



COMPANY : PATTERSON PETROLEUM, LLC.
LEASE : HAWKEYE STATE "30"
WELL NO. : # 1
FIELD : WILDCAT
COUNTY/STATE : LEA / NEW MEXICO

TEST DATE : 01-17-00
D.S.T. NO. : 3
TEST TKT. NO. : 20749
INVOICE NO. : 19002
ORDER NO. :

FORMATION	: LOWER WOLFCAMP	HOLE SIZE (in)	: 7.875	ANCHOR LENGTH (ft)	: 473
INTERVAL (ft)	: 10200 TO 10673	DRILL PIPE ID (in)	: 3.82	TOOL LENGTH (ft)	: 76
TOTAL DEPTH (ft)	: 10673	DRILL COLLAR ID(in)	: 2.25	TOOL O.D. (in)	: 5
ELEVATION (ft)	: 4086	DRILL COLLAR feet	: 217	PACKER SIZE (in)	: 7.00

RECORDER DATA
AK1-KUSTER / AMERADA

TOP RECORDER: IN
RECORDER NO. : 13532
CAPACITY (psi): 7025
DEPTH (ft) : 10210
CLOCK NO. : 23945
DURATION (hrs): 18

BOTTOM RECORDER: OUT
RECORDER NO. : 86973
CAPACITY (psi): 10000
DEPTH (ft) : 10215
CLOCK NO. : 86973
DURATION (hrs): 96

MUD PROPERTIES

MUD TYPE : F.W.GEL/STARCH
MUD WT. (#/gal) : 8.60

WATER LOSS (cc) : 8.80
FILTER CAKE (in) : 1/32
VISCOSITY (sec) : 35

CHLORIDE PPM : 500
RESISTIVITY(ohm-m): 9.50

EQUIPMENT DATA

CONVENTIONAL : YES
STRADDLE : NO
SELECTIVE ZONE : NO
SAMPLE CHAMBER : YES
GAS ANALYSIS : NO

ROTARY JARS : YES
NO. OF PACKERS : 2
SAFETY JOINT : YES
CIRCULATING SUB : YES
REVERSED OUT : NO

MULTIFLOW : NO
MILEAGE : NO
OPERATOR TIME : NO
OTHER : YES
AMERADA ELECTRONIC

SUCCESSFUL : YES

PACKER FAILURE : NO

TOOL PLUG : NO

DECIDED NOT TO TEST : NO

FAIL TO REACH BOTTOM : NO

TIME INTERVAL DATA (min)

TOOL OPENED : 1:37 AM

TOTAL TEST TIME: 330

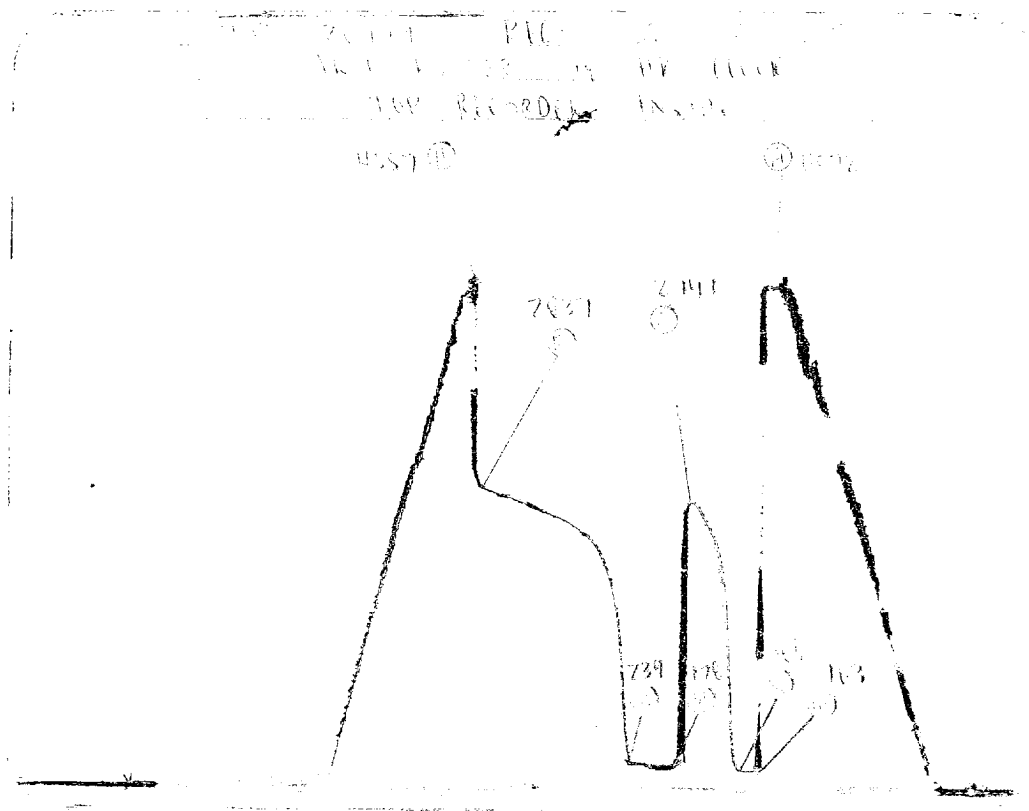
INITIAL FLOW : 30
SECOND FLOW : 60
THIRD FLOW :

INITIAL SHUT-IN: 60
SECOND SHUT-IN : 180
THIRD SHUT IN :

TEST TOOL OPERATOR: TOMMY WILLIAMS

24
SEP 1993
Received
JMS
JUP

		CORRECTED READING	FIELD READING
A	INITIAL HYDROSTATIC:	4572 PSI	4646 PSI
B-1	INITIAL FIRST FLOW :	103 PSI	179 PSI
B-2	FINAL FIRST FLOW :	166 PSI	143 PSI
C	FIRST SHUT-IN :	2741 PSI	2649 PSI
D-1	INITIAL SECOND FLOW:	178 PSI	214 PSI
D-2	FINAL SECOND FLOW :	239 PSI	232 PSI
E	SECOND SHUT-IN :	2837 PSI	2791 PSI
H	FINAL HYDROSTATIC :	4557 PSI	4646 PSI



RECOVERY DATA

PIPE RECOVERY

B.H. TEMP. (deg F) : 133

SAMPLE CHAMBER

 500 FT. OF GAS IN PIPE
 250 FT. OF SLIGHT GAS CUT MUD

 100 LBS. OF PRESSURE
 .20 CU. FT. OF GAS
 1800 CC'S OF GAS CUT MUD
 WITH TRACE OF OIL

TEST REMARKS

TOOL OPENED WITH VERY WEAK BLOW (1/4" IN WATER) WHICH INCREASED TO A FAIR BLOW (9.5" IN WATER) AT END OF THE 30 MIN. FIRST FLOW. REOPENED TOOL WITH VERY WEAK BLOW (1/4" IN WATER) WHICH INCREASED TO GOOD BLOW (18" IN WATER) IN 55 MIN. AND 11.5" IN WATER AT THE END OF THE 60 MIN. FINAL FLOW PERIOD.

