced; (b) prepare a comprehensive list of such units; (c) provide this list to all operators in both pools; and, (d) submit said list to both the Case files and to the Division Director.

(19) Effective immediately any operator within either the North Dagger Draw-Upper Pennsylvanian Pool or South Dagger Draw-Upper Pennsylvanian Associated Pool with units that are in an **overproduced** status should be ordered to restrict total production from said units to a rate not to exceed that amount equivalent to **half** of the unit's assigned allowable. Production should not exceed 350 BOPD and/or 3,500 MCFPD for the North Dagger Draw-Upper Pennsylvanian Pool or 700 BOPD and/or 4,900 MCFPD for the South Dagger Draw-Upper Pennsylvanian Associated Pool.

(20) **Further**, all operators in both pools with such **overproduction** should be ordered to have all affected units brought into balance and any such **overproduced** status eliminated within an 18-month time period that begins August 15, 1996. This should be accomplished by the operator by whatever means available to him, even if production rates in those affected units have to be curtailed more than the imposed "half of the unit's assigned allowable" in this 18-month period. **If** overproduction should still exist at the end of this 18-month period the affected unit should be shut-in until such overproduction is made-up. In addition such overproduction should then be labeled as "illegal oil and/or gas" under the terms of any and all applicable Division Rules and Regulations and Laws of New Mexico and the Division should levy fines or prosecute such offender(s), whichever course of action is appropriate.

(21) Those operators identified as having overproduced units should henceforth be ordered to report on a monthly basis during this 18-month period to the Supervisor of the Artesia District Office of the Division as to the status of production from all wells within the affected unit(s).

(22) Should it be determined by the Artesia District Supervisor that any unit is no longer in a state of being "overproduced" during this 18-month period, such "half of the affected allowable restricted flow rate" can be canceled and the operator can continue to produce that unit under the appropriate pool rules.

(23) **However**, should it become necessary, the Artesia District Supervisor should have the authority to shut-in any unit if the operator fails to submit such production report on that unit.

(24) To further address the potential for waste that will occur if proper reservoir management is not instituted and to further expand upon Findings 12, 13, and 14 there should be created immediately a Dagger Draw Complex Operators Committee, hereinafter referred to as "Committee," consisting of operator representatives who have operations in either the North Dagger Draw or South Dagger Draw-Upper Pennsylvanian pools. Said committee or technical sub-committee should be charged with acquiring the necessary information, through testing and further reservoir analyses to scientifically investigate recovery methods, other than primary. Said investigation should address OOIP, relative interference between wells, accurate porosity calculations, and other measurements, critical to evaluating enhanced oil recovery options for the pools. The Chairman of the Oil Conservation Commission will appoint the "Committee" and Committee Chairman. If operators cannot reach agreement on issues and/or tests that need to be undertaken, a facilitator should be employed to bring disagreeing operators to the table to work out their differences. The committee will report to the Division Director quarterly in 1997 and will submit a final report with recommendations to the Chairman of the Oil Conservation Commission by January 1, 1998. Said report will form the basis for future regulation in

the Dagger Draw complex, including but not limited to pool allowables which reflect the "maximum efficient rate" (MER) of production from the reservoir, the potential for waterflooding, the potential for pressure maintenance, and the potential for carbon dioxide flooding. Economic criteria should also be incorporated into the report.

IT IS THEREFORE ORDERED THAT:

(1) The application of Yates Petroleum Corporation ("Yates") in Case No. 11525 to amend the "*Special Rules and Regulations for the North Dagger Draw-Upper Pennsylvanian Pool*", as promulgated by said Division Order No. R-4691, as amended, changing the special poolwide depth bracket allowable for a standard 160-acre oil spacing and proration unit in said pool from 700 barrels of oil per day to 4,000 barrels of oil per day, thereby increasing the corresponding maximum gas allowable from the current 7,000 MCF of gas per day for each 160-acre unit to 40,000 MCF of gas per day for each 160-acre unit (GOR of 10,000 to one times the proposed top oil allowable of 4,000 BOPD) and for the cancellation of any and all overproduction cumulated in said pool is hereby **denied**.

