

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL APR 13 1989

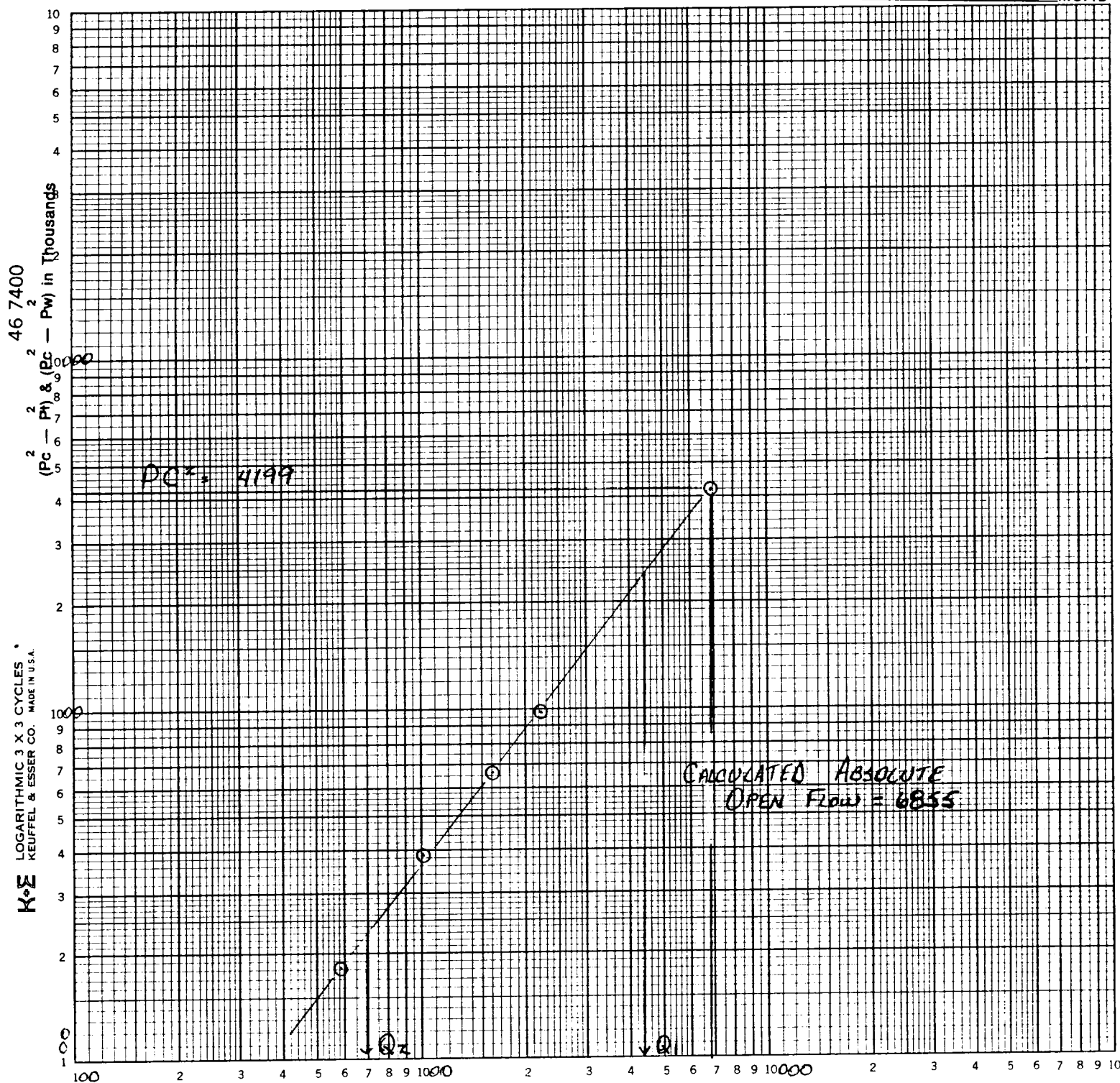
Type Test ☒ Initial ☐ Annual ☐ Special		Test Date 4-11-89	
Company CARL A. SCHELLINGER		Connection AIR NEW WELL	
Pool UND. S. PALMA MESA MONTOYA XXXXXXX RANCH For Ranch		Formation MONTOYA	
Completion Date 4-11-89		Total Depth 6595	
Csg. Size 5.5		Well Back TD 6537	
Wt. 15.5		Elevation C. D. 3873A, OFFICE	
Set At 4.950		Perforations From 6482 To 6518	
Perforations Set At 6400		From OPEN T-ENDED	
Farm or Lease Name CAMPBELL STATION UNIT		Well No. #6	
Unit I		Sec. 5 Twp. 9S Rge. 27E	
Type Well - Single - Rodhead - G.C. or G.O. Multiple SINGLE		Packer Set At 6400	
Producing Thru TUBING		State NEW MEXICO	
Reservoir Temp. °F 145		Mean Annual Temp. °F 60.0	
Baro. Press. - P _g 13.2		County CHAVES	
L 6500	H 6500	G _g .669	% CO ₂ 2.47
% N ₂ 4.65	% H ₂ S 00.0	Prover 00.0	Meter Run 3.0
Taps FLANGE			
FLOW DATA			
NO.	Prover Line Size	Orifice Size	Press. p.s.i.g.
SI			
1.	3.0 X 1.500	240	7.0
2.	3.0 X 1.500	245	20.0
3.	3.0 X 1.500	260	49.0
4.	3.0 X 1.500	260	92.0
5.			
TUBING DATA			
NO.	Prover Line Size	Orifice Size	Press. p.s.i.g.
1.	3.0 X 1.500	240	7.0
2.	3.0 X 1.500	245	20.0
3.	3.0 X 1.500	260	49.0
4.	3.0 X 1.500	260	92.0
5.			
BHP DATA			
NO.	Prover Line Size	Orifice Size	Press. p.s.i.g.
1.	3.0 X 1.500	240	7.0
2.	3.0 X 1.500	245	20.0
3.	3.0 X 1.500	260	49.0
4.	3.0 X 1.500	260	92.0
5.			
RATE OF FLOW CALCULATIONS			
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m
1	11.17	42.10	253.2
2	11.17	71.86	258.2
3	11.17	115.70	273.2
4	11.17	158.54	273.2
5			
NO.	P _g	Temp. °R	T _g
1	.38	519.	1.43
2	.38	521.	1.43
3	.41	520.	1.43
4	.41	521.	1.43
5			
Gas Liquid Hydrocarbon Ratio 86.7 Mcf/bbl.			
A.P.I. Gravity of Liquid Hydrocarbons 65.5 Deg.			
Specific Gravity Separator Gas .669 XXXXXXXXXX			
Specific Gravity Flowing Fluid XXXXX .698			
Critical Pressure 672. P.S.I.A. 670. P.S.I.A.			
Critical Temperature 363. R 372. R			
P _c 2048.1 P _w 24199.			
NO.	P _i	P _w	P _w ²
1	5952	2005	4018
2	5645	1953	3813
3	2537	1882	3541
4	4738	1791	3209
5			
(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 4.2436$			
(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 3.0933$			
AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 6855.0$			
Post ID-2 5-5-89 comp & BK			
Absolute Open Flow 6855.0 Mcfd @ 15.025		Angle of Slope 52.0	
Slope, n .781			
Remarks: CHOKES 1ST RATE 8/64 2ND RATE 12/64 3RD RATE 16/64 4TH RATE 19/64			
BHP MEASURED WITH AMERADA PRESSURE ELEMENTS			
Approved By Division		Conducted By: BENNETT-CATHEY	
Calculated By: MONTY RANDOLPH		Checked By:	

