

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

July 15, 1991

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

Yates Drilling Company
105 South Fourth Street
Artesia, New Mexico 88210

*RE: Injection Pressure Increase
Cactus Queen Unit Waterflood Project
Chaves County, New Mexico*

Dear Sir:

Reference is made to your request dated June 3, 1991, to increase the surface injection pressure on the two wells within the Cactus Queen Unit Waterflood Project. This request is based on step rate tests conducted on these wells on May 29, 1991. The results of the tests have been reviewed by my staff and we feel an increase in injection pressure on these wells is justified at this time.

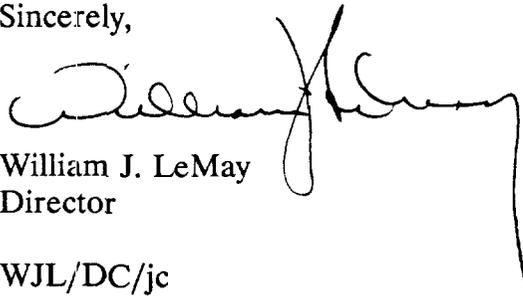
You are therefore authorized to increase the surface injection pressure on the following well.

<u>WELL AND LOCATION</u>	<u>MAXIMUM INJECTION SURFACE PRESSURE</u>
Cactus Queen Unit Well No. 1 Unit K, Section 27, T-12 South, R-31 East, NMPM	980 PSIG
Cactus Queen Unit Well No. 5 Unit C, Section 34, T-12 South, R-31 East, NMPM	1100 PSIG
Both in Chaves County, New Mexico	

Yates Drilling Company
July 15, 1991
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,



William J. LeMay
Director

WJL/DC/jc

cc: Oil Conservation Division ✓/Artesia
File: Case No. R-9810 ✓
D. Catanach
R. Brown

NO WAITING PERIOD

COMPANY: Yates Drilling Company
ADDRESS: 105 South Fourth Street
CITY, STATE, ZIP: Albino, New Mexico 88210
ATTENTION: _____

Re: Injection Pressure Increase
Cactus Queen Unit Waterflood Project
Chaves County, New Mexico

Dear Sir:

Reference is made to your request dated June 3, 1991, to increase the surface injection pressure on two wells within the Cactus Queen Unit Waterflood Project. This request is based on step rate tests conducted on these wells on May 29, 1991. The results of the tests have been reviewed by my staff and we feel an increase in injection pressure on these wells is justified at this time.

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

<u>Well & Location</u>	<u>Maximum Injection Surface Pressure</u>
<u>Cactus Queen Unit Well No 1</u> <u>Unit B, Section 27, T-12S, R-31E, NMPM</u>	<u>990 PSIG</u>
<u>Cactus Queen Unit Well No 5</u> <u>Unit C, Section 24, T-12S, R-31E, NMPM</u>	<u>1100 PSIG</u>
<u>Both in Chaves County, New Mexico</u>	
_____	_____
_____	_____
_____	_____
_____	_____

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: T. GALLEGOS D. CATANACH FILE- Case No 9810 OCD- Abbe
R. Brown

Submit 3 Copies
to Appropriate
District Office

State of New Mexico
Energy, Minerals and Natural Resources Department DIVISION

Form C-103
Revised 1-1-89

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

WELL API NO.
2030-005-21037

5. Indicate Type of Lease
STATE FEE

6. State Oil & Gas Lease No.
LH-1648



7. Lease Name or Unit Agreement Name
Cactus Queen Unit

8. Well No.
1

9. Pool name or Wildcat
SE Chaves On Gas Area Assoc.

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A
DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT"
(FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well:
OIL WELL GAS WELL OTHER Water Injection Well

2. Name of Operator
Yates Drilling Company

3. Address of Operator
105 S. 4th Street, Artesia, NM 88210

4. Well Location
Unit Letter K : 1650 Feet From The South Line and 2310 Feet From The West Line
Section 27 Township 12S Range 31E NMPM Chaves County