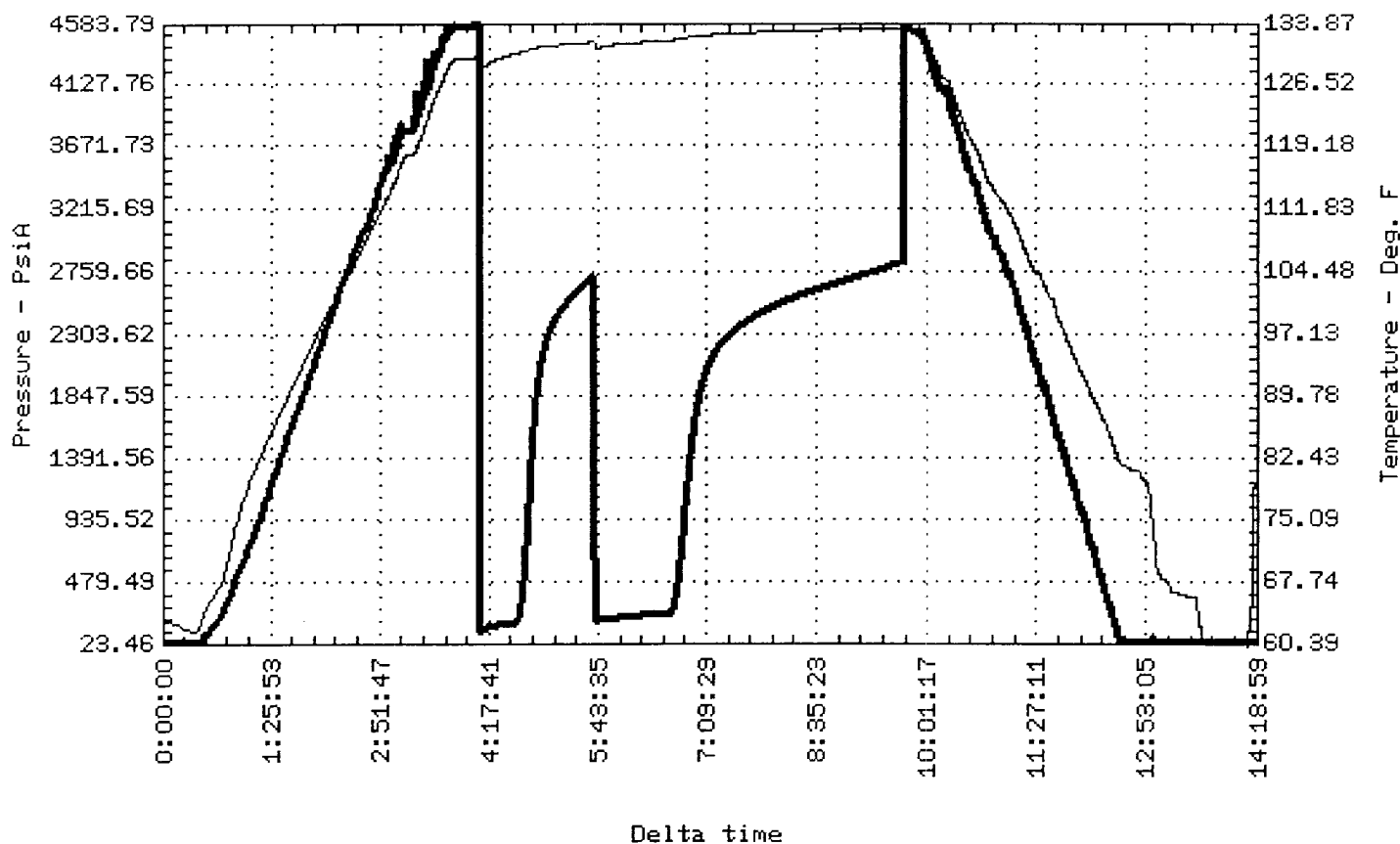
4
MAY 2009
Received
10/20

LOGGED PRESSURE / TEMPERATURE DATA

File name: PATT3

Company : PATTERSON PETROLEUM L.L.C.
Client : LANEY ASHWORTH
Gauge number : 86973
Well name : HAWKEYE STATE "30"
Well number : 1
Test number : 3
Field name : WILDCAT
Test operator: TOMMY WILLIAMS
Comments : 10200-10673 FT. (WOLFCAMP)
: 40 FT. OF PAY
:

Starting date: 01/17/2000
time: 01:37:03



APR 2000
Received
Hobbs
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INCREMENTAL PRESSURE DATA

RECORDER NO : 86973

RECORDER CAPACITY : 10000 psi

RECORDER DEPTH : 10215 ft

ELAPSED TIME ---MIN---	TOTAL FLOW TIME, T ---MIN---	INCREMENTAL SHUT-IN TIME, DT ---MIN---	(T+DT)/DT (HORNER) -----	PRESSURE ---PSIG---	DELTA P ---PSIG---
FIRST FLOW					
.0	.0			97.90	.00
1.0	1.0			108.03	10.13
2.0	2.0			117.69	19.79
3.0	3.0			125.35	27.45
4.0	4.0			129.97	32.07
5.0	5.0			131.77	33.87
6.0	6.0			134.05	36.15
7.0	7.0			135.35	37.45
8.0	8.0			140.40	42.50
9.0	9.0			142.55	44.65
10.0	10.0			145.34	47.44
11.0	11.0			147.34	49.44
12.0	12.0			149.50	51.60
13.0	13.0			150.17	52.27
14.0	14.0			151.78	53.88
15.0	15.0			152.55	54.65
16.0	16.0			154.50	56.60
17.0	17.0			156.17	58.27
18.0	18.0			158.60	60.70
19.0	19.0			159.73	61.83
20.0	20.0			160.79	62.89
21.0	21.0			162.60	64.70
22.0	22.0			163.12	65.22
23.0	23.0			164.61	66.71
24.0	24.0			166.93	69.03
25.0	25.0			166.18	68.28
26.0	26.0			168.30	70.40
27.0	27.0			169.08	71.18
28.0	28.0			170.60	72.70
29.0	29.0			171.40	73.50
29.6	29.6			174.80	76.90
FIRST SHUT-IN					
29.6	29.6	.00	.000	174.80	.00
30.6	29.6	1.00	30.640	214.84	40.04
31.6	29.6	2.00	15.820	263.43	88.63
32.6	29.6	3.00	10.880	321.37	146.57
33.6	29.6	4.00	8.410	399.17	224.37
34.6	29.6	5.00	6.928	492.27	317.47
35.6	29.6	6.00	5.940	614.47	439.67
36.6	29.6	7.00	5.234	751.80	577.00
37.6	29.6	8.00	4.705	914.80	740.00
38.6	29.6	9.00	4.293	1074.30	899.50
39.6	29.6	10.00	3.964	1239.83	1065.03
41.6	29.6	12.00	3.470	1527.70	1352.90

