



CONFIDENTIAL

REPORT NO.
113895

PAGE NO. 1

TEST DATE:

07-APR-1990

S T A RTMA Schlumberger Transient Analysis Report
Of A Schlumberger Drillstem Test

Schlumberger

Company: APEX ENERGY CO.

Well: NORTH FORK 7-1

TEST IDENTIFICATION

Test Type MFE OH DST
Test No. 1
Formation FT UNION COAL
Test Interval (ft) ... 3460 - 3499
Reference Depth KELLY BUSHING

WELL LOCATION

Field
County MOFFAT
State COLORADO
Sec/Twn/Rng S7 T9N R91W
Elevation (ft) 7344

HOLE CONDITIONS

Total Depth (MD/TUD)(ft) . 3499
Hole Size (in) 7 7/8
Casing/Liner I.D. (in) ...
Perf'd Interv./Nt Pay(ft). -- / 33
Shot Density/Diameter(in).

MUD PROPERTIES

Mud Type LSND
Mud Weight (lb/gal) 9.0
Mud Resistivity (ohm.m) .. 9.0 @ 60 DEG. F.
Filtrate Resistiv.(ohm.m). 8.5 @ 60 DEG. F.
Filtrate Chlorides (ppm) . 250

INITIAL TEST CONDITIONS

Initial Hydrostatic (psi). 1690
Gas Cushion Type NONE
Surface Pressure (psi) ... --
Liquid Cushion Type NONE
Cushion Length (ft) --

TEST STRING CONFIGURATION

Pipe Length (ft)/I.D.(in). 2876 / 3.8
Collar Length ft/I.D.(in). 533 / 2.31
Packer Depths (ft) 3460
Bottomhole Choke Size(in). 1.0
Gauge Depth (ft)/Type 3466 / MECHANICAL

NET PIPE RECOVERY

Volume	Fluid Type	Properties
6 FT.	DRLG. MUD	RW=9.0 @ 60 DEG. F. 250 PPM CL.

NET SAMPLE CHAMBER RECOVERY

Volume	Fluid Type	Properties
2480 CC	MUD	RW = 9 @ 60 DEG. F. 250 PPM CL.
Press. 10	GOR:	GLR:

VALIDATION RESULTS

Model of Behavior
Fluid Type Used
Reservoir Pressure (psi) .
Transmissivity (md.ft/cp)
Permeability (md)
Skin Factor/Damage Ratio .
Storativity Ratio
Interporosity Flow Coeff..
Distance to Anomaly (ft).
Investigation Radius (ft).
Potentiometric Surf. (ft).

ROCK/FLUID/WELLBORE PROPERTIES

Oil Density (deg. API) ...
Basic Solids (%)
Gas Gravity
Water Cut (%)
Viscosity (cp)
Tot. Compress. (1/psi) ...
Porosity (%)
Reservoir Temperature (F). 86
Form.Vol.Factor (bbl/STB).

PRODUCTION RATE DURING TEST: -

COMMENTS:

FLUID LEVEL SHOTS INDICATED NO FLUID ENTRY DURING TEST. BYPASSED MUD ON FINAL SHUT-

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SEQUENCE OF EVENTS

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EVENT NO.	DATE	TIME (HR:MIN)	DESCRIPTION	ELAPSED TIME (MIN)	BHP (PSIA)	BLOW (IN. -H ₂ O)
1	07-APR	0930	SET PACKERS	-1.74	1690	
2		0935	OPENED TOOL-1/4" CHOKE	0.00	32	
		0945				SURF. BLOW
3		0950	CLOSED FOR INITIAL SHUTIN	15.12	31	
4		1020	FINISHED SHUT-IN	45.54	585	
5		1025	RE-OPENED TOOL	50.20	39	NO BLOW
			NO BLOW THROUGHOUT FLOW			
6		1125	FINISHED FLOW	109.71	40	NO BLOW
7		1125	BYPASSED MUD	111.15	1889	
8		1125	START FINAL SHUT-IN	111.39	1720	
9		1325	FINISHED SHUT-IN	230.03	1623	
10		1327	PULLED PACKERS LOOSE	231.05	1660	
			NOTE: 6 FT. FILL ON BTM.			
			BYPASSED ON FINAL SHUTIN.			
			NO PROBLEMS COMING OFF			
			BOTTOM. TELEFLOW FAILED.			
			DID NOT REVERSE OUT.			

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BOTTOMHOLE PRESSURE LOG

FIELD REPORT NO. 113895

COMPANY : APEX ENERGY CO.

