

REPORT NO.  
6697609

PAGE NO. 1

TEST DATE:  
07-JAN-2001

# STAR

## Schlumberger Testing Data Report

Schlumberger

Pressure Data Report N-13-22s-32e  
30-D25-3525b

COMPANY: POGO PRODUCING CO.

WELL: WBR FEDERAL #5, DST #1

### TEST IDENTIFICATION

Test Type ..... SLIM HOLE DST  
Test No. .... ONE  
Formation ..... MORROW  
Test Interval (ft) ..... 14464 to 14751  
Depth Reference ..... KB

### WELL LOCATION

Field ..... BOOTLEG RIDGE  
County ..... LEA  
State ..... NEW MEXICO  
Sec/Twn/Rng ..... 13/22s/32e  
Elevation (ft) ..... 3716

### HOLE CONDITIONS

Total Depth (MD/TVD) (ft) .... 14751  
Hole Size (in) ..... 6.125  
Casing/Liner I.D. (in) ..... 7.0" @ 12696'  
Perf'd Interval/Net Pay (ft) .. / 70  
Shot Density/Diameter (in) ...

### MUD PROPERTIES

Mud Type ..... B/W POLYMER BAR  
Mud Weight (lb/gal) ..... 10.5  
Mud Resistivity (ohm.m) .....  
Filtrate Resistivity (ohm.m) .. 0.052 @ 60F  
Filtrate Chlorides (ppm) ..... 154000

### INITIAL TEST CONDITIONS

Initial Hydrostatic (psi) .... 8175.55  
Gas Cushion Type .....  
Surface Pressure (psi) .....  
Liquid Cushion Type ..... FRESH WATER  
Cushion Length (ft) ..... 4500

### TEST STRING CONFIGURATION

Pipe Length (ft)/I.D. (in) ... 13815 / 2.60  
Collar Length (ft)/I.D. (in) .. 850 / 2.25  
Packer Depths (ft) ..... 14458, 14464,  
Bottomhole Choke Size (in) ... 0.75  
Gauge Depth (ft)/Type ..... 14483/SLSR-884

### NET PIPE RECOVERY

| Volume  | Fluid Type    | Properties              |
|---------|---------------|-------------------------|
| 3600 ft | WATER CUSHION | Rw 0.258 @ 60F 18000ppm |
|         | SLIGHTLY MUD  |                         |
| 500 ft  | CUT WATER     | Rw 0.215 @ 60F 22000ppm |
|         | WATER & GAS   |                         |
| 400 ft  | CUT MUD       | Rw 0.075 @ 60F 76000ppm |

### NET SAMPLE CHAMBER RECOVERY

| Volume         | Fluid Type | Properties            |
|----------------|------------|-----------------------|
| 3.42 cuft      | Gas        |                       |
| 0 cc           | Oil        |                       |
| 0 cc           | Water      |                       |
| 1700 cc        | Mud        | Rw 0.055 @ 60F 124000 |
| Pressure: 1600 |            | GOR: 0                |
|                |            | GLR: 320              |

### INTERPRETATION RESULTS

Model of Behavior .....  
Fluid Type Used for Analysis ..  
Reservoir Pressure (psi) .....  
Transmissibility (md.ft/cp) ..  
Effective Permeability (md) ..  
Skin Factor/Damage Ratio .....  
Storativity Ratio, Omega .....  
Interporos.Flow Coef.. Lambda ..  
Distance to an Anomaly (ft) ..  
Radius of Investigation (ft) ..  
Potentiometric Surface (ft) ..

### ROCK/FLUID/WELLBORE PROPERTIES

Oil Density (deg. API) .....  
Basic Solids (%) .....  
Gas Gravity .....  
GOR (scf/STB) .....  
Water Cut (%) .....  
Viscosity (cp) .....  
Total Compressibility (1/psi) ..  
Porosity (%) .....  
Reservoir Temperature (F) .... 198  
Form.Vol.Factor (bbl/STB) ....

### PRODUCTION RATE DURING TEST: Data Report

#### COMMENTS:

Water in the chickens from the 8,000 pound pressure test caused some confusion at surface when we opened the tool. The formation did not make enough pressure to blow it out and clear the lines. We recovered about what we put in as our water cushion. 28.5 bbls. There were faint gas vapors near the fluid recovery. The top was 23.6 bbls. of water. The middle was 3 bbls. of slightly mud cut water. The bottom was 1.9 bbls. slightly water and gas cut mud.

*CW*

|                                           |                    |                     |
|-------------------------------------------|--------------------|---------------------|
| WELL TEST INTERPRETATION REPORT #:6697609 |                    | PAGE: 2,            |
| CLIENT : POGO PRODUCING CO.               |                    | 9-JAN-01            |
| REGION :CSD                               | SEQUENCE OF EVENTS | FIELD:BOOTLEG RIDGE |
| DISTRICT:HOBBS                            |                    | ZONE :MORROW        |
| BASE :MIDLAND                             |                    | WELL :WBR FEDERAL#5 |
| ENGINEER:GRAYSHAW/MACY                    |                    | LOCATION:13/22s/32e |

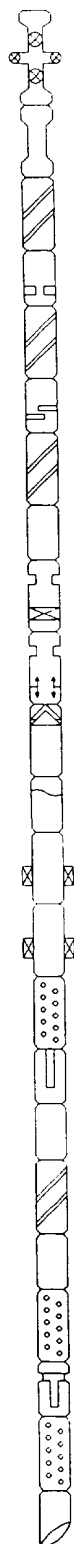
| DATE   | TIME<br>(HR:MIN) | DESCRIPTION                                                                  | ET<br>(MINS) | BHP<br>(PSIA) | WHP<br>(PSIG) |
|--------|------------------|------------------------------------------------------------------------------|--------------|---------------|---------------|
| =====  |                  |                                                                              |              |               |               |
| 08-JAN | 03:48            | CLOSED AT SURFACE                                                            | -4           |               |               |
|        | 03:50            | SET PACKERS                                                                  | -2           |               |               |
|        | 03:52            | START FLOW                                                                   | 0            | 1972          | 10#           |
|        | 03:58            |                                                                              | 6            |               | 10#           |
|        | 04:08            | END FLOW & START SHUT-IN                                                     | 16           | 1973          | 12#           |
|        | 04:11            | OPEN TO 1" CHOKE-WATER IN<br>THE CHIKSANS DRAINS OUT<br>THE BACK OF MANIFOLD | 19           |               |               |
|        | 05:06            | CLOSED AT SURFACE                                                            | 74           |               |               |
|        | 05:07            | END SHUT-IN                                                                  | 75           | 5214          |               |
|        | 05:09            | START FLOW                                                                   | 77           | 1944          | DEAD          |
|        | 05:14            |                                                                              | 82           |               | DEAD          |
|        | 05:16            | OPEN TO 1/8" BUBBLE HOSE                                                     | 84           |               |               |
|        | 05:19            |                                                                              | 87           |               | DEAD          |
|        | 05:28            | END FLOW & START SHUT-IN                                                     | 96           | 1991          | DEAD          |
|        | 05:33            | RE-OPENED TOOL ON BOTTOM<br>TO VERIFY IT WAS OPEN                            | 101          |               | DEAD          |
|        | 05:39            | CYCLED TOOL START SHUT-IN                                                    | 107          | 1991          | DEAD          |
|        | 05:40            | OPEN TO 1" CHOKE ONLY                                                        | 108          |               |               |
|        | 05:45            | WE BLEW AIR THROUGH<br>MANIFOLD AND CHIKSANS TO<br>BLOW LEFTOVER WATER OUT   | 113          |               |               |
|        | 06:44            | START FLOW-ON BUBBLE HOSE                                                    | 172          | 1984          | 2"            |
|        | 06:46            | BOTTOM OF THE BUCKET                                                         | 174          |               | 6oz.          |
|        | 06:49            |                                                                              | 177          |               | 7oz.          |
|        | 06:59            |                                                                              | 187          |               | 7oz.          |
|        | 07:04            |                                                                              | 192          |               | 6oz.          |
|        | 07:14            |                                                                              | 202          |               | 7.5oz         |
|        | 07:24            |                                                                              | 212          |               | 9oz.          |
|        | 07:34            |                                                                              | 222          |               | 12oz.         |
|        | 07:44            |                                                                              | 232          |               | 16oz.         |

