



STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION

GARREY CARRUTHERS  
GOVERNOR

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

January 11, 1990

Phillips Petroleum Company  
4001 Penbrook  
Room 401  
Odessa, TX 79762

Attention: William J. Mueller

*RE: Injection Pressure Increase  
Maljamar Philmex Pilot CO<sub>2</sub>  
Injection Project  
Lea County, New Mexico*

Dear Mr. Mueller:

Reference is made to your request dated November 30, 1989, to increase the surface injection pressure on the Philmex Well No. 38. This request is based on a step rate test conducted on the Philmex Well No. 37 and on additional breakdown pressure data obtained from the Philmex Well No. 38. The data presented has been reviewed by my staff and we feel an increase in injection pressure on the well is justified at this time.

You are therefore authorized to increase the surface injection pressure on the following well:

WELL AND LOCATION

MAXIMUM INJECTION  
SURFACE PRESSURE

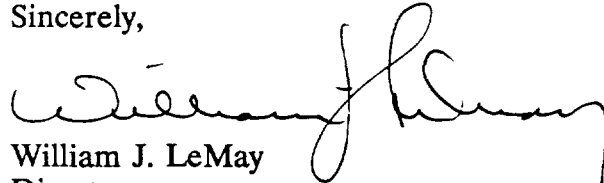
Philmex Well No. 38  
Unit M, Section 26, T-17 South,  
R-33 East, NMPM, Lea County, New  
Mexico.

1800 PSIG

Injection Pressure Increase  
Phillips Petroleum Company  
January 11, 1990  
Page 2

The Division Director may rescind this injection pressure increase if it becomes apparent that the injected water is not being confined to the injection zone or is endangering any fresh water aquifers.

Sincerely,

A handwritten signature in cursive script, appearing to read "William J. LeMay". The signature is written in dark ink and is positioned above the printed name and title.

William J. LeMay  
Director

cc: Oil Conservation Division - Hobbs  
File: ~~Case 9131~~  
T. Gallegos  
D. Catanach

COMPANY: Phillips Petroleum Company  
ADDRESS: 4001 Penbrook  
CITY, STATE, ZIP: Odessa, Texas 79762  
ATTENTION: William J. Moeller

Re: Injection Pressure Increase  
Maljama Philmex Pilot CO<sub>2</sub>  
Injector Project  
Lee County, New Mexico

Dear Sir:

Reference is made to your request dated November 30, 1989, to increase the surface injection pressure on the Philmex Well No. 38. This request is based on a step rate test conducted on the well on 11/18/89. ~~The results of the test have~~ <sup>presented has</sup> been reviewed by my staff and we feel an increase in injection pressure on the well is justified at this time. <sup>data</sup>

You are therefore authorized to increase the surface injection pressure on the following well:

the Philmex Well No. 38, and on additional breakdown pressure data obtained from the Philmex Well No. 38.

Well & Location

Maximum Injection  
Surface Pressure

Philmex Well No. 38

1800 PSIG

Unit A, Sector 2, T-17S, R-33E, NMPM

Lee County, New Mexico

The Division Director may rescind this injection pressure increase if it becomes apparent that the injected water is not being confined to the injection zone or is endangering any fresh water aquifers.

xc: <sup>1666</sup> ~~OCD-Case~~ 9737 T. Gallegos  
File- D. Catanach

Sincerely,  
William J. LeMay



**PHILLIPS PETROLEUM COMPANY**

ODESSA, TEXAS 79762  
4001 PENBROOK

OIL CONSERVATION DIVISION  
RECEIVED

'89 DEC 4 AM 10 24

EXPLORATION AND PRODUCTION GROUP

November 30, 1989

Maljamar Philmex Pilot CO<sub>2</sub> Injection Project  
Step-Rate Test Results  
Lea County, New Mexico

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

Attn: William J. Lemay, Director

As per NMOCED Order R-3668A; Phillips Petroleum Company has performed a CO<sub>2</sub> step-rate test to determine the Grayburg formation fracture pressure. The results indicate a wellhead fracture pressure of 2550 psi (Attachment One).

The step-rate test was performed with CO<sub>2</sub> on Philmex Well No. 37 located 1980' FSL and 1880' FWL, Section 26-17S-33E. This well is 925' northeast of the actual CO<sub>2</sub> pilot project injector, Philmex Well No. 38. The step-rate test was not conducted on the injector to avoid fracturing the well and possibly creating direct communication with the closest logging observation well located only 185' away.

Individual sets of Philmex Well No. 38 perforations were isolated and broken down with 15% NEFE HCl acid. Attachment Two summarizes this breakdown information which indicates a wellhead fracture pressure above 2000 psi with acid.

It is requested the maximum allowable wellhead injection pressure for Philmex Well No. 38 be increased from the current 1700 psi as provided in Order R-3668A to 1800 psi. This is substantially below all Grayburg fracture pressures indicated above and will permit utilization of full supply line pressure; line pressure averages 1750 psi.

Please contact myself at (915)367-1313 or Susan Courtright at (915)367-1418 should there be any questions.