BENNETT & CATHEY PRODUCTION TESTING BACK PRESSURE CUR.

Operator CARL A. SCHELLINGER Lease CAMPBELL STATION Well No. #6
 County CHAVES Field N. FORD RANCH Location 5/95/27E
 Date of Test 4-11-89 Slope "n" .781 Angle of Slope 52°

Calc. Abs. Potential 6855

MCF/D



$$\overline{\Delta P}_1^2 \quad P_c^2 - P_w^2 = 2300$$

$$\overline{\Delta P}_2^2 \quad P_c^2 - P_w^2 = 230$$

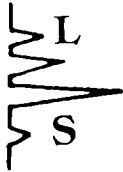
$$Q_1 = 4227$$

$$Q_2 = 700$$

$$\text{LOG } Q_1 = 3.626$$

$$\text{LOG } Q_2 = 2.845$$

$$n = .781$$



LABORATORY SERVICES

1331 Tasker Drive
Hobbs, New Mexico 88240

Telephone: (505) 397-3713

FOR: Bennett & Cathey
P. O. Box 787
Artesia, New Mexico 88210

SAMPLE
IDENTIFICATION: Campbell Station #6
COMPANY: Carl S. Schellinger
LEASE:
PLANT:

SAMPLE DATA:	DATE SAMPLED:	4/11/89	GAS XXX LIQUID ()
	ANALYSIS DATE:	4/11/89	SAMPLED BY: Bennett & Cathey
	PRESSURE — PSIG	250	ANALYSIS BY: Rolland Perry
	TEMPERATURE — °F:		

REMARKS:

COMPONENT ANALYSIS

COMPONENT		MOL PERCENT	GPM	LIQ. VOL. PERCENT
Hydrogen Sulfide	(H2S)	-0-		
Nitrogen	(N2)	4.65		
Carbon Dioxide	(CO2)	2.47		
Methane	(C1)	84.15		
Ethane	(C2)	5.45	1.390	
Propane	(C3)	1.85	0.510	
I-Butane	(IC4)	0.25	0.082	
N-Butane	(NC4)	0.47	0.148	
I-Pentane	(IC5)	0.16	0.059	
N-Pentane	(NC5)	0.12	0.044	
Hexane	(C6)	0.16	0.074	
Heptanes Plus	(C7 +)	0.27	0.151	
		<u>100.00</u>	<u>2.458</u>	