Continued next page

|                                           |                                 |                     |
|-------------------------------------------|---------------------------------|---------------------|
| WELL TEST INTERPRETATION REPORT #:6697609 |                                 | PAGE: 3.            |
| CLIENT : POGO PRODUCING CO.               |                                 | 9-JAN-01            |
| REGION :CSD                               | SEQUENCE OF EVENTS<br>Continued | FIELD:BOOTLEG RIDGE |
| DISTRICT:HOBBS                            |                                 | ZONE :MORROW        |
| BASE :MIDLAND                             |                                 | WELL :WBR FEDERAL#5 |
| ENGINEER:GRAYSHAW/MACY                    |                                 | LOCATION:13/22s/32e |

| DATE | TIME<br>(HR:MIN) | DESCRIPTION                        | ET<br>(MINS) | BHP<br>(PSIA) | WHP<br>(PSIG) |
|------|------------------|------------------------------------|--------------|---------------|---------------|
|      | 07:54            |                                    | 242          |               | 17oz.         |
|      | 08:04            |                                    | 252          |               | 18oz.         |
|      | 08:14            |                                    | 262          |               | 16oz.         |
|      | 08:20            | END FLOW & START SHUT-IN           | 268          | 2039          | 16oz.         |
|      | 08:25            | GE TO 1" CHOKE ONLY                | 273          |               |               |
|      | 09:50            | END SHUT-IN                        | 358          | 5708          |               |
|      | 09:56            | PULLED PACKERS LOOSE               | 364          |               |               |
|      | 09:58            | HYDROSTATIC MUD<br>PULLED TO FLUID | 366          | 8126          |               |

POGO PRODUCING CO.  
WBR FEDERAL #5, DST #1  
TOOL STRING SCHEMATIC

|                                                                                    | TOOL DESCRIPTION             | OD   | ID   | LENGTH | DEPTH    |
|------------------------------------------------------------------------------------|------------------------------|------|------|--------|----------|
|  | SURFACE FLOWHEAD             |      |      |        | 0        |
|                                                                                    | DRILL PIPE 15.5#             | 3.50 | 2.60 | 13815  | 13815    |
|                                                                                    | DRILL COLLARS-13             | 4.75 | 2.25 | 399.1  | 14214.1  |
|                                                                                    | PUMPOUT DISC REVERSING VALVE | 4.75 | 2.37 | 0.980  | 14215.08 |
|                                                                                    | DRILL COLLARS-3              | 4.75 | 2.25 | 90.00  | 14305.08 |
|                                                                                    | BREAKOFF PIN REVERSING VALVE | 4.75 | 2.50 | 1.310  | 14306.39 |
|                                                                                    | DRILL COLLARS-4              | 4.75 | 2.25 | 120.1  | 14426.49 |
|                                                                                    | CROSS OVER SUB               | 4.90 | 2.25 | 1.700  | 14428.19 |
|                                                                                    | MFE (MFEV-V)                 | 4.25 | 0.75 | 9.940  | 14438.13 |
|                                                                                    | MFE OH BYPASS                | 4.25 | 1.17 | 3.560  | 14441.69 |
|                                                                                    | TR HYDRAULIC JAR             | 4.75 | 1.88 | 8.710  | 14450.4  |
|                                                                                    | SAFETY JOINT                 | 4.75 | 2.00 | 2.440  | 14452.84 |
|                                                                                    | BOB TAIL PACKER              | 5.50 | 1.00 | 5.640  | 14458.48 |
|                                                                                    | BOB TAIL PACKER              | 5.50 | 1.00 | 5.520  | 14464    |
|                                                                                    | PERFORATED ANCHOR            | 4.75 | 2.25 | 12.14  | 14476.14 |
|                                                                                    | INSIDE DUAL RECORDER CARRIER | 4.88 | 2.50 | 7.210  | 14483.35 |
|                                                                                    | CROSS OVER SUB               | 4.75 | 2.00 | 0.660  | 14484.01 |
|                                                                                    | DRILL COLLARS-8              | 4.75 | 2.25 | 240.7  | 14724.71 |
|                                                                                    | CROSS OVER SUB               | 4.75 | 2.25 | 0.680  | 14725.39 |
|                                                                                    | PERFORATED ANCHOR            | 4.75 | 2.25 | 5.000  | 14730.39 |
|                                                                                    | OUTSIDE RECORDER CARRIER     | 4.88 | 2.50 | 5.960  | 14736.35 |
|                                                                                    | PERFORATED ANCHOR            | 4.75 | 2.25 | 14.00  | 14750.35 |
|                                                                                    | MULE SHOE                    | 4.75 | 0.00 | 0.650  | 14751    |

Report Number: 6697609  
Test Number: ONE  
Test Date: 07-JAN-2001

**Schlumberger**

# BOTTOMHOLE PRESSURE LOG

FIELD REPORT NO. 6697609

COMPANY : POGO PRODUCING CO.

