

REGISTRATION DIVISION
RECEIVED
'95 DE 27 AM 8 52

DEVON
ENERGY
OPERATING
CORPORATION

20 North Broadway, Suite 1500
Oklahoma City, Oklahoma 73102

405/235-3611
Fax 405/552-4550
Fax 405/552-4552

December 19, 1995

State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87504 - 2088

Attention: Mike Stogner

Re: Non - Standard Location Approval

Dear Sir:

It is requested that administrative approval be granted under Rule 104F. (1) for unorthodox location for the infill producing well located within the Keel West Waterflood Project, at the following location:

WELL	LOCATION
C. A. Russell #15 <i>internal</i>	500' FNL & 1950' FWL, Sec. 18-17S-31E
Turner "A" #51	2660' FNL & 75' FEL, Sec. 19-17S-31E

Attached is a plat of the Keel - West Waterflood Project showing the project boundaries that are adjacent to the subject well. Forms 3160 - 3 and C - 102 are attached for the well listed above. The Keel - West Waterflood project is located on federal property and the proposed well is to be part of this active waterflood project.

The above location does not conform to Rule 104. C. I. because it is located closer than 330' to the governmental quarter - quarter section boundaries. It will be drilled to a depth sufficient to produce the Grayburg - San Andres formation (approximately 4000'). The well will be drilled at the unorthodox location in order to prevent waste by developing an efficient production and injection pattern within the Keel - West Waterflood Project, which was approved under Order R - 2268. When fully developed this well will combine with the existing wells (some of which will eventually be converted to injection) to establish a 40 acre 5 spot waterflood pattern.

There are no operators that have production in offsetting 40 acre tracts. The well listed is offset by wells that are already operated by Devon Energy Operating Corporation; therefore, no notification is necessary.

Should you require any additional information regarding this unorthodox locations please notify me at 405-552-4527.

Sincerely,

Karen Byers

Karen Byers

Engineering Technician

**UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT**

SUBMIT IN TRIPLICATE*
(See other instructions on reverse side)

Operator
Form approved.

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

a. TYPE OF WORK: DRILL DEEPEN

b. TYPE OF WELL: OIL WELL GAS WELL Other SINGLE ZONE MULTIPLE ZONE

2. NAME OF OPERATOR
DEVON ENERGY OPERATING CORPORATION

ADDRESS AND TELEPHONE NO.
20 N. BROADWAY, SUITE 1500, OKC, OK 73102 (405) 552-4560

3. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface **1500' FNL & 1950' FWL**
At top proposed prod. zone (SAME) **Non-Standard Location...**

**... SUBJECT TO
LIKE APPROVAL
BY STATE**

4. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
1 miles east & 2 miles north of Loco Hills, N.M.

5. LEASE DESIGNATION AND SERIAL NO.
LC 029548A-

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
NA

7. UNIT AGREEMENT NAME
NA

8. FARM OR LEASE NAME, WELL NO.
C. A. Russell #15

9. API WELL NO.

10. FIELD AND POOL, OR WILDCAT
GRAYBURG-JACKSON

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA
SECTION 18-T17 S - R31 E

12. COUNTY OR PARISH
EDDY

13. STATE
NM

5. DISTANCE FROM PROPOSED LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. **1140'**
(Also to nearest drlg. unit line if any)

16. NO. OF ACRES IN LEASE
224.09

17. NO. OF ACRES ASSIGNED TO THIS WELL
40

8. DISTANCE FROM PROPOSED LOCATION TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. **625'**

19. PROPOSED DEPTH
4200'

20. ROTARY OR CABLE TOOLS*
Rotary

1. ELEVATIONS (Show whether DF, RT, GR, etc.)
738' GR

22. APPROX. DATE WORK WILL START*
January 1, 1996

3. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
7 1/2"	13 3/8" H-40	48#	40'	Cmt'd to surface with Redmix
2 1/4"	8 5/8" J-55	24#	450'	125 sxs Lite + 200 sxs Class "C"
7/8"	5 1/2" J-55	15.5#	4200'	550 sxs Lite + 425 sxs "H" + 10% Gypsu

We plan to circulate cement to surface on all casing strings. Devon Energy Operating Corporation proposes to drill to 4200' to test the Grayburg-Jackson formation for commercial quantities of oil. If the Grayburg-Jackson is deemed non-commercial, the wellbore will be plugged and abandoned per Federal Regulations. Programs to adhere to onshore oil and gas regulations are outlined in the following exhibits and attachments.