12

Received
12/12/12

INCREMENTAL PRESSURE DATA

RECORDER NO : 86973

RECORDER CAPACITY : 10000 psi

RECORDER DEPTH : 10215 ft

ELAPSED TIME ---MIN---	TOTAL FLOW TIME, T ---MIN---	INCREMENTAL SHUT-IN TIME, DT ---MIN---	(T+DT)/DT (HORNER) -----	PRESSURE ---PSIG---	DELTA P ---PSIG---
FIRST SHUT-IN					
43.6	29.6	14.00	3.117	1757.53	1582.73
45.6	29.6	16.00	2.853	1932.50	1757.70
47.6	29.6	18.00	2.647	2063.67	1888.87
49.6	29.6	20.00	2.482	2161.86	1987.06
51.6	29.6	22.00	2.347	2236.31	2061.51
53.6	29.6	24.00	2.235	2294.78	2119.98
55.6	29.6	26.00	2.140	2342.07	2167.27
57.6	29.6	28.00	2.059	2382.03	2207.23
59.6	29.6	30.00	1.988	2416.60	2241.80
62.6	29.6	33.00	1.898	2462.45	2287.65
65.6	29.6	36.00	1.823	2502.13	2327.33
68.6	29.6	39.00	1.760	2538.48	2363.68
71.6	29.6	42.00	1.706	2571.00	2396.20
74.6	29.6	45.00	1.659	2600.93	2426.13
77.6	29.6	48.00	1.618	2629.68	2454.88
80.6	29.6	51.00	1.581	2656.35	2481.55
83.6	29.6	54.00	1.549	2682.30	2507.50
86.6	29.6	57.00	1.520	2707.18	2532.38
89.8	29.6	60.18	1.493	2733.70	2558.90
SECOND FLOW					
91.3	31.1			182.70	.00
93.3	33.1			188.34	5.64
95.3	35.1			193.87	11.17
97.3	37.1			195.18	12.48
99.3	39.1			195.93	13.23
101.3	41.1			197.86	15.16
103.3	43.1			200.30	17.60
105.3	45.1			202.83	20.13
107.3	47.1			204.60	21.90
109.3	49.1			206.68	23.98
111.3	51.1			208.95	26.25
113.3	53.1			211.33	28.63
115.3	55.1			213.20	30.50
117.3	57.1			215.22	32.52
119.3	59.1			217.33	34.63
121.3	61.1			219.15	36.45
123.3	63.1			221.27	38.57
125.3	65.1			222.97	40.27
127.3	67.1			224.37	41.67
129.3	69.1			225.98	43.28
131.3	71.1			228.98	46.28
133.3	73.1			230.10	47.40
135.3	75.1			231.22	48.52
137.3	77.1			232.32	49.62

INCREMENTAL PRESSURE DATA

RECORDER NO : 86973

RECORDER CAPACITY : 10000 psi

RECORDER DEPTH : 10215 ft

ELAPSED TIME ---MIN---	TOTAL FLOW TIME, T ---MIN---	INCREMENTAL SHUT-IN TIME, DT ---MIN---	(T+DT)/DT (HORNER) -----	PRESSURE ---PSIG---	DELTA P ---PSIG---
SECOND FLOW					
139.3	79.1			232.97	50.27
141.3	81.1			234.33	51.63
143.3	83.1			235.29	52.59
145.3	85.1			236.65	53.95
147.3	87.1			237.83	55.13
149.3	89.1			239.33	56.63
151.2	91.0			241.60	58.90
SECOND SHUT-IN					
151.2	91.0	.00	.000	241.60	.00
152.2	91.0	1.00	92.020	276.63	35.03
153.2	91.0	2.00	46.510	316.66	75.06
154.2	91.0	3.00	31.340	360.85	119.25
155.2	91.0	4.00	23.755	416.52	174.92
156.2	91.0	5.00	19.204	478.70	237.10
157.2	91.0	6.00	16.170	555.17	313.57
158.2	91.0	7.00	14.003	637.48	395.88
159.2	91.0	8.00	12.378	734.67	493.07
160.2	91.0	9.00	11.113	832.85	591.25
161.2	91.0	10.00	10.102	940.65	699.05
163.2	91.0	12.00	8.585	1148.45	906.85
165.2	91.0	14.00	7.501	1339.32	1097.72
167.2	91.0	16.00	6.689	1502.29	1260.69
169.2	91.0	18.00	6.057	1639.50	1397.90
171.2	91.0	20.00	5.551	1754.88	1513.28
173.2	91.0	22.00	5.137	1850.05	1608.45
175.2	91.0	24.00	4.793	1928.22	1686.62
177.2	91.0	26.00	4.501	1993.00	1751.40
179.2	91.0	28.00	4.251	2047.12	1805.52
181.2	91.0	30.00	4.034	2092.80	1851.20
184.2	91.0	33.00	3.758	2149.65	1908.05
187.2	91.0	36.00	3.528	2194.08	1952.48
190.2	91.0	39.00	3.334	2230.90	1989.30
193.2	91.0	42.00	3.167	2263.40	2021.80
196.2	91.0	45.00	3.023	2291.85	2050.25
199.2	91.0	48.00	2.896	2318.03	2076.43
202.2	91.0	51.00	2.785	2341.70	2100.10
205.2	91.0	54.00	2.686	2364.00	2122.40
208.2	91.0	57.00	2.597	2384.50	2142.90
211.2	91.0	60.00	2.517	2403.80	2162.20

