



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



BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

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

July 27, 1993

Texaco Exploration and Production, Inc.
P.O. Box 730
Hobbs, NM 88241

Attention: M.C. Duncan

**RE: Injection Pressure Increase Central Vacuum Unit,
Lea County, New Mexico**

Dear Mr. Duncan:

Reference is made to your request dated July 1 and July 9, 1993 to increase the surface injection pressure on six wells in the your Central Vacuum Unit. This request is based on step rate tests conducted on these wells between June 21 and July 1, 1993. 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:

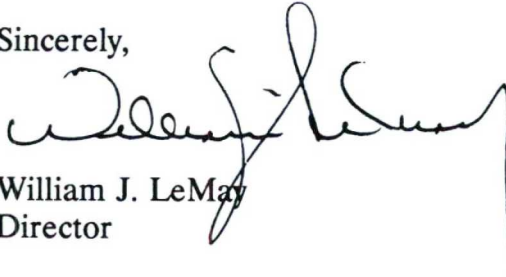
Well and Location	Maximum Injection Surface Pressure
Central Vacuum Unit Well No. 44 Unit D, Section 31, Township 17 South, Range 35 East	2300 PSIG
Central Vacuum Unit Well No. 70 Unit E, Section 36, Township 17 South, Range 36 East	1555 PSIG
Central Vacuum Unit Well No. 120 Unit D, Section 7, Township 18 South, Range 35 East	1400 PSIG
Central Vacuum Unit Well No. 128 Unit H, Section 12, Township 18 South, Range 34 East	1500 PSIG

Injection Pressure Increase
Texaco Exploration and Production, Inc.
July 27, 1993
Page 2

Well and Location	Maximum Injection Surface Pressure
Central Vacuum Unit Well No. 137 Unit D, Section 6, Township 18 South, Range 35 East	1950 PSIG
Central Vacuum Unit Well No. 154 Unit D, Section 30, Township 17 South, Range 35 East	1920 PSIG
All wells 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/amg

cc: Oil Conservation Division - Hobbs
File: Case No. 6008

NO WAITING PERIOD

COMPANY: Texaco Exploration & Production, Inc.
ADDRESS: P.O. Box 730
CITY, STATE, ZIP: Hobbs, New Mexico 88241
ATTENTION: Mr. M.C. Duncan, Ms. Darlene de Aragao

Re: Injection Pressure Increase
Central Vacuum Unit
Lea County, New Mexico

Dear Sir:

Reference is made to your requests dated **July 1 and July 9, 1993**, to increase the surface injection pressure on **6 wells in your Central Vacuum Unit**. This request is based on step rate tests conducted on these wells between **June 21, and July 1, 1993**. 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>
Central Vacuum Unit Well No.44 Unit D, Section 31, T17S, R35E	2300 psig
Central Vacuum Unit Well No.70 Unit E, Section 36, T17S, R36E	1555 psig
Central Vacuum Unit Well No.120 Unit D, Section 7, T18S, R35E	1400 psig
Central Vacuum Unit Well No.128 Unit H, Section 12, T18S, R34E	1500 psig
Central Vacuum Unit Well No.137 Unit D, Section 6, T18S, R35E	1950 psig
Central Vacuum Unit Well No.154 Unit D, Section 30, T17S, R35E	1920 psig

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.

William J. LeMay
Director

WJL/BES

xc: **OCD - Hobbs**
 FILE- Case No.6008

N/R
OIL CONSERVATION DIVISION
RECEIVED

'93 JUL 2 AM 9 22

6 WELLS

July 1, 1993

New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe N.M. 87504

Attn: Mr. David Catanach
Engineer, New Mexico Oil Conservation Division

Re: PRESSURE INCREASE ON INJECTION WELL
Central Vacuum Unit #154
Unit D, Section 30
T-17-S, R-35-E
Lea County, New Mexico

Dear David:

Texaco Exploration and Production Inc. requests an increase in the maximum allowable pressure on the above well from 957 psig to 1970 psig. A step rate injection test was ran on the well. Results of the test are attached.

1920

If you have any questions concerning this request, please contact me at 397-0418 or 393-7191. The engineer assigned to this well is Darlene de Aragao. Her number is 397-0424. Thank you for your assistance in this matter.

Yours very truly,



M.C. Duncan
Engineer's Assistant

/mcd
Chrono
Attachments
cc: Jerry Sexton/NMOCD/Hobbs

JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: TEXACO INC.