INSTRUMENT NO. SLSR-777

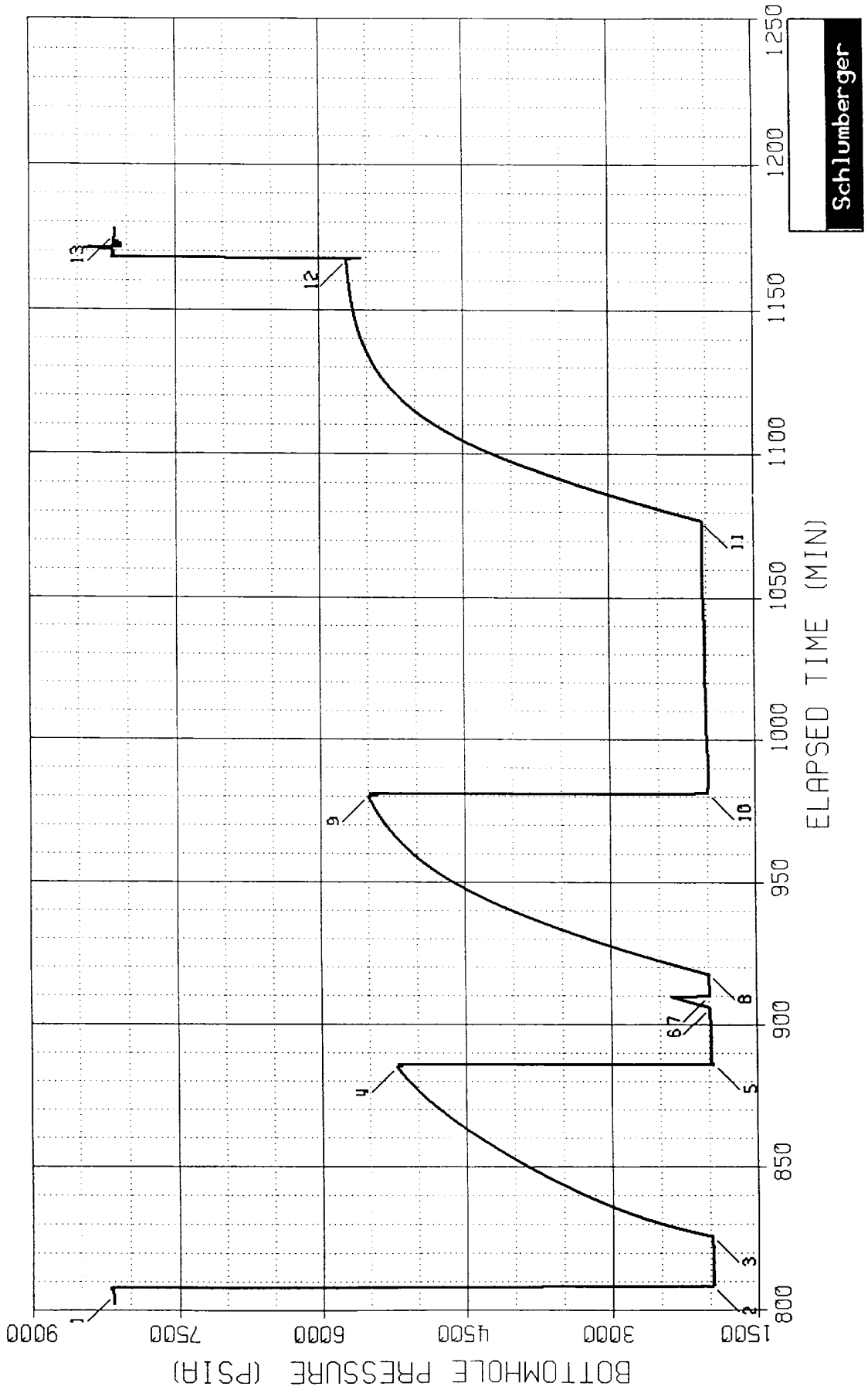
WELL : WBR FEDERAL #5, DST #1

DEPTH : 14483 FT

CAPACITY : 10000 PSI

Electronic Pressure Data

PORT OPENING : INSIDE



# BOTTOMHOLE TEMPERATURE LOG

FIELD REPORT NO. 6697609

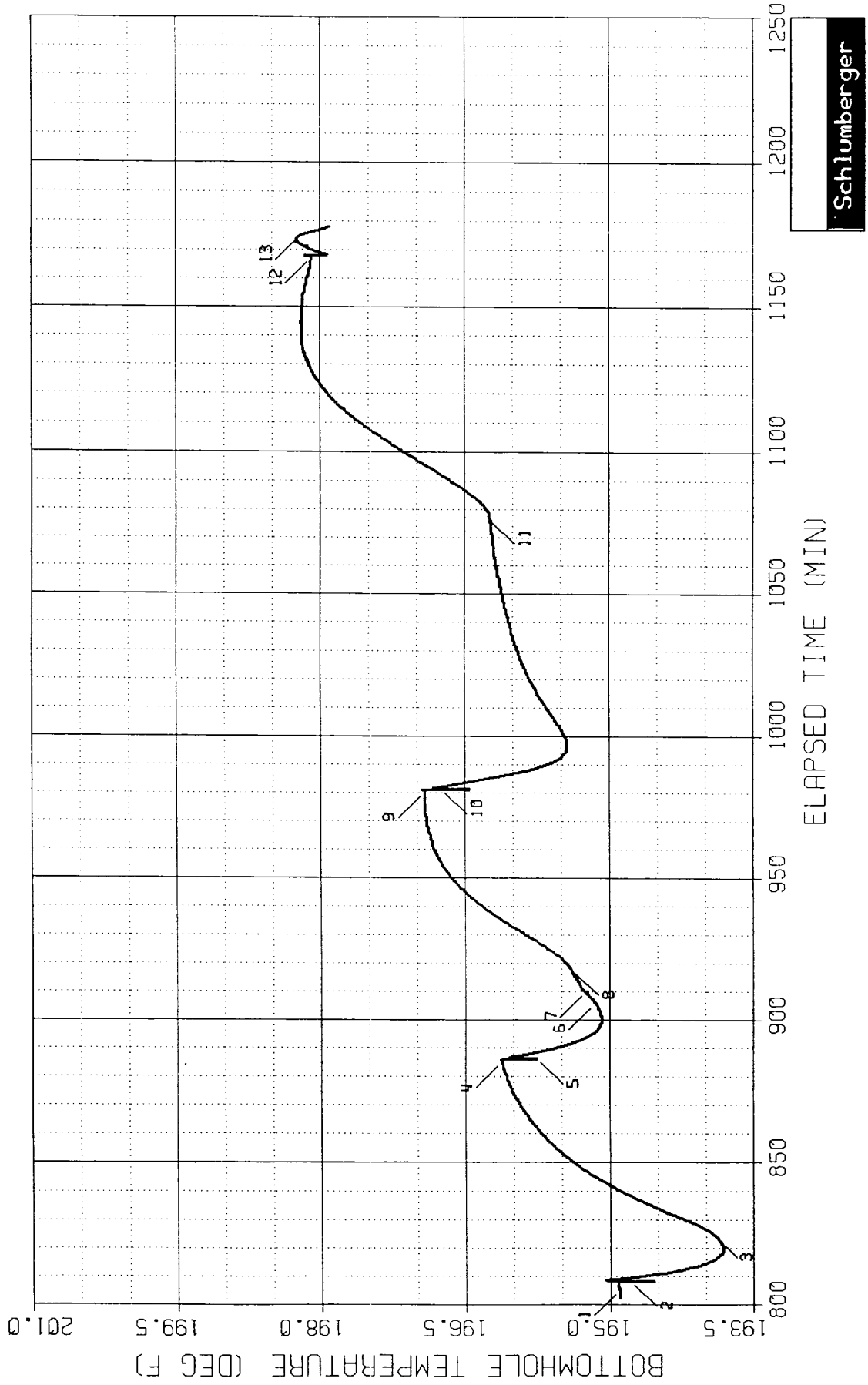
COMPANY : POGO PRODUCING CO.

