

STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION



April 2, 1987

GARREY CARRUTHERS
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

Shell Western E & P Inc.
P. O. Box 991
Houston, Texas 77001

Attention: A. J. Ford

Re: Administrative Order NFL- 161

Dear Mr. Fore:

Reference is made to your application for an Infill Well Finding and Well-Spacing Waiver made pursuant to Section 271.305(b) of the Federal Energy Regulatory Commission regulations, Natural Gas Policy Act of 1978, and Oil Conservation Division Order No. R-6013 for the following described well:

North Hobbs Unit Well No. 242 located 100 feet from the North line and 1400 feet from the West line (Unit N) of Section 29, Township 18 South, Range 38 East, NMPM, Lea County, New Mexico.

THE DIVISION FINDS THAT:

(1) Section 271.305(b) of the Federal Energy Regulatory Commission Interim Regulations promulgated pursuant to the Natural Gas Policy Act of 1978 provides that, in order for an infill well to qualify as a new onshore production well under Section 103 of said Act, the Division must find, prior to the commencement of drilling, that the well is necessary to effectively and efficiently drain a portion of the reservoir covered by the proration unit which cannot be so drained by any existing well within that unit, and must grant a waiver of existing well-spacing requirements.

(2) By Division Order No. R-6013, dated June 7, 1979, the Division established an administrative procedure whereby the Division Director and the Division Examiners are empowered to act for the Division and find that an infill well is necessary.

(3) The well for which a finding is sought is to be completed in the Hobbs Grayburg San Andres Pool, and the standard spacing unit in said pool is 40 acres.

(4) A standard 40-acre oil proration unit comprising the SE/4 SW/4 of Section 29, Township 18 South, Range 38 East, is currently dedicated to the North Hobbs Unit Well No. 241 located in Unit N of said Section 29.

(5) Said unit is not being effectively and efficiently drained by the existing wells on the unit.

(6) The drilling and completion of the well for which a finding is sought should result in the production of an additional 120,000 MCF of gas from the proration unit which would not otherwise be recovered.

(7) All requirements of Division Order No. R-6013 have been complied with, and the well for which a finding is sought is necessary to effectively and efficiently drain a portion of the reservoir covered by said proration unit which cannot be so drained by any existing well within the unit.

(8) In order to permit effective and efficient drainage of said proration unit, the subject application should be approved as an exception to the standard well-spacing requirements for the pool.

IT IS THEREFORE ORDERED THAT:

(1) The applicant is hereby authorized to drill the North Hobbs Unit Well No. 242 as described above, as an infill well on the existing 40-acre oil proration unit comprising the SE/4 SW/4 of Section 29, Township 18 South, Range 38 East, NMPM, Hobbs Grayburg San Andres Pool, Lea County, New Mexico. The authorization for infill drilling granted by this order is an exception to applicable well spacing requirements and is necessary to permit the drainage of a portion of the reservoir covered by said proration unit which cannot be effectively and efficiently drained by any existing well thereon.

(2) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

Sincerely,


Michael E. Stogner
Examiner

MES/et

xc: Oil Conservation Division - Hobbs

Shell Western E&P Inc.

A Subsidiary of Shell Oil Company



P.O. Box 991
Houston, TX 77001

May 20, 1985

State of New Mexico
Energy and Minerals Department
Oil Conservation Division
ATTN R. L. Stamets, Director
P. O. Box 2088
Santa Fe, NM 87501

Gentlemen:

SUBJECT: INFILL DRILLING FINDING
PURSUANT TO SECTION 271.305(b)
FEDERAL ENERGY REGULATORY COMMISSION REGULATIONS,
NATURAL GAS POLICY ACT OF 1978 AND
OIL CONSERVATION DIVISION ORDER NO. R-6013-A

Shell Western E&P Inc. (SWEPI), respectfully requests an administrative finding that the following infill wells are necessary to effectively and efficiently drain a portion of the Grayburg/San Andres reservoir:

SHELL WESTERN E&P INC. OPERATED
NORTH HOBBS (GRAYBURG/SAN ANDRES) UNIT
HOBBS (GRAYBURG/SAN ANDRES) POOL
LEA COUNTY, NEW MEXICO

<u>WELL NO.</u>		<u>LOCATION</u>
24-413	A-24-18S-37E	1200' FNL & 206' FEL
29-242	N-29-18S-38E	100' FSL & 1400' FWL
30-312	F-30-18S-38E	1770' FNL & 2405' FWL
33-142	M-33-18S-38E	1250' FSL & 185' FWL
33-233	K-33-18S-38E	2380' FSL & 2472' FWL.

