

Shell Western E&P Inc.

A Subsidiary of Shell Oil Company



P.O. Box 576  
Houston, TX 77001

MAY 4, 1990

MAY 3 8 45 AM '90

CERTIFIED MAIL

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

Gentlemen:

SUBJECT: FORM C-108 AND ATTACHMENTS  
APPLICATION FOR AUTHORIZATION TO INJECT  
NORTH HOBBS (GRAYBURG/SAN ANDRES) UNIT NO. 27-241  
LOT 26, BLOCK 57, FOURTH UNIT BROADMORE ADDITION  
SECTION 27, T18S, R38E  
LEA COUNTY, NEW MEXICO

It is our intent to convert the subject well to water injection service for pressure maintenance in the near future. The New Mexico Oil Conservation Division requires that leasehold operators within one-half mile of the well location be furnished a copy of the application to inject.

Accordingly, enclosed is a copy of our application. Included are Form C-108, Application for Authorization to Inject, and all attachments that were submitted to the State of New Mexico in support of the application.

If you need additional information, please contact Ellyn Schade at (713) 870-3016.

Very truly yours,

A handwritten signature in cursive script, appearing to read "W. F. N. Kelldorf", is written over a horizontal line.

W. F. N. Kelldorf  
Senior Staff Production Engineer  
Health, Safety and Environment  
Western Division

EMS:r1b

Enclosures

cc: (w/o attachments)  
State of New Mexico  
Energy, Minerals and Natural Resources Department  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe, NM 87504-2088  
BNND9012411 - 0001.0.0



STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

HOBBS DISTRICT OFFICE

APR 19 9 00

4-17-90

GARREY CARRUTHERS  
GOVERNOR

POST OFFICE BOX 1980  
HOBBS, NEW MEXICO 89241-1980  
(505) 393-6161

OIL CONSERVATION DIVISION  
P. O. BOX 2088  
SANTA FE, NEW MEXICO 87501

RE: Proposed:

- MC \_\_\_\_\_
- DHC \_\_\_\_\_
- NSL \_\_\_\_\_
- NSP \_\_\_\_\_
- SWD \_\_\_\_\_
- WFX \_\_\_\_\_
- PMX  \_\_\_\_\_

Gentlemen:

I have examined the application for the:

*Shell Western E&P Inc. North Hobbs P/S.A Unit Sec 27 #241-N*  
 Operator Lease & Well No. Unit S-T-R *27-18-38*

and my recommendations are as follows:

*OK*

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Yours very truly,

*Jerry Sexton*  
 Jerry Sexton  
 Supervisor, District 1

/ed

1990 APR 16 AM 9 10

SHELL WESTERN E&P INC.  
200 North Dairy Ashford  
P. O. Box 576  
Houston, TX 77001-0576

APRIL 10, 1990

Mr. J. R. Pruet  
Shell Oil Company  
Property Administration  
P. O. Box 576  
Houston, TX 77001  
WCK 3250

Gentlemen:

SUBJECT: FORM C-108 AND ATTACHMENTS  
APPLICATION FOR AUTHORIZATION TO INJECT  
NORTH HOBBS (GRAYBURG/SAN ANDRES) UNIT NO. 27-241  
LOT 26, BLOCK 57, FOURTH UNIT BROADMORE ADDITION  
SECTION 27, T18S, R38E  
LEA COUNTY, NEW MEXICO  
(Reference: Service Agreement between SWEPI/SOC)

It is our intent to convert the subject well to water injection service for pressure maintenance in the near future. The New Mexico Oil Conservation Division requires that the surface owner of the tract on which a proposed injector is located be furnished a copy of the application to inject.

Accordingly, enclosed is a copy of our application. Included are Form C-108, Application for Authorization to Inject, and all attachments that were submitted to the State of New Mexico in support of the application.

If you need additional information, please contact Ellyn Schade at (713) 870-3016.

