



Chevron U.S.A. Inc.
P. O. Box 670, Hobbs, NM 88240

February 26, 1986

R. C. Anderson
Division Manager
Hobbs Division
Production Department

APPLICATION TO AMEND INJECTION
PERMIT, FOR THE MALJAMAR
GRAYBURG UNIT WELL NO. 78,
MALJAMAR GRAYBURG POOL, LOCATED
IN SECTION 3-T17S-R32E,
LEA COUNTY, NEW MEXICO

R. L. Stamets
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87501

Gentlemen,

Chevron U.S.A. Inc. respectfully requests administrative approval to amend Division Order No. WFX-531 and increase the maximum wellhead injection pressure for the subject well to 1000 psig. Administrative Order No. WFX-531, issued September 11, 1984, limited the wellhead injection pressure to no more than 784 psig.

Enclosed for your consideration are the results of a step-rate test ran February 17, 1986, on the subject well. The test indicates a bottom hole fracture pressure of 2891 psig, which equates to a .708 psig/ft fracture gradient at an average perforated depth of 4082'. Also enclosed are an injection water analysis and calculations which show that under current injection conditions, a wellhead pressure of 1018 psig is necessary to fracture the reservoir.

Copies of this application are being sent to offset operators, the Lea County Clerk, and the BLM by certified mail as their notification. If additional information is necessary, please contact Mike Casey at area code (505) 393-4121.

Yours very truly,

R. C. ANDERSON

MWC/jc

Attachments

cc: OCD - Hobbs (w/Attachments)
Lea County Clerk (w/Attachments)
BLM - Carlsbad (w/Attachments)
Offset Operators (w/Attachments)

Chevron U.S.A. Inc.
Maljamar Grayburg Unit
Offset Operators List

Conoco Inc.
P.O. Box 460
Hobbs, New Mexico 88240

Texaco Inc.
P.O. Box 728
Hobbs, New Mexico 88240

Exxon Company U.S.A.
P.O. Box 2180
Houston, Texas 77001

Phillips Petroleum Company
4001 Penbrook
Odessa, Texas 79762

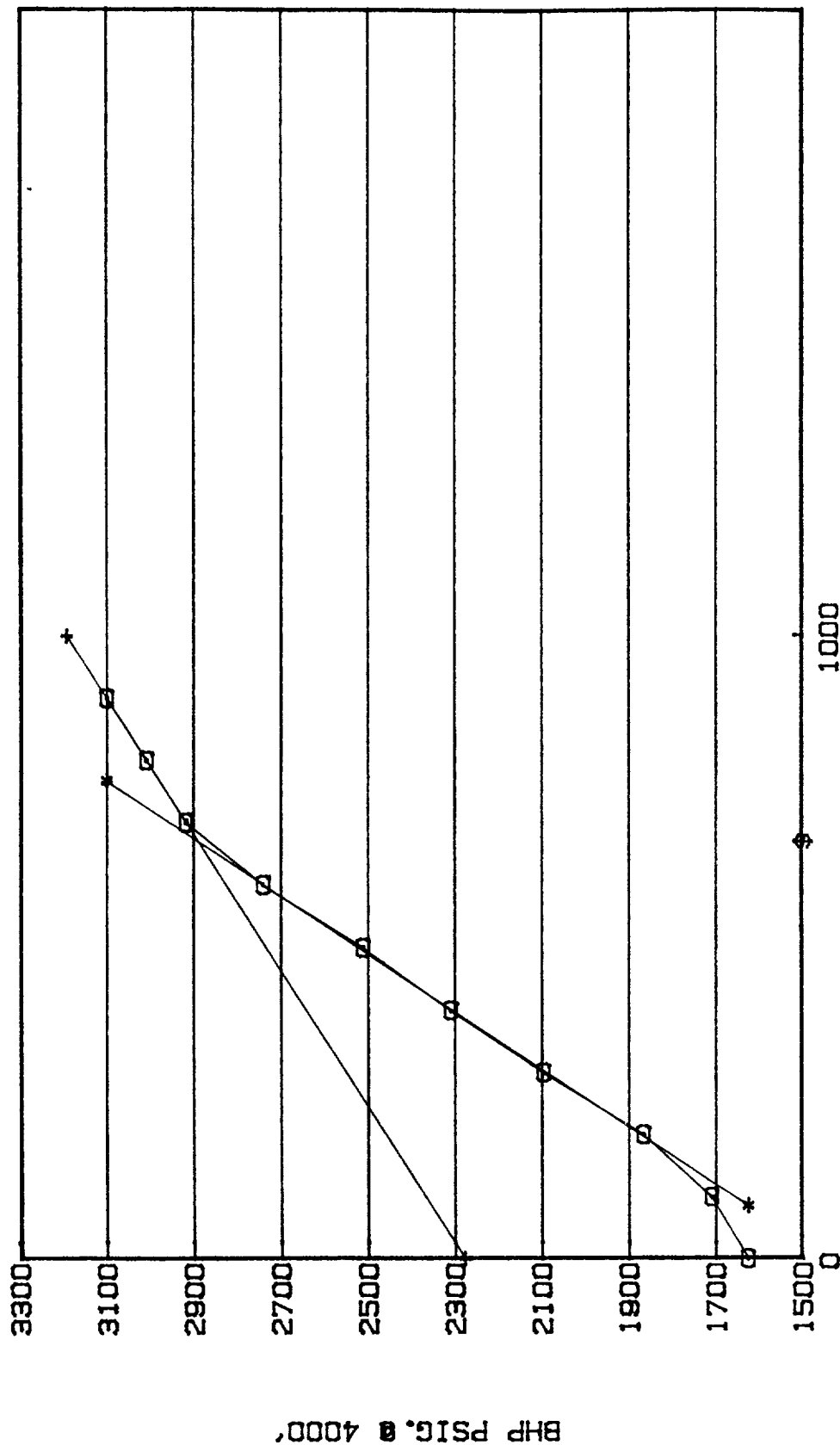
Marathon Oil Company
P.O. Box 552
Midland, Texas 79702