INSTRUMENT NO. 080

WELL : NORTH FORK 7-1

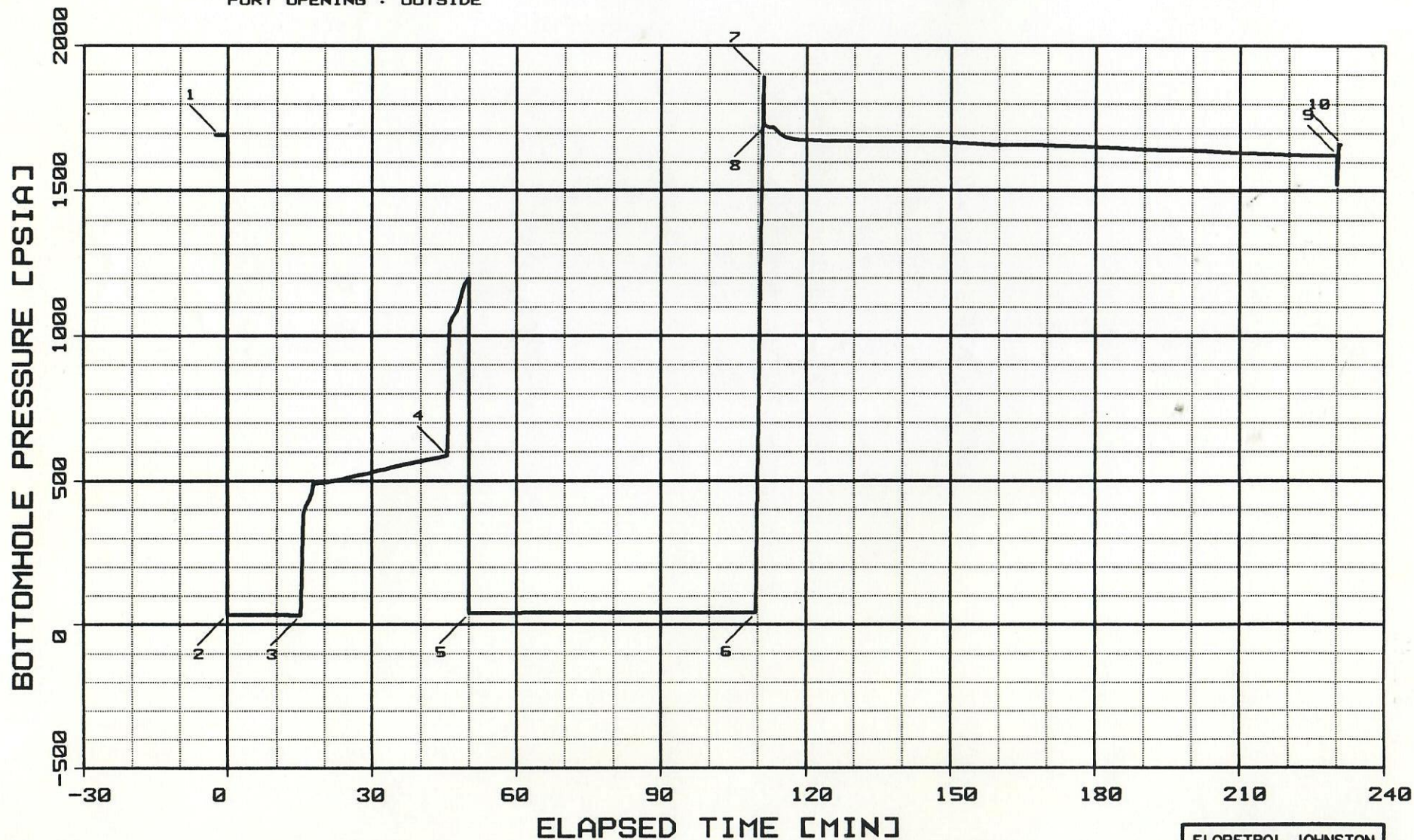
DEPTH : 3466 FT

CAPACITY : 4700 PSI

PORT OPENING : OUTSIDE

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FLOPETROL JOHNSTON

Schlumberger

 * WELL TEST DATA PRINTOUT *

FIELD REPORT # : 113895

COMPANY : APEX ENERGY CO.
 WELL : NORTH FORK 7-1

INSTRUMENT # : 080
 CAPACITY [PSI] : 4700.
 DEPTH [FT] : 3466.0
 PORT OPENING : OUTSIDE
 TEMPERATURE [DEG F] : 86.0

LABEL POINT INFORMATION

#	TIME OF DAY HH:MM:SS	DATE DD-MM	EXPLANATION	ELAPSED TIME,MIN	BOT HOLE PRESSURE PSIA
1	9:33:16	7-AP	HYDROSTATIC MUD	-1.74	1690
2	9:35: 0	7-AP	START FLOW	0.00	32
3	9:50: 7	7-AP	END FLOW & START SHUT-IN	15.12	31
4	10:20:32	7-AP	END SHUT-IN	45.54	585
5	10:25:12	7-AP	START FLOW	50.20	39
6	11:24:43	7-AP	END FLOW	109.71	40
7	11:26: 9	7-AP	BYPASSED MUD	111.15	1889
8	11:26:23	7-AP	START SHUT-IN	111.39	1720
9	13:25: 2	7-AP	END SHUT-IN	230.03	1623
10	13:26: 3	7-AP	HYDROSTATIC MUD	231.05	1660

SUMMARY OF FLOW PERIODS

PERIOD	START ELAPSED TIME,MIN	END ELAPSED TIME,MIN	DURATION MIN	START PRESSURE PSIA	END PRESSURE PSIA
1	0.00	15.12	15.12	32	31
2	50.20	109.71	59.51	39	40

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SUMMARY OF SHUTIN PERIODS

PERIOD	START ELAPSED TIME,MIN	END ELAPSED TIME,MIN	DURATION MIN	START PRESSURE PSIA	END PRESSURE PSIA	FINAL FLOW PRESSURE PSIA	PRODUCING TIME, MIN
1	15.12	45.54	30.42	31	585	31	15.12
2	111.39	230.03	118.64	1720	1623	40	74.63

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TEST PHASE : FLOW PERIOD # 1

TIME OF DAY	DATE	ELAPSED TIME, MIN	DELTA TIME, MIN	BOT HOLE PRESSURE PSIA
HH:MM:SS	DD-MM	*****	*****	*****

9:35: 0	7-AP	0.00	0.00	32
9:40: 0	7-AP	5.00	5.00	32
9:45: 0	7-AP	10.00	10.00	32
9:50: 0	7-AP	15.00	15.00	31
9:50: 7	7-AP	15.12	15.12	31

TEST PHASE : SHUTIN PERIOD # 1

FINAL FLOW PRESSURE [PSIA] = 31

PRODUCING TIME [MIN] = 15.12

TIME OF DAY	DATE	ELAPSED TIME, MIN	DELTA TIME, MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORN TIME
HH:MM:SS	DD-MM	*****	*****	*****	*****	*****

