



NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

April 20, 1998

SWD-691

PDEV0020900691

Cobra Oil & Gas Corporation
P.O. Box 8206
Wichita Falls, Texas 76307-8206

Attn: Mr. Buzz Thomason

**RE: Injection Pressure Increase,
State SWD Well No.1
Lea County, New Mexico**

Dear Mr. Thomason:

Reference is made to your request dated April 9, 1998 to increase the surface injection pressure on the above referenced well. This request is based on a step rate test conducted on April 3, 1998. 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:

<i>Well and Location</i>	<i>Maximum Surface Injection Pressure</i>
State SWD Well No.1	1088 PSIG
Located in 'J' of Section 16, Township 9 South, Range 37 East, 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,

Lori Wrotenbery,
Director

LW/BES/kv

cc: Oil Conservation Division - Hobbs
Files: SWD-691; PSI-X 4th QTR98

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[illegible]

1. *Phragmites australis* (Cav.) Trin. ex Steud.

Figure 1. The effect of the concentration of the *Agrobacterium* suspension on the transformation efficiency of *Agrobacterium* strains. The concentration of the *Agrobacterium* suspension was 10⁶ cells/ml (○), 10⁷ cells/ml (□), 10⁸ cells/ml (△), and 10⁹ cells/ml (◇). The error bars represent the standard deviation of three independent experiments.

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WEST-TEST, INC.