DATE: JUNE 23, 1983

WELL NAME: CENTRAL VACUUM UNIT WELL NO. 154

WO#: 93-14-1063

Lea County, New Mexico

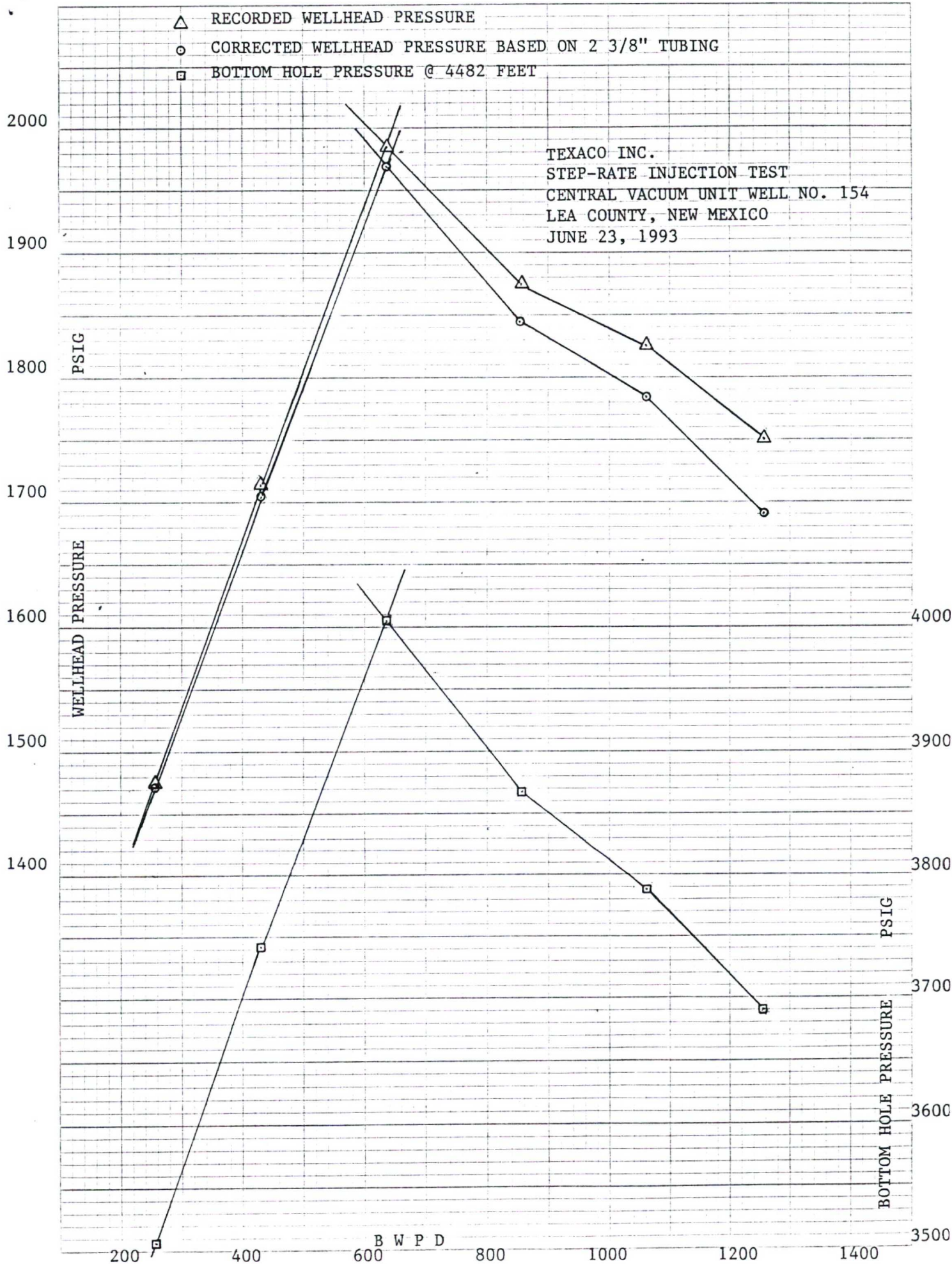
MID-PERFS. = 4480

MDR = 4482

BHP GAUGE DEPTH = 4480

STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMULATIVE 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)
CASING	9:50	1212.3				1212.3		3244
PRESS	9:55	1336.4	0.9	259.2	3.181	1333.2	7.56	3360
75	10:00	1385.8	1.8	259.2	3.181	1382.6	7.56	3413
PSIG	10:05	1409.9	2.8	288.0	3.865	1406.0	8.40	3446
	10:10	1435.2	3.6	230.4	2.558	1432.6	6.72	3469
	10:15	1449.2	4.5	259.2	3.181	1446.0	7.56	3488
1	10:20	1474.5	5.4	259.2	3.181	1471.3	7.56	3505
				259.2				
CASING	10:25	1563.1	6.9	432.0	8.184	1554.9	12.60	3592
PRESS	10:30	1599.8	8.3	403.2	7.203	1592.6	11.76	3631
75	10:35	1629.0	9.8	432.0	8.184	1620.8	12.60	3658
PSIG	10:40	1658.1	11.3	432.0	8.184	1649.9	12.60	3687
	10:45	1687.2	12.8	432.0	8.184	1679.0	12.60	3716
2	10:50	1712.6	14.4	460.8	9.222	1703.4	13.44	3741
				432.0				
CASING	10:55	1863.2	16.7	662.4	18.046	1845.2	19.32	3881
PRESS	11:00	1902.4	18.9	633.6	16.622	1885.8	18.48	3912
75	11:05	1936.6	21.2	662.4	18.046	1918.6	19.32	3945
PSIG	11:10	1953.1	23.4	633.6	16.622	1936.5	18.48	3967
	11:15	1978.4	25.6	633.6	16.622	1961.8	18.48	3986
3	11:20	1984.7	27.7	604.8	15.251	1969.4	17.64	4004
				638.4				
CASING	11:25	2150.6	30.7	864.0	29.503	2121.1	25.20	4133
PRESS	11:30	2164.5	33.7	864.0	29.503	2135.0	25.20	4162
75	11:35	2172.1	36.6	835.2	27.710	2144.4	24.36	4167
PSIG	11:40	1873.4	39.6	864.0	29.503	1843.9	25.20	3862
	11:45	1851.9	42.6	864.0	29.503	1822.4	25.20	3835
4	11:50	1874.7	45.6	864.0	29.503	1845.2	25.20	3868
				859.2				

STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (psf)	(5) CORRECTED TUBING PRESS. (psf) (1)-(4)	(6) INJECTION RATE (gpm) (3)/34.2857	(7) MEASURED BHP (psf)
CASING PRESS 80 PSIG	11:55	1967.1	49.2	1036.8	41.338	1925.8	30.24	3940
	12:00	1927.8	52.8	1036.8	41.338	1886.5	30.24	3899
	12:05	1874.7	56.6	1094.4	45.687	1829.0	31.92	3836
	12:10	1883.6	60.3	1065.6	43.488	1840.1	31.08	3847
	12:15	1893.7	64.0	1065.6	43.488	1850.2	31.08	3862
5	12:20	1826.6	67.7	1065.6	43.488	1783.1	31.08	3789
				1060.8				
CASING PRESS 90 PSIG	12:25	1876.0	72.0	1238.4	57.426	1818.6	36.12	3815
	12:30	1803.9	76.4	1267.2	59.921	1744.0	36.96	3739
	12:35	1769.7	80.7	1238.4	57.426	1712.3	36.12	3701
	12:40	1749.5	85.1	1267.2	59.921	1689.6	36.96	3691
	12:45	1749.5	89.5	1267.2	59.921	1689.6	36.96	3687
6	12:50	1749.5	93.9	1267.2	59.921	1689.6	36.96	3690
				1257.6				
FALLOFF	12:51	1567.2				1567.2		3601
CASING PRESS 100 PSIG	12:52	1569.8				1569.8		3604
	12:53	1568.5				1568.5		3604
	12:54	1564.7				1564.7		3600
	12:55	1562.2				1562.2		3596
	1:00	1541.9				1541.9		3577
	1:05	1525.5				1525.5		3559



July 1, 1993

New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe N.M. 87504

Attn: Mr. David Catanach
Engineer, New Mexico Oil Conservation Division

Re: PRESSURE INCREASE ON INJECTION WELL
Central Vacuum Unit #44
Unit D, Section 31
T-17-S, R-35-E
Lea County, New Mexico

Dear David:

Texaco Exploration and Production Inc. requests an increase in the maximum allowable pressure on the above well from 914 psig to 2300 psig. A step rate injection test was ran on the well. Results of the test are attached. OK

If you have any questions concerning this request, please contact me at 397-0418 or 393-7191. The engineer assigned to this well is Darlene de Aragao. Her number is 397-0424. Thank you for your assistance in this matter.

Yours very truly,



M.C. Duncan
Engineer's Assistant

/mcd
Chrono
Attachments
cc: Jerry Sexton/NMOCD/Hobbs

JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: TEXACO INC.