9:50: 7	7-AP	15.12	0.00	31	0	
9:51: 7	7-AP	16.12	1.00	411	380	1.207
9:52: 7	7-AP	17.12	2.00	446	415	0.932
9:53: 7	7-AP	18.12	3.00	491	460	0.781
9:54: 7	7-AP	19.12	4.00	492	461	0.679
9:55: 7	7-AP	20.12	5.00	493	462	0.605
9:56: 7	7-AP	21.12	6.00	497	465	0.547
9:57: 7	7-AP	22.12	7.00	500	469	0.500
9:58: 7	7-AP	23.12	8.00	503	472	0.461
9:59: 7	7-AP	24.12	9.00	507	476	0.428
10: 0: 7	7-AP	25.12	10.00	511	480	0.400
10: 2: 7	7-AP	27.12	12.00	518	487	0.354
10: 4: 7	7-AP	29.12	14.00	526	495	0.318
10: 6: 7	7-AP	31.12	16.00	534	503	0.289
10: 8: 7	7-AP	33.12	18.00	541	510	0.265
10:10: 7	7-AP	35.12	20.00	550	519	0.245
10:12: 7	7-AP	37.12	22.00	557	526	0.227
10:14: 7	7-AP	39.12	24.00	564	532	0.212
10:16: 7	7-AP	41.12	26.00	571	540	0.199
10:18: 7	7-AP	43.12	28.00	577	546	0.188
10:20: 7	7-AP	45.12	30.00	584	553	0.177
10:20:32	7-AP	45.54	30.42	585	554	0.175

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TEST PHASE : FLOW PERIOD # 2

TIME OF DAY HH:MM:SS	DATE DD-MM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA
*****	*****	*****	*****	*****
10:25:12	7-AP	50.20	0.00	39
10:30:12	7-AP	55.20	5.00	39
10:35:12	7-AP	60.20	10.00	39
10:40:12	7-AP	65.20	15.00	40
10:45:12	7-AP	70.20	20.00	40
10:50:12	7-AP	75.20	25.00	40
10:55:12	7-AP	80.20	30.00	40
11: 0:12	7-AP	85.20	35.00	40
11: 5:12	7-AP	90.20	40.00	40
11:10:12	7-AP	95.20	45.00	40
11:15:12	7-AP	100.20	50.00	40
11:20:12	7-AP	105.20	55.00	40
11:24:43	7-AP	109.71	59.51	40

TEST PHASE : SHUTIN PERIOD # 2

FINAL FLOW PRESSURE [PSIA] = 40
 PRODUCING TIME [MIN] = 74.63

TIME OF DAY HH:MM:SS	DATE DD-MM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
*****	*****	*****	*****	*****	*****	*****
11:26:23	7-AP	111.39	0.00	1720	1680	
11:27:23	7-AP	112.39	1.00	1718	1678	1.879
11:28:23	7-AP	113.39	2.00	1714	1674	1.583
11:29:23	7-AP	114.39	3.00	1699	1659	1.413
11:30:23	7-AP	115.39	4.00	1687	1646	1.294
11:31:23	7-AP	116.39	5.00	1679	1639	1.202
11:32:23	7-AP	117.39	6.00	1677	1637	1.128
11:33:23	7-AP	118.39	7.00	1675	1635	1.067
11:34:23	7-AP	119.39	8.00	1674	1634	1.014
11:35:23	7-AP	120.39	9.00	1673	1633	0.968
11:36:23	7-AP	121.39	10.00	1673	1632	0.928
11:38:23	7-AP	123.39	12.00	1671	1631	0.858
11:40:23	7-AP	125.39	14.00	1671	1631	0.801
11:42:23	7-AP	127.39	16.00	1671	1631	0.753
11:44:23	7-AP	129.39	18.00	1671	1630	0.711
11:46:23	7-AP	131.39	20.00	1670	1630	0.675
11:48:23	7-AP	133.39	22.00	1670	1630	0.643
11:50:23	7-AP	135.39	24.00	1669	1629	0.614
11:52:23	7-AP	137.39	26.00	1669	1629	0.588
11:54:23	7-AP	139.39	28.00	1669	1629	0.564
11:56:23	7-AP	141.39	30.00	1669	1629	0.543
12: 1:23	7-AP	146.39	35.00	1669	1629	0.496
12: 6:23	7-AP	151.39	40.00	1665	1624	0.457
12:11:23	7-AP	156.39	45.00	1661	1620	0.425
12:16:23	7-AP	161.39	50.00	1657	1617	0.397

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TEST PHASE : SHUTIN PERIOD # 2

FINAL FLOW PRESSURE [PSIA] = 40

PRODUCING TIME [MIN] = 74.63

TIME OF DAY	DATE	ELAPSED TIME, MIN	DELTA TIME, MIN	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
*****	*****	*****	*****	*****	*****	*****
12:21:23	7-AP	166.39	55.00	1657	1617	0.372
12:26:23	7-AP	171.39	60.00	1655	1615	0.351
12:31:23	7-AP	176.39	65.00	1652	1612	0.332
12:36:23	7-AP	181.39	70.00	1649	1608	0.315
12:41:23	7-AP	186.39	75.00	1645	1605	0.300
12:46:23	7-AP	191.39	80.00	1641	1600	0.286
12:51:23	7-AP	196.39	85.00	1640	1599	0.274
12:56:23	7-AP	201.39	90.00	1637	1597	0.262
13: 1:23	7-AP	206.39	95.00	1633	1593	0.252
13: 6:23	7-AP	211.39	100.00	1629	1589	0.242
13:11:23	7-AP	216.39	105.00	1627	1587	0.233
13:16:23	7-AP	221.39	110.00	1624	1584	0.225
13:21:23	7-AP	226.39	115.00	1623	1583	0.217
13:25: 2	7-AP	230.03	118.64	1623	1583	0.212

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ΔT (MIN)

0.048 0.086 0.15 0.27 0.49 0.90 1.7 3.3 7.0 19 00

HORNER PLOT

FIELD REPORT NO. 113895

INSTRUMENT NO. 080

COMPANY : APEX ENERGY CO.

