RIG
TESTERS, INC.

COMPANY	: PATTERSON PETROLEUM INC.	TEST DATE	: 12-29-99
LEASE	: HAWKEYE STATE "30"	D.S.T. NO.	: 1
WELL NO.	: # 1	TEST TKT. NO.	: 20979
FIELD	: WILDCAT	INVOICE NO.	: 18981
COUNTY/STATE	: LEA / NEW MEXICO	ORDER NO.	:

FORMATION	: PADDOCK DOLOMITE	HOLE SIZE (in)	: 7.875	ANCHOR LENGTH (ft)	: 70
INTERVAL (ft)	: 6497 TO 6567	DRILL PIPE ID (in)	: 3.75	TOOL LENGTH (ft)	: 73
TOTAL DEPTH (ft)	: 6567	DRILL COLLAR ID(in)	: 2.25	TOOL O.D. (in)	: 5
ELEVATION (ft)	:	DRILL COLLAR feet	: 588	PACKER SIZE (in)	: 7.00

RECORDER DATA
AK-IKUSTER / AMERADA

TOP RECORDER: IN		BOTTOM RECORDER: OUT	
RECORDER NO.	: 70637	RECORDER NO.	: 11025
CAPACITY (psi)	: 10000	CAPACITY (psi)	: 5025
DEPTH (ft)	: 6563	DEPTH (ft)	: 6567
CLOCK NO.	: 70637	CLOCK NO.	: 16119
DURATION (hrs)	: 96	DURATION (hrs)	: 24

MUD PROPERTIES

MUD TYPE	: FRESH WATER	WATER LOSS (cc)	:	CHLORIDE PPM	: 1200
MUD WT. (#/gal)	: 8.40	FILTER CAKE (in)	:	RESISTIVITY(ohm-m)	: 5.80
		VISCOSITY (sec)	: 28		

EQUIPMENT DATA

CONVENTIONAL	: YES	ROTARY JARS	: YES	MULTIFLOW	: NO
STRADDLE	: NO	NO. OF PACKERS	: 2	MILEAGE	: NO
SELECTIVE ZONE	: NO	SAFETY JOINT	: YES	OPERATOR TIME	: NO
SAMPLE CHAMBER	: YES	CIRCULATING SUB	: YES	OTHER	: YES
GAS ANALYSIS	: NO	REVERSED OUT	: NO	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 : 6:06 AM

TOTAL TEST TIME: 266

INITIAL FLOW	: 28	INITIAL SHUT-IN	: 58
SECOND FLOW	: 59	SECOND SHUT-IN	: 121
THIRD FLOW	:	THIRD SHUT IN	:

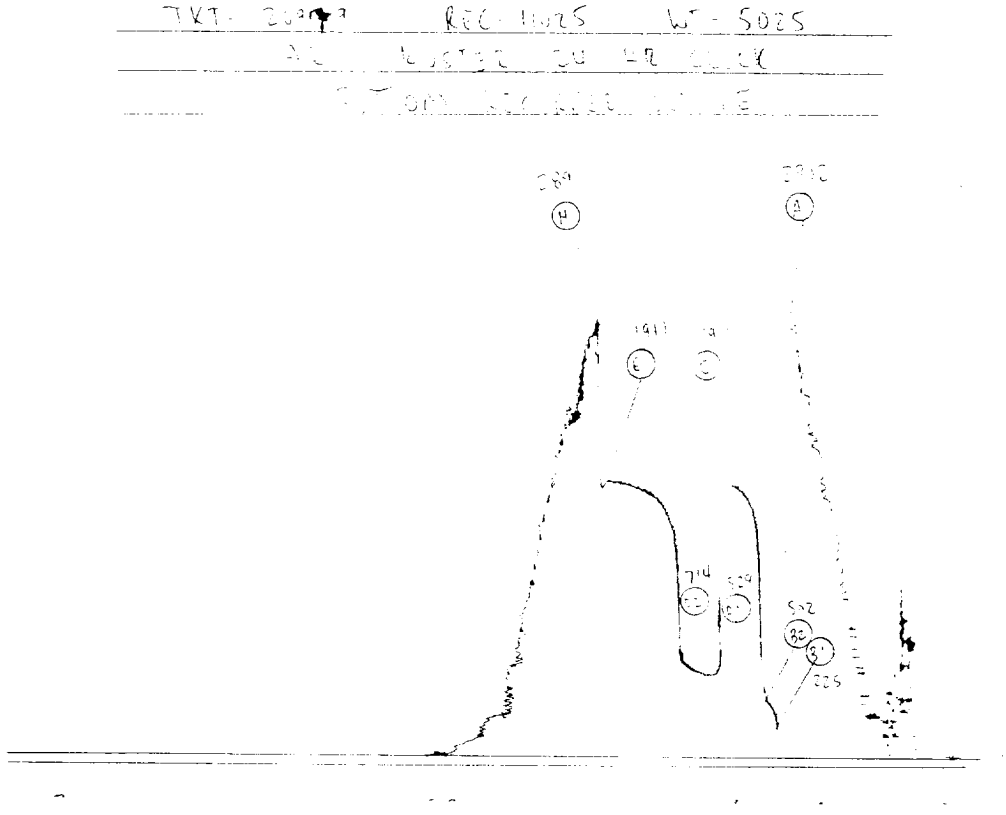
TEST TOOL OPERATOR: RAYMON KINCAID

PATTERSON PETROLEUM INC.

RIG TESTERS, INC.

HAWKEYE STATE "30" # 1
D.S.T. NO. : 1

		CORRECTED READING	FIELD READING
A	INITIAL HYDROSTATIC:	2902 PSI	2891 PSI
B-1	INITIAL FIRST FLOW :	225 PSI	194 PSI
B-2	FINAL FIRST FLOW :	502 PSI	479 PSI
C	FIRST SHUT-IN :	1911 PSI	1835 PSI
D-1	INITIAL SECOND FLOW:	529 PSI	544 PSI
D-2	FINAL SECOND FLOW :	714 PSI	634 PSI
E	SECOND SHUT-IN :	1911 PSI	1874 PSI
H	FINAL HYDROSTATIC :	2891 PSI	2827 PSI



RECOVERY DATA

PIPE RECOVERY

2200 FT. OF SLIGHTLY GAS CUT MUDDY SULPHUR WATER
36,500 MG/L CHLORIDES- .235 OHMS @ 85 DEGREES

B.H. TEMP. (deg F) : 110

SAMPLE CHAMBER

600 LBS. OF PRESSURE
2000 CC'S SULPHUR WATER
36,500 MG/L CHLORIDES
.235 OHMS @ 85 DEGREES

TEST REMARKS

TOOL OPENED WITH WEAK BLOW WHICH INCREASED SLOWLY TO GOOD BLOW (18" IN WATER) IN 25 MIN. & REMAINED THROUGHOUT 30 MIN. FIRST FLOW. REOPENED TOOL WITH WEAK BLOW WHICH INCREASED TO GOOD BLOW (18" IN WATER) IN 45 MIN. & REMAINED THROUGHOUT THE 60 MIN. FINAL FLOW PERIOD.