DATE: JUNE 21, 1988

WELL NAME: CENTRAL VACUUM UNIT WELL NO. 44

WO#: 88-14-1070

Lea County, New Mexico

MID-PERFS. = 4577

MDR = 4977

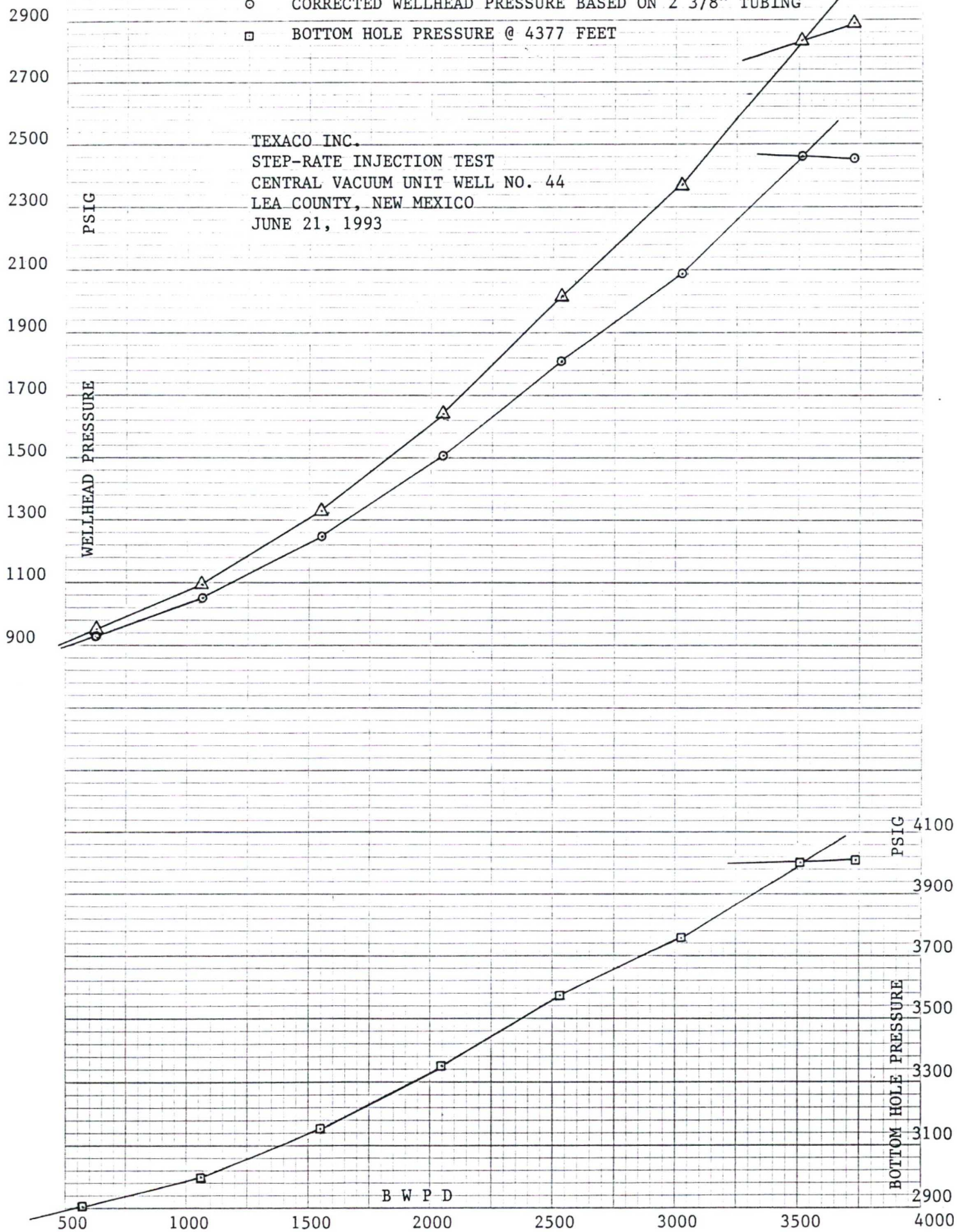
BHP GAUGE DEPTH = 4365

STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (ps)	(5) CORRECTED TUBING PRESS. (ps) (1)-(4)	(6) INJECTION RATE (gpm) (3)/34.2857	(7) MEASURED BHP (ps)
CASING	9:25	924.0				924.0		2910
PRESS	9:30	975.8	2.0	576.0	13.577	962.2	16.80	2935
140	9:35	973.3	3.9	547.2	12.348	961.0	15.96	2932
PSIG	9:40	967.1	5.9	576.0	13.577	953.5	16.80	2925
	9:45	955.8	7.9	576.0	13.577	942.2	16.80	2918
	9:50	945.7	9.9	576.0	13.577	932.1	16.80	2910
1	9:55	945.7	11.9	576.0	13.577	932.1	16.80	2902
				571.2				
CASING	10:00	1045.5	15.5	1036.8	40.278	1005.2	30.24	2950
PRESS	10:05	1060.7	19.2	1065.6	42.372	1018.3	31.08	2967
145	10:10	1077.2	22.9	1065.6	42.372	1034.8	31.08	2979
PSIG	10:15	1091.1	26.5	1036.8	40.278	1050.8	30.24	2987
	10:20	1092.4	30.3	1094.4	44.515	1047.9	31.92	2994
2	10:25	1098.7	34.0	1065.6	42.372	1056.3	31.08	3000
				1060.8				
CASING	10:30	1243.0	39.3	1526.4	82.379	1160.6	44.52	3059
PRESS	10:35	1268.3	44.8	1584.0	88.222	1180.1	46.20	3089
165	10:40	1291.1	50.1	1526.4	82.379	1208.7	44.52	3109
PSIG	10:45	1305.0	55.5	1555.2	85.277	1219.7	45.36	3126
	10:50	1321.5	60.9	1555.2	85.277	1236.2	45.36	3141
3	10:55	1336.7	66.3	1555.2	85.277	1251.4	45.36	3153
				1550.4				
CASING	11:00	1525.3	73.5	2073.6	145.201	1380.1	60.48	3226
PRESS	11:05	1560.7	80.7	2073.6	145.201	1415.5	60.48	3264
200	11:10	1596.2	87.7	2016.0	137.827	1458.4	58.80	3292
PSIG	11:15	1607.6	94.8	2044.8	141.492	1466.1	59.64	3315
	11:20	1624.0	101.9	2044.8	141.492	1482.5	59.64	3333
4	11:25	1645.6	109.0	2044.8	141.492	1504.1	59.64	3353
				2049.5				

STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMULATIVE 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)
CASING	11:30	1874.6	118.0	2592.0	219.408	1655.2	75.60	3432
PRESS	11:35	1901.2	126.7	2505.6	206.070	1695.1	73.08	3462
240	11:40	1930.3	135.5	2534.4	210.473	1719.8	73.92	3499
PSIG	11:45	1959.4	144.2	2505.6	206.070	1753.3	73.08	3527
	11:50	1994.9	152.9	2505.6	206.070	1788.8	73.08	3550
5	11:55	2016.4	161.7	2534.4	210.473	1805.9	73.92	3577
				2529.6				
CASING	12:00	2279.7	172.2	3024.0	291.813	1987.9	88.20	3660
PRESS	12:05	2308.8	182.7	3024.0	291.813	2017.0	88.20	3698
280	12:10	2337.9	193.2	3024.0	291.813	2046.1	88.20	3727
PSIG	12:15	2337.9	203.7	3024.0	291.813	2046.1	88.20	3729
	12:20	2346.8	214.3	3052.8	296.975	2049.8	89.04	3738
6	12:25	2377.2	224.7	2995.2	286.692	2090.5	87.36	3757
				3024.0				
CASING	12:30	2784.8	237.1	3571.2	396.949	2387.9	104.16	3976
PRESS	12:35	2775.9	249.2	3484.8	379.365	2396.5	101.64	3978
330	12:40	2784.8	261.6	3571.2	396.949	2387.9	104.16	3990
PSIG	12:45	2782.2	273.5	3427.2	367.846	2414.4	99.96	3994
	12:50	2830.5	285.9	3571.2	396.949	2433.6	104.16	4002
7	12:55	2833.1	297.9	3456.0	373.585	2459.5	100.80	4007
				3513.6				
CASING	1:00	2850.9	310.5	3628.8	408.874	2442.0	105.84	4011
PRESS	1:05	2927.2	323.6	3772.8	439.396	2487.8	110.04	4029
360	1:10	2915.8	336.4	3686.4	420.962	2494.8	107.52	4031
PSIG	1:15	2908.1	349.6	3801.6	445.621	2462.5	110.88	4025
	1:20	2898.0	362.6	3744.0	433.211	2464.8	109.20	4015
8	1:25	2890.3	375.8	3801.8	445.665	2444.6	110.89	4011
OUT OF WATER END TEST				3739.2				
FALLOFF	1:26	1792.5				1792.5		3782
	1:27	1757.0				1757.0		3740
	1:28	1724.1				1724.1		3708
	1:29	1693.7				1693.7		3678
	1:30	1668.4				1668.4		3651
	1:35	1552.0				1552.0		3536
	1:40	1458.4				1458.4		3443

- △ RECORDED WELLHEAD PRESSURE
- CORRECTED WELLHEAD PRESSURE BASED ON 2 3/8" TUBING
- BOTTOM HOLE PRESSURE @ 4377 FEET

TEXACO INC.
STEP-RATE INJECTION TEST
CENTRAL VACUUM UNIT WELL NO. 44
LEA COUNTY, NEW MEXICO
JUNE 21, 1993



July 9, 1993

New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe N.M. 87504

Attn: Mr. David Catanach
Engineer, New Mexico Oil Conservation Division

Re: PRESSURE INCREASE ON INJECTION WELL
Central Vacuum Unit #70
Unit E, Section 36
T-17-S, R-36-E
Lea County, New Mexico

Dear David:

Texaco Exploration and Production Inc. requests an increase in the maximum allowable pressure on the above well from 876 psig to 1600 psig. A step rate injection test was ran on the well. Results of the test are attached. 1555

If you have any questions concerning this request, please contact me at 397-0424. Thank you for your assistance in this matter.