WELL : NORTH FORK 7-1

SHUTIN #1 : FINAL FLOW PRESSURE: 31.09 PSIA

PLOT ELAPSED TIME RANGE: 15.2 TO 45.5 MIN

PLOT ΔT TIME RANGE: 0.1 TO 30.4 MIN

PRODUCING TIME (T_P): 15.1 MIN

SHUTIN PRESSURE [PSIA]

480

400

320

240

160

80

0

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$\text{LOG} \left[\frac{T_P + \Delta T}{\Delta T} \right]$

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SHUTIN PRESSURE [PSIA]

ΔT (MIN)

HORNER PLOT

FIELD REPORT NO. 113895

INSTRUMENT NO. 080

COMPANY : APEX ENERGY CO.

WELL : NORTH FORK 7-1

SHUTIN #2 : FINAL FLOW PRESSURE: 40.16 PSIA

PLOT ELAPSED TIME RANGE: 112.0 TO 230.0 MIN

PLOT ΔT TIME RANGE: 0.6 TO 118.6 MIN

PRODUCING TIME (T_p): 74.6 MIN

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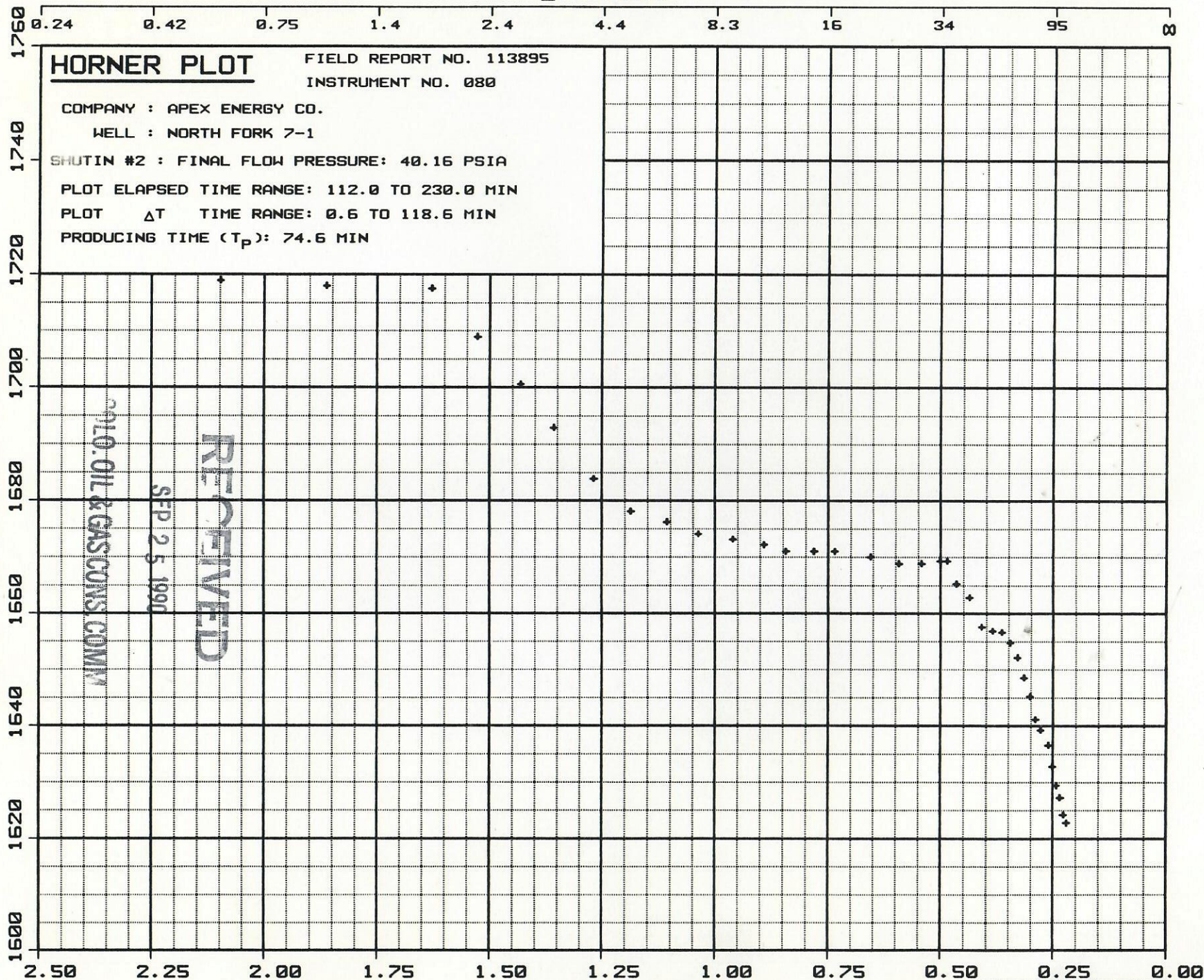
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$\text{LOG} \left[\frac{T_p + \Delta T}{\Delta T} \right]$

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BOTTOMHOLE PRESSURE LOG

FIELD REPORT NO. 111900

COMPANY : APEX ENERGY CO.