- Drilling Program**
- Exhibits #1/1-A = Blowout Prevention Equipment
 - Exhibit #2 = Location and Elevation Plat
 - Exhibit #3/3-A = Road Map and Topo Map
 - Exhibit #4 = Wells Within 1 Mile Radius
 - Exhibit #5 = Production Facilities Plat
 - Exhibit #6 = Rotary Rig Layout
 - Exhibit #7 = Casing Design
- H2S Operating Plan

The undersigned accepts all applicable terms, condition, stipulations and restrictions concerning operations conducted on the leased land or portions thereof, as described below:
Lease No. LC-029548A
Legal Description: Section 18-T17^S-R31E
Bond Coverage: Nationwide
BLM Bond No.: CO1151

O&G
APPROVED
NOV 9 10 21 AM '95
RECEIVED

ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on present productive zone and proposed new productive zone. If proposal to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

SIGNED *Randy Jackson* TITLE **RANDY JACKSON DISTRICT ENGINEER** DATE 11/6/95

This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

**APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS**

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

APPROVED BY *Uplanda Vign* TITLE **MANAGER** DATE 12/15/95

See Instructions On Reverse Side

The 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

DISTRICT I
P. O. Box 1980
Hobbs, NM 88241-1980

State of New Mexico
Energy, Minerals, and Natural Resources Department

Form C-102
Revised 02-10-94
Instructions on back

DISTRICT II
P. O. Drawer DD
Artesia, NM 88211-0719

OIL CONSERVATION DIVISION
P. O. Box 2088
Santa Fe, New Mexico 87504-2088

Submit to the Appropriate
District Office
State Lease - 4 copies
Fee Lease - 3 copies