Yours very truly,


Darlene de Aragao
Production Engineer

/ddd
Chrono
Attachments
cc: Jerry Sexton/NMOCD/Hobbs

JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: TEXACO INC.

DATE: JULY 1, 1993

WELL NAME: CENTRAL VACUUM UNIT WELL NO. 70

WO#: 93-14-1075

Lea County, New Mexico

MID-PERF8. = 4380 - 4710

MDR = 4454

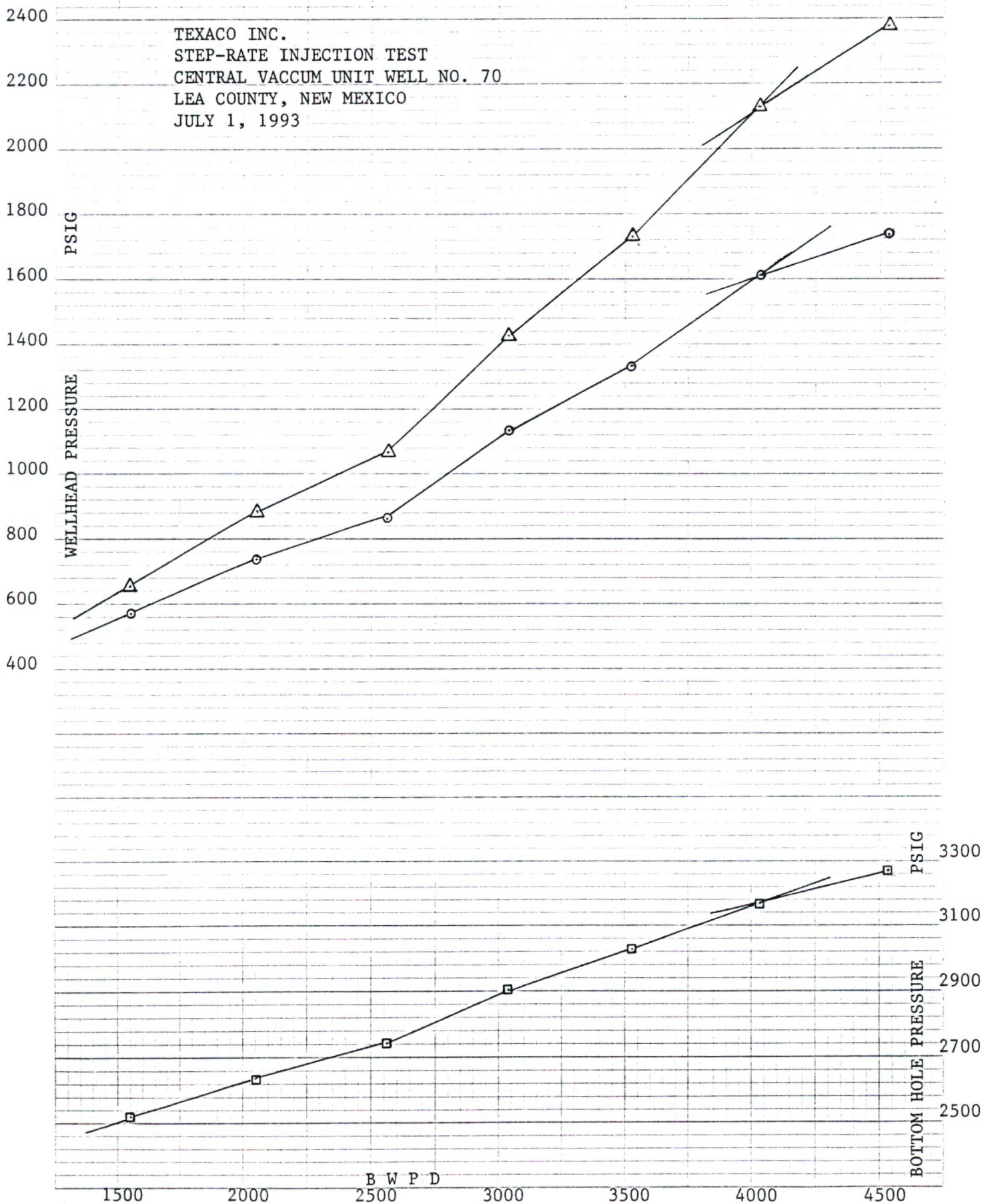
BHP GAUGE DEPTH = 4450

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)
CASING PRESS	10:10	312.7				312.7		2331
90 PSIG	10:15	572.9	5.5	1584.0	89.979	482.9	46.20	2439
	10:20	599.6	10.8	1526.4	84.020	515.6	44.52	2472
	10:25	616.2	16.2	1555.2	86.976	529.2	45.36	2491
	10:30	645.3	21.5	1526.4	84.020	561.3	44.52	2505
	10:35	644.1	26.9	1555.2	86.976	557.1	45.36	2515
1	10:40	654.2	32.3	1555.2	86.976	567.2	45.36	2522
				1550.4				
CASING PRESS	10:45	811.8	39.5	2073.6	148.094	663.7	60.48	2573
110 PSIG	10:50	834.4	46.6	2044.8	144.311	690.1	59.64	2595
	10:55	858.3	53.7	2044.8	144.311	714.0	59.64	2611
	11:00	864.7	60.8	2044.8	144.311	720.4	59.64	2625
	11:05	882.5	67.9	2044.8	144.311	738.2	59.64	2636
2	11:10	881.3	75.0	2044.8	144.311	737.0	59.64	2641
				2049.6				
CASING PRESS	11:15	1015.1	84.0	2592.0	223.779	791.3	75.60	2684
125 PSIG	11:20	1029.0	92.9	2563.2	219.201	809.8	74.76	2698
	11:25	1035.3	101.7	2534.4	214.666	820.6	73.92	2712
	11:30	1050.5	110.6	2563.2	219.201	831.3	74.76	2723
	11:35	1065.7	119.4	2534.4	214.666	851.0	73.92	2733
3	11:40	1073.3	128.2	2534.4	214.666	858.6	73.92	2741
				2553.6				
CASING PRESS	11:45	1326.4	138.7	3024.0	297.626	1028.8	88.20	2810
160 PSIG	11:50	1372.0	149.3	3052.8	302.891	1069.1	89.04	2843
	11:55	1394.8	159.8	3024.0	297.626	1097.2	88.20	2866
	12:00	1402.4	170.3	3024.0	297.626	1104.8	88.20	2873
	12:05	1417.6	180.9	3052.8	302.891	1114.7	89.04	2889
4	12:10	1431.5	191.4	3024.0	297.626	1133.9	88.20	2902
				3033.6				

STEP NO. & REMARKS	TIME	SURFACE TUBING PRESS. (psig)	(2) CUMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1)-(4)	(6) INJECTION RATE (gpm) (8)/34.2887	(7) MEASURED BHP (psi)
CASING PRESS 195 PSIG	12:15	1669.5	203.6	3513.6	392.859	1276.6	102.48	2954
	12:20	1688.4	215.8	3513.6	392.859	1295.5	102.48	2974
	12:25	1698.5	228.3	3600.0	410.918	1287.6	105.00	2990
	12:30	1712.5	240.3	3456.0	381.028	1331.5	100.80	3003
	12:35	1726.4	252.5	3513.0	392.735	1333.7	102.46	3014
5	12:40	1725.0	264.7	3513.0	392.735	1332.3	102.46	3023
				3518.4				
CASING PRESS 235 PSIG	12:45	2011.1	278.8	4060.8	513.484	1497.6	118.44	3083
	12:50	2047.8	292.7	4003.2	500.090	1547.7	116.76	3109
	12:55	2054.2	306.9	4089.6	520.241	1534.0	119.28	3125
	1:00	2097.3	320.6	3945.6	486.860	1610.4	115.08	3143
	1:05	2108.7	334.6	4032.0	506.767	1601.9	117.60	3158
6	1:10	2123.8	348.7	4060.8	513.484	1610.3	118.44	3172
				4032.0				
CASING PRESS 245 PSIG	1:15	2401.1	364.2	4464.0	611.765	1789.3	130.20	3226
	1:20	2401.1	379.9	4521.6	626.449	1774.7	131.88	3247
	1:25	2378.3	395.6	4521.6	626.449	1751.9	131.88	3261
	1:30	2375.7	411.6	4608.0	648.774	1726.9	134.40	3266
				4528.8				
OUT OF WATER END TEST								
FALLOFF	1:31	1079.5				1079.5		3119
	1:32	1007.4				1007.4		3024
	1:33	955.7				955.7		2978
	1:34	911.5				911.5		290
	1:35	776.5				776.5		2796
	1:40	684.4				684.4		2705