Very truly yours,



W. F. N. Kelldorf  
Senior Staff Production Engineer  
Health, Safety and Environment  
Western Division

EMS:rlb

Enclosures

BNND9010005 - 0001.0.0

cc: (w/o attachments)  
State of New Mexico  
Energy, Minerals and Natural Resources Department  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe, NM 87504-2088

Shell Western E&P Inc.

A Subsidiary of Shell Oil Company



P.O. Box 576  
Houston, TX 77001

APRIL 10, 1990

APR 10 11 03 AM '90

CERTIFIED MAIL

State of New Mexico  
Energy, Minerals and Natural Resources Department  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe, NM 87504-2088

Gentlemen:

SUBJECT: EXPANSION OF PRESSURE MAINTENANCE PROJECT  
SWEPI - NORTH HOBBS (GRAYBURG/SAN ANDRES) UNIT  
HOBBS (GRAYBURG/SAN ANDRES) POOL  
TOWNSHIP 18 SOUTH, RANGE 38 EAST  
LEA COUNTY, NEW MEXICO

Shell Western E&P Inc. hereby requests administrative approval to convert one North Hobbs (Grayburg/San Andres) Unit well to water injection. Administrative Order No. R-6199, dated November 30, 1979, authorized Shell Western to operate the North Hobbs (Grayburg/San Andres) Unit pressure maintenance project within the subject pool.

The well to be converted is the North Hobbs (GSA) Unit No. 27-241, Section 27, T18S, R38E, Lea County, New Mexico. Form C-108 and the necessary documentation to obtain the injection permit is attached.

As required, a copy of this application, complete with all attachments, has been sent to the only surface owner, Shell Oil Company, Property Administration, P. O. Box 576, Houston, Texas 77001, Attn: J. R. Pruet. Because the Area of Review is wholly within the North Hobbs (GSA) Unit boundaries, no offset operator notification was necessary.

In conjunction with the above conversion to water injection, we are also notifying you for informational purposes of our intent to return the North Hobbs (GSA) Unit 27-111W to injection. The NHGSAU 27-111W was completed in February 1970 as an open-hole Grayburg, San Andres Zone I and San Andres Zone II producer. The well was converted to water injection in the Grayburg formation only in June 1981 and was subsequently temporarily abandoned in June 1989. As we reported to you in our 1990 Plan of Development, submitted on January 31, 1990, we plan to initiate water injection into the San Andres Zone I reservoir on the east flank of the unit because it is not receiving aquifer support from the Zone I waterdrive. The NHGSAU 27-111W was reported at that time as scheduled to be returned to injection in the San Andres Zone I in 1990.

MB008702.EMS

If you have any questions concerning this application or any attachment, please contact Ellyn Schade at (713) 870-3016.

Very truly yours,



W. F. N. Kelldorf  
Senior Staff Production Engineer  
Health, Safety and Environment  
Western Division

EMS:MB

Attachments

cc: (w/attachments)  
State of New Mexico  
Energy, Minerals and Natural Resources Department  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe, NM 87504-2088

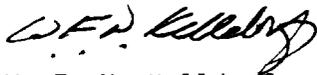
State of New Mexico  
Energy, Minerals and Natural Resources Department  
Oil Conservation Division  
P. O. Box 1980  
Hobbs, NM 88240

bc: Western Division (w/attachments)  
E. M. Schade, WCK 4411

(w/o attachments)  
C. A. Miller, WCK 4410  
W. F. N. Kelldorf, WCK 4414  
W. S. Powers, New Mexico Production Unit  
C. E. Fox, WCK 4596  
S. G. Hendrickson, WCK 4558  
R. W. Zygmunt, WCK 4420

If you have any questions concerning this application or any attachment, please contact Ellyn Schade at (713) 870-3016.

