

CF 6008



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



BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

December 6, 1993

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

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

Attention: Terry L. Fraizer

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

Dear Mr. Fraizer:

Reference is made to your request dated November 22, 1993 to increase the surface injection pressure on three wells in your Central Vacuum Unit. This request is based on step rate tests conducted on these wells between October 7 and 11, 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. 14 Unit E, Section 30, Township 17 South, Range 35 East	1340 PSIG
Central Vacuum Unit Well No. 15 Unit F, Section 30, Township 17 South, Range 35 East	1760 PSIG
Central Vacuum Unit Well No. 159 Unit D, Section 36, Township 17 South, Range 34 East	1790 PSIG
All wells located in Lea County, New Mexico.	

Injection Pressure Increase
Texaco Exploration & Production, Inc.
December 6, 1993
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', with a long, sweeping horizontal stroke extending to the right.

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. T.L. Frazier**

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

Dear Sir:

Reference is made to your request dated **November 22, 1993**, to increase the surface injection pressure on **3 wells in your Central Vacuum Unit**. This request is based on step rate tests conducted on these wells between **October 7 and 11, 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.14 Unit E, Section 30, T17S, R35E	1340 psig
Central Vacuum Unit Well No.15 Unit F, Section 30, T17S, R35E	1760 psig
Central Vacuum Unit Well No.159 Unit D, Section 36, T17S, R34E	1790 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



Texaco E & P

PO Box 1980
Hobbs, NM 88240
505-393-7191

N/R PSI-X
OIL CONSERVATION DIVISION
RECEIVED

NOV 24 AM 10 07

November 22, 1993

Mr. David R. Catanach
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
State Land Office Building
310 Old Santa Fe Trail
P.O. Box 2088
Santa Fe, New Mexico 87504

SUBJECT: REQUEST FOR INCREASED SURFACE INJECTION PRESSURE ON
SELECTED WELLS IN THE CENTRAL VACUUM UNIT
LEA COUNTY, NEW MEXICO

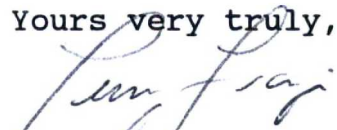
Mr. David Catanach:

Texaco request that the surface injection pressure limit be increased for the three wells on the attached list. The requested increases are based on step rate tests which are attached for your review.

The increases in surface injection pressure are necessary to maintain adequate injection rates, thus ensuring the optimum performance of the waterflood.

Should you have any questions or require additional information, please contact Todd Lackey at (505) 393-7191.

Yours very truly,


T. L. Frazier
Hobbs Area Manager

WTL

cc: Mr. Jerry Sexton
Oil Conservation Division
P.O. Box 1980
Hobbs, NM 88240

Central Vacuum Unit
Texaco Exploration and Production Inc.
Lea County, New Mexico

<u>Well</u>	<u>Present Allow Inj Press (PSIG)</u>	<u>Observed Surface Parting Press (PISG)</u>	<u>Requested Allow Inj Press (PSIG)</u>
CVU Well #14	900	1390	1340
CVU Well #15	902	1810	1760
CVU Well #159	1215	1840	1790

JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: TEXACO EXPLORATION & PRODUCTION

