

AREA OF REVIEW / WELL DATA

WELL NAME																	WELL TYPE			COMP DATE			TD			SURFACE CASING			INTERMEDIATE CASING			PRODUCTION CASING			LINER																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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Grizzell # 1	30-025-10111	8/22S/37E	1980 FSL-1980 FEL	O	02/03/38	3718	11	8-5/8	1128	500																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									

Well: Shell G # 1
Field: Undesignated
Location: 330' FSL & 330' FEL
Unit P, Sec. 8, T22S, R37E
Lea County, New Mexico
API #: 30-025-23287

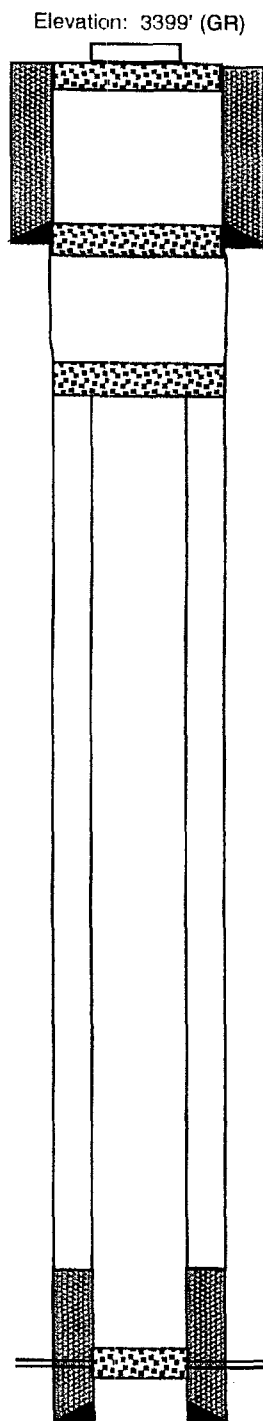
Current Status: D&A (7/70)

Elevation: 3399' (GR)
Install P&A marker
Surface Plug - 10 sx

Cmt Plug @ 1200' w/ 25 sx

Pulled 2260' - 4-1/2" Casing
Cmt Plug - Casing Stub @ 2260'
w/ 25 sx

Perforations:
7319-27
Cement Plug - Across Perfs
w/ 25 sx



11" Hole
8-5/8" 32# J-55 CSA 1193'
Cement w / 385 sx
Circulated to Surface

7-7/8" Hole
4-1/2" 9.5/11.6# J-55 CSA 7420'
Cement w / 240 sx
TOC @ 6307' (Calc)

TD @ 7420'

Well: Grizzell B # 2

Field: Paddock

Current Status: P&A (2/89)

Location: 1980' FNL & 660' FEL
Unit H, Sec. 8, T22S, R37E
Lea County, New Mexico

API #: 30-025-10101

Install P&A marker
Surface Plug - 5 sx

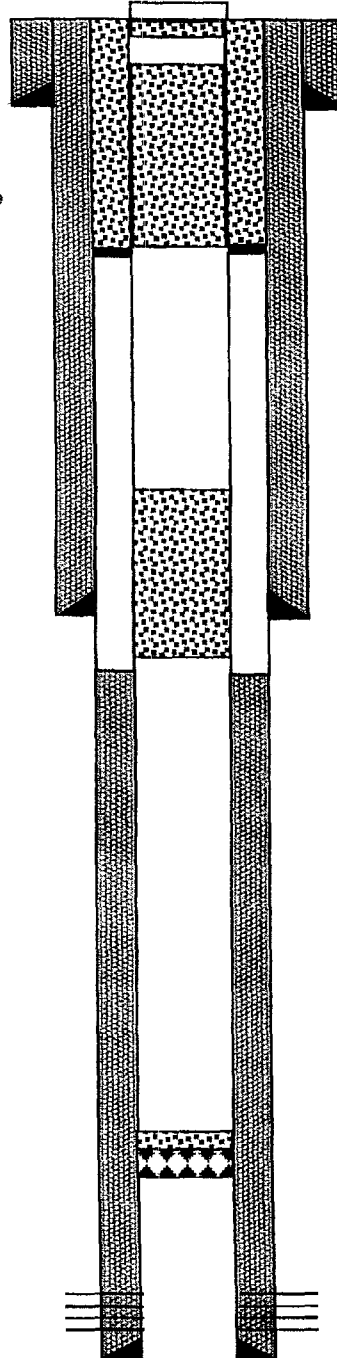
Perf 1200-01
Cmt sqz 5-1/2" x 7" Annulus
w/ 220 sx - Circulated to Surface
Tag TOC inside casing @ 107'