Great Western Drilling
P.O. Box 1659
Midland, Texas 79702

Southland Royalty Company
21 Desta Drive
Midland, Texas 79701

William A. & Edward R. Hudson
1440 Interfirst Tower
801 Cherry Street
Fort Worth, Texas 76102-4780

MALJAMAR GRAYBURG UNIT #78



□ CHEVRON USA * PART @ 2891 PSI
 \$ SURF. @ 1159 PSI + PART @ 670 BHPD

TYLER SURVEYS, INC

915/523-6826 908 CARDINAL CREST
ANDREWS, TEXAS 79714

ACCUMULATED DATA

RATE BMPD	BOTTOM HOLE PRESSURE PSIG
0	1626
100	1710
200	1867
300	2097
400	2310
500	2512
600	2741
700	2919
800	3009
900	3101

0 , 2277.33333 TO 1000,3192.35333

767.822469 , 3101 TO 95.8992142 , 1626

TYLER SURVEYS, INC

915/523-6826

908 CARDINAL CREST
ANDREWS, TEXAS 79714

COMPANY - CHEVRON USA (HOBBS)
WELL NUMBER MALJAMAR GB UNIT#78
BHP@ DEPTH - 4000' FT

DATE - 2-17-86

STABILIZATION
RATE - 0 BHPD PRESURE - -106 PSIG

INCREMENTS:
RATE - 100 BHPD STEP LENGTH - 15 MIN

TEST RESULTS
FORMATION PARTING POINT - 3391 PSIG @ 670 BHPD
SURFACE STATIC PART. 1159 PSIG

Chevron U.S.A. Inc.
Maljamar Grayburg Unit Well No. 78
Fracture Pressure Calculations

Average perforated depth = 4082'

Bottom hole fracture pressure from step-rate test = 2891 psi

Fluid used in Step Rate Test = Fresh Water
Pressure Gradient = .433 psi/ft

Injection fluid = Produced Water
Pressure Gradient = .459 psi/ft

Therefore

Fracture Gradient = 2891 psi/4082 feet = .708 psi/ft

Maximum Wellhead Pressure = BHFP - P(h)

BHFP = Bottom Hole Fracture Pressure

P(h) = Hydrostatic Pressure (Injection Fluid)

= 2891 psi - (.459 psi/ft) x (4082 ft.)

= 1018 psi



Chevron USA Inc
Southern Region - Exploration, Land and Production

Maljamar Grayburg Unit
Maljamar Grayburg Pool



Well No. 78

Located: 50' FWL & 1400' FSL,
Section 3-T17S-R32E
Lea County, New Mexico

MALJAMAR GRAYBURG UNIT BOUNDARY