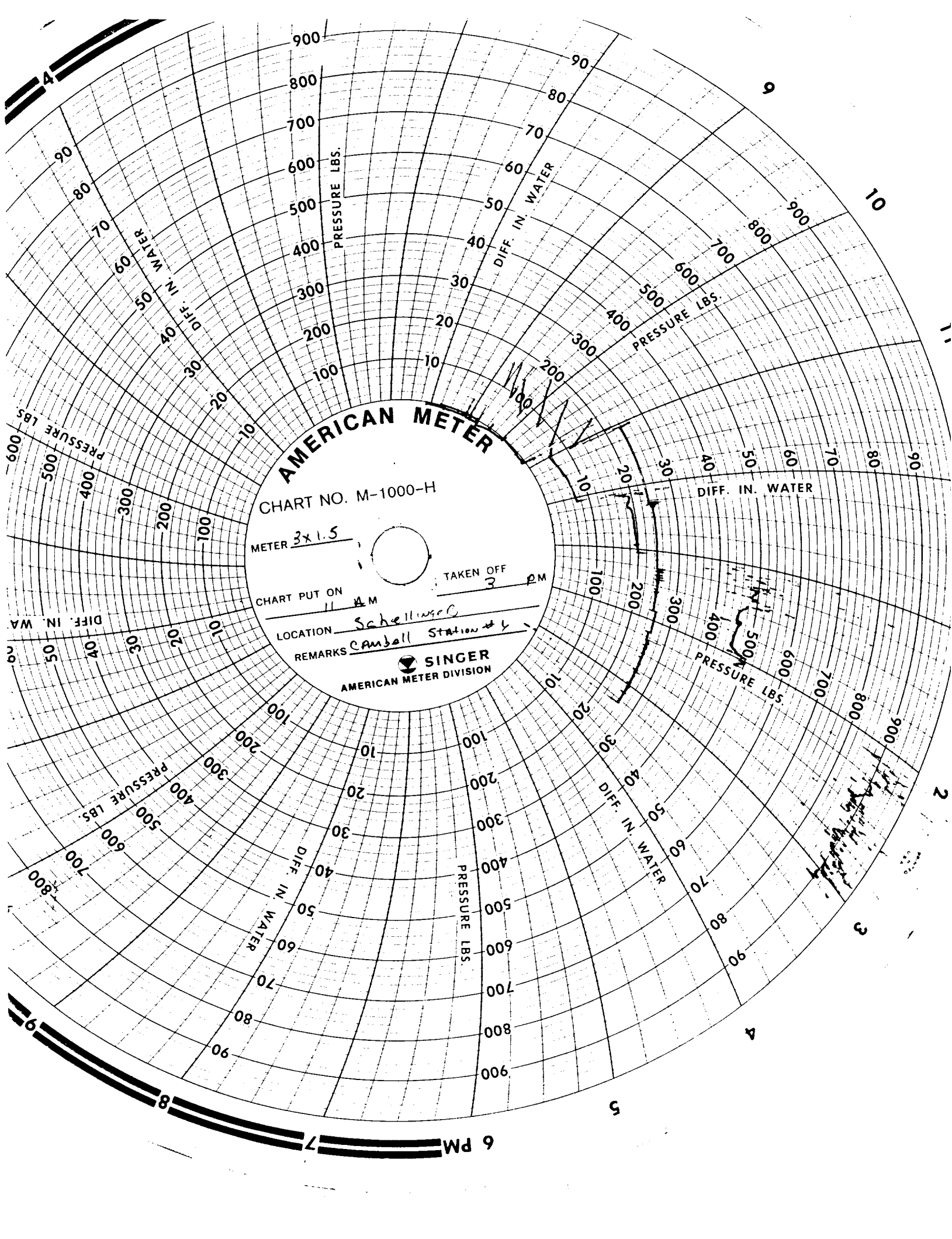
BTU/CU. FT.—DRY 1053
AT 14.650 WET 1032

SPECIFIC GRAVITY—CALCULATED 0.669
MEASURED

VAPOR PRESSURE (ABSOLUTE)—CALCULATED

26# GASOLINE— 0.380

CU. FT./GAL. —



BENNETT-CATHEY

BOTTOM HOLE
DRAWDOWN / BUILD UP
REPORT

FOR:
CARL A SCHELLINGER
4/ 7/89

WELL INFORMATION :

LEASE : CAMPBELL STATION	WELL # 6	FIELD :
LOCATION : S5/T9S/R27E		FILE # CARL S-6
COUNTY : CHAVES		STATE : NM
ELEVATION : 0.00		ZERO POINT : GL
TUBING SIZE : 2.875		DEPTH : 6400.0
CASING SIZE : 5.5		DEPTH : 0.0
PACKER TYPE : 0		@ 6400.00 feet
PERFORATED 6482.0 to 6518.0 feet		TOTAL DEPTH : 6537.0

TEST INFORMATION :

WELL CONDITION : SI	WELL TYPE : GAS
SURFACE TUBING PRESSURE 1500 psig by GAUGE	
SURFACE CASING PRESSURE psig by	
BOTTOM HOLE TEMPERATURE 145 deg. F. at 6500.0 feet	
BOTTOM HOLE PRESSURE 2500.8 psig at 6500.0 feet	
INSTRUMENT TYPE : RPG-3	NUMBER : 21034 RUN BY : BURRELL

REAL TIME	ELAPSED TIME	HORNER coef	PRESSURE psig	dPRESSURE psig
WELL FLOWING				
14:10:00	000:00:00	0.00	2040.5	0.0
WELL SHUT IN				
14:25:00	000:00:00	99999.90	2043.0	0.0
14:35:00	000:10:00	97.00	2185.5	142.6
14:45:00	000:20:00	49.00	2251.7	208.7
14:55:00	000:30:00	33.00	2290.1	247.1
15:05:00	000:40:00	25.00	2313.2	270.2
15:15:00	000:50:00	20.20	2330.6	287.6
15:25:00	001:00:00	17.00	2341.7	298.8
15:35:00	001:10:00	14.71	2352.5	309.5
15:45:00	001:20:00	13.00	2361.2	318.2
15:55:00	001:30:00	11.67	2368.6	325.6
16:05:00	001:40:00	10.60	2374.8	331.8
16:15:00	001:50:00	9.73	2381.0	338.0
16:25:00	002:00:00	9.00	2384.7	341.7
16:45:00	002:20:00	7.86	2393.0	350.0
17:05:00	002:40:00	7.00	2401.2	358.3
17:25:00	003:00:00	6.33	2407.0	364.0
17:45:00	003:20:00	5.80	2413.2	370.2
18:05:00	003:40:00	5.36	2417.8	374.8