INSTRUMENT NO. SLSR-777

WELL : WBR FEDERAL #5, DST #1

DEPTH : 14483 FT

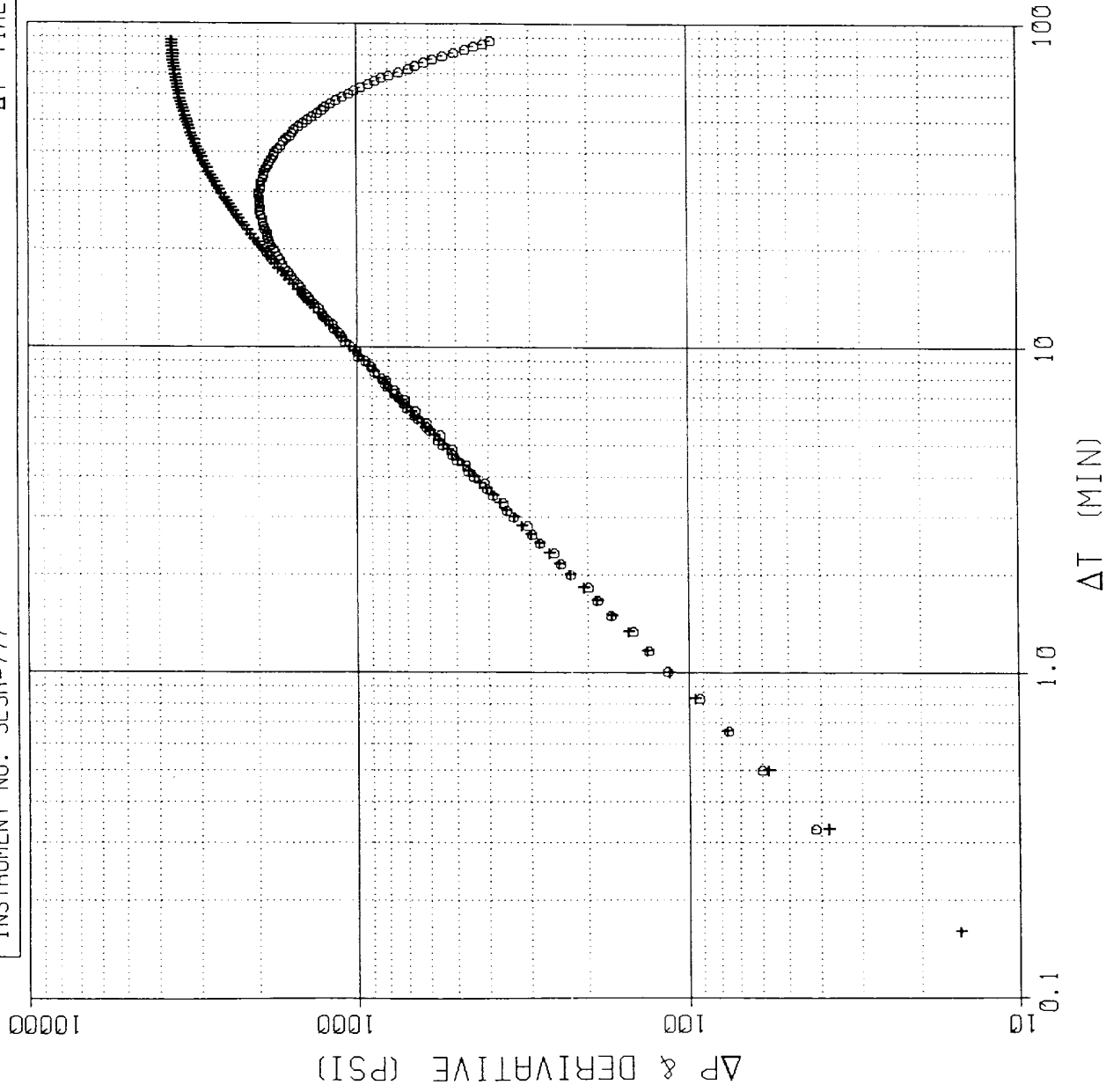
Electronic Temperature Data



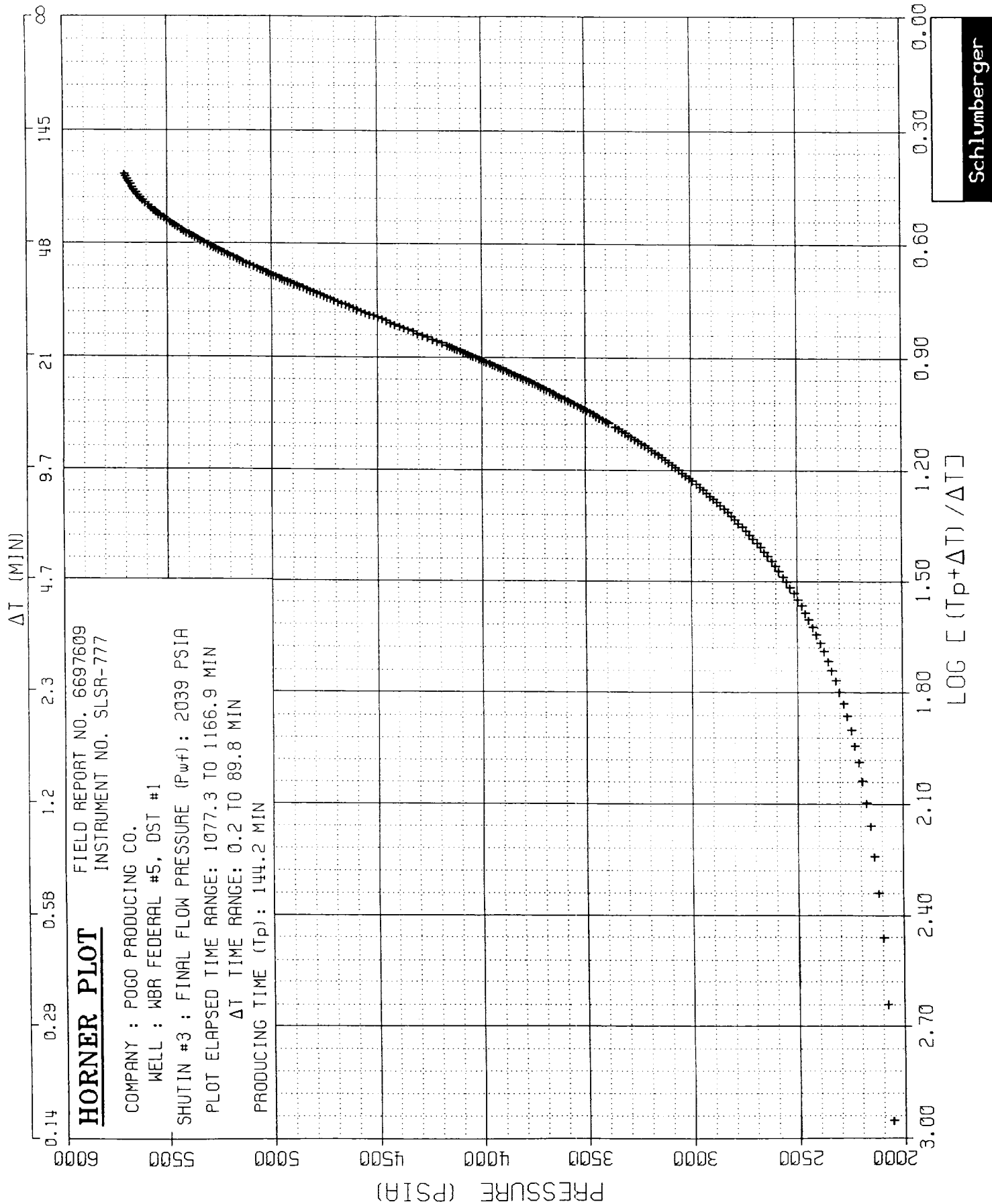
# LOG LOG PLOT

COMPANY : POGO PRODUCING CO.  
WELL : WBR FEDERAL #5, DST #1  
FIELD REPORT NO. 6697609  
INSTRUMENT NO. SLSR-777

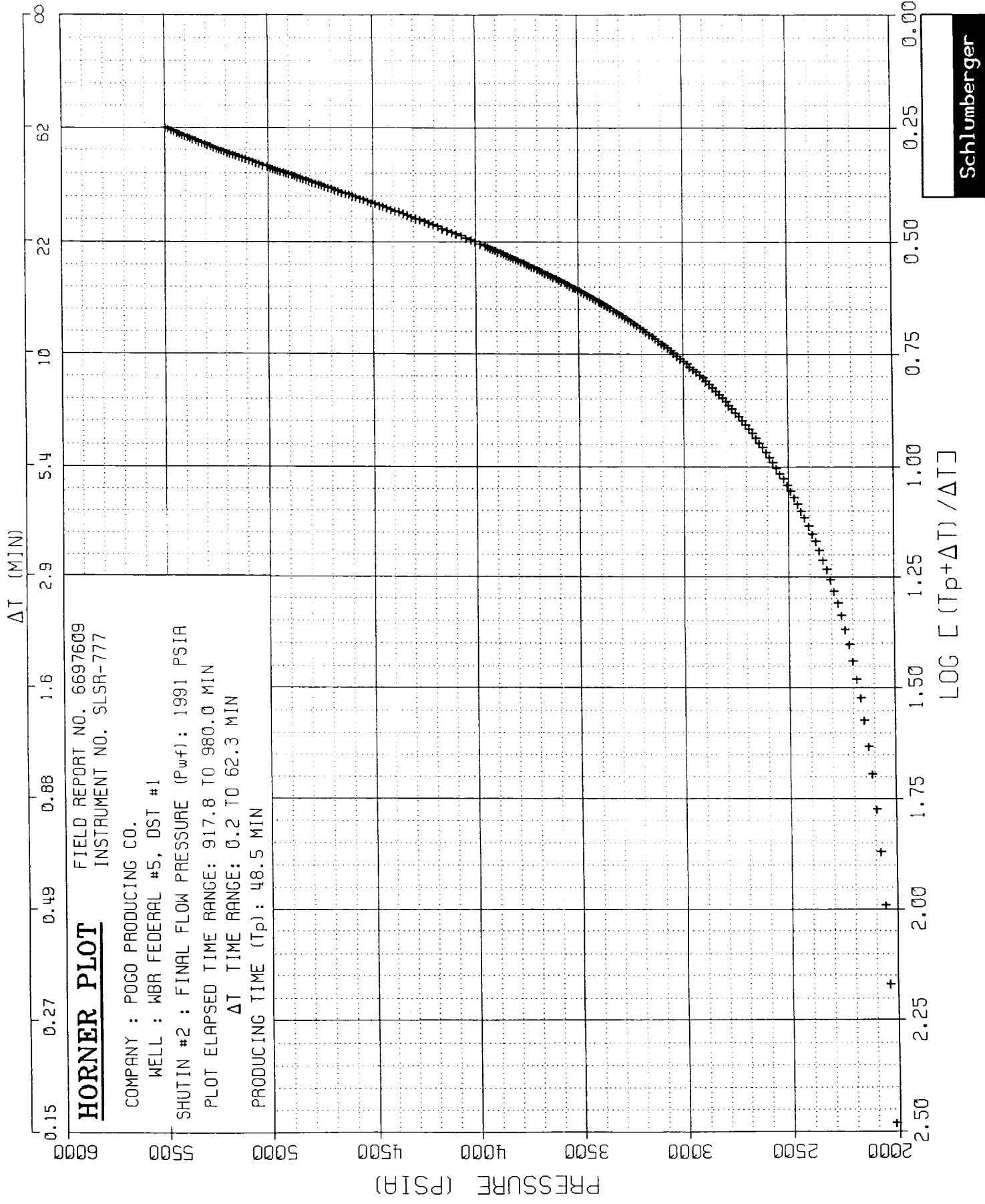
SHUTIN #3 : PRODUCING TIME (T<sub>p</sub>): 144.2 MIN  
FINAL FLOW PRESSURE (P<sub>wf</sub>): 2039 PSIA  
PLOT ELAPSED TIME RANGE: 1077.3 TO 1166.9 MIN  
ΔT TIME RANGE: 0.2 TO 89.8 MIN