Very truly yours,



W. F. N. Kelldorf  
Senior Staff Production Engineer  
Health, Safety and Environment  
Western Division

EMS:MB

Attachments

cc: (w/attachments)  
State of New Mexico  
Energy, Minerals and Natural Resources Department  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe, NM 87504-2088

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

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose:  Secondary Recovery  Pressure Maintenance  Disposal  Storage  
Application qualifies for administrative approval?  yes  no
- II. Operator: SHELL WESTERN E&P INC.  
Address: P. O. Box 576, Houston, Texas 77001  
Contact party: Ellvn Schade Phone: (713) 870-3016
- III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project?  yes  no  
If yes, give the Division order number authorizing the project R-6199, November 30, 1979
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- \* VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
  2. Whether the system is open or closed;
  3. Proposed average and maximum injection pressure;
  4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
  5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- \*VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- \* X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)
- \* XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification
- I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- Name: W. F. N. Kelldorf Title Sr. Staff Production Engineer, Health Safety and Environment, Western Division  
Signature: [Signature] Date: 4/10/90
- \* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal. See attached information sheet

## III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

## XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;
- (3) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

**NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.**

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**NOTICE:** Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

FORM C-108 REQUIRED INFORMATION  
NORTH HOBBS (GSA) UNIT NO. 27-241  
CONVERSION TO INJECTION

ITEM NUMBER

III. Well Data - See attached injection well data sheet. This also includes well data requested on Side 2, Part III.A. and Part III.B.

V. See attached Area of Review Map for location of NHGSAU 27-241 with a one-half mile radius circle identifying the well's area of review. The map also indicates the NHGSAU 27-111W referenced in the cover letter. The NHGSAU 27-211, which has an indicated area of review, is not being permitted at this time.

VI. This tabulation of well data supplements well data already submitted. Please reference approved orders for previously submitted data:

<u>ORDER NO.</u>	<u>DATE</u>
R-6199	11/30/79
PMX-87	8/26/80
PMX-109	08/13/81
R-6199-A	08/04/83
PMX-131	10/25/84
PMX-133	01/11/85
PMX-151	01/27/88

Also included is a schematic of the R. H. King - Sanger #1 illustrating plugging details.

VII. Proposed Operation Data:

- 1) Average injection rate 1500 BWPD  
Maximum injection volume 2000 BWPD
- 2) This system is closed and is reinjecting North Hobbs (Grayburg/San Andres) Unit produced water.
- 3) Average injection pressure 760 psi  
Maximum injection pressure 812 psi

Injection will be into the San Andres formation at an injection interval of 4060 feet to 4350 feet (open hole). Surface injection pressure will be limited to 0.2 psi per foot gradient to the top of the open-hole interval, in accordance with Rule 11 of Order No. R-6199.

VIII. Previously submitted by earlier referenced orders.

IX. The proposed stimulation program is included on the Injection Well Data Sheet.

X. Logs from the original oil well completion were previously submitted; however, we are enclosing more recent vintage production logs for your information:

.Sidewall Neutron Porosity Log	12-17-74
.Micro-Seismogram Log - Cased Hole	10-25-80
.Sidewall Neutron Porosity Log	7-13-87
.BHC - Sonic	7-13-87

Test Data - NHU 27-241 (Old Sanger #2)

Potential Test - 1/30/35

During the potential test, the well flowed for 1 hour at a rate of 4290 BPD with 2.6% B. S. and 6600 MCF through open 3 inch tubing. From the Engineering Committee curve, the open flow potential rated at 6200 BFPD or 6039 BOPD and 6666 MCFD.

1989 Production Data

The well produced approximately 50 BOPD and 100 BWPD with a GOR of 1250 SCF/bbl during the first 9 months of 1989.

XI. No evidence exists of any active fresh water well within one mile of the well site. This statement is based on:

1) Attempts by Shell Western personnel to contact owners of water wells in the area. A list of permits containing ten acre locations with permit dates and owners was obtained from the State Engineer's office in Roswell. The wells are posted on the AOR map. We could not locate an active water well.

2) Discussions with personnel in both the Hobbs NMOCD Office (Mr. Sexton) and the Roswell State Engineer District Office (Mr. Hernandez).

XII. Does not apply.

XIII. A copy of this application and attachments have been mailed, as required by "Proof of Notice" Section, to Shell Oil Company, the surface owner. There are no offset operators within the Area of Review.