- △ RECORDED WELLHEAD PRESSURE
- CORRECTED WELLHEAD PRESSURE BASED ON 2 3/8" TUBING
- BOTTOM HOLE PRESSURE @ 4454 FEET

TEXACO INC.
STEP-RATE INJECTION TEST
CENTRAL VACCUM UNIT WELL NO. 70
LEA COUNTY, NEW MEXICO
JULY 1, 1993



July 1, 1993

New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe N.M. 87504

Attn: Mr. David Catanach
Engineer, New Mexico Oil Conservation Division

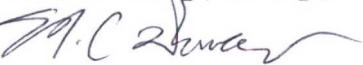
Re: PRESSURE INCREASE ON INJECTION WELL
Central Vacuum Unit #120
Unit D, Section 7
T-18-S, R-35-E
Lea County, New Mexico

Dear David:

Texaco Exploration and Production Inc. requests an increase in the maximum allowable pressure on the above well from 922 psig to 1400 psig. A step rate injection test was ran on the well. Results of the test are attached. OK

If you have any questions concerning this request, please contact me at 397-0418 or 393-7191. The engineer assigned to this well is Darlene de Aragao. Her number is 397-0424. Thank you for your assistance in this matter.

Yours very truly,



M.C. Duncan
Engineer's Assistant

/mcd
Chrono
Attachments
cc: Jerry Sexton/NMOCD/Hobbs

JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: TEXACO INC.

DATE: JUNE 24, 1983

WELL NAME: CENTRAL VACUUM UNIT WELL NO. 120

WO#: 83-14-1083

Lea County, New Mexico

MID-PERFS. = 4640

MDR = 4506

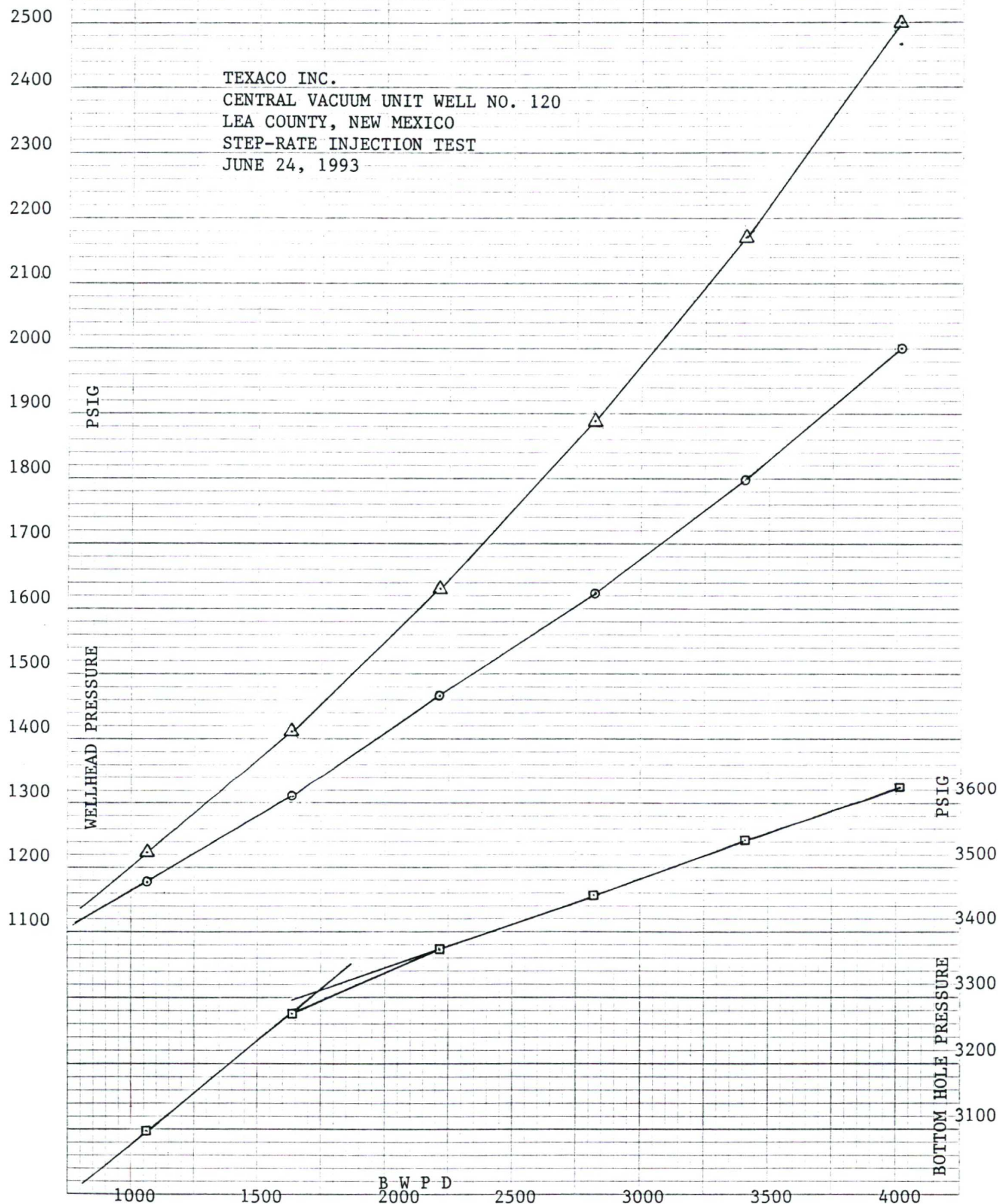
BHP GAUGE DEPTH = 4500

STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (psf)	(5) CORRECTED TUBING PRESS. (psf) (1)-(4)	(6) INJECTION RATE (gpm) (8)/34.2857	(7) MEASURED BHP (psf)
CASING	1:10	1056.0				1056.0		3109
PRESS	1:15	1193.9	3.6	1036.8	41.560	1152.3	30.24	3163
0	1:20	1202.7	7.3	1065.6	43.721	1159.0	31.08	3177
PSIG	1:25	1214.1	11.1	1094.4	45.932	1168.2	31.92	3185
	1:30	1214.2	14.8	1065.6	43.721	1170.5	31.08	3190
	1:35	1214.2	18.5	1065.6	43.721	1170.5	31.08	3195
1	1:40	1221.7	22.2	1065.6	43.721	1178.0	31.08	3198
				1065.6				
CASING	1:45	1380.0	27.8	1612.8	94.115	1285.9	47.04	3251
PRESS	1:50	1396.5	33.5	1641.6	97.248	1299.3	47.88	3263
35	1:55	1404.1	39.2	1641.6	97.248	1306.9	47.88	3270
PSIG	2:00	1402.8	45.0	1670.4	100.428	1302.4	48.72	3271
	2:05	1402.8	50.6	1612.8	94.115	1308.7	47.04	3273
2	2:10	1411.8	56.4	1670.4	100.428	1311.4	48.72	3275
				1641.6				
CASING	2:15	1614.2	64.1	2217.6	169.637	1444.6	64.68	3335
PRESS	2:20	1610.4	71.8	2217.6	169.637	1440.8	64.68	3346
115	2:25	1617.9	76.9	246.4	2.912	1615.0	7.19	3357
PSIG	2:30	1620.5	87.2	2188.8	165.584	1454.9	63.84	3362
	2:35	1634.4	94.9	2217.6	169.637	1464.8	64.68	3375
3	2:40	1631.9	102.6	2217.6	169.637	1462.3	64.68	3374
				2217.6				
CASING	2:45	1840.6	112.5	2851.2	270.046	1570.6	83.16	3404
PRESS	2:50	1850.7	122.2	2793.6	260.040	1590.7	81.48	3414
200	2:55	1858.3	132.0	2822.4	265.021	1593.3	82.32	3422
PSIG	3:00	1867.2	141.8	2822.4	265.021	1602.2	82.32	3435
	3:05	1873.5	151.6	2822.4	265.021	1608.5	82.32	3442
4	3:10	1887.5	161.4	2822.4	265.021	1622.5	82.32	3458
				2822.4				

STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (ps)	(5) CORRECTED TUBING PRESS. (ps) (1)-(4)	(6) INJECTION RATE (gpm) (3)/34.2337	(7) MEASURED BHP (ps)
CASING	3:15	2177.3	173.2	3398.4	373.675	1803.6	99.12	3537
PRESS	3:20	2159.6	185.3	3484.8	391.440	1768.2	101.64	3520
280	2:25	2184.9	196.9	3340.8	362.042	1822.9	97.44	3550
PSIG	3:30	2174.8	208.7	3398.4	373.675	1801.1	99.12	3543
	3:35	2169.7	220.5	3398.4	373.675	1796.0	99.12	3537
5	3:40	2173.5	232.3	3398.4	373.675	1799.8	99.12	3542
				3403.2				
CASING	3:45	2478.6	246.2	4003.2	505.929	1972.7	116.76	3615
PRESS	3:50	2495.1	260.0	3974.4	499.216	1995.9	115.92	3627
375	3:55	2486.2	274.0	4032.0	512.683	1973.5	117.60	3624
PSIG	4:00	2471.0	287.9	4003.2	505.929	1965.1	116.76	3607
	4:05	2474.8	301.9	4032.0	512.683	1962.1	117.60	3610
4	4:10	2500.1	315.7	3974.4	499.216	2000.9	115.92	3625
				4003.2				
FALLOFF	4:11							
CASING	4:12	1214.2				1214.2		3268
PRESS	4:13	1213.0				1213.0		3265
285	4:14	1209.2				1209.2		3263
PSIG	4:15	1205.4				1205.4		3260
	4:20	1195.2				1195.2		3250
	4:25	1187.6				1187.6		3243

- △ RECORDED WELLHEAD PRESSURE
○ CORRECTED WELLHEAD PRESSURE BASED ON 2 3/8" TUBING
□ BOTTOM HOLE PRESSURE @ 4506 FEET

TEXACO INC.
CENTRAL VACUUM UNIT WELL NO. 120
LEA COUNTY, NEW MEXICO
STEP-RATE INJECTION TEST
JUNE 24, 1993



July 1, 1993

New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe N.M. 87504

Attn: Mr. David Catanach
Engineer, New Mexico Oil Conservation Division

Re: PRESSURE INCREASE ON INJECTION WELL
Central Vacuum Unit #128
Unit H, Section 12
T-18-S, R-34-E
Lea County, New Mexico

Dear David:

Texaco Exploration and Production Inc. requests an increase in the maximum allowable pressure on the above well from 927 psig to 1500 psig. A step rate injection test was ran on the well. Results of the test are attached. OK

If you have any questions concerning this request, please contact me at 397-0418 or 393-7191. The engineer assigned to this well is Darlene de Aragao. Her number is 397-0424. Thank you for your assistance in this matter.

Yours very truly,



M.C. Duncan
Engineer's Assistant

/mcd
Chrono
Attachments
cc: Jerry Sexton/NMOCD/Hobbs

JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: TEXACO INC.