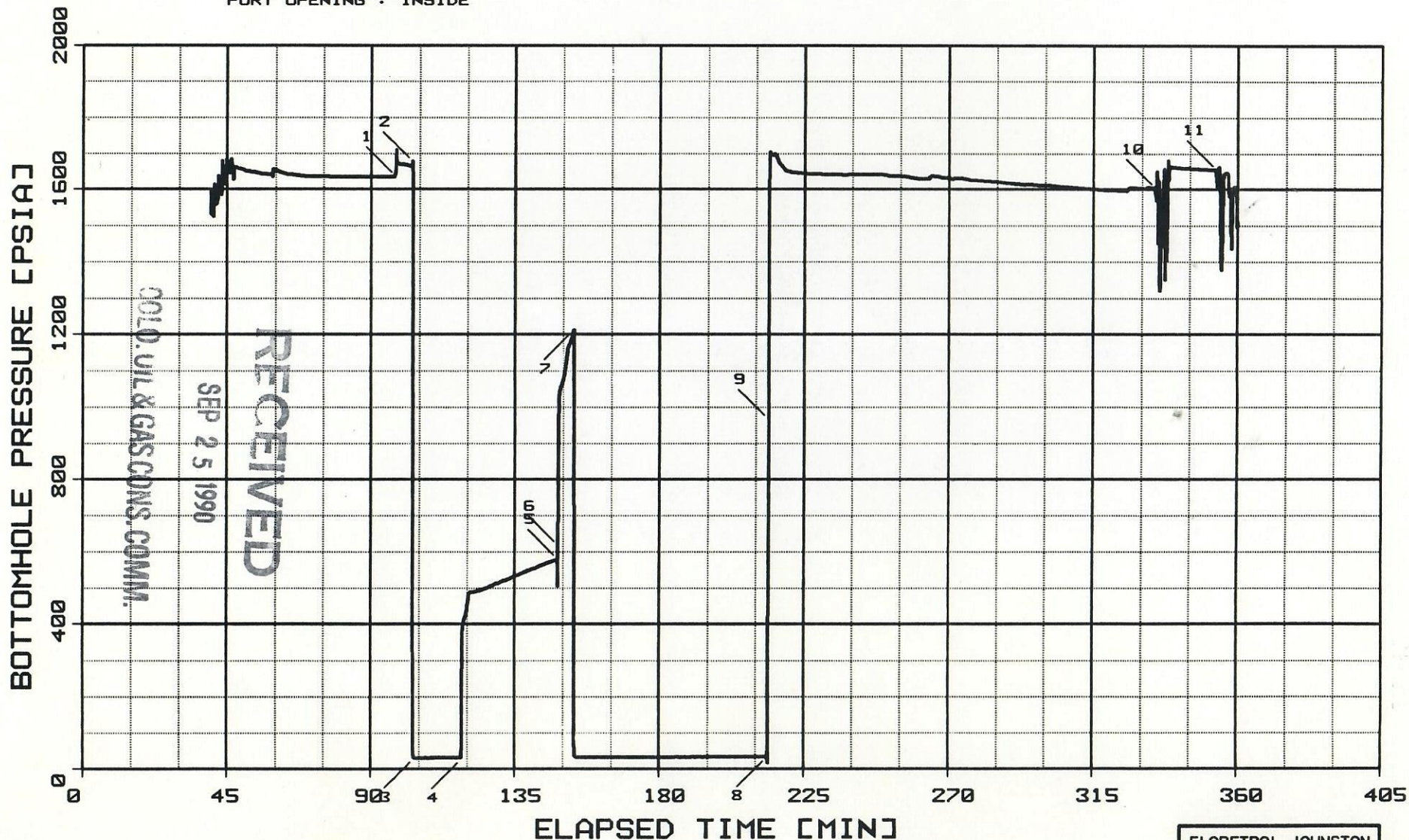
INSTRUMENT NO. 9069

WELL : NORTH FORK 7-1

DEPTH : 3464 FT

CAPACITY : 20000 PSI

PORT OPENING : INSIDE



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BOTTOMHOLE TEMPERATURE LOG

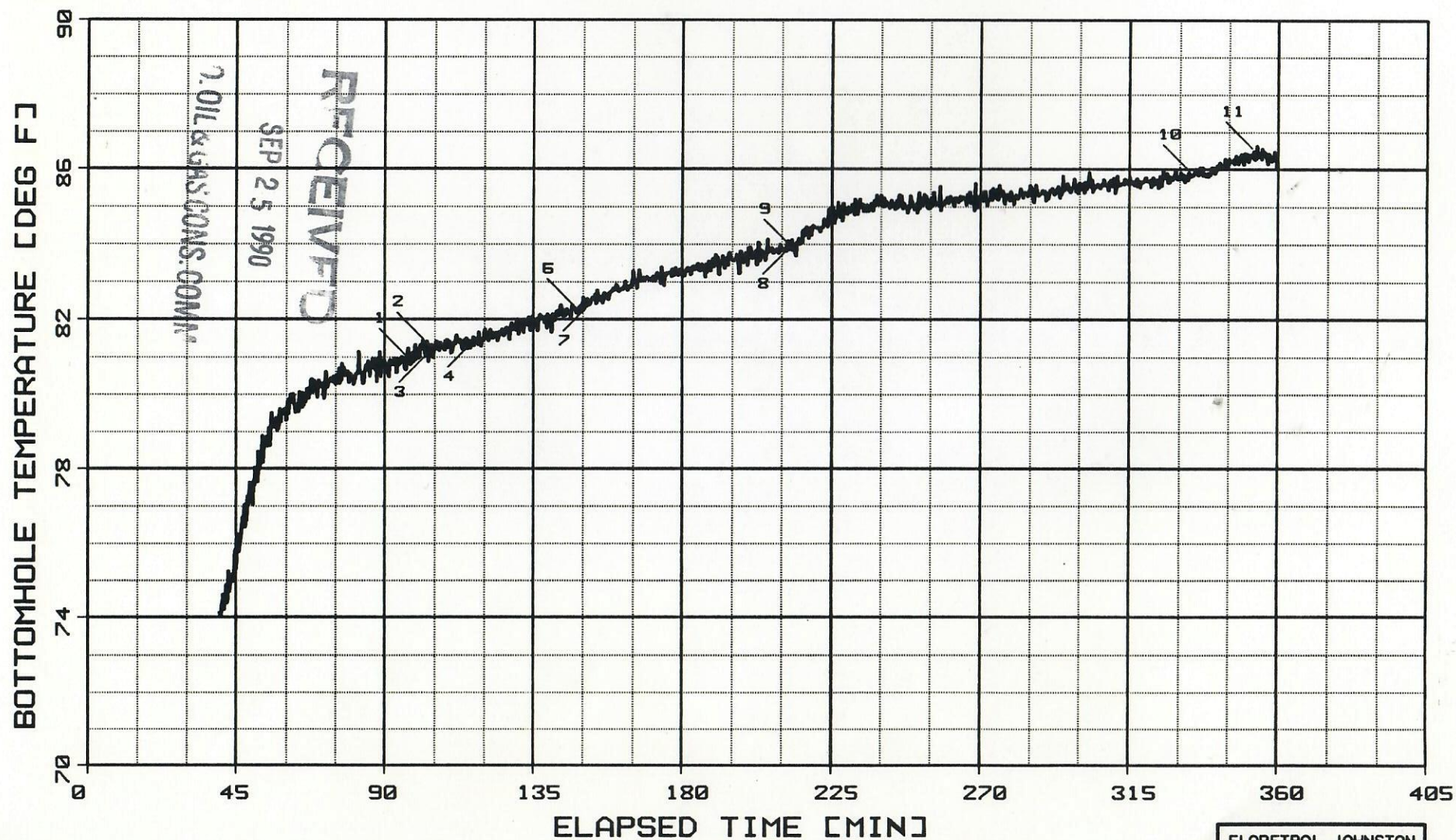
FIELD REPORT NO. 111900

COMPANY : APEX ENERGY CO.

