



NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

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

March 21, 1996

CF 11113
R-10251

Great Western Drilling Company
P.O. Box 1659
Midland, Texas 79702

EOR-21
PEOR0000212602

Attn: Mr. Joe N. Clement

**RE: Injection Pressure Increase South Carter (San Andres)
Unit Waterflood Project, Lea County, New Mexico**

Dear Mr. Clement:

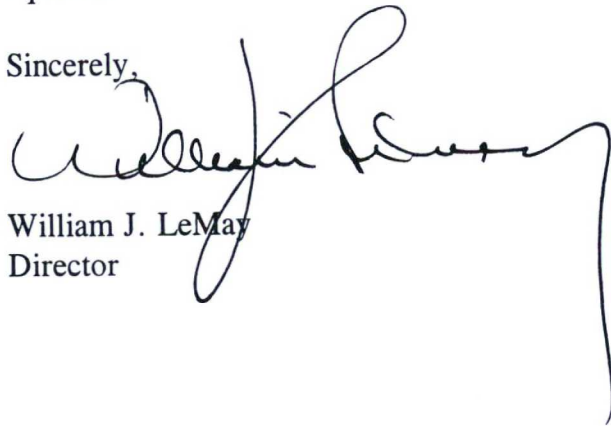
Reference is made to your request dated March 4, 1996 to increase the surface injection pressure on 4 wells in the above referenced waterflood project. This request is based on step rate tests conducted between February 1 and 19, 1996. The results of the tests have been reviewed by my staff and we feel 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 Surface Injection Pressure
South Carter (San Andres) Unit Well No.102, 'N', Section 5	1280 PSIG
South Carter (San Andres) Unit Well No.103, 'K', Section 5	1790 PSIG
South Carter (San Andres) Unit Well No.303, 'D', Section 8	1640 PSIG
South Carter (San Andres) Unit Well No.402, 'F', Section 8	1240 PSIG
Located in Township 18 South, Range 39 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,


William J. LeMay
Director

Injection Pressure Increase
Great Western Drilling Company
March 21, 1996
Page 2

WJL/BES

cc: Oil Conservation Division - Hobbs
Files: Case No.11113; EOR-21; PSI-X 3rd QTR 96



GREAT WESTERN DRILLING COMPANY
Post Office Box 1659 • Midland, Texas 79702 • 915/682-5241



March 4, 1996

TO: David Catanach
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87504

Re: South Carter (San Andres) Unit
Maximum Injection Pressure

Mr Catanach:

Great Western Drilling Company respectfully requests an increase in the maximum injection pressure on our South Carter (San Andres) Unit. Currently, the maximum injection pressure is 0.2 psi per foot, as outlined in Order No. R-110251. Results of the step rate tests on the 4 injection wells in the unit are as follows:

Well Number	Surface Parting Pressure
LEA SCSAU #102 # 2	1330 psi 1280
LEA SCSAU #103 # 3	1750 psi 1790
SYLVESTER SCSAU #303	1700 psi 1640
MCQU SCSAU #402	1300 psi 1240

It is our recommendation the new maximum surface injection pressures of 50 psi under the surface parting pressure, as indicated by the step rate tests, be approved. These wells are located in T18S, R39E, Lea County, New Mexico.

If you have any questions regarding this matter, please feel free to contact my office at 505-396-5538.

Very truly yours,

Joe N. Clement
Division Engineer

cc: Jerry Sexton - Hobbs OCD

LIGHTFOOT WIRELINE SERVICE, INC.

STEP RATE TEST

GREAT WESTERN
SOUTH CARTER UNIT #102
SOUTH CARTER

2/1/96

WELL DATA

WELL STATUS: INJECTING
PRESSURE DATUM: 5174'
TUBING: 2 3/8"
CASING:
PERFS:
FORMATION:
PACKER DEPTH:
T.D. :

TEST INFORMATION

STABILIZED RATE: 200 B/D
STABILIZED PRESSURE: 3063.30 BHP
RATE INCREMENTS: 100 B/D
STEP LENGTH: 30 MINS.
CUMULATIVE INJECTION:
TEST OPERATOR: D. GRYDER

SUMMARY

BHP PARTING PRESSURE: ---- 3435.00 BHPSI
SURFACE PARTING PRESSURE: 1330.00 SPSI
PARTING GRADIENT: ----- .66

COMPANY: LIGHTFOOT WIRELINE SERV
CLIENT: GREAT WESTERN
GAUGE NUMBER: 77675
WELL NAME: SOUTH CARTER UNIT #102
WELL NUMBER: 1
TEST NUMBER: 1
LOCATION: SOUTH CARTER
TEST OPERATOR: D. GRYDER
COMMENTS: STEP-RATE TEST BHP/RATE
GAUGE SET @ 5174'

POSITION	GAUGE SERIAL NUMBER
1	
2	63150
3	77675
4	

PAGE START DATE: 1/ 1/96
PAGE START TIME: 11:28:59
DATA FILE: 6

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE °F	COMMENTS
0.000	200.00		91.75	SPSI 900
-0.002	200.00	3063.30		
0.034	300.00		91.75	
0.032	300.00	3073.22		
0.065	300.00		91.75	
0.067	300.00	3080.87		
0.100	300.00		91.75	
0.098	300.00	3085.45		
0.131	300.00		91.76	
0.134	300.00	3089.92		
0.163	300.00		91.76	
0.165	300.00	3094.44		
0.198	300.00		91.76	
0.196	300.00	3097.91		
0.229	300.00		91.73	
0.232	300.00	3101.01		
0.265	300.00		91.70	
0.263	300.00	3103.43		
0.296	300.00		91.68	
0.298	300.00	3106.64		
0.331	300.00		91.65	
0.329	300.00	3109.02		
0.363	300.00		91.63	
0.365	300.00	3111.45		
0.394	300.00		91.61	
0.396	300.00	3113.30		
0.429	300.00		91.59	
0.427	300.00	3115.02		
0.460	300.00		91.57	
0.463	300.00	3117.26		
0.494	300.00		91.55	SPSI 960
0.497	300.00	3119.25		
0.529	400.00		91.53	
0.527	400.00	3130.80		
0.560	400.00		91.49	
0.562	400.00	3139.33		
0.595	400.00		91.45	
0.593	400.00	3144.16		
0.626	400.00		91.42	
0.629	400.00	3150.49		
0.658	400.00		91.43	
0.660	400.00	3155.17		
0.693	400.00		91.30	
0.691	400.00	3159.67		
0.724	400.00		91.25	
0.727	400.00	3163.42		
0.760	400.00		91.20	
0.758	400.00	3167.56		
0.791	400.00		91.16	
0.793	400.00	3172.06		

PAGE START DATE: 1/ 1/96
PAGE START TIME: 12:18:35
DATA FILE: 6

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE `F	COMMENTS
0.827	400.00		91.11	
0.825	400.00	3176.39		
0.858	400.00		91.07	
0.856	400.00	3179.31		
0.889	400.00		91.03	
0.891	400.00	3181.72		
0.924	400.00		90.99	
0.923	400.00	3183.57		
0.956	400.00		90.96	
0.958	400.00	3185.33		
0.992	400.00		90.93	SPSI 1040
0.990	400.00	3186.63		
1.021	500.00		90.90	
1.024	500.00	3196.81		
1.057	500.00		90.87	
1.055	500.00	3201.32		
1.088	500.00		90.85	
1.091	500.00	3203.98		
1.124	500.00		90.82	
1.122	500.00	3215.98		
1.155	500.00		90.77	
1.157	500.00	3225.51		
1.186	500.00		90.73	
1.188	500.00	3229.93		
1.221	500.00		90.66	
1.219	500.00	3233.83		
1.253	500.00		90.60	
1.255	500.00	3238.02		
1.288	500.00		90.53	
1.286	500.00	3242.04		
1.319	500.00		90.48	
1.322	500.00	3246.43		
1.350	500.00		90.44	
1.353	500.00	3250.37		
1.386	500.00		90.39	
1.384	500.00	3254.16		
1.417	500.00		90.35	
1.419	500.00	3258.89		
1.453	500.00		90.30	
1.451	500.00	3262.45		
1.484	500.00		90.26	SPSI 1120
1.486	500.00	3265.76		
1.518	600.00		90.22	
1.516	600.00	3268.63		
1.549	600.00		90.16	
1.551	600.00	3279.66		
1.584	600.00		90.09	
1.583	600.00	3285.90		
1.616	600.00		90.03	
1.618	600.00	3293.33		

PAGE START DATE: 1/ 1/96
PAGE START TIME: 13: 8: 5
DATA FILE: 6

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE °F	COMMENTS
1.652	600.00		89.94	
1.650	600.00	3297.93		
1.683	600.00		89.86	
1.681	600.00	3302.69		
1.714	600.00		89.79	
1.716	600.00	3308.74		
1.749	600.00		89.72	
1.748	600.00	3313.28		
1.781	600.00		89.65	
1.783	600.00	3317.81		
1.816	600.00		89.58	
1.814	600.00	3321.28		
1.847	600.00		89.53	
1.850	600.00	3325.29		
1.878	600.00		89.47	
1.881	600.00	3329.49		
1.914	600.00		89.42	
1.912	600.00	3332.88		
1.945	600.00		89.37	
1.948	600.00	3336.61		
1.979	600.00		89.33	SPSI 1200
1.982	600.00	3339.81		
2.014	700.00		89.27	
2.013	700.00	3348.44		
2.046	700.00		89.20	
2.048	700.00	3356.73		
2.077	700.00		89.11	
2.079	700.00	3362.18		
2.112	700.00		89.02	
2.110	700.00	3367.56		
2.143	700.00		88.92	
2.146	700.00	3373.00		
2.179	700.00		88.82	
2.177	700.00	3377.28		
2.210	700.00		88.75	
2.213	700.00	3382.09		
2.246	700.00		88.66	
2.244	700.00	3385.59		
2.277	700.00		88.60	
2.279	700.00	3390.17		
2.308	700.00		88.54	
2.310	700.00	3394.70		
2.343	700.00		88.47	
2.341	700.00	3398.12		
2.374	700.00		88.40	
2.377	700.00	3401.64		
2.410	700.00		88.33	
2.408	700.00	3404.65		
2.441	700.00		88.28	
2.444	700.00	3408.28		

PAGE START DATE: 1/ 1/96
PAGE START TIME: 13:57:35
DATA FILE: 6

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE `F	COMMENTS
2.477	700.00		88.22	SPSI 1280
2.475	700.00	3411.08		
2.508	800.00		88.16	
2.510	800.00	3418.81		
2.539	800.00		88.08	
2.541	800.00	3424.35		
2.574	800.00		87.97	
2.572	800.00	3428.93		
2.605	800.00		87.86	
2.608	800.00	3433.56		
2.641	800.00		87.74	
2.639	800.00	3437.18		
2.672	800.00		87.65	
2.674	800.00	3440.64		
2.708	800.00		87.56	
2.706	800.00	3443.19		
2.739	800.00		87.49	
2.741	800.00	3445.02		
2.770	800.00		87.41	
2.772	800.00	3446.32		
2.805	800.00		87.34	
2.803	800.00	3447.60		
2.836	800.00		87.28	
2.839	800.00	3448.78		
2.872	800.00		87.21	
2.870	800.00	3449.43		
2.903	800.00		87.15	
2.906	800.00	3449.48		
2.939	800.00		87.09	
2.937	800.00	3449.29		
2.970	800.00		87.04	
2.972	800.00	3448.61		
3.001	900.00		86.97	SPSI 1340
3.004	900.00	3451.39		
3.037	900.00		86.88	
3.035	900.00	3453.59		
3.068	900.00		86.78	
3.070	900.00	3453.70		
3.103	900.00		86.67	
3.101	900.00	3453.56		
3.134	900.00		86.58	
3.137	900.00	3453.36		
3.166	900.00		86.51	
3.168	900.00	3453.40		
3.201	900.00		86.44	
3.199	900.00	3453.77		
3.232	900.00		86.41	
3.235	900.00	3455.27		
3.268	900.00		86.35	
3.266	900.00	3456.54		

PAGE START DATE: 1/ 1/96
PAGE START TIME: 14:46:55
DATA FILE: 6

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE °F	COMMENTS
3.299	900.00		86.28	
3.301	900.00	3457.71		
3.331	900.00		86.23	
3.333	900.00	3458.34		
3.366	900.00		86.19	
3.364	900.00	3458.35		
3.397	900.00		86.08	
3.400	900.00	3458.16		
3.433	900.00		85.97	
3.431	900.00	3458.46		
3.463	900.00		85.91	SPSI 1360
3.466	900.00	3459.14		
3.498	1000.00		85.84	
3.496	1000.00	3463.00		
3.529	1000.00		85.76	
3.531	1000.00	3466.11		
3.564	1000.00		85.63	
3.563	1000.00	3467.16		
3.596	1000.00		85.53	
3.598	1000.00	3468.71		
3.631	1000.00		85.42	
3.629	1000.00	3470.83		
3.662	1000.00		85.34	
3.665	1000.00	3471.95		
3.693	1000.00		85.26	
3.696	1000.00	3472.44		
3.729	1000.00		85.18	
3.727	1000.00	3473.46		
3.760	1000.00		85.12	
3.762	1000.00	3474.51		
3.796	1000.00		85.05	
3.794	1000.00	3475.43		
3.827	1000.00		84.99	
3.829	1000.00	3476.20		
3.862	1000.00		84.92	
3.860	1000.00	3478.05		
3.893	1000.00		84.86	
3.896	1000.00	3480.09		
3.924	1000.00		84.79	
3.927	1000.00	3480.99		
3.960	1000.00		84.71	SPSI 1380
3.958	1000.00	3481.63		

Plot starting date: 1/ 1/96

time: 11:28:59

Gauge S/N 77675

Company: LIGHTFOOT WIRELINE SERV

Client: GREAT WESTERN

Well name: SOUTH CARTER UNIT #102

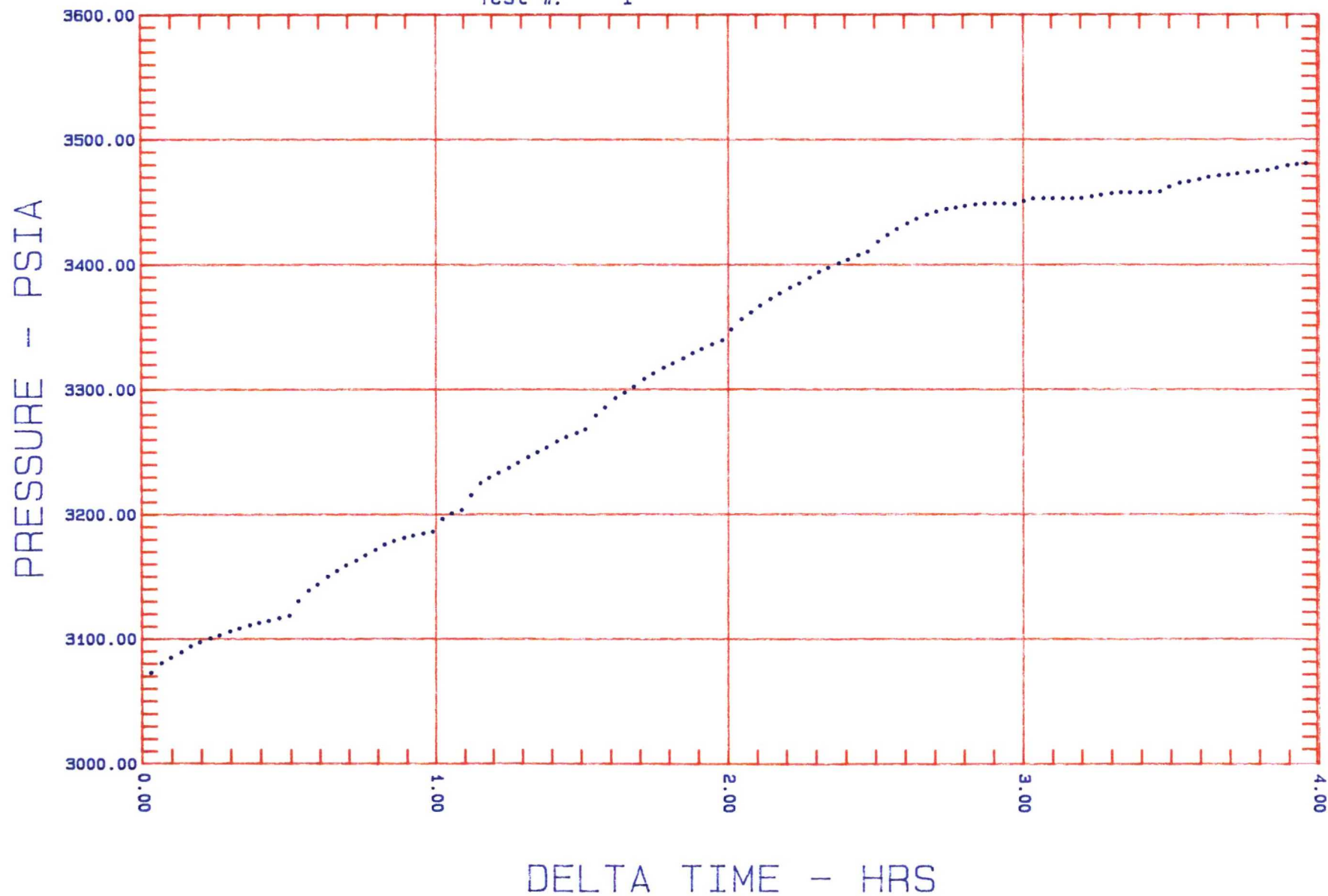
Well #: 1

Test #: 1

Location: SOUTH CARTER

Operator: D. GRYDER

Comments: STEP-RATE TEST BHP/RATE
GAUGE SET @ 5174'