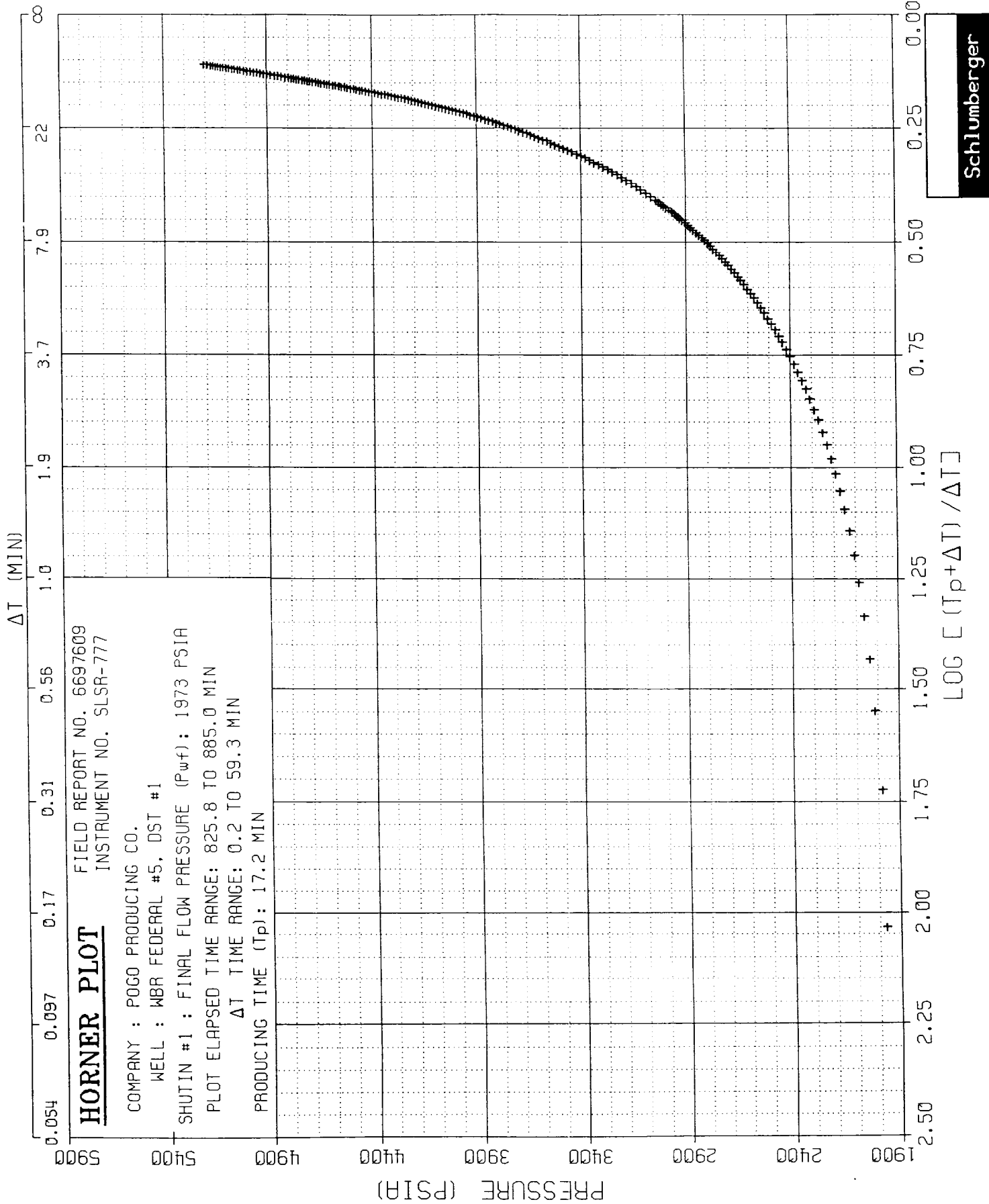


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 \*\* WELL TEST DATA PRINTOUT \*\*  
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COMPANY: POGO PRODUCING CO.  
 WELL: WBR FEDERAL #5, DST #1

FIELD REPORT NO. 6697609  
 INSTRUMENT NO. SLSR-777

RECORDER CAPACITY: 10000 PSI    PORT OPENING: INSIDE    DEPTH: 14483 FT

LABEL POINT INFORMATION

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| #  | TIME<br>OF DAY<br>HH:MM:SS | DATE<br>DD-MMM | EXPLANATION              | ELAPSED<br>TIME, MIN | BOT HOLE<br>PRESSURE<br>PSIA | BOT HOLE<br>TEMP.<br>DEG F |
|----|----------------------------|----------------|--------------------------|----------------------|------------------------------|----------------------------|
| 1  | 3:48:07                    | 8-JAN          | HYDROSTATIC MUD          | 805.12               | 8175.55                      | 194.90                     |
| 2  | 3:51:27                    | 8-JAN          | START FLOW               | 808.45               | 1972.32                      | 194.79                     |
| 3  | 4:08:37                    | 8-JAN          | END FLOW & START SHUT-IN | 825.62               | 1973.24                      | 193.95                     |
| 4  | 5:07:57                    | 8-JAN          | END SHUT-IN              | 884.95               | 5213.70                      | 196.12                     |
| 5  | 5:09:17                    | 8-JAN          | START FLOW               | 886.28               | 1944.44                      | 195.76                     |
| 6  | 5:28:47                    | 8-JAN          | CYCLED TOOL              | 905.78               | 1984.78                      | 195.15                     |
| 7  | 5:33:07                    | 8-JAN          | CYCLED TOOL              | 910.12               | 1987.07                      | 195.24                     |
| 8  | 5:40:37                    | 8-JAN          | END FLOW & START SHUT-IN | 917.62               | 1991.22                      | 195.39                     |
| 9  | 6:42:57                    | 8-JAN          | END SHUT-IN              | 979.95               | 5499.66                      | 196.92                     |
| 10 | 6:44:27                    | 8-JAN          | START FLOW               | 981.45               | 1983.59                      | 196.75                     |
| 11 | 8:20:07                    | 8-JAN          | END FLOW & START SHUT-IN | 1077.12              | 2038.98                      | 196.25                     |
| 12 | 9:49:57                    | 8-JAN          | END SHUT-IN              | 1166.95              | 5707.53                      | 198.09                     |
| 13 | 9:58:17                    | 8-JAN          | HYDROSTATIC MUD          | 1175.28              | 8125.51                      | 198.19                     |

SUMMARY OF FLOW PERIODS

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| PERIOD | START<br>ELAPSED<br>TIME, MIN | END<br>ELAPSED<br>TIME, MIN | DURATION<br>MIN | START<br>PRESSURE<br>PSIA | END<br>PRESSURE<br>PSIA | INITIAL<br>PRESSURE<br>PSIA |
|--------|-------------------------------|-----------------------------|-----------------|---------------------------|-------------------------|-----------------------------|
| 1      | 808.45                        | 825.62                      | 17.17           | 1972.32                   | 1973.24                 | 1972.32                     |
| 2      | 886.28                        | 917.62                      | 31.34           | 1944.44                   | 1991.22                 | 1944.44                     |
| 3      | 981.45                        | 1077.12                     | 95.67           | 1983.59                   | 2038.98                 | 1983.59                     |

SUMMARY OF SHUTIN PERIODS

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| PERIOD | START<br>ELAPSED<br>TIME, MIN | END<br>ELAPSED<br>TIME, MIN | DURATION<br>MIN | START<br>PRESSURE<br>PSIA | END<br>PRESSURE<br>PSIA | FINAL FLOW<br>PRESSURE<br>PSIA | PRODUCING<br>TIME, MIN |
|--------|-------------------------------|-----------------------------|-----------------|---------------------------|-------------------------|--------------------------------|------------------------|
| 1      | 825.62                        | 884.95                      | 59.33           | 1973.24                   | 5213.70                 | 1973.24                        | 17.17                  |
| 2      | 917.62                        | 979.95                      | 62.33           | 1991.22                   | 5499.66                 | 1991.22                        | 48.51                  |
| 3      | 1077.12                       | 1166.95                     | 89.83           | 2038.98                   | 5707.53                 | 2038.98                        | 144.18                 |

TEST PHASE: FLOW PERIOD # 1

| TIME<br>OF DAY<br>HH:MM:SS | DATE<br>DD-MMM | ELAPSED<br>TIME,MIN | DELTA<br>TIME,MIN | BOT HOLE<br>TEMP.<br>DEG F | BOT HOLE<br>PRESSURE<br>PSIA |
|----------------------------|----------------|---------------------|-------------------|----------------------------|------------------------------|
| 3:51:27                    | 8-JAN          | 808.45              | 0.00              | 194.79                     | 1972.32                      |
| 4:06:27                    | 8-JAN          | 823.45              | 15.00             | 193.87                     | 1971.94                      |
| 4:08:37                    | 8-JAN          | 825.62              | 17.17             | 193.95                     | 1973.24                      |