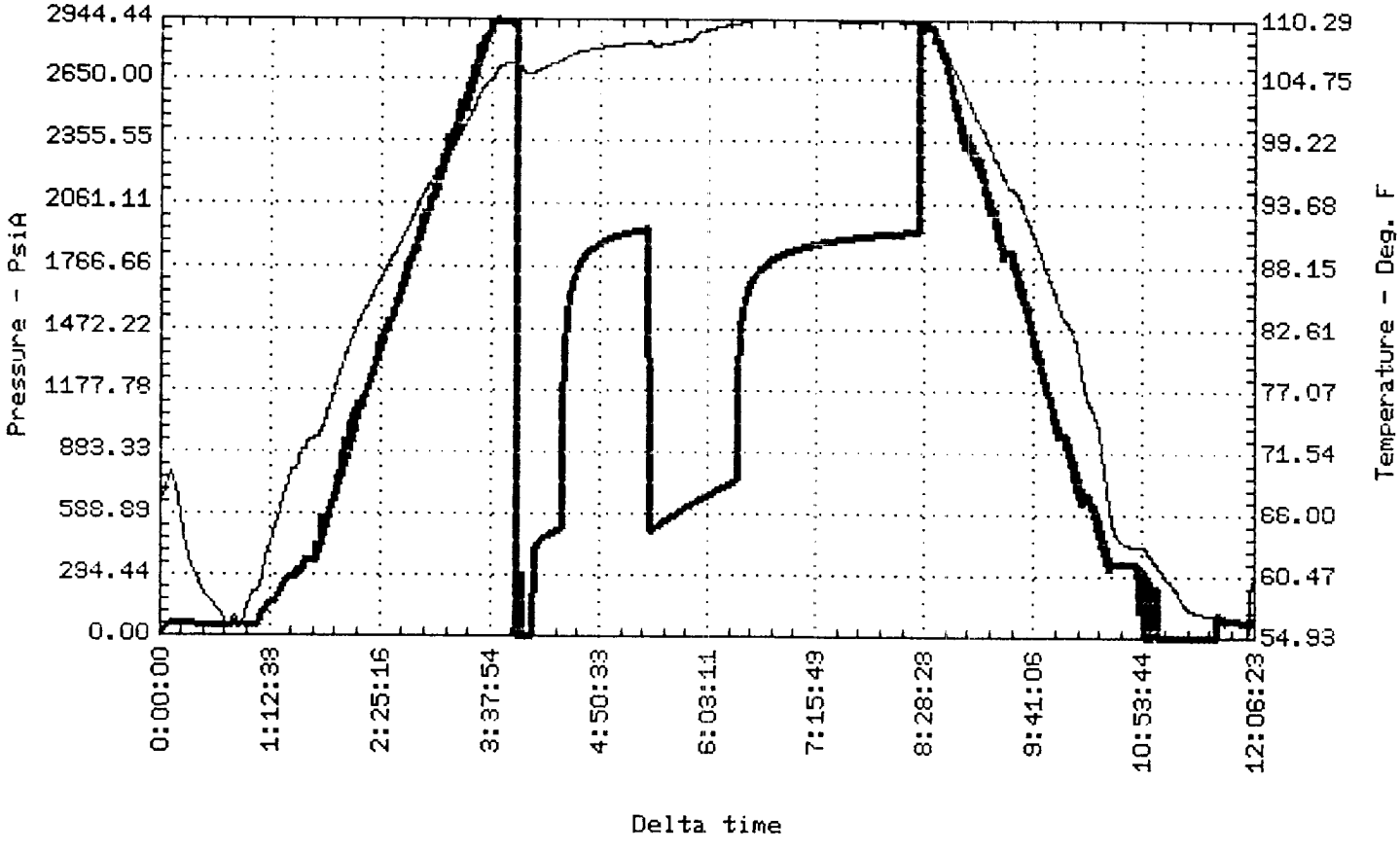
RIG TESTERS, INC.

LOGGED PRESSURE / TEMPERATURE DATA

File name: PATPET1

Company	: PATTERSON PETROLEUM
Client	: L.T. BILLS
Gauge number	: 70637
Well name	: HAWKEYE STATE 30
Well number	: 1
Test number	: 1
Field name	: WILDCAT
Test operator	: RAYMON KINCAID
Comments	:

Starting date: 12/29/1999
time: 06:06:00



PATTERSON PETROLEUM INC.

RIG TESTERS, INC.

HAWKEYE STATE "30" # 1
D.S.T. NO. : 1

INCREMENTAL PRESSURE DATA

RECORDER NO : 70637 RECORDER CAPACITY : 10000 psi RECORDER DEPTH : 6563 ft

ELAPSED TIME	TOTAL FLOW TIME, T	INCREMENTAL SHUT-IN TIME, DT	(T+DT)/DT (HORNER)	PRESSURE	DELTA P
---MIN---	---MIN---	---MIN---	----------	---PSIG---	---PSIG---
			FIRST FLOW		
.0	.0			255.60	.00
2.0	2.0			314.02	58.42
4.0	4.0			361.87	106.27
6.0	6.0			389.07	133.47
8.0	8.0			403.70	148.10
10.0	10.0			419.47	163.87
12.0	12.0			444.25	188.65
14.0	14.0			460.18	204.58
16.0	16.0			469.00	213.40
18.0	18.0			478.10	222.50
20.0	20.0			485.72	230.12
22.0	22.0			493.55	237.95
24.0	24.0			502.37	246.77
26.0	26.0			510.23	254.63
27.8	27.8			517.50	261.90
			FIRST SHUT-IN		
27.8	27.8	.00	.000	517.50	.00
28.3	27.8	.50	56.560	1110.80	593.30
28.8	27.8	1.00	28.780	1266.44	748.94
29.3	27.8	1.50	19.520	1345.00	827.50
29.8	27.8	2.00	14.890	1404.91	887.41
30.3	27.8	2.50	12.112	1453.93	936.43
30.8	27.8	3.00	10.260	1500.10	982.60
31.3	27.8	3.50	8.937	1535.18	1017.68
31.8	27.8	4.00	7.945	1566.07	1048.57
32.3	27.8	4.50	7.173	1593.10	1075.60
32.8	27.8	5.00	6.556	1618.11	1100.61
33.8	27.8	6.00	5.630	1658.58	1141.08
34.8	27.8	7.00	4.969	1689.44	1171.94
35.8	27.8	8.00	4.473	1715.67	1198.17
36.8	27.8	9.00	4.087	1735.95	1218.45
37.8	27.8	10.00	3.778	1754.17	1236.67
39.8	27.8	12.00	3.315	1782.55	1265.05
41.8	27.8	14.00	2.984	1804.59	1287.09
43.8	27.8	16.00	2.736	1822.40	1304.90
45.8	27.8	18.00	2.543	1837.20	1319.70
47.8	27.8	20.00	2.389	1849.67	1332.17
50.8	27.8	23.00	2.208	1865.14	1347.64
53.8	27.8	26.00	2.068	1877.90	1360.40
56.8	27.8	29.00	1.958	1888.57	1371.07
59.8	27.8	32.00	1.868	1897.56	1380.06
62.8	27.8	35.00	1.794	1905.54	1388.04
65.8	27.8	38.00	1.731	1912.32	1394.82
68.8	27.8	41.00	1.678	1918.42	1400.92

PATTERSON PETROLEUM INC.