COMPANY: LIGHTFOOT WIRELINE SERV
CLIENT: GREAT WESTERN
GAUGE NUMBER: 77675
WELL NAME: SOUTH CARTER UNIT #102
WELL NUMBER: 1
TEST NUMBER: 1
LOCATION: SOUTH CARTER
TEST OPERATOR: D. GRYDER
COMMENTS: STEP-RATE TEST BHP/RATE
GAUGE SET @ 5174'

POSITION	GAUGE SERIAL NUMBER
1	
2	63150
3	77675
4	

PAGE START DATE: 2/ 1/96
PAGE START TIME: 11:30: 0
DATA FILE: 8

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE °F	COMMENTS
0.000	200.00	3063.30		
0.500	300.00	3119.25		
1.000	400.00	3186.63		
1.500	500.00	3265.76		
2.000	600.00	3339.81		
2.500	700.00	3411.08		
3.000	800.00	3448.61		
3.500	900.00	3459.14		
4.000	1000.00	3481.63		

Plot starting date: 2/ 1/96

time: 11:30: 0

Gauge S/N 77675

Company: LIGHTFOOT WIRELINE SERV

Client: GREAT WESTERN

Well name: SOUTH CARTER UNIT #102

Well #: 1

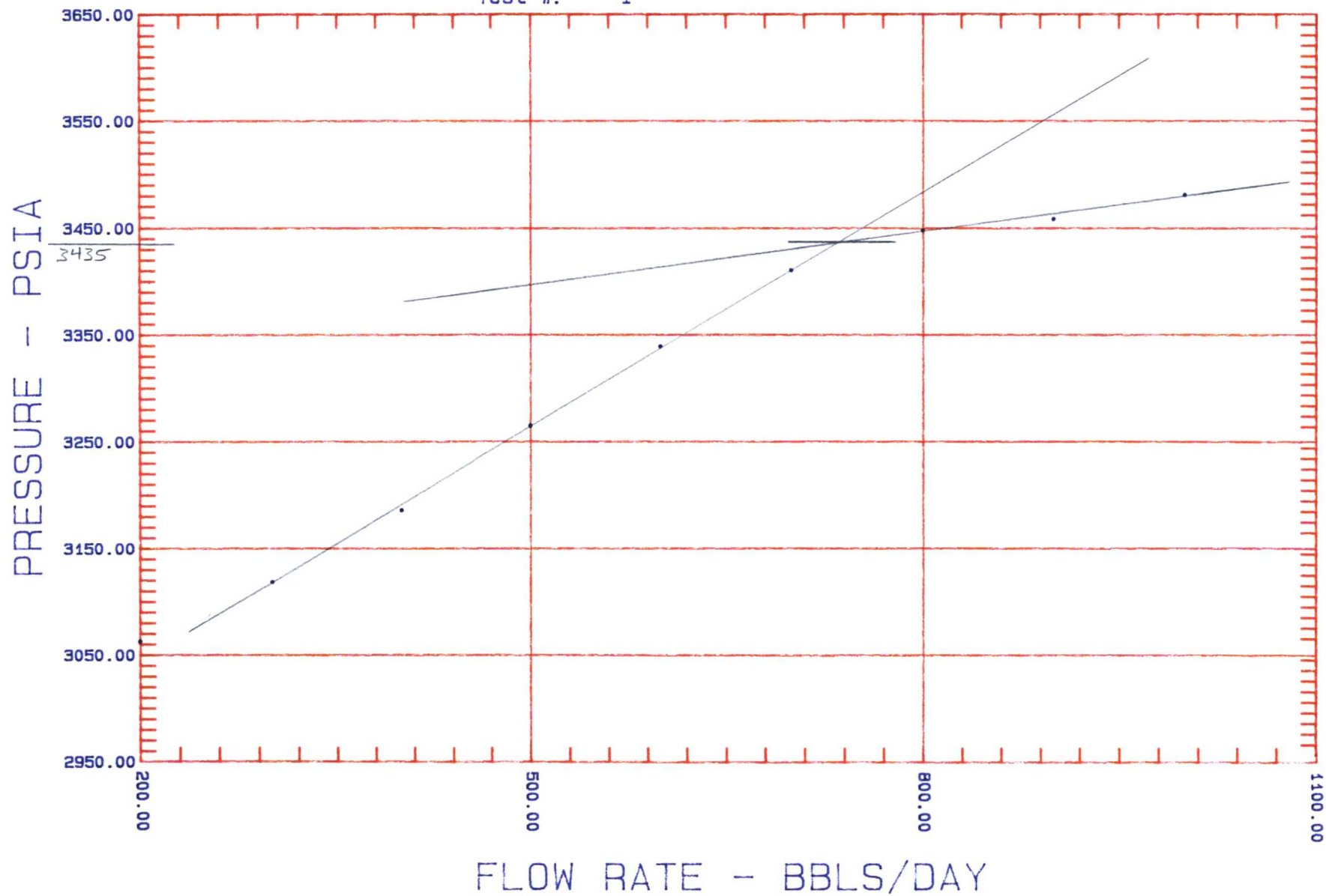
Test #: 1

Location: SOUTH CARTER

Operator: D. GRyder

Comments: STEP-RATE TEST BHP/RATE

GAUGE SET @ 5174'



COMPANY: LIGHTFOOT WIRELINE SERV
CLIENT: GREAT WESTERN
GAUGE NUMBER: 77675
WELL NAME: SOUTH CARTER UNIT #102
WELL NUMBER: 1
TEST NUMBER: 1
LOCATION: SOUTH CARTER
TEST OPERATOR: D. GRYDER
COMMENTS: STEP-RATE TEST SURF/RATE
GAUGE SET @ SURFACE

POSITION	GAUGE SERIAL NUMBER
1	
2	63150
3	77675
4	

PAGE START DATE: 2/ 1/96
PAGE START TIME: 11:30: 0
DATA FILE: 8

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE `F	COMMENTS
0.000	200.00	900.00		
0.500	300.00	960.00		
1.000	400.00	1040.00		
1.500	500.00	1120.00		
2.000	600.00	1200.00		
2.500	700.00	1280.00		
3.000	800.00	1340.00		
3.500	900.00	1360.00		
4.000	1000.00	1380.00		

Plot starting date: 2/ 1/96

time: 11:30: 0

Gauge S/N 77675

Company: LIGHTFOOT WIRELINE SERV

Client: GREAT WESTERN

Well name: SOUTH CARTER UNIT #102

Well #: 1

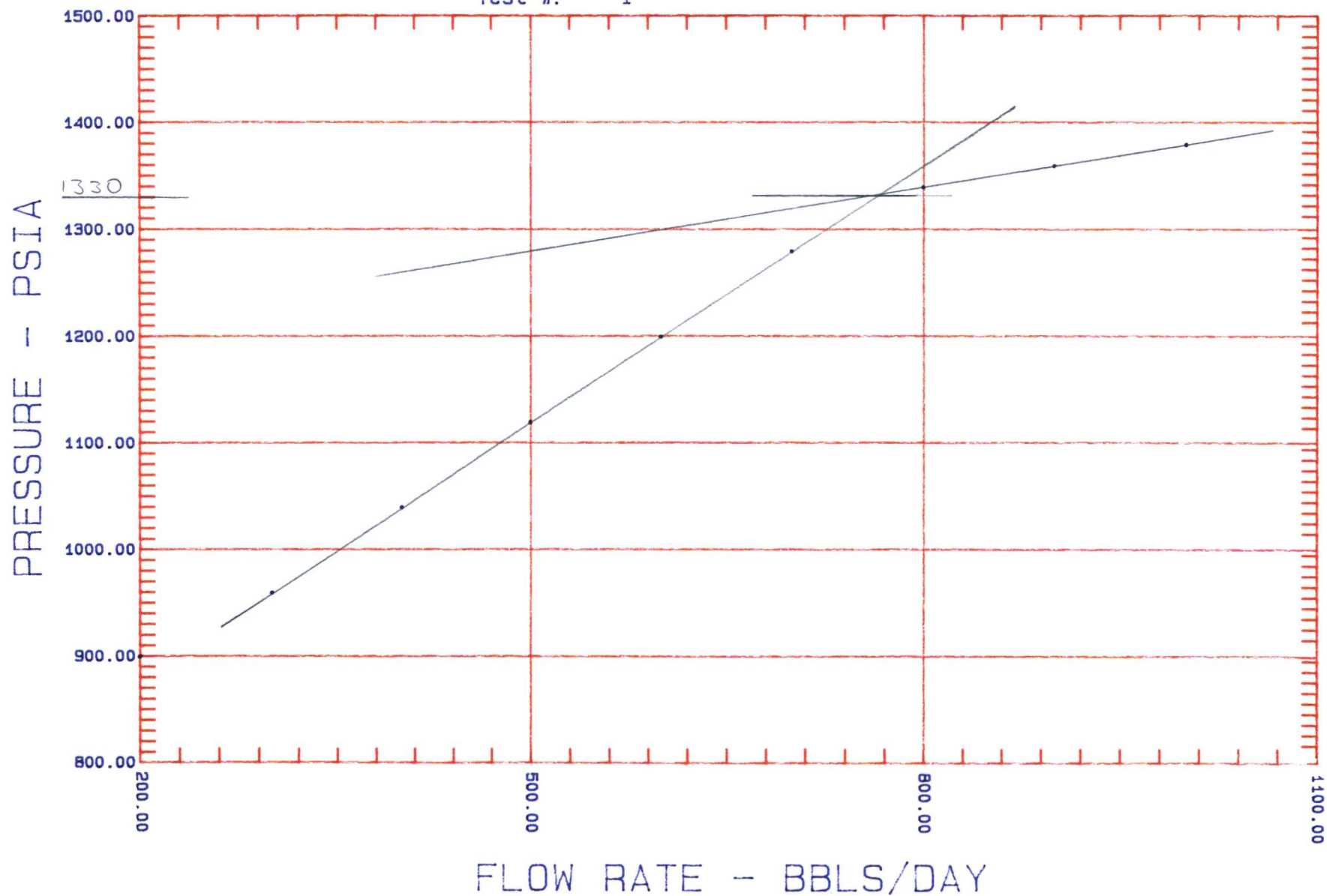
Test #: 1

Location: SOUTH CARTER

Operator: D. GRyder

Comments: STEP-RATE TEST SURF, RATE

GAUGE SET @ SURFACE



LIGHTFOOT WIRELINE SERVICE, INC.

STEP RATE TEST

GREAT WESTERN
SOUTH CARTER UNIT #103
SOUTH CARTER FIELD

2/19/96

WELL DATA

WELL STATUS: INJECTING
PRESSURE DATUM: 5120'
TUBING: 2 3/8"
CASING:
PERFS:
FORMATION:
PACKER DEPTH:
T.D. :

TEST INFORMATION

STABILIZED RATE: 100 B/D
STABILIZED PRESSURE: 3053.23 BHP
RATE INCREMENTS: MULTIPLE INCREMENTS
STEP LENGTH: 30 MINS.
CUMULATIVE INJECTION:
TEST OPERATOR: D. GRYDER

SUMMARY

BHP PARTING PRESSURE: ---- 3800.00 BHPSI
SURFACE PARTING PRESSURE: 1750.00 SPSI
PARTING GRADIENT: ----- .74

COMPANY: LIGHTFOOT WIRELINE SERVICES
CLIENT: GREAT WESTREN DRILLING
GAUGE NUMBER: 77675
WELL NAME: SOUTH CARTER UNIT #103
WELL NUMBER: 4
TEST NUMBER: 4
LOCATION: LEA COUNTY, NM.
TEST OPERATOR: R. McCULLUGH
COMMENTS: STEP-RATE TEST BHP/RATE
GAUGE SET @ 5120'

POSITION	GAUGE SERIAL NUMBER
1	
2	63150
3	77675
4	

PAGE START DATE: 2/19/96
PAGE START TIME: 9:34:11
DATA FILE: 5

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE °F	COMMENTS
0.000	100.00		92.49	SPSI 1000
-0.002	100.00	3053.23		
0.031	150.00		92.56	
0.034	150.00	3055.85		
0.062	150.00		92.60	
0.065	150.00	3056.61		
0.098	150.00		92.62	
0.096	150.00	3057.17		
0.129	150.00		92.61	
0.132	150.00	3057.45		
0.165	150.00		92.59	
0.163	150.00	3058.10		
0.196	150.00		92.58	
0.198	150.00	3059.22		
0.231	150.00		92.56	
0.229	150.00	3059.55		
0.263	150.00		92.55	
0.265	150.00	3059.77		
0.294	150.00		92.54	
0.296	150.00	3059.88		
0.329	150.00		92.53	
0.327	150.00	3059.89		
0.360	150.00		92.52	
0.363	150.00	3059.86		
0.396	150.00		92.52	
0.394	150.00	3059.82		
0.427	150.00		92.51	
0.429	150.00	3059.75		
0.463	150.00		92.50	
0.461	150.00	3059.67		
0.494	150.00		92.50	SPSI 940
0.492	150.00	3059.57		
0.524	200.00		92.50	
0.527	200.00	3063.21		
0.560	200.00		92.49	
0.558	200.00	3064.61		
0.591	200.00		92.47	
0.594	200.00	3066.21		
0.627	200.00		92.46	
0.625	200.00	3067.20		
0.658	200.00		92.44	
0.660	200.00	3068.01		
0.693	200.00		92.42	
0.691	200.00	3068.65		
0.724	200.00		92.39	
0.727	200.00	3069.40		
0.756	200.00		92.38	
0.758	200.00	3069.98		
0.791	200.00		92.36	
0.789	200.00	3070.47		

PAGE START DATE: 2/19/96
PAGE START TIME: 10:23:31
DATA FILE: 5

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE °F	COMMENTS
0.822	200.00		92.35	
0.825	200.00	3070.96		
0.858	200.00		92.33	
0.856	200.00	3072.46		
0.889	200.00		92.32	
0.892	200.00	3073.38		
0.921	200.00		92.31	
0.923	200.00	3073.95		
0.956	200.00		92.28	
0.954	200.00	3074.42		
0.988	200.00		92.27	SPSI 940
0.991	200.00	3074.90		
1.023	250.00		92.26	
1.021	250.00	3079.04		
1.054	250.00		92.24	
1.056	250.00	3081.09		
1.089	250.00		92.22	
1.087	250.00	3083.35		
1.120	250.00		92.19	
1.123	250.00	3085.04		
1.156	250.00		92.16	
1.154	250.00	3086.18		
1.187	250.00		92.13	
1.185	250.00	3087.15		
1.218	250.00		92.14	
1.221	250.00	3088.14		
1.254	250.00		92.13	
1.252	250.00	3088.88		
1.285	250.00		92.14	
1.287	250.00	3089.67		
1.320	250.00		92.11	
1.318	250.00	3090.23		
1.351	250.00		92.09	
1.354	250.00	3090.86		
1.383	250.00		92.09	
1.385	250.00	3091.38		
1.418	250.00		92.09	
1.416	250.00	3092.89		
1.449	250.00		92.07	
1.452	250.00	3093.73		
1.485	250.00		92.06	SPSI 1000
1.483	250.00	3094.31		
1.519	300.00		92.04	
1.517	300.00	3099.08		
1.550	300.00		92.00	
1.552	300.00	3101.97		
1.581	300.00		91.96	
1.583	300.00	3104.03		
1.616	300.00		91.90	
1.614	300.00	3105.75		

PAGE START DATE: 2/19/96
PAGE START TIME: 11:13: 2
DATA FILE: 5

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE 'F	COMMENTS
1.648	300.00		91.85	
1.650	300.00	3108.14		
1.684	300.00		91.81	
1.682	300.00	3110.08		
1.715	300.00		91.78	
1.717	300.00	3111.70		
1.746	300.00		91.75	
1.748	300.00	3113.24		
1.781	300.00		91.72	
1.779	300.00	3114.35		
1.813	300.00		91.70	
1.815	300.00	3115.32		
1.848	300.00		91.68	
1.846	300.00	3117.69		
1.879	300.00		91.67	
1.882	300.00	3119.87		
1.915	300.00		91.65	
1.913	300.00	3121.27		
1.946	300.00		91.63	
1.948	300.00	3122.50		
1.978	300.00		91.61	SPSI 1000
1.980	300.00	3124.74		
2.012	350.00		91.60	
2.010	350.00	3129.13		
2.043	350.00		91.56	
2.046	350.00	3133.21		
2.079	350.00		91.50	
2.077	350.00	3135.39		
2.110	350.00		91.45	
2.112	350.00	3137.81		
2.146	350.00		91.40	
2.144	350.00	3140.33		
2.177	350.00		91.36	
2.179	350.00	3142.89		
2.208	350.00		91.34	
2.210	350.00	3144.79		
2.243	350.00		91.31	
2.241	350.00	3146.53		
2.274	350.00		91.25	
2.277	350.00	3148.06		
2.310	350.00		91.21	
2.308	350.00	3149.45		
2.341	350.00		91.19	
2.344	350.00	3150.79		
2.377	350.00		91.16	
2.375	350.00	3153.31		
2.408	350.00		91.14	
2.410	350.00	3155.39		
2.439	350.00		91.12	
2.441	350.00	3156.91		

PAGE START DATE: 2/19/96
PAGE START TIME: 12: 2:43
DATA FILE: 5

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE °F	COMMENTS
2.476	350.00		91.08	SPSI 1040
2.474	350.00	3157.91		
2.507	450.00		91.05	
2.509	450.00	3166.16		
2.538	450.00		91.01	
2.540	450.00	3170.69		
2.573	450.00		90.93	
2.571	450.00	3174.05		
2.604	450.00		90.85	
2.607	450.00	3178.11		
2.640	450.00		90.78	
2.638	450.00	3181.07		
2.671	450.00		90.72	
2.674	450.00	3183.82		
2.707	450.00		90.66	
2.705	450.00	3185.84		
2.738	450.00		90.62	
2.740	450.00	3188.15		
2.769	450.00		90.58	
2.771	450.00	3190.05		
2.804	450.00		90.55	
2.803	450.00	3191.73		
2.836	450.00		90.52	
2.838	450.00	3193.82		
2.871	450.00		90.49	
2.869	450.00	3195.12		
2.902	450.00		90.47	
2.905	450.00	3197.05		
2.938	450.00		90.44	
2.936	450.00	3198.62		
2.970	450.00		90.42	1100
2.968	450.00	3202.46		
3.000	550.00		90.36	
3.003	550.00	3212.20		
3.036	550.00		90.25	
3.034	550.00	3217.26		
3.067	550.00		90.14	
3.069	550.00	3221.74		
3.102	550.00		90.03	
3.100	550.00	3224.68		
3.133	550.00		89.95	
3.136	550.00	3227.71		
3.164	550.00		89.89	
3.167	550.00	3230.79		
3.200	550.00		89.83	
3.198	550.00	3233.76		
3.231	550.00		89.77	
3.234	550.00	3236.93		
3.267	550.00		89.71	
3.265	550.00	3239.46		