Enclosed is the Legal Notice and Affidavit of Publication from the Hobbs Daily News-Sun, a daily newspaper published at Hobbs, New Mexico.

INJECTION WELL DATA SHEET

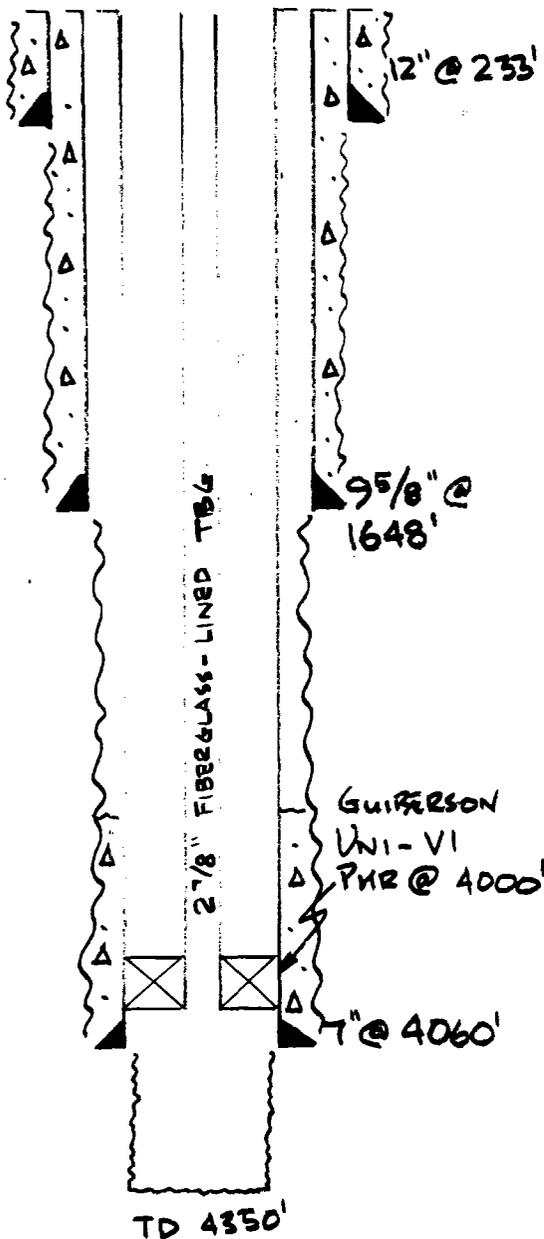
SHELL WESTERN E&P INC.

NORTH HOBBS UNIT

OPERATOR		LEASE		
27-241	330' FSL & 1325' FWL	27	18-S	38-E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic

Tabular Data



Surface Casing

Size 12 " Cemented with 700 sx.  
 TOC Surface feet determined by Circulation  
 Hole size 15"

Intermediate Casing

Size 9 5/8" " Cemented with 350 sx.  
 TOC Surface feet determined by Circulation  
 Hole size 12 1/4"

Long string

Size 7 " Cemented with 250 sx.  
 TOC 3145' feet determined by CBL  
 Hole size 8 5/8"  
 Total depth 4228'

Injection interval

4060 feet to 4350 feet  
 (perforated or open-hole indicate which)

(IX) Proposed Stimulation Program

1. Clean well to PBDT
2. At OH w/5000 g 25% HCl in 4 stages w/300-500# graded rock salt between stages.
3. Run inj. equip.