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Retrieved

INCREMENTAL PRESSURE DATA

RECORDER NO : 86973

RECORDER CAPACITY : 10000 psi

RECORDER DEPTH : 10215 ft

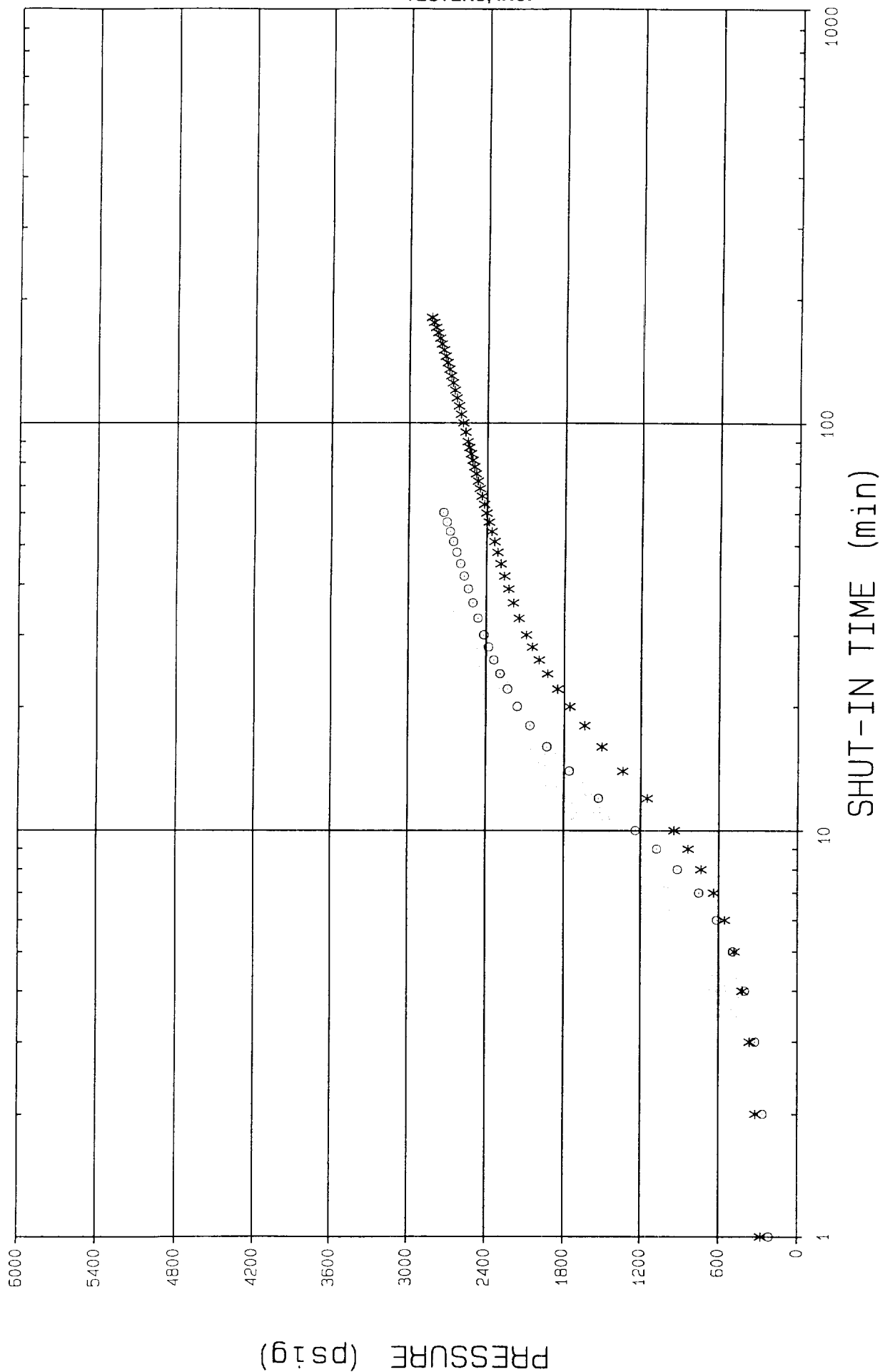
ELAPSED TIME ---MIN---	TOTAL FLOW TIME, T ---MIN---	INCREMENTAL SHUT-IN TIME, DT ---MIN---	(T+DT)/DT (HORNER) -----	PRESSURE ---PSIG---	DELTA P ---PSIG---
		SECOND SHUT-IN			
214.2	91.0	63.00	2.445	2422.10	2180.50
217.2	91.0	66.00	2.379	2439.08	2197.48
220.2	91.0	69.00	2.319	2455.48	2213.88
223.2	91.0	72.00	2.264	2470.80	2229.20
226.2	91.0	75.00	2.214	2485.75	2244.15
229.2	91.0	78.00	2.167	2499.68	2258.08
232.2	91.0	81.00	2.124	2513.10	2271.50
235.2	91.0	84.00	2.084	2526.20	2284.60
238.2	91.0	87.00	2.046	2538.55	2296.95
241.2	91.0	90.00	2.011	2550.78	2309.18
246.2	91.0	95.00	1.958	2569.68	2328.08
251.2	91.0	100.00	1.910	2587.84	2346.24
256.2	91.0	105.00	1.867	2605.00	2363.40
261.2	91.0	110.00	1.827	2621.53	2379.93
266.2	91.0	115.00	1.791	2637.54	2395.94
271.2	91.0	120.00	1.759	2652.88	2411.28
276.2	91.0	125.00	1.728	2667.61	2426.01
281.2	91.0	130.00	1.700	2682.12	2440.52
286.2	91.0	135.00	1.674	2696.30	2454.70
291.2	91.0	140.00	1.650	2710.45	2468.85
296.2	91.0	145.00	1.628	2724.59	2482.99
301.2	91.0	150.00	1.607	2739.03	2497.43
306.2	91.0	155.00	1.587	2754.13	2512.53
311.2	91.0	160.00	1.569	2769.03	2527.43
316.2	91.0	165.00	1.552	2784.50	2542.90
321.2	91.0	170.00	1.535	2800.67	2559.07
326.2	91.0	175.00	1.520	2816.34	2574.74
331.2	91.0	180.00	1.506	2831.70	2590.10
331.6	91.0	180.36	1.505	2832.80	2591.20

REMARKS

THE INCREMENTAL DATA, PLOTS AND ANALYSIS ARE FROM THE ELECTRONIC RECORDER
PLEASE REFER TO DERIVATIVE DIAGNOSTICS ANALYSIS FOR FURTHER INFORMATION

45
10/17/2009
Received
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MCP

PRESSURE TIME



PATTERSON PETROLEUM, LLC.