PAGE START DATE: 2/19/96
PAGE START TIME: 12:52: 3
DATA FILE: 5

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE `F	COMMENTS
3.298	550.00		89.66	
3.300	550.00	3242.83		
3.329	550.00		89.64	
3.332	550.00	3244.82		
3.365	550.00		89.61	
3.363	550.00	3247.22		
3.396	550.00		89.59	
3.399	550.00	3251.62		
3.432	550.00		89.56	
3.430	550.00	3254.95		
3.464	550.00		89.51	SPSI 1140
3.466	550.00	3258.43		
3.495	650.00		89.47	
3.498	650.00	3267.69		
3.531	650.00		89.44	
3.529	650.00	3274.45		
3.562	650.00		89.36	
3.564	650.00	3280.14		
3.597	650.00		89.28	
3.595	650.00	3285.09		
3.628	650.00		89.19	
3.631	650.00	3291.71		
3.659	650.00		89.10	
3.662	650.00	3296.71		
3.695	650.00		89.00	
3.693	650.00	3300.21		
3.726	650.00		88.92	
3.729	650.00	3304.78		
3.762	650.00		88.84	
3.760	650.00	3308.68		
3.793	650.00		88.75	
3.795	650.00	3312.73		
3.828	650.00		88.59	
3.826	650.00	3316.23		
3.859	650.00		88.48	
3.862	650.00	3319.76		
3.891	650.00		88.39	
3.893	650.00	3323.24		
3.926	650.00		88.35	
3.924	650.00	3325.84		
3.958	650.00		88.34	SPSI 1220
3.960	650.00	3329.21		
3.993	750.00		88.32	
3.991	750.00	3338.62		
4.024	750.00		88.29	
4.027	750.00	3346.00		
4.060	750.00		88.22	
4.058	750.00	3351.26		
4.091	750.00		88.16	
4.093	750.00	3354.46		

PAGE START DATE: 2/19/96
PAGE START TIME: 13:41:31
DATA FILE: 5

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE °F	COMMENTS
4.122	750.00		88.07	
4.125	750.00	3358.05		
4.158	750.00		87.96	
4.156	750.00	3362.62		
4.189	750.00		87.82	
4.192	750.00	3367.89		
4.221	750.00		87.69	
4.223	750.00	3371.39		
4.256	750.00		87.57	
4.254	750.00	3374.98		
4.287	750.00		87.52	
4.290	750.00	3380.19		
4.323	750.00		87.50	
4.321	750.00	3383.12		
4.354	750.00		87.47	
4.356	750.00	3387.45		
4.389	750.00		87.41	
4.388	750.00	3390.89		
4.421	750.00		87.43	
4.423	750.00	3394.90		
4.452	750.00		87.45	SPSI 1300
4.454	750.00	3398.46		
4.487	850.00		87.38	
4.485	850.00	3407.87		
4.518	850.00		87.25	
4.521	850.00	3414.08		
4.554	850.00		87.08	
4.552	850.00	3418.14		
4.585	850.00		86.93	
4.587	850.00	3421.63		
4.620	850.00		86.84	
4.618	850.00	3427.17		
4.651	850.00		86.71	
4.654	850.00	3432.96		
4.682	850.00		86.63	
4.685	850.00	3437.49		
4.718	850.00		86.57	
4.716	850.00	3441.44		
4.749	850.00		86.52	
4.752	850.00	3445.54		
4.785	850.00		86.45	
4.783	850.00	3449.03		
4.816	850.00		86.41	
4.818	850.00	3454.26		
4.851	850.00		86.37	
4.849	850.00	3458.96		
4.882	850.00		86.31	
4.885	850.00	3463.65		
4.914	850.00		86.25	
4.916	850.00	3467.25		

PAGE START DATE: 2/19/96
PAGE START TIME: 14:31: 4
DATA FILE: 5

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE `F	COMMENTS
4.948	850.00		86.19	SPSI 1380
4.951	850.00	3471.29		
4.983	950.00		86.13	
4.981	950.00	3482.20		
5.014	950.00		86.02	
5.017	950.00	3490.70		
5.046	950.00		85.92	
5.048	950.00	3496.41		
5.081	950.00		85.81	
5.079	950.00	3501.64		
5.112	950.00		85.72	
5.115	950.00	3507.44		
5.148	950.00		85.68	
5.146	950.00	3511.97		
5.179	950.00		85.64	
5.181	950.00	3517.32		
5.214	950.00		85.62	
5.212	950.00	3521.75		
5.246	950.00		85.58	
5.248	950.00	3526.53		
5.277	950.00		85.49	
5.279	950.00	3531.38		
5.312	950.00		85.25	
5.310	950.00	3536.86		
5.343	950.00		85.10	
5.346	950.00	3542.36		
5.379	950.00		85.04	
5.377	950.00	3546.73		
5.410	950.00		85.02	
5.413	950.00	3551.36		
5.445	950.00		85.01	SPSI 1480
5.443	950.00	3555.54		
5.476	1050.00		85.06	
5.478	1050.00	3566.47		
5.511	1050.00		85.01	
5.509	1050.00	3573.65		
5.542	1050.00		84.79	
5.545	1050.00	3580.74		
5.578	1050.00		84.51	
5.576	1050.00	3586.60		
5.609	1050.00		84.47	
5.611	1050.00	3592.98		
5.640	1050.00		84.45	
5.642	1050.00	3598.14		
5.676	1050.00		84.41	
5.674	1050.00	3602.90		
5.707	1050.00		84.38	
5.709	1050.00	3608.16		
5.742	1050.00		84.38	
5.740	1050.00	3612.71		

PAGE START DATE: 2/19/96
PAGE START TIME: 15:20:35
DATA FILE: 5

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE 'F	COMMENTS
5.773	1050.00		84.36	
5.776	1050.00	3618.06		
5.805	1050.00		84.31	
5.807	1050.00	3622.59		
5.841	1050.00		84.30	
5.839	1050.00	3627.36		
5.872	1050.00		84.16	
5.874	1050.00	3632.43		
5.907	1050.00		84.03	
5.905	1050.00	3636.63		
5.939	1050.00		83.93	SPSI 1580
5.938	1050.00	3640.98		
5.971	1150.00		83.78	
5.973	1150.00	3651.58		
6.006	1150.00		83.61	
6.004	1150.00	3659.51		
6.037	1150.00		83.50	
6.040	1150.00	3666.99		
6.073	1150.00		83.40	
6.071	1150.00	3673.63		
6.104	1150.00		83.32	
6.106	1150.00	3680.54		
6.135	1150.00		83.26	
6.138	1150.00	3685.80		
6.171	1150.00		83.20	
6.169	1150.00	3691.35		
6.202	1150.00		83.15	
6.204	1150.00	3697.14		
6.237	1150.00		83.10	
6.235	1150.00	3701.88		
6.268	1150.00		83.05	
6.271	1150.00	3707.34		
6.299	1150.00		83.01	
6.302	1150.00	3711.54		
6.335	1150.00		82.96	
6.333	1150.00	3716.12		
6.366	1150.00		82.92	
6.369	1150.00	3720.84		
6.402	1150.00		82.88	
6.400	1150.00	3724.87		
6.433	1150.00		82.85	SPSI 1680
6.436	1150.00	3729.03		
6.469	1250.00		82.81	
6.467	1250.00	3737.92		
6.500	1250.00		82.72	
6.502	1250.00	3746.32		
6.531	1250.00		82.72	
6.533	1250.00	3753.00		
6.566	1250.00		82.71	
6.564	1250.00	3759.03		

PAGE START DATE: 2/19/96
PAGE START TIME: 16:10: 2
DATA FILE: 5

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE °F	COMMENTS
6.598	1250.00		82.42	
6.600	1250.00	3765.05		
6.634	1250.00		82.28	
6.632	1250.00	3770.30		
6.665	1250.00		82.28	
6.667	1250.00	3776.31		
6.696	1250.00		82.25	
6.698	1250.00	3780.99		
6.731	1250.00		82.21	
6.729	1250.00	3785.68		
6.763	1250.00		82.17	
6.765	1250.00	3790.76		
6.798	1250.00		82.13	
6.796	1250.00	3795.18		
6.829	1250.00		82.10	
6.832	1250.00	3799.66		
6.865	1250.00		82.08	
6.863	1250.00	3803.79		
6.896	1250.00		82.07	
6.898	1250.00	3808.27		
6.929	1250.00		82.07	SPSI 1780
6.931	1250.00	3812.39		
6.932	1350.00		82.08	
6.963	1350.00	3817.55		
6.996	1350.00		81.84	
6.994	1350.00	3828.90		
7.027	1350.00		81.80	
7.029	1350.00	3835.96		
7.062	1350.00		81.58	
7.060	1350.00	3841.56		
7.093	1350.00		81.74	
7.096	1350.00	3847.91		
7.124	1350.00		81.74	
7.127	1350.00	3852.88		
7.160	1350.00		81.48	
7.158	1350.00	3857.39		
7.191	1350.00		81.34	
7.194	1350.00	3862.90		
7.227	1350.00		81.33	
7.225	1350.00	3868.20		
7.258	1350.00		81.37	
7.260	1350.00	3873.27		
7.293	1350.00		81.34	
7.291	1350.00	3877.68		
7.324	1350.00		81.30	
7.327	1350.00	3882.06		
7.356	1350.00		81.39	
7.358	1350.00	3886.04		
7.391	1350.00		81.48	
7.389	1350.00	3890.17		

PAGE START DATE: 2/19/96
PAGE START TIME: 16:59:38
DATA FILE: 5

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE °F	COMMENTS
7.424	1350.00		81.37	SPSI 1860
7.422	1350.00	3894.01		
7.455	1450.00		81.20	
7.458	1450.00	3902.92		
7.491	1450.00		81.03	
7.489	1450.00	3910.47		
7.522	1450.00		81.20	
7.524	1450.00	3917.28		
7.557	1450.00		81.00	
7.555	1450.00	3922.30		
7.588	1450.00		80.76	
7.591	1450.00	3928.02		
7.619	1450.00		80.66	
7.622	1450.00	3932.97		
7.655	1450.00		80.69	
7.653	1450.00	3937.27		
7.686	1450.00		80.93	
7.689	1450.00	3942.02		
7.722	1450.00		80.88	
7.720	1450.00	3946.13		
7.753	1450.00		80.71	
7.755	1450.00	3950.75		
7.788	1450.00		80.53	
7.786	1450.00	3954.25		
7.819	1450.00		80.46	
7.822	1450.00	3958.37		
7.851	1450.00		80.43	
7.853	1450.00	3962.29		
7.886	1450.00		80.45	
7.884	1450.00	3965.42		
7.917	1450.00		80.48	SPSI 1960
7.920	1450.00	3969.31		

Plot starting date: 2/19/96

time: 9:34:11

Gauge S/N 77675

Company: LIGHTFOOT WIRELINE SERV.

Client: GREAT WESTERN DRILLING

Well name: SOUTH CARTER UNIT #103

Well #: 4

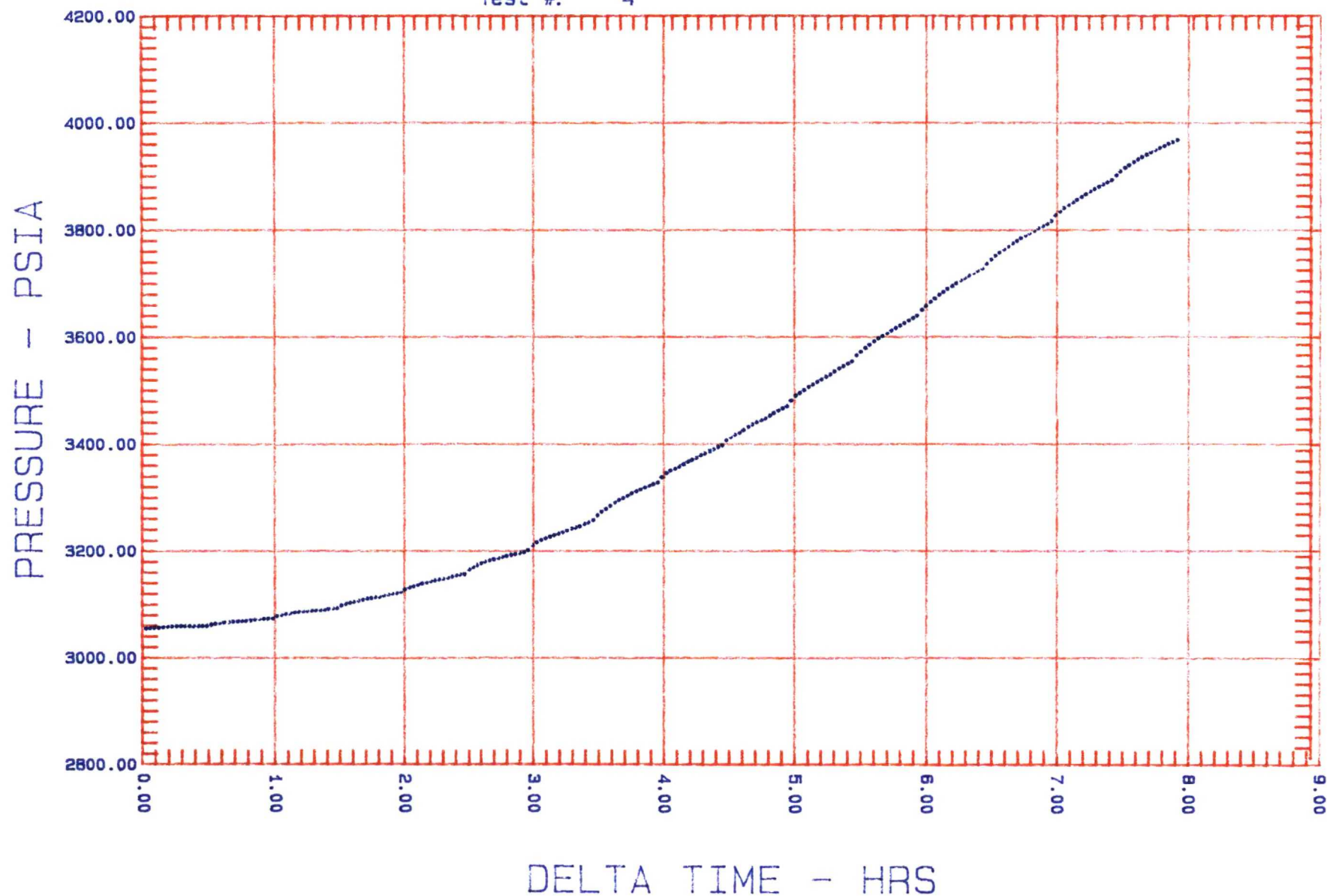
Test #: 4

Location: LEA COUNTY, NM.

Operator: R. McCULLUGH

Comments: STEP-RATE TEST BHP/RATE

GAUGE SET @ 5120'



COMPANY: LIGHTFOOT WIRELINE SERV.
CLIENT: GREAT WESTREN DRILLING
GAUGE NUMBER: 77675
WELL NAME: SOUTH CARTER UNIT #103
WELL NUMBER: 4
TEST NUMBER: 4
LOCATION: LEA COUNTY, NM.
TEST OPERATOR: R. McCULLUGH
COMMENTS: STEP-RATE TEST BHP/RATE
GAUGE SET @ 5120'

POSITION	GAUGE SERIAL NUMBER
1	
2	63150
3	77675
4	

PAGE START DATE: 2/19/96
PAGE START TIME: 9:34: 0
DATA FILE: 8

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE °F	COMMENTS
0.000	100.00	3053.23		
0.500	150.00	3059.57		
1.000	200.00	3074.90		
1.500	250.00	3094.31		
2.000	300.00	3124.74		
2.500	350.00	3157.91		
3.000	450.00	3202.46		
3.500	550.00	3258.43		
4.000	650.00	3329.21		
4.500	750.00	3398.46		
5.000	850.00	3471.29		
5.500	950.00	3555.54		
6.000	1050.00	3640.98		
6.500	1150.00	3729.03		
7.000	1250.00	3812.39		
7.500	1350.00	3894.01		
8.000	1450.00	3969.31		

Plot starting date: 2/19/96

time: 9:34: 0

Gauge S/N 77675

Company: LIGHTFOOT WIRELINE SERV.