A SUBSIDIARY OF JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: COBRA OIL & GAS CORPORATION

DATE: APRIL 3, 1998

WELL NAME: STATE NO. 1 SWD
LEA COUNTY, NEW MEXICO

WO#: 98-14-0518

PERFS =

PACKER DEPTH =

BHP GAUGE DEPTH = 4200

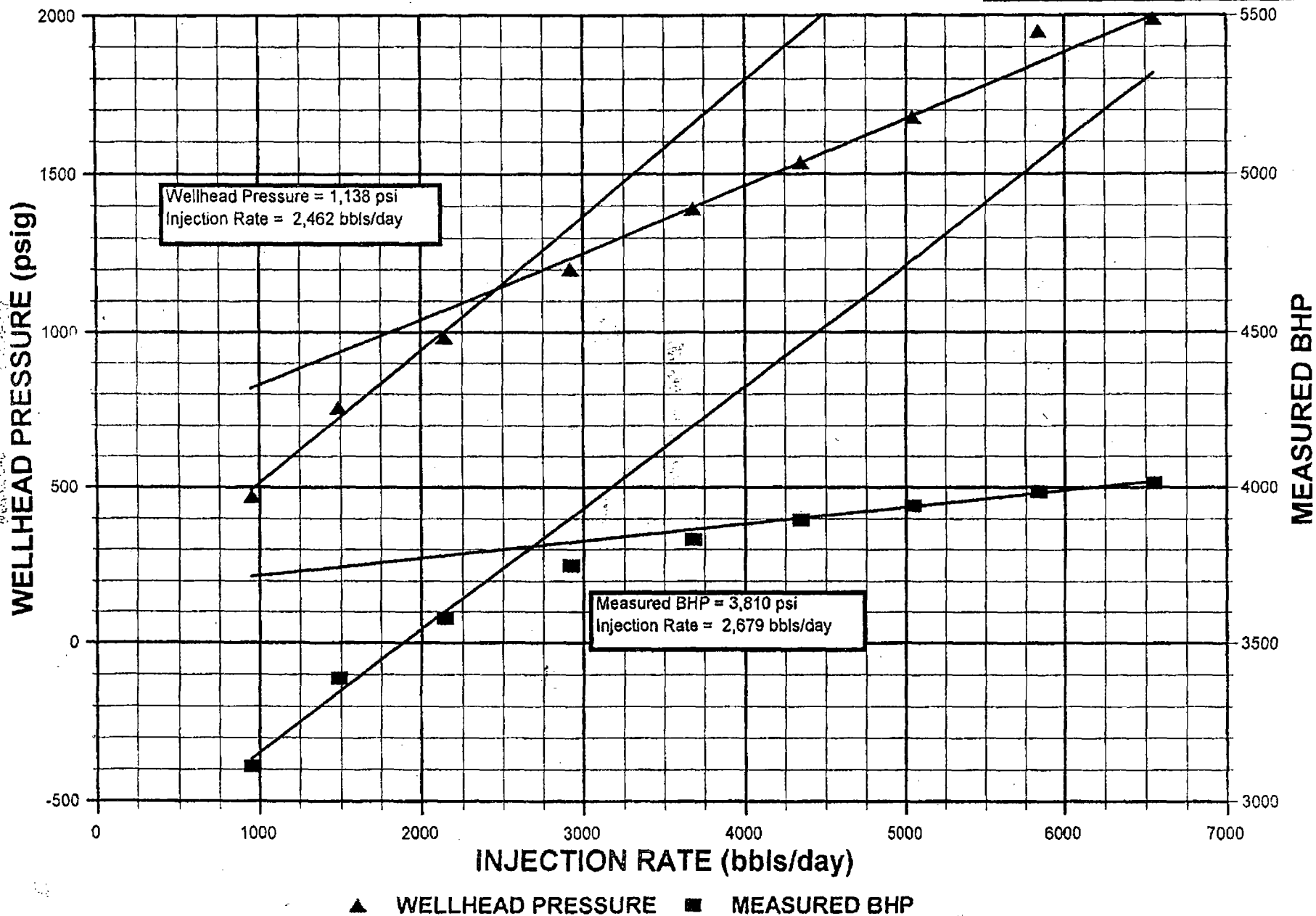
STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1)-(4)	(6) INJECTION RATE (gpm) (3)/34.2057	(7) MEASURED BHP (psi)
	10:10							2632.0
	10:15	264.1	3.1	892.8	11.007	253.1	26.04	2886.2
	10:20	394.8	6.5	979.2	13.058	381.7	28.56	3025.8
1	10:25	473.5	9.9	979.2	13.058	460.4	28.56	3111.9
				950.4				
	10:30	632.1	15.0	1468.8	27.646	604.5	42.84	3252.0
	10:35	690.5	20.3	1526.4	29.685	660.8	44.52	3332.2
2	10:40	759.0	25.4	1468.8	27.646	731.4	42.84	3389.6
				1488.0				
	10:45	888.4	33.0	2188.8	57.828	830.6	63.84	3487.7
	10:50	931.5	40.4	2131.2	55.044	876.5	62.16	3542.8
3	10:55	984.8	47.7	2102.4	53.676	931.1	61.32	3580.0
				2140.8				
	11:00	1119.2	57.7	2880.0	96.080	1023.1	84.00	3654.9
	11:05	1176.2	67.9	2937.6	99.665	1076.5	85.68	3704.2
4	11:10	1204.0	78.1	2937.6	99.665	1104.3	85.68	3750.0
				2918.4				
	11:15	1334.5	91.4	3830.4	162.838	1171.7	111.72	3782.6
	11:20	1361.0	103.7	3542.4	140.915	1220.1	103.32	3813.7
5	11:25	1392.6	116.4	3657.6	149.509	1243.1	106.68	3833.7
				3676.8				
	11:30	1513.0	131.6	4377.6	208.469	1304.5	127.68	3865.7
	11:35	1528.2	146.7	4348.8	205.939	1322.3	126.84	3883.3
6	11:40	1539.6	161.7	4320.0	203.423	1336.2	126.00	3896.9
				4348.8				
	11:45	1654.9	179.2	5040.0	270.553	1384.3	147.00	3917.6
	11:50	1668.8	196.7	5040.0	270.553	1398.2	147.00	3932.0
7	11:55	1680.2	214.2	5040.0	270.553	1409.6	147.00	3943.2
				5040.0				

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)
8	12:00	1819.6	234.4	5817.6	352.802	1466.8	169.68	3964.0
	12:05	1832.3	254.7	5846.4	356.040	1476.3	170.52	3976.0
	12:10	1951.4	275.0	5846.4	356.040	1595.4	170.52	3988.8
9	12:15	1970.4	297.9	5836.8	444.966	1525.4	192.36	4001.6
	12:20	1981.8	320.5	6595.2	434.242	1547.6	189.84	4011.2
	12:25	1991.9	343.2	6508.8	437.804	1554.1	190.68	4017.0
FALLOFF	12:26	1335.1		6537.6		1335.1		3998.4
	12:27	1345.2		6547.2		1345.2		3986.4
	12:28	1333.8				1333.8		3976.0
	12:29	1324.9				1324.9		3967.2
	12:30	1317.3				1317.3		3959.0
	12:35	1285.6				1285.6		3926.4
	12:40	1260.2				1260.2		3900.9

STEP RATE INJECTION TEST

COBRA OIL & GAS CORPORATION

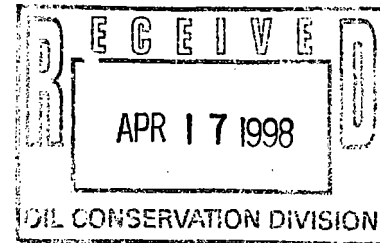
Well Name:
State No. 1 SWD
Lea County, New Mexico