DATE: OCTOBER 7, 1993

WELL NAME CENTRAL VACUUM UNIT NO. 14

WO#: 93-14-1719

Lea County, New Mexico

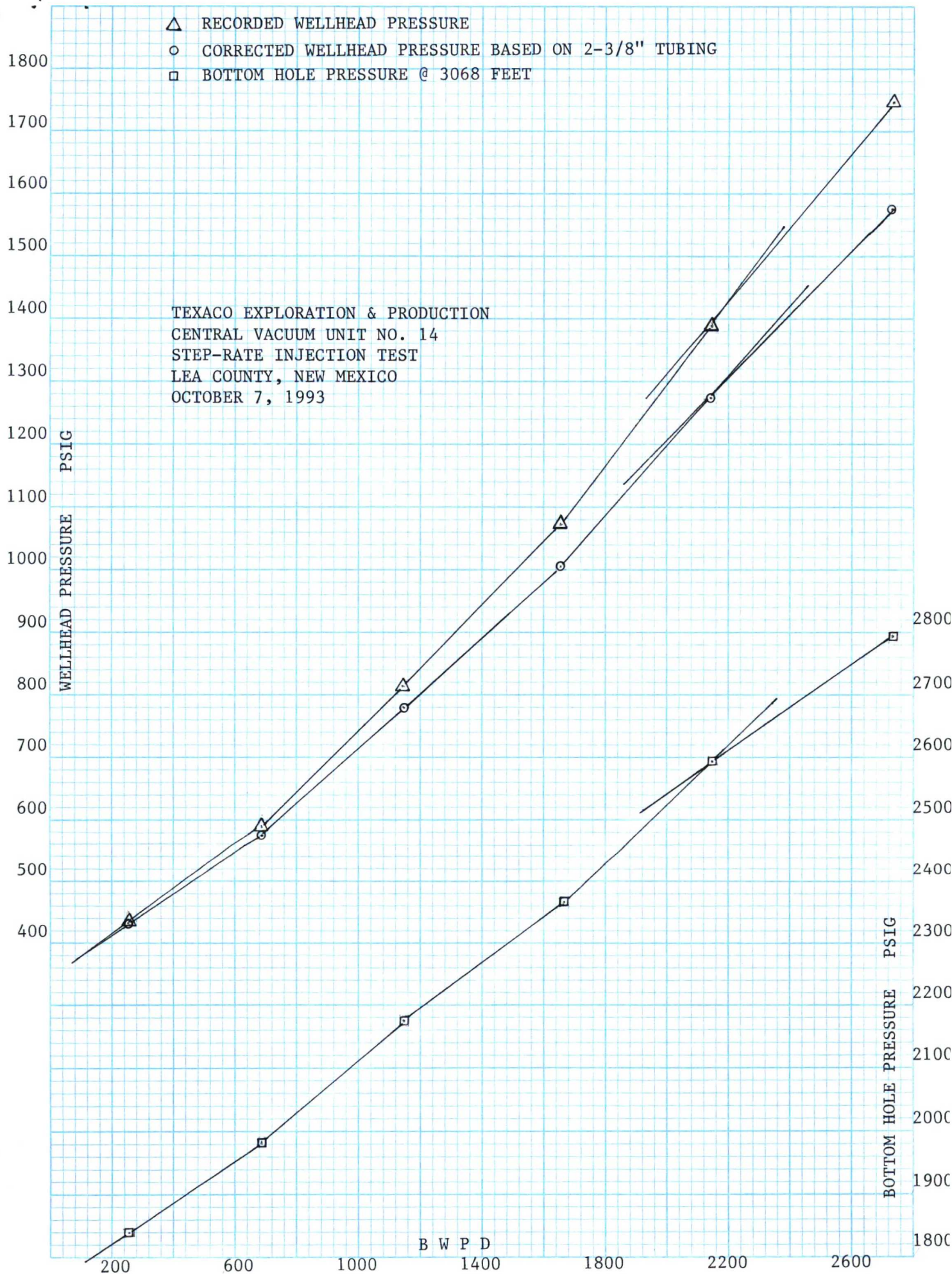
MID-PERFS.