Client: GREAT WESTERN DRILLING

Well name: SOUTH CARTER UNIT #103

Well #: 4

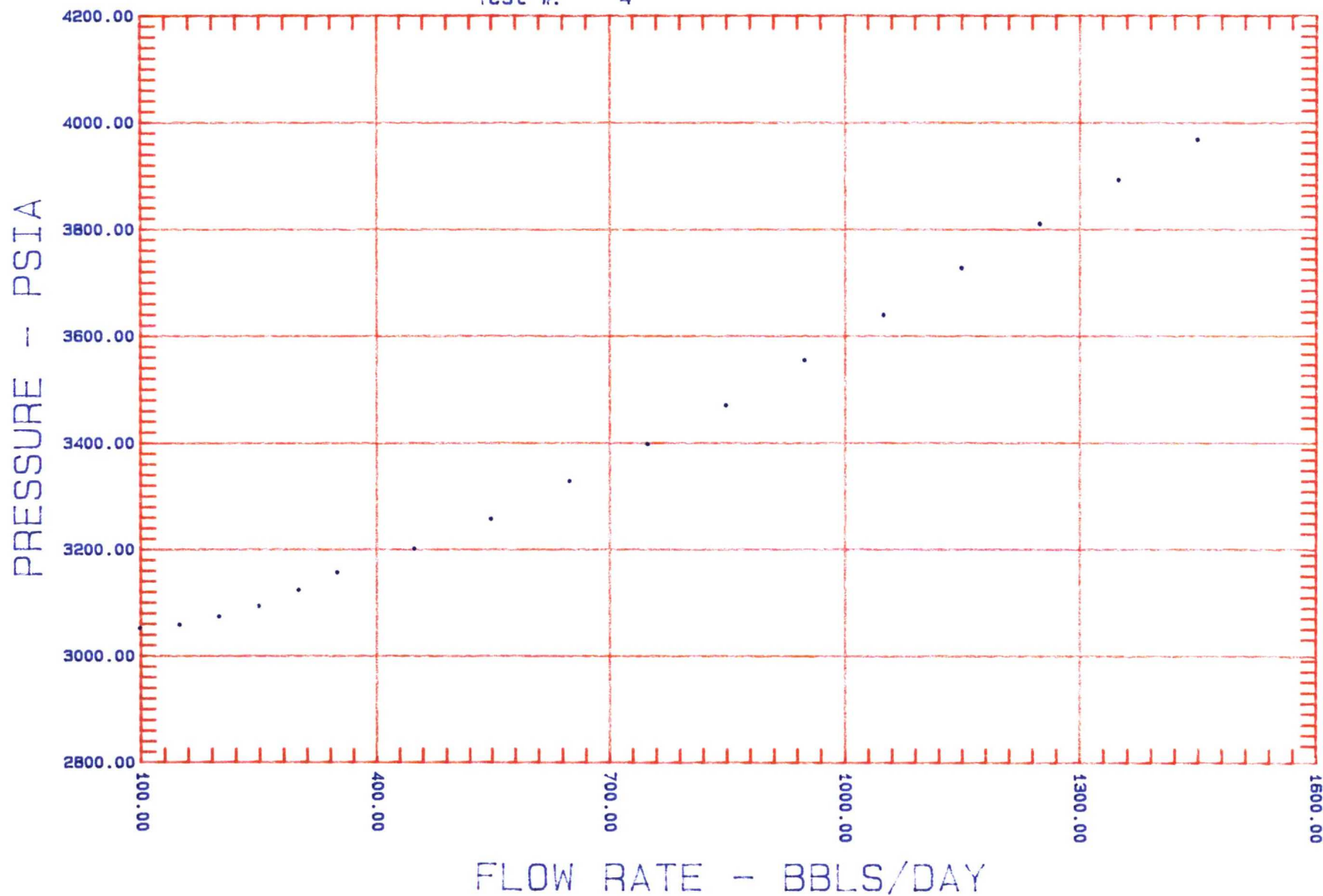
Test #: 4

Location: LEA COUNTY, NM.

Operator: R. McCULLUGH

Comments: STEP-RATE TEST BHP/RATE

GAUGE SET @ 5120'



COMPANY: LIGHTFOOT WIRELINE SERV.
CLIENT: GREAT WESTREN DRILLING
GAUGE NUMBER: 77675
WELL NAME: SOUTH CARTER UNIT #103
WELL NUMBER: 4
TEST NUMBER: 4
LOCATION: LEA COUNTY, NM.
TEST OPERATOR: R. McCULLUGH
COMMENTS: STEP-RATE TEST SURF/RATE
GAUGE SET @ SURFACE

POSITION	GAUGE SERIAL NUMBER
1	
2	63150
3	77675
4	

PAGE START DATE: 2/19/96
PAGE START TIME: 9:34: 0
DATA FILE: 8

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE `F	COMMENTS
0.000	100.00	920.00		
0.500	150.00	940.00		
1.000	200.00	940.00		
1.500	250.00	1000.00		
2.000	300.00	1000.00		
2.500	350.00	1040.00		
3.000	450.00	1100.00		
3.500	550.00	1140.00		
4.000	650.00	1220.00		
4.500	750.00	1300.00		
5.000	850.00	1380.00		
5.500	950.00	1480.00		
6.000	1050.00	1580.00		
6.500	1150.00	1680.00		
7.000	1250.00	1780.00		
7.500	1350.00	1860.00		
8.000	1450.00	1960.00		

Plot starting date: 2/19/96

time: 9:34: 0

Gauge S/N 77675

Company: LIGHTFOOT WIRELINE SERV.

Client: GREAT WESTREN DRILLING

Well name: SOUTH CARTER UNIT #103

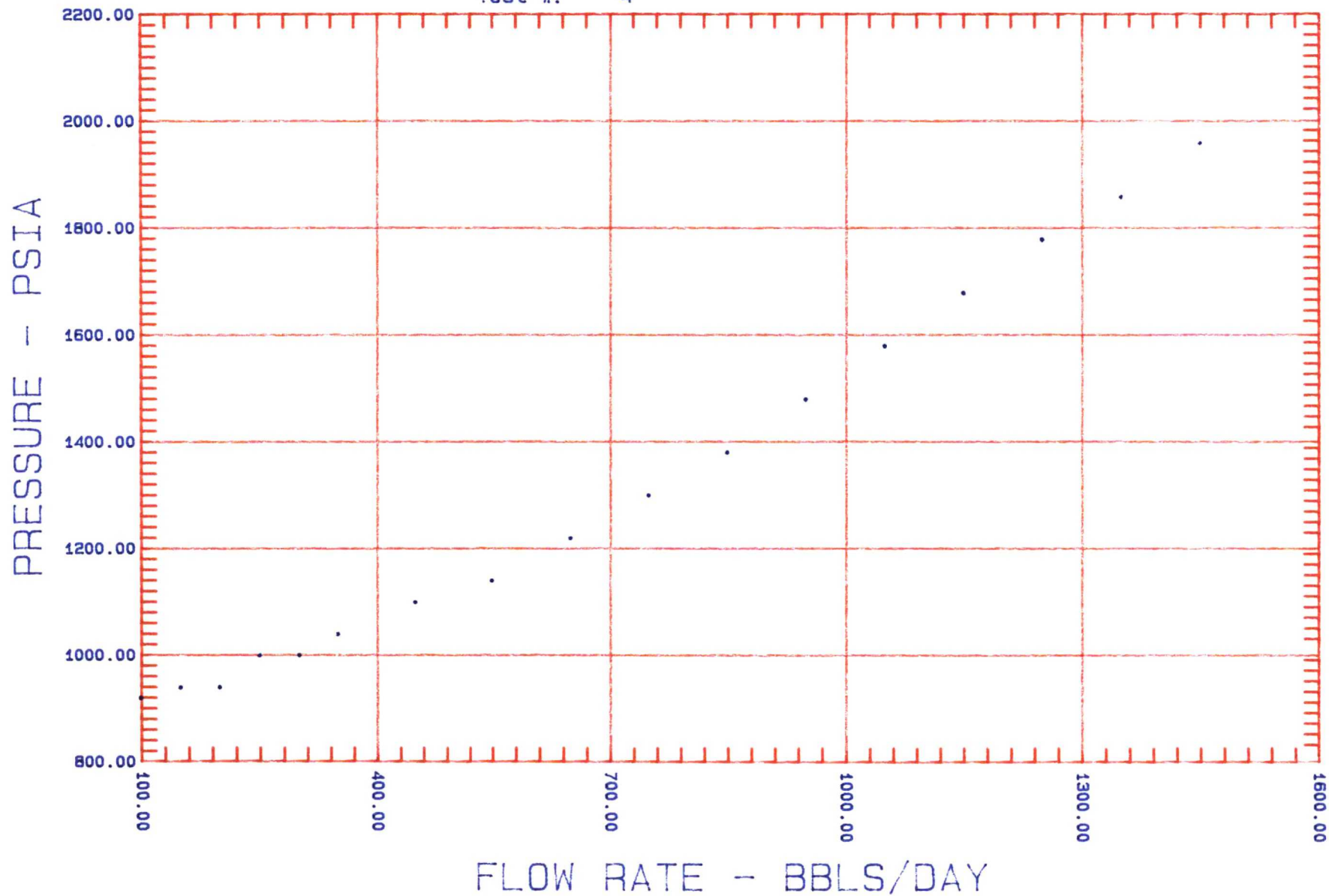
Well #: 4

Test #: 4

Location: LEA COUNTY, NM.

Operator: R. McCULLUGH

Comments: STEP-RATE TEST SURF/RATE
GAUGE SET @ SURFACE



LIGHTFOOT WIRELINE SERVICE, INC.

STEP RATE TEST

GREAT WESTERN
SOUTH CARTER UNIT #303
SOUTH CARTER FIELD

2/16/96

WELL DATA

WELL STATUS: INJECTING
PRESSURE DATUM: 5108'
TUBING: 2 3/8"
CASING:
PERFS:
FORMATION:
PACKER DEPTH:
T.D. :

TEST INFORMATION

STABILIZED RATE: 50 B/D
STABILIZED PRESSURE: 3074.67 BHP
RATE INCREMENTS: 50 B/D
STEP LENGTH: 30 MINS.
CUMULATIVE INJECTION:
TEST OPERATOR: D. GRYDER

SUMMARY

BHP PARTING PRESSURE: ---- 3800.00 BHPSI
SURFACE PARTING PRESSURE: 1700.00 SPSI
PARTING GRADIENT: ----- .74

COMPANY: LIGHTFOOT WIRELINE SERV.
CLIENT: GREAT WESTREN DRILLING
GAUGE NUMBER: 77675
WELL NAME: SOUTH CARTER UNIT #303
WELL NUMBER: 3
TEST NUMBER: 3
LOCATION: LEA COUNTY, NM.
TEST OPERATOR: R. McCULLUGH
COMMENTS: STEP-RATE TEST BHP/RATE
GAUGE SET @ 5108'

POSITION	GAUGE SERIAL NUMBER
1	
2	63150
3	77675
4	

PAGE START DATE: 2/16/96
PAGE START TIME: 10: 8:19
DATA FILE: 2

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE °F	COMMENTS
0.000	50.00		95.10	SPSI 940
0.003	50.00	3074.67		
0.035	100.00		95.11	
0.037	100.00	3077.84		
0.066	100.00		95.09	
0.068	100.00	3079.90		
0.101	100.00		95.08	
0.099	100.00	3081.81		
0.132	100.00		95.05	
0.135	100.00	3083.33		
0.168	100.00		95.02	
0.166	100.00	3084.46		
0.199	100.00		95.00	
0.202	100.00	3085.56		
0.235	100.00		95.00	
0.233	100.00	3086.53		
0.266	100.00		94.99	
0.268	100.00	3088.02		
0.297	100.00		94.98	
0.299	100.00	3088.91		
0.333	100.00		94.97	
0.331	100.00	3089.63		
0.364	100.00		94.96	
0.366	100.00	3090.32		
0.399	100.00		94.95	
0.397	100.00	3090.86		
0.430	100.00		94.93	
0.433	100.00	3092.51		
0.466	100.00		94.92	
0.464	100.00	3093.35		
0.498	100.00		94.91	SPSI 960
0.496	100.00	3094.05		
0.529	150.00		94.89	
0.532	150.00	3098.26		
0.565	150.00		94.87	
0.563	150.00	3100.62		
0.596	150.00		94.86	
0.598	150.00	3102.87		
0.627	150.00		94.83	
0.629	150.00	3104.21		
0.662	150.00		94.81	
0.661	150.00	3106.21		
0.694	150.00		94.78	
0.696	150.00	3107.77		
0.729	150.00		94.75	
0.727	150.00	3109.25		
0.760	150.00		94.72	
0.763	150.00	3111.02		
0.796	150.00		94.70	
0.794	150.00	3112.16		

PAGE START DATE: 2/16/96
PAGE START TIME: 10:57:56
DATA FILE: 2

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE °F	COMMENTS
0.827	150.00		94.68	
0.829	150.00	3113.97		
0.859	150.00		94.66	
0.861	150.00	3115.09		
0.894	150.00		94.64	
0.892	150.00	3115.77		
0.925	150.00		94.63	
0.928	150.00	3117.15		
0.961	150.00		94.62	
0.959	150.00	3118.42		
0.992	150.00		94.60	SPSI 1000
0.995	150.00	3119.23		
1.023	200.00		94.58	
1.025	200.00	3121.21		
1.058	200.00		94.56	
1.056	200.00	3126.49		
1.089	200.00		94.54	
1.092	200.00	3129.95		
1.125	200.00		94.51	
1.123	200.00	3133.12		
1.156	200.00		94.48	
1.159	200.00	3135.66		
1.192	200.00		94.45	
1.190	200.00	3138.96		
1.223	200.00		94.41	
1.225	200.00	3141.88		
1.254	200.00		94.38	
1.256	200.00	3143.54		
1.289	200.00		94.34	
1.288	200.00	3147.17		
1.321	200.00		94.31	
1.323	200.00	3150.25		
1.356	200.00		94.30	
1.354	200.00	3152.42		
1.387	200.00		94.26	
1.390	200.00	3154.51		
1.423	200.00		94.23	
1.421	200.00	3156.04		
1.454	200.00		94.21	
1.456	200.00	3157.52		
1.486	200.00		94.20	SPSI 1040
1.489	200.00	3158.72		
1.522	250.00		94.19	
1.520	250.00	3165.24		
1.553	250.00		94.19	
1.555	250.00	3168.86		
1.584	250.00		94.18	
1.586	250.00	3172.03		
1.619	250.00		94.14	
1.618	250.00	3176.16		

PAGE START DATE: 2/16/96
PAGE START TIME: 11:47:21
DATA FILE: 2

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE `F	COMMENTS
1.651	250.00		94.10	
1.653	250.00	3179.94		
1.687	250.00		94.04	
1.685	250.00	3182.51		
1.718	250.00		94.01	
1.720	250.00	3184.71		
1.749	250.00		93.98	
1.751	250.00	3186.27		
1.784	250.00		93.94	
1.783	250.00	3187.85		
1.816	250.00		93.92	
1.818	250.00	3189.35		
1.851	250.00		93.91	
1.849	250.00	3191.83		
1.882	250.00		93.91	
1.885	250.00	3194.17		
1.918	250.00		93.90	
1.916	250.00	3195.97		
1.949	250.00		93.88	
1.951	250.00	3197.71		
1.983	250.00		93.87	SPS11080
1.981	250.00	3198.88		
2.013	300.00		93.85	
2.016	300.00	3206.78		
2.049	300.00		93.82	
2.047	300.00	3211.52		
2.080	300.00		93.79	
2.083	300.00	3215.11		
2.116	300.00		93.74	
2.114	300.00	3217.52		
2.147	300.00		93.70	
2.149	300.00	3219.75		
2.178	300.00		93.68	
2.180	300.00	3222.01		
2.213	300.00		93.65	
2.211	300.00	3224.53		
2.244	300.00		93.63	
2.247	300.00	3229.48		
2.280	300.00		93.61	
2.278	300.00	3232.21		
2.311	300.00		93.58	
2.314	300.00	3235.01		
2.347	300.00		93.55	
2.345	300.00	3237.04		
2.378	300.00		93.54	
2.380	300.00	3239.21		
2.409	300.00		93.52	
2.411	300.00	3241.74		
2.444	300.00		93.50	
2.443	300.00	3243.91		

PAGE START DATE: 2/16/96
PAGE START TIME: 12:36:55
DATA FILE: 2

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE °F	COMMENTS
2.477	300.00		93.49	SPSI 1120
2.479	300.00	3246.47		
2.511	350.00		93.47	
2.509	350.00	3252.94		
2.542	350.00		93.44	
2.544	350.00	3257.66		
2.577	350.00		93.40	
2.575	350.00	3261.32		
2.608	350.00		93.36	
2.611	350.00	3264.29		
2.644	350.00		93.32	
2.642	350.00	3269.50		
2.675	350.00		93.29	
2.678	350.00	3273.84		
2.706	350.00		93.25	
2.709	350.00	3277.79		
2.742	350.00		93.21	
2.740	350.00	3281.16		
2.773	350.00		93.17	
2.775	350.00	3283.96		
2.808	350.00		93.13	
2.806	350.00	3286.82		
2.839	350.00		93.09	
2.842	350.00	3289.69		
2.875	350.00		93.04	
2.873	350.00	3291.67		
2.906	350.00		92.99	
2.909	350.00	3292.86		
2.937	350.00		92.95	
2.940	350.00	3295.35		
2.970	350.00		92.92	SPSI 1180
2.973	350.00	3298.15		
3.005	400.00		92.89	
3.003	400.00	3305.26		
3.036	400.00		92.86	
3.039	400.00	3311.00		
3.072	400.00		92.81	
3.070	400.00	3315.17		
3.103	400.00		92.75	
3.106	400.00	3318.68		
3.139	400.00		92.70	
3.137	400.00	3322.39		
3.170	400.00		92.74	
3.172	400.00	3327.09		
3.201	400.00		92.64	
3.203	400.00	3331.19		
3.236	400.00		92.58	
3.234	400.00	3333.94		
3.268	400.00		92.54	
3.270	400.00	3335.99		