RIG TESTERS, INC.

HAWKEYE STATE "30" # 1
D.S.T. NO. : 1

INCREMENTAL PRESSURE DATA

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26.0	26.0			510.23	254.63
27.8	27.8			517.50	261.90
		FIRST SHUT-IN			
27.8	27.8	.00	.000	517.50	.00
28.3	27.8	.50	56.560	1110.80	593.30
28.8	27.8	1.00	28.780	1266.44	748.94
29.3	27.8	1.50	19.520	1345.00	827.50
29.8	27.8	2.00	14.890	1404.91	887.41
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---MIN----	---MIN----	---MIN----	----------	---PSIG---	---PSIG---
		FIRST SHUT-IN			
71.8	27.8	44.00	1.631	1923.73	1406.23
74.8	27.8	47.00	1.591	1928.53	1411.03
77.8	27.8	50.00	1.556	1932.90	1415.40
80.8	27.8	53.00	1.524	1936.73	1419.23
83.8	27.8	56.00	1.496	1940.32	1422.82
85.9	27.8	58.08	1.478	1942.60	1425.10
		SECOND FLOW			
86.3	28.3			505.70	.00
89.3	31.3			511.63	5.93
92.3	34.3			526.78	21.08
95.3	37.3			541.65	35.95
98.3	40.3			556.85	51.15
101.3	43.3			570.88	65.18
104.3	46.3			585.38	79.68
107.3	49.3			599.40	93.70
110.3	52.3			612.45	106.75
113.3	55.3			627.02	121.32
116.3	58.3			638.85	133.15
119.3	61.3			650.95	145.25
122.3	64.3			662.72	157.02
125.3	67.3			674.80	169.10
128.3	70.3			686.40	180.70
131.3	73.3			697.80	192.10
134.3	76.3			708.95	203.25
137.3	79.3			720.15	214.45
140.3	82.3			731.20	225.50
143.3	85.3			741.90	236.20
145.6	87.5			749.70	244.00
		SECOND SHUT-IN			
145.6	87.5	.00	.000	749.70	.00
146.1	87.5	.50	176.080	1216.98	467.28
146.6	87.5	1.00	88.540	1349.42	599.72
147.1	87.5	1.50	59.360	1412.85	663.15
147.6	87.5	2.00	44.770	1459.03	709.33
148.1	87.5	2.50	36.016	1495.37	745.67
148.6	87.5	3.00	30.180	1528.50	778.80
149.1	87.5	3.50	26.011	1552.97	803.27
149.6	87.5	4.00	22.885	1573.82	824.12
150.1	87.5	4.50	20.453	1591.92	842.22

PATTERSON PETROLEUM INC.

RIG TESTERS, INC.

HAWKEYE STATE "30" # 1
D.S.T. NO. : 1

INCREMENTAL PRESSURE DATA

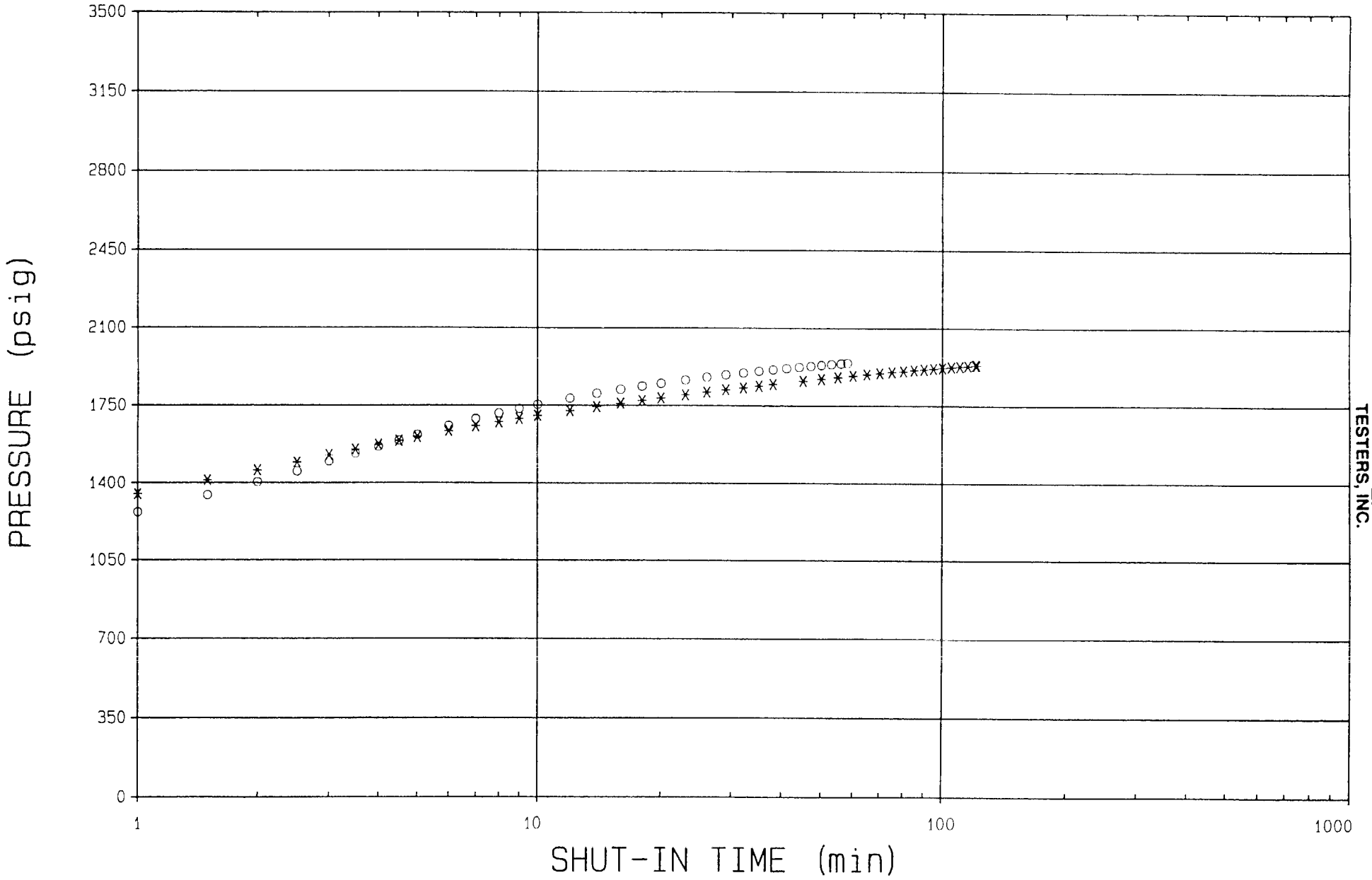
RECORDER NO : 70637 RECORDER CAPACITY : 10000 psi RECORDER DEPTH : 6563 ft