HAWKEYE STATE "30" # 1



Well Test Report

RigTesters, Inc.
ABILENE - MIDLAND - GRAHAM

PATTERSON PETROLEUM, LLC. HAWKEYE STATE "30" #1

Well identification

Well ID	HAWKEYE "30" #1	Well location	N.W. BUCKEYE
County/District	LEA	State, Country	NEW MEXICO
Company	PATTERSON PETR	Division	SNYDER

Fluid properties

Prod/Inj fluid	OIL	GOR	700:1
Water cut	0%	Condensate yield	UNKNOWN
API gravity	40.0	Gas spec. grav.	0.7
Viscosity	0.72185 cp	Pseudo-critical T	382.97 deg R
Pseudo-critical P	664.37 psia	H2S mole fraction	UNKNOWN
CO2 mole fraction	UNKNOWN	N2 mole fraction	UNKNOWN
Compressibility(t)	14.26 e-6/psi	Formation vol factor	1.354 RB/STB

Reservoir properties

Porosity	0.12 frac	Formation thickness	40 ft
Wellbore radius	0.32813 ft	Prod-observer distance	N/A
Water-Oil Contact	UNKNOWN	Gas-Oil Contact	N/A
Gas-Water Contact	N/A	Rock compressibility	
Reservoir temperature	133 deg F	Pressure for properties	4375.8 psia

Comments

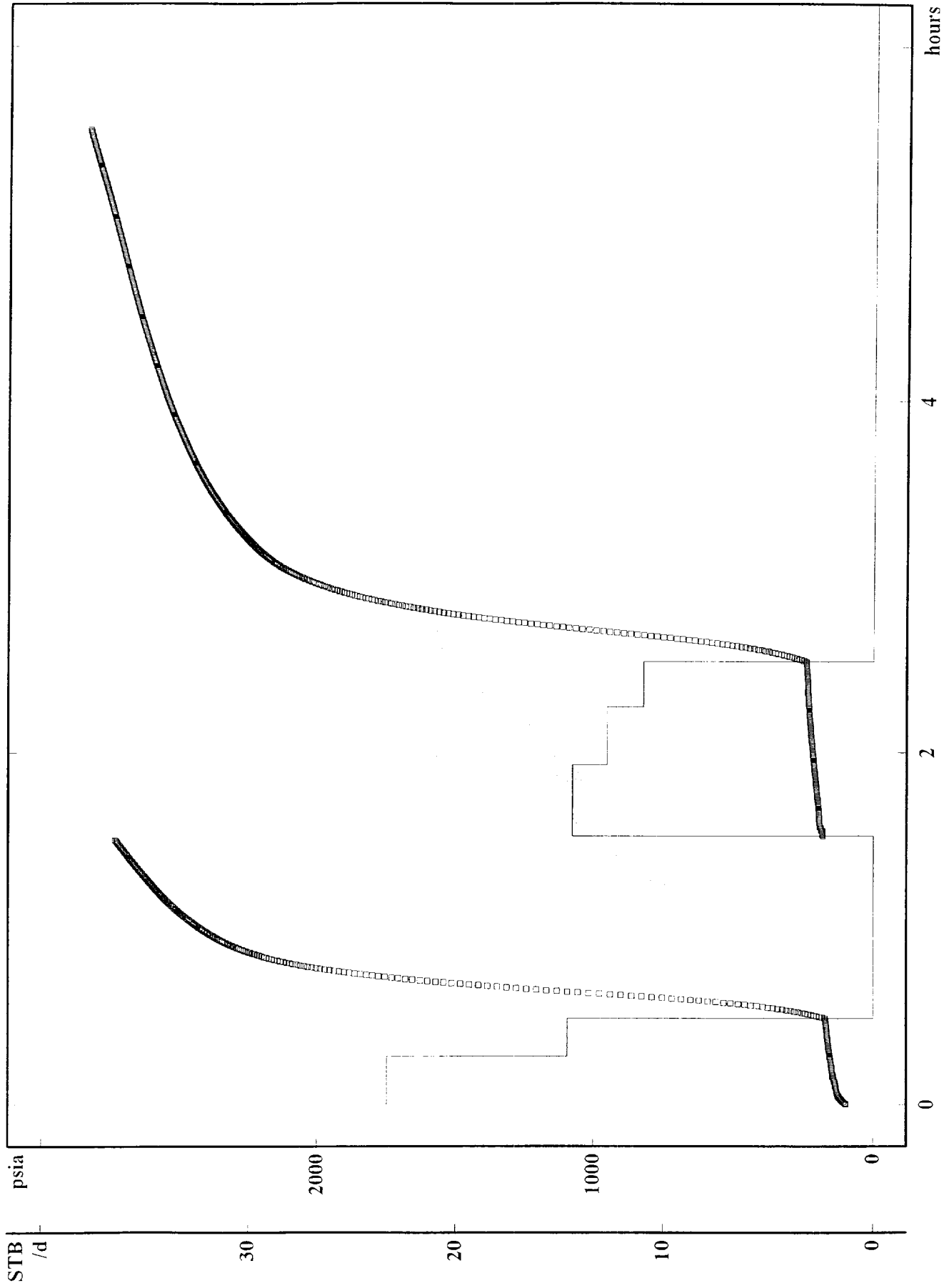
THE DERIVATIVES INDICATE A RESERVOIR WITH LOW PERMEABILITY AND VERY LOW (OR NEGATIVE) SKIN FACTOR. THE CHANGE IN SLOPE AND RAPID INCREASE ON DERIVATIVE CURVES IN MID & LATE TIME DATA INDICATE BOUNDARIES OR BARRIERS WITH-IN RADIUS OF TEST. ALLTHOUGH TRUE RADIAL FLOW REGIME WAS NOT OBTAINED DUE TO THE CLOSE PROXIMITY OF BARRIERS AND CALCULATIONS (EXTRAPOLATIONS, PERMEABILITY, SKIN, ETC.) ARE SUBJECT TO QUESTION, A REGRESSION MODEL ANALYSIS WAS PERFORMED FOR COMPARITIVE PURPOSES. THE MULTIPLE BOUNDARIES (AT LEAST 3) WERE ALL DETECTED WITHIN 3-4 FT. FROM THE WELLBORE (POSSIBLY DUE TO THE CEMENT INVASION ACROSS INTERVAL). THE FIXED PARAMETERS USED WERE AN EST. 12% POROSITY, 40 FT. OF NET PAY AND AVERAGE (TIME WEIGHTED) PRODUCTION OF 12.35 BBLs. OF FLUID FOR THE FINAL FLOW PERIOD. THE RATES WERE BASED ON DENSITY FOF FLUID RECOVERED VS. FLOWING PRESSURES. THE TOTAL RADIUS OF INVESTIGATION CALCULATED TO ONLY 9 FT. FROM THE WELLBORE.