Tubing size 2 7/8" lined with Fiberglass set in a Guiberson Uni-VI (material) packer at 4000' (brand and model) feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Grayburg/San Andres
2. Name of Field or Pool (if applicable) Hobbs
3. Is this a new well drilled for injection?  Yes  No  
 If no, for what purpose was the well originally drilled? Oil production
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) No
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.  
 Next higher zone - Queen, 3375'  
 Next lower zone - Paddock, 5380'

LARGE FORMAT  
EXHIBIT HAS  
BEEN REMOVED  
AND IS LOCATED  
IN THE NEXT FILE

ACR TABULATION

N.M.O.C.D. ORDER NO. R-6199  
FORM C-108, ITEM VI  
JANUARY 1990

LOCATION S-T-R FOOTAGE	OPERATOR WELL #	ELEV.	DATE DRILLED	TD PBT	WELL TYPE	SIZE	WEIGHT (LB/FT)	DEPTH (FT)	CEMENT (SACKS)	TOC (FT)	DTMND BY	HOLE SIZE	COMPLETION INTERVAL	CASING DETAIL	
														TOC (FT)	DTMND BY
34-T18S-R38E 1990' FWL & 511 FWL	AMOCO 30	3635 GL	8/79	7050 7036	OIL - DRINKARD	13.375 9.625	54.50 32.30 20.00 23.00 26.00	420 4403 7050	450 2550 400	0 0 4045	CIRC SQZ TS	17.5 12.25 8.75	6665-6986'		
34-T18S-R38E Surface: 717' FNL & 651' FWL Bottomhole: 1303' FNL & 1339 FWL	AMOCO WI-9	3636 GL	11/84	4491 4480	INJ - GB/SA	14 8.625 5.5	36.71 24.00 15.50	40 1655 4491	25 875 1250	0 0 0	CONSTRUCTION CIRC CIRC	12.25 7.875	4293-4441'		
34-T18S-R38E 721' FNL & 569' FWL	AMOCO 210	3637 GL	4/86	4380 4370	OIL - GB/SA	16 10.75 7	42.05 40.50 23.00	40 1650 4380	2.5 YD 1200 1600	0 0 0	CONSTR. CIRC CIRC	22 14.75 9.875	4126-4168'		
34-T18S-R38E 1950' FNL & 535' FWL	AMOCO WI-6	3637 GL	9/83	4444 4408	INJ - GB/SA	14 8.625 5.5	36.71 24.00 15.50	40 1640 4444	4 YD 1380 1800	0 0 0	CONSTRUCTION CIRC CIRC	12.25 7.875	4232-4406'		
34-T18S-R38E 1980' FNL & 660' FWL	AMOCO 2 /old 29	3642 DF	8/32 8/78 8/82	4180 4220 4256	OIL GB/SA	16 10.75 8.625 5.5	70.00 45.50 36.00 14.00	236 2776 3970 4220	100 400 150 155	124 618 0 3919	CALC CALC CIRC CIRC	19.75 12.25 9.5 7.875	3970-4180'		
34-T18S-R38E 660' FNL & 660' FWL	AMOCO 1 /old 8		8/34 3/48 10/78	3976 4221 4246	OIL GB/SA	16 10.75 7 5.5	70.00 40.00 24.00 18.00	224 1647 3976 4221	90 350 1450 50	130 0 0 3872	CALC CALC CIRC CIRC	19.75 12.25 8.75 6.25	4080-4246'		
27-T18S-R38E 650' FSL & 5' FWL	R H KING SANGER #1	3640 *	1/48	4286	DRY	8.625 5.5	32.00 14.00	246 4069	200 350	CIRC 2790	CALC TS	12.25 7.875	PLUGGED		
33-T18S-R38E 510' FNL & 660' FEL	CHEVRON GRIMES STATE B 9	3655 KB	10/83	7110 6817	OIL	13.375 8.625 5.5	48.00 32.00 17.00	415 4289 7109	500 1740 1220	0 0 0	CIRC CIRC CIRC	17.5 12.25 7.875	6638-6642'		