DATE: JUNE 22, 1983

WELL NAME: CENTRAL VACUUM UNIT WELL NO. 128
Lea County, New Mexico

WO#: 93-14-1061

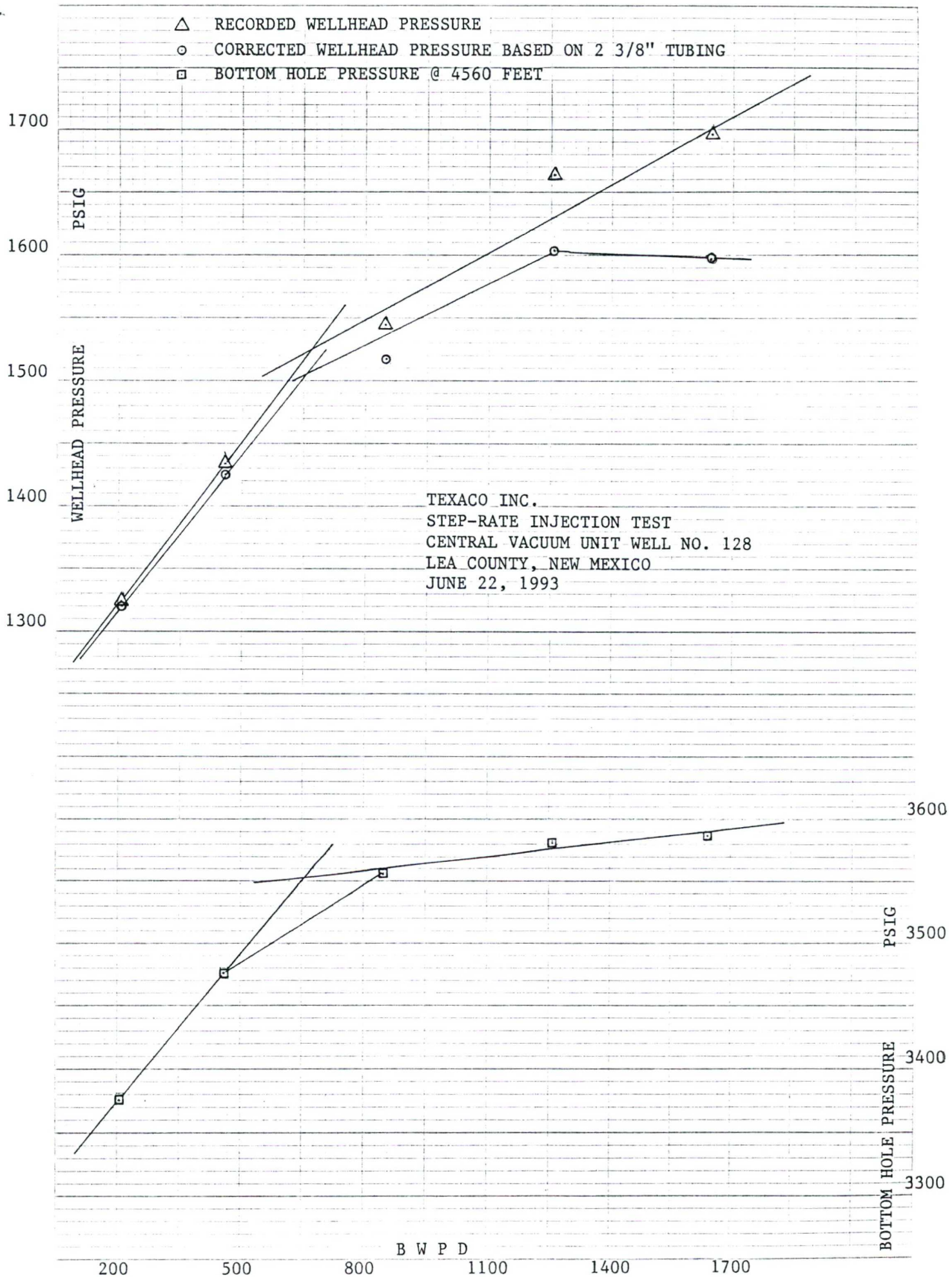
MID-PERFS. = 4690

MDR= 4560

BHP GAUGE DEPTH = 4550

STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMULATIVE 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)
CASING	12:30	1125.5				1125.5		3183
PRESS	12:35	1302.7	0.8	230.4	2.603	1300.1	6.72	3348
60	12:40	1303.9	1.7	259.2	3.236	1300.7	7.56	3362
PSIG	12:45	1310.3	2.5	230.4	2.603	1307.7	6.72	3363
	12:50	1311.6	3.3	230.4	2.603	1309.0	6.72	3369
	12:55	1319.2	4.1	230.4	2.603	1316.6	6.72	3367
1	1:00	1323.0	4.9	230.4	2.603	1320.4	6.72	3376
				235.2				
CASING	1:05	1421.7	6.6	489.6	10.496	1411.2	14.28	3471
PRESS	1:10	1430.6	8.1	432.0	8.326	1422.3	12.60	3470
60	1:15	1440.7	9.7	460.8	9.382	1431.3	13.44	3476
PSIG	1:20	1430.6	11.3	460.8	9.382	1421.2	13.44	3468
	1:25	1426.8	13.0	489.6	10.496	1416.3	14.28	3475
2	1:30	1433.1	14.6	460.8	9.382	1423.7	13.44	3477
				465.6				
CASING	1:35	1558.4	17.6	864.0	30.017	1528.4	25.20	3570
PRESS	1:40	1558.4	20.5	835.2	28.192	1530.2	24.36	3568
60	1:45	1553.4	23.4	835.2	28.192	1525.2	24.36	3565
PSIG	1:50	1545.6	26.4	864.0	30.017	1515.6	25.20	3561
	1:55	1543.3	29.4	864.0	30.017	1513.3	25.20	3556
3	2:00	1545.8	32.3	835.2	28.192	1517.6	24.36	3557
				849.6				
CASING	2:05	1626.8	36.7	1267.2	60.964	1565.8	36.96	3578
PRESS	2:10	1616.7	41.0	1238.4	58.426	1558.3	36.12	3572
60	2:15	1616.7	45.4	1267.2	60.964	1555.7	36.96	3570
PSIG	2:20	1612.9	49.8	1267.2	60.964	1551.9	36.96	3567
	2:25	1611.7	54.1	1238.4	58.426	1553.3	36.12	3568
4	2:30	1663.6	58.5	1267.2	60.964	1602.6	36.96	3582
				1257.6				

STEP NO. & REMARKS	TIME	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)
CASING	2:35	1728.1	64.3	1670.4	101.631	1626.5	48.72	3616
PRESS	2:40	1719.7	69.9	1612.8	95.243	1624.5	47.04	3612
80	2:45	1701.5	75.7	1670.4	101.631	1599.9	48.72	3595
PSIG	2:50	1699.0	81.3	1612.8	95.243	1603.8	47.04	3590
	2:55	1696.5	87.0	1641.6	98.413	1598.1	47.88	3588
5	3:00	1696.5	92.7	1641.6	98.413	1598.1	47.88	3588
				1641.6				
FALLOFF	3:01	1361.2				1361.2		3408
	3:02	1340.9				1340.9		3396
	3:03	1333.3				1333.3		3388
	3:04	1328.3				1328.3		3384
	3:05	1324.5				1324.5		3379
	3:10	1310.5				1310.5		3367
	3:15	1301.7				1301.7		3357



OIL CONSERVATION DIVISION
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'93 JUL 12 AM 8 59

July 9, 1993

New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe N.M. 87504

Attn: Mr. David Catanach
Engineer, New Mexico Oil Conservation Division

Re: PRESSURE INCREASE ON INJECTION WELL
Central Vacuum Unit #137
Unit D, Section 6
T-18-S, R-35-E
Lea County, New Mexico

Dear David:

Texaco Exploration and Production Inc. requests an increase in the maximum allowable pressure on the above well from 866 psig to 2000 psig. A step rate injection test was ran on the well. Results of the test are attached. 1950

If you have any questions concerning this request, please contact me at 397-0424. Thank you for your assistance in this matter.

Yours very truly,

Darlene de Aragao
Darlene de Aragao
Production Engineer

/ddd
Chrono
Attachments
cc: Jerry Sexton/NMOCD/Hobbs

JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: TEXACO INC.