PAGE START DATE: 2/16/96
PAGE START TIME: 13:26:30
DATA FILE: 2

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE °F	COMMENTS
3.303	400.00		92.53	
3.301	400.00	3338.21		
3.334	400.00		92.51	
3.337	400.00	3340.44		
3.370	400.00		92.49	
3.368	400.00	3342.44		
3.401	400.00		92.46	
3.403	400.00	3345.04		
3.432	400.00		92.42	
3.434	400.00	3347.11		
3.467	400.00		92.40	SPSI 1240
3.469	400.00	3348.80		
3.498	450.00		92.38	
3.501	450.00	3356.34		
3.534	450.00		92.34	
3.532	450.00	3361.50		
3.565	450.00		92.29	
3.567	450.00	3366.96		
3.600	450.00		92.23	
3.598	450.00	3371.31		
3.631	450.00		92.20	
3.634	450.00	3376.29		
3.667	450.00		92.21	
3.665	450.00	3379.63		
3.698	450.00		92.15	
3.701	450.00	3384.07		
3.729	450.00		92.07	
3.732	450.00	3386.43		
3.765	450.00		92.02	
3.763	450.00	3387.23		
3.796	450.00		92.00	
3.798	450.00	3389.03		
3.831	450.00		91.98	
3.829	450.00	3390.74		
3.863	450.00		91.97	
3.865	450.00	3392.32		
3.898	450.00		91.95	
3.896	450.00	3397.43		
3.929	450.00		91.91	
3.931	450.00	3399.63		
3.960	450.00		91.88	SPSI 1300
3.963	450.00	3401.26		
3.995	500.00		91.86	
3.993	500.00	3408.57		
4.026	500.00		91.81	
4.029	500.00	3415.68		
4.062	500.00		91.72	
4.060	500.00	3420.16		
4.093	500.00		91.66	
4.096	500.00	3424.78		

PAGE START DATE: 2/16/96
PAGE START TIME: 14:16: 2
DATA FILE: 2

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE °F	COMMENTS
4.129	500.00		91.60	
4.127	500.00	3428.91		
4.160	500.00		91.56	
4.162	500.00	3433.14		
4.191	500.00		91.52	
4.193	500.00	3436.43		
4.226	500.00		91.48	
4.224	500.00	3438.94		
4.257	500.00		91.45	
4.260	500.00	3441.24		
4.293	500.00		91.43	
4.291	500.00	3442.46		
4.324	500.00		91.42	
4.327	500.00	3445.16		
4.360	500.00		91.41	
4.358	500.00	3447.96		
4.391	500.00		91.39	
4.393	500.00	3450.86		
4.422	500.00		91.37	
4.424	500.00	3453.20		
4.458	500.00		91.36	SPSI 1340
4.456	500.00	3455.42		
4.488	550.00		91.37	
4.490	550.00	3462.96		
4.523	550.00		91.32	
4.521	550.00	3467.39		
4.554	550.00		91.22	
4.557	550.00	3472.48		
4.590	550.00		91.14	
4.588	550.00	3476.72		
4.621	550.00		91.09	
4.624	550.00	3480.86		
4.657	550.00		91.01	
4.655	550.00	3483.57		
4.688	550.00		90.96	
4.690	550.00	3486.67		
4.719	550.00		90.93	
4.721	550.00	3488.99		
4.754	550.00		90.91	
4.753	550.00	3492.69		
4.786	550.00		90.88	
4.788	550.00	3495.98		
4.821	550.00		90.83	
4.819	550.00	3499.51		
4.852	550.00		90.78	
4.855	550.00	3503.73		
4.888	550.00		90.74	
4.886	550.00	3506.32		
4.919	550.00		90.70	
4.921	550.00	3510.55		

PAGE START DATE: 2/16/96
PAGE START TIME: 15: 5:27
DATA FILE: 2

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE `F	COMMENTS
4.952	550.00		90.66	SPSI 1400
4.955	550.00	3513.50		
4.986	600.00		90.61	
4.984	600.00	3518.47		
5.017	600.00		90.58	
5.020	600.00	3525.13		
5.053	600.00		90.54	
5.051	600.00	3528.94		
5.084	600.00		90.44	
5.086	600.00	3534.96		
5.115	600.00		90.37	
5.118	600.00	3539.41		
5.151	600.00		90.33	
5.149	600.00	3543.43		
5.182	600.00		90.29	
5.184	600.00	3546.51		
5.217	600.00		90.26	
5.215	600.00	3550.26		
5.248	600.00		90.22	
5.251	600.00	3553.21		
5.284	600.00		90.16	
5.282	600.00	3555.19		
5.315	600.00		90.12	
5.318	600.00	3558.78		
5.346	600.00		90.08	
5.349	600.00	3562.09		
5.382	600.00		90.07	
5.380	600.00	3565.81		
5.413	600.00		90.06	
5.415	600.00	3568.74		
5.449	600.00		90.03	SPSI 1460
5.447	600.00	3572.78		
5.479	650.00		89.90	
5.481	650.00	3577.89		
5.514	650.00		89.83	
5.513	650.00	3582.02		
5.546	650.00		89.77	
5.548	650.00	3587.57		
5.581	650.00		89.72	
5.579	650.00	3592.33		
5.612	650.00		89.67	
5.615	650.00	3596.24		
5.643	650.00		89.64	
5.646	650.00	3599.82		
5.679	650.00		89.59	
5.677	650.00	3603.29		
5.710	650.00		89.56	
5.713	650.00	3607.25		
5.746	650.00		89.52	
5.744	650.00	3610.62		

PAGE START DATE: 2/16/96
PAGE START TIME: 15:54:55
DATA FILE: 2

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE °F	COMMENTS
5.777	650.00		89.49	
5.779	650.00	3614.77		
5.808	650.00		89.45	
5.811	650.00	3617.75		
5.844	650.00		89.40	
5.842	650.00	3620.42		
5.875	650.00		89.36	
5.878	650.00	3623.06		
5.911	650.00		89.32	
5.909	650.00	3625.90		
5.943	650.00		89.28	SPSI 1520
5.941	650.00	3628.77		
5.973	700.00		89.23	
5.975	700.00	3635.00		
6.008	700.00		89.16	
6.006	700.00	3639.92		
6.039	700.00		89.07	
6.042	700.00	3645.18		
6.075	700.00		88.98	
6.073	700.00	3649.06		
6.106	700.00		88.94	
6.109	700.00	3653.08		
6.142	700.00		88.91	
6.140	700.00	3656.43		
6.173	700.00		88.90	
6.175	700.00	3660.29		
6.204	700.00		88.90	
6.206	700.00	3663.16		
6.239	700.00		88.89	
6.238	700.00	3666.29		
6.271	700.00		88.94	
6.273	700.00	3670.27		
6.306	700.00		88.81	
6.304	700.00	3674.06		
6.337	700.00		88.72	
6.340	700.00	3677.52		
6.373	700.00		88.62	
6.371	700.00	3680.79		
6.404	700.00		88.56	
6.406	700.00	3684.41		
6.439	700.00		88.50	SPSI 1580
6.437	700.00	3687.19		
6.468	750.00		88.46	
6.471	750.00	3692.35		
6.504	750.00		88.39	
6.502	750.00	3696.70		
6.535	750.00		88.47	
6.537	750.00	3700.88		
6.570	750.00		88.32	
6.568	750.00	3704.18		

PAGE START DATE: 2/16/96
PAGE START TIME: 16:44:24
DATA FILE: 2

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE °F	COMMENTS
6.601	750.00		88.27	
6.604	750.00	3707.85		
6.633	750.00		88.23	
6.636	750.00	3710.76		
6.669	750.00		88.14	
6.667	750.00	3713.31		
6.700	750.00		88.08	
6.702	750.00	3716.55		
6.735	750.00		88.02	
6.733	750.00	3719.09		
6.766	750.00		87.98	
6.769	750.00	3722.52		
6.802	750.00		87.91	
6.800	750.00	3725.98		
6.833	750.00		87.86	
6.836	750.00	3728.52		
6.864	750.00		87.85	
6.867	750.00	3729.08		
6.900	750.00		87.90	
6.898	750.00	3731.73		
6.931	750.00		87.94	SPSI 1620
6.934	750.00	3735.75		
6.966	800.00		87.89	
6.964	800.00	3740.25		
6.997	800.00		87.76	
7.000	800.00	3745.64		
7.033	800.00		87.64	
7.031	800.00	3749.69		
7.064	800.00		87.54	
7.066	800.00	3754.11		
7.095	800.00		87.45	
7.098	800.00	3757.77		
7.131	800.00		87.36	
7.129	800.00	3761.09		
7.162	800.00		87.27	
7.164	800.00	3764.63		
7.197	800.00		87.19	
7.195	800.00	3767.60		
7.228	800.00		87.12	
7.231	800.00	3770.38		
7.264	800.00		87.07	
7.262	800.00	3772.59		
7.295	800.00		87.03	
7.298	800.00	3775.42		
7.326	800.00		87.01	
7.329	800.00	3778.08		
7.362	800.00		86.98	
7.360	800.00	3780.86		
7.393	800.00		86.96	
7.395	800.00	3781.96		

PAGE START DATE: 2/16/96
PAGE START TIME: 17:34: 4
DATA FILE: 2

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE °F	COMMENTS
7.429	800.00		86.95	SPSI 1700
7.427	800.00	3783.91		
7.461	850.00		86.94	
7.459	850.00	3788.16		
7.492	850.00		86.89	
7.494	850.00	3792.71		
7.527	850.00		86.81	
7.525	850.00	3796.24		
7.558	850.00		86.75	
7.561	850.00	3799.10		
7.594	850.00		86.70	
7.592	850.00	3800.72		
7.625	850.00		86.69	
7.628	850.00	3804.37		
7.656	850.00		86.66	
7.659	850.00	3807.74		
7.692	850.00		86.60	
7.690	850.00	3810.83		
7.723	850.00		86.53	
7.725	850.00	3814.04		
7.758	850.00		86.47	
7.756	850.00	3816.66		
7.789	850.00		86.44	
7.792	850.00	3819.37		
7.825	850.00		86.41	
7.823	850.00	3821.57		
7.856	850.00		86.36	
7.859	850.00	3823.90		
7.887	850.00		86.31	
7.890	850.00	3825.83		
7.923	850.00		86.23	SPSI 1740
7.921	850.00	3827.68		
7.953	900.00		86.15	
7.956	900.00	3831.27		
7.989	900.00		86.15	
7.987	900.00	3834.05		
8.020	900.00		86.09	
8.023	900.00	3836.76		
8.056	900.00		85.95	
8.054	900.00	3838.86		
8.087	900.00		85.85	
8.089	900.00	3841.10		
8.118	900.00		85.77	
8.120	900.00	3842.82		
8.153	900.00		85.71	
8.151	900.00	3844.37		
8.184	900.00		85.66	
8.187	900.00	3846.06		
8.220	900.00		85.60	
8.218	900.00	3847.29		

PAGE START DATE: 2/16/96
PAGE START TIME: 18:23:23
DATA FILE: 3

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE °F	COMMENTS
8.251	900.00		85.55	
8.254	900.00	3848.41		
8.283	900.00		85.51	
8.285	900.00	3849.12		
8.318	900.00		85.46	
8.316	900.00	3849.56		
8.349	900.00		85.43	
8.352	900.00	3849.85		
8.385	900.00		85.38	
8.383	900.00	3850.17		
8.417	900.00		85.34	SPSI 1800
8.420	900.00	3850.75		

Plot starting date: 2/16/96

time: 10: 8: 19

Gauge S/N 77675

Company: LIGHTFOOT WIRELINE SERV.

Client: GREAT WESTERN DRILLING

Well name: SOUTH CARTER UNIT #303

Well #: 3

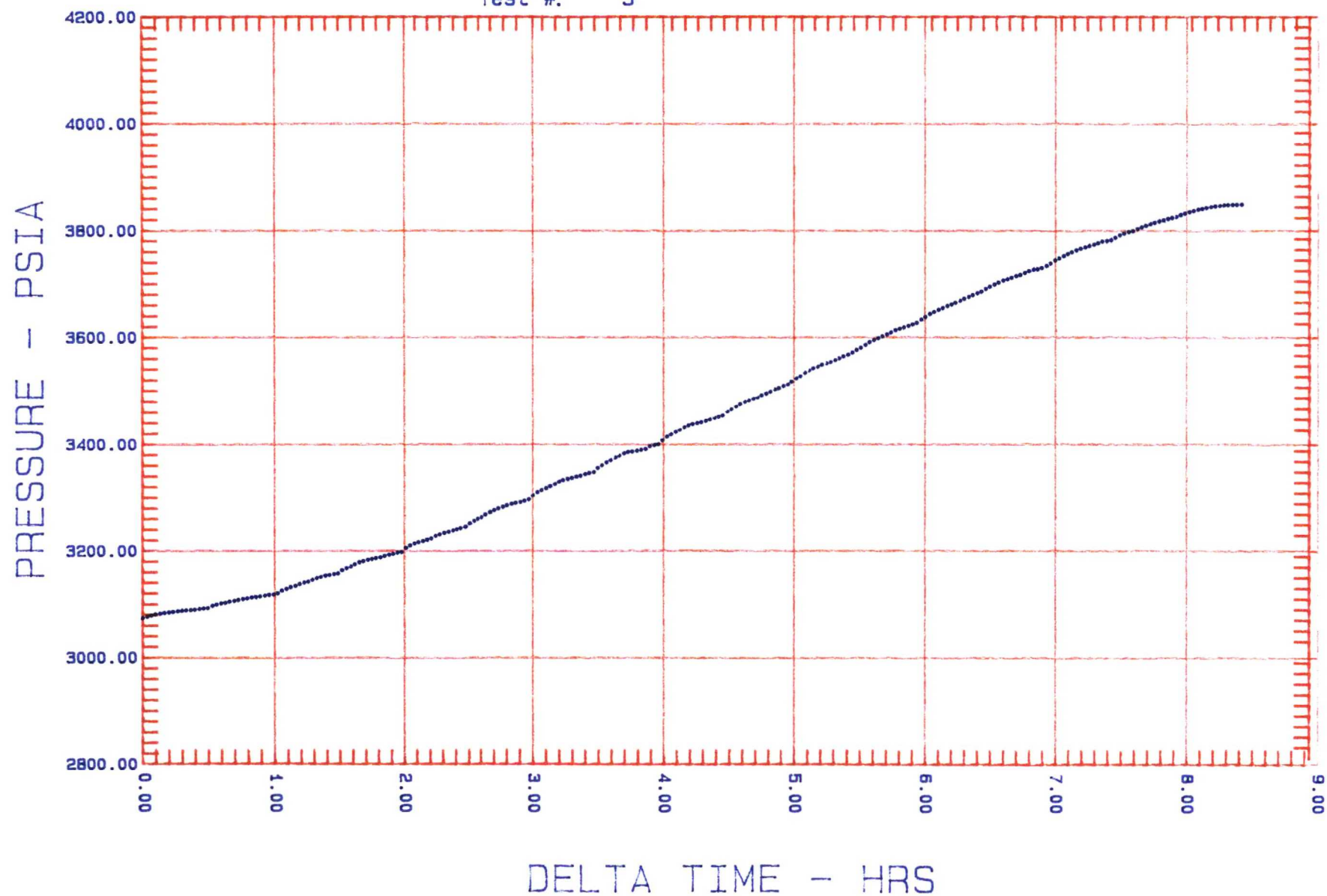
Test #: 3

Location: LEA COUNTY, NM.

Operator: R. McCULLUGH

Comments: STEP-RATE TEST BHP/RATE

GAUGE SET @ 5108'



COMPANY: LIGHTFOOT WIRELINE SERV.
CLIENT: GREAT WESTREN DRILLING
GAUGE NUMBER: 77675
WELL NAME: SOUTH CARTER UNIT #303
WELL NUMBER: 3
TEST NUMBER: 3
LOCATION: LEA COUNTY, NM.
TEST OPERATOR: R. McCULLUGH
COMMENTS: STEP-RATE TEST BHP/RATE
GAUGE SET @ 5108'

POSITION	GAUGE SERIAL NUMBER
1	
2	63150
3	77675
4	

PAGE START DATE: 2/16/96
PAGE START TIME: 10: 8: 0
DATA FILE: 7

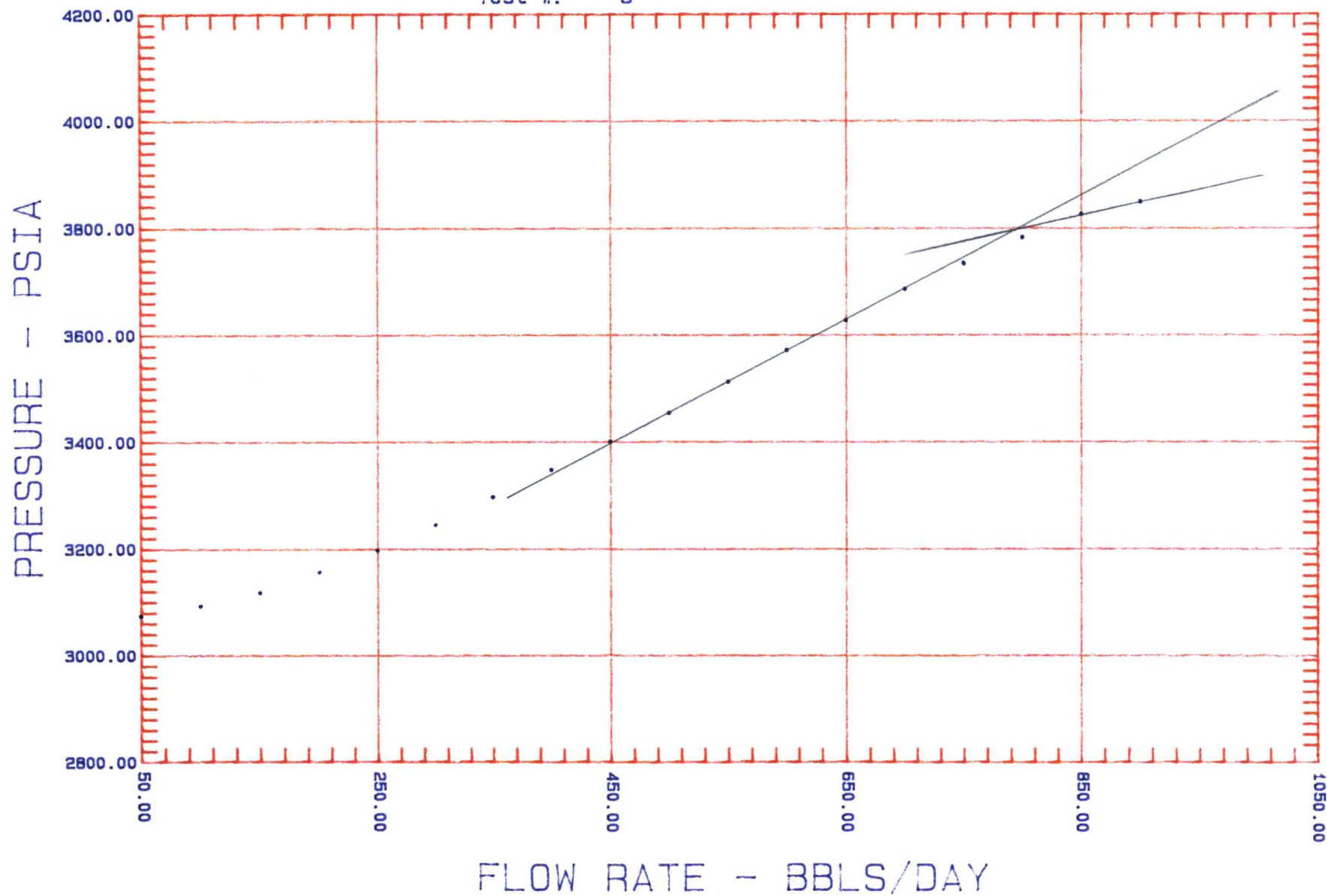
GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE °F	COMMENTS
0.000	50.00	3074.67		
0.500	100.00	3094.05		
1.000	150.00	3119.23		
1.500	200.00	3158.72		
2.000	250.00	3198.88		
2.500	300.00	3246.37		
3.000	350.00	3298.15		
3.500	400.00	3348.80		
4.000	450.00	3401.26		
4.500	500.00	3455.42		
5.000	550.00	3513.50		
5.500	600.00	3572.78		
6.000	650.00	3628.77		
6.500	700.00	3687.19		
7.000	750.00	3735.75		
7.500	800.00	3783.91		
8.000	850.00	3827.68		
8.500	900.00	3850.75		