Cmt Plug 2990' - 3650' (50 sx)

CIBP @ 4850' w/ 35' cement

Paddock Perfs:
5107-57, 66-80, 5228-60

Elevation: 3427' (GR)



13" Hole
10-3/4" 40# H-40 CSA 281'
Cement w / 200 sx
Circulated to Surface

8-3/4" Hole
7" 22# H-40 CSA 3400'
Cement w / 600 sx
TOC @ Surface (Calc)

6-1/4" Hole
5/5-1/2" 14/17# J-55 CSA 5260'
Cement w / 110 sx
TOC @ 3746' (Calc)

TD @ 5260'

Well: So. Penrose Skelly Unit # 181

Field: Penrose Skelly; Grayburg

Current Status: P&A (11/84)

Location: 660' FSL & 1980' FWL
Unit N, Sec. 8, T22S, R37E
Lea County, New Mexico

API #: 30-025-10119

Install P&A marker
Surface Plug - 0' - 50'

Perf 1298 - 1301
Cement Retainer @ 1226'
Cmt sqz behind 5-1/2" w/ 300 sx
TOC @ 60' (Temp Survey)

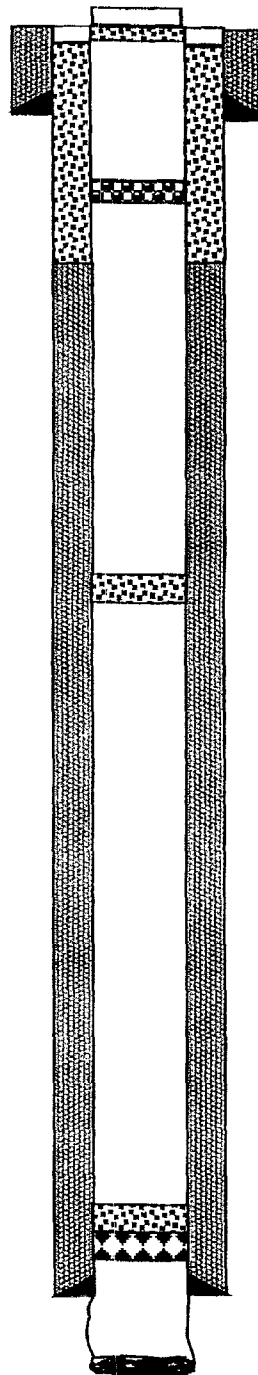
Cmt Plug 2318' - 2418' (12 sx)

CIBP @ 3475' w/ 12 sx cement

Grayburg Open Hole:
3512' - 3681'

Dump 10 sx cement on bottom
PBTD @ 3681'

Elevation: 3418' (GR)



12-1/4" Hole
10-3/4" 32# H-40 CSA 339'
Cement w / 200 sx
Circulated to Surface

7-7/8" Hole
5-1/2" 17# J-55 CSA 3512'
Cement w / 500 sx
TOC @ 1607' (Calc)

TD @ 3720'

Well: Greenwood # 1
Field: Undesignated
Location: 330' FSL & 500' FWL
Unit M, Sec. 9, T22S, R37E
Lea County, New Mexico
API #: 30-025-23691

Current Status: D&A (3/71)

Install P&A marker
Surface Plug - 10 sx

Cmt Plug @ 1162' w/ 25 sx

Cmt Plug @ 2400' w/ 25 sx

Cmt Plug @ 5035' w/ 25 sx

Cmt Plug @ 5485' w/ 25 sx

Cmt Plug @ 6030' w/ 25 sx

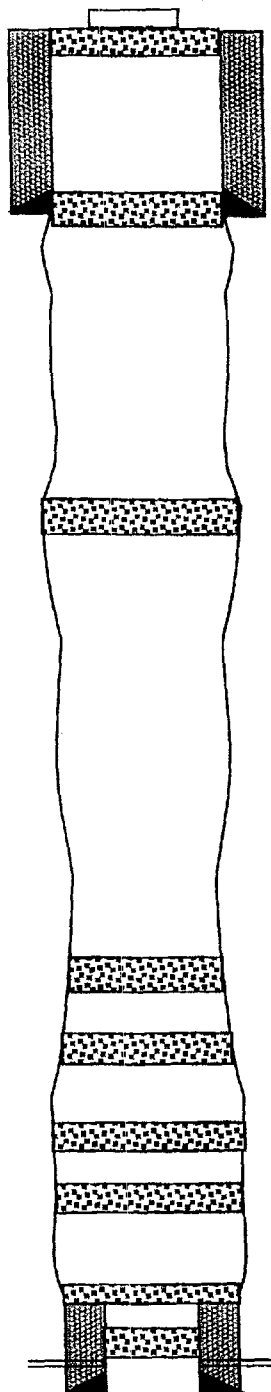
Cmt Plug @ 6160' w/ 25 sx

Pulled 6875' - 4-1/2" casing
Cmt Plug - Casing Stub @ 6875'
w/ 25 sx

Cmt Plug @ 7278' w/ 25 sx

Perforations:
7281-7301

Elevation: 3403' (GR)



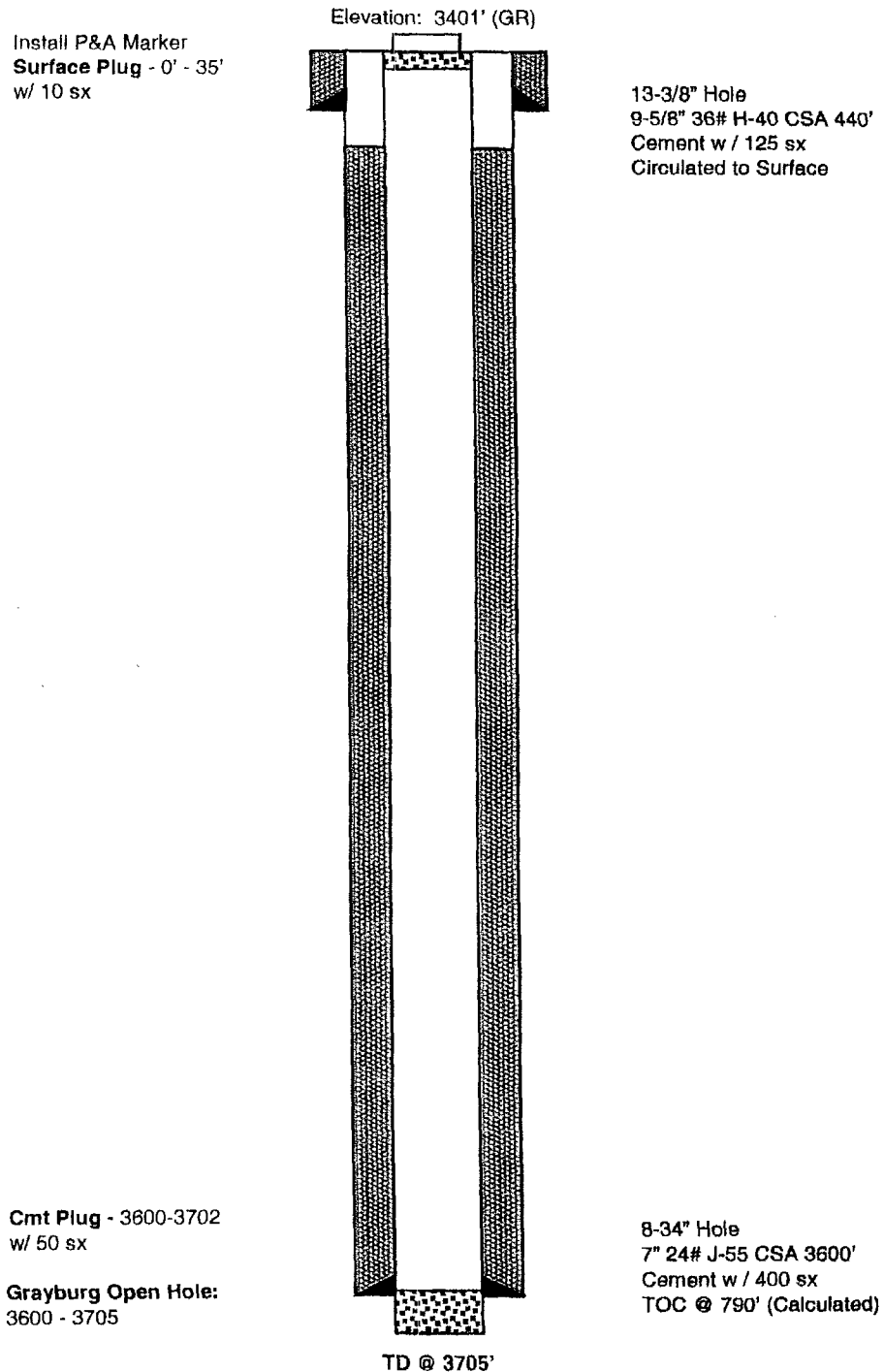
11-1/4" Hole
8-5/8" 24# J-55 CSA 1162'
Cement w / 325 sx
Circulated to Surface

7-7/8" Hole
4-1/2" 10.5# J-55 CSA 7335'
Cement w / 75 sx
TOC @ 6876' (Calc)

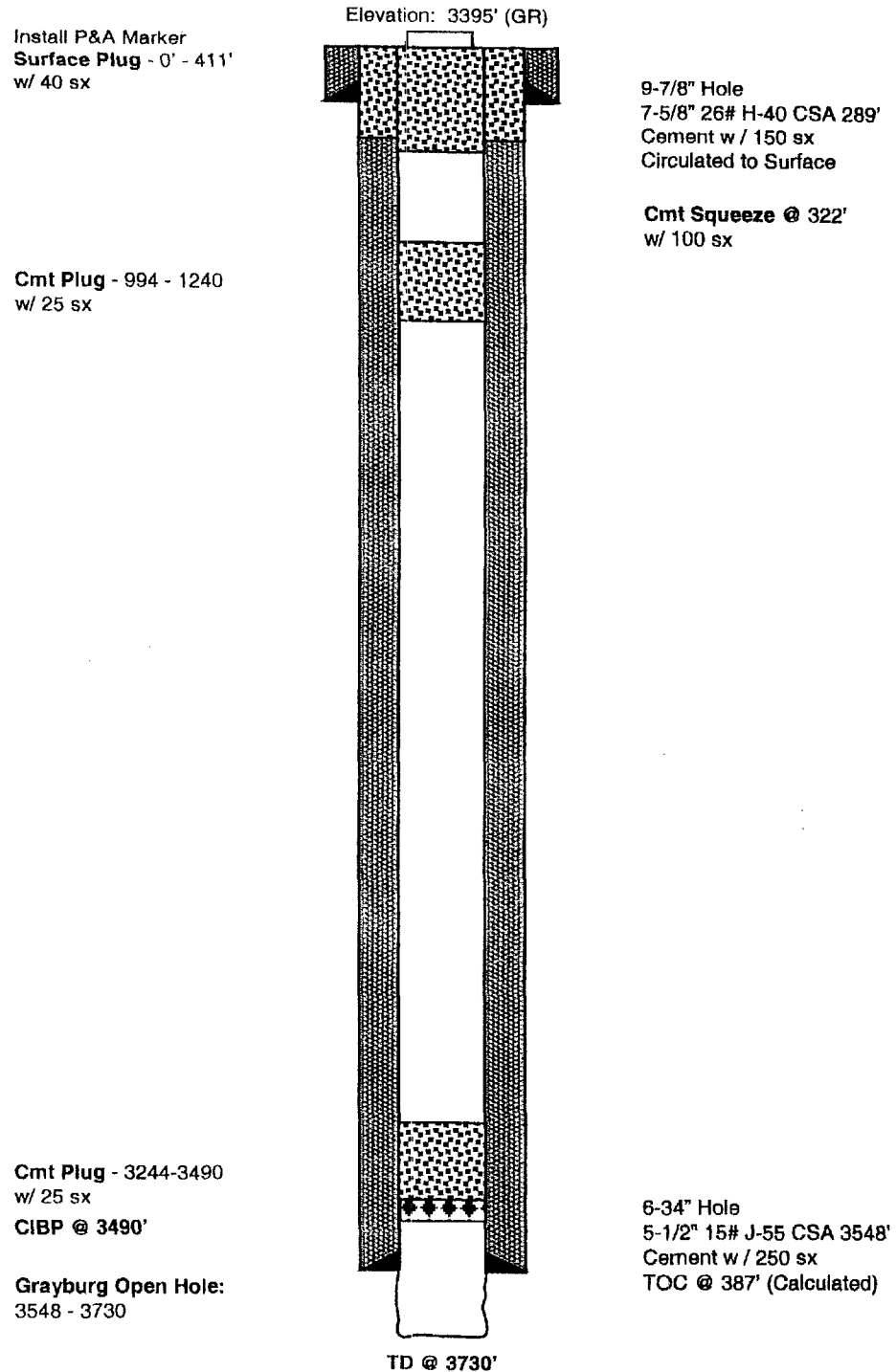
TD @ 7335'

Well: Greenwood # 3
Field: Penrose Skelly; Grayburg
Location: 660' FSL & 660' FWL
Unit M, Sec. 9, T22S, R37E
Lea County, New Mexico
API #: 30-025-10124

Current Status: P&A (10/70)



Current Status: P&A (8/98)



South Permian Basin Region
 10520 West I-20 East
 Odessa, TX 79765
 (915) 498-9191
 Lab Team Leader - Sheila Hernandez
 (915) 495-7240

Water Analysis Report by Baker Petrolite

Company:	APACHE CORPORATION	Sales RDT:	33102
Region:	PERMIAN BASIN	Account Manager:	MIKE EDWARDS (505) 910-9517
Area:	EUNICE, NM	ID #:	22639
Lease/Platform:	GRIZZELL UNIT	Analysis Cost:	\$40.00
Entity (or well #):	12		
Formation:	SAN ANDRES		
Sample Point:	WELLHEAD		

Summary		Analysis of Sample 209886 @ 75 °F					
Sampling Date:	11/15/01	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	11/20/01	Chloride:	4050.0	114.24	Sodium:	2894.3	125.9
Analyst:	JAMES AHRLETT	Bicarbonate:	2405.0	39.42	Magnesium:	112.0	9.21
TDS (mg/l or g/m3):	9975.3	Carbonate:	0.0	0.	Calcium:	262.0	13.07
Density (g/cm3, tonne/m3):	1.008	Sulfate:	20.0	0.42	Strontium:	9.0	0.21
Anion/Cation Ratio:	1.0000001	Phosphate:			Barium:	6.0	0.09
		Borate:			Iron:	4.0	0.14
		Silicate:			Potassium:	213.0	5.45
Carbon Dioxide:		Hydrogen Sulfide:			Aluminum:		
Oxygen:		pH at time of sampling:			Chromium:		
Comments:		pH at time of analysis:		7.47	Copper:		
		pH used in Calculation:		7.47	Lead:		
					Manganese:		
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO3		Gypsum CaSO4*2H2O		Anhydrite CaSO4		Celestite SrSO4		Barite BaSO4		CO2 Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	1.32	171.78	-2.42	0.00	-2.49	0.00	-2.11	0.00	0.82	2.78	0.94
100	0	1.41	181.85	-2.44	0.00	-2.44	0.00	-2.09	0.00	0.67	2.78	1.28
120	0	1.51	191.57	-2.45	0.00	-2.37	0.00	-2.07	0.00	0.55	2.43	1.7
140	0	1.60	199.89	-2.46	0.00	-2.29	0.00	-2.04	0.00	0.45	2.08	2.2

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.



DRINKARD

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

TONEY ANAYA
GOVERNOR

June 21, 1985

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

APPLICATION OF SHELL WESTERN E & P INC.
TO EXPAND ITS WATERFLOOD PROJECT IN THE
PENROSE-SKELLY POOL IN LEA COUNTY,
NEW MEXICO.

ORDER No. WFX-547

ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION

Under the provisions of Order No. R-2794, Shell Western E & P Inc. has made application to the Division on April 30, 1985, for permission to expand its South Penrose Skelly Unit Waterflood Project in the Penrose-Skelly Pool in Lea County, New Mexico.

NOW, on this 13th day of June, 1985, the Division Director finds:

1. That application has been filed in due form.
2. That satisfactory information has been provided that all offset operators have been duly notified of the application.
3. That no objection has been received within the waiting period as prescribed by Rule 701B.
4. That the proposed injection well is eligible for conversion to water injection under the terms of Rule 701.
5. That the proposed expansion of the above referenced waterflood project will not cause waste nor impair correlative rights.
6. That the application should be approved.

IT IS THEREFORE ORDERED:

That the applicant, Shell Western E & P Inc., be and the same is hereby authorized to inject water into the Grayburg formation through plastic-lined tubing set in a packer at approximately 3600 feet in the following described well for purposes of waterflooding to wit:

Shell Western Grizzell No. 11, 1300' FSL and 1139' FEL
Unit P, Sec. 8, T-22-S, R-37-E, Lea County

IT IS FURTHER ORDERED:

That the operator shall take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

That the casing-tubing annulus (in each well) shall be loaded with an inert fluid and equipped with a pressure gauge at the surface or left open to the atmosphere to facilitate detection of leakage in the casing, tubing, or packer.

That the injection well or system shall be equipped with a pressure limiting device which will limit the wellhead pressure on the injection well to no more than 732 psi.

That the Director of the Division may authorize an increase in injection pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the injected fluid from the Grayburg formation. That such proper showing shall consist of a valid step-rate test run in accordance with and acceptable to this office.

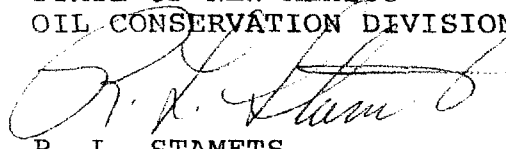
That the operator shall notify the supervisor of the Division's Hobbs District Office before injection is commenced through said perforations.

That the operator shall immediately notify the Supervisor of the Division's Hobbs District Office of the failure of the tubing, casing, or packer in said or the leakage of water from or around said wellbore and shall take such steps as may be timely or necessary to correct such failure or leakage.

That the subject injection well shall be governed by all provisions of Division Order No. R-2794 and Rules 702, 703, 704, 705, and 706 not inconsistent herewith.

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION



R. L. STAMETS,
Director

S E A L

Shell Western E&P Inc.

A Subsidiary of Shell Oil Company



P.O. Box 991

Houston, TX 77001

June 5, 1985

State of New Mexico
Energy and Minerals Department
Oil Conservation Division
ATTN Mr. G. Quintana
P. O. Box 2088
Santa Fe, NM 87501

Gentlemen:

AUTHORIZATION TO INJECT
SHELL WESTERN - GRIZZELL NO. 11
PENROSE SKELLY GRAYBURG POOL
UNIT LETTER P, 1300' FSL & 1139' FEL
SECTION 8, T22S-R37E, NMPM
LEA COUNTY, NEW MEXICO

Further to our application of April 26, 1985, and confirming our discussion on May 24, 1985, the following information is submitted in support of our request for administrative approval to convert the subject well to water injection service.

NMOCD Order #R-2794 dated October 30, 1964, granted Gulf Oil Exploration and Production Company permission to conduct waterflood operations in the subject pool. Subsequent to the formation of the Gulf operated South Penrose Skelly Unit on July 1, 1965, a water injection pilot project was initiated in June of 1967. Active injection was discontinued in April of 1972.

The subject well was one of two 20-acre infill wells drilled and tested by Gulf in June, 1975, for the purpose of evaluating the pilot performance and determining the future of the unit. In May, 1976, Gulf advised unit participants that neither well was capable of being completed as a producer.

The South Penrose Skelly Unit was officially terminated on April 1, 1984, after receiving approvals from the New Mexico State Land Office, State Energy and Minerals Department, United States Bureau of Land Management, and the required 80 percent of the unit's working interest ownership.

On abandonment of the unit and under the terms of the South Penrose Skelly Unit Agreement, Shell Western assumed operations of all wells on its Grizzell lease, including No. 11, formerly SPSU No. 262. We propose to waterflood the Penrose Skelly Grayburg Pool under our Grizzell lease by converting well No. 11 to injection service. We estimate that successful waterflooding will result in the recovery of an additional 85,000 barrels of oil.

BNA8515402

In accordance with the provisions set forth in Rule 701-F, we request an exception to the hearing requirements of Rule 701-A for conversion to injection of additional wells for an authorized project.

If additional information is required, please advise.

Yours very truly,

Original Signed By
A. J. FORE

JMW:CMM

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

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

bc: B. G. Ratterree
D. J. Pfau
C. Saucedo