TEST PHASE: SHUTIN PERIOD # 1      FINAL FLOW PRESSURE = 1973.24 PSIA  
 PRODUCING TIME = 17.17 MIN

| TIME<br>OF DAY<br>HH:MM:SS | DATE<br>DD-MMM | ELAPSED<br>TIME,MIN | DELTA<br>TIME,MIN | BOT HOLE<br>TEMP.<br>DEG F | BOT HOLE<br>PRESSURE<br>PSIA | DELTA P<br>PSI | LOG<br>HORN<br>TIME |
|----------------------------|----------------|---------------------|-------------------|----------------------------|------------------------------|----------------|---------------------|
| 4:08:37                    | 8-JAN          | 825.62              | 0.00              | 193.95                     | 1973.24                      | 0.00           |                     |
| 4:09:37                    | 8-JAN          | 826.62              | 1.00              | 194.00                     | 2081.58                      | 108.34         | 1.2594              |
| 4:10:37                    | 8-JAN          | 827.62              | 2.00              | 194.05                     | 2208.62                      | 235.38         | 0.9816              |
| 4:11:37                    | 8-JAN          | 828.62              | 3.00              | 194.11                     | 2325.96                      | 352.72         | 0.8276              |
| 4:12:37                    | 8-JAN          | 829.62              | 4.00              | 194.18                     | 2435.37                      | 462.13         | 0.7237              |
| 4:13:37                    | 8-JAN          | 830.62              | 5.00              | 194.25                     | 2537.24                      | 564.00         | 0.6468              |
| 4:14:37                    | 8-JAN          | 831.62              | 6.00              | 194.32                     | 2632.26                      | 659.02         | 0.5868              |
| 4:15:37                    | 8-JAN          | 832.62              | 7.00              | 194.41                     | 2721.76                      | 748.52         | 0.5382              |
| 4:16:37                    | 8-JAN          | 833.62              | 8.00              | 194.47                     | 2806.57                      | 833.33         | 0.4978              |
| 4:17:37                    | 8-JAN          | 834.62              | 9.00              | 194.54                     | 2887.65                      | 914.41         | 0.4636              |
| 4:18:37                    | 8-JAN          | 835.62              | 10.00             | 194.61                     | 2965.03                      | 991.79         | 0.4341              |
| 4:20:37                    | 8-JAN          | 837.62              | 12.00             | 194.74                     | 3110.96                      | 1137.72        | 0.3858              |
| 4:22:37                    | 8-JAN          | 839.62              | 14.00             | 194.86                     | 3248.80                      | 1275.56        | 0.3476              |
| 4:24:37                    | 8-JAN          | 841.62              | 16.00             | 194.97                     | 3378.00                      | 1404.76        | 0.3166              |
| 4:26:37                    | 8-JAN          | 843.62              | 18.00             | 195.08                     | 3500.79                      | 1527.55        | 0.2909              |
| 4:28:37                    | 8-JAN          | 845.62              | 20.00             | 195.19                     | 3618.15                      | 1644.91        | 0.2692              |
| 4:30:37                    | 8-JAN          | 847.62              | 22.00             | 195.28                     | 3730.96                      | 1757.72        | 0.2505              |
| 4:32:37                    | 8-JAN          | 849.62              | 24.00             | 195.35                     | 3839.19                      | 1865.95        | 0.2344              |
| 4:34:37                    | 8-JAN          | 851.62              | 26.00             | 195.44                     | 3943.85                      | 1970.61        | 0.2202              |
| 4:36:37                    | 8-JAN          | 853.62              | 28.00             | 195.51                     | 4045.19                      | 2071.95        | 0.2077              |
| 4:38:37                    | 8-JAN          | 855.62              | 30.00             | 195.58                     | 4142.96                      | 2169.72        | 0.1965              |
| 4:43:37                    | 8-JAN          | 860.62              | 35.00             | 195.73                     | 4381.29                      | 2408.05        | 0.1734              |
| 4:48:37                    | 8-JAN          | 865.62              | 40.00             | 195.85                     | 4597.49                      | 2624.25        | 0.1551              |
| 4:53:37                    | 8-JAN          | 870.62              | 45.00             | 195.94                     | 4791.71                      | 2818.47        | 0.1404              |
| 4:58:37                    | 8-JAN          | 875.62              | 50.00             | 196.02                     | 4962.27                      | 2989.03        | 0.1282              |
| 5:03:37                    | 8-JAN          | 880.62              | 55.00             | 196.07                     | 5108.04                      | 3134.80        | 0.1180              |
| 5:07:57                    | 8-JAN          | 884.95              | 59.33             | 196.12                     | 5213.70                      | 3240.46        | 0.1104              |

TEST PHASE: FLOW PERIOD # 2

| TIME<br>OF DAY<br>HH:MM:SS | DATE<br>DD-MMM | ELAPSED<br>TIME,MIN | DELTA<br>TIME,MIN | BOT HOLE<br>TEMP.<br>DEG F | BOT HOLE<br>PRESSURE<br>PSIA |
|----------------------------|----------------|---------------------|-------------------|----------------------------|------------------------------|
| 5:09:17                    | 8-JAN          | 886.28              | 0.00              | 195.76                     | 1944.44                      |
| 5:24:17                    | 8-JAN          | 901.28              | 15.00             | 195.08                     | 1980.74                      |
| 5:39:17                    | 8-JAN          | 916.28              | 30.00             | 195.37                     | 1993.05                      |
| 5:40:37                    | 8-JAN          | 917.62              | 31.34             | 195.39                     | 1991.22                      |

TEST PHASE: SHUTIN PERIOD # 2

FINAL FLOW PRESSURE = 1991.22 PSIA  
PRODUCING TIME = 48.51 MIN

| TIME<br>OF DAY<br>HH:MM:SS | DATE<br>DD-MMM | ELAPSED<br>TIME,MIN | DELTA<br>TIME,MIN | BOT HOLE<br>TEMP.<br>DEG F | BOT HOLE<br>PRESSURE<br>PSIA | DELTA P<br>PSI | LOG<br>HORNER<br>TIME |
|----------------------------|----------------|---------------------|-------------------|----------------------------|------------------------------|----------------|-----------------------|
| 5:40:37                    | 8-JAN          | 917.62              | 0.00              | 195.39                     | 1991.22                      | 0.00           |                       |
| 5:41:37                    | 8-JAN          | 918.62              | 1.00              | 195.42                     | 2109.36                      | 118.14         | 1.6947                |
| 5:42:37                    | 8-JAN          | 919.62              | 2.00              | 195.44                     | 2216.67                      | 225.45         | 1.4023                |
| 5:43:37                    | 8-JAN          | 920.62              | 3.00              | 195.46                     | 2320.89                      | 329.67         | 1.2348                |
| 5:44:37                    | 8-JAN          | 921.62              | 4.00              | 195.49                     | 2422.97                      | 431.75         | 1.1182                |
| 5:45:37                    | 8-JAN          | 922.62              | 5.00              | 195.53                     | 2522.88                      | 531.66         | 1.0295                |
| 5:46:37                    | 8-JAN          | 923.62              | 6.00              | 195.58                     | 2621.19                      | 629.97         | 0.9583                |
| 5:47:37                    | 8-JAN          | 924.62              | 7.00              | 195.62                     | 2717.31                      | 726.09         | 0.8993                |
| 5:48:37                    | 8-JAN          | 925.62              | 8.00              | 195.66                     | 2811.74                      | 820.52         | 0.8490                |
| 5:49:37                    | 8-JAN          | 926.62              | 9.00              | 195.71                     | 2904.58                      | 913.36         | 0.8055                |
| 5:50:37                    | 8-JAN          | 927.62              | 10.00             | 195.75                     | 2996.16                      | 1004.94        | 0.7672                |
| 5:52:37                    | 8-JAN          | 929.62              | 12.00             | 195.85                     | 3174.68                      | 1183.46        | 0.7026                |
| 5:54:37                    | 8-JAN          | 931.62              | 14.00             | 195.94                     | 3346.97                      | 1355.75        | 0.6498                |
| 5:56:37                    | 8-JAN          | 933.62              | 16.00             | 196.05                     | 3513.34                      | 1522.12        | 0.6055                |
| 5:58:37                    | 8-JAN          | 935.62              | 18.00             | 196.14                     | 3673.76                      | 1682.54        | 0.5676                |
| 6:00:37                    | 8-JAN          | 937.62              | 20.00             | 196.23                     | 3827.58                      | 1836.36        | 0.5347                |
| 6:02:37                    | 8-JAN          | 939.62              | 22.00             | 196.30                     | 3974.56                      | 1983.34        | 0.5058                |
| 6:04:37                    | 8-JAN          | 941.62              | 24.00             | 196.38                     | 4114.52                      | 2123.30        | 0.4802                |
| 6:06:37                    | 8-JAN          | 943.62              | 26.00             | 196.45                     | 4246.50                      | 2255.28        | 0.4572                |
| 6:08:37                    | 8-JAN          | 945.62              | 28.00             | 196.52                     | 4370.72                      | 2379.50        | 0.4366                |
| 6:10:37                    | 8-JAN          | 947.62              | 30.00             | 196.57                     | 4486.50                      | 2495.28        | 0.4178                |
| 6:15:37                    | 8-JAN          | 952.62              | 35.00             | 196.70                     | 4742.01                      | 2750.79        | 0.3777                |
| 6:20:37                    | 8-JAN          | 957.62              | 40.00             | 196.79                     | 4951.65                      | 2960.43        | 0.3449                |
| 6:25:37                    | 8-JAN          | 962.62              | 45.00             | 196.84                     | 5122.33                      | 3131.11        | 0.3176                |
| 6:30:37                    | 8-JAN          | 967.62              | 50.00             | 196.88                     | 5260.38                      | 3269.16        | 0.2945                |
| 6:35:37                    | 8-JAN          | 972.62              | 55.00             | 196.92                     | 5372.06                      | 3380.84        | 0.2746                |
| 6:40:37                    | 8-JAN          | 977.62              | 60.00             | 196.92                     | 5463.11                      | 3471.89        | 0.2573                |
| 6:42:57                    | 8-JAN          | 979.95              | 62.33             | 196.92                     | 5499.66                      | 3508.44        | 0.2500                |