10. Elevation (Show whether DF, RKB, RT, GR, etc.)
4438' GL

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>	PLUG AND ABANDONMENT <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>		CASING TEST AND CEMENT JOB <input type="checkbox"/>	
OTHER: Request increase in Allowable Injection Pressure <input checked="" type="checkbox"/>		OTHER: <input type="checkbox"/>	

12. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

A Step-Rate Injection Test was conducted on the subject well 5-29-91. A copy of the data from this test along with Rate vs. Pressure plots are attached. Calculations indicate the (wellhead) pressure at which the formation first parts is 1082 psig. Under the terms of order R-9075 and R-9075-B, we are permitted to request administrative approval of an increase in injection pressure, if supported by a Step-Rate Injection Test. Accordingly we are requesting approval of a wellhead injection pressure of 980 psig.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE [Signature] TITLE Engineer DATE 6-3-91

TYPE OR PRINT NAME _____ TELEPHONE NO. _____

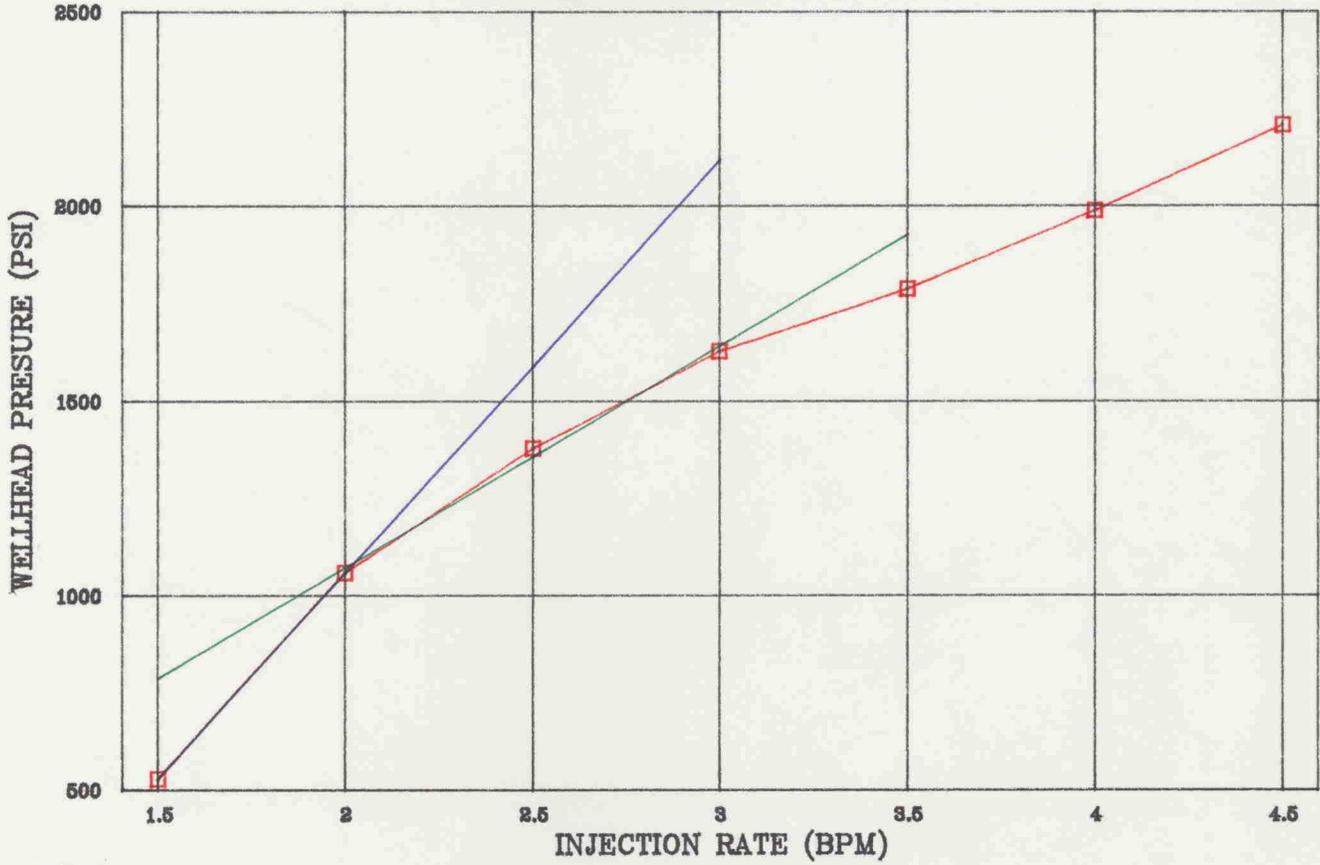
(This space for State Use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