ELAPSED TIME	TOTAL FLOW TIME, T	INCREMENTAL SHUT-IN TIME, DT	(T+DT)/DT (HORNER)	PRESSURE	DELTA P
---MIN----	---MIN----	---MIN----	----------	---PSIG---	---PSIG---
		SECOND SHUT-IN			
150.6	87.5	5.00	18.508	1609.54	859.84
151.6	87.5	6.00	15.590	1635.67	885.97
152.6	87.5	7.00	13.506	1657.95	908.25
153.6	87.5	8.00	11.943	1675.40	925.70
154.6	87.5	9.00	10.727	1691.00	941.30
155.6	87.5	10.00	9.754	1704.35	954.65
157.6	87.5	12.00	8.295	1726.65	976.95
159.6	87.5	14.00	7.253	1744.55	994.85
161.6	87.5	16.00	6.471	1759.67	1009.97
163.6	87.5	18.00	5.863	1772.65	1022.95
165.6	87.5	20.00	5.377	1783.88	1034.18
168.6	87.5	23.00	4.806	1798.24	1048.54
171.6	87.5	26.00	4.367	1810.73	1061.03
174.6	87.5	29.00	4.019	1821.33	1071.63
177.6	87.5	32.00	3.736	1830.68	1080.98
180.6	87.5	35.00	3.501	1839.15	1089.45
183.6	87.5	38.00	3.304	1846.60	1096.90
190.6	87.5	45.00	2.945	1861.50	1111.80
195.6	87.5	50.00	2.751	1870.33	1120.63
200.6	87.5	55.00	2.592	1878.10	1128.40
205.6	87.5	60.00	2.459	1885.08	1135.38
210.6	87.5	65.00	2.347	1891.18	1141.48
215.6	87.5	70.00	2.251	1896.75	1147.05
220.6	87.5	75.00	2.167	1901.70	1152.00
225.6	87.5	80.00	2.094	1906.27	1156.57
230.6	87.5	85.00	2.030	1910.48	1160.78
235.6	87.5	90.00	1.973	1914.35	1164.65
240.6	87.5	95.00	1.921	1917.92	1168.22
245.6	87.5	100.00	1.875	1921.27	1171.57
250.6	87.5	105.00	1.834	1924.30	1174.60
255.6	87.5	110.00	1.796	1927.12	1177.42
260.6	87.5	115.00	1.761	1929.69	1179.99
265.6	87.5	120.00	1.730	1932.13	1182.43
266.5	87.5	120.84	1.724	1932.60	1182.90

REMARKS

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

PRESSURE TIME



RIG TESTERS, INC.

PATTERSON PETROLEUM INC.

HAWKEYE STATE "30" # 1

○ FIRST SHUT-IN

* SECOND SHUT-IN

RIG TESTERS, INC.

Well Test Report

RigTesters, Inc.
ABILENE - MIDLAND - GRAHAM

PATTERSON PETROLEUM INC.

Well identification

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

Fluid properties

Prod/Inj fluid	WATER	GOR	
Water cut	100%	Condensate yield	UNKNOWN
API gravity		Gas spec. grav.	0.7
Viscosity	0.6556 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)	12.477 e-6/psi	Formation vol factor	1.0066 RB/STB

Reservoir properties

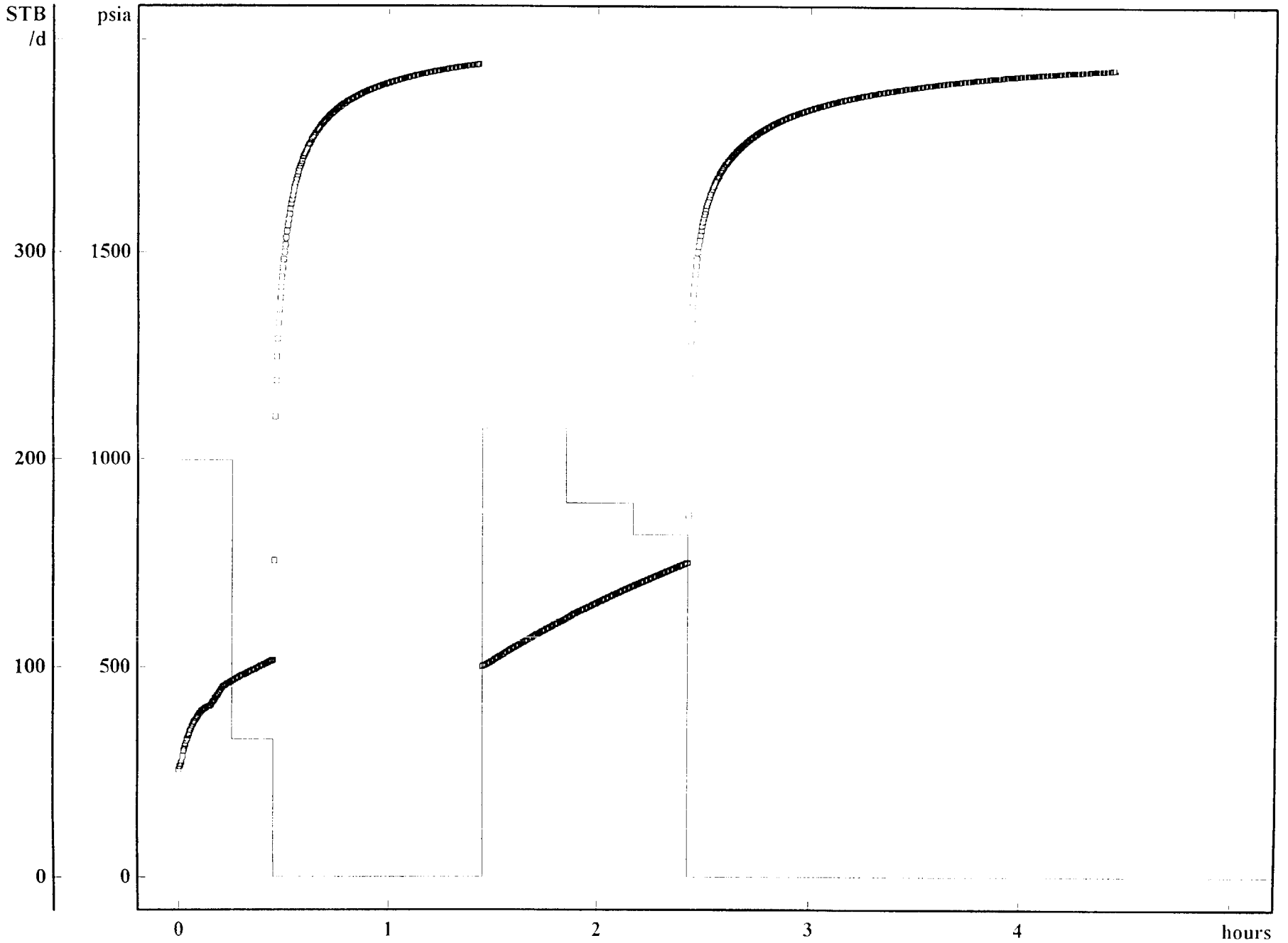
Porosity	0.14 frac	Formation thickness	50 ft
Wellbore radius	0.32813 ft	Prod-observer distance	N/A
Water-Oil Contact	UNKNOWN	Gas-Oil Contact	N/A
Gas-Water Contact	N/A	Rock compressibility	
Reservoir temperature	110 deg F	Pressure for properties	1950 psia