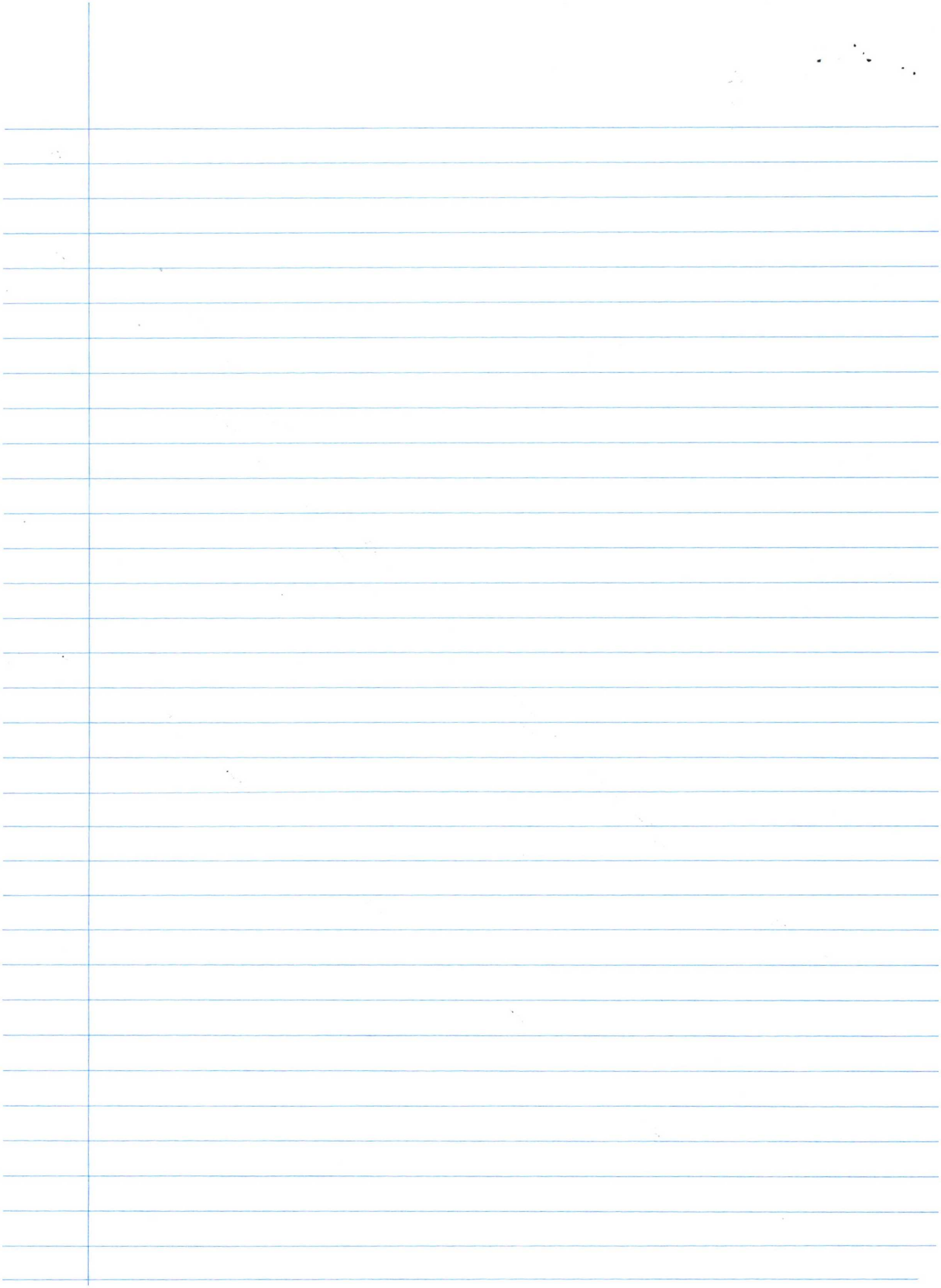
PACKER DEPTH

BHP GAUGE D. 3068

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)
1	9:20	350.4				350.4		1767
	9:25	385.8	0.7	201.6	1.368	384.4	5.88	1791
	9:30	399.8	1.6	259.2	2.177	397.6	7.56	1813
	9:35	423.8	2.5	259.2	2.177	421.6	7.56	1820
	9:40	431.3	3.4	259.2	2.177	429.1	7.56	1838
	9:45	441.5	4.3	259.2	2.177	439.3	7.56	1840
	9:50	435.2	5.3	288.0	2.646	432.6	8.40	1840
				254.4				
	9:55	526.2	7.6	662.4	12.353	513.8	19.32	1905
	10:00	552.8	10.0	691.4	13.372	539.4	20.17	1937
2	10:05	564.2	12.4	691.4	13.372	550.8	20.17	1947
	10:10	573.0	14.8	691.4	13.372	559.6	20.17	1959
	10:15	581.9	17.1	662.4	12.353	569.5	19.32	1970
	10:20	589.5	19.5	691.2	13.365	576.1	20.16	1982
				681.6				
	10:25	732.3	23.5	1152.0	34.386	697.9	33.60	2087
	10:30	751.2	27.5	1152.0	34.386	716.8	33.60	2101
	10:35	767.7	31.5	1152.0	34.386	733.3	33.60	2122
	10:40	777.8	35.5	1152.0	34.386	743.4	33.60	2147
	10:45	812.0	39.5	1152.0	34.386	777.6	33.60	2167
3	10:50	814.6	43.5	1152.0	34.386	780.2	33.60	2175
				1152.0				
	10:55	958.6	49.3	1670.4	68.378	890.2	48.72	2259
	11:00	986.4	55.1	1670.4	68.378	918.0	48.72	2286
	11:05	1024.3	60.9	1670.4	68.378	955.9	48.72	2310