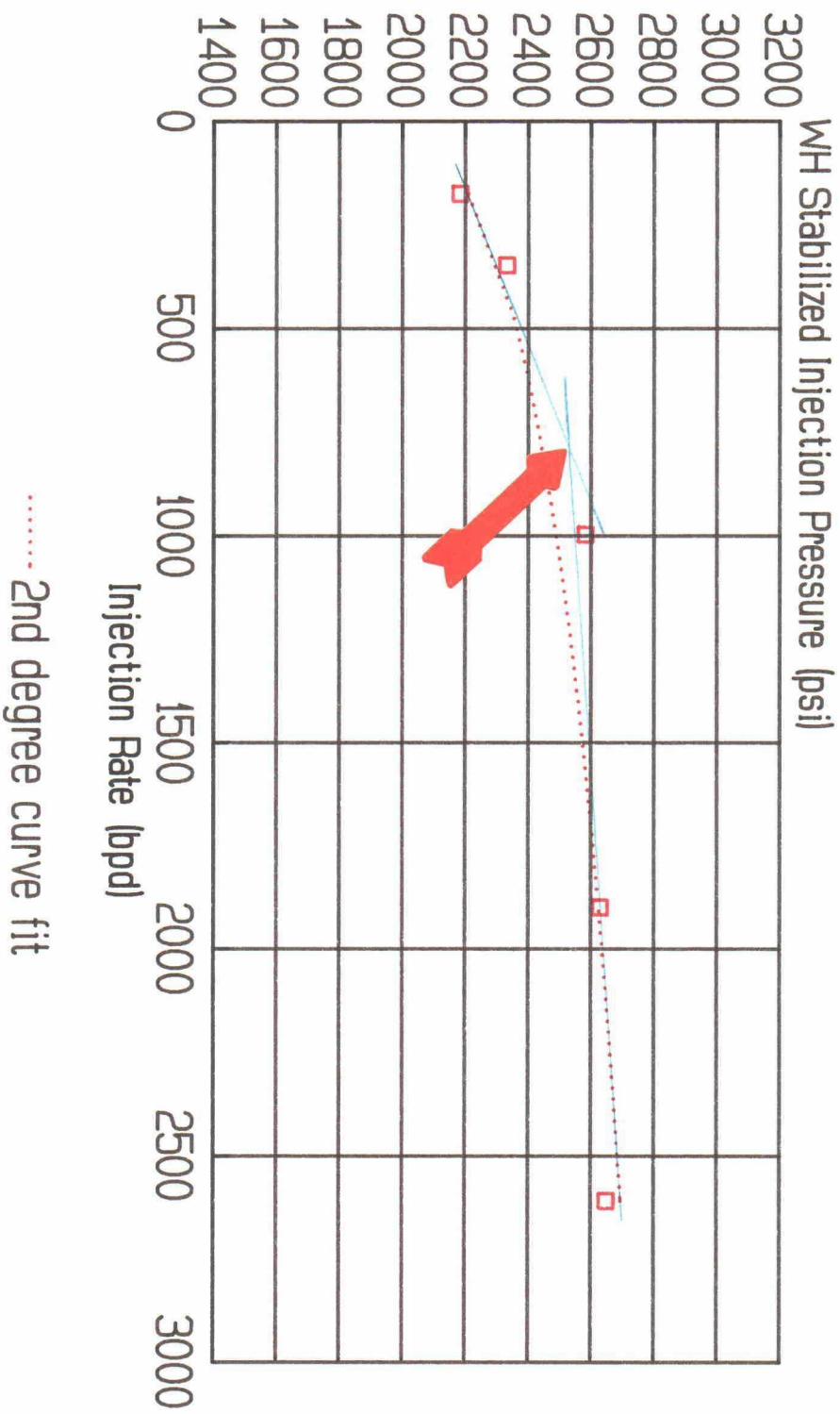
Sincerely,

William J. Mueller  
Principal Reservoir Engineer

WJM:SGC

cc: Jerry Sexton-Hobbs, NM

Phillips Petroleum Company  
Philmex Well No. 37 CO2 Step Rate Test  
1980'FSL & 1880'FWL; Section 26-17S-33E



Test performed 11/14/89

## ATTACHMENT TWO

Phillips Petroleum Company  
Philmex Well No. 37  
Acid Breakdown Pressures  
Grayburg Formation

| <u>perforated interval</u> | <u>breakdown pressure (psi)</u> |
|----------------------------|---------------------------------|
| 4187' - 4231'              | 2200                            |
| 4276' - 4347'              | 2300                            |
| 4403' - 4472'              | 2400                            |



STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION  
HOBBBS DISTRICT OFFICE 33  
December 5, 1989

GARREY CARRUTHERS  
GOVERNOR

POST OFFICE BOX 1980  
HOBBBS, NEW MEXICO 88240  
(505) 393-6161

OIL CONSERVATION DIVISION  
P.O. BOX 2088  
SANTA FE, NEW MEXICO 87504-2088

RE: APPLICATION FOR PRESSURE LIMIT INCREASE FOR DISPOSAL & INJECTION WELLS

Gentlemen:

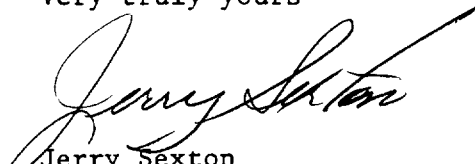
I have examined the step rate test for the:

|                            |                  |            |
|----------------------------|------------------|------------|
| Phillips Petroleum Company | Philhex #38-K    | 26-17-33   |
| Operator                   | Lease & Well No. | Unit S-T-R |

and my recommendations are as follows:

OK

Very truly yours

  
Jerry Sexton  
Supervisor, District I

/bp