(2) The application of Yates in Case No. 11526 to amend the "*General Rules and Regulations for the Associated Oil and Gas Pools of Northwest and Southeast New Mexico*", as promulgated by Division Order No. R-5353, as amended, changing the special poolwide depth bracket oil allowable for a standard 320-acre spacing and proration unit in said pool from 1,400 barrels of oil per day to 8,000 barrels of oil per day, thereby increasing the corresponding maximum gas allowable from the current 9,800 MCF of gas per day for each 320-acre unit to 56,000 MCF of gas per day for each 320-acre unit (GOR of 7,000 to one times the proposed top oil allowable of 8,000 BOPD) and for the cancellation of any and all overproduction cumulated in the pool is hereby **denied**.

(3) Effective immediately any operator within either the North Dagger Draw-Upper Pennsylvanian Pool or South Dagger Draw-Upper Pennsylvanian Associated Pool that have units that are **overproduced** is hereby ordered to continue restricting total production from said units to a rate not to exceed that amount equivalent to **half** of the unit's assigned allowable. Production should not exceed 350 BOPD and/or 3,500 MCFPD for the North Dagger Draw-Upper Pennsylvanian Pool or 700 BOPD and/or 4,900 MCFPD for the South Dagger Draw-Upper Pennsylvanian Associated Pool.

(4) As soon as is reasonably possible the Supervisor of the Division's Artesia District Office shall: (a) identify and/or verify all units in both pools that are currently overproduced; (b) prepare a comprehensive list of such units; (c) provide this list to all operators in both pools; and, (d) submit said list to both the Case files and to the Division Director.

(5) All operators in both pools with such **overproduction** are further ordered to have all affected units brought into balance and any such **overproduced** status eliminated by March 1, 1998. This should be accomplished by the operator by whatever means available to him even if production rates in those affected units have to be curtailed more than the imposed "half of the unit's assigned allowable" in this adjustment period.

HOWEVER, should such overproduction still exist on March 1, 1998 the affected unit shall be shut-in until such time as the remaining overproduction is made up. In addition such overproduction shall then be labeled as "illegal oil and/or gas" under the terms of any and all applicable Division Rules and Regulations and Laws of New Mexico and the Division shall take appropriate action to fine or prosecute such offender(s).

IT IS FURTHER ORDERED THAT:

(6) Those operators identified as having overproduced units shall henceforth be ordered to report on a monthly basis during this adjustment period to the Supervisor of the Artesia District Office of the Division as to the status of production from all wells within any affected unit(s).

(7) Should it be determined by the Artesia District Supervisor that any unit is no longer in a state of being "overproduced" during this adjustment period, such "half of the unit's assigned allowable" can then be canceled and the operator can continue to produce that unit under the appropriate pool rules.

HOWEVER, should it become necessary, the Artesia District Supervisor shall have the authority to shut-in any unit if the operator fails to submit such production reports.

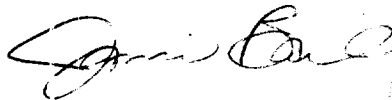
(8) The aforementioned "**Committee**" is hereby created and shall include representatives of operators operating in the North Dagger Draw and South Dagger Draw-Upper Pennsylvanian pools appointed by the Chairman of the New Mexico Oil Conservation Commission. Said Committee shall be charged with acquiring the necessary information, through testing and further reservoir analyses, to scientifically investigate recovery methods, other than primary. Said investigation shall address OOIP, relative interference between wells, accurate porosity calculations, and other measurements, critical to evaluating improved oil recovery options of these pools. If operators cannot reach agreement on issues and/or tests that need to be undertaken, a facilitator should be employed to bring disagreeing operators to the table to work out their differences. The committee will report to the Division Director of the New Mexico Oil Conservation Division quarterly in 1997 and will submit a final report with recommendations to the Chairman of the Oil Conservation Commission by January 1, 1998. Said report will form the basis for future regulation in the Dagger Draw complex, including but not limited to pool allowables which reflect the "maximum efficient rate" (MER) of production from the

reservoir, the potential for waterflooding, the potential for pressure maintenance, and the potential for carbon dioxide flooding. Economic criteria should also be incorporated into the report.

(9) Jurisdiction is hereby retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

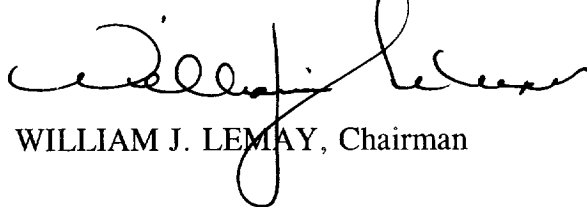
STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION



JAMI BAILEY, Member



WILLIAM W. WEISS, Member



WILLIAM J. LEMAY, Chairman

S E A L