REAL TIME	ELAPSED TIME	HORNER coef	PRESSURE psig	dPRESSURE psig
18:25:00	004:00:00	5.00	2421.1	378.1
18:45:00	004:20:00	4.69	2426.9	383.9
19:05:00	004:40:00	4.43	2431.0	388.0
19:25:00	005:00:00	4.20	2433.1	390.1
19:45:00	005:20:00	4.00	2435.5	392.6
20:05:00	005:40:00	3.82	2437.6	394.6
20:25:00	006:00:00	3.67	2439.3	396.3
20:55:00	006:30:00	3.46	2444.2	401.2
21:25:00	007:00:00	3.29	2447.1	404.1
21:55:00	007:30:00	3.13	2447.9	405.0
22:25:00	008:00:00	3.00	2449.6	406.6
22:55:00	008:30:00	2.88	2451.2	408.3
23:25:00	009:00:00	2.78	2453.3	410.3
23:55:00	009:30:00	2.68	2454.5	411.6
00:25:00	010:00:00	2.60	2455.4	412.4
00:55:00	010:30:00	2.52	2457.4	414.5
01:25:00	011:00:00	2.45	2458.7	415.7
01:55:00	011:30:00	2.39	2460.3	417.4
02:25:00	012:00:00	2.33	2462.4	419.4
03:25:00	013:00:00	2.23	2463.6	420.7

REAL TIME	ELAPSED TIME	HORNER coef	PRESSURE psig	dPRESSURE psig
04:25:00	014:00:00	2.14	2465.3	422.3
05:25:00	015:00:00	2.07	2466.1	423.1
06:25:00	016:00:00	2.00	2467.8	424.8
07:25:00	017:00:00	1.94	2469.0	426.0
08:25:00	018:00:00	1.89	2469.8	426.9
09:25:00	019:00:00	1.84	2470.2	427.3
10:25:00	020:00:00	1.80	2471.9	428.9
11:25:00	021:00:00	1.76	2473.6	430.6
12:25:00	022:00:00	1.73	2475.2	432.2
13:25:00	023:00:00	1.70	2476.4	433.5
14:25:00	024:00:00	1.67	2476.9	433.9
16:25:00	026:00:00	1.62	2478.9	436.0
18:25:00	028:00:00	1.57	2479.8	436.8
20:25:00	030:00:00	1.53	2481.0	438.0
22:25:00	032:00:00	1.50	2481.4	438.4
00:25:00	034:00:00	1.47	2481.8	438.8
02:25:00	036:00:00	1.44	2482.6	439.7
04:25:00	038:00:00	1.42	2483.9	440.9
06:25:00	040:00:00	1.40	2484.7	441.7
08:25:00	042:00:00	1.38	2485.5	442.6

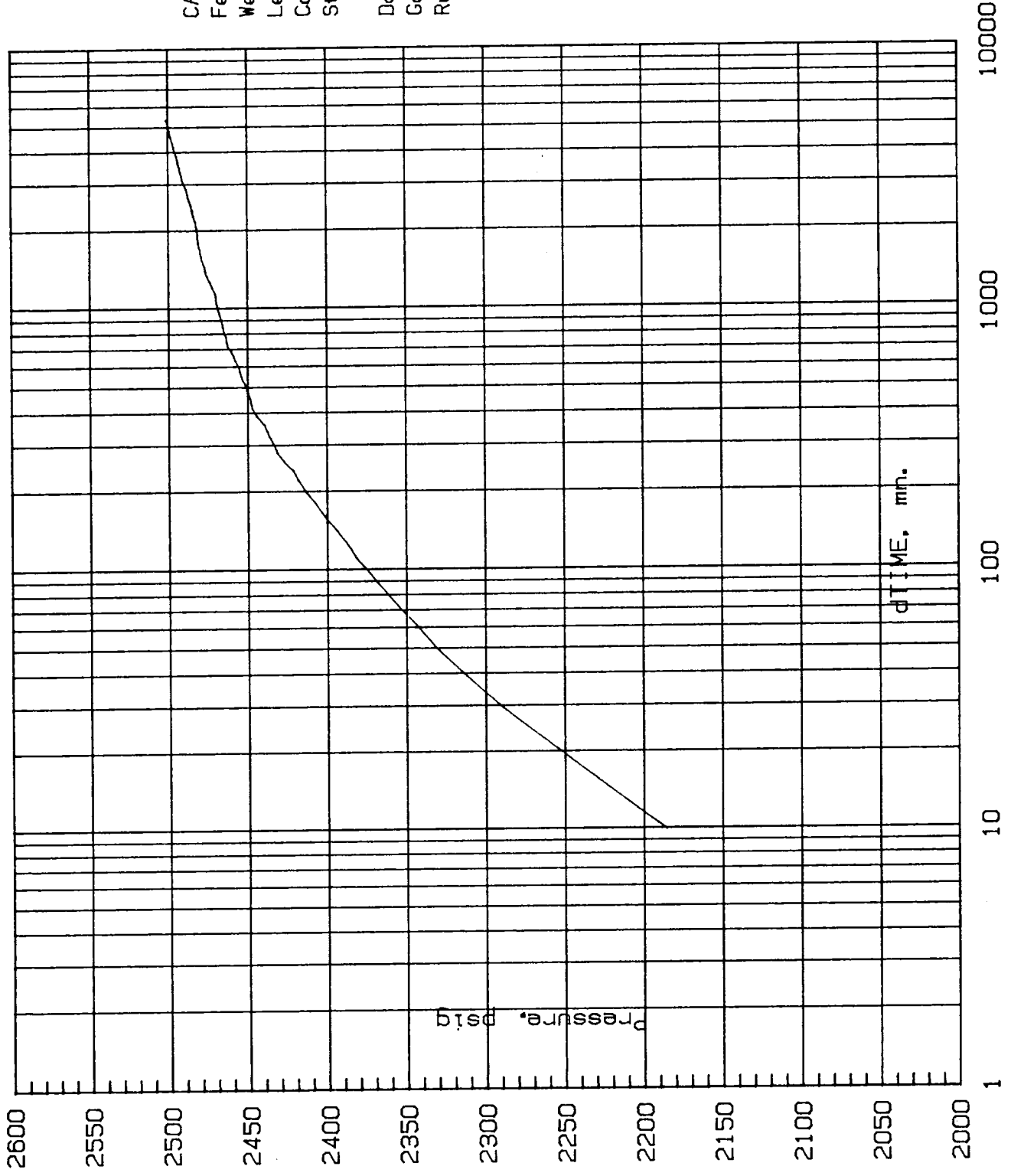
REAL TIME	ELAPSED TIME	HORNER coef	PRESSURE psig	dPRESSURE psig
10:25:00	044:00:00	1.36	2486.8	443.8
12:25:00	046:00:00	1.35	2487.6	444.6
14:25:00	048:00:00	1.33	2488.4	445.5
16:25:00	050:00:00	1.32	2489.7	446.7
18:25:00	052:00:00	1.31	2490.9	447.9
20:25:00	054:00:00	1.30	2491.3	448.3
22:25:00	056:00:00	1.29	2492.1	449.2
00:25:00	058:00:00	1.28	2492.6	449.6
02:25:00	060:00:00	1.27	2493.4	450.4
04:25:00	062:00:00	1.26	2493.8	450.8
06:25:00	064:00:00	1.25	2494.2	451.2
08:25:00	066:00:00	1.24	2495.0	452.1
10:25:00	068:00:00	1.24	2495.9	452.9
12:25:00	070:00:00	1.23	2496.3	453.3
14:25:00	072:00:00	1.22	2496.7	453.7
18:25:00	076:00:00	1.21	2497.9	455.0
22:25:00	080:00:00	1.20	2498.8	455.8
02:25:00	084:00:00	1.19	2499.6	456.6
06:25:00	088:00:00	1.18	2500.4	457.4
07:30:00	089:05:00	1.18	2500.8	457.9