Comments

THE DERIVATIVES INDICATE A RESERVOIR WITH LOW PERMEABILITY AND SKIN. THE DIPS AND RISES FROM RADIAL FLOW ON BOTH SHUT-IN PERIODS IS INDICATIVE OF A MULTIPLE POROSITY RESERVOIR WITH-IN INTERVAL TESTED. THE PERMEABILITY AND SKIN CALCULATIONS REPRESENT THE OVERALL AVERAGE OF THE INTERVAL TESTED. A REGRESSION VERIFIED MODEL ANALYSIS WAS PERFORMED TO BETTER DETERMINE FORMATION PARAMETERS AND IS REPRESENTED BY A SOLID LINE PLOTTED OVER ACTUAL DATA. THE FIXED PARAMETERS USED WERE AN EST. 14% POROSITY, 50 FT. OF NET PAY REPORTED AND AN AVERAGE PRODUCTION OF 185 BBLS. OF WATER FOR THE FINAL FLOW. THE RATES WERE BASED ON DENSITY OF FLUID RECOVERED VS. FLOWING PRESSURES. TOTAL RADIUS OF INVESTIGATION CALCULATED TO APPROX. 41 FT. FROM WELLBORE.

PATTERSON PETROLEUM INC. HAWKEYE STATE "30" #1

Pressure and flow rate vs time during test sequence

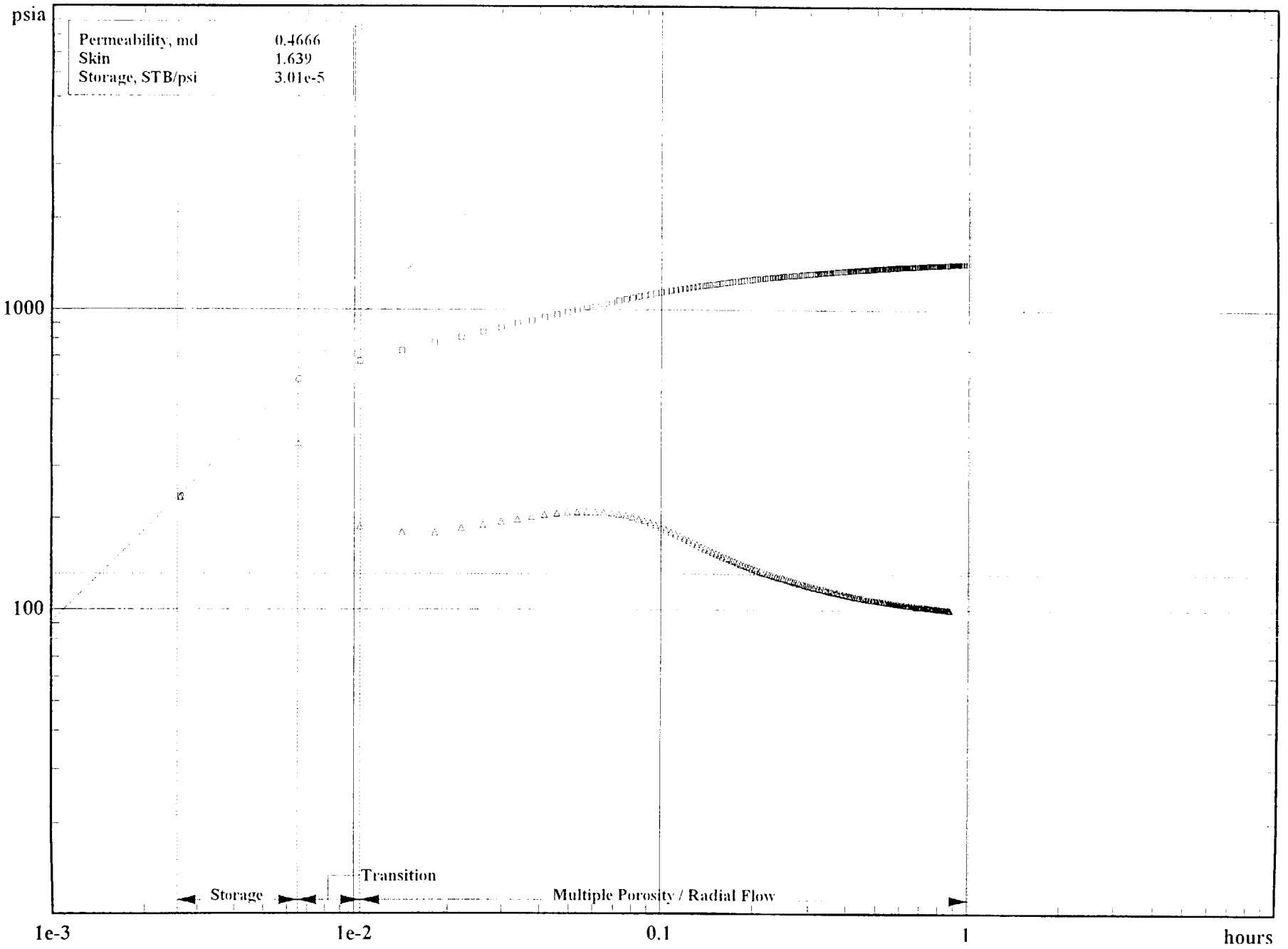


DST #1 6497 - 6567 FT. PADDOCK DOLOMITE

RIG TESTERS, INC.