34
100-1000
Registered
10/1/1917

10/1/1917

PATTERSON PETROLEUM, LLC. HAWKEYE STATE "30" #1

Pressure and flow rate vs time during test sequence



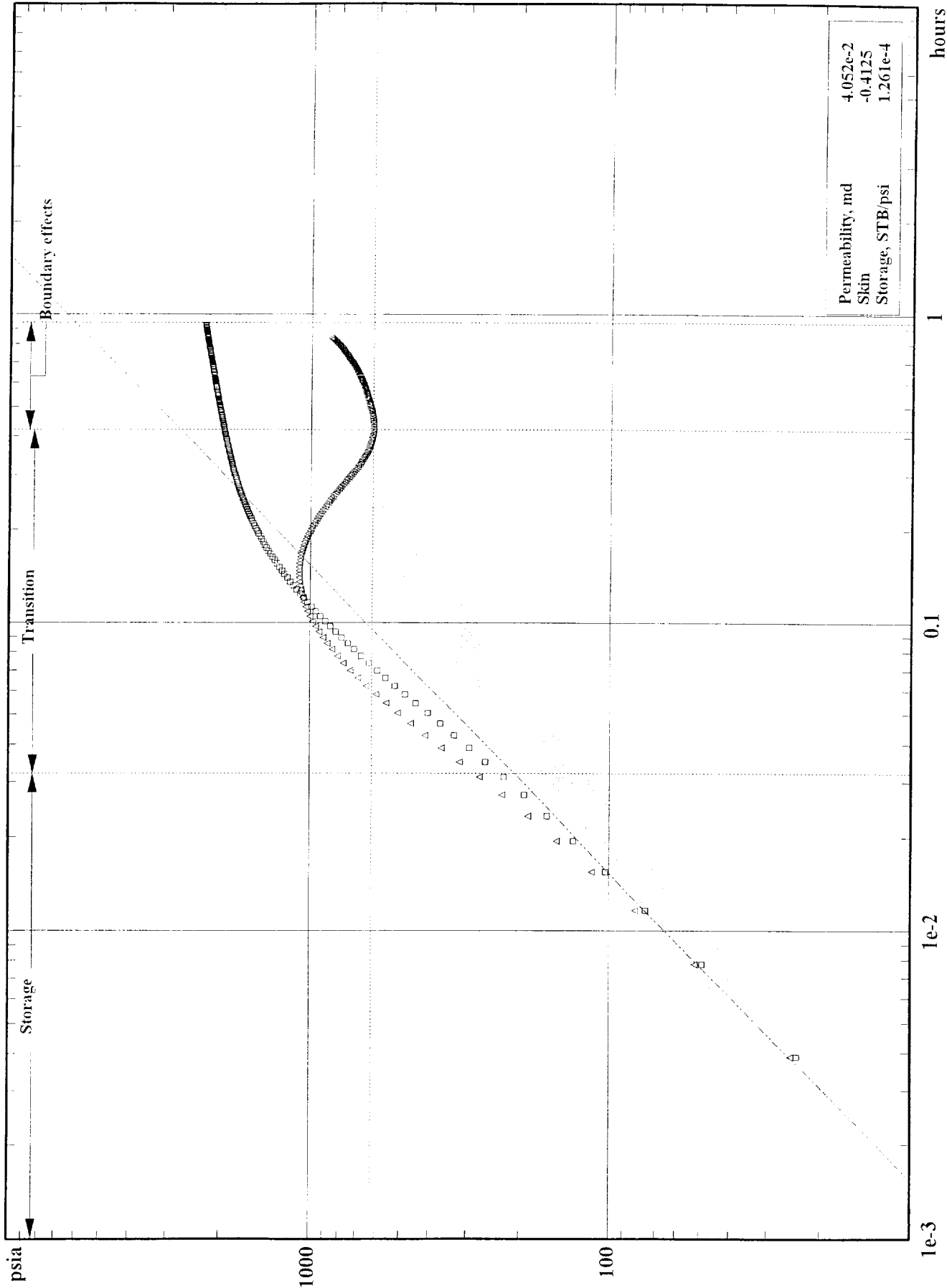
DST #3 10,200 - 10673 FT. LOWER WOLFCAMP

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PATTERSON PETROLEUM, LLC. HAWKEYE STATE "30" #1



Diagnostic plot (pressure & time)



INITIAL SHUT-IN PERIOD DST #3

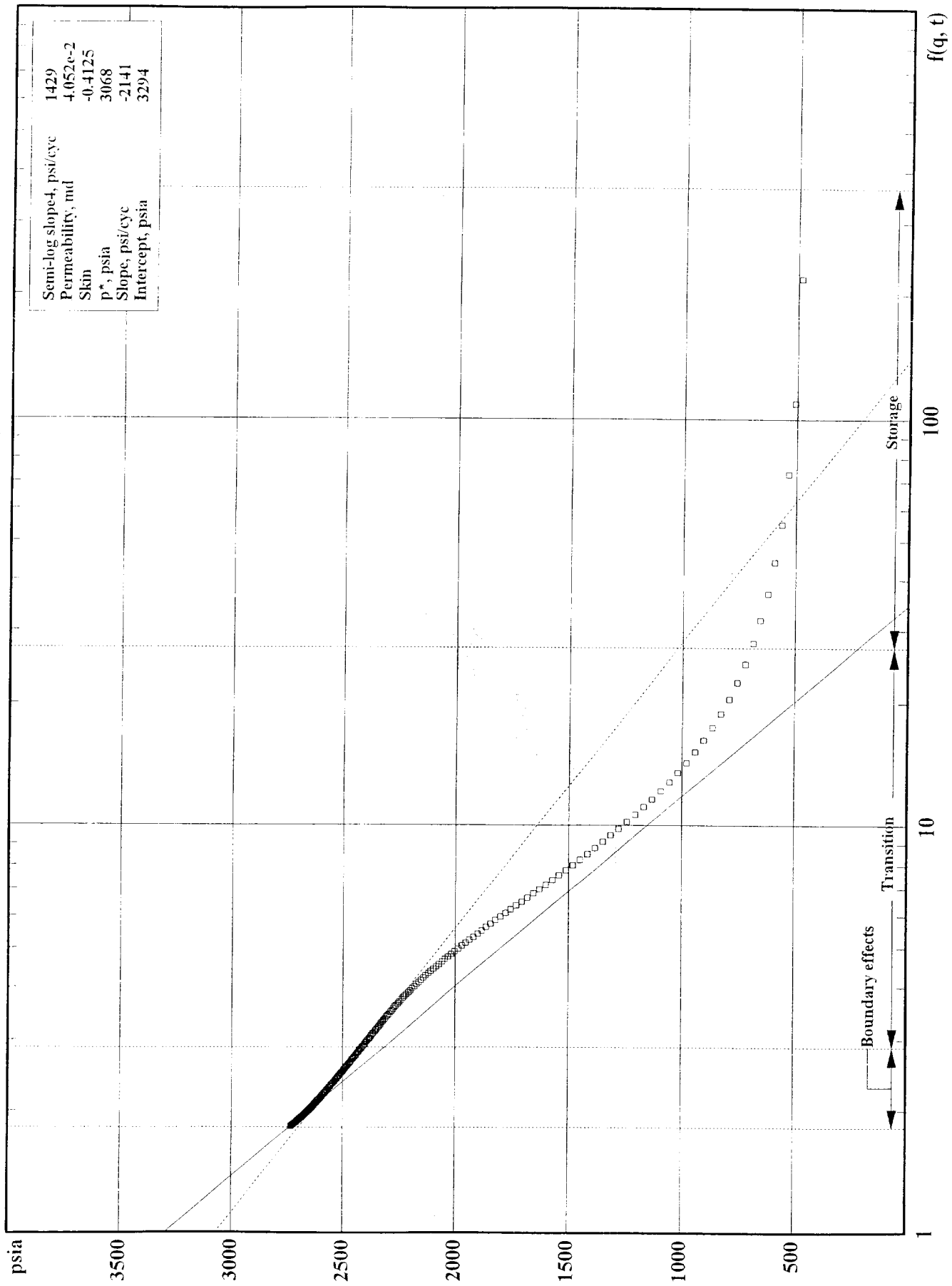
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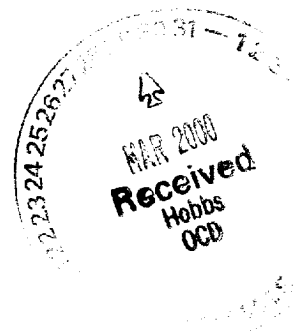
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PATTERSON PETROLEUM, LLC. HAWKEYE STATE "30" #1