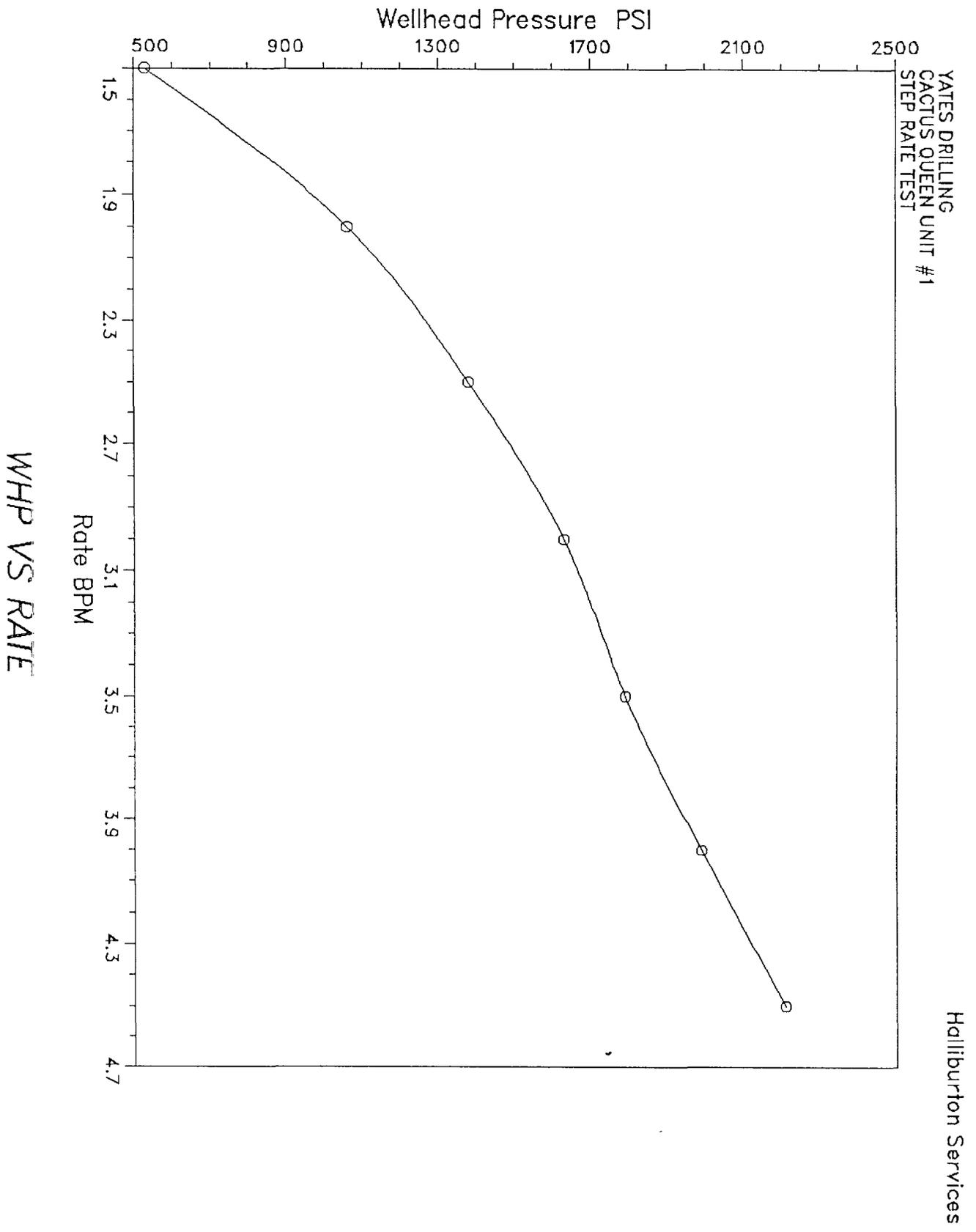
STEP RATE INJECTION TEST

CACTUS QUEEN UNIT WELL #1



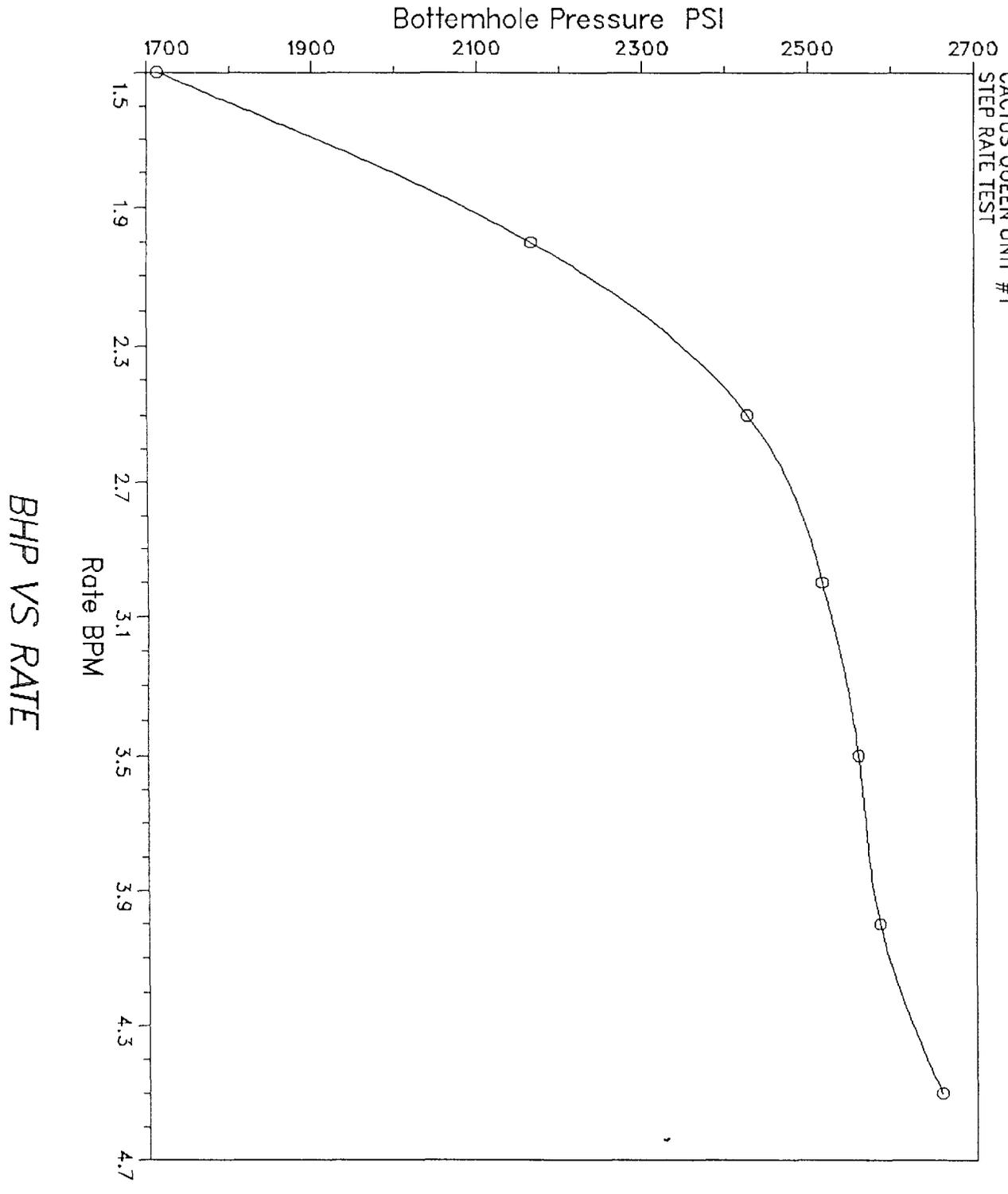
5-29-91

RECEIVED
JUN 4 1991
8:00
HONEYWELL



YATES DRILLING
CACTUS QUEEN UNIT #1
STEP RATE TEST

Halliburton Services



BHP VS RATE

27 12 31

2998

SPEEDSET © MOORE BUSINESS FORMS, INC. - N

**HALLIBURTON SERVICES
JOB LOG**

WELL NO. 1 LEASE Cactus Queen Unit TICKET NO. 129714
 CUSTOMER VATES Drilling PAGE NO. 1
 JOB TYPE 460 injection test DATE 5-29-91

FORM 2013 R-2

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL / GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
1	13:31	3		1				load tubing with pressurizer
2	13:40	1.5		1		60		start test
3	13:45	1.5	28	1		200		5 min
4	13:50	1.5	34.5	1		390		10 MIN
5	13:55	1.5	42	1		530		15 MIN step up to 2 BBL/MIN
6	14:00	2	50	1		790		5 MIN
7	14:05	2	59	1		960		10 MIN
8	14:10	2	68	1		1060		15 MIN step up to 2.5 BBL/MIN