PATTERSON PETROLEUM INC. HAWKEYE STATE "30" #1

Diagnostic plot (pressure & time)

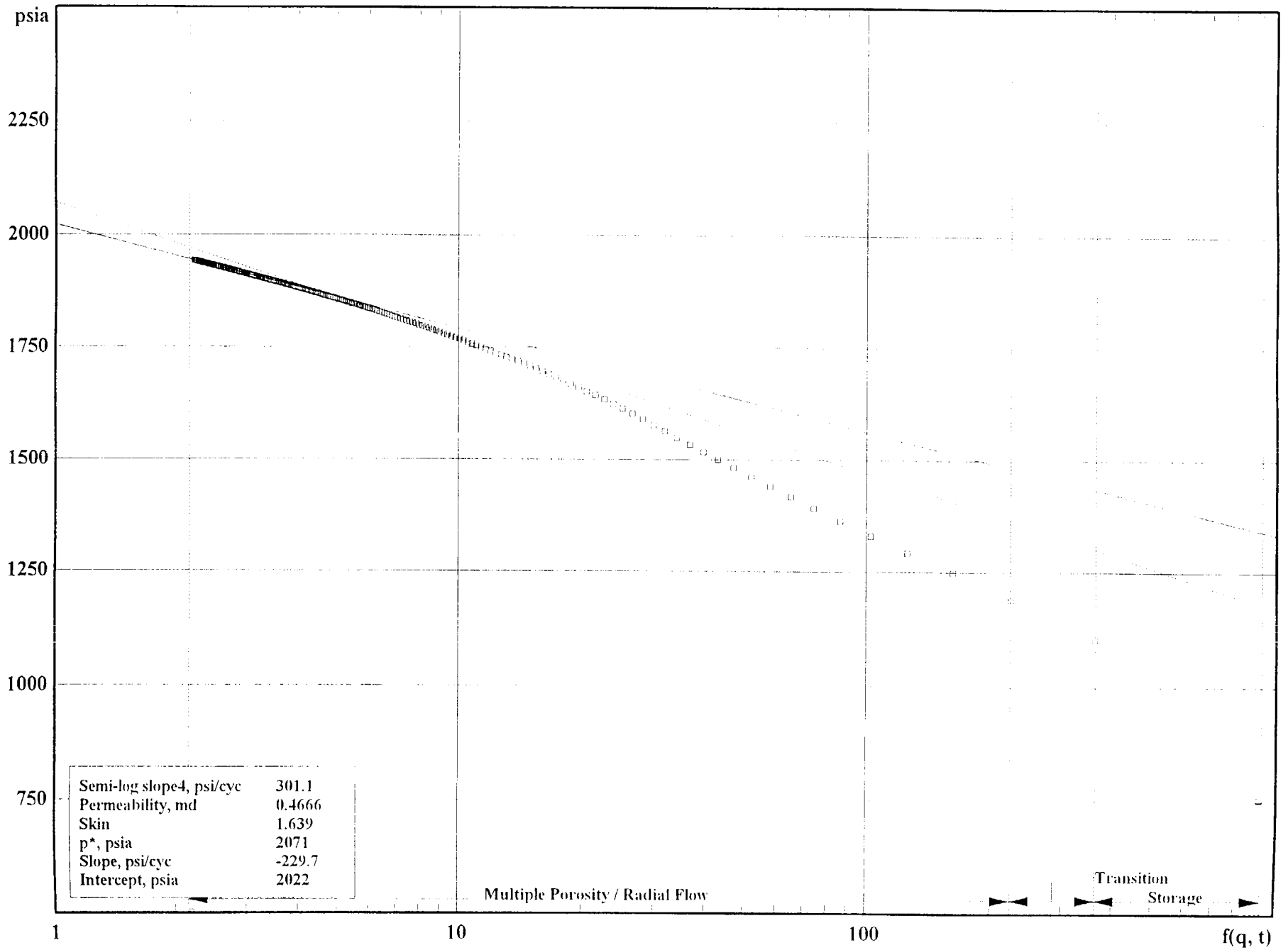


RIG TESTERS, INC.

INITIAL SHUT-IN PERIOD DST#1

PATTERSON PETROLEUM INC. HAWKEYE STATE "30" #1

Variable rate Horner plot (pressure & time)

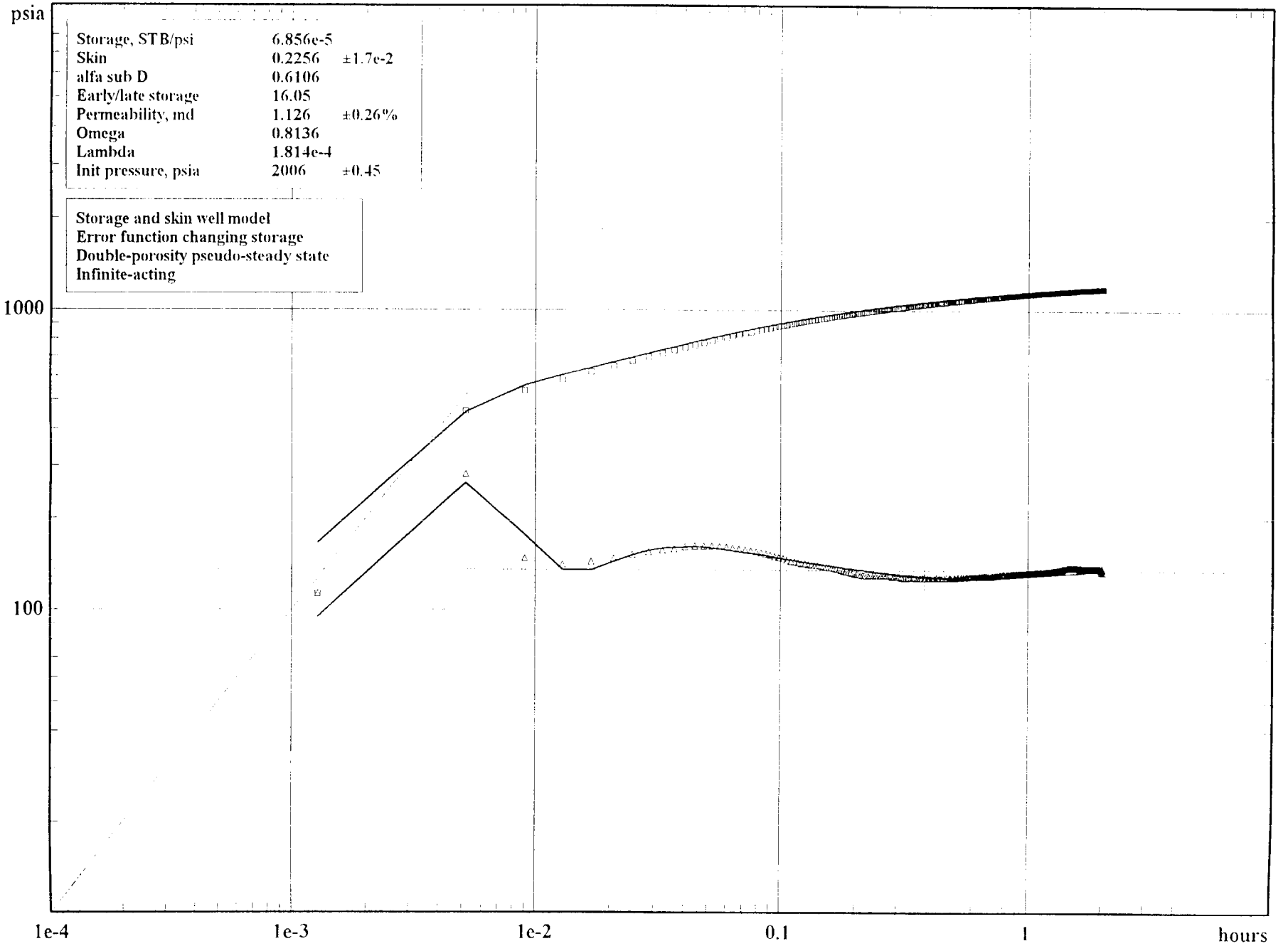


RIG TESTERS, INC.