DISTRICT III
1000 Rio Brazos Rd.
Aztec, NM 87410

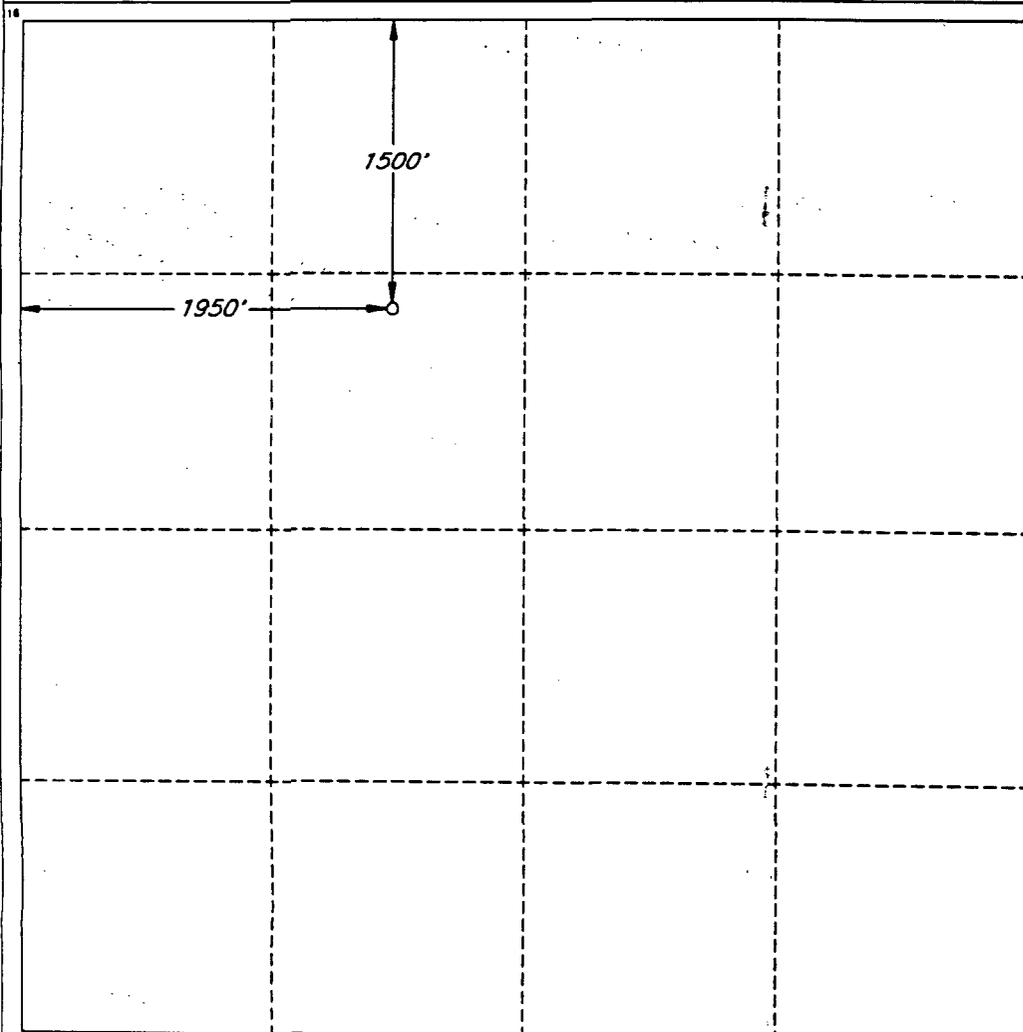
AMENDED REPORT

DISTRICT IV
P. O. Box 2088
Santa Fe, NM 87507-2088

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number		2 Pool Code		3 Pool Name Grayburg Jackson					
4 Property Code 15973		5 Property Name C. A. RUSSELL					6 Well Number 15		
7 OGRID No. 136025		8 Operator Name DEVON ENERGY OPERATING CORP.					9 Elevation 3738'		
10 SURFACE LOCATION									
UL or lot no. F	Section 18	Township 17 SOUTH	Range 31 EAST, N.M.P.M.	Lot Ida	Feet from the 1500'	North/South line NORTH	Feet from the 1950'	East/West line WEST	County EDDY
11 BOTTOM HOLE LOCATION IF DIFFERENT FROM SURFACE									
UL or lot no.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line	County
12 Dedicated Acres 40		13 Joint or Infill		14 Consolidation Code		15 Order No.			

NO ALLOWABLE WELL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Signature

Randy Jackson

Printed Name

Randy Jackson

Title

District Engineer

Date

11/6/95

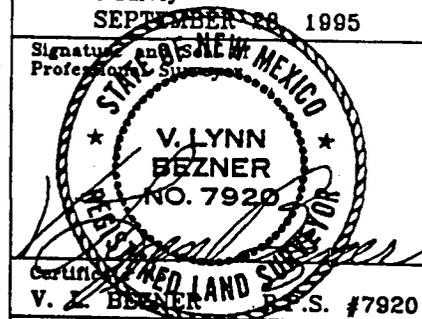
SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date of Survey

SEPTEMBER 28, 1995

Signature and Professional Seal



Continued on REVERSE SIDE
V. LYNN BEZNER P.E.S. #7920

JOB #41653-3/ 98 SW / JSJ

Sec : 18 Twp : 17S Rng : 31E Section Type : NORMAL

1 31.99	C 40.00	B 40.00	A 40.00
Federal owned	Federal owned	Federal owned	Federal owned
A A	A A	A	
2 32.10	F 40.00	G 40.00	H 40.00
Federal owned	Federal owned	Federal owned	Federal owned
A	A A A	A	A A

PF01 HELP PF02 PF03 EXIT PF04 GoTo PF05 PF06
PF07 BKWD PF08 FWD PF09 PRINT PF10 SDIV PF11 PF12

OGRID Identifier : 136025 DEVON ENERGY OPERATING CORP
Prop Identifier : 15973 C A RUSSELL
API Well Identifier : 30 15 28757 Well No : 15
Surface Locn - UL : F Sec : 18 Twp : 17S Range : 31E Lot Idn :
Multiple comp (S/M/C) : N TVD Depth (Feet) : MVD Depth (Feet):
Spud Date : P/A Date :
Casing/Linear Record:

S Size (inches)	Grade Weight (lb/ft)	Depth(ft) Top-Liner	Depth(ft) Bot-Liner	Hole Size (inches)	Cement (Sacks)	---- TOC ---- (feet)	Code
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E0004: No matching record found. Enter data to create.

PF01 HELP PF02 PF03 EXIT PF04 GoTo PF05 PF06 CONFIRM
PF07 PF08 PF09 COMMENT PF10 TLOG PF11 PF12

CMD :
OG6IWCM

ONGARD
INQUIRE WELL COMPLETIONS

01/16/96 10:27:24
OGOMES -EMGA

API Well No : 30 15 5220 Eff Date : 09-01-1994 WC Status : A
Pool Idn : 28509 GRAYBURG JACKSON;7 RVRS-QU-GB-SA
OGRID Idn : 136025 DEVON ENERGY OPERATING CORP
Prop Idn : 15973 C A RUSSELL