Administrative Order NSL-1749 dated October 4, 1983 and amended December 13, 1983, approved the above-described unorthodox locations. Additional data in support of this request is attached.

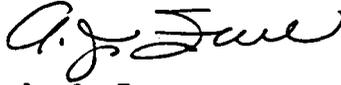
Based on the results of these initial five (5) infill wells, the Division issued Order No. R-7670 dated September 21, 1985 approving Shell Western's proposal to drill thirty-eight (38) additional producers and five (5) injectors and found that the 38 wells were necessary to effectively and efficiently drain portions of the Grayburg/San Andres reservoir. Shell Western is now requesting and Effective and Efficient finding for the initial five wells.

The only operator of a proration or spacing unit offsetting the subject unit is Amoco Production Company, which operates the South Hobbs (Grayburg/San Andres) Unit. Amoco has been notified by certified mail of this request.

BNBG8512703

If additional information is required, please advise.

Yours very truly,



A. J. Fore
Supervisor Regulatory and Permitting
Mid-Continent Division

DMU

Attachments

cc: State of New Mexico
Energy and Minerals Department
Oil Conservation Division
P. O. Box 1980
Hobbs, NM 88240

Amoco Production Company
P. O. Box 3092
Houston, TX 77253

INFILL DRILLING FINDING

SHELL WESTERN E&P INC. OPERATED
NORTH HOBBS (GRAYBURG/SAN ANDRES) UNIT
HOBBS (GRAYBURG/SAN ANDRES) POOL
LEA COUNTY, NEW MEXICO

<u>WELL NO.</u>		<u>LOCATION</u>
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29-242	N-29-18S-38E	100' FSL & 1400' FWL
30-312	F-30-18S-38E	1770' FNL & 2405' FWL
33-142	M-33-18S-38E	1250' FSL & 185' FWL
33-233	K-33-18S-38E	2380' FSL & 2472' FWL.

The North Hobbs (G/SA) Unit and pressure maintenance project which was authorized by Division Order No. R-6198 and R-6199, became effective on February 1, 1980. Prior to drilling the subject wells, the Unit was developed by 189 producers and 74 injectors, utilizing a modified 5-spot flood pattern (Figure No. 1). Average daily oil production amounted to 9849 barrels of oil and 50,408 barrels of water in January 1984. For the same period, water injection averaged 57,629 barrels per day. The Unit development plans as originally proposed were essentially completed with the drilling of the line injection wells on the boundary between the North and South Hobbs (G/SA) Units in 1983.

About 85 percent of the wells drilled in the central portion of the Unit are located off-center, usually 330+ feet from the lease line. The sweep efficiencies with this off-center configuration were reviewed and 48+ potential infill well locations were identified. It was determined that the drilling of 48+ infill wells would develop an estimated 6.0± MMB of reserves that would not be produced with the existing well configuration. The five (5) subject infill wells were drilled to confirm the unique oil potential of the infill drilling program in the subject Unit. Order No. R-7670 dated September 21, 1984, approved the unorthodox locations of the 38 remaining infill wells as necessary to effectively and efficiently drain a portion of the Grayburg/San Andres reservoir which could not be drained by any existing well within the proration unit.

Each of these wells is the second or subsequent well drilled on an established proration unit. The completion of these five (5) infill wells had no appreciable affect on the oil production of the first or subsequent wells as shown by the attached production decline curves.

Based on the foregoing, it is our opinion that the reserves developed by these five (5) infill wells are unique and would not be recovered by any other wells in the existing proration unit. Therefore, we recommend an effective and efficient finding be made for each of these wells.

GAS RESERVE CALCULATION

The North Hobbs (G/SA) Unit average producing GOR is currently 1100 cu ft per barrel. However, we expect with continued response to the water injection program the GOR will decline to near the solution GOR of 645 cu ft per barrel.

To determine gas reserves attributable to each well, we have assumed a lifetime GOR of 800 cu ft per barrel.

Estimated Ultimate Oil Recovery = 150,000 bbls per well

150,000 X 800 = 120 MMCFGas per well.