Plot starting date: 2/16/96
time: 10: 8: 0
Gauge S/N 77675

Company: LIGHTFOOT WIRELINE SERV.
Client: GREAT WESTERN DRILLING
Well name: SOUTH CARTER UNIT #303
Well #: 3
Test #: 3

Location: LEA COUNTY, NM.
Operator: R. McCULLUGH
Comments: STEP-RATE TEST BHP/RATE
GAUGE SET @ 5108'



COMPANY: LIGHTFOOT WIRELINE SERV.
CLIENT: GREAT WESTREN DRILLING
GAUGE NUMBER: 77675
WELL NAME: SOUTH CARTER UNIT #303
WELL NUMBER: 3
TEST NUMBER: 3
LOCATION: LEA COUNTY, NM.
TEST OPERATOR: R. McCULLUGH
COMMENTS: STEP-RATE TEST SURF/RATE
GAUGE SET @ SURFACE

POSITION	GAUGE SERIAL NUMBER
1	
2	63150
3	77675
4	

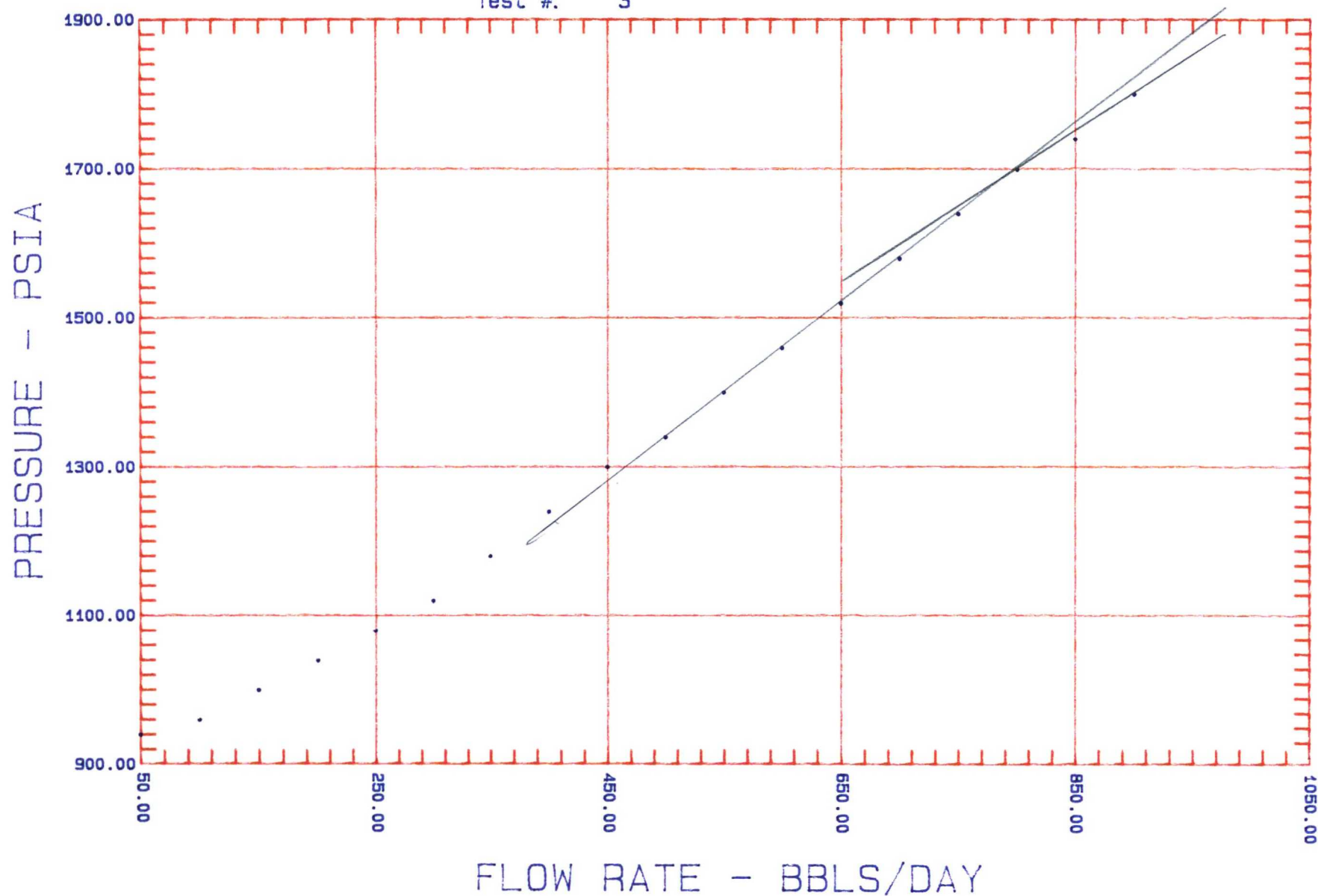
PAGE START DATE: 2/16/96
PAGE START TIME: 10: 8: 0
DATA FILE: 7

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE °F	COMMENTS
0.000	50.00	940.00		
0.500	100.00	960.00		
1.000	150.00	1000.00		
1.500	200.00	1040.00		
2.000	250.00	1080.00		
2.500	300.00	1120.00		
3.000	350.00	1180.00		
3.500	400.00	1240.00		
4.000	450.00	1300.00		
4.500	500.00	1340.00		
5.000	550.00	1400.00		
5.500	600.00	1460.00		
6.000	650.00	1520.00		
6.500	700.00	1580.00		
7.000	750.00	1640.00		
7.500	800.00	1700.00		
8.000	850.00	1740.00		
8.500	900.00	1800.00		

Plot starting date: 2/16/96
time: 10: 8: 0
Gauge S/N 77675

Company: LIGHTFOOT WIRELINE SERV. Location: LEA COUNTY, NM.
Client: GREAT WESTERN DRILLING Operator: R. McCULLUGH
Well name: SOUTH CARTER UNIT #303 Comments: STEP-RATE TEST SURF/RATE
Well #: 3 GAUGE SET @ SURFACE
Test #: 3



LIGHTFOOT WIRELINE SERVICE, INC.

STEP RATE TEST

GREAT WESTERN
SOUTH CARTER UNIT #402
SOUTH CARTER

2/15/96

WELL DATA

WELL STATUS: INJECTING
PRESSURE DATUM: 5182'
TUBING: 2 3/8"
CASING:
PERFS:
FORMATION:
PACKER DEPTH:
T.D. :

TEST INFORMATION

STABILIZED RATE: 100 B/D
STABILIZED PRESSURE: 3120.73 BHP
RATE INCREMENTS: 50 B/D
STEP LENGTH: 30 MINS.
CUMULATIVE INJECTION:
TEST OPERATOR: D. GRYDER

SUMMARY

BHP PARTING PRESSURE: ---- 3465.00 BHPSI
SURFACE PARTING PRESSURE: 1300.00 SPSI
PARTING GRADIENT: ----- .67

COMPANY: LIGHTFOOT WIRELINE SERV.
CLIENT: GREAT WESTREN DRILLING
GAUGE NUMBER: 77675
WELL NAME: SOUTH CARTER UNIT #402
WELL NUMBER: 2
TEST NUMBER: 2
LOCATION: LEA COUNTY, NM.
TEST OPERATOR: R. McCULLUGH
COMMENTS: STEP-RATE TEST BHP/RATE
GAUGE SET @ 5182'

POSITION	GAUGE SERIAL NUMBER
1	
2	63150
3	77675
4	

PAGE START DATE: 2/15/95
PAGE START TIME: 10:36:31
DATA FILE: 1

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE °F	COMMENTS
0.000	100.00		96.84	SPSI 900
0.002	100.00	3120.73		
0.035	150.00		96.84	
0.033	150.00	3126.31		
0.066	150.00		96.83	
0.069	150.00	3131.48		
0.097	150.00		96.83	
0.100	150.00	3135.78		
0.133	150.00		96.82	
0.131	150.00	3139.15		
0.164	150.00		96.81	
0.166	150.00	3142.14		
0.199	150.00		96.79	
0.198	150.00	3144.15		
0.231	150.00		96.77	
0.233	150.00	3147.47		
0.266	150.00		96.75	
0.264	150.00	3149.64		
0.297	150.00		96.74	
0.300	150.00	3151.91		
0.328	150.00		96.72	
0.331	150.00	3153.93		
0.364	150.00		96.70	
0.362	150.00	3155.56		
0.395	150.00		96.68	
0.397	150.00	3158.70		
0.431	150.00		96.66	
0.429	150.00	3160.89		
0.462	150.00		96.64	
0.464	150.00	3162.73		
0.497	150.00		96.61	SPSI 980
0.495	150.00	3164.30		
0.529	200.00		96.58	
0.527	200.00	3170.61		
0.560	200.00		96.56	
0.562	200.00	3176.43		
0.595	200.00		96.52	
0.593	200.00	3180.18		
0.626	200.00		96.48	
0.629	200.00	3183.77		
0.662	200.00		96.45	
0.660	200.00	3187.18		
0.693	200.00		96.40	
0.696	200.00	3189.61		
0.724	200.00		96.37	
0.727	200.00	3192.54		
0.760	200.00		96.32	
0.758	200.00	3194.64		
0.791	200.00		96.28	
0.793	200.00	3196.85		

PAGE START DATE: 2/15/95
PAGE START TIME: 11:26: 7
DATA FILE: 1

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE °F	COMMENTS
0.827	200.00		96.25	
0.825	200.00	3199.36		
0.858	200.00		96.22	
0.860	200.00	3201.35		
0.889	200.00		96.20	
0.891	200.00	3202.57		
0.924	200.00		96.17	
0.922	200.00	3205.66		
0.956	200.00		96.15	
0.958	200.00	3208.37		
0.991	200.00		96.13	SPSI 1020
0.989	200.00	3209.68		
1.021	250.00		96.12	
1.024	250.00	3216.36		
1.057	250.00		96.09	
1.055	250.00	3220.34		
1.088	250.00		96.06	
1.090	250.00	3224.58		
1.123	250.00		96.04	
1.121	250.00	3227.94		
1.154	250.00		95.98	
1.157	250.00	3231.83		
1.190	250.00		95.93	
1.188	250.00	3234.83		
1.221	250.00		95.90	
1.224	250.00	3238.75		
1.252	250.00		95.87	
1.255	250.00	3241.76		
1.288	250.00		95.82	
1.286	250.00	3244.49		
1.319	250.00		95.79	
1.321	250.00	3247.50		
1.354	250.00		95.77	
1.352	250.00	3250.22		
1.386	250.00		95.73	
1.388	250.00	3252.85		
1.421	250.00		95.70	
1.419	250.00	3254.97		
1.452	250.00		95.68	
1.455	250.00	3257.33		
1.484	250.00		95.65	SPSI 1080
1.486	250.00	3259.87		
1.519	300.00		95.63	
1.517	300.00	3265.19		
1.550	300.00		95.59	
1.552	300.00	3270.45		
1.585	300.00		95.54	
1.583	300.00	3274.25		
1.616	300.00		95.50	
1.619	300.00	3278.06		

PAGE START DATE: 2/15/95
PAGE START TIME: 12:15:38
DATA FILE: 1

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE °F	COMMENTS
1.652	300.00		95.47	
1.650	300.00	3281.90		
1.683	300.00		95.45	
1.686	300.00	3285.43		
1.714	300.00		95.40	
1.717	300.00	3288.70		
1.750	300.00		95.37	
1.748	300.00	3291.50		
1.781	300.00		95.32	
1.783	300.00	3294.72		
1.816	300.00		95.28	
1.814	300.00	3297.46		
1.847	300.00		95.22	
1.850	300.00	3300.38		
1.883	300.00		95.18	
1.881	300.00	3302.96		
1.914	300.00		95.13	
1.917	300.00	3305.74		
1.945	300.00		95.09	
1.948	300.00	3308.43		
1.978	300.00		95.06	SPSI 1120
1.981	300.00	3311.08		
2.014	350.00		95.03	
2.012	350.00	3316.06		
2.045	350.00		95.00	
2.047	350.00	3321.23		
2.080	350.00		94.94	
2.078	350.00	3325.45		
2.111	350.00		94.89	
2.114	350.00	3329.81		
2.147	350.00		94.82	
2.145	350.00	3333.43		
2.178	350.00		94.78	
2.181	350.00	3337.13		
2.209	350.00		94.75	
2.212	350.00	3340.21		
2.245	350.00		94.71	
2.243	350.00	3343.00		
2.276	350.00		94.67	
2.278	350.00	3345.93		
2.311	350.00		94.63	
2.309	350.00	3349.08		
2.342	350.00		94.59	
2.345	350.00	3351.98		
2.378	350.00		94.55	
2.376	350.00	3355.16		
2.409	350.00		94.52	
2.412	350.00	3358.50		
2.440	350.00		94.49	
2.443	350.00	3361.21		

PAGE START DATE: 2/15/95
PAGE START TIME: 13: 4:59
DATA FILE: 1

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE °F	COMMENTS
2.474	350.00		94.45	SPSI 1180
2.477	350.00	3363.74		
2.510	400.00		94.34	
2.508	400.00	3371.80		
2.541	400.00		94.28	
2.543	400.00	3375.83		
2.572	400.00		94.24	
2.574	400.00	3379.28		
2.607	400.00		94.20	
2.606	400.00	3382.15		
2.639	400.00		94.16	
2.641	400.00	3385.52		
2.674	400.00		94.10	
2.672	400.00	3388.74		
2.705	400.00		94.05	
2.708	400.00	3391.98		
2.741	400.00		94.00	
2.739	400.00	3395.42		
2.772	400.00		93.97	
2.774	400.00	3397.90		
2.803	400.00		93.95	
2.806	400.00	3400.62		
2.839	400.00		93.93	
2.837	400.00	3403.65		
2.870	400.00		93.91	
2.872	400.00	3406.63		
2.905	400.00		93.89	
2.903	400.00	3409.43		
2.936	400.00		93.87	
2.939	400.00	3412.15		
2.968	400.00		93.86	SPSI 1240
2.971	400.00	3414.70		
3.004	450.00		93.84	
3.002	450.00	3419.32		
3.035	450.00		93.80	
3.037	450.00	3423.38		
3.071	450.00		93.77	
3.069	450.00	3426.71		
3.102	450.00		93.70	
3.104	450.00	3430.33		
3.137	450.00		93.64	
3.135	450.00	3433.56		
3.168	450.00		93.59	
3.166	450.00	3436.70		
3.199	450.00		93.53	
3.202	450.00	3439.89		
3.235	450.00		93.49	
3.233	450.00	3442.47		
3.266	450.00		93.45	
3.269	450.00	3445.22		

PAGE START DATE: 2/15/95
PAGE START TIME: 13:54:37
DATA FILE: 1

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE `F	COMMENTS
3.302	450.00		93.41	
3.300	450.00	3447.75		
3.333	450.00		93.36	
3.335	450.00	3450.83		
3.364	450.00		93.32	
3.366	450.00	3453.07		
3.399	450.00		93.28	
3.397	450.00	3455.43		
3.431	450.00		93.26	
3.433	450.00	3458.06		
3.465	450.00		93.21	SPSI 1300
3.467	450.00	3460.35		
3.500	500.00		93.16	
3.498	500.00	3463.77		
3.531	500.00		93.09	
3.534	500.00	3467.16		
3.562	500.00		93.04	
3.565	500.00	3469.95		
3.598	500.00		92.98	
3.596	500.00	3472.44		
3.629	500.00		92.91	
3.631	500.00	3475.12		
3.664	500.00		92.85	
3.662	500.00	3476.34		
3.696	500.00		92.83	
3.698	500.00	3478.66		
3.731	500.00		92.77	
3.729	500.00	3481.05		
3.762	500.00		92.74	
3.765	500.00	3483.96		
3.793	500.00		92.69	
3.796	500.00	3486.42		
3.829	500.00		92.67	
3.827	500.00	3488.85		
3.860	500.00		92.63	
3.862	500.00	3491.43		
3.896	500.00		92.58	
3.894	500.00	3493.63		
3.927	500.00		92.53	
3.929	500.00	3496.13		
3.961	500.00		92.48	SPSI 1320
3.959	500.00	3497.77		
3.995	550.00		92.41	
3.993	550.00	3501.22		
4.026	550.00		92.30	
4.028	550.00	3504.84		
4.057	550.00		92.21	
4.059	550.00	3507.36		
4.092	550.00		92.13	
4.091	550.00	3509.81		