AOR TABULATION

N.M.O.C.D. ORDER NO. R-6199  
 FORM C-108, ITEM VI  
 JANUARY 1990

CASING DETAIL

LOCATION S-T-R FOOTAGE	OPERATOR WELL #	ELEV.	DATE DRILLED	TD PBT	WELL TYPE	SIZE	WEIGHT (LB/FT)	DEPTH (FT)	CEMENT (SACKS)	TOC (FT)	DTMND BY	HOLE SIZE	COMPLETION INTERVAL
27-T18S-R38E 1200' FNL & 470' FWL	SHELL SANGER #6 (NHU 27-111W)	3641	DF 2/77	4360 4218	INJ. GB/SA	8.625 5.5	24.00 15.50	347 4222	275 450	0 2626	CALC CBL	12.5 * 7.875 *	4161-4218'
27-T18S-R38E 2645' FSL & 412' FEL	SHELL SANGER #7 (NHU 27-121)	3636	KB 6/36	4250 4250	OIL GB/SA	12.5 9.625	50.00 36.00	270 1705	150 575	0 0	CIRC CALC	17.5 11.5 *	4180-4250'
27-T18S-R38E 1650' FSL & 412' FWL	SHELL SANGER #3 (NHU 27-131)	3638	KB 6/35	4252 4252	OIL GB/SA	12.5 9.625	50.00 40.60	259 1645	150 200	0 735	CIRC CALC	16.5 11.5 *	4075-4252'
27-T18S-R38E 330' FSL & 287' FWL	SHELL SANGER #1 (NHU 27-141)	3644	KB 10/34	4257 4257	OIL GB/SA	12.5 9.625	50.00 36.00	275 1648	250 363	0 50	CIRC CALC	18 11.5 *	4032-4257'
27-T18S-R38E 1350' FSL & 1350' FWL	SHELL SANGER #5 (NHU 27-231)	3640	KB 7/37	4375 4375	OIL GB/SA	9.625	45.00 36.00	274 1718	150 450	0 0	CIRC CALC	17.5 12	4086-4375'
27-T18S-R38E 330' FSL & 1325' FWL	SHELL SANGER #2 (NHU 27-241)	3643	DF 2/35	4350 4345	OIL GB/SA	12.5 9.625	50.00 44.00	233 1648	700 350	0 0	CIRC CBL	15 11	4060-4350'
28-T18S-R38E Surface: Bottomhole: 69' FNL & 1312' FEL	SHELL NHU 33-312	3650	DF 5/85	4428 4381	INJ GB/SA	9.625	36.00 20.00	1510 4428	650 975	0 0	CIRC CIRC	12.25 8.75	4120-4270' (MD)
28-T18S-R38E 2310' FNL & 1120' FEL	SAMEDAN MOON B #1 (NHU 28-421)	3648	GL 5/35	4262 4238	OIL GB/SA	12.5	50.00 23.00	235 4020	150 500	0 2677	CIRC CBL	16 8.75 *	4020-4238'
28-T18S-R38E 2199' FNL & 772' FEL	SHELL NHU 28-422W	3649	KB 6/81	4510 4470	INJ GB/SA	8.625 5.5	24.00 14.00	1600 4503	850 1050	0 0	CIRC CIRC	12.25 * 7.875 *	4239-4270'