INSTRUMENT NO. 9069

WELL : NORTH FORK 7-1

DEPTH : 3464 FT



FLOPETROL JOHNSTON

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 * WELL TEST DATA PRINTOUT *

FIELD REPORT # : 111900
 COMPANY : APEX ENERGY CO.
 WELL : NORTH FORK 7-1

INSTRUMENT # : 9069
 CAPACITY [PSI] : 20000.
 DEPTH [FT] : 3464.0
 PORT OPENING : INSIDE

LABEL POINT INFORMATION

#	TIME OF DAY HH:MM:SS	DATE DD-MM	EXPLANATION	ELAPSED TIME,MIN	BOT HOLE PRESSURE PSIA	BOT HOLE TEMP. DEG F
1	9:29:32	7-AP	HYDROSTATIC MUD	97.53	1635.32	80.9
2	9:35: 0	7-AP	SQUEEZE PRESSURE	103.00	1676.78	81.3
3	9:35:36	7-AP	START FLOW	103.60	28.99	81.1
4	9:50:20	7-AP	END FLOW & START SHUT-IN	118.34	26.93	81.6
5	10:20:28	7-AP	END SHUT-IN	148.47	577.75	82.2
6	10:20:35	7-AP	BYPASSED MUD	148.58	614.04	82.2
7	10:25:26	7-AP	START FLOW	153.44	1211.43	82.5
8	11:25:38	7-AP	END FLOW & START SHUT-IN	213.63	32.24	84.0
9	11:26: 2	7-AP	BYPASSED MUD	214.04	964.78	83.8
10	13:26:15	7-AP	END SHUT-IN	334.25	1602.75	85.8
11	13:45:25	7-AP	HYDROSTATIC MUD	353.42	1654.99	86.4

SUMMARY OF FLOW PERIODS

PERIOD	START ELAPSED TIME,MIN	END ELAPSED TIME,MIN	DURATION MIN	START PRESSURE PSIA	END PRESSURE PSIA
1	103.60	118.34	14.74	28.99	26.93
2	153.44	213.63	60.19	1211.43	32.24

SUMMARY OF SHUTIN PERIODS

PERIOD	START ELAPSED TIME,MIN	END ELAPSED TIME,MIN	DURATION MIN	START PRESSURE PSIA	END PRESSURE PSIA	FINAL FLOW PRESSURE PSIA	PRODUCING TIME, MIN
1	118.34	148.47	30.13	26.93	577.75	26.93	14.74
2	213.63	334.25	120.62	32.24	1602.75	32.24	74.93

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TEST PHASE : FLOW PERIOD # 1

TIME OF DAY	DATE	ELAPSED TIME, MIN	DELTA TIME, MIN	BOT HOLE TEMP. DEG F	BOT HOLE PRESSURE PSIA
HH:MM:SS	DD-MM	*****	*****	*****	*****
9:35:36	7-AP	103.60	0.00	81.1	28.99
9:40:36	7-AP	108.60	5.00	81.3	29.20
9:45:36	7-AP	113.60	10.00	81.3	29.27
9:50:20	7-AP	118.34	14.74	81.6	26.93

TEST PHASE : SHUTIN PERIOD # 1

FINAL FLOW PRESSURE [PSIA] = 26.93
 PRODUCING TIME [MIN] = 14.74

TIME OF DAY	DATE	ELAPSED TIME, MIN	DELTA TIME, MIN	BOT HOLE TEMP. DEG F	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
HH:MM:SS	DD-MM	*****	*****	*****	*****	*****	*****
9:50:20	7-AP	118.34	0.00	81.6	26.93	0.00	
9:51:20	7-AP	119.34	1.00	81.4	416.70	389.77	1.197
9:52:20	7-AP	120.34	2.00	81.7	463.70	436.77	0.923
9:53:20	7-AP	121.34	3.00	81.5	487.90	460.98	0.772
9:54:20	7-AP	122.34	4.00	81.6	488.07	461.14	0.671
9:55:20	7-AP	123.34	5.00	81.6	490.60	463.67	0.596
9:56:20	7-AP	124.34	6.00	81.5	493.17	466.24	0.539
9:57:20	7-AP	125.34	7.00	81.6	496.17	469.24	0.492
9:58:20	7-AP	126.34	8.00	81.6	499.88	472.95	0.454
9:59:20	7-AP	127.34	9.00	81.7	503.29	476.36	0.421
10: 0:20	7-AP	128.34	10.00	81.9	506.42	479.49	0.393
10: 2:20	7-AP	130.34	12.00	82.0	514.60	487.67	0.348
10: 4:20	7-AP	132.34	14.00	81.8	521.93	495.00	0.312
10: 6:20	7-AP	134.34	16.00	81.9	528.76	501.83	0.284
10: 8:20	7-AP	136.34	18.00	81.7	536.14	509.21	0.260
10:10:20	7-AP	138.34	20.00	82.0	543.38	516.45	0.240
10:12:20	7-AP	140.34	22.00	81.9	550.96	524.03	0.223
10:14:20	7-AP	142.34	24.00	82.2	557.41	530.48	0.208
10:16:20	7-AP	144.34	26.00	82.2	563.89	536.96	0.195
10:18:20	7-AP	146.34	28.00	82.1	570.98	544.05	0.184
10:20:20	7-AP	148.34	30.00	82.3	577.63	550.70	0.174
10:20:28	7-AP	148.47	30.13	82.2	577.75	550.82	0.173

