STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

WFX-653

PPEV0020600653

May 8, 1995

Phillips Petroleum Company
4001 Penbrook
Odessa, Texas 79762

Attn: Mr. Keith H. Maberry

RE: Injection Pressure Increase East Vacuum Grayburg San Andres Unit Waterflood Project, Lea County, New Mexico

Dear Mr. Mayberry:

Reference is made to your request dated April 7, 1995 to increase the surface injection pressure on 1 well in the above referenced waterflood project. This request is based on a step rate test conducted on April 3, 1995. The results of the test have been reviewed by my staff and we feel an increase in injection pressure on this well is justified at this time.

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

Well and Location	Maximum Surface Injection Pressure
East Vacuum Grayburg San Andres Unit Well No.3202-033, Unit Letter E, Section 32, Township 17 South, Range 35 East	2320 PSIG
Located in Lea 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.

Sincerely,

William J. LeMay
Director

WJL/BES

cc: Oil Conservation Division - Hobbs
Files: WFX-653; PSI-X 2nd QTR 95

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OIL CONSERVATION DIVISION
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PHILLIPS PETROLEUM COMPANY
ODESSA, TEXAS 79762
4001 PENBROOK

EXPLORATION AND PRODUCTION GROUP
Permian Basin Region

April 7, 1995

Request for Increased Injection Pressure
East Vacuum Grayburg San Andres Unit
Waterflood Project - Lea County, N M
NMOCD Division Order No. WFX-653

Mr. David R. Catanach
State of New Mexico
Energy, Minerals & Natural Resources Dept.
Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87504

Mr. Catanach,

Phillips Petroleum Company requests administrative approval to increase the maximum surface injection pressure to 1500 psig on East Vacuum Grayburg San Andres Unit Well No. 3202-033, Lea County, New Mexico. Attached is a recent injection step-rate test submitted as proof that the requested injection pressure is below the formation parting pressure. The measured parting pressure is 2370 psig at 5390 BPD. Three tests points after parting pressure could not be recorded due to surface pumping limitations.

The subject well was approved under NMOCD Division Order No. WFX-653 on December 28, 1993.

If you have any questions or require further information, please call me at (915) 368-1232

Sincerely,

Keith H. Maberry
Senior EOR Operations Engineer

CC: Mr. Jerry Sexton
NMOCD District 1
P. O. Box 1980
Hobbs, New Mexico 88240
Central Files

WEST-TEST, INC.