PAGE START DATE: 2/15/95
PAGE START TIME: 14:43:56
DATA FILE: 1

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE °F	COMMENTS
4.124	550.00		92.09	
4.126	550.00	3512.62		
4.160	550.00		92.02	
4.158	550.00	3514.69		
4.191	550.00		91.96	
4.193	550.00	3517.15		
4.222	550.00		91.90	
4.224	550.00	3519.13		
4.257	550.00		91.84	
4.256	550.00	3521.43		
4.289	550.00		91.80	
4.291	550.00	3524.29		
4.324	550.00		91.74	
4.322	550.00	3526.66		
4.355	550.00		91.69	
4.358	550.00	3529.07		
4.391	550.00		91.65	
4.389	550.00	3530.75		
4.422	550.00		91.61	
4.424	550.00	3532.71		
4.457	550.00		91.57	SPSI 1380
4.455	550.00	3534.27		
4.487	600.00		91.53	
4.490	600.00	3537.11		
4.523	600.00		91.46	
4.521	600.00	3539.54		
4.554	600.00		91.40	
4.556	600.00	3542.23		
4.585	600.00		91.34	
4.588	600.00	3544.22		
4.621	600.00		91.28	
4.619	600.00	3546.25		
4.652	600.00		91.23	
4.654	600.00	3548.32		
4.687	600.00		91.19	
4.685	600.00	3549.84		
4.718	600.00		91.15	
4.721	600.00	3551.68		
4.754	600.00		91.10	
4.752	600.00	3553.25		
4.785	600.00		91.06	
4.787	600.00	3554.70		
4.816	600.00		91.02	
4.819	600.00	3556.06		
4.852	600.00		90.97	
4.850	600.00	3557.29		
4.883	600.00		90.94	
4.885	600.00	3559.11		
4.918	600.00		90.90	
4.916	600.00	3560.12		

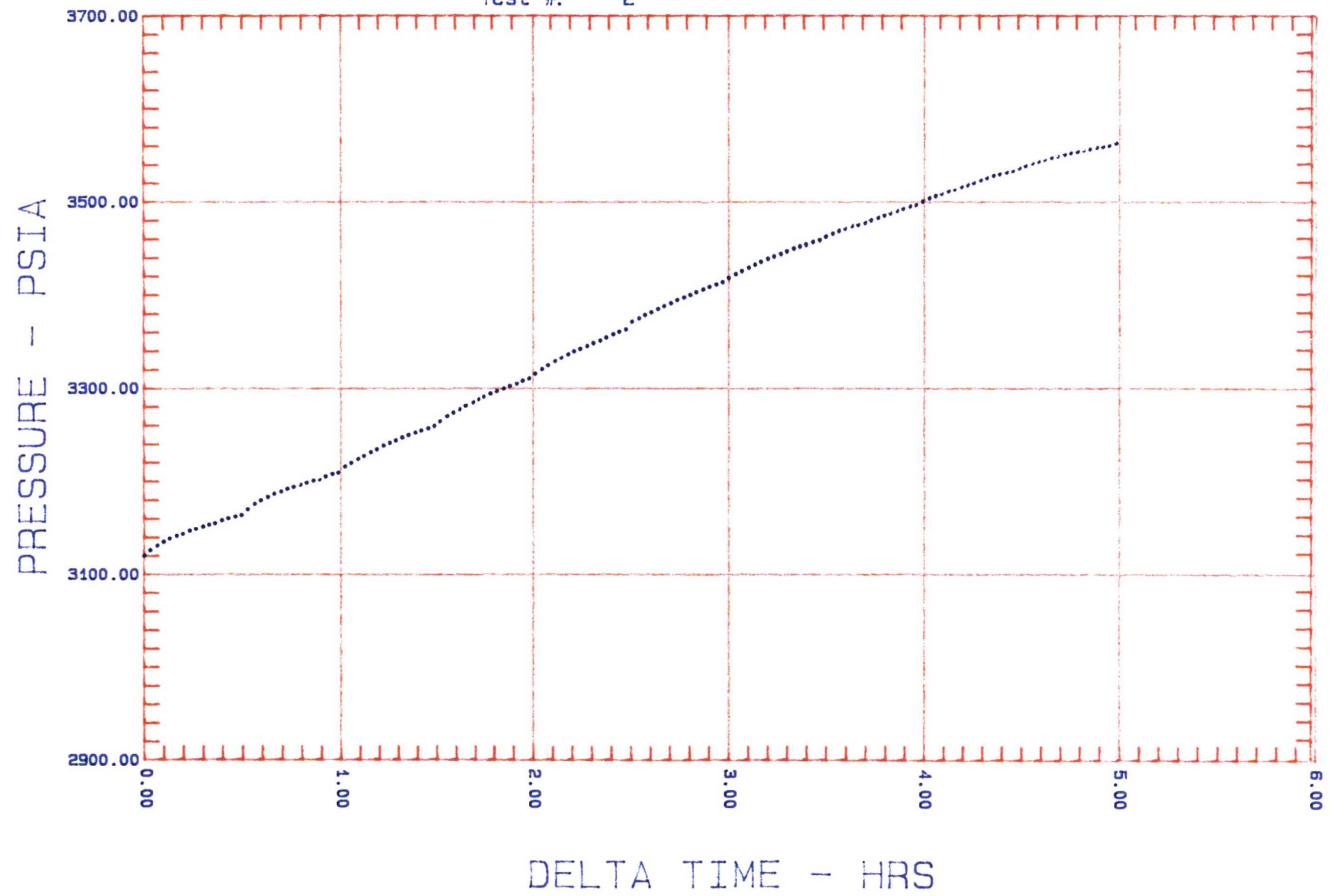
PAGE START DATE: 2/15/95
PAGE START TIME: 15:33:34
DATA FILE: 1

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE °F	COMMENTS
4.951	600.00		90.86	SPSI 1400
4.949	600.00	3561.22		
4.982	650.00		90.81	
4.984	650.00	3563.65		

Plot starting date: 2/15/95
time: 10:36:31
Gauge S/N 77675

Company: LIGHTFOOT WIRELINE SERV. Location: LEA COUNTY, NM.
Client: GREAT WESTERN DRILLING Operator: R. McCULLUGH
Well name: SOUTH CARTER UNIT #402 Comments: STEP-RATE TEST BHP/RATE
Well #: 2 GAUGE SET @ 5182'
Test #: 2



COMPANY: LIGHTFOOT WIRELINE SERV.
CLIENT: GREAT WESTREN DRILLING
GAUGE NUMBER: 77675
WELL NAME: SOUTH CARTER UNIT #402
WELL NUMBER: 2
TEST NUMBER: 2
LOCATION: LEA COUNTY, NM.
TEST OPERATOR: R. McCULLUGH
COMMENTS: STEP-RATE TEST BHP/RATE
GAUGE SET @ 5182'

POSITION	GAUGE SERIAL NUMBER
1	
2	63150
3	77675
4	

PAGE START DATE: 2/15/96
PAGE START TIME: 10:36: 0
DATA FILE: 6

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE °F	COMMENTS
0.000	100.00	3120.73		
0.500	150.00	3164.30		
1.000	200.00	3209.68		
1.500	250.00	3259.87		
2.000	300.00	3311.08		
2.500	350.00	3363.74		
3.000	400.00	3414.70		
3.500	450.00	3460.35		
4.000	500.00	3497.77		
4.500	550.00	3534.27		
5.000	600.00	3561.22		

Plot starting date: 2/15/96

time: 10:36: 0

Gauge S/N 77675

Company: LIGHTFOOT WIRELINE SERV.

Client: GREAT WESTERN DRILLING

Well name: SOUTH CARTER UNIT #402

Well #: 2

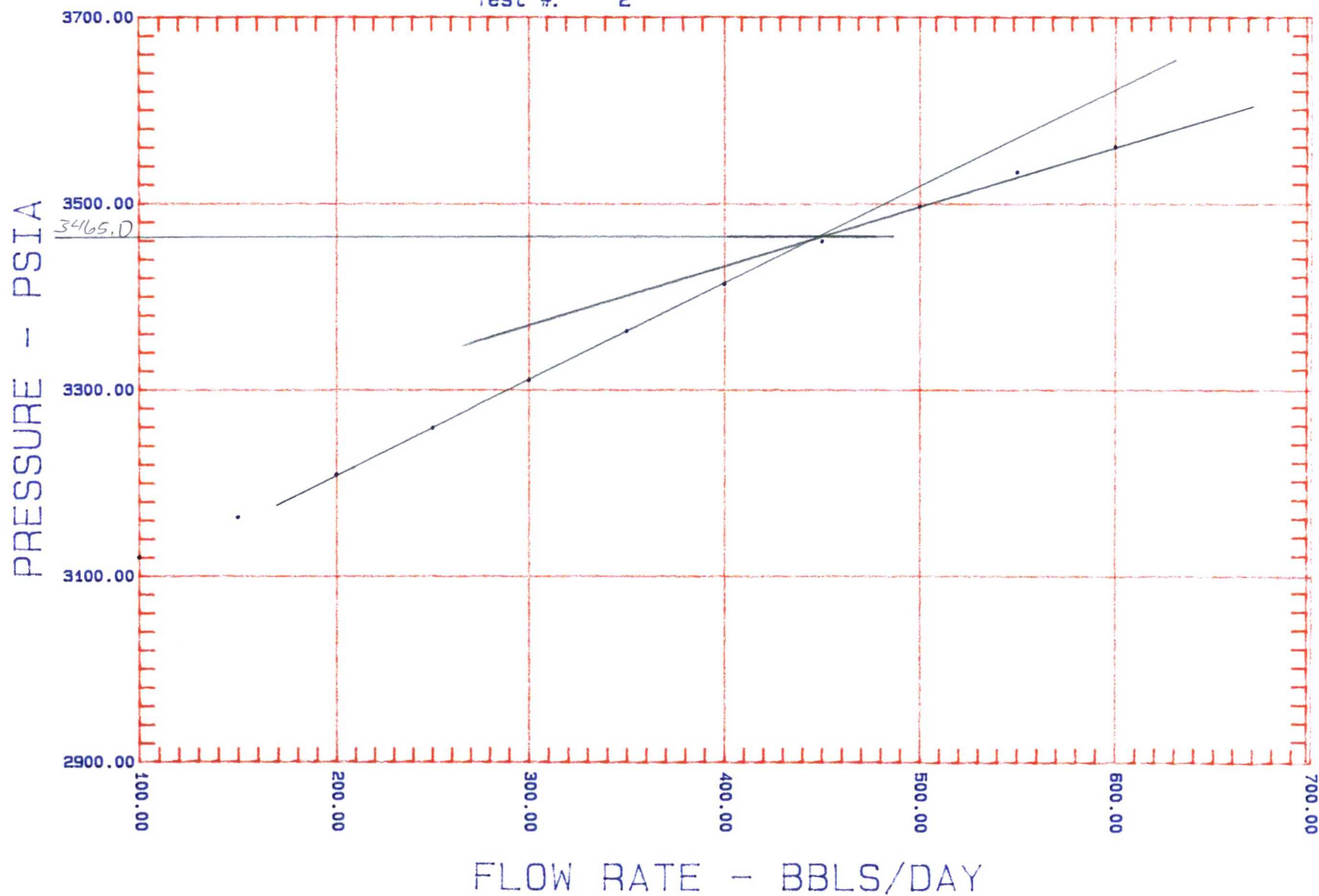
Test #: 2

Location: LEA COUNTY, NM.

Operator: R. McCULLUGH

Comments: STEP-RATE TEST BHP/RATE

GAUGE SET @ 5182'



COMPANY: LIGHTFOOT WIRELINE SERV.
CLIENT: GREAT WESTREN DRILLING
GAUGE NUMBER: 77675
WELL NAME: SOUTH CARTER UNIT #402
WELL NUMBER: 2
TEST NUMBER: 2
LOCATION: LEA COUNTY, NM.
TEST OPERATOR: R. McCULLUGH
COMMENTS: STEP-RATE TEST SURF/RATE
GAUGE SET @ SURFACE

POSITION	GAUGE SERIAL NUMBER
1	
2	63150
3	77675
4	

PAGE START DATE: 2/15/96
PAGE START TIME: 10:36: 0
DATA FILE: 6

GAUGE S/N: 77675

DELTA TIME HRS	FLOW RATE BBLs/DAY	PRESSURE PSIA	TEMPERATURE °F	COMMENTS
0.000	100.00	900.00		
0.500	150.00	980.00		
1.000	200.00	1020.00		
1.500	250.00	1080.00		
2.000	300.00	1120.00		
2.500	350.00	1180.00		
3.000	400.00	1240.00		
3.500	450.00	1300.00		
4.000	500.00	1320.00		
4.500	550.00	1380.00		
5.000	600.00	1400.00		

Plot starting date: 2/15/96

time: 10:36: 0

Gauge S/N 77675

Company: LIGHTFOOT WIRELINE SERV.

Client: GREAT WESTERN DRILLING

Well name: SOUTH CARTER UNIT #402

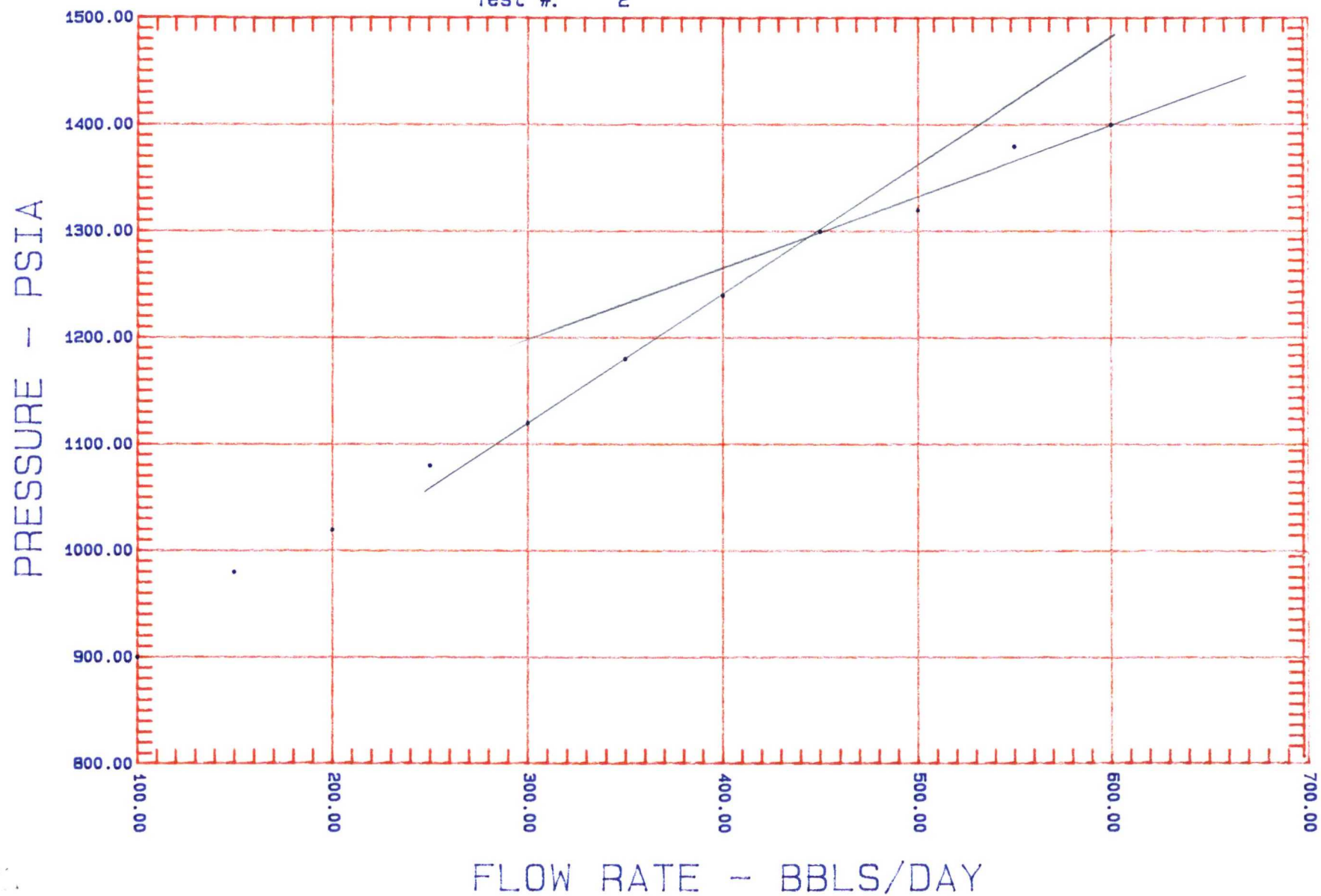
Well #: 2

Test #: 2

Location: LEA COUNTY, NM.