END OF TEST

MDH PLOT

CARL A SCHELLINGER
Field :
Well # 6
Lease : CAMPBELL STATION
County : CHAVES
State : NM

Date of Run : 4/ 7/89
Gauge # 21034
Run by : BURRELL

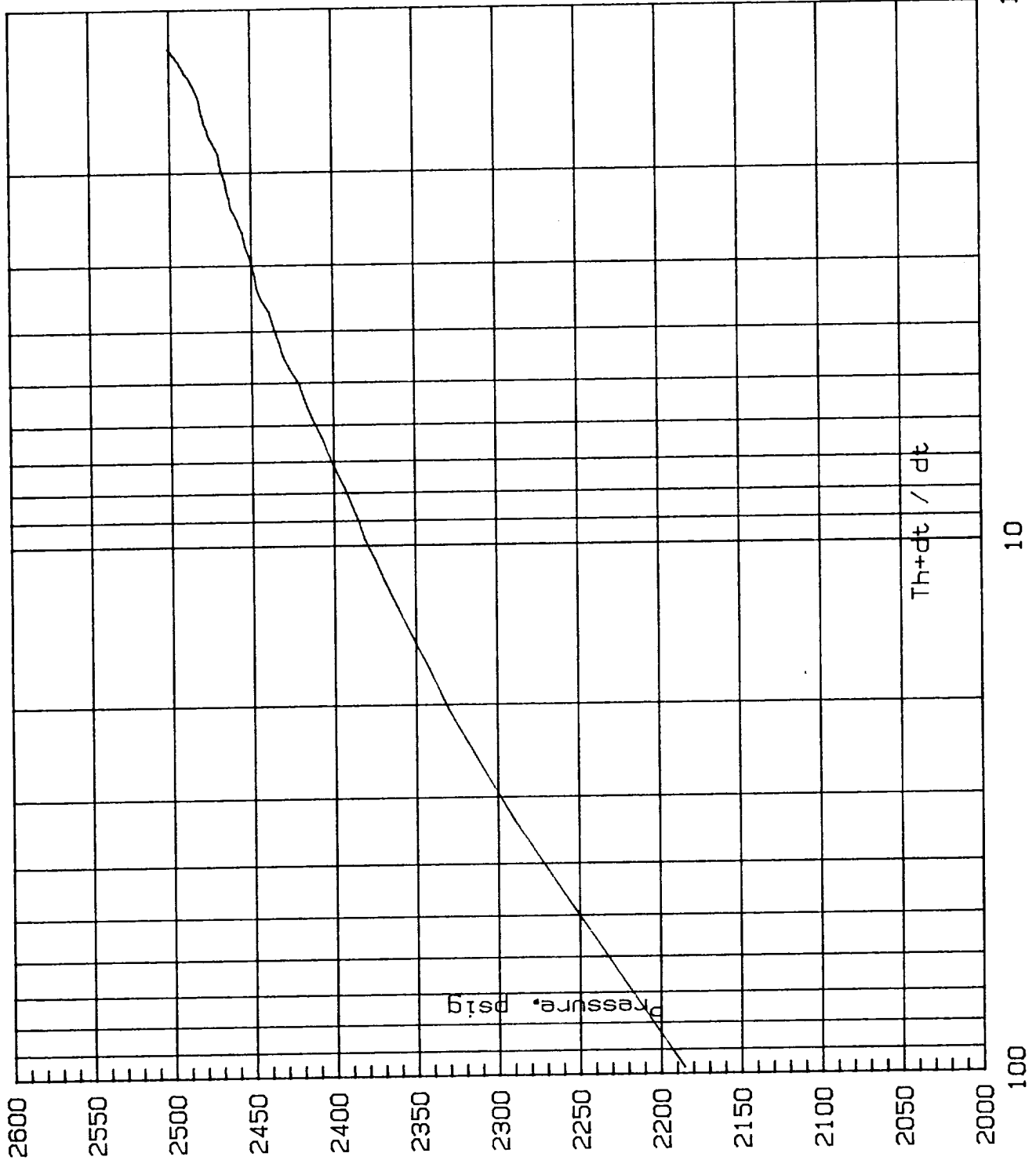


HORNER PLOT

CARL A SCHELLINGER
Field :
Well # 6
Lease : CAMPBELL STATION
County : CHAVES
State : NM