Well No : 007
GL Elevation: 3765

	U/L	Sec	Township	Range	North/South	East/West	Prop/Act (P/A)
B.H. Locn	: F	18	17S	31E	FTG 1650 F N	FTG 1384 F W	A

Lot Identifier:
Dedicated Acre: 40.00
Lease Type : F
Type of consolidation (Comm, Unit, Forced Pooling - C/U/F/O) :

M0025: Enter PF keys to scroll

PF01 HELP	PF02	PF03 EXIT	PF04 GoTo	PF05	PF06
PF07	PF08	PF09	PF10 NEXT-WC	PF11 HISTORY	PF12 NXTREC

CMD :
OG6IWCM

ONGARD
INQUIRE WELL COMPLETIONS

01/16/96 10:27:55
OGOMES -EMGA

API Well No : 30 15 5233 Eff Date : 09-01-1994 WC Status : A
Pool Idn : 28509 GRAYBURG JACKSON;7 RVRS-QU-GB-SA
OGRID Idn : 136025 DEVON ENERGY OPERATING CORP
Prop Idn : 15973 C A RUSSELL

Well No : 010
GL Elevation: 3746

	U/L	Sec	Township	Range	North/South	East/West	Prop/Act (P/A)
B.H. Locn	: F	18	17S	31E	FTG 2200 F N	FTG 2665 F E	A

Lot Identifier:
Dedicated Acre:
Lease Type : F

Type of consolidation (Comm, Unit, Forced Pooling - C/U/F/O) :

M0025: Enter PF keys to scroll

PF01 HELP	PF02	PF03 EXIT	PF04 GoTo	PF05	PF06
PF07	PF08	PF09	PF10 NEXT-WC	PF11 HISTORY	PF12 NXTREC

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE No. 3521
Order No. R-3185

APPLICATION OF SINCLAIR OIL & GAS
COMPANY FOR THREE WATERFLOOD PROJ-
ECTS, EDDY COUNTY, NEW MEXICO.

See Also Order Nos.

R-3185-A

R-3528

R-3528-A

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on January 25, 1967, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 1st day of February, 1967, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, 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 the applicant, Sinclair Oil & Gas Company, seeks authority to institute three waterflood projects in the Grayburg-Jackson Pool by the injection of water into the Grayburg-San Andres formations through two wells on its C. A. Russell Lease, eight wells on its Turner "A" Lease, and nine wells on its Turner "B" Lease in Sections 17, 18, 19, and 20, Township 17 South, Range 31 East, NMPM, Eddy County, New Mexico.

(3) That the applicant also seeks an administrative procedure whereby said projects could be expanded to include additional lands and injection wells in the area of said projects as may be necessary in order to complete an efficient injection pattern.

(4) That the wells in each of the project areas are in an advanced state of depletion and should properly be classified as "stripper" wells.

(5) That the proposed waterflood projects should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(6) That the subject application should be approved and the projects should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Sinclair Oil & Gas Company, is hereby authorized to institute three waterflood projects in the Grayburg-Jackson Pool by the injection of water into the Grayburg-San Andres formations through the following-described 19 wells in Township 17 South, Range 31 East, NMPM, Eddy County, New Mexico:

Sinclair Russell Grayburg-Jackson Waterflood Project

Injection wells:

C. A. Russell Well No. 6	979' FNL & 1400' FWL	Section 18
C. A. Russell Well No. 10	2147' FNL & 2374' FWL	Section 18

Sinclair Turner "A" Grayburg-Jackson Waterflood Project

Injection wells:

Turner "A" SP Well No. 2	2220' FSL & 427' FWL	Section 18
Turner "A" SP Well No. 5	332' FNL & 670' FWL	Section 19
Turner "A" SP Well No. 6	568' FSL & 1707' FWL	Section 18
Turner "A" SP Well No. 9	408' FNL & 1994' FEL	Section 19
Turner "A" SP Well No. 10	1940' FSL & 1839' FEL	Section 18
Turner "A" SP Well No. 11	589' FSL & 655' FEL	Section 18
Turner "A" SP Well No. 15	1635' FNL & 1698' FWL	Section 19
Turner "A" SP Well No. 35	700' FEL & 1840' FNL	Section 19

Sinclair Turner "B" Grayburg-Jackson Waterflood Project

Injection wells:

Turner "B" SP Well No. 3	309' FNL & 666' FWL	Section 20
Turner "B" SP Well No. 4	700' FSL & 1751' FWL	Section 17
Turner "B" SP Well No. 5	1989' FSL & 625' FWL	Section 17
Turner "B" SP Well No. 8	504' FNL & 2064' FEL	Section 20
Turner "B" SP Well No. 11	1785' FNL & 725' FEL	Section 20
Turner "B" SP Well No. 30	680' FSL & 632' FEL	Section 17
Turner "B" SP Well No. 41	1635' FNL & 1665' FWL	Section 20
Turner "B" SP Well No. 67	1650' FSL & 660' FWL	Section 20
Turner "B" SP Well No. 78	2130' FSL & 1980' FEL	Section 20

(2) That the subject waterflood projects shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations;

PROVIDED HOWEVER, that the Secretary-Director of the Commission may approve expansion of said projects to include such additional lands and injection wells in the area of said projects as may be necessary to complete an efficient water injection pattern.

(3) That monthly progress reports of the waterflood projects herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(4) That jurisdiction of this cause is 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

DAVID F. CARGO, Chairman

GUYTON B. HAYS, Member

A. L. PORTER, Jr., Member & Secretary

S E A L

esr/

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

CASE No. 3521
Order No. R-3185-A

IN THE MATTER OF THE APPLICATION OF
SINCLAIR OIL & GAS COMPANY FOR THREE
WATERFLOOD PROJECTS, EDDY COUNTY,
NEW MEXICO.

See Also Order No.

R-3185

R-3528

R-3528-A

NUNC PRO TUNC ORDER

BY THE COMMISSION:

It appearing to the Commission that through inadvertence, Order No. R-3185, dated February 1, 1967, does not reflect the true and correct locations of certain existing wells which were authorized for conversion to water injection by said order,

IT IS THEREFORE ORDERED:

(1) That the following well locations are hereby substituted in lieu of those shown in Order No. R-3185 to correctly reflect the locations of water injection wells authorized by said Order No. R-3185:

Sinclair Russell Grayburg-Jackson Waterflood Project

Injection wells:

C. A. Russell Well No. 6	990' FNL & 1384' FWL	Section 18
C. A. Russell Well No. 10	2200' FNL & 2665' FEL	Section 18

Sinclair Turner "A" Grayburg-Jackson Waterflood Project

Injection wells:

Turner "A" SP Well No. 2	2200' FSL & 440' FWL	Section 18
Turner "A" SP Well No. 5	330' FNL & 660' FWL	Section 19
Turner "A" SP Well No. 6	660' FSL & 1980' FWL	Section 18
Turner "A" SP Well No. 9	330' FNL & 1980' FEL	Section 19
Turner "A" SP Well No. 10	1980' FSL & 1830' FEL	Section 18
Turner "A" SP Well No. 11	660' FSL & 660' FEL	Section 18
Turner "A" SP Well No. 15	1650' FNL & 1980' FWL	Section 19
Turner "A" SP Well No. 35	1800' FNL & 660' FEL	Section 19

-2-

CASE No. 3521-

Order No. R-3185-A

Sinclair Turner "B" Grayburg-Jackson Waterflood Project

Injection wells:

Turner "B" SP Well No. 3	330' FNL & 660' FWL	Section 20
Turner "B" SP Well No. 4	660' FSL & 1980' FWL	Section 17
Turner "B" SP Well No. 5	1980' FSL & 660' FWL	Section 17
Turner "B" SP Well No. 8	660' FNL & 1980' FEL	Section 20
Turner "B" SP Well No. 11	1980' FNL & 660' FEL	Section 20
Turner "B" SP Well No. 30	660' FSL & 660' FEL	Section 17
Turner "B" SP Well No. 41	1650' FNL & 1650' FWL	Section 20
Turner "B" SP Well No. 67	1650' FSL & 660' FWL	Section 20
Turner "B" SP Well No. 78	2080' FSL & 1980' FEL	Section 20

(2) That this order shall be effective nunc pro tunc as of February 1, 1967.

DONE at Santa Fe, New Mexico, on this 19th day of February, 1968.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

DAVID F. CARGO, Chairman

GUYTON B. HAYS, Member

A. L. PORTER, Jr., Member & Secretary

S E A L

esr/

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE No. 3885
Order No. R-3528

APPLICATION OF SINCLAIR OIL & GAS
COMPANY FOR A WATERFLOOD EXPANSION,
EDDY COUNTY, NEW MEXICO.

See Also Order No.

