

Britton McQuien
Petroleum Engineer

March 28, 2002

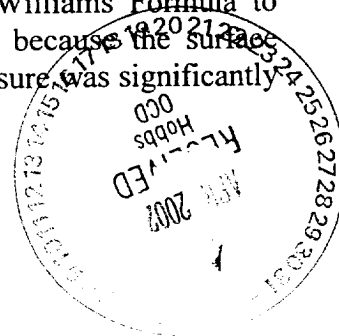
Subject: Request increase in surface injection for wells North Vacuum Abo West Unit #3 and #5

Dear Mr. Catanach:

Texaco Exploration and Production Inc. respectfully requests increases in injection pressure for the following North Vacuum Abo West Unit wells:

Well Number	API Number	Location	Requested Max Surface Water Injection Pressure	Requested Max Surface CO ₂ Injection Pressure
3	3002524495	Unit L, Section 15, T-17S, R-34E	3050 PSIG	N/A
5	3002535562	Unit D, Section 2, T-17S, R-34E	3400 PSIG	N/A

Enclosed, please find step rate tests for the wells listed above. In addition, a plot of bottom-hole pressure versus rate has also been included using the Hazen Williams Formula to account for frictional pressure loss. This calculation was performed because the surface pressures did not plot linearly versus rate, indicating that frictional pressure was significantly impacting the surface pressures.



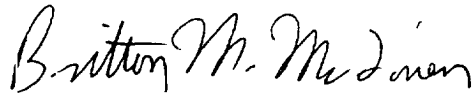
March 28, 2002

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ChevronTexaco

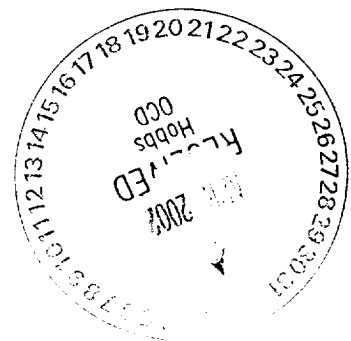
If you have any questions or comments about this request, please contact Britton M. McQuien @ (915) 687-7218.

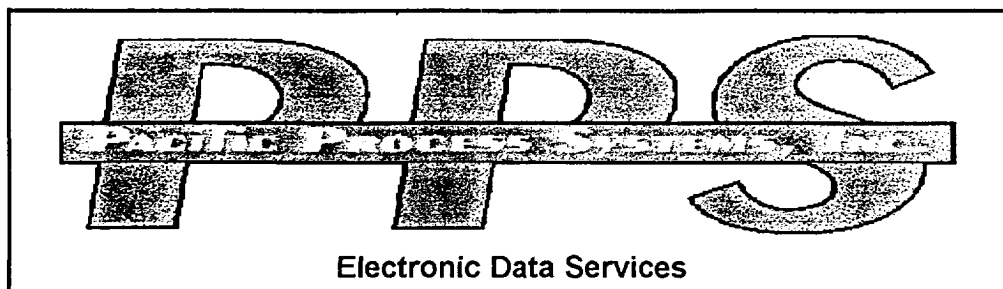
Very Truly Yours,



Britton M. McQuien
Texaco Exploration and Production, Inc.
15 Smith Road
Midland, Texas 79705

cc: Chris Williams





Step Rate Injection Test Report

for

Chevron / Texaco

NVAWU #3

0

Sec.15 - T17S - R34E

03-07-02

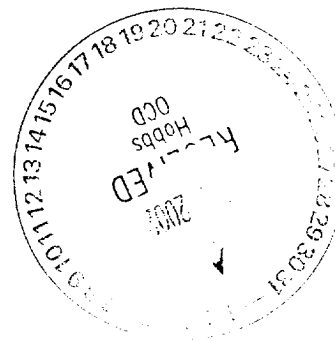
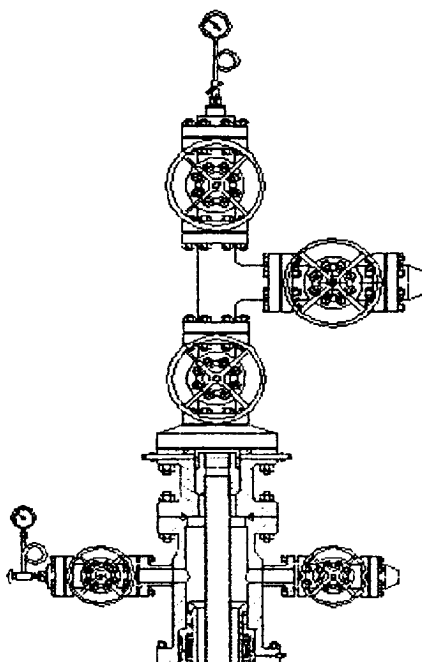
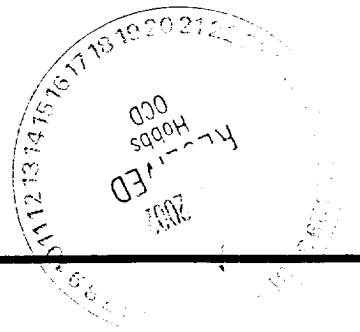
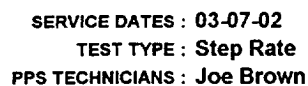
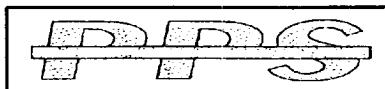