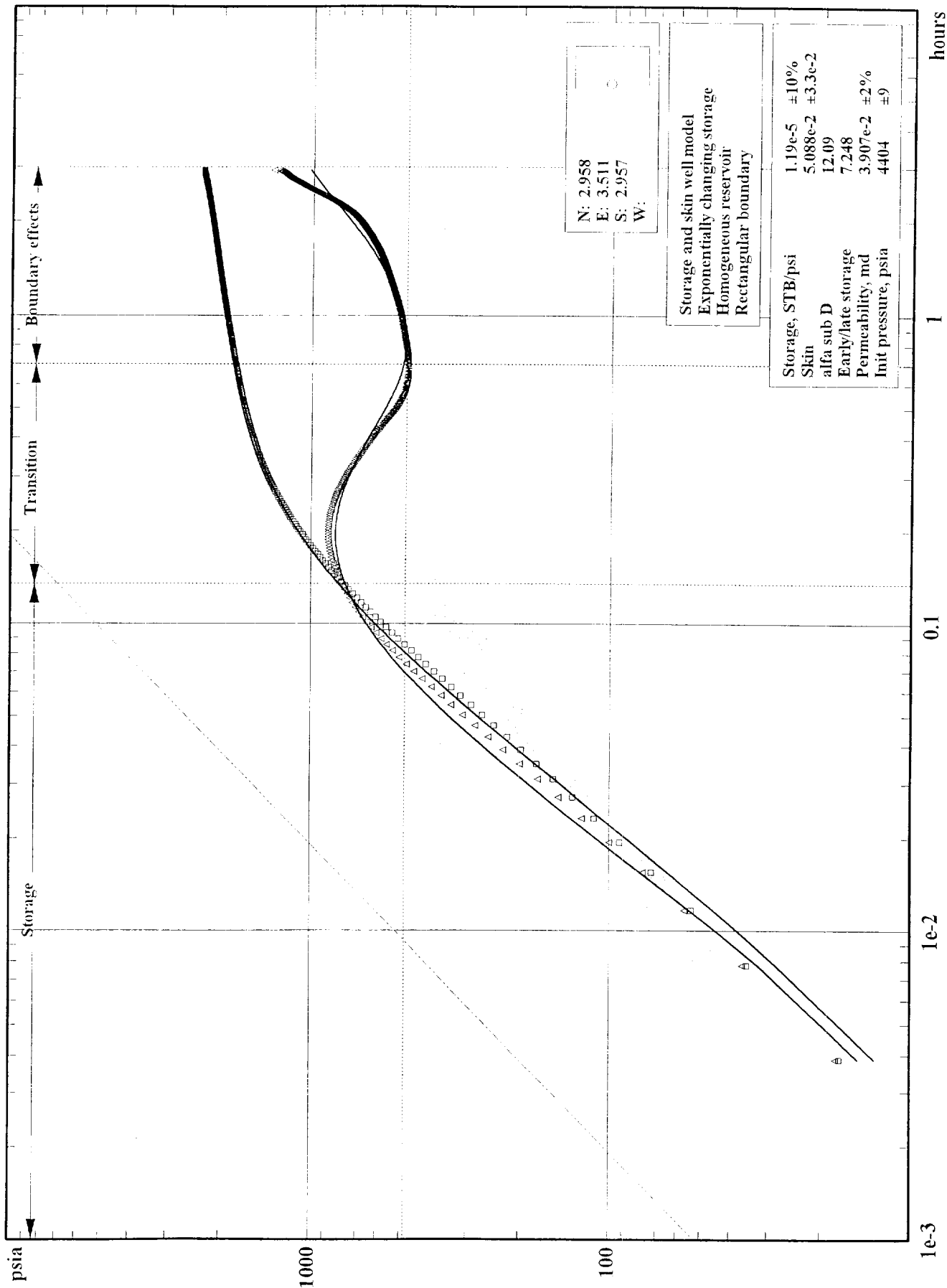
Variable rate Horner plot (pressure & time)



INITIAL SHUT-IN PERIOD DST #3



Diagnostic plot (pressure & time)