Date of Run : 4/ 7/89
Gauge # 21034
Run by : BURRELL

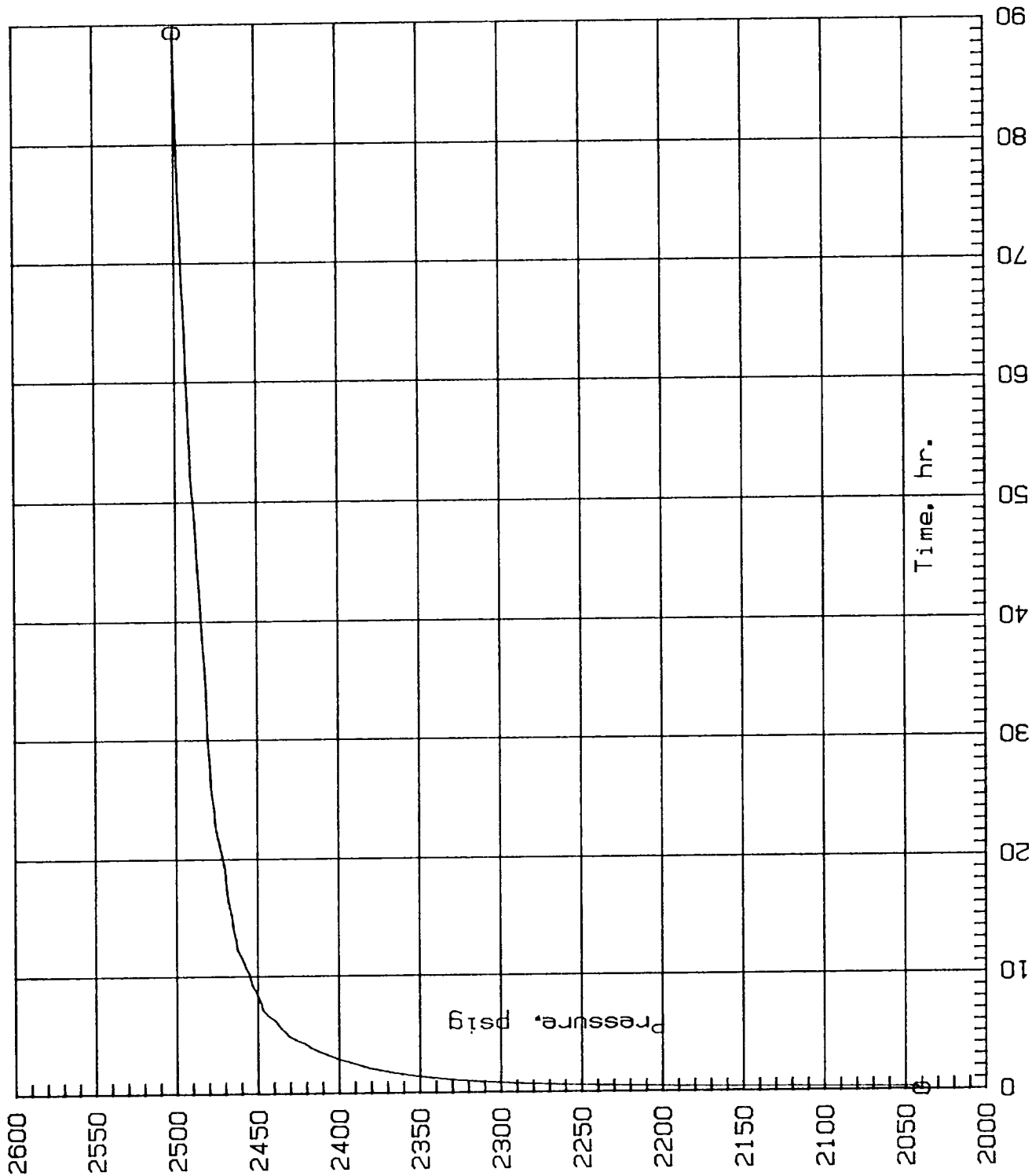
Prod. Time : 16 hr.