ADDITIONAL DATA - SECOND OR SUBSEQUENT WELLS

	<u>LOCATION</u>		<u>SPUD DATE</u>	<u>FORMER OPERATOR/WELL NAME & NO.</u>
<u>N. Hobbs Unit</u> <u>No. 24-413</u>				
24-411	A/24-18S-37E	990' FNL & 990' FEL	6-10-70	Gulf - Graham State (NCT A) #6
24-412	A/24-18S-37E	330' FNL & 330' FEL	7-02-32	Gypsy - Graham State A #2
<u>N. Hobbs Unit</u> <u>No. 29-242</u>				
29-241	N/29-18S-38E	330' FSL & 2310' FWL	7-25-30	Conoco - State A-29 #2
<u>N. Hobbs Unit</u> <u>No. 30-223</u>				
30-221	F/30-18S-38E	2310' FNL & 2310' FWL	4-20-30	Amerada - H. D. McKinley #2
30-222W	F/30-18S-38E	1470' FNL & 1395' FWL	6-23-80	Shell - N. Hobbs (G/SA) Unit #30-222 (Converted to injector 11-29-82)
<u>N. Hobbs Unit</u> <u>No. 33-142</u>				
33-141	M/33-18S-38E	660' FSL & 660' FWL	7-05-30	Conoco - State A-33 #1
<u>N. Hobbs Unit</u> <u>No. 33-233</u>				
33-231	K/33-18S-38E	2310' FSL & 1320' FWL	8-13-30	Conoco - State A-33 #3
33-232W	K/33-18S-38E	2595' FSL & 1370' FWL	8-15-80	Shell - N. Hobbs (G/SA) Unit #33-232 (Completed as an injector 6-16-81)

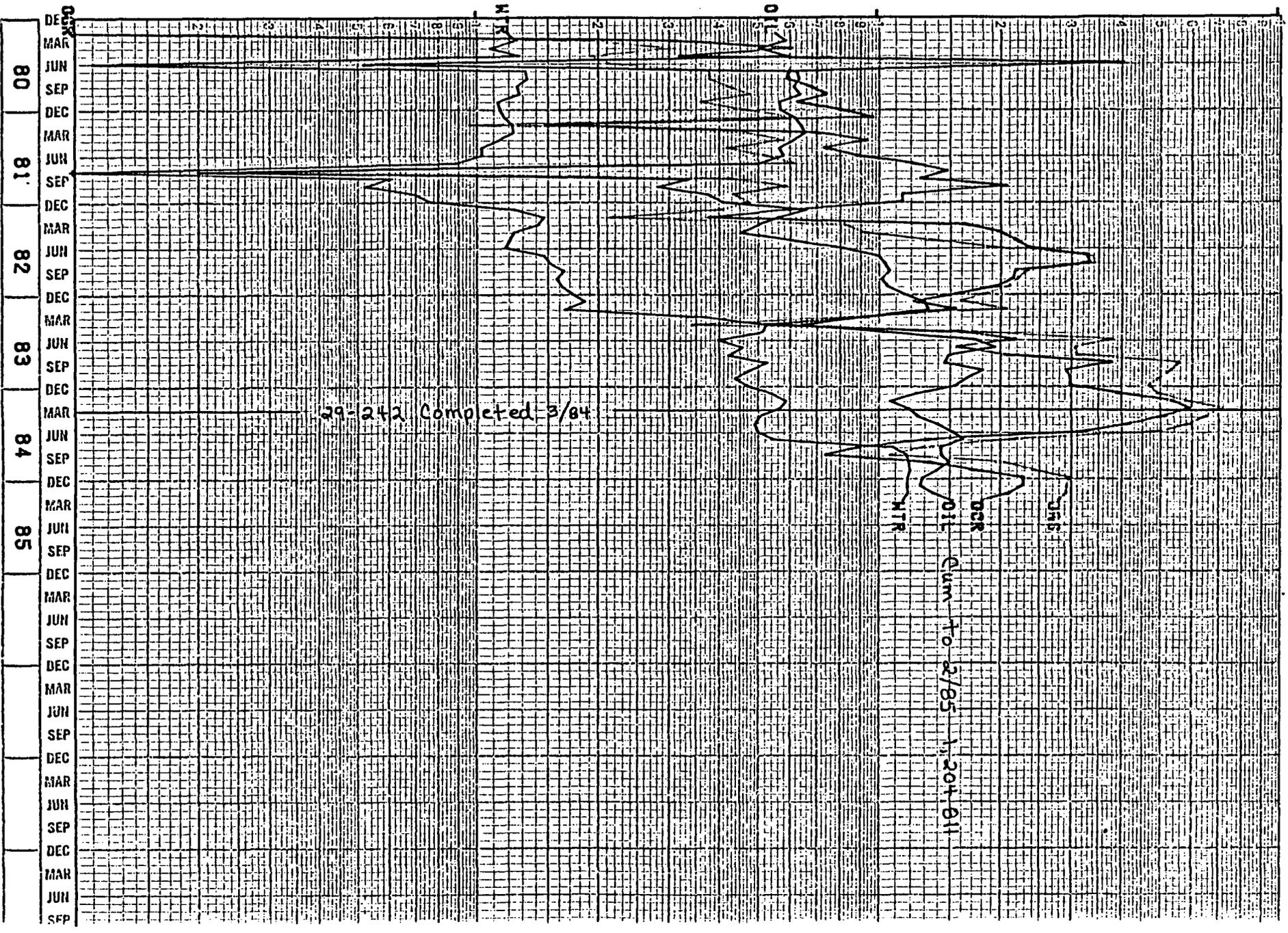
PRODUCTION UNIT 647: NEW MEXICO
 LSE: HOBBS NORTH UNIT
 RES: GRAYBURG-SAN ANDRES
 33601 WLL: 241-29 7074
 31249 75229