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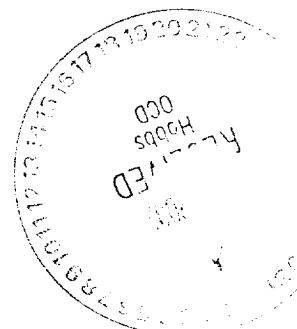


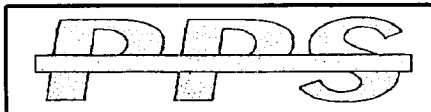


COMPANY : Chevron / Texaco
WELL: NVAWU #3
COMPANY REP: Britton McQuien
PERFORATIONS: N/A

SERVICE DATES : 03-07-02
TEST TYPE : Step Rate
PPS TECHNICIANS : Joe Brown

DATE	TIME	REMARKS
03/07/02	10:15	Start test.
03/07/02	13:02	
03/07/02	13:03	
03/07/02	13:04	
03/07/02	13:05	
03/07/02	13:06	
03/07/02	13:07	
03/07/02	13:08	
03/07/02	13:09	
03/07/02	13:10	
03/07/02	13:15	End Test.

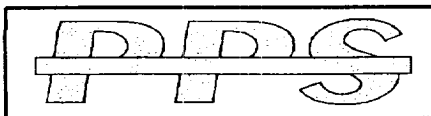




COMPANY : Chevron / Texaco
 WELL: NVAWU #3
 COMPANY REP: Britton McQuien
 PERFORATIONS: N/A

SERVICE DATES : 03-07-02
 TEST TYPE : Step Rate
 PPS TECHNICIANS : Joe Brown

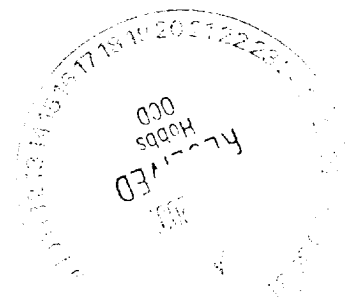
STEP NO.	TIME	SURFACE TUBING PRESS.	CUMULATIVE VOL INJECTED	INJECTION RATE	INJECTION RATE (gpm)	MEASURED BHP
	10:15	47.6				
	10:20	101.9	4.4	1271.1	37.07	
	10:25	156.6	8.8	1268.5	37.00	
1	10:30	332.8	13.9	1470.6	42.89	
	10:35	439.7	19.5	1606.8	46.86	
	10:40	521.8	25.1	1607.3	46.88	
2	10:45	575.5	30.7	1607.2	46.88	
	10:50	875.0	37.8	2047.5	59.72	
	10:55	998.0	44.9	2048.8	59.76	
3	11:00	1048.2	52.1	2066.0	60.26	
	11:05	1364.3	60.5	2421.0	70.61	
	11:10	1469.6	69.0	2445.7	71.33	
4	11:15	1538.0	77.4	2439.4	71.15	
	11:20	1874.6	86.2	2517.5	73.43	
	11:25	1702.4	95.2	2610.4	76.14	
5	11:30	1876.7	104.6	2703.2	78.84	
	11:35	1844.4	114.3	2796.1	81.55	
	11:40	1934.5	124.2	2853.1	83.22	
6	11:45	2126.9	134.2	2877.0	83.91	
	11:50	2425.3	144.7	3003.2	87.59	
	11:55	2477.0	155.7	3168.5	92.41	
7	12:00	2563.7	166.6	3158.3	92.12	
	12:05	2916.5	178.9	3529.0	102.93	
	12:10	2972.3	191.3	3591.9	104.76	
8	12:15	3046.4	203.9	3622.2	105.65	
	12:20	3416.8	218.3	4128.3	120.41	
	12:25	3453.7	232.5	4112.7	119.95	
9	12:30	3539.1	246.8	4119.2	120.14	
	12:35	3888.4	262.3	4445.9	129.67	
	12:40	3871.7	277.8	4457.6	130.01	
10	12:45	3931.1	293.7	4585.3	133.74	
	12:50	4009.9	310.5	4846.9	141.37	
	12:55	4043.5	327.6	4922.9	143.59	