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TEST PHASE : FLOW PERIOD # 2

TIME OF DAY HH:MM:SS	DATE DD-MM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE TEMP. DEG F	BOT HOLE PRESSURE PSIA
*****	*****	*****	*****	*****	*****
10:25:26	7-AP	153.44	0.00	82.5	1211.43
10:30:26	7-AP	158.44	5.00	82.7	31.96
10:35:26	7-AP	163.44	10.00	82.7	31.91
10:40:26	7-AP	168.44	15.00	83.0	31.75
10:45:26	7-AP	173.44	20.00	83.0	31.85
10:50:26	7-AP	178.44	25.00	83.2	31.91
10:55:26	7-AP	183.44	30.00	83.4	31.93
11: 0:26	7-AP	188.44	35.00	83.4	32.05
11: 5:26	7-AP	193.44	40.00	83.5	32.00
11:10:26	7-AP	198.44	45.00	83.5	32.15
11:15:26	7-AP	203.44	50.00	83.7	32.12
11:20:26	7-AP	208.44	55.00	83.8	32.09
11:25:26	7-AP	213.44	60.00	83.8	32.23
11:25:38	7-AP	213.63	60.19	84.0	32.24

TEST PHASE : SHUTIN PERIOD # 2

FINAL FLOW PRESSURE [PSIA] = 32.24

PRODUCING TIME [MIN] = 74.93

TIME OF DAY HH:MM:SS	DATE DD-MM	ELAPSED TIME,MIN	DELTA TIME,MIN	BOT HOLE TEMP. DEG F	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
*****	*****	*****	*****	*****	*****	*****	*****
11:25:38	7-AP	213.63	0.00	84.0	32.24	0.00	
11:26:38	7-AP	214.63	1.00	84.0	1699.37	1667.13	1.880
11:27:38	7-AP	215.63	2.00	84.0	1699.07	1666.83	1.585
11:28:38	7-AP	216.63	3.00	84.3	1684.33	1652.09	1.415
11:29:38	7-AP	217.63	4.00	84.5	1669.36	1637.12	1.295
11:30:38	7-AP	218.63	5.00	84.3	1657.75	1625.51	1.204
11:31:38	7-AP	219.63	6.00	84.4	1651.17	1618.93	1.130
11:32:38	7-AP	220.63	7.00	84.4	1649.68	1617.44	1.068
11:33:38	7-AP	221.63	8.00	84.4	1646.92	1614.68	1.016
11:34:38	7-AP	222.63	9.00	84.6	1646.13	1613.89	0.970
11:35:38	7-AP	223.63	10.00	84.5	1645.35	1613.11	0.929
11:37:38	7-AP	225.63	12.00	84.7	1643.85	1611.61	0.860
11:39:38	7-AP	227.63	14.00	84.7	1642.92	1610.68	0.803
11:41:38	7-AP	229.63	16.00	84.8	1642.43	1610.19	0.755
11:43:38	7-AP	231.63	18.00	84.9	1642.16	1609.92	0.713
11:45:38	7-AP	233.63	20.00	85.2	1641.77	1609.53	0.676
11:47:38	7-AP	235.63	22.00	84.9	1641.42	1609.18	0.644
11:49:38	7-AP	237.63	24.00	84.9	1641.13	1608.89	0.615
11:51:38	7-AP	239.63	26.00	85.0	1641.20	1608.96	0.589
11:53:38	7-AP	241.63	28.00	85.0	1641.51	1609.27	0.565
11:55:38	7-AP	243.63	30.00	85.0	1641.34	1609.10	0.544
12: 0:38	7-AP	248.63	35.00	84.9	1641.68	1609.44	0.497
12: 5:38	7-AP	253.63	40.00	85.3	1637.86	1605.62	0.458
12:10:38	7-AP	258.63	45.00	85.1	1632.68	1600.44	0.426

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TEST PHASE : SHUTIN PERIOD # 2

FINAL FLOW PRESSURE [PSIA] = 32.24

PRODUCING TIME [MIN] = 74.93

TIME OF DAY	DATE	ELAPSED TIME, MIN	DELTA TIME, MIN	BOT HOLE TEMP. DEG F	BOT HOLE PRESSURE PSIA	DELTA P PSI	LOG HORNER TIME
*****	*****	*****	*****	*****	*****	*****	*****
12:15:38	7-AP	263.63	50.00	85.1	1629.82	1597.58	0.398
12:20:38	7-AP	268.63	55.00	85.2	1632.61	1600.37	0.373
12:25:38	7-AP	273.63	60.00	85.2	1630.81	1598.57	0.352
12:30:38	7-AP	278.63	65.00	85.2	1625.48	1593.24	0.333
12:35:38	7-AP	283.63	70.00	85.4	1622.08	1589.84	0.316
12:40:38	7-AP	288.63	75.00	85.4	1617.67	1585.43	0.301
12:45:38	7-AP	293.63	80.00	85.5	1613.12	1580.88	0.287
12:50:38	7-AP	298.63	85.00	85.7	1611.94	1579.70	0.275
12:55:38	7-AP	303.63	90.00	85.5	1608.90	1576.66	0.263
13: 0:38	7-AP	308.63	95.00	85.5	1604.78	1572.54	0.253
13: 5:38	7-AP	313.63	100.00	85.7	1601.41	1569.17	0.243
13:10:38	7-AP	318.63	105.00	85.7	1598.20	1565.96	0.234
13:15:38	7-AP	323.63	110.00	85.6	1596.71	1564.47	0.226
13:20:38	7-AP	328.63	115.00	85.8	1603.82	1571.58	0.218
13:25:38	7-AP	333.63	120.00	85.8	1604.41	1572.17	0.211
13:26:15	7-AP	334.25	120.62	85.8	1602.75	1570.51	0.210

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ΔT (MIN)

0.015 0.029 0.059 0.12 0.24 0.48 0.99 2.1 4.9 14 00

HORNER PLOT

FIELD REPORT NO. 111900

INSTRUMENT NO. 9069

COMPANY : APEX ENERGY CO.