AOR TABULATION

N.M.O.C.D. ORDER NO. R-6199  
FORM C-108, ITEM VI  
JANUARY 1990

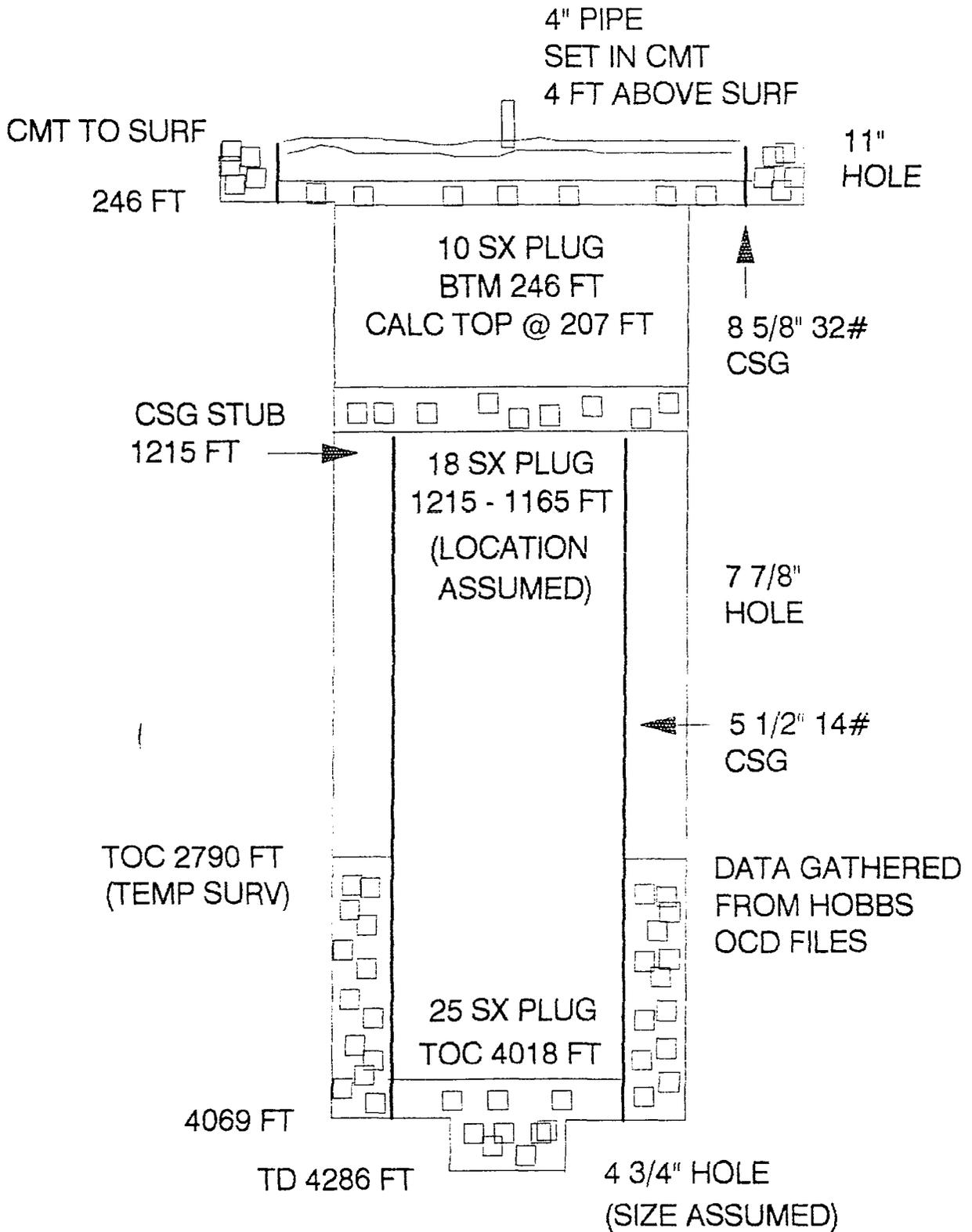
LOCATION S-T-R FOOTAGE	CASING DETAIL											COMPLETION INTERVAL
	OPERATOR WELL #	ELEV.	DATE DRILLED	TD PBD	WELL TYPE	WEIGHT (LB/FT)	DEPTH (FT)	CEMENT (SACKS)	TOC (FT)	DTMND BY	HOLE SIZE	
28-T18S-R38E 1650' FSL & 990' FEL	CONTINENT GRIMES #4 (NHU 28-431)	3648	GL 9/35	4225	OIL GB/SA	40.00 26.40 17.00	225 1640 3993	150 400 400	0 CIRC 0 CIRC 0 CIRC	13.5 * 9.625 * 7.875 *	3993-4225'	
28-T18S-R38E 330 FSL & 660' FEL	CONTINENT GRIMES #2 (NHU 28-441W)	3642	GL 1/35	4320 4272	INJ GB/SA	40.00 26.40 17.00 11.30	243 1634 4015 4318	150 300 300 100	0 CIRC 185 CALC 1940 TS 3801 CIRC	13.5 9.625 6.25 6.25	4102-4257'	
34-T18S-R38E 660 FSL & 1650' FWL	SKELLY TURNER #2 (NHU 34-211)	3642	KB 7/34	4276 4276	OIL GB/SA	50.00 24.00 15.00	240 4012 4211	175 400 340	0 CALC 1593 CALC 0 CIRC	16 8.75 6.25	4211-4276'	
34-T18S-R38E 1980' FNL & 1700' FWL	GETTY TURNER #1 (NHU 34-221)	3638	KB 9/32	4222 4220	OIL GB/SA	50.00 34.00 24.00 18.00	220 2780 3974 4221	200 400 300 340	0 CIRC 0 SQZ 1823 CALC 3120 CBL	16 * 11.75 * 8.5 * 6.25 *	4083-4217'	
34-T18S-R38E 1022' FNL & 2310' FEL	SHELL TURNER #2 (NHU 34-311)	3641	GL 9/35	4254 4254	OIL GB/SA	50.00 36.00 24.00	282 1700 4134	150 625 300	0 CIRC 0 CIRC 3210 CBL	16 11.5 * 8.75 *	4134-4254'	
34-T18S-R38E 660' FNL & 660' FEL	GULF GRIMES B #4 (NHU 33-411)	3647	KB 11/34	4256 4256	OIL GB/SA	54.50 36.00 24.00 14.00	285 2739 3970 4175	200 351 150 40	0 CALC 1723 CALC 3260 CBL 3964 TS	15 12.25 * 8.75 * 6.25	4095-4256'	