	11:10	1038.3	66.7	1670.4	68.378	969.9	48.72	2329
	11:15	1058.6	72.4	1641.6	66.213	992.4	47.88	2347
	11:20	1073.8	78.2	1670.4	68.378	1005.4	48.72	2363
				1665.6				

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)
5	11:25	1306.7	85.6	2131.2	107.314	1199.4	62.16	2508
	11:30	1334.6	93.1	2160.0	110.012	1224.6	63.00	2533
	11:35	1343.5	100.5	2131.2	107.314	1236.2	62.16	2551
	11:40	1356.2	108.0	2160.0	110.012	1246.2	63.00	2565
	11:45	1367.6	115.5	2160.0	110.012	1257.6	63.00	2580
	11:50	1386.6	123.0	2160.0	110.012	1276.6	63.00	2594
				2150.4				
	11:55	1667.6	132.7	2793.6	177.053	1490.5	81.48	
	12:00	1665.1	141.9	2649.6	160.540	1504.6	77.28	2749
	12:05	1667.7	151.5	2764.8	173.691	1494.0	80.64	
6	12:10	1684.2	161.0	2736.0	170.359	1513.8	79.80	2776
	12:15	1709.5	170.6	2764.8	173.691	1535.8	80.64	2794
	12:20	1745.0	180.0	2707.2	167.056	1577.9	78.96	
				2736.0				
FALLOFF	12:21	1084.2				1084.2		2512
	12:22	1081.7				1081.7		2502
	12:23	1072.8				1072.8		2494
	12:24	1065.2				1065.2		2486
	12:25	1058.9				1058.9		2480
	12:30	1032.4				1032.4		2451
	12:35	1005.9				1005.9		2427





JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: TEXACO EXPLORATION & PRODUCTION