10000
 1000
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 10000
 1000
 00R SCE/A
 000 WTR B/D
 OIL B/D

1000
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 100

100
 10
 100
 10

10
 10
 1



NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section.

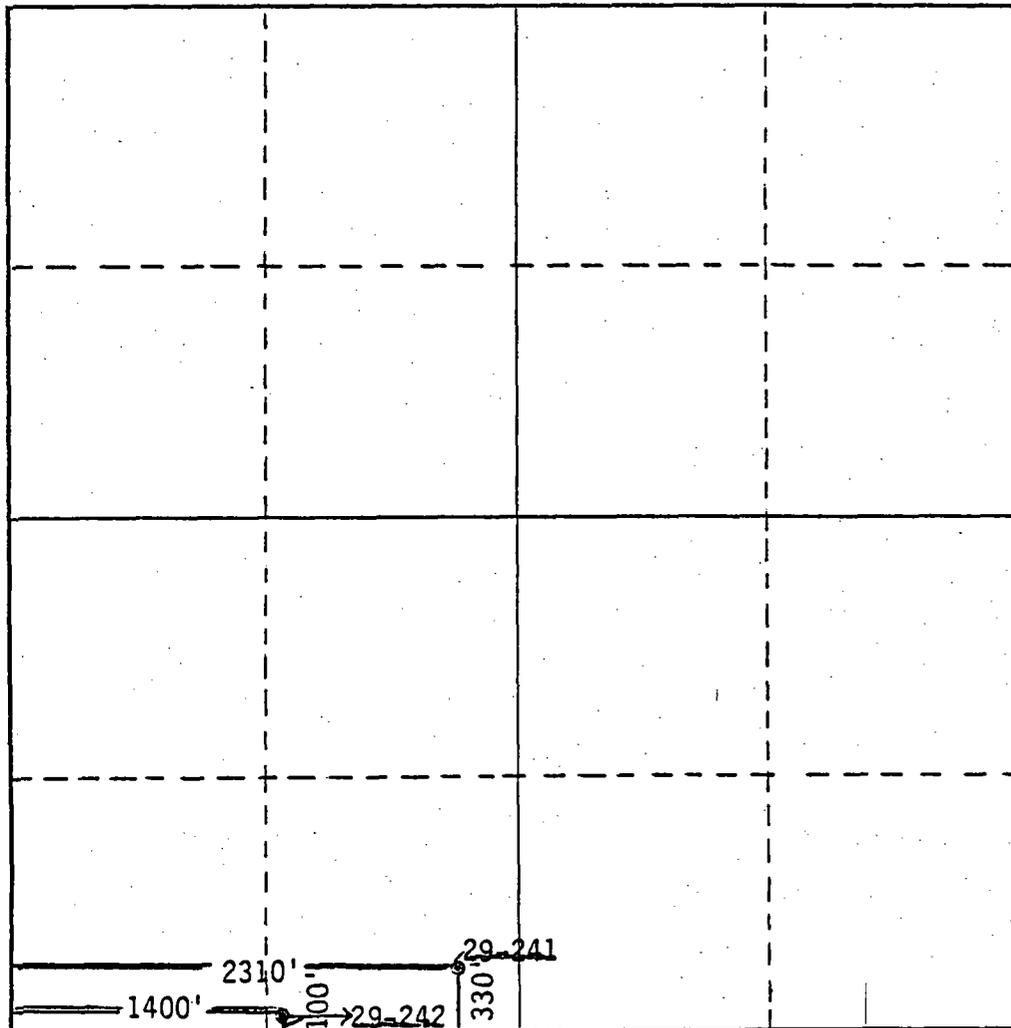
Operator SHELL WESTERN E&P INC.			Lease N. HOBBS (G/SA) UNIT SECTION 29		Well No. 241 242
Unit Letter N	Section 29	Township 18-S	Range 38-E	County LEA	
Actual Footage Location of Well:					
feet from the		line and		feet from the	
Ground Level Elev.	Producing Formation GRAYBURG/SAN ANDRES		Pool HOBBS (G/SA)	Dedicated Acreage: Acres	

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

Yes No If answer is "yes," type of consolidation UNITIZATION

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

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

Name **A. J. FORE**
Position **SUPV. REGULATORY & PERMITTING**
Company **SHELL WESTERN E&P INC.**
Date **MAY 20 1985**

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 knowledge and belief.