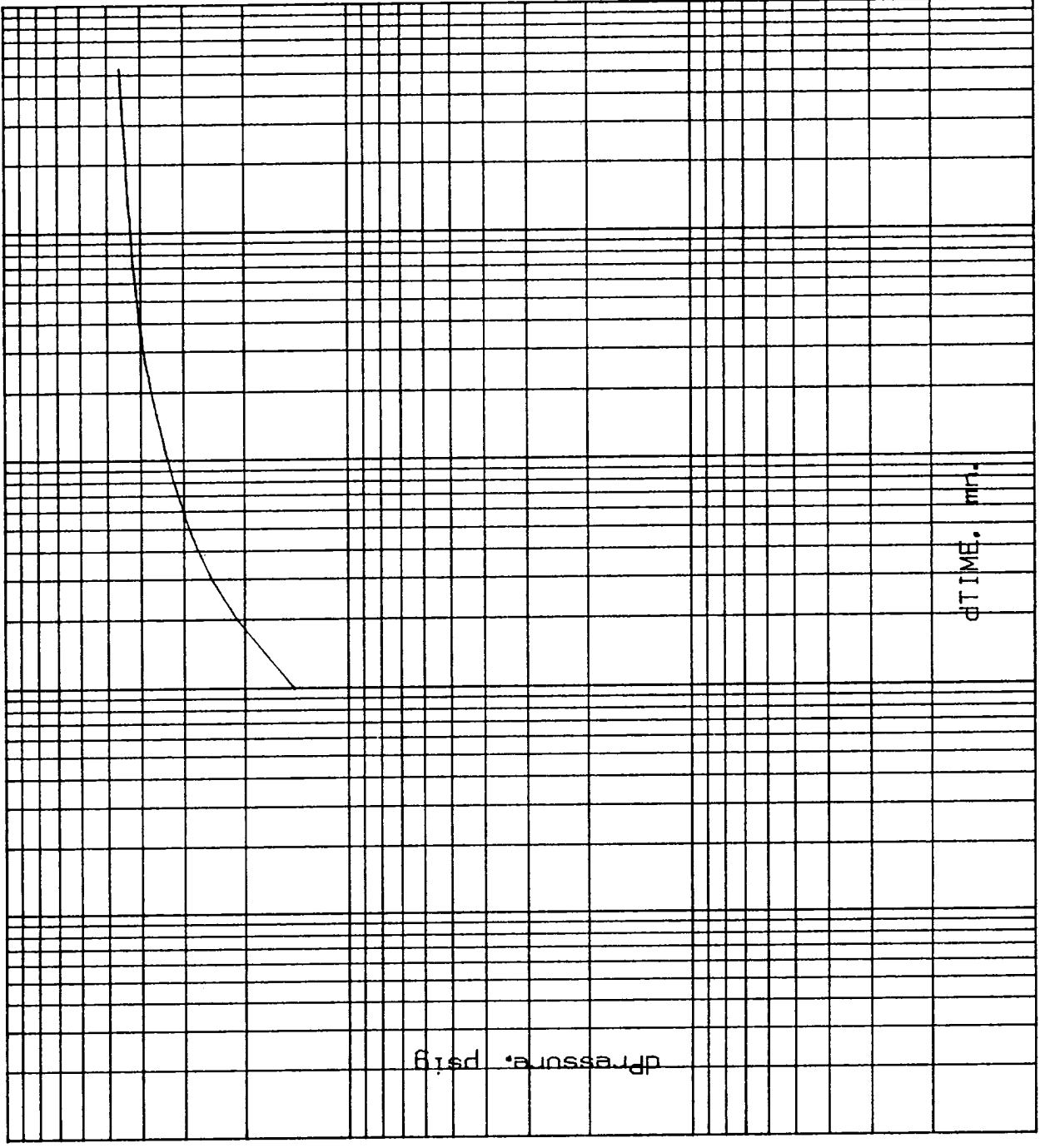
LINEAR PLOT

CARL A SCHELLINGER
Field :
Well # 6
Lease : CAMPBELL STATION
County : CHAVES
State : NM

Date of Run : 4/ 7/89
Gauge # 21034
Run by : BURRELL



1000



1

.1

1

10

100

1000

10000

LOG LOG PLOT

CARL A SCHELLINGER
Field :
Well # 6
Lease : CAMPBELL STATION
County : CHAVES
State : NM

Date of Run : 4/ 7/89
Gauge # 21034
Run by : BURRELL

BENNETT-CATHEY

BOTTOM HOLE
PRESSURE / GRADIENT
REPORT

FOR:
CARL A SCHELLINGER
4/11/89

WELL INFORMATION :

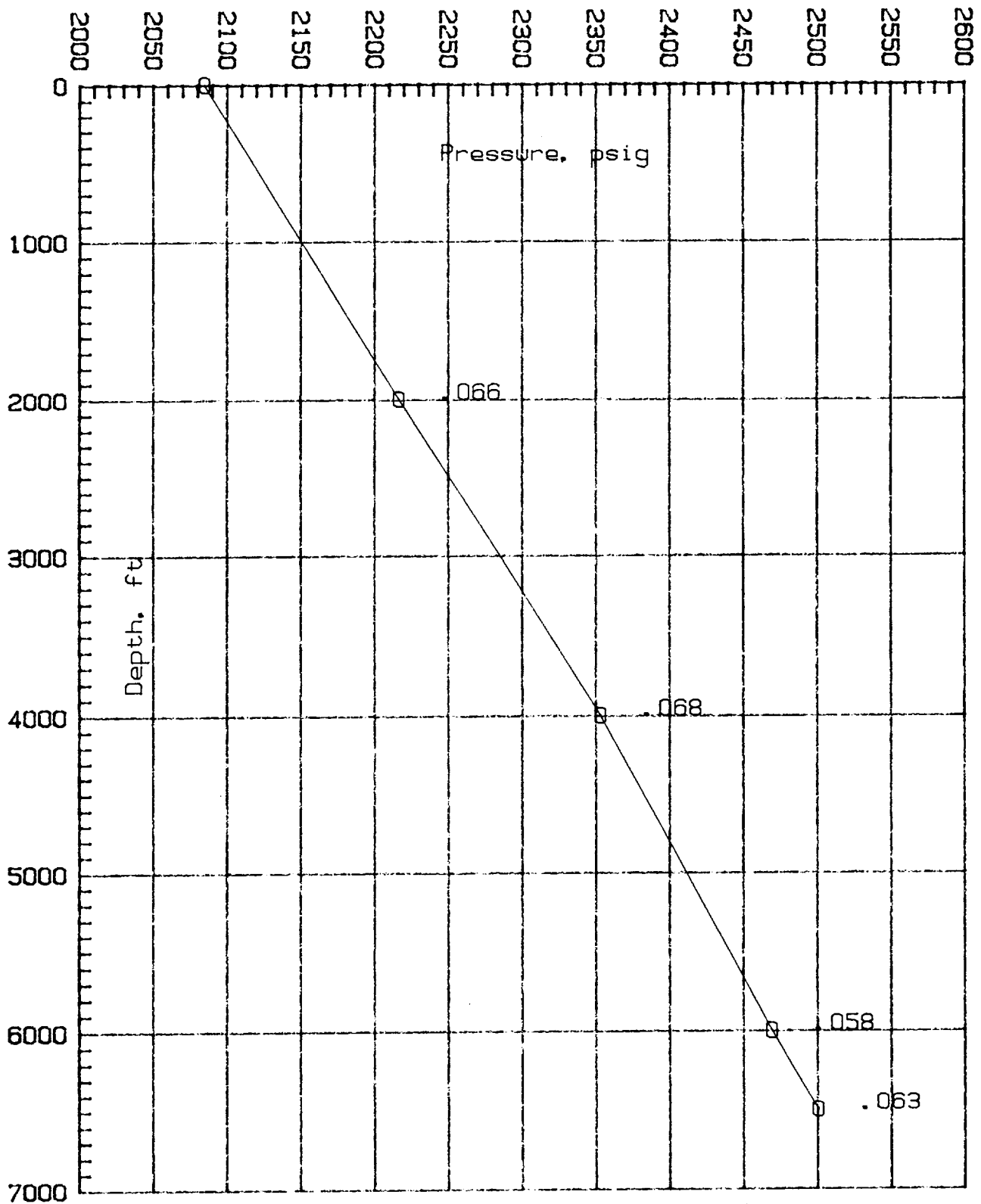
LEASE :CAMBELL STATION	WELL # 6	FIELD :
LOCATION :S5/T9S/R27E		FILE # CAS-6
COUNTY :CHAVES		STATE :NM
ELEVATION : 0.00		ZERO POINT :GL
TUBING SIZE :2.875		DEPTH : 6400.0
CASING SIZE :0		DEPTH : 0.0
PACKER TYPE :0		@ 6400.00 feet
PERFORATED 6482.0 to 6518.0 feet		TOTAL DEPTH : 6537.0