DATE: OCTOBER 8, 1993

WELL NAME CENTRAL VACUUM UNIT NO. 15
Lea County, New Mexico

WO#: 93-14-1720

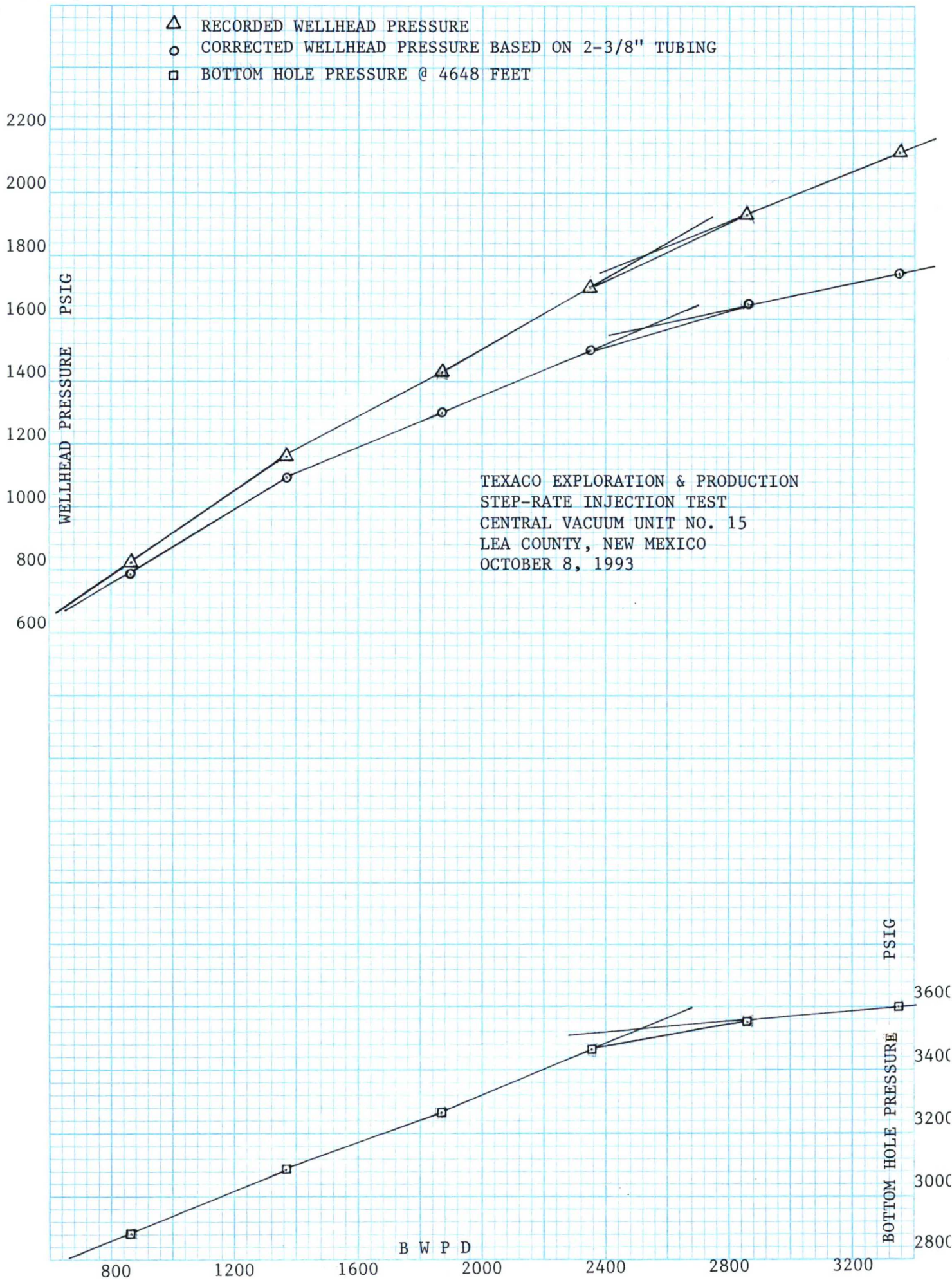
MID-PERFS. 4648

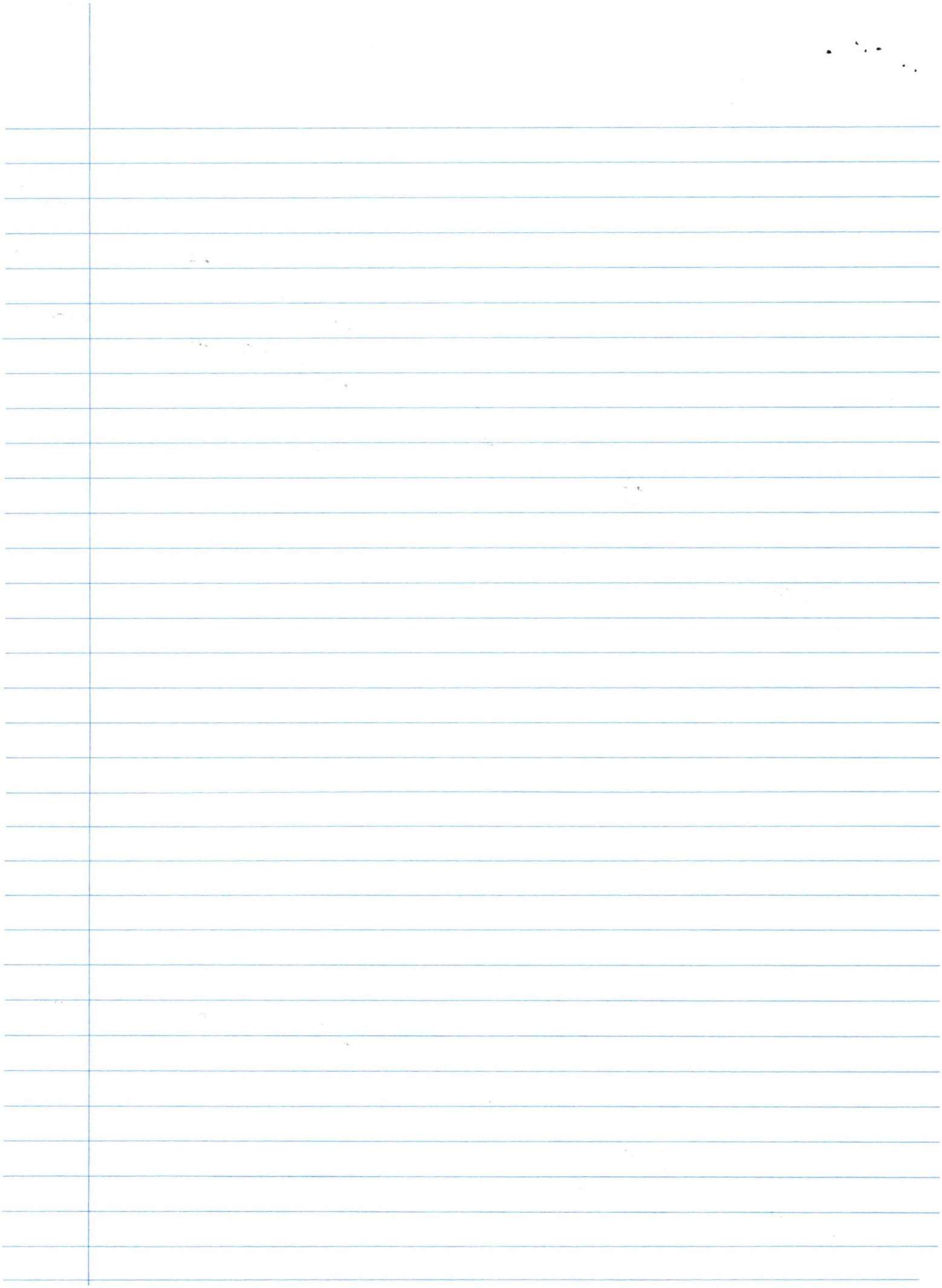
PACKER DEPT 4340

BHP GAUGE I 4648

STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbis)	(3) INJECTION RATE (bbis/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1)-(4)	(6) INJECTION RATE (gpm) (3)/34.2857	(7) MEASURED BHP (psi)
1	11:10	577.8				577.8		2717
	11:15	690.1	3.0	864.0	30.596	659.5	25.20	2781
	11:20	725.4	6.0	864.0	30.596	694.8	25.20	2810
	11:25	744.4	9.0	864.0	30.596	713.8	25.20	2831
	11:30	773.5	12.0	864.0	30.596	742.9	25.20	2850
	11:35	801.3	15.0	864.0	30.596	770.7	25.20	2866
	11:40	824.1	18.0	864.0	30.596	793.5	25.20	2881
				864.0				
	11:45	960.4	22.7	1353.6	70.205	890.2	39.48	2937
	11:50	1004.5	27.4	1353.6	70.205	934.3	39.48	2973
2	11:55	1056.4	32.2	1382.4	72.993	983.4	40.32	3003