Date Surveyed

Registered Professional Engineer and/or Land Surveyor

Certificate No.



P 658 011 764

RECEIPT FOR CERTIFIED MAIL

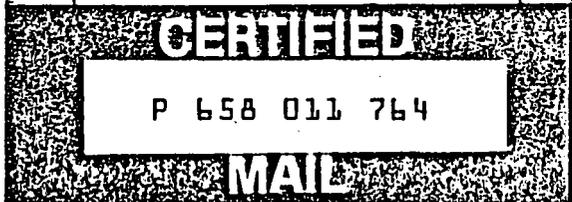
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

* U.S.G.P.O. 1983-403-517

PS Form 3800, Feb. 1982

Sent to AMOCO PRODUCTION COMPANY ATTN: H. L. McDONALD	
Street and No. P. O. BOX 3092	
P.O., State and ZIP Code HOUSTON, TX 77253	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date D. M. UPSON WCK 4435 5-20-85	



NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT.

Form O-11
Supersedes O-10
Effective 1-1-65

All distances must be from the outer boundaries of the Section

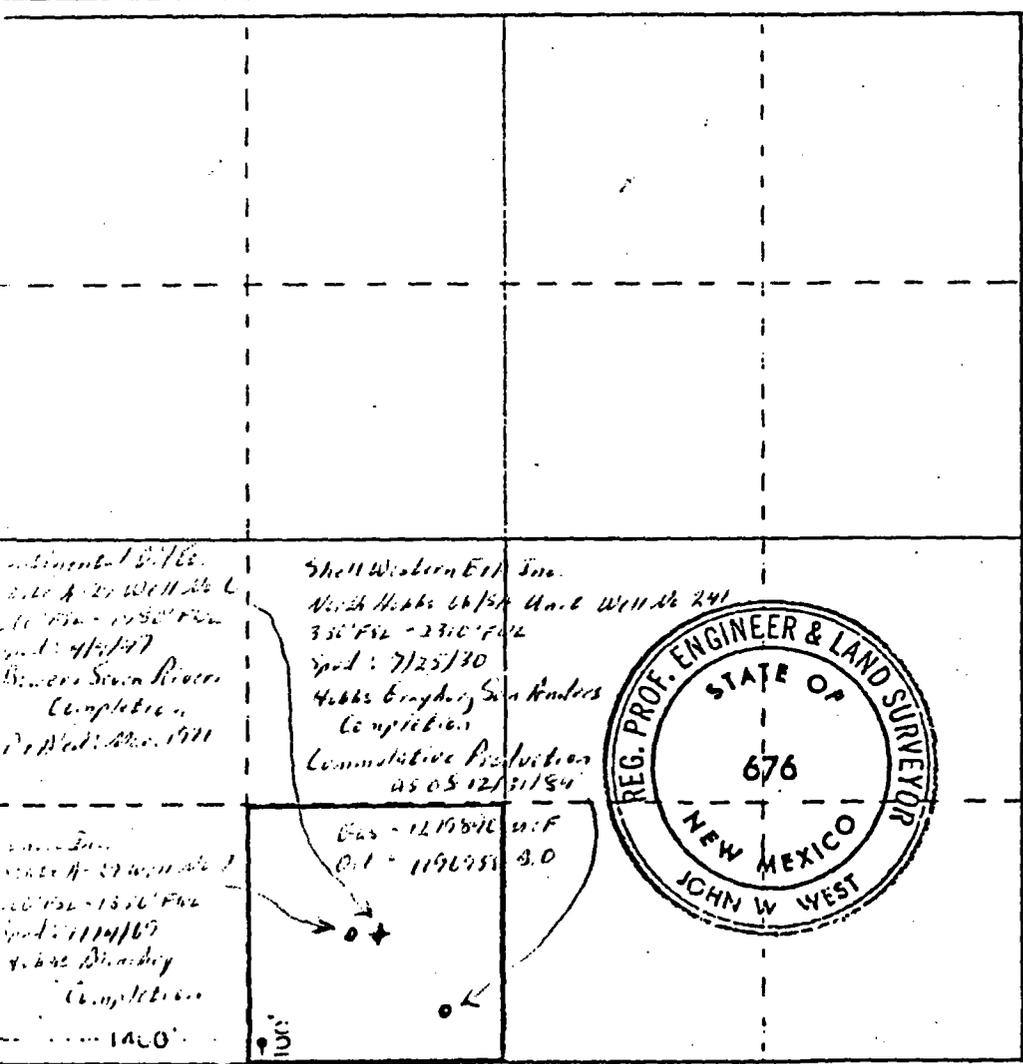
SHELL WESTERN E&P INC.			Lease NORTH HOBBS UNIT		29-242
Letter N	Section 29	Township 18 SOUTH	Range 38 EAST	County LEA	
Well Location of Well:					
100	feet from the	SOUTH	line and	1400	feet from the WEST
Well Level Elev. 3640.3'	Producing Formation SAN ANDRES		Pool HOBBS (GRAYBURG/SAN ANDRES)		Well Head Diameter 40

- Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
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A. J. Fore A. J. FORE
SUPERVISOR REG. & PERMITTING
SHELL WESTERN E&P INC.
NOVEMBER 16, 1984

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 knowledge and belief.

Date Surveyed: 9-13-83
Registered Professional Engineer and Land Surveyor
John W. West
Certificate No. 676

Shell Western E&P Inc.

A Subsidiary of Shell Oil Company



P.O. Box 991
Houston, TX 77001

May 20, 1985

State of New Mexico
Energy and Minerals Department
Oil Conservation Division
ATTN R. L. Stamets, Director
P. O. Box 2088
Santa Fe, NM 87501

Gentlemen:

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PURSUANT TO SECTION 271.305(b)
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NATURAL GAS POLICY ACT OF 1978 AND
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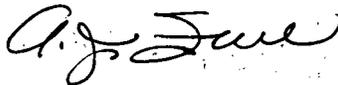
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BNBG8512703

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Yours very truly,



A. J. Fore
Supervisor Regulatory and Permitting
Mid-Continent Division

DMU

Attachments

cc: State of New Mexico
Energy and Minerals Department
Oil Conservation Division
P. O. Box 1980
Hobbs, NM 88240

Amoco Production Company
P. O. Box 3092
Houston, TX 77253

INFILL DRILLING FINDING

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NORTH HOBBS (GRAYBURG/SAN ANDRES) UNIT
HOBBS (GRAYBURG/SAN ANDRES) POOL
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ADDITIONAL DATA - SECOND OR SUBSEQUENT WELLS

<u>LOCATION</u>		<u>SPUD DATE</u>	<u>FORMER OPERATOR/WELL NAME & NO.</u>
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24-411	A/24-18S-37E	990' FNL & 990' FEL	6-10-70
24-412	A/24-18S-37E	330' FNL & 330' FEL	7-02-32
Gulf - Graham State (NCT A) #6 Gypsy - Graham State A #2			
<u>N. Hobbs Unit</u> <u>No. 29-242</u>			
29-241	N/29-18S-38E	330' FSL & 2310' FWL	7-25-30
Conoco - State A-29 #2			
<u>N. Hobbs Unit</u> <u>No. 30-223</u>			
30-221	F/30-18S-38E	2310' FNL & 2310' FWL	4-20-30
30-222W	F/30-18S-38E	1470' FNL & 1395' FWL	6-23-80
Amerada - H. D. McKinley #2 Shell - N. Hobbs (G/SA) Unit #30-222 (Converted to injector 11-29-82)			
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33-141	M/33-18S-38E	660' FSL & 660' FWL	7-05-30
Conoco - State A-33 #1			
<u>N. Hobbs Unit</u> <u>No. 33-233</u>			
33-231	K/33-18S-38E	2310' FSL & 1320' FWL	8-13-30
33-232W	K/33-18S-38E	2595' FSL & 1370' FWL	8-15-80
Conoco - State A-33 #3 Shell - N. Hobbs (G/SA) Unit #33-232 (Completed as an injector 6-16-81)			

**NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT**

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section.