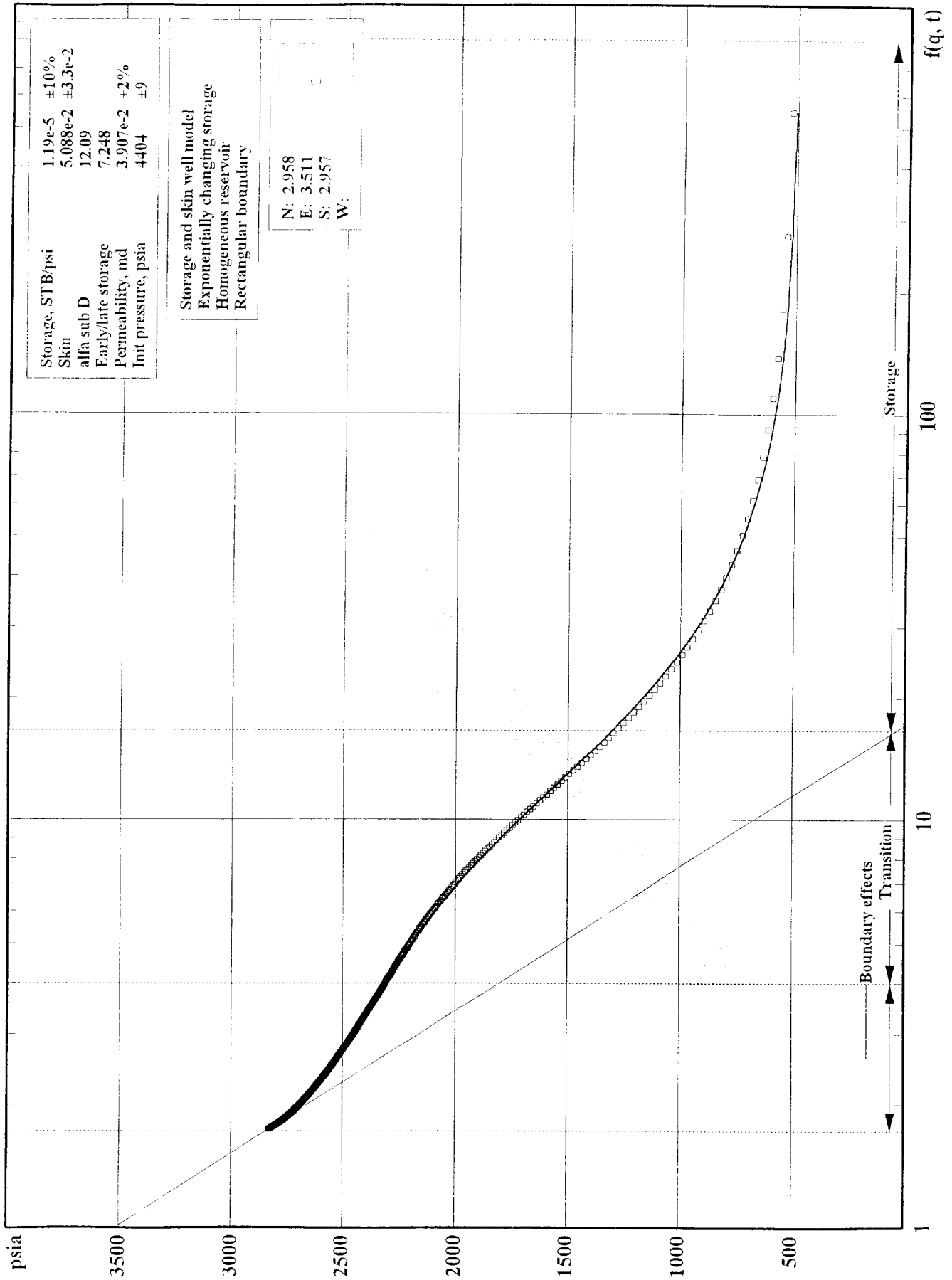


FINAL SHUT-IN PERIOD DST #3 REGRESSION VERIFIED MODEL



PATTERSON PETROLEUM, LLC. HAWKEYE STATE "30" #1

Variable rate Horner plot (pressure & time)



FINAL SHUT-IN PERIOD DST #3 REGRESSION VERIFIED MODEL

12-13-14-15-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31-12-20

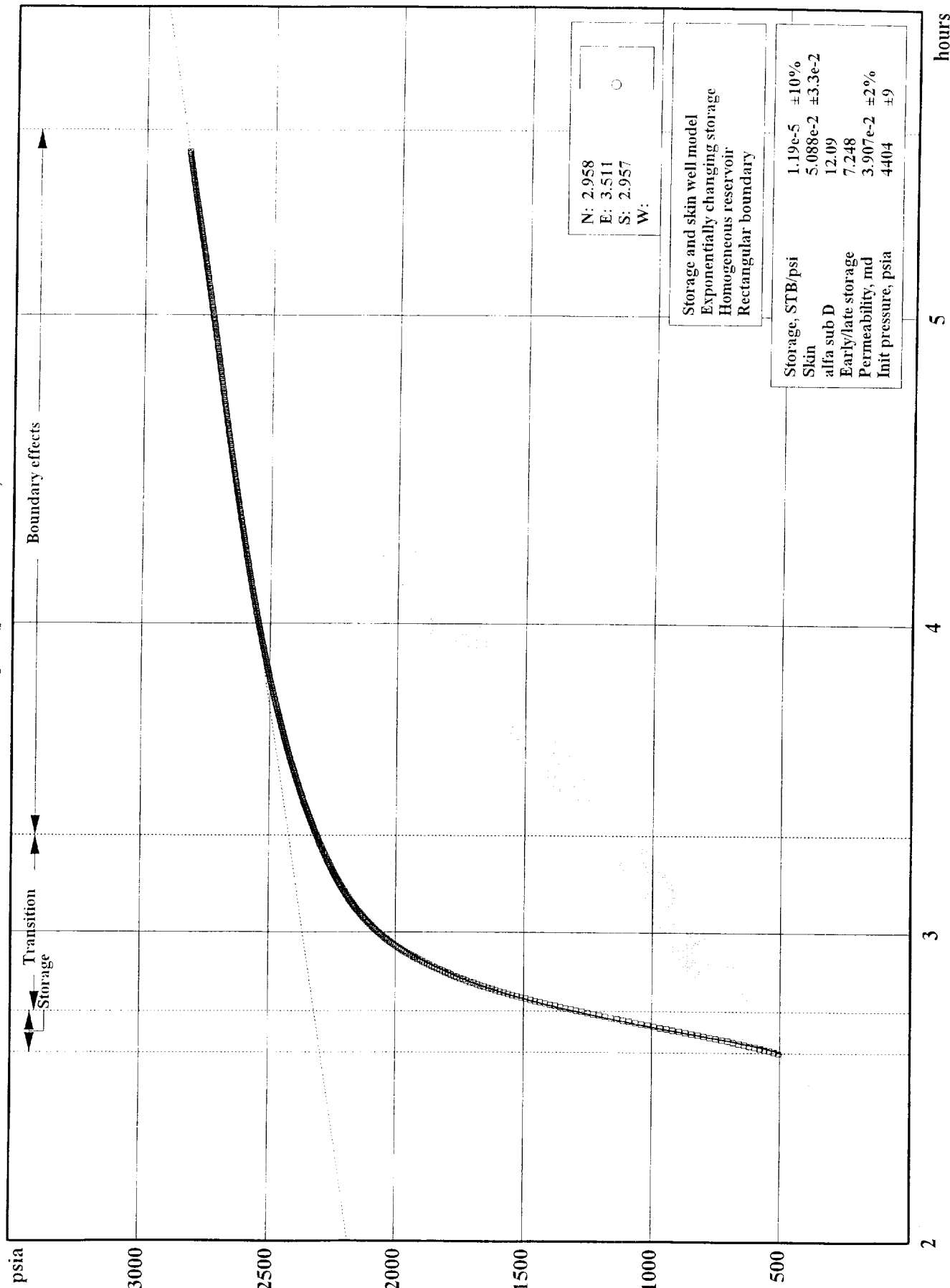
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PATTERSON PETROLEUM, LLC. HAWKEYE STATE "30" #1

Cartesian plot (pressure & time)



FINAL SHUT-IN PERIOD DST #3 REGRESSION VERIFIED MODEL