	12:00	1095.6	37.0	1382.4	72.993	1022.6	40.32	3030
	12:05	1128.6	41.7	1353.6	70.205	1058.4	39.48	3057
	12:10	1160.2	46.4	1353.6	70.205	1090.0	39.48	3081
				1363.2				
	12:15	1318.4	52.9	1872.0	127.902	1190.5	54.60	3139
	12:20	1347.5	59.4	1872.0	127.902	1219.6	54.60	3177
	12:25	1375.4	66.0	1900.8	131.566	1243.8	55.44	3206
	12:30	1398.3	72.4	1843.2	124.285	1274.0	53.76	3228
	12:35	1422.3	78.9	1872.0	127.902	1294.4	54.60	3248
3	12:40	1430.0	85.4	1872.0	127.902	1302.1	54.60	3267
				1872.0				
	1:15	1642.8	8.2	2361.6	196.582	1446.2	68.88	3392
	1:20	1658.0	16.4	2361.6	196.582	1461.4	68.88	3409
	1:25	1669.4	24.6	2361.6	196.582	1472.8	68.88	3423
	1:30	1690.9	32.8	2361.6	196.582	1494.3	68.88	3438
	1:35	1679.5	40.9	2332.8	192.169	1487.3	68.04	3452
	1:40	1696.0	49.1	2361.6	196.582	1499.4	68.88	3465
				2356.8				

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)
5	1:45	1864.3	59.0	2851.2	278.556	1585.7	83.16	3489