TEST PHASE: FLOW PERIOD # 3

| TIME<br>OF DAY<br>HH:MM:SS | DATE<br>DD-MMM | ELAPSED<br>TIME,MIN | DELTA<br>TIME,MIN | BOT HOLE<br>TEMP.<br>DEG F | BOT HOLE<br>PRESSURE<br>PSIA |
|----------------------------|----------------|---------------------|-------------------|----------------------------|------------------------------|
| 6:44:27                    | 8-JAN          | 981.45              | 0.00              | 196.75                     | 1983.59                      |
| 6:59:27                    | 8-JAN          | 996.45              | 15.00             | 195.44                     | 1992.63                      |
| 7:14:27                    | 8-JAN          | 1011.45             | 30.00             | 195.67                     | 2007.10                      |
| 7:29:27                    | 8-JAN          | 1026.45             | 45.00             | 195.91                     | 2013.58                      |
| 7:44:27                    | 8-JAN          | 1041.45             | 60.00             | 196.05                     | 2020.07                      |
| 7:59:27                    | 8-JAN          | 1056.45             | 75.00             | 196.16                     | 2035.36                      |
| 8:14:27                    | 8-JAN          | 1071.45             | 90.00             | 196.23                     | 2039.94                      |
| 8:20:07                    | 8-JAN          | 1077.12             | 95.67             | 196.25                     | 2038.98                      |

TEST PHASE: SHUTIN PERIOD # 3

FINAL FLOW PRESSURE = 2038.98 PSIA  
PRODUCING TIME = 144.18 MIN

| TIME<br>OF DAY<br>HH:MM:SS | DATE<br>DD-MMM | ELAPSED<br>TIME, MIN | DELTA<br>TIME, MIN | BOT HOLE<br>TEMP.<br>DEG F | BOT HOLE<br>PRESSURE<br>PSIA | DELTA P<br>PSI | LOG<br>HORNER<br>TIME |
|----------------------------|----------------|----------------------|--------------------|----------------------------|------------------------------|----------------|-----------------------|
| 8:20:07                    | 8-JAN          | 1077.12              | 0.00               | 196.25                     | 2038.98                      | 0.00           |                       |
| 8:21:07                    | 8-JAN          | 1078.12              | 1.00               | 196.25                     | 2152.69                      | 113.71         | 2.1619                |
| 8:22:07                    | 8-JAN          | 1079.12              | 2.00               | 196.25                     | 2263.32                      | 224.34         | 1.8639                |
| 8:23:07                    | 8-JAN          | 1080.12              | 3.00               | 196.27                     | 2371.51                      | 332.53         | 1.6907                |
| 8:24:07                    | 8-JAN          | 1081.12              | 4.00               | 196.29                     | 2478.65                      | 439.67         | 1.5687                |
| 8:25:07                    | 8-JAN          | 1082.12              | 5.00               | 196.32                     | 2584.13                      | 545.15         | 1.4747                |
| 8:26:07                    | 8-JAN          | 1083.12              | 6.00               | 196.34                     | 2687.51                      | 648.53         | 1.3985                |
| 8:27:07                    | 8-JAN          | 1084.12              | 7.00               | 196.39                     | 2789.40                      | 750.42         | 1.3344                |
| 8:28:07                    | 8-JAN          | 1085.12              | 8.00               | 196.43                     | 2890.03                      | 851.05         | 1.2793                |
| 8:29:07                    | 8-JAN          | 1086.12              | 9.00               | 196.47                     | 2989.36                      | 950.38         | 1.2310                |
| 8:30:07                    | 8-JAN          | 1087.12              | 10.00              | 196.50                     | 3087.48                      | 1048.50        | 1.1880                |
| 8:32:07                    | 8-JAN          | 1089.12              | 12.00              | 196.59                     | 3279.13                      | 1240.15        | 1.1144                |
| 8:34:07                    | 8-JAN          | 1091.12              | 14.00              | 196.70                     | 3463.37                      | 1424.39        | 1.0530                |
| 8:36:07                    | 8-JAN          | 1093.12              | 16.00              | 196.79                     | 3641.71                      | 1602.73        | 1.0005                |
| 8:38:07                    | 8-JAN          | 1095.12              | 18.00              | 196.88                     | 3812.47                      | 1773.49        | 0.9547                |
| 8:40:07                    | 8-JAN          | 1097.12              | 20.00              | 196.99                     | 3973.99                      | 1935.01        | 0.9143                |
| 8:42:07                    | 8-JAN          | 1099.12              | 22.00              | 197.10                     | 4127.09                      | 2088.11        | 0.8782                |
| 8:44:07                    | 8-JAN          | 1101.12              | 24.00              | 197.19                     | 4269.57                      | 2230.59        | 0.8456                |
| 8:46:07                    | 8-JAN          | 1103.12              | 26.00              | 197.28                     | 4402.25                      | 2363.27        | 0.8159                |
| 8:48:07                    | 8-JAN          | 1105.12              | 28.00              | 197.37                     | 4525.58                      | 2486.60        | 0.7888                |
| 8:50:07                    | 8-JAN          | 1107.12              | 30.00              | 197.46                     | 4639.69                      | 2600.71        | 0.7639                |
| 8:55:07                    | 8-JAN          | 1112.12              | 35.00              | 197.65                     | 4885.26                      | 2846.28        | 0.7092                |
| 9:00:07                    | 8-JAN          | 1117.12              | 40.00              | 197.83                     | 5080.73                      | 3041.75        | 0.6632                |
| 9:05:07                    | 8-JAN          | 1122.12              | 45.00              | 197.98                     | 5234.55                      | 3195.57        | 0.6237                |
| 9:10:07                    | 8-JAN          | 1127.12              | 50.00              | 198.07                     | 5355.21                      | 3316.23        | 0.5892                |
| 9:15:07                    | 8-JAN          | 1132.12              | 55.00              | 198.14                     | 5448.93                      | 3409.95        | 0.5589                |
| 9:20:07                    | 8-JAN          | 1137.12              | 60.00              | 198.19                     | 5521.27                      | 3482.29        | 0.5319                |
| 9:25:07                    | 8-JAN          | 1142.12              | 65.00              | 198.19                     | 5576.75                      | 3537.77        | 0.5076                |
| 9:30:07                    | 8-JAN          | 1147.12              | 70.00              | 198.19                     | 5619.15                      | 3580.17        | 0.4857                |
| 9:35:07                    | 8-JAN          | 1152.12              | 75.00              | 198.18                     | 5651.20                      | 3612.22        | 0.4657                |
| 9:40:07                    | 8-JAN          | 1157.12              | 80.00              | 198.16                     | 5675.39                      | 3636.41        | 0.4475                |
| 9:45:07                    | 8-JAN          | 1162.12              | 85.00              | 198.12                     | 5693.76                      | 3654.78        | 0.4308                |
| 9:49:57                    | 8-JAN          | 1166.95              | 89.83              | 198.09                     | 5707.53                      | 3668.55        | 0.4158                |

# BOTTOMHOLE PRESSURE LOG

FIELD REPORT NO. 6697609

COMPANY : POGO PRODUCING CO.