DATE: JUNE 28, 1993

WELL NAME: CENTRAL VACUUM UNIT WELL NO. 137

WO#: 93-14-1079

Lea County, New Mexico

MID-PERFS. = 4330 - 4698

MDR = 4284

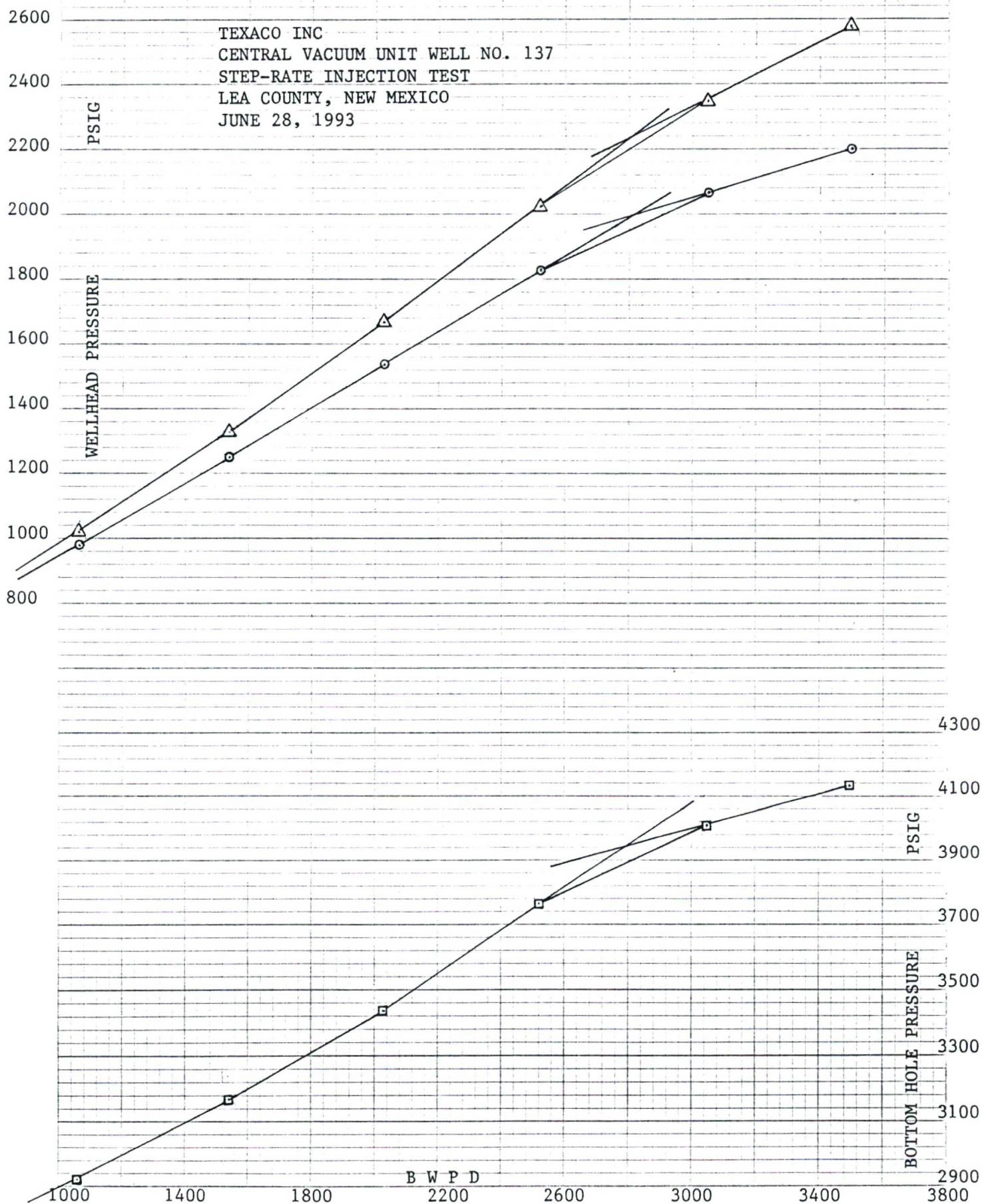
BHP GAUGE DEPTH = 4280

STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMULATIVE 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)
CASING	9:45	681.2				681.2		2640
PRESS	9:50	917.4	3.7	1065.6	41.567	875.8	31.08	2839
200	9:55	975.5	7.4	1065.6	41.567	933.9	31.08	2879
PSIG	10:00	988.2	11.1	1065.6	41.567	946.6	31.08	2897
	10:05	982.0	14.8	1065.6	41.567	940.4	31.08	2910
	10:10	1009.9	18.5	1065.6	41.567	968.3	31.08	2916
1	10:15	1017.5	22.1	1036.8	39.512	978.0	30.24	2922
				1060.8				
CASING	10:20	1171.9	27.6	1584.0	86.545	1085.4	46.20	3048
PRESS	10:25	1217.6	32.8	1497.6	78.015	1139.6	43.68	3087
270	10:30	1236.6	32.8	1555.2	83.656	1152.9	45.36	3116
PSIG	10:35	1268.2	43.5	1526.4	80.813	1187.4	44.52	3137
	10:40	1284.7	48.8	1526.4	80.813	1203.9	44.52	3155
2	10:45	1326.0	54.1	1526.4	80.813	1245.2	44.52	3171
				1535.9				
CASING	10:50	1513.8	61.2	2044.8	138.803	1375.0	59.64	3326
PRESS	10:55	1568.3	68.3	2044.8	138.803	1429.5	59.64	3384
365	11:00	1598.7	75.3	2016.0	135.208	1463.5	58.80	3414
PSIG	11:05	1627.8	82.3	2016.0	135.208	1492.6	58.80	3439
	11:10	1649.3	89.5	2073.6	142.441	1506.9	60.48	3461
3	11:15	1669.6	96.5	2016.0	135.208	1534.4	58.80	3482
				2035.9				
CASING	11:20	1896.1	105.4	2563.2	210.835	1685.3	74.76	3633
PRESS	11:25	1940.4	114.1	2505.6	202.153	1738.2	73.08	3678
450	11:30	1965.7	122.8	2505.6	202.153	1763.5	73.08	3707
PSIG	11:35	1984.7	131.6	2534.4	206.473	1778.2	73.92	3730
	11:40	2006.3	140.4	2534.4	206.473	1799.8	73.92	3749
4	11:45	2026.5	149.0	2476.8	197.876	1828.6	72.24	3768
				2520.0				

STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1)-(4)	(6) INJECTION RATE (gpm) (8)/34.2857	(7) MEASURED BHP (psi)
CASING	11:50	2260.7	159.8	3110.4	301.581	1959.1	90.72	3916
PRESS	11:55	2286.0	170.3	3024.0	286.267	1999.7	88.20	3941
545	12:00	2306.3	180.8	3024.0	286.267	2020.0	88.20	3966
PSIG	12:05	2330.3	191.3	3024.0	286.267	2044.0	88.20	3987
	12:10	2345.5	201.9	3052.8	291.331	2054.2	89.04	4001
5	12:15	2358.2	212.4	3024.0	286.267	2071.9	88.20	4014
				3043.2				
CASING	12:20	2543.1	224.5	3484.8	372.155	2170.9	101.64	4107
PRESS	12:25	2544.4	236.9	3571.2	389.404	2155.0	104.16	4106
600	12:30	2540.6	248.9	3456.0	366.485	2174.1	100.80	4103
PSIG	12:35	2562.3	260.8	3427.2	360.855	2201.4	99.96	4118
	12:40	2572.4	273.0	3513.6	377.865	2194.5	102.48	4130
6	12:45	2577.5	285.2	3513.6	377.865	2199.6	102.48	4135
				3494.4				
FALLOFF	12:46	1811.5				1811.5		3769
CASING	12:47	1701.4				1701.4		3658
PRESS	12:48	1617.8				1617.8		3575
480	12:49	1547.0				1547.0		3503
PSIG	12:50	1490.0				1490.0		3446
	12:55	1287.5				1287.5		3245
	1:00	1158.5				1158.5		3115

- △ RECORDED WELLHEAD PRESSURE
- CORRECTED WELLHEAD PRESSURE BASED ON 2 3/8" TUBING
- BOTTOM HOLE PRESSURE @ 4284 FEET

TEXACO INC
CENTRAL VACUUM UNIT WELL NO. 137
STEP-RATE INJECTION TEST
LEA COUNTY, NEW MEXICO
JUNE 28, 1993





STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE

July 7, 1993

BRUCE KING
GOVERNOR

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

OIL CONSERVATION
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'93 JUL 12 AM

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:

Texaco Exploration & Production Inc	Central Vacuum Unit 44-D	31-17-35
Operator	Lease & Well No.	Unit S-T-R

and my recommendations are as follows:

OK TO 2700

Very truly yours

Jerry Sexton
Supervisor, District I

/bp



OIL CONSERVATION DIVISION STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

'93 JUL 16 AM 9 08
OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE

July 13, 1993

BRUCE KING
GOVERNOR

POST OFFICE BOX 1980
HOBBS, 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:

Texaco Exploration & Production Inc.	Central Vacuum Unit 70-E	36-17-36
Operator	Lease & Well No.	Unit S-T-R

and my recommendations are as follows:

OK - to 2100

Very truly yours

Jerry Sexton
Supervisor, District I

/bp



CONSERVATION DIVISION
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ENERGY

STATE OF NEW MEXICO
AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE

July 13, 1993

BRUCE KING
GOVERNOR

POST OFFICE BOX 1980
HOBBS, 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:

Texaco Exploration & Production Inc.	Central Vacuum Unit 137-D	6-18-35
Operator	Lease & Well No.	Unit S-T-R

and my recommendations are as follows:

OK TO 2000

Very truly yours

Jerry Sexton
Supervisor, District I

/bp



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE
July 8, 1993

OIL CONSERVATION DIVISION
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BRUCE KING
GOVERNOR

POST OFFICE BOX 1980
HOBBS, 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:

Texaco Exploration & Production Inc.	Central Vacuum Unit #120-D	7-18-35
Operator	Lease & Well No.	Unit
		S-T-R

and my recommendations are as follows:

OK

Very truly yours

Jerry Sexton
Supervisor, District I

/bp



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE

OIL CONSERVATION DIVISION
RECEIVED
'93 JUL 12 AM 9 13

July 7, 1993

BRUCE KING
GOVERNOR

POST OFFICE BOX 1980
HOBBS, 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:

Texaco Exploration & Production Inc	Central Vacuum Unit 154-D	30-17-35
Operator	Lease & Well No.	Unit S-T-R

and my recommendations are as follows:

Bad test looks like EQUIP or formation problem

Very truly yours

Jerry Sexton
Supervisor, District I

/bp



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE

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BRUCE KING
GOVERNOR

July 7, 1993

POST OFFICE BOX 1980
HOBBS, 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:

Texaco Exploration & Production Inc	Central Vacuum Unit 128-H	12-18-34
Operator	Lease & Well No.	Unit S-T-R

and my recommendations are as follows:

BAD TEST

Very truly yours

Jerry Sexton
Supervisor, District I

/bp