	1:50	1874.5	69.0	2880.0	283.783	1590.7	84.00	3506
	1:55	1889.7	78.9	2851.2	278.556	1611.1	83.16	3519
	2:00	1908.7	88.8	2851.2	278.556	1630.1	83.16	3533
	2:05	1922.6	98.7	2851.2	278.556	1644.0	83.16	3544
	2:10	1931.5	108.7	2880.0	283.783	1647.7	84.00	3554
				2860.8				
	2:15	2101.1	120.2	3312.0	367.518	1733.6	96.60	3567
	2:20	2112.5	131.9	3369.6	379.429	1733.1	98.28	3575
	2:25	2090.9	143.5	3340.8	373.452	1717.4	97.44	3585
6	2:30	2107.4	155.2	3369.6	379.429	1728.0	98.28	3592
	2:35	2115.0	166.9	3369.6	379.429	1735.6	98.28	3594
	2:40	2125.1	178.6	3369.6	379.429	1745.7	98.28	3600
				3355.2				
FALLOFF	2:41	1518.8				1518.8		3583
	2:42	1503.6				1503.6		3574
	2:43	1499.8				1499.8		3564
	2:44	1487.1				1487.1		3555
	2:45	1480.8				1480.8		3548
FIVE MIN	2:50	1449.2				1449.2		3512
	2:55	1422.6				1422.6		3481





JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: TEXACO EXPLORATION & PRODUCTION