R-3528-A

R-3185

R-3185-A

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on October 9, 1968, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 22nd day of October, 1968, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, 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 the applicant, Sinclair Oil Corporation, formerly Sinclair Oil & Gas Company, seeks permission to expand its Turner "B" Grayburg-Jackson Waterflood Project in the Grayburg-Jackson Pool by the injection of water into the Premier Sand of the Grayburg formation through 12 additional injection wells in Sections 20, 29, and 30, Township 17 South, Range 31 East, NMPM, Eddy County, New Mexico.

(3) That the wells in the project area are in an advanced state of depletion and should properly be classified as "stripper" wells.

(4) That the proposed expansion of the Turner "B" Grayburg-Jackson Waterflood Project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

CASE No. 3885

Order No. R-3528

(5) That the subject application should be approved and the expanded project should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Sinclair Oil Corporation, formerly Sinclair Oil & Gas Company, is hereby authorized to expand its Turner "B" Grayburg-Jackson Waterflood Project in the Grayburg-Jackson Pool by the injection of water into the Premier Sand of the Grayburg formation through the following-described wells in Township 17 South, Range 31 East, NMPM, Eddy County, New Mexico:

LEASE	WELL NO.	UNIT	SECTION
Turner "B" SP	44	N	20
Turner "B" SP	46	P	20
Turner "B" SP	47	B	29
Turner "B" SP	50	D	29
Turner "B" SP	54	F	29
Turner "B" SP	55	H	29
Turner "B" SP	61	J	29
Turner "B" SP	64	L	29
Turner "B" SP	66	N	29
Turner "B" SP	68	P	29
Turner "B" SP	56	J	30
Turner "B" SP	76	P	30

(2) That the expanded waterflood project shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

(3) That monthly progress reports of the expanded waterflood project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(4) That jurisdiction of this cause is 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

DAVID F. CARGO, Chairman

GUYTON B. HAYS, Member

S E A L

esr/

A. L. PORTER, Jr., Member & Secretary

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

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

CASE NO. 10290
Order No. R-3528-A

APPLICATION OF AVON ENERGY CORPORATION
FOR AMENDMENT OF DIVISION ORDER NOS.
R-3185, R-3185-A AND R-3528 TO EXPAND
THE VERTICAL LIMITS AND TO ESTABLISH
AN INJECTION PRESSURE LIMITATION FOR
THE TURNER "B" LEASE WATERFLOOD PROJECT,
EDDY COUNTY, NEW MEXICO.

See Also Order Nos.

R-3185

R-3185-A

R-3528

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on August 8, 1991, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 23rd day of September, 1991, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

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

(2) By Order No. R-3185, dated February 1, 1967, the Division authorized Sinclair Oil & Gas Company to institute three waterflood projects, the Russel Grayburg-Jackson Waterflood Project, Turner "A" Grayburg-Jackson Waterflood Project, and the Turner "B" Grayburg-Jackson Waterflood Project, said projects comprising all or portions of Sections 17, 18, 19, 20, 29 and 30, Township 17 South, Range 31 East, NMPM, Grayburg-Jackson Pool, Eddy County, New Mexico, by the injection of water into the Grayburg-San Andres formation through two, eight and nine injection wells located within said projects, respectively.

(3) By Nunc Pro Tunc Order No. R-3185-A, dated February 19, 1968, the Division corrected certain injection well locations authorized by said Order No. R-3185.

(4) By Order No. R-3528, dated October 9, 1968, the Division authorized Sinclair Oil Corporation to expand its Turner "B" Grayburg-Jackson Waterflood Project by the injection of water into the Premier Sand member of the Grayburg formation through twelve injection wells located in Sections 20, 29 and 30, Township 17 South, Range 31 East, NMPM, Eddy County, New Mexico, hereinafter referred to as the "Expansion Area".

(5) The current boundaries of the Russel Grayburg-Jackson Waterflood Project, Turner "A" Grayburg-Jackson Waterflood Project, Turner "B" Grayburg-Jackson Waterflood Project (including the "Expansion Area"), and the Grayburg-Jackson Friess-Fren Waterflood Project (also located in said Sections 19 and 30 and approved by Division Order No. R-4306) are as follows:

Russel Grayburg-Jackson Waterflood Project
TOWNSHIP 17 SOUTH, RANGE 31 EAST, NMPM

Section 18: NW/4, W/2 NE/4

Turner "A" Grayburg-Jackson Waterflood Project
TOWNSHIP 17 SOUTH, RANGE 31 EAST, NMPM

Section 18: S/2
Section 19: N/2

Turner "B" Grayburg-Jackson Waterflood Project
TOWNSHIP 17 SOUTH, RANGE 31 EAST, NMPM

Section 17: NW/4 SW/4, S/2 S/2
Section 20: All
Section 29: All
Section 30: SE/4

Grayburg-Jackson Friess-Fren Waterflood Project
TOWNSHIP 17 SOUTH, RANGE 31 EAST, NMPM

Section 19: E/2 SW/4, SE/4
Section 30: NE/4

(6) The Russel Grayburg-Jackson, Turner "A" Grayburg-Jackson, Grayburg-Jackson Friess-Fren and portions of the Turner "B" Grayburg-Jackson Waterflood Projects are currently owned and operated by Socorro Petroleum Company.