A SUBSIDIARY OF JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: PHILLIPS PETROLEUM COMPANY DATE: APRIL 3, 1995

WELL NAME: EAST VACUUM GRAYBURG SAN ANDRES UNIT 3202-033 WO#: 95-14-0511
LEA COUNTY, NEW MEXICO

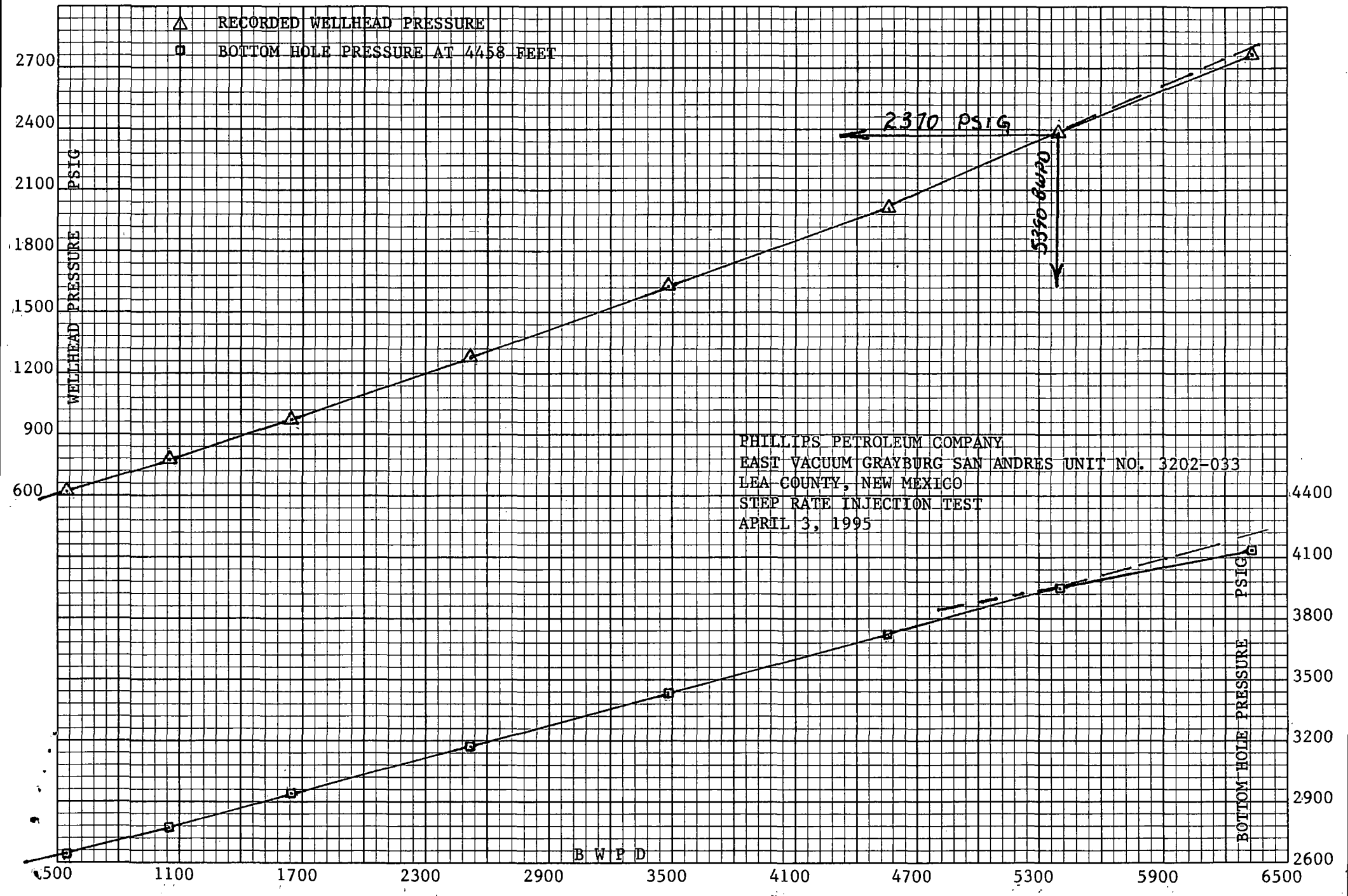
PERFS = 4396-4520

PACKER DEPTH = 4353

BHP GAUGE DEPTH = 4458

STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS (psig)	(2) CUMMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS (psi) (1)-(4)	(6) INJECTION RATE (gpm) (3)/34.2857	(7) MEASURED BHP (psi)
	9:25	480.0				480.0		2522.0
	9:30	569.0	1.9	547.2	4.723	564.3	15.96	2595.0
	9:35	591.0	3.9	576.0	5.193	585.8	16.80	2622.0
1	9:40	620.0	5.8	547.2	4.723	615.3	15.96	2642.0
				556.8				
	9:45	712.0	9.5	1065.6	16.207	695.8	31.08	2714.0
	9:50	752.0	13.0	1008.0	14.623	737.4	29.40	2749.0
2	9:55	779.0	16.7	1065.6	16.207	762.8	31.08	2773.0
				1046.4				
	10:00	915.0	22.5	1670.4	37.228	877.8	48.72	2865.0
	10:05	958.0	28.2	1641.6	36.049	922.0	47.88	2910.0
3	10:10	977.0	33.9	1641.6	36.049	941.0	47.88	2943.0
				1651.2				
	10:15	1178.0	42.7	2534.4	80.504	1097.5	73.92	3070.0
	10:20	1232.0	56.5	2534.4	80.504	1151.5	73.92	3127.0
4	10:25	1275.0	60.2	2505.6	78.819	1196.2	73.08	3171.0
				2524.8				
	10:30	1511.0	72.2	3456.0	142.892	1368.1	100.80	3307.0
	10:35	1576.0	84.4	3513.6	147.329	1428.7	102.48	3380.0
5	10:40	1621.0	96.5	3484.8	145.103	1475.9	101.64	3431.0
				3484.8				
	10:45	1912.0	112.0	4464.0	229.422	1682.6	130.20	3581.0
	10:50	1946.0	127.9	4579.2	240.495	1705.5	133.56	3651.0
6	10:55	2008.0	144.0	4636.8	246.122	1761.9	135.24	3716.0
				4560.0				
	11:00	2258.0	162.7	5385.6	324.660	1933.3	157.08	3834.0
	11:05	2345.0	181.5	5414.4	327.879	2017.1	157.92	3896.0
7	11:10	2394.0	200.3	5414.4	327.879	2066.1	157.92	3949.0
				5404.8				

STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1) – (4)	(6) INJECTION RATE (gpm) (3)/34.2857	(7) MEASURED BHP (psi)
	11:15	2657.0	222.1	6278.4	431.188	2225.8	183.12	4043.0
	11:20	2708.0	243.8	6249.6	427.536	2280.5	182.28	4086.0
8	11:25	2760.0	266.7	6451.2	453.399	2306.6	188.16	4131.0
				6326.4				
FALLOFF	11:26	1988.0				1988.0		4043.0
	11:27	1884.0				1884.0		3942.0
	11:28	1804.0				1804.0		3861.0
	11:29	1737.0				1737.0		3794.0
	11:30	1681.0				1681.0		3736.0
	11:35	1484.0				1484.0		3536.0
	11:40	1366.0				1366.0		3419.0


RECORDED WELLHEAD PRESSURE
BOTTOM HOLE PRESSURE AT 4458 FEET
2370 PSIG
5370 BWPD
WELLHEAD PRESSURE PSIG
BOTTOM HOLE PRESSURE PSIG
BWPD
2700
2400
2100
1800
1500
1200
900
600
4400
4100
3800
3500
3200
2900
2600
500
1100
1700
2300
2900
3500
4100
4700
5300
5900
6500
PHILLIPS PETROLEUM COMPANY
EAST VACUUM GRAYBURG SAN ANDRES UNIT NO. 3202-033
LEA COUNTY, NEW MEXICO
STEP RATE INJECTION TEST
APRIL 3, 1995