WELL : NORTH FORK 7-1

SHUTIN #1 : FINAL FLOW PRESSURE: 26.93 PSIA

PLOT ELAPSED TIME RANGE: 118.4 TO 148.5 MIN

PLOT ΔT TIME RANGE: 0.0 TO 30.1 MIN

PRODUCING TIME (T_p): 14.7 MIN

SHUTIN PRESSURE [PSIA]

560

480

400

320

240

160

80

0

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$\text{LOG} \left[\frac{T_p + \Delta T}{\Delta T} \right]$

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LOG LOG PLOT

COMPANY : APEX ENERGY CO.

WELL : NORTH FORK 7-1

FIELD REPORT NO. 111900

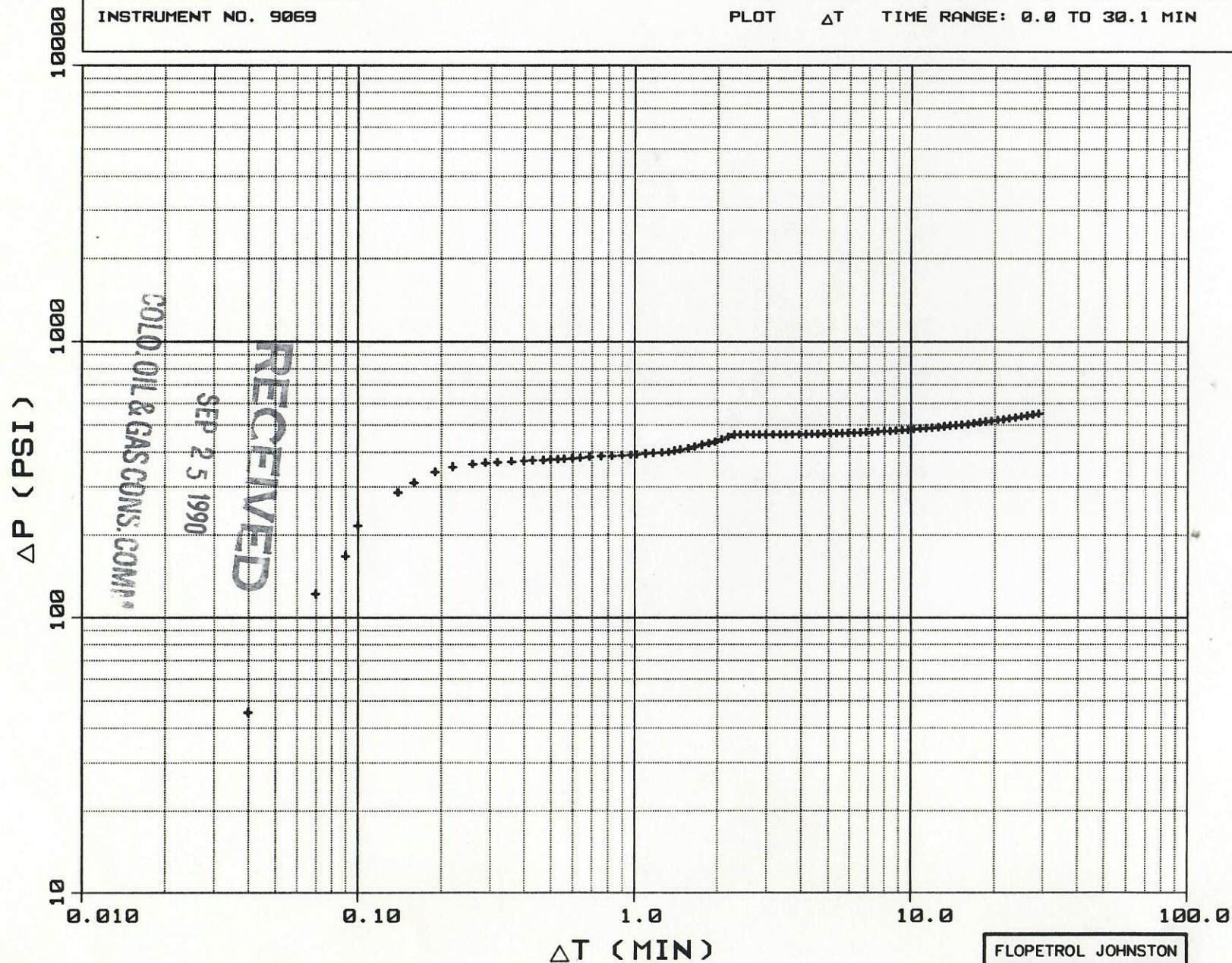
INSTRUMENT NO. 9069

SHUTIN #1 :

FINAL FLOW PRESSURE (PWF): 26.93 PSIA

PLOT ELAPSED TIME RANGE: 118.4 TO 148.5 MIN

PLOT ΔT TIME RANGE: 0.0 TO 30.1 MIN



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410 17th St., Suite 810
Denver, CO 80202

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GLG Energy, L.P.
Attn: Bill Claxton
8085 S. Chester, Suite 14
Englewood, CO 80112

2

GLG Energy, Inc.
Attn: Robert R. Durkee
400 W. 15th, Suite 1610
Austin, TX 78701

2

Dr. Burdette A. Ogle
P. O. Box 3297
Grand Junction, CO 81502

1

Louis Marks
667 Madison Ave., 25th Floor
New York, NY 10017

1

John Paul De Joria
1670 Gilcrest Dr.
Beverly Hills, CA 90210

1

NRG Resources, Inc.
4260 Republicbank Center
700 Louisiana
Houston, TX 77002

1

Duncan McBane
4649 Metzger
Laurel, MT 59044

2

Resource Enterprises, Inc.
Attn: Terry Logan
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Salt Lake City, UT 84108

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