COMPANY : Chevron / Texaco
WELL: NVAWU #3
COMPANY REP: Britton McQuien
PERFORATIONS: N/A

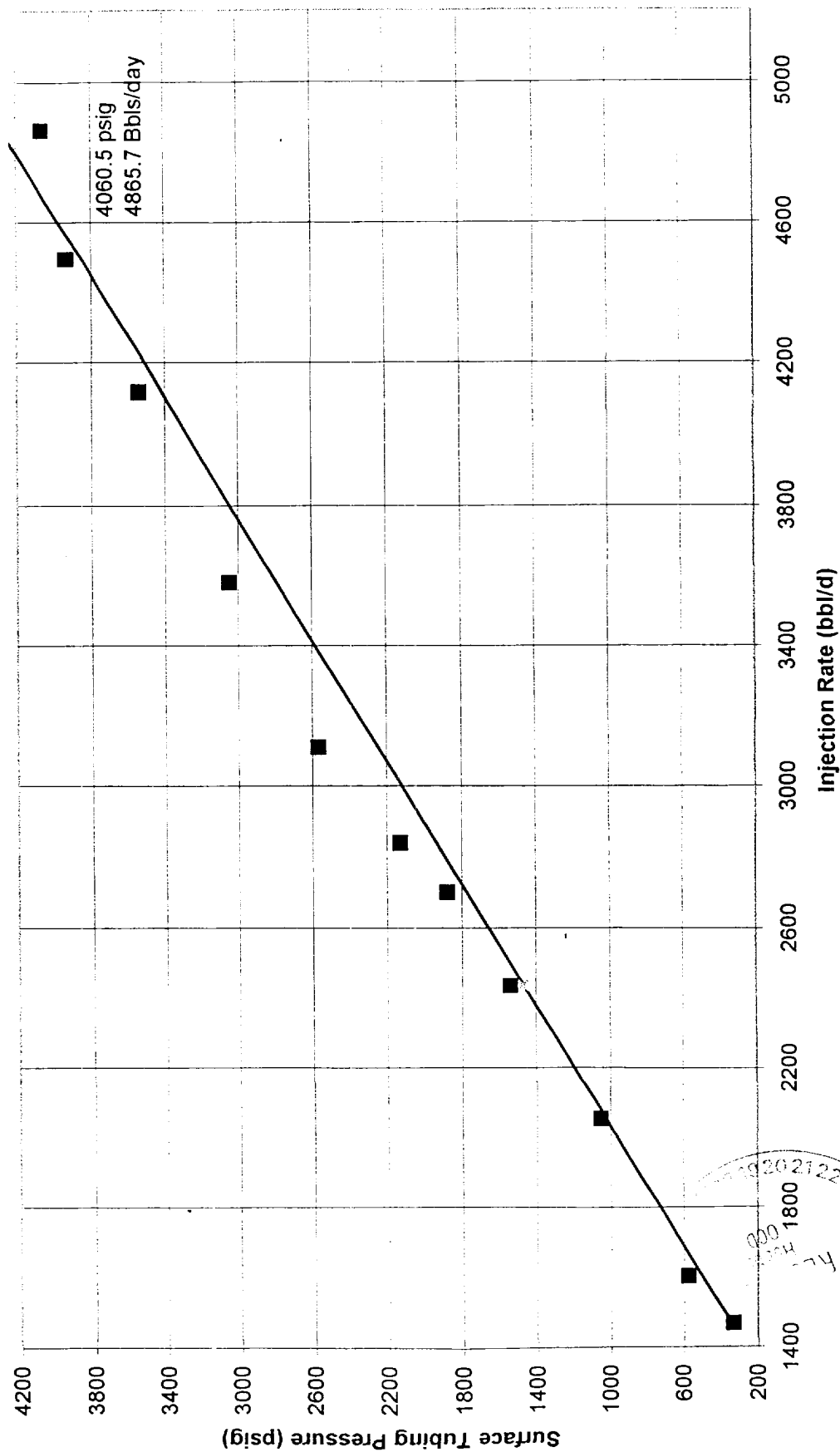
SERVICE DATES : 03-07-02
TEST TYPE : Step Rate
PPS TECHNICIANS : Joe Brown

STEP NO.	TIME	SURFACE TUBING PRESS.	CUMULATIVE VOL INJECTED	INJECTION RATE	INJECTION RATE (gpm)	MEASURED BHP
			(bbls)	(bbls/hr)	(bbls/hr)	(psi)
Falloff	13:00	4060.5	344.4	4827.3	140.80	
	13:01	2552.0				
	13:02	2529.5				
	13:03	2470.3				
	13:04	2429.4				
	13:05	2392.1				
	13:06	2358.5				
	13:07	2327.6				
	13:08	2298.8				
	13:09	2271.3				
	13:10	2247.4				
	13:15	2141.6				



Pacific Process Systems, Inc.