Operator: R. McCULLUGH

Comments: STEP-RATE TEST SURF/RATE
GAUGE SET @ SURFACE





GREAT WESTERN DRILLING COMPANY
Post Office Box 1659 • Midland, Texas 79702 • 915/682-5241

*South Carter San Andres
Unit WF Project
R-110251
Case No. 11113*

March 4, 1996

TO: David Catanach
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87504

*102- Unit N-5
103- Unit K-5
303- Unit D-P
402- Unit F-8*

Re: South Carter (San Andres) Unit
Maximum Injection Pressure

Mr Catanach:

Great Western Drilling Company respectfully requests an increase in the maximum injection pressure on our South Carter (San Andres) Unit. Currently, the maximum injection pressure is 0.2 psi per foot, as outlined in Order No. R-110251. Results of the step rate tests on the 4 injection wells in the unit are as follows:

Well Number	Surface Injection Pressure
SCSAU #102	1330 psi
SCSAU #103	1750 psi
SCSAU #303	1700 psi
SCSAU #402	1300 psi

It is our recommendation the new maximum surface injection pressures of 50 psi under the surface parting pressure, as indicated by the step rate tests, be approved. These wells are located in T18S, R39E, Lea County, New Mexico.

If you have any questions regarding this matter, please feel free to contact my office at 505-396-5538.

Very truly yours,

Joe N. Clement

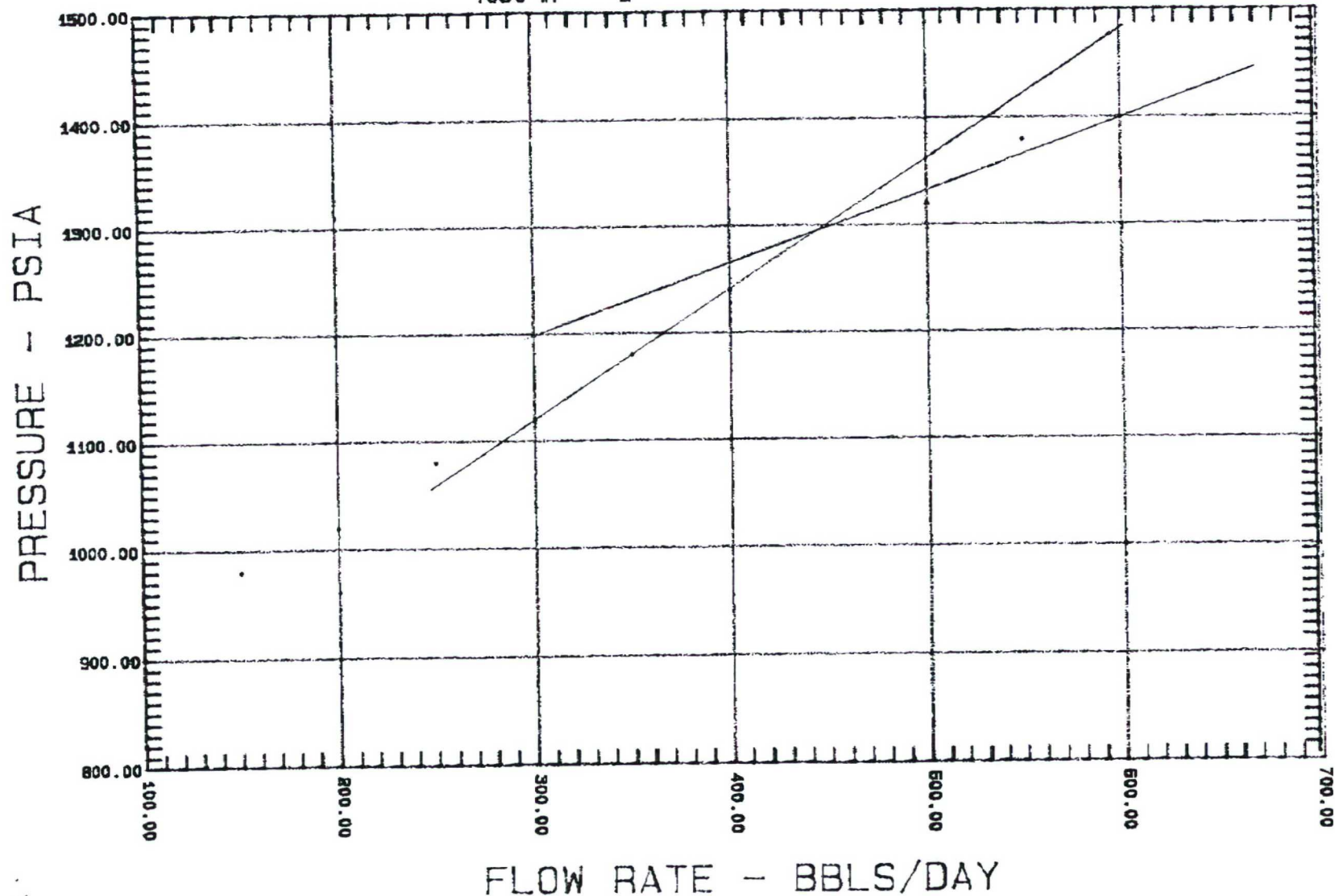
Joe N. Clement
Division Engineer

cc: Jerry Sexton - Hobbs OCD

Plot starting date: 2/15/96
time: 10:36: 0
Gauge S/N 77675

Company: LIGHTFOOT WIRELINE SERV.
Client: GREAT WESTERN DRILLING
Well name: SOUTH CARTER UNIT #402
Well #: 2
Test #: 2

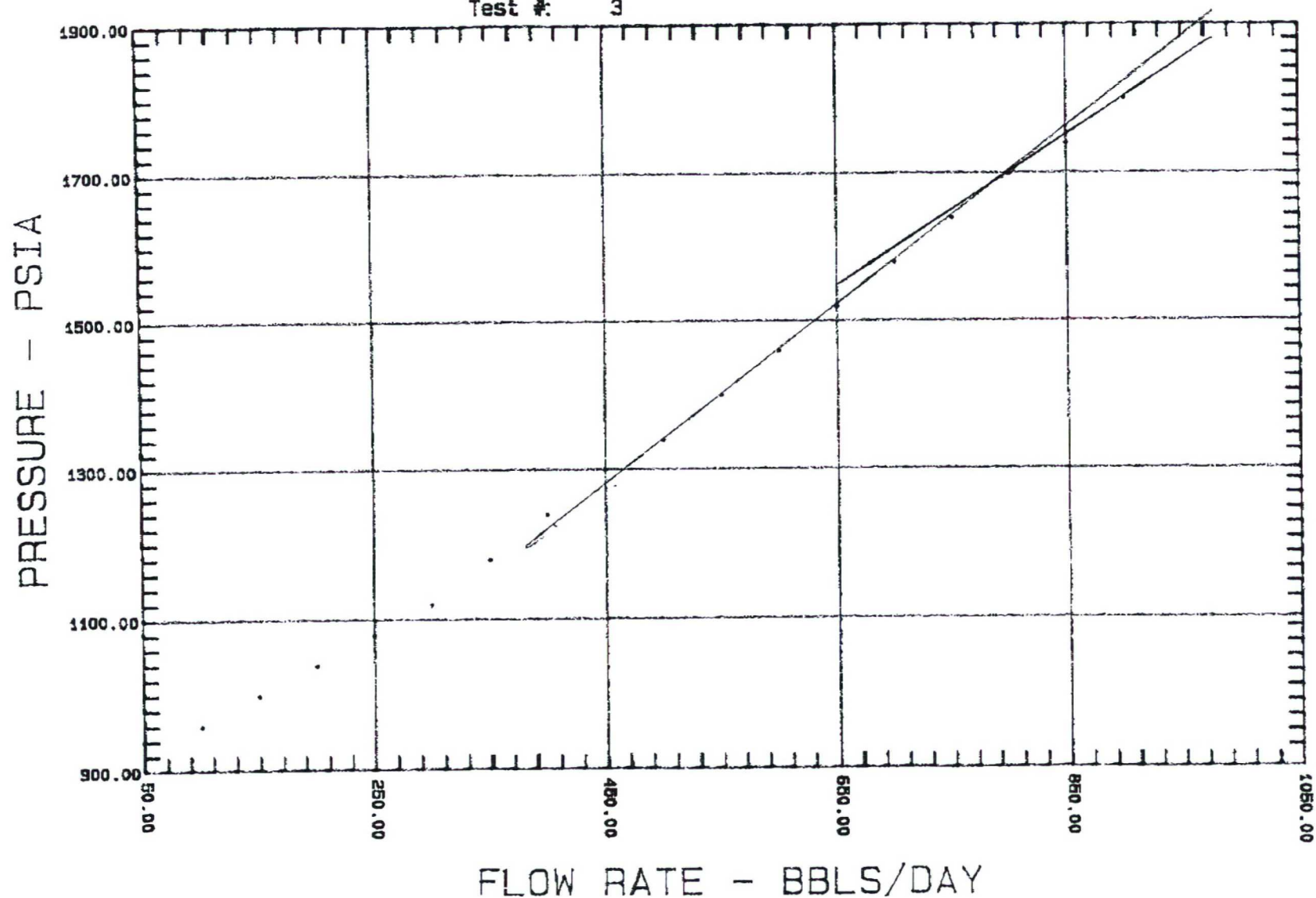
Location: LEA COUNTY, NM.
Operator: R. McCULLUGH
Comments: STEP-RATE TEST SURF/RATE
GAUGE SET @ SURFACE



Plot starting date: 2/16/96
time: 10: 8: 0
Gauge S/N 77675

Company: LIGHTFOOT WIRELINE SERV.
Client: GREAT WESTERN DRILLING
Well name: SOUTH CARTER UNIT #303
Well #: 3
Test #: 3

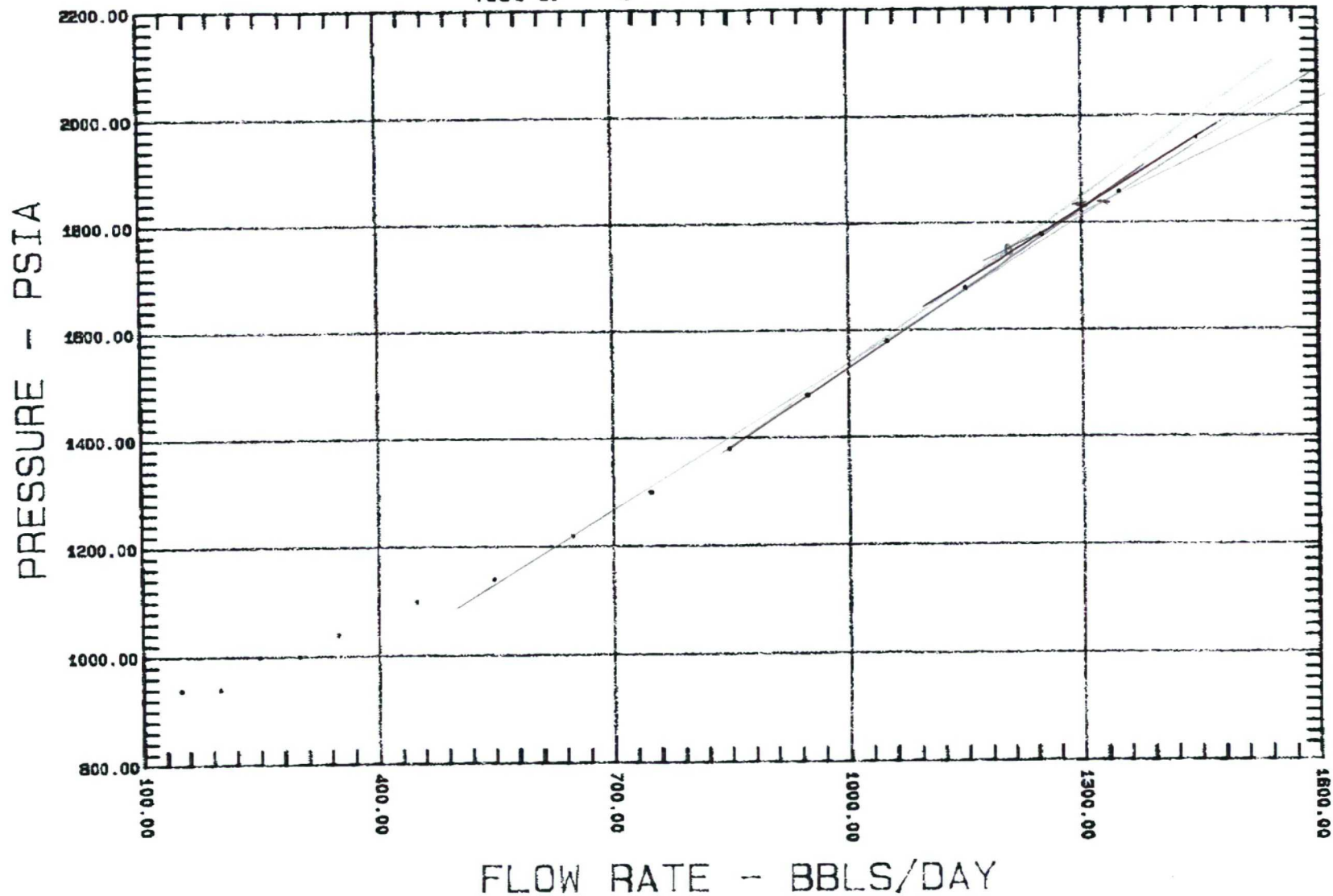
Location: LEA COUNTY, NM.
Operator: R. McCULLUGH
Comments: STEP-RATE TEST SURF/RATE
GAUGE SET @ SURFACE



Plot starting date: 2/19/96
time: 9:34: 0
Gauge S/N 77675

Company: LIGHTFOOT WIRELINE SERV.
Client: GREAT WESTERN DRILLING
Well name: SOUTH CARTER UNIT #103
Well #: 4
Test #: 4

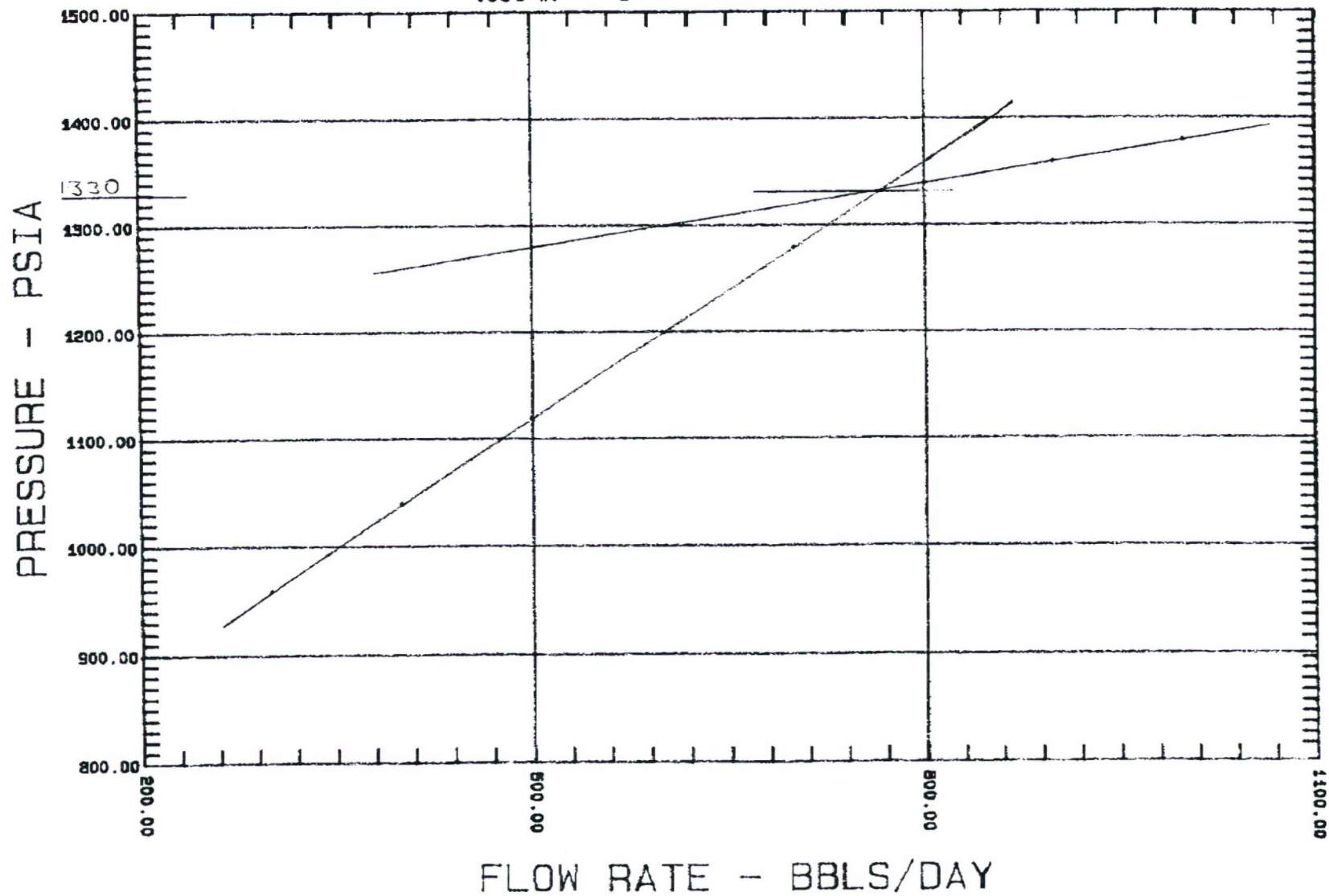
Location: LEA COUNTY, NM.
Operator: R. McCULLUGH
Comments: STEP-RATE TEST SURF/RATE
GAUGE SET @ SURFACE



Plot starting date: 2/ 1/96
time: 11:30: 0
Gauge S/N 77675

Company: LIGHTFOOT WIRELINE SERV
Client: GREAT WESTERN
Well name: SOUTH CARTER UNIT #102
Well #: 1
Test #: 1

Location: SOUTH CARTER
Operator: D. GRyder
Comments: STEP-RATE TEST SURF, RATE
GAUGE SET @ SURFACE





STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

TO: *David Catanach*

FROM: *Bonnie Trichard*

DATE: *3/4/96*

NUMBER OF PAGES: *6*
(INCLUDING COVER)

NMOC FAX NUMBER: (506) 393-0720
IF YOU DO NOT RECEIVE A TRANSMISSION, CALL (506) 393-6161