INITIAL SHUT-IN PERIOD DST#1

PATTERSON PETROLEUM INC. HAWKEYE STATE "30" #1

Diagnostic plot (pressure & time)

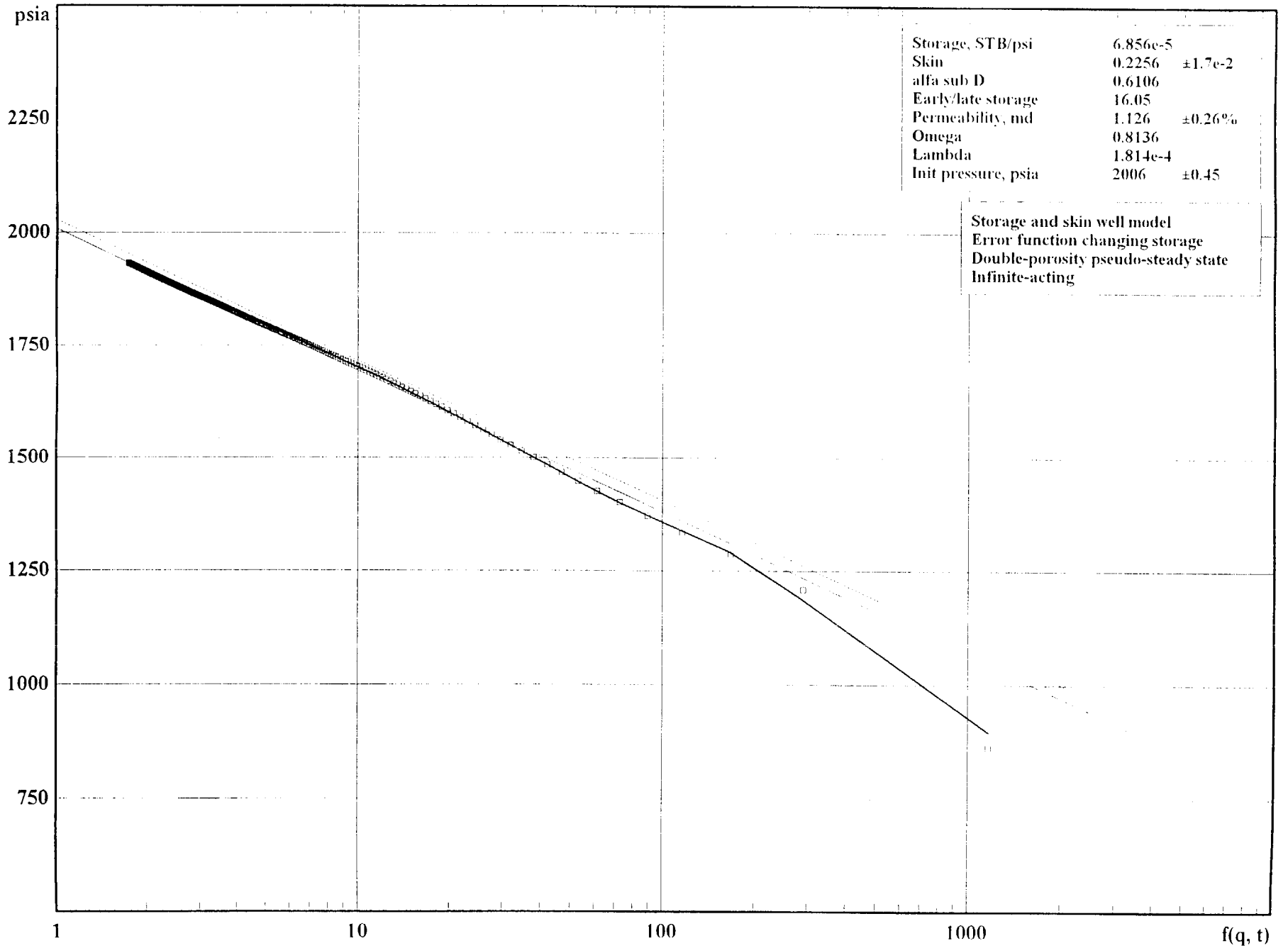


RIG TESTERS, INC.

FINAL SHUT-IN PERIOD DST#1 REGRESSION VERIFIED MODEL

PATTERSON PETROLEUM INC. HAWKEYE STATE "30" #1

Variable rate Horner plot (pressure & time)