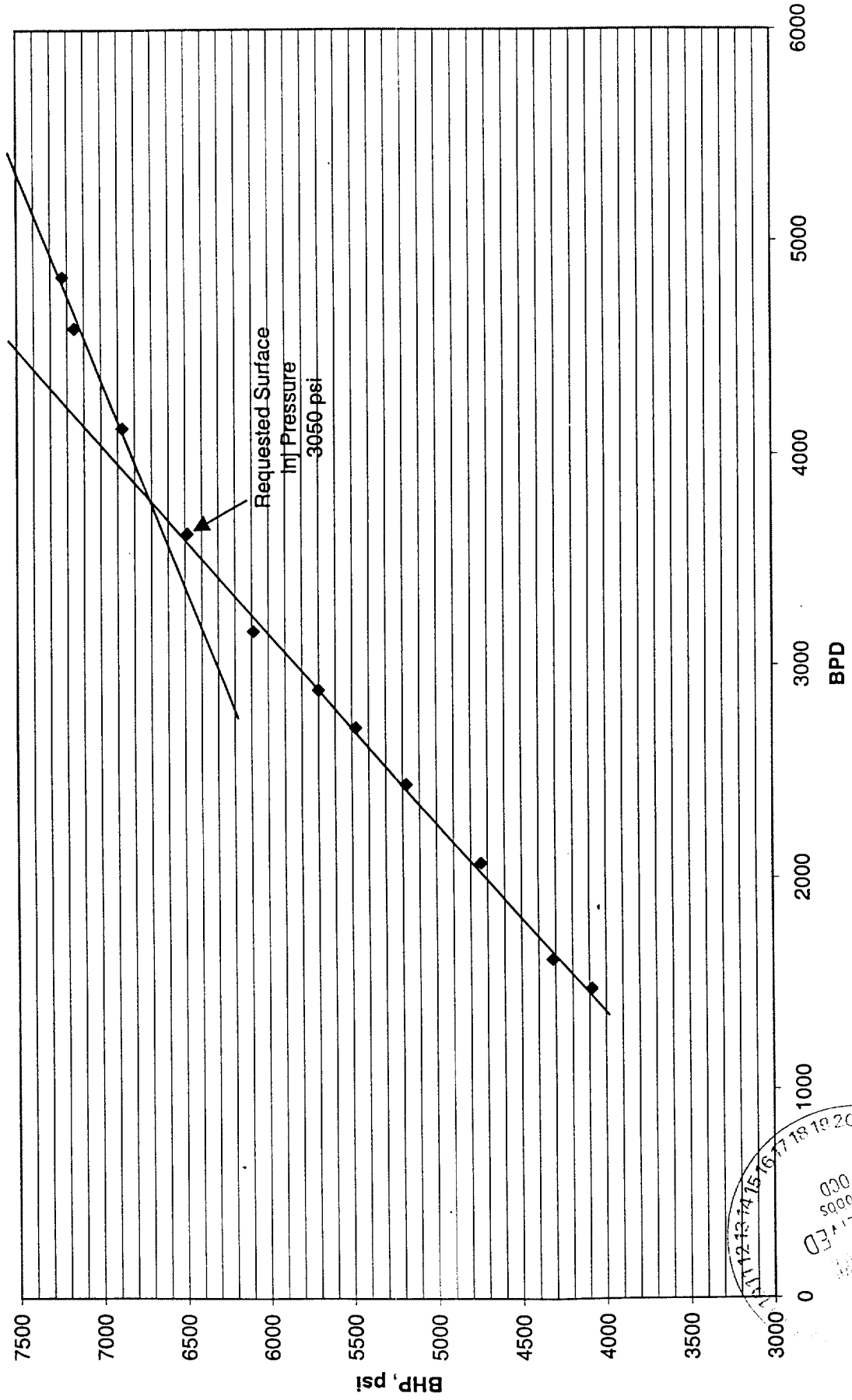
Step Rate Injection Test



3406 Lovington Hwy.
Hobbs, NM 88240

Phone: (505) 392-8813
Fax: (505) 392-8612

NVAWU #3



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