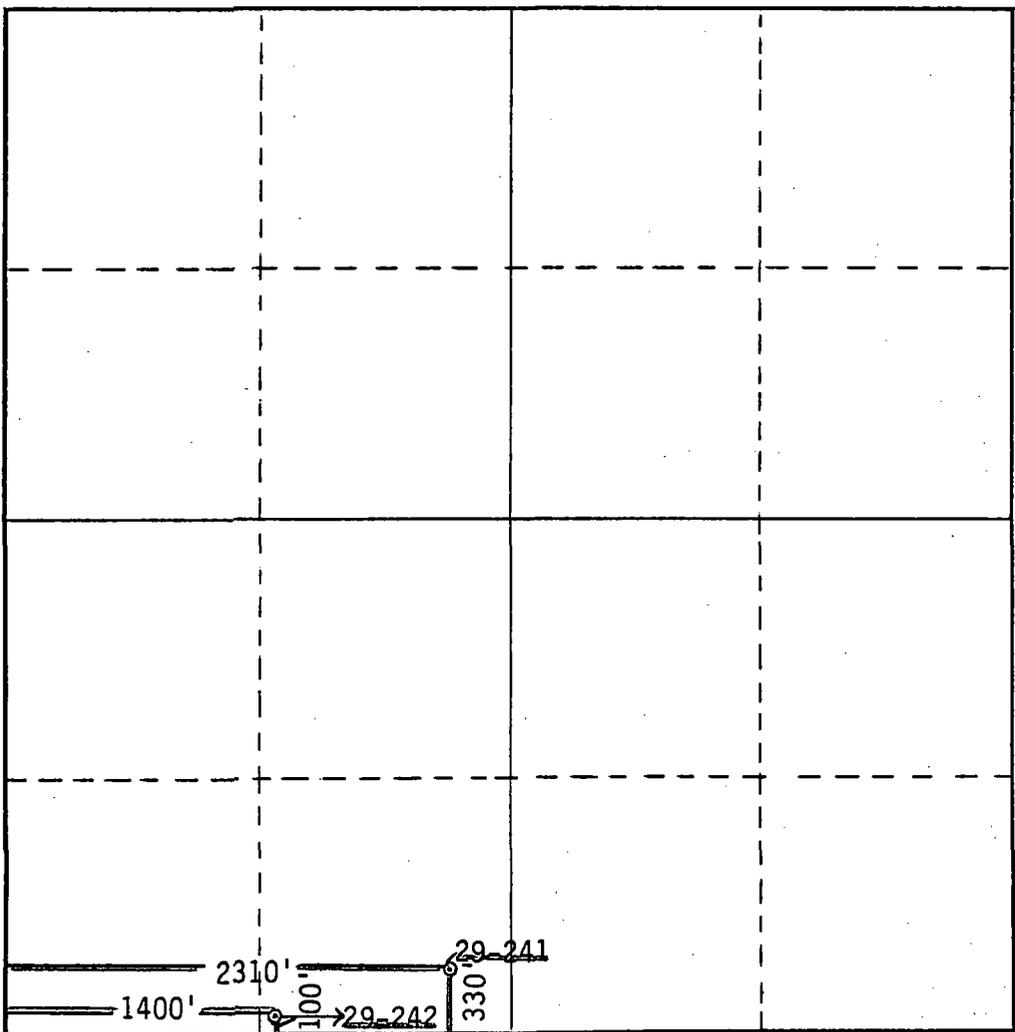
Operator SHELL WESTERN E&P INC.		Lease N. HOBBS (G/SA) UNIT SECTION 29			Well No. 241 242
Unit Letter N	Section 29	Township 18-S	Range 38-E	County LEA	
Actual Footage Location of Well:					
feet from the		line and		feet from the line	
Ground Level Elev.	Producing Formation GRAYBURG/SAN ANDRES	Pool HOBBS (G/SA)	Dedicated Acreage: Acres		

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
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CERTIFICATION

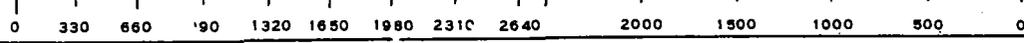
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name	A. J. FORE
Position	SUPV. REGULATORY & PERMITTING
Company	SHELL WESTERN E&P INC.
Date	MAY 20 1985

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 knowledge and belief.

Date Surveyed	
Registered Professional Engineer and/or Land Surveyor	

Certificate No. _____



P 658 011 764

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

★ U.S.G.P.O. 1983-403-517
PS Form 3800, Feb. 1982

Sent to AMOCO PRODUCTION COMPANY ATTN: H. L. McDONALD	
Street and No. P. O. BOX 3092	
P.O., State and ZIP Code HOUSTON, TX 77253	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date D. M. UPSON WCK 4435 5-20-85	