9	14:16	2.5	79	1		1240		5 MIN
10	14:20	2.5	89	1		1280		10 MIN
11	14:25	2.5	101	1		1380		15 MIN
12				1		1500		Step up to 3 BBL/MIN
12	14:30	3	113	1		1560		5 MIN
13	14:35	3	127	1		1600		10 MIN
14	14:40	3	142	1		1630		15 MIN
				1		1740		Step Up to 3.5 BBL/MIN
15	14:45	3.5	156	1		1760		5 MIN
16	14:50	3.5	173	1		1790		10 MIN
17	14:55	3.5	185	1		1790		15 MIN
				1		1920		Step up to 4 BBL/min
18	15:00	4	202	1		1950		5 MIN
19	15:05	4	222	1		1980		10 MIN
20	15:10	4	239	1		1990		15 MIN
				1		2160		step up to 4.5 BBL/MIN
21	15:15	4.5	259	1		2190		5 MIN
22	15:20	4.5	279	1		2210		10 MIN
23	15:25	4.5	300	1		2210		15 MIN
						1600		15 IP

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION



BRUCE KING
GOVERNOR

April 15, 1992

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

Yates Drilling Company
105 South Fourth Street
Artesia, New Mexico 88210

*RE: Injection Pressure Increase
Doyle Fee Lease
Waterflood Project
Chaves County, New Mexico*

Dear Sir:

Reference is made to your request dated April 1, 1992, to increase the surface injection pressure on three wells within the Doyle Fee Lease Waterflood Project. This request is based on step rate tests conducted on these wells March 17-19, 1992. The results of the tests have been reviewed by my staff and we feel an increase in injection pressure on these wells is justified at this time.

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

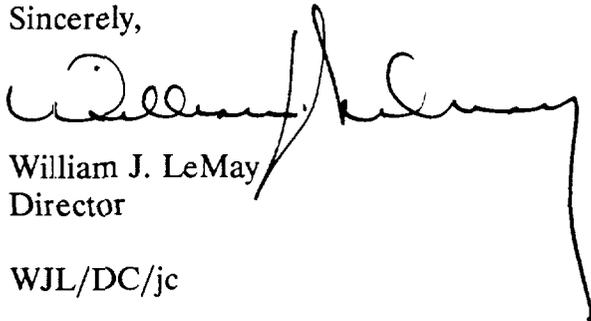
<u>WELL AND LOCATION</u>	<u>MAXIMUM INJECTION SURFACE PRESSURE</u>
Doyle No. 1 Unit A, Section 34, Township 12 South, Range 31 East, NMPM;	1480 PSIG
Doyle No. 3 Unit I, Section 27, Township 12 South, Range 31 East, NMPM;	1630 PSIG
Doyle No. 4 Unit M, Section 26, Township 12 South, Range 31 East, NMPM;	1750 PSIG