ABBREVIATIONS

- \* - ESTIMATED
- CIRC - CIRCULATE
- CBL - CEMENT BOND LOG
- TS - TEMPERATURE SURVEY
- SQZ - SQUEEZED CEMENT TO SURFACE
- TOL - TOP OF LINER
- GB - GRAYBURG
- SA - SAN ANDRES
- GL - GROUND LEVEL
- DF - DERICK FLOOR
- KB - KELLY BUSHING
- MD - MEASURED DEPTH

R. H. KING  
SANGER #1

FORM C-108



**AFFIDAVIT OF PUBLICATION**

State of New Mexico,  
County of Lea.

I, George W. Moore

of the Hobbs Daily News-Sun, a daily newspaper published at Hobbs, New Mexico, do solemnly swear that the clipping attached hereto was published once a week in the regular and entire issue of said paper, and not a supplement thereof for a period

of \_\_\_\_\_

One weeks.  
Beginning with the issue dated

January 12, 1990  
and ending with the issue dated

January 12, 1990

*George W. Moore*  
Publisher.

Sworn and subscribed to before  
me this 16<sup>th</sup> day of

January, 1990  
*Pamela E. Cole*  
Notary Public.

My Commission expires \_\_\_\_\_

July 12, 1993  
(Seal)

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937, and payment of fees for said publication has been made.

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**LEGAL NOTICE  
January 12, 1990**

Notice is hereby given of the application of Shell Western E&P Inc., P.O. Box 576, Houston, TX 77001, to the Oil Conservation Division, New Mexico Energy & Minerals Department, for approval of the following injection wells for the purpose of pressure maintenance and enhanced recovery.

Well Nos: 27-221W and 27-241

Lease/Unit Name: North Hobbs (Grayburg/San Andres) Unit

Both locations are in Section 27, T18S, R38E, Lea County, New Mexico.

The NHU 27-241, 330' FSL & 1325' FWL, is a conversion to water injection service. The injection formation is the San Andres at a depth of approximately 4060 feet below the surface of the ground. Expected maximum injection rate is 2000 barrels of water per day, and expected maximum injection pressure is 812 psi. The NHU 27-221W, 2600' FNL & 544' FWL, will be drilled as a water injector. The injection formation is the San Andres at a depth of approximately 4150 feet below the surface of the ground. Expected maximum injection rate is 2000 barrels of water per day, and expected maximum injection pressure is 830 psi.

Interested parties must file objections or request for hearing with the Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico 87501, within fifteen (15) days.



● **SENDER:** Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.  
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7. Date of Delivery	