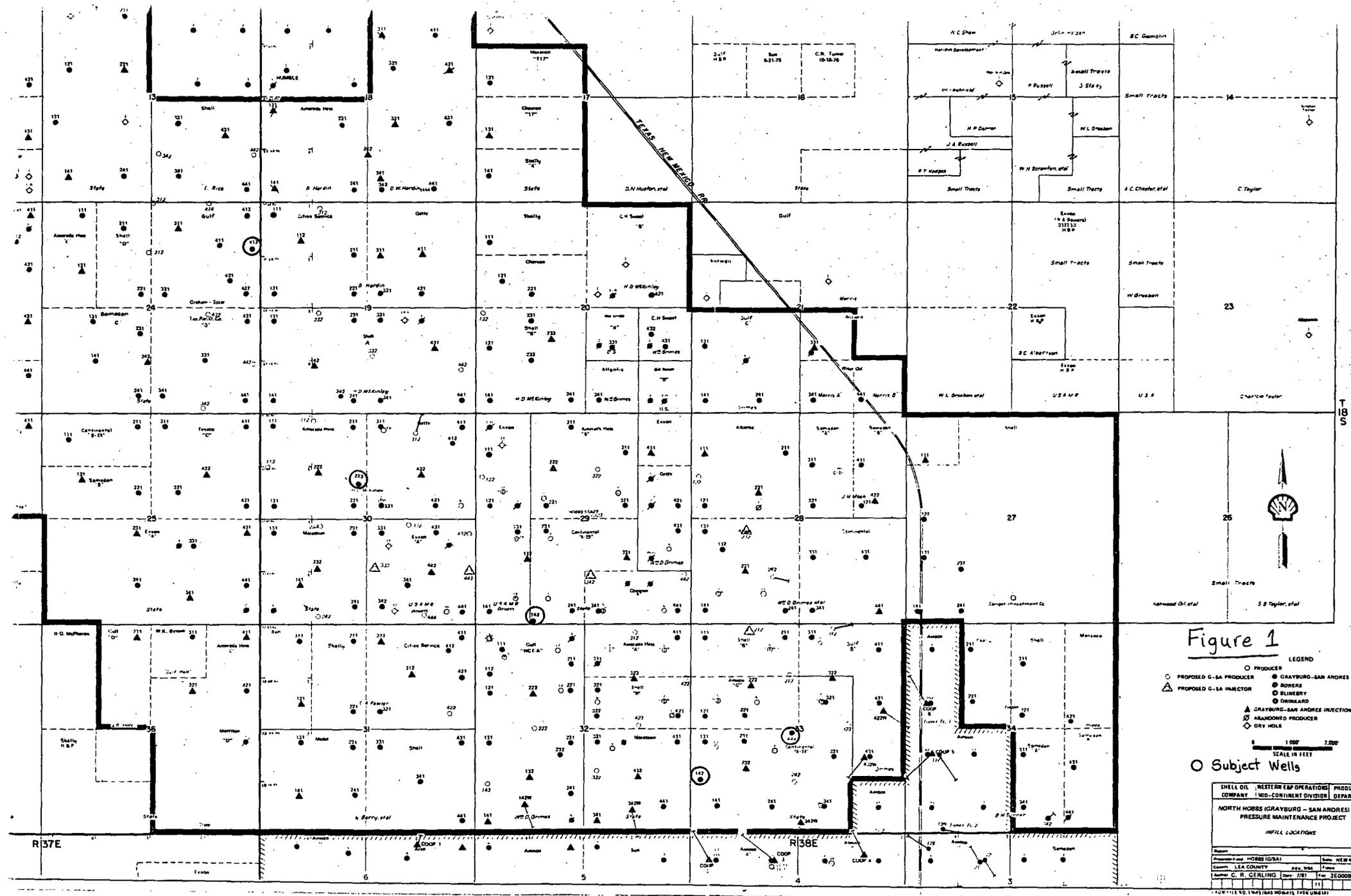


Figure 1

LEGEND

- PRODUCER
- PROPOSED C-SA PRODUCER
- △ PROPOSED C-SA INJECTOR
- GRAVBURG-SAN ANDRES
- BOWERY
- BLINNEY
- OWNSLARD
- ▲ GRAVBURG-SAN ANDRES INJECTION WELL
- ▲ ABANDONED PRODUCER
- ◇ DRY HOLE

1 000' 2 000'
SCALE IN FEET

○ Subject Wells

SHELL OIL - WESTERN OPERATIONS		PRODUCTION COMPANY - MID-CONTINENT DIVISION		DEPARTMENT	
NORTH HOBBS - SAN ANDRES - SAN ANDRES UNIT					
PRESSURE MAINTENANCE PROJECT					
WELL LOCATIONS					
Map					
Project	NORTH HOBBS (GSA)				
County	LEA COUNTY	REV.	1964	Drawn	NEW MEXICO
Author	C. R. GIERLING	Date	7/61	File	2E00087 00
* 1961 U.S. GEOLOGICAL SURVEY (1:50,000)					