PS1-X N/R

P.O. BOX 8206
WICHITA FALLS,
TEXAS 76307-8206
TELEPHONE (940) 716-5100
PRODUCTION FAX (940) 716-5110
WELL LOG FAX (940) 716-5180
LAND FAX (940) 716-5210
ACCOUNTING FAX (940) 716-5150
EXPLORATION FAX (940) 716-5170



April 14, 1998

Mr. David Catanach
New Mexico Oil Conservation Division
2040 Pacheco Street
Santa Fe, New Mexico 87505

Re: Step Rate Injection Test
State #1 SWD - Order SWD-691
Section 16, T9S-R37E
Lea County, New Mexico

Dear Mr. Catanach:

Enclosed is a Step Rate Test run on the captioned well on April 3, 1998. Cobra Oil & Gas Corporation respectfully requests an increase in injection pressure based on this test.

Thank you for your attention to this request. Should you require additional information, please advise.

Sincerely yours,

A handwritten signature in cursive script that reads "Rory Edwards".

Rory Edwards
Production Supervisor

RRE:jt
Enclosure
LTR437

xc: District Office, Hobbs, New Mexico

WEST-TEST, INC.

A SUBSIDIARY OF JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: COBRA OIL & GAS CORPORATION

DATE: APRIL 3, 1998

WELL NAME: STATE NO. 1 SWD
LEA COUNTY, NEW MEXICO

WO#: 98-14-0518

PERFS =

PACKER DEPTH =

BHP GAUGE DEPTH = 4200

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)/24.2057	(7) MEASURED BHP (psi)
1	10:10							2632.0
	10:15	264.1	3.1	892.8	11.007	253.1	26.04	2886.2
	10:20	394.8	6.5	979.2	13.058	381.7	28.56	3025.8
	10:25	473.5	9.9	979.2	13.058	460.4	28.56	3111.9
				950.4				
2	10:30	632.1	15.0	1468.8	27.646	604.5	42.84	3252.0
	10:35	690.5	20.3	1526.4	29.685	660.8	44.52	3332.2
	10:40	759.0	25.4	1468.8	27.646	731.4	42.84	3389.6
3				1488.0				
	10:45	888.4	33.0	2188.8	57.828	830.6	63.84	3487.7
	10:50	931.5	40.4	2131.2	55.044	876.5	62.16	3542.8
	10:55	984.8	47.7	2102.4	53.676	931.1	61.32	3580.0
				2140.8				
4	11:00	1119.2	57.7	2880.0	96.080	1023.1	84.00	3654.9
	11:05	1176.2	67.9	2937.6	99.665	1076.5	85.68	3704.2
	11:10	1204.0	78.1	2937.6	99.665	1104.3	85.68	3750.0
				2918.4				
5	11:15	1334.5	91.4	3830.4	162.838	1171.7	111.72	3782.6
	11:20	1361.0	103.7	3542.4	140.915	1220.1	103.32	3813.7
	11:25	1392.6	116.4	3657.6	149.509	1243.1	106.68	3833.7
				3676.8				
6	11:30	1513.0	131.6	4377.6	208.469	1304.5	127.68	3865.7
	11:35	1528.2	146.7	4348.8	205.939	1322.3	126.84	3883.3
	11:40	1539.6	161.7	4320.0	203.423	1336.2	126.00	3896.9
				4348.8				
7	11:45	1654.9	179.2	5040.0	270.553	1384.3	147.00	3917.6
	11:50	1668.8	196.7	5040.0	270.553	1398.2	147.00	3932.0
	11:55	1680.2	214.2	5040.0	270.553	1409.6	147.00	3943.2
				5040.0				

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)
8	12:00	1819.6	234.4	5817.6	352.802	1466.8	169.68	3964.0
	12:05	1832.3	254.7	5846.4	356.040	1476.3	170.52	3976.0
	12:10	1951.4	275.0	5846.4	356.040	1595.4	170.52	3988.8
				5836.8				
9	12:15	1970.4	297.9	6595.2	444.966	1525.4	192.36	4001.6
	12:20	1981.8	320.5	6508.8	434.242	1547.6	189.84	4011.2
	12:25	1991.9	343.2	6537.6	437.804	1554.1	190.68	4017.0
				6547.2				
FALLOFF	12:26	1335.1				1335.1		3998.4
	12:27	1345.2				1345.2		3986.4
	12:28	1333.8				1333.8		3976.0
	12:29	1324.9				1324.9		3967.2
	12:30	1317.3				1317.3		3959.0
	12:35	1285.6				1285.6		3926.4
	12:40	1260.2				1260.2		3900.9

STEP RATE INJECTION TEST

COBRA OIL & GAS CORPORATION

Well Name:
State No. 1 SWD
Lea County, New Mexico