TEST INFORMATION :

WELL CONDITION :SI	WELL TYPE :GAS
SURFACE TUBING PRESSURE 2065 psig by GAUGE	
SURFACE CASING PRESSURE psig by	
BOTTOM HOLE TEMPERATURE 145 deg. F. at 6500.0 feet	
BOTTOM HOLE PRESSURE 2500.8 psig at 6500.0 feet	
INSTRUMENT TYPE : RPG-3	NUMBER : 21034 RUN BY : BURRELL

C&W WIRELINE dba BENNETT-CATHEY,P.O.BOX 787 ARTESIA,NM 88210

DEPTH ft	dDEPTH ft	PRESSURE psig	dPRESSURE psig	GRADIENT psig/ft
0		2084.7		
2000	2000	2216.5	131.8	.066
4000	2000	2353.3	136.8	.068
6000	2000	2469.4	116.1	.058
6500	500	2500.8	31.4	.063
EXTRAPOLATION TO MIDPOINT OF PERFORATIONS ; 6500				.063



GRADIENT SURVEY

CARL A SCHELLINGER Field :

Well # 6

Lease : CAMBELL STATION

County : CHAVES

State : NM

Date of Run : 4/11/89

Gauge # 21034

Run by : BURRELL

BENNETT-CATHEY

BOTTOM HOLE
DRAWDOWN / BUILD UP
REPORT

FOR:
CARL A SCHELLINGER
4/11/89

WELL INFORMATION :

LEASE : CAMPBELL STATION	WELL # 6	FIELD :
LOCATION : S5/T9S/R27E		FILE # CCSCH-6
COUNTY : CHAVES		STATE : NM
ELEVATION : 0.00		ZERO POINT : GL
TUBING SIZE : 2.875		DEPTH : 6400.0
CASING SIZE : 0		DEPTH : 0.0
PACKER TYPE : 0		@ 6400.00 feet
PERFORATED 6482.0 to 6518.0 feet		TOTAL DEPTH : 6537.0

TEST INFORMATION :

WELL CONDITION : DD	WELL TYPE : GAS
SURFACE TUBING PRESSURE 2065 psig by GAUGE	
SURFACE CASING PRESSURE psig by	
BOTTOM HOLE TEMPERATURE 145 deg. F. at 6500.0 feet	
BOTTOM HOLE PRESSURE 2180.2 psig at 6500.0 feet	
INSTRUMENT TYPE : RPG-3	NUMBER : 21034 RUN BY : BURRELL

REAL TIME	ELAPSED TIME	HORNER coef	PRESSURE psig	dPRESSURE psig
WELL SHUT IN				
09:10:00	000:00:00	99999.90	2500.8	0.0
10:10:00	001:00:00	1.00	2490.1	-10.7
WELL FLOWING				
11:00:00	000:00:00	0.00	2481.0	0.0
11:15:00	000:15:00	0.00	2472.7	-8.3
11:30:00	000:30:00	0.00	2448.3	-32.6
11:45:00	000:45:00	0.00	2436.0	-45.0
12:00:00	001:00:00	0.00	2426.4	-54.5
12:15:00	001:15:00	0.00	2404.1	-76.9
12:30:00	001:30:00	0.00	2386.8	-94.2
12:45:00	001:45:00	0.00	2373.6	-107.4
13:00:00	002:00:00	0.00	2362.8	-118.2
13:15:00	002:15:00	0.00	2322.7	-158.3
13:30:00	002:30:00	0.00	2297.5	-183.5
13:45:00	002:45:00	0.00	2287.6	-193.4
14:00:00	003:00:00	0.00	2275.2	-205.8
14:15:00	003:15:00	0.00	2233.5	-247.5
14:30:00	003:30:00	0.00	2197.5	-283.5
14:45:00	003:45:00	0.00	2180.2	-300.8
15:00:00	004:00:00	0.00	2163.6	-317.4

END OF TEST

LINEAR PLOT

CARL A SCHELLINGER
Field :
Well # 6
Lease : CAMPBELL STATION
County : CHAVES
State : NM
Date of Run : 4/11/89
Gauge # 21034
Run by : BURRELL