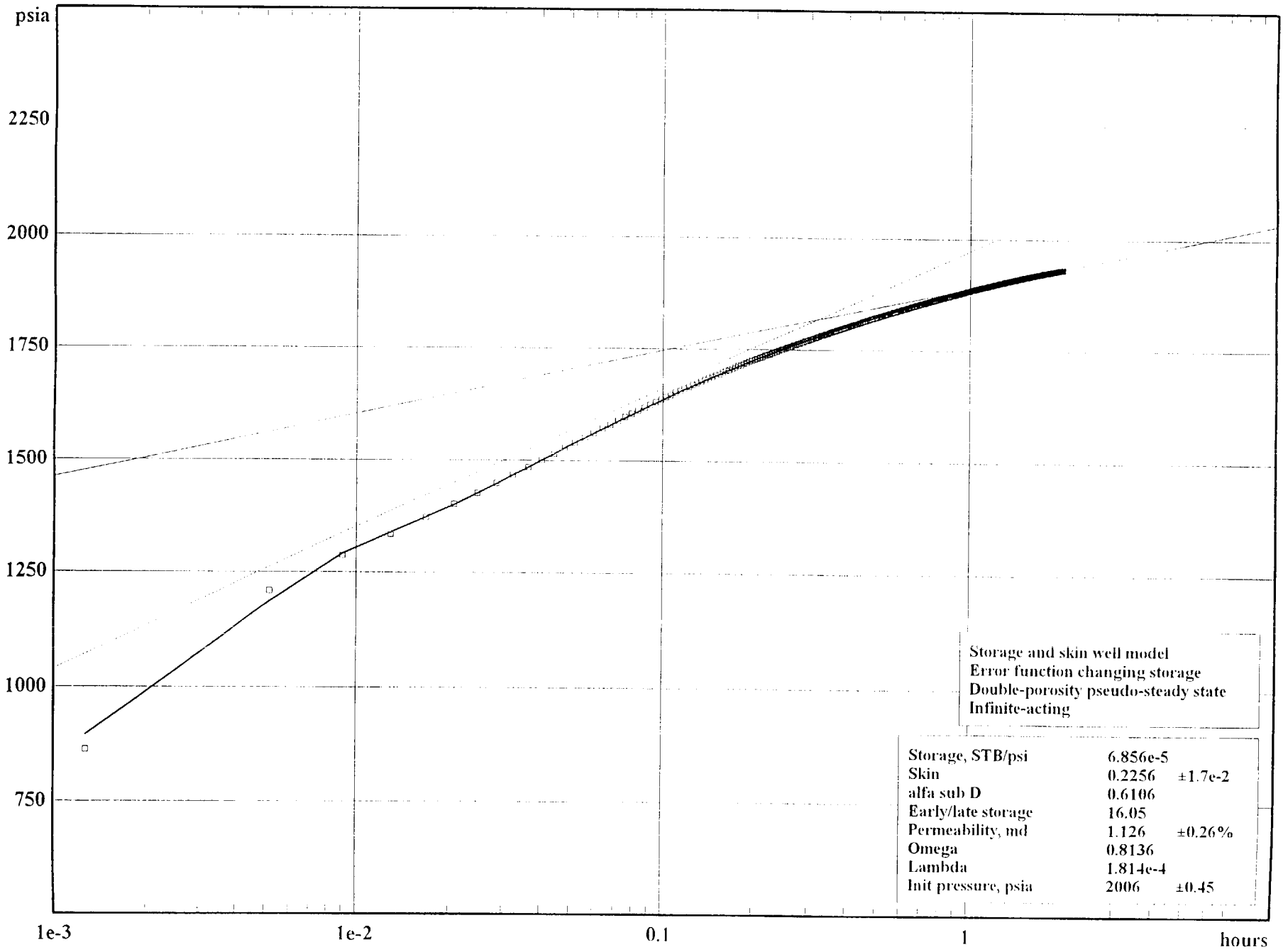


FINAL SHUT-IN PERIOD DST#1 REGRESSION VERIFIED MODEL

RIG TESTERS, INC.

PATTERSON PETROLEUM INC. HAWKEYE STATE "30" #1

MDH plot (pressure & time)

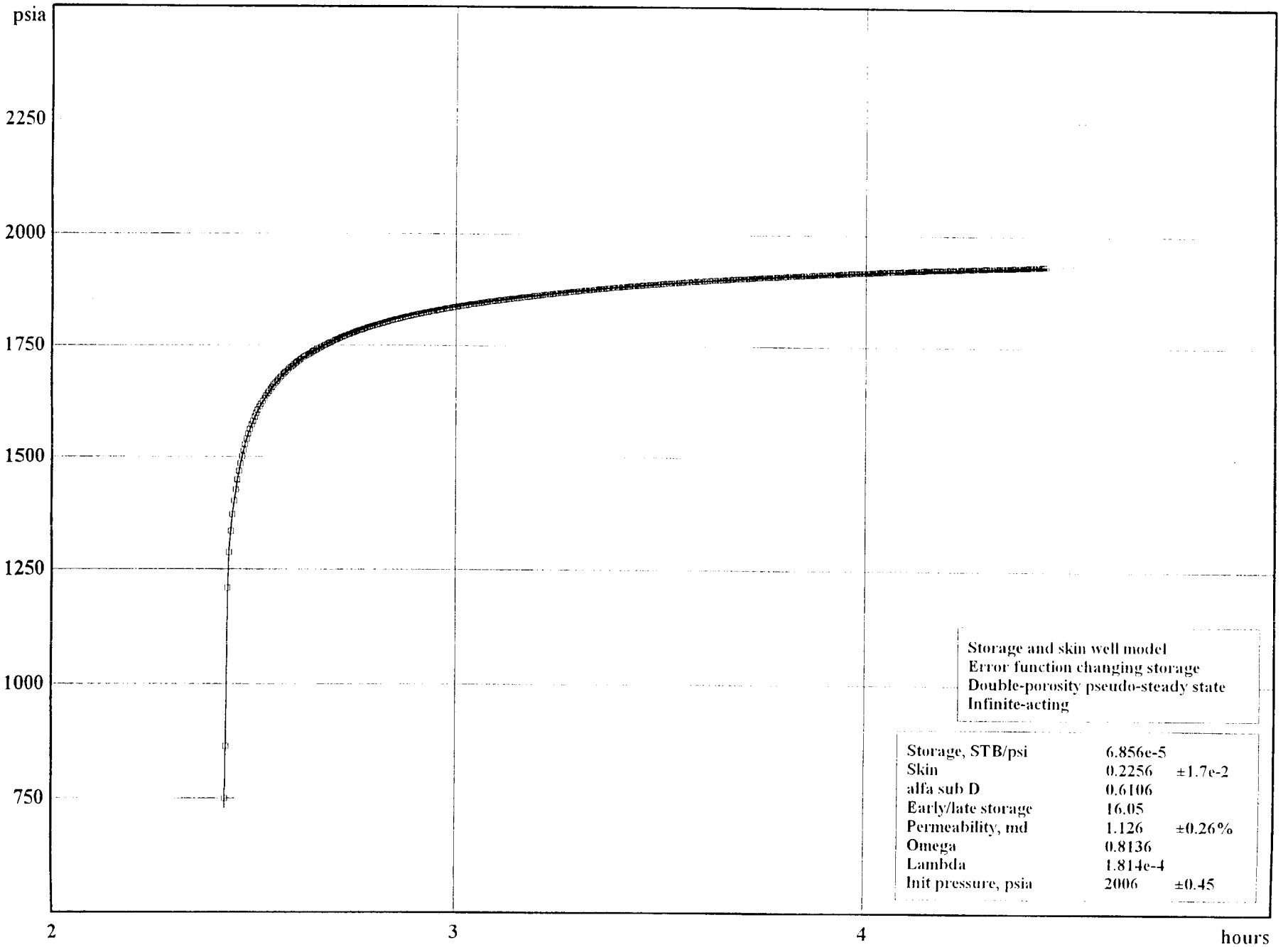


RIG TESTERS, INC.

FINAL SHUT-IN PERIOD DST#1 REGRESSION VERIFIED MODEL

PATTERSON PETROLEUM INC. HAWKEYE STATE "30" #1

Cartesian plot (pressure & time)



RIG TESTERS, INC.

FINAL SHUT-IN PERIOD DST#1 REGRESSION VERIFIED MODEL