DATE: OCTOBER 11, 1993

WELL NAME: CENTRAL VACUUM UNIT NO. 159
Lea County, New Mexico

WO#: 93-14-1721

MID-PERFS. = 4415-4730

PACKER DEPTH = 4360

BHP GAUGE DEPTH = 4422

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)
1	9:30	363.1				363.1		2386
	9:35	444.2	2.0	576.0	13.748	430.5	16.80	2448
	9:40	487.3	3.9	547.2	12.504	474.8	15.96	2479
	9:45	503.9	5.9	576.0	13.748	490.2	16.80	2504
	9:50	519.2	7.9	576.0	13.748	505.5	16.80	2521
	9:55	537.0	9.9	576.0	13.748	523.3	16.80	2536
	10:00	544.6	12.0	604.8	15.047	529.6	17.64	2547
				576.0				
	10:05	671.1	15.7	1065.6	42.905	628.2	31.08	2620
	10:10	704.0	19.4	1065.6	42.905	661.1	31.08	2662
2	10:15	743.2	23.1	1065.6	42.905	700.3	31.08	2695
	10:20	766.1	26.8	1065.6	42.905	723.2	31.08	2722
	10:25	792.7	30.5	1065.6	42.905	749.8	31.08	2745
	10:30	811.7	34.2	1065.6	42.905	768.8	31.08	2765
				1065.6				
	10:35	962.0	39.5	1526.4	83.416	878.6	44.52	2843
	10:40	1006.3	45.0	1584.0	89.333	917.0	46.20	2889
	10:45	1046.9	50.2	1497.6	80.528	966.4	43.68	2928
	10:50	1074.8	55.6	1555.2	86.351	988.4	45.36	2962
	10:55	1107.8	60.9	1526.4	83.416	1024.4	44.52	2991
3	11:00	1134.4	66.2	1526.4	83.416	1051.0	44.52	3016
				1536.0				
	11:05	1295.2	73.3	2044.8	143.274	1151.9	59.64	3092
	11:10	1370.0	80.3	2016.0	139.563	1230.4	58.80	3140
	11:15	1399.1	87.4	2044.8	143.274	1255.8	59.64	3180
	11:20	1451.1	94.4	2016.0	139.563	1311.5	58.80	3215
	11:25	1486.6	101.5	2044.8	143.274	1343.3	59.64	3246
	11:30	1498.1	108.6	2044.8	143.274	1354.8	59.64	3274
				2035.2				

STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbis)	(3) INJECTION RATE (bbis/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1) - (4)	(6) INJECTION RATE (gpm) (3)/34.2857	(7) MEASURED BHP (psi)
5	11:35	1667.7	117.4	2534.4	213.124	1454.6	73.92	3342
	11:40	1705.8	126.3	2563.2	217.626	1488.2	74.76	3382
	11:45	1743.9	135.0	2505.6	208.665	1535.2	73.08	3412
	11:50	1768.0	144.0	2592.0	222.171	1545.8	75.60	3437
	11:55	1779.4	152.8	2534.4	213.124	1566.3	73.92	3457
6	12:00	1799.8	161.6	2534.4	213.124	1586.7	73.92	3474
				2544.0				
	12:05	1965.6	172.2	3196.8	327.482	1638.1	93.24	3514
	12:10	1996.0	182.6	2995.2	290.303	1705.7	87.36	3533
	12:15	1992.2	193.2	3052.8	300.715	1691.5	89.04	3546
7	12:20	2001.1	203.8	3052.8	300.715	1700.4	89.04	3555
	12:25	2020.1	214.3	3024.0	295.488	1724.6	88.20	3562
	12:30	2055.5	224.9	3052.8	300.715	1754.8	89.04	3565
				3038.4				
	12:35	2231.5	237.0	3484.8	384.143	1847.4	101.64	3589
	12:40	2255.5	249.1	3484.8	384.143	1871.4	101.64	3595
	12:45	2255.5	261.9	3686.4	426.263	1829.2	107.52	3595
	12:50	2259.3	273.3	3283.2	344.044	1915.3	95.76	
	12:55	2241.6	285.5	3513.6	390.037	1851.6	102.48	3577
	1:00	2251.7	297.8	3542.4	395.972	1855.7	103.32	3578
FALLOFF				3499.2				
	1:01	1526.4				1526.4		3525
	1:02	1474.5				1474.5		3491
	1:03	1440.4				1440.4		3464
	1:04	1431.5				1431.5		3441
FIVE MIN FIVE MIN	1:05	1399.8				1399.8		3414
	1:10	1339.1				1339.1		3339
	1:15	1288.5				1288.5		3283

- △ RECORDED WELLHEAD PRESSURE
- CORRECTED WELLHEAD PRESSURE BASED ON 2-3/8" TUBING
- BOTTOM HOLE PRESSURE @ 4422 FEET