(7) The applicant, Avon Energy Corporation, a 50% owner of Socorro Petroleum Company, currently operates a portion of the Turner "B" Grayburg-Jackson Waterflood Project comprising the following described acreage:

TOWNSHIP 17 SOUTH, RANGE 31 EAST, NMPM

Section 20: S/2 N/2, S/2

Section 29: All

Section 30: E/2 SE/4

(8) The applicant in this case, Avon Energy Corporation, seeks the following:

- 1) The amendment of Division Order No. R-3528 by expanding the injection interval in the twelve injection wells approved by said order to include the entire Grayburg-San Andres formation;
- 2) The establishment of an injection pressure limitation of 450 psi above the formation fracture pressure as determined from step rate tests for those twelve injection wells located within the "Expansion Area".
- 3) The establishment of an administrative procedure whereby acreage currently contained within the Russel Grayburg-Jackson, Turner "A" Grayburg-Jackson, Turner "B" Grayburg-Jackson, and Grayburg-Jackson Friess-Fren Waterflood Projects may be transferred to Avon Energy Corporation and operated as a single waterflood project.

(9) According to applicant's evidence, Avon Energy Corporation currently has a farmout agreement with Socorro Petroleum Company whereby Avon earns acreage from Socorro as said acreage is drilled or otherwise further developed.

(10) Further evidence presented indicates that all of the acreage within the subject waterflood projects is Federal lands.

(11) The transfer and operation of such acreage should result in a more efficient operation, will result in the recovery of additional oil within the projects, and will not violate correlative rights.

(12) According to applicant's evidence and testimony, expansion of the injection interval within those wells located in the "Expansion Area" will result in the recovery of an additional 2.3 million barrels of oil which would not otherwise be recovered, thereby preventing waste.

(13) The proposed expansion of the injection interval within those wells located in the "Expansion Area" should be approved.

(14) The Division has determined, after consultation with the applicant prior to the hearing, that certain "Area of Review" wells located within the "Expansion Area" are not completed in such a manner which will assure that their wellbores will not serve as a conduit for migration of the injected fluid from the proposed injection zone.

(15) Prior to commencing injection operations within one-half mile of any of the following described wells, or prior to injecting into the Turner "B" Well No. 56 located in Unit J of said Section 30, the applicant should be required to perform remedial cement operations or take other action as may be necessary in order to assure that these wellbores will not serve as a conduit for migration of injected fluid to the satisfaction of the supervisor of the Artesia district office of the Division:

Turner "B" No. 55	Unit H, Section 29, T-17S, R-31E
Turner "B" No. 60	Unit K, Section 29, T-17S, R-31E
Turner "B" No. 68	Unit P, Section 29, T-17S, R-31E
Turner "B" No. 71	Unit M, Section 29, T-17S, R-31E

(16) No injection pressure limitation currently exists on any of the injection wells in the subject waterflood projects, however, by virtue of amending the injection interval in those injection wells located within the "Expansion Area", the Division would normally impose a surface injection pressure limitation on those wells equal to 0.2 psi per foot of depth to the uppermost perforations.

(17) The applicant presented the results of step-rate tests conducted on three injection wells within the "Expansion Area". The results of these step rate tests show an average formation fracture pressure of 1208 psi.

(18) The applicant's engineering study of pressure limits based upon Frac Hite, Frac Migration, and After Frac Logs (submitted as evidence in this case) provides substantial evidence to demonstrate that injection at 1650 psi (450 psi above the formation parting pressure) will not propagate fractures outside of the vertical limits of the Grayburg-Jackson Pool.

(19) The requested increase in surface pressure limitations for the "Expansion Area" will approximate the surface injection pressure for the original injection wells for which no pressure limit was imposed.

(20) Engineering studies conducted on behalf of the applicant have demonstrated that the water injected into the original injection wells at pressures up to an average of 1870 psi remained confined to the Grayburg-Jackson Pool.