INSTRUMENT NO. SLSR-777

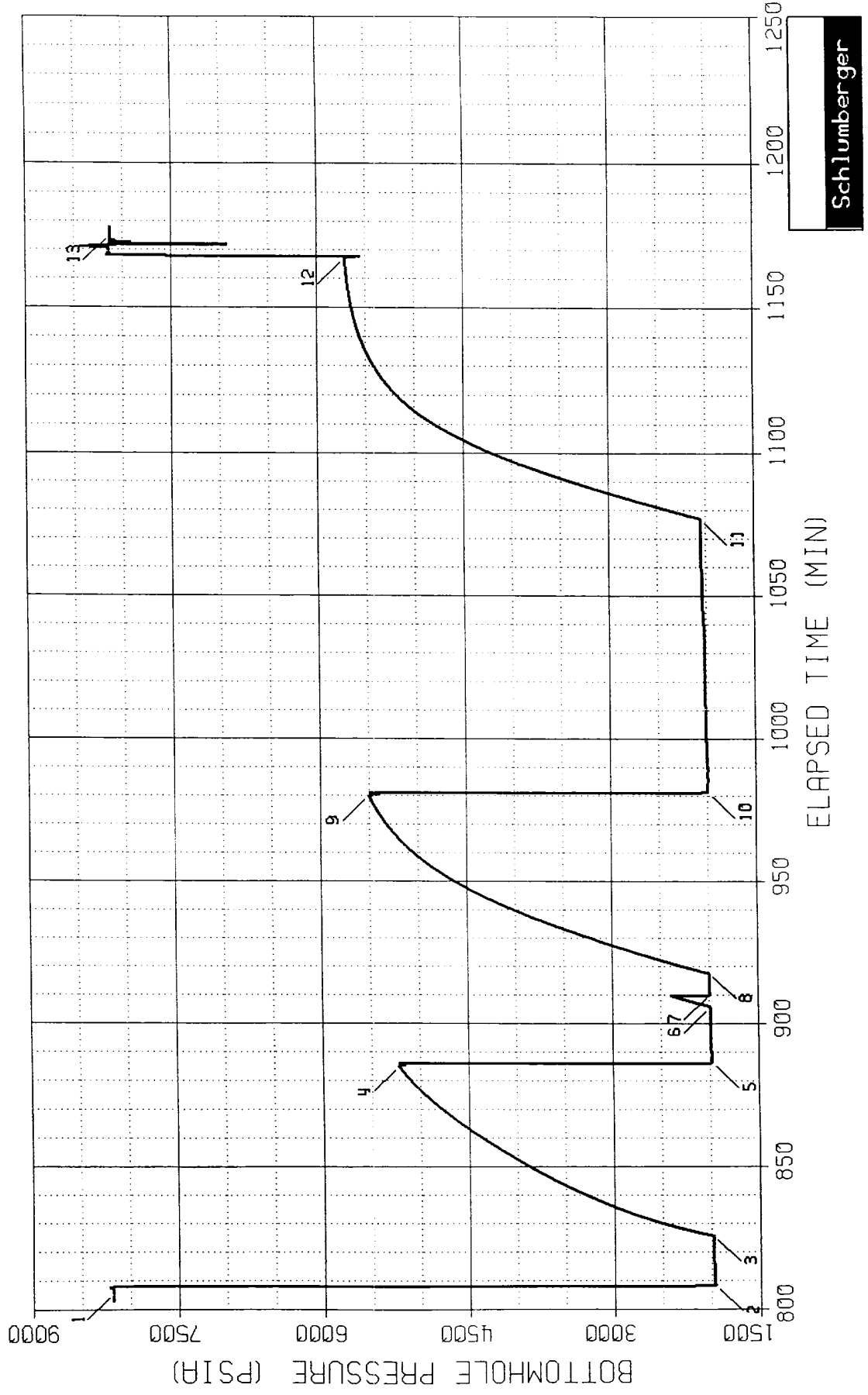
WELL : WBR FEDERAL #5, DST #1

DEPTH : 14489 FT

CAPACITY : 10000 PSI

PORT OPENING : INSIDE

Electronic Pressure Data



# BOTTOMHOLE TEMPERATURE LOG

FIELD REPORT NO. 6697609

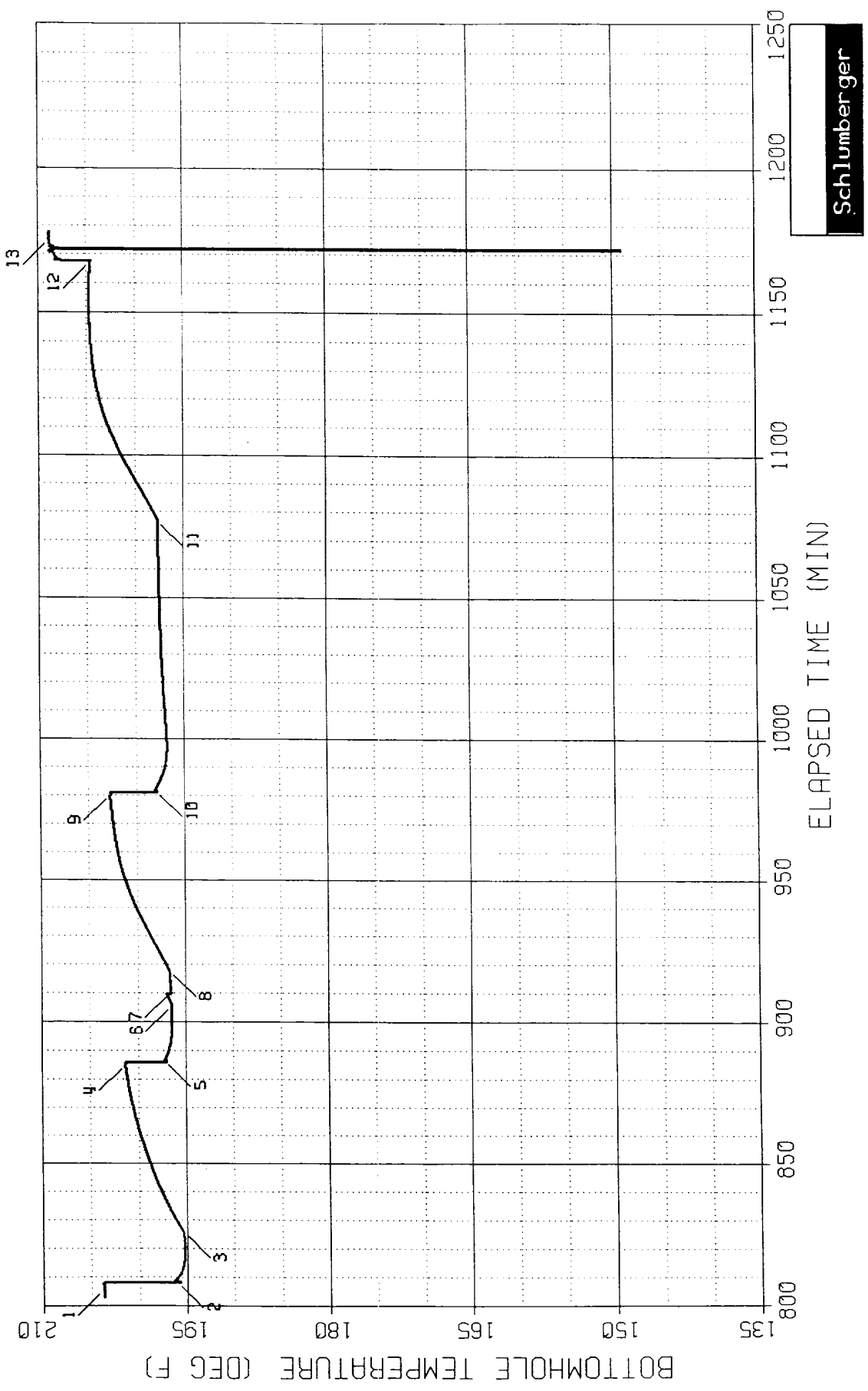