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 waver 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 <u>not</u> 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



May 20, 1985

P.O. Box 991 Houston, TX 77001

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

WELL NO.		LOCATION				
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.

If additional information is required, please advise.

Yours very truly,

DMU

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

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

WELL NO.	·	LOCATION				
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.

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

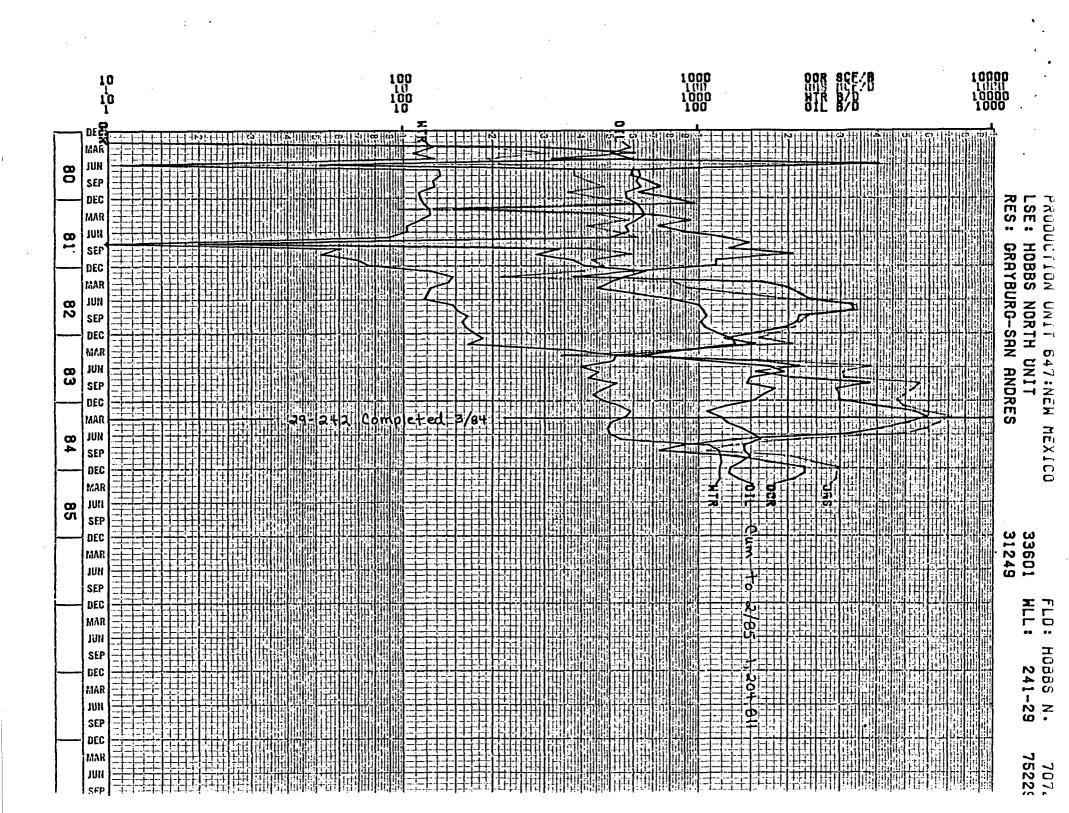
The North Hobbs (G/SA) Unit average producing GOR is currently 1100 cu ft per barrel. However, we expect with continued response to the water injection program the GOR will decline to near the solution GOR of 645 cu ft per barrel.

To determine gas reserves attributable to each well, we have assumed a life-time 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

	LOCAT	<u>ION</u>	SPUD DATE	FORMER OPERATOR/WELL NAME & NO.
N. Hobbs No. 24-41				
24-411 24-412	A/24-18S-37E A/24-18S-37E	990' FNL & 990' FEI 330' FNL & 330' FE		Gulf - Graham State (NCT A) #6 Gypsy - Graham State A #2
N. Hobbs No. 29-24				
29-241	N/29-18S-38E	330' FSL & 2310' FW	L 7-25-30	Conoco - State A-29 #2
N. Hobbs No. 30-22				
30-221 30-222W	F/30-18S-38E F/30-18S-38E	2310' FNL & 2310' FW 1470' FNL & 1395' FW		Amerada - H. D. McKinley #2 Shell - N. Hobbs (G/SA) Unit #30-222 (Converted to injector 11-29-82)
				,
N. Hobbs No. 33-14				
33-141	M/33-18S-38E	660' FSL & 660' FW	L 7-05-30	Conoco - State A-33 #1
N. Hobbs No. 33-23				
33-231 33-232W	K/33-18S-38E K/33-18S-38E	2310' FSL & 1320' FWI 2595' FSL & 1370' FWI		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

All distances must be from the outer boundaries of the Section. Operator 241 1 0750 Well No. SHE WESTERN E&P INC HOBBS (G/SA) UNIT SECTION 29 242 Township Init I etter Range County 29 18-S 38-E LEA Actual Footage Location of Well: feet from the line and feet from the Ground Level Elev. Producing Formation Dedicated Acreage: HOBBS (G/SA) GRAYBURG/SAN ANDRES 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? If answer is "yes," type of consolidation ____ UNITIZATION XX Yes ¬ N₀ 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. MAY 2 0 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 1400 Certificate No.

2000

1980

1500

1000

500

P 658 011 764

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED NOT FOR INTERNATIONAL MAIL

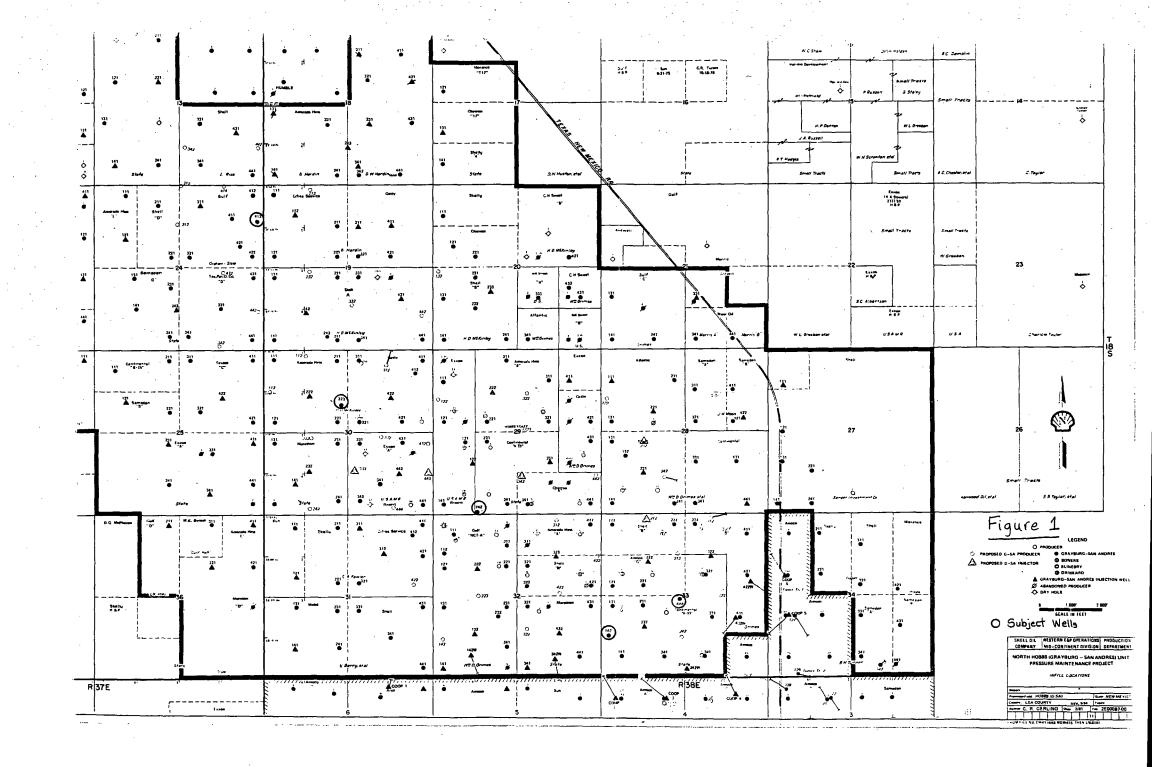
(See Reverse)

3-517	Sent to AMOCO PRODUCTI ATTN: H. L. MCDON	ON COMPAN ALD	ΙY			
# U.S.G.P.O. 1983-403-517	Street and No. P. O. BOX 3092					
.o.	P.O., State and ZIP Code HOUSTON, TX 7725	3				
S.G.	Postage	\$				
*	Certified Fee					
	Special Delivery Fee					
	Restricted Delivery Fee					
	Return Receipt Showing to whom and Date Delivered					
1982	Return receipt showing to whom, Date, and Address of Delivery					
Feb.	TOTAL Postage and Fees	\$				
	Postmark or Date					
Form 3800,	D. M. UPSON	.				
For	WCK 4435 5-20-85	,				
PS	3-20-03					

CERTIFIED

P 658 011 764

MAIL



WELL LOCATION AND ACREAGE DEDICATION PLAT.

Supersedes Column Effective (-)-65

All distances must be from the outer boundaries of the Section

SUPERVISOR REG. & PERMITTING THE SHELL WESTERN E&P INC. SHELL WESTERN E&P INC. The NOVEMBER 16, 1984 Shell Western E&P INC. The November 16, 1984 I hereby certify that the well location shown on this plat was platted from field motes 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. Shell Mean of the same is true and correct to the best of my knowledge and belief. Shell Mean of the same is true and correct to the best of my knowledge and belief. Shell Mean of the same is true and correct to the best of my knowledge and belief. Shell Mean of the same is true and correct to the best of my knowledge and belief. Shell Mean of the same is true and correct to the best of my knowledge and belief. Shell Mean of the same is true and correct to the best of my knowledge and belief. Shell Mean of the same is true and correct to the best of my knowledge and belief. Shell Mean of the same is true and correct to the best of my knowledge and belief. Shell Mean of the same is true and correct to the best of my knowledge and belief. Shell Mean of the same is true and correct to the best of my knowledge and belief. Shell Mean of the same is true and correct to the best of my knowledge and belief. Shell Mean of the same is true and correct to the best of my knowledge and belief. Shell Mean of the same is true and correct to the best of my knowledge and belief. Shell Mean of the same is true and correct to the best of my knowledge and belief. Shell Mean of the same is true and correct to the best of my knowledge and belief. Shell Mean of the same is true and correct to the best of my knowledge and belief.	: 3111	SHELL	WESTERN	E&P INC.		Lease	NORTH	НОВЕ	BS NNI.		1	29-242
100 ten income SOUTH incomes 1400 per ten incomes 150 ten incomes 1400 per ten incomes 150 ten		i		1		1			•		 	
100 test test to SOUTH time on 1400 test test to WEST 10-2 test test test test test test test tes				18 9	SOUTH	38	EAST		LE	A		
A SAM ANDRES SAN ANDRES SAN ANDRES SAN ANDRES HOBBS (GRAYBURG/SAN ANDRES) Outline the acreage dedicated to the subject well by colored penalty rhachure marks on the plat below. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to warking interest and royalty). If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consultated by communitization, unitization, force-pooling, etc? XX Yes No If answer is "yes" type of consolidation If unswer is "no." list the owners and tract descriptions which have actually been consolidated. (I so reverse side of this form if necessary.) No allowable will be assigned to the well until all interests have been consolidated the communitization, untitization, farced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approach by the Commission. CERTIFICATION I hareby certify that the information contained herein as true and complete to me base of my incoming and being in the communitization of the communitization of the communitization of the communitization of the commission. CERTIFICATION I have by certify that the information contained herein as true and complete to me base of my incoming and being in the commission of the commission. CERTIFICATION I have by certify that the well location field more of actual covers made by my or or well my incoming and being in the commission of the commi				SOUTH	line on i	1400		100. 1	ma: the	WEST	1:-	-
Dutline the acreage dedicated to the subject well by colored pencil or hachare marks on the plat below. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as in working interest and royalty). If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated dated by communitization, unitization, force-pooling, etc? XX Yes \(\) No If answer is "yes," type of consolidation \(\) UNITIZATION If unever is "no," list the owners and truct descriptions which have actually been consolidated. It se reverse side of this form if necessary.) No allowable will be assigned to the well until all interests have been consolidated the communitization, untilation, faced-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 been read campletes to the best of my soundedge and belief. Supplies to the best of my soundedge and belief. Supplies to the best of my soundedge and belief. Supplies to the best of my soundedge and belief. Supplies to the best of my soundedge and belief. Supplies to the best of my soundedge and belief. Supplies to the best of my soundedge and belief. Supplies to the best of my soundedge and belief. Supplies to the best of my soundedge and belief. Supplies to the best of my soundedge and belief. Supplies to the best of my soundedge and belief. Supplies to the best of my soundedge and belief. Supplies to the best of my soundedge and belief. Supplies to the best of my soundedge and belief. Supplies to the best of my soundedge and belief. Supplies to the best of my soundedge and belief. Supplies to the best of my soundedge and belief. Supplies to the best of my soundedge and belief. Supplies to the best of my soundedge and belief. Supplies to the supplies to the best of my soundedge and belief.		ì	roducing For								. - 1: 11 -	t å Terige:
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). 11 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? 2 XX Yes No. If answer is "yes," type of connolidation UNITIZATION 13 unewer is "no." list the owners and tract descriptions which have actually been consolidated (to communitization, unstization, force-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission. 1 hereby certify that the information contended whether the interests have been consolidated (to communitization, unstization, farced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission. 1 hereby certify that the information contended here is true and complete to the best of my non-leage, and belief. 2 Shell Mission steps that the units all interests have been consolidated (to communitization, unstization, farced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission. 2 Shell Western Eap INC. 3 Shell Western Eap INC. 4 A 2 Standard Contended to the well foother and the same of my household contended to the well foother and the same is to use and correct to the best of my household contended to the contended to the well foother and the same is the same in the same												
1. 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? XX Yes No If answer is "yes" type of consolidation). Outline t	he acre	age dedica	led to the	e subject w	ell by co	lored penc	ril or	hachure	marks on the	plut b	elus.
Manamer is "no." list the owners and tract descriptions which have actually been consolidated. It so reverse side of this form if necessary.) No allowable will be assigned to the well until all interests have been consolidated the communitization, untilization, forced-pooling, or otherwise) or, until a non-standard unit, eliminating such interests, has been approved by the Commission. CERTIFICATION I have been in true and complete to the best of my knowledge and belief. Supervisor Reg. 8 PERMITTI In a way Shell Western E8P INC. The We	interest a	and toka	lty).									•
If unswer is "not" list the owners and tract descriptions which have actually been consolidated. (I se reverse side of this farm if necessary.) No allowable will be assigned to the well until all interests have been consolidated (by communitization, untization, 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 here is true and complete to the best of my anon-ledge and betted. Supervisor REG. 8 PERMITTIEST Contained to the contained from the latest and the latest and the contained from the latest and the							to the we	ell, ha	ive the i	interests of a	all owr	ers been consult-
The large form of necessary. No allowable will be assigned to the well until all interests have been consolidated the communitization, untilation, 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. Supervisor Reg. & Permitting and the state of the best of my knowledge and belief. Supervisor Reg. & Permitting and the state of the well become a shown on this plan was planted from field the state of the best of my knowledge and belief. Supervisor Reg. & Permitting and the state of the well become a shown on this plan was planted from field the state of the best of my knowledge and belief. Supervisor Reg. & Permitting and the state of the best of my knowledge and belief. Supervisor Reg. & Permitting and the state of the best of my knowledge and belief. Supervisor Reg. & Permitting and the state of the best of my knowledge and belief. Supervisor Reg. & Permitting and the state of the best of my knowledge and belief. Supervisor Reg. & Permitting and the state of the best of my knowledge and belief. Supervisor Reg. & Permitting and the state of the best of my knowledge and belief. Supervisor Reg. & Permitting and the state of the best of my knowledge and belief. Supervisor Reg. & Permitting and the supervisor Reg. & Permitt	XX Yes		o II a	nswer is "	'yes!' type d	of consoli	dation		<u> </u>	UNITIZAT	ION	
The large form of necessary. No allowable will be assigned to the well until all interests have been consolidated the communitization, untilation, 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. Supervisor Reg. & Permitting and the state of the best of my knowledge and belief. Supervisor Reg. & Permitting and the state of the well become a shown on this plan was planted from field the state of the best of my knowledge and belief. Supervisor Reg. & Permitting and the state of the well become a shown on this plan was planted from field the state of the best of my knowledge and belief. Supervisor Reg. & Permitting and the state of the best of my knowledge and belief. Supervisor Reg. & Permitting and the state of the best of my knowledge and belief. Supervisor Reg. & Permitting and the state of the best of my knowledge and belief. Supervisor Reg. & Permitting and the state of the best of my knowledge and belief. Supervisor Reg. & Permitting and the state of the best of my knowledge and belief. Supervisor Reg. & Permitting and the state of the best of my knowledge and belief. Supervisor Reg. & Permitting and the state of the best of my knowledge and belief. Supervisor Reg. & Permitting and the supervisor Reg. & Permitt								•				
No allowable will be assigned to the well until all interests have been consolidated the communitization, until faced-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 how ledge and belief. SUPERVISOR REG. & PERMITTI The supervisor of my how ledge and belief. SHELL WESTERN E&P INC. The supervisor of my how ledge and belief. I hereby certify that the well lacation shown on this play was planted from field the standard of the supervisor. Supervisor of the supervisor of the best of my how ledge and belief. SUPERVISOR REG. & PERMITTI The supervisor of my how ledge and belief. I hereby certify that the well lacation shown on this play was planted from field ones of accordance in the well lacation of the standard my how is a facility of the supervisor. On the best of my how ledge and belief. Supervisor of the best of my how ledge and belief. Supervisor of the best of my how ledge and belief. Supervisor of the best of my how ledge and belief. Supervisor of the best of my how ledge and belief. Supervisor of the best of my how ledge and belief. Supervisor of the best of my how ledge and belief. Supervisor of the best of my how ledge and belief. Supervisor of the best of my how ledge and belief. Supervisor of the best of my how ledge and belief. Supervisor of the best of my how ledge and belief. Supervisor of the best of my how ledge and belief. Supervisor of the best of my how ledge and belief. Supervisor of the best of my how ledge and belief. Supervisor of the best of my how ledge and belief. Supervisor of				owners an	d trạct desc	enoildit:	which have	e acti	ally be	rn consolidat 	ed. († :	se reverse side af
CERTIFICATION I hereby certify that the information continued herein is true and complete to the best of my ano-ledge and belief. SUPERVISOR REG. & PERMITTIE SUPERVISOR REG. & PERMITTIE And the supervisor Reg. & PERMITTIE And th				ed to the v	ell until al	interest	s have bed	en co	nsolidat	ed (by comm	unitiza	tion, unitization.
Sinent 18/16. Sinent	forced-por	oling, or	otherwise)	or until a	non-standar	d unit, el	iminating	such	interest	s, has been a	pprose	d by the Commis-
Amental Elle Am	sion.											
Supervisor Reg. 8 Permittie Shell Western Er Inc. Shell Western Er Inc. Supervisor Reg. 8 Permittie Shell Western Er Inc. Shell We		ı					l				CERTIF	ICATION
Supervisor Reg. 8 Permittie Shell Western Er Inc. Shell Western Er Inc. Supervisor Reg. 8 Permittie Shell Western Er Inc. Shell We		1					! ! .					
Supervisor Reg. & PERMITTI Supervisor Reg. & PERMITTI The Western Ed Inc. The Western Ed I		1				2	1		•	1	-	
Supervisor Reg. & Permitting Shell Western Est The Miss Asia Will		- / i			'بر		1 . 1		1	j.		
Supervisor Reg. & Permitting Supervisor Reg. & Permitting Supervisor Reg. & Permitting Shell Western Esp Inc. The November 16, 1984 I hereby certify that the well location shown on this plan was platted from field miles for first and the same is true and correct to the best of my howledge and belief. Supervisor of the same is true and correct to the best of my howledge and belief. Supervisor of the well location of the same is true and correct to the best of my howledge and belief. Supervisor of the well location of the same is true and correct to the best of my howledge and belief. Supervisor of the well location of the same is true and correct to the best of my howledge and belief. Supervisor of the well location of the same is true and correct to the best of my howledge and belief. Supervisor of the well location of the well location of the same is true and correct to the best of my howledge and belief. Supervisor of the well location of the well	e.	i			ŕ		1		1			
SUPERVISOR REG. & PERMITTING THE SHELL WESTERN E&P INC. SHELL WESTERN E&P INC. The NOVEMBER 16, 1984 Shell Western E&P INC. The November 16, 1984 I hereby certify that the well location shown on this plat was platted from field motes 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. Shell Mean of the same is true and correct to the best of my knowledge and belief. Shell Mean of the same is true and correct to the best of my knowledge and belief. Shell Mean of the same is true and correct to the best of my knowledge and belief. Shell Mean of the same is true and correct to the best of my knowledge and belief. Shell Mean of the same is true and correct to the best of my knowledge and belief. Shell Mean of the same is true and correct to the best of my knowledge and belief. Shell Mean of the same is true and correct to the best of my knowledge and belief. Shell Mean of the same is true and correct to the best of my knowledge and belief. Shell Mean of the same is true and correct to the best of my knowledge and belief. Shell Mean of the same is true and correct to the best of my knowledge and belief. Shell Mean of the same is true and correct to the best of my knowledge and belief. Shell Mean of the same is true and correct to the best of my knowledge and belief. Shell Mean of the same is true and correct to the best of my knowledge and belief. Shell Mean of the same is true and correct to the best of my knowledge and belief. Shell Mean of the same is true and correct to the best of my knowledge and belief. Shell Mean of the same is true and correct to the best of my knowledge and belief.							i .			1000		
Shell Western Est Inc. 1. 14/47 3.6 Fiz23/2/10 Complete 1. 14/47 Complete 1. 12/10 Complete 1		t								1193	us.	A. J. FOR
Shell Western Est Inc. 1. 14/47 3.6 Fiz23/2/10 Complete 1. 14/47 Complete 1. 12/10 Complete 1		1		!			<i>!</i> :			SUPERVISO	OR RE	S. & PERMITTING
Shell Western Er Shell Berne Western Er Sh		j	-				1			Congrany		
Accordance of the control of the con		+					1				STERN	E&P INC.
Shell Western Est Sine. 10 A 27 Well St. 11 A 27 Well St. 12 A 27 Well St. 13 SEFEL - 2310 Fell Western Est Sine. 12 A 27 Well St. 13 SEFEL - 2310 Fell Western Est Sine. 13 SEFEL - 2310 Fell Western Est Sine. 14 St. 17 St. 17 St. 15 St. 18 St. 18 St. 16 St. 18 St. 18 St. 18 St. 18 St. 18 St. 18 St. 18 St. 18 St. 18 St. 18 St. 18 St. 18 St. 18 St. 18 St. 18		1			-		1			1 -	16.	1984
A 27 WIND A 18 Complete was plotted from the well location shown on this plot was plotted from tield 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. Complete was plotted from tield 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. Complete was plotted from tield 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. Constituted from tield 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. Constituted from tield 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. Constituted from tield 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. Constituted from tield 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. Constituted from tield 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. Constituted from tield notes of actual surveys made by me or under my supervision. On the same is true and correct to the best of my supervision. Constituted from tield notes of actual surveys made by me or under my supervision. Constituted from tield notes of actual surveys made by me or under my supervision. Constituted from tield notes of actual surveys made by me or under my supervision. Constituted from tield notes of actual surveys made by me or under my supervision. Constituted from tield notes of actual surveys made by me or under my supervision. Constituted from tield notes of actual surveys made by me or under my supervision. Con		1					1					· · · · · · · · · · · · · · · · · · ·
shown on this play was platted from field 1. 14/1/197 1. 14/1/197 1. 14/1/197 1. 1/1/19/19/197 1. 1/1/19/19/19/19/19/19/19/19/19/19/19/19/							i	•	`			
Completion (Englished) Completion Compl	1776-1786	Crow 1				CINE	ER &			1		
Completion (Englished) Completion Compl		Piver !	Sport:	7/25/30	/	LING.	TE CAN		٠.	notes of ac	ctual su	rveys made by me or
Learnistive Fie fretres 676 As 05 12 1184 As 05 12 1184 As 12 10 bite 1184 Constitute fire fretres for the field of th	Completes	: -, !	4.665	traghery Si With 16.5	a Kinders	5/ 3.	, 00	121	1	1		
1. 11 11 11 11 11 11 11 11 11 11 11 11 1	A Call Aller	/9// I	Comme	lative fre	wition 13	1 4	76	圖		1		· ·
CHN W WEST 9-13-83 Register a Friends of the State of th						1	÷	<i>IŞII</i>			•	• .
9-13-83 Frequency (11 most 11), 5 mallimet (1. myliteria						12mm	Lax CO					
Registered for tession, indicate the first on the first one of the first on the first on the first on the first on the first one of the f		·	1 10	1176171		CHN	W WEST			1		•
Chapter 18 0 K	1:111110	}	> 0 +							 		
1400 13					.		1			,		
		•	• <u>·</u> g	• ^Æ			•			: 40	m	15610
Cettificate No in the waster Ass.	Incl		Y 2							Confliction H	1) 1	* Also Co

Shell Western E&P Inc.

A Subsidiary of Shell Oil Company



May 20, 1985

P.O. Box 991 Houston, TX 77001

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

WELL NO.		LOCATION				
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 efficently 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.

If additional information is required, please advise.

Yours very truly,

DMU

A. J. Fore

Supervisor Regulatory and Permitting Mid-Continent Division

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

WELL NO.		LOCATION				
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.

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 life-time 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

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

All distances must be from the outer boundaries of the Section

I a				or the section		
Operator SHELL WE	STERN E&P INC		Lease N. HOBBS (G/S	TIMIL (AS	SECTION 29	Well No. 241 242
Unit Letter	Section 110	Township	Range	County	SECTION 25	
N	29	18 - S	38-E	LEA	<u> </u>	
Actual Footage Loc	cation of Well:				· · · · · · · · · · · · · · · · · · ·	
Ground Level Elev.	feet from the Producing For	line and	Pool	feet from the	· · · · · · · · · · · · · · · · · · ·	line
Glound Lever Elev.		G/SAN ANDRES	HOBBS (G/	()	Dedic	ated Acreage:
1 0-41 4						Acres
1. Outline to	ie acreage dedica	ted to the subject wel	ii by colored penci	1 or nacnure	e marks on the pla	t below.
	han one lease is nd royalty).	dedicated to the well,	outline each and	identify the	ownership thereof	(both as to working
		ifferent ownership is d initization, force-poolin		ll, have the	interests of all o	wners been consoli-
XX Yes	─ No If as	nswer is "yes," type of	consolidation	UNITIZ	ATION	
<u> </u>		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
		owners and tract descr	iptions which have	actually be	en consolidated.	(Use reverse side of
	f necessary.)					
		ed to the well until all				
sion.	ning, or otherwise)	or until a non-standard	unit, eliminating	such interes	ts, has been appro	oved by the Commis-
			······		<u> </u>	·
	1				() CER	TIFICATION
			į			
			<u> </u>	1	1	that the information con- true and complete to the
	i		1		best of my know	•
	1					
	1 .		i .			
<u> </u>	+	+			Nome	A. J. FORE
	1		1		Position	71. 0. 1012
	ļ.		1		SUPV. REGULA	TORY & PERMITTING
			1		Company	CTEDN FOR THE
·	. [i		SHELL WE	STERN E&P INC.
	Ì	,	1.			2 0 1985
	1		i			
	†		t		, ,	that the well location
	} 			İ	1	at was plotted from field
	į				ŀ	surveys made by me or ision, and that the same
!	1 .		ļ		1	rect to the best of my
	1		I I	-	knowledge and b	elief.
	+	_				
	1		Ι.			
1	1		1		Date Surveyed	
	I		1		Daniel 1997	
	l J	29_241	1		Registered Profess and/or Land Surve	•
	- 23氧0'=		·			
1400	' 	242 8	<u> </u>	,		·
					Certificate No.	
0 330 660 '	90 1320 1650 198	0 2310 2640 2000	1500 1000	500 0		

P 658 011 764

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED NOT FOR INTERNATIONAL MAIL

(See Reverse)

1-517	Sent to AMOCO PRODUCTI ATTN: H. L. MCDON	ON COMPAN ALD	YY			
+ U.S.G.P.O. 1983-403-517	Street and No. P. O. BOX 3092					
.o.	P.O., State and ZIP Code HOUSTON, TX 77253					
S.G.1	Postage	\$				
n *	Certified Fee					
	Special Delivery Fee					
	Restricted Delivery Fee					
·	Return Receipt Showing to whom and Date Delivered					
1982	Return receipt showing to whom, Date, and Address of Delivery					
Feb. 1982	TOTAL Postage and Fees	s				
	Postmark or Date					
rm 3	D. M. UPSON					
PS Form 3800,	WCK 4435 5-20-85					

(43:11313)

P 658 011 764

MALL SERVICE