(21) There is no indication that water injected into the original injection wells at pressures higher than those sought by the applicant in this case has moved water outside of the vertical limits of the Grayburg-Jackson Pool.

(22) Applicant's request is similar to the request previously approved by the Division Order R-2268-C for Socorro Petroleum Company and for which no adverse effects have been reported.

(23) Injection into the twelve subject injection wells at a surface injection pressure of approximately 450 psi above formation fracture pressure will allow the recovery of additional oil reserves within the Grayburg-Jackson Pool, thereby preventing waste, will not endanger any fresh water aquifers, and should therefore be approved.

(24) As the reservoir pressure in the "Expansion Area" increases as a result of the injection of water, it will be necessary to periodically increase the surface pressure limitation for the project which should be authorized administratively.

(25) The applicant should be required to submit a request to the Santa Fe and Artesia offices of the Division and to the United States Bureau of Land Management (BLM) for transfer of acreage from the Socorro Petroleum Company operated Turner "A" Grayburg-Jackson, Turner "B" Grayburg-Jackson, Grayburg-Jackson Friess-Fren and Russel Grayburg-Jackson Waterflood Projects into the Avon operated Turner "B" Grayburg-Jackson Waterflood Project. Such request should be in general letter form along with a plat of the projects showing the requested acreage to be transferred.

IT IS THEREFORE ORDERED THAT:

(1) Division Order Nos. R-3185, R-3185-A and R-3528 are hereby amended authorizing Avon Energy Corporation to inject water into the Grayburg-San Andres formation, Grayburg-Jackson Pool, through the twelve injection wells (previously approved for injection by Order No. R-3528) shown on Exhibit "A" attached hereto located within the "Expansion Area" of the Turner "B" Grayburg-Jackson Waterflood Project comprising all or portions of Sections 20, 29 and 30, Township 17 South, Range 31 East, NMPM, Eddy County, New Mexico.

(2) The twelve subject injection wells or pressurization system shall be equipped with a pressure limiting device which will limit the surface injection pressure on said wells to no more than 1650 psi.

(3) The Division Director shall have the authority to administratively approve subsequent pressure increases on said wells to 450 psi above fracture pressure, provided, however, that step-rate tests, temperature surveys, tracer surveys or other supporting data the Division may deem necessary accompany such requests.

(4) The Division Director shall also have the authority to reduce or rescind said injection pressures should it become apparent that the injected fluid is not being adequately confined to the Grayburg-Jackson Pool.

(5) Prior to commencing injection operations within one-half mile of any of the following described wells, or prior to injecting into the Turner "B" Well No. 56 located in Unit J of said Section 30, the applicant shall perform remedial cement operations or take other action as may be necessary in order to assure that these wellbores will not serve as a conduit for migration of injected fluid to the satisfaction of the supervisor of the Artesia district office of the Division:

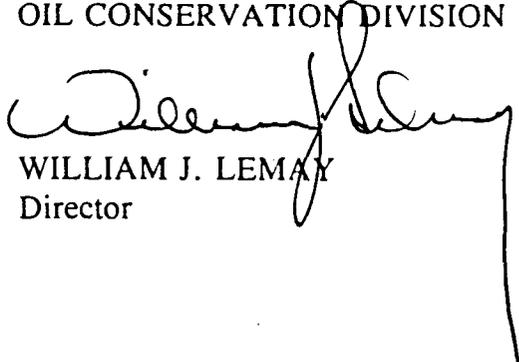
Turner "B" No. 55	Unit H, Section 29, T-17S, R-31E
Turner "B" No. 60	Unit K, Section 29, T-17S, R-31E
Turner "B" No. 68	Unit P, Section 29, T-17S, R-31E
Turner "B" No. 71	Unit M, Section 29, T-17S, R-31E

(6) The Division Director may authorize the transfer of acreage currently contained within the Socorro Petroleum Company operated Turner "A" Grayburg-Jackson, Turner "B" Grayburg-Jackson, Grayburg-Jackson Friess-Fren and Russel Grayburg-Jackson Waterflood Projects into the Avon operated Turner "B" Grayburg-Jackson Waterflood Project provided a request for such transfer of acreage is submitted to the Santa Fe and Artesia offices of the Division and to the United States Bureau of Land Management (BLM). Such request shall be in general letter form along with a plat of the projects showing the requested acreage to be transferred.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION


WILLIAM J. LEMAY
Director

S E A L

GRAYBURG-JACKSON UNIT