All in Chaves County, New Mexico

Yates Drilling Company
April 15, 1992
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 black ink, appearing to read "William J. LeMay". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

William J. LeMay
Director

WJL/DC/jc

cc: Oil Conservation Division - Hobbs
File: Case No. 9810 ✓
D. Catanach
R. Brown

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION



BRUCE KING
GOVERNOR

April 16, 1992



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

Yates Drilling Company
105 South Fourth Street
Artesia, New Mexico 88210

*RE: Injection Pressure Increase
Cactus Queen Unit
Waterflood Project
Chaves County, New Mexico*

Dear Sir:

Reference is made to your request dated April 1, 1992, to increase the surface injection pressure on three wells within the Cactus Queen Unit Waterflood Project. This request is based on step rate tests conducted on these wells March 18-20, 1992. The results of the tests have been reviewed by my staff and we feel an increase in injection pressure on these wells is justified at this time.

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

<u>WELL AND LOCATION</u>	<u>MAXIMUM INJECTION SURFACE PRESSURE</u>
Cactus Queen Unit No. 1 Unit K, Section 27, Township 12 South, 31 East, NMPM;	1610 PSIG
Cactus Queen Unit No. 4 Unit O, Section 27, Township 12 South, Range 31 East, NMPM;	1660 PSIG
Cactus Queen Unit No. 5 Unit C, Section 34, Township 12 South, Range 31 East, NMPM;	1700 PSIG

All in Chaves County, New Mexico

Yates Drilling Company
April 16, 1992
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 black ink, appearing to read "William J. LeMay". The signature is written in a cursive style with a large initial "W".

William J. LeMay
Director

WJL/DC/jc

cc: Oil Conservation Division - Hobbs
File: Case No. 9810 ✓
D. Catanach
R. Brown

CASE 9810 (Reindustrialized)

Application of Yates Drilling Company for Water Flood Projects, Chaves County, New Mexico.

Applicant, in the above-styled cause, seeks authority to institute a water flood project in the proposed Cactus Queen ~~Unit~~ (Statutory) Unit Area (Division Case No 9509) ~~located~~ underlying the SW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 26, ~~the~~ the NE $\frac{1}{4}$ SW $\frac{1}{4}$, E $\frac{1}{2}$ SW $\frac{1}{4}$, and SE $\frac{1}{4}$ of Section 27, the N $\frac{1}{2}$ N $\frac{1}{2}$ and SE $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 34, and the NW $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 35, all in Township 12 South, Range 31 East, by the injection of water into the Southeast Chaves Queen Gas Area Associated Pool through ^{certain} ~~3~~ wells ~~located~~ within ~~the~~ Unit Area. IN THE ALTERNATIVE, the applicant seeks to institute two water flood projects adjacent to one another in this same ~~general~~ general area; the first to be in the proposed Cactus Queen (Voluntary) Unit Area (Division Case No 4823) underlying the NE $\frac{1}{4}$ SW $\frac{1}{4}$, E $\frac{1}{2}$ SW $\frac{1}{4}$, and W $\frac{1}{2}$ SE $\frac{1}{4}$ of Section 27 and the NW $\frac{1}{4}$ NE $\frac{1}{4}$ and N $\frac{1}{2}$ NW $\frac{1}{4}$ of Section 34, both in Township 12 South, Range 31 East, by the injection of water into the Southeast Chaves Queen Gas Area Associated Pool through 3 certain wells with said Unit Area; and, the second to be on the ~~W $\frac{1}{2}$ NW $\frac{1}{4}$~~ "Doyle" Fire lease comprising the SW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 26, the E $\frac{1}{2}$ SE $\frac{1}{4}$ of Section 27, and the NE $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 34, all in Township 12 South, Range 31 East, by the

injection of water into said Pool through 3 certain wells
within ~~the~~ said lease. The aforesaid area is
located approximately 12 miles southeast by south of
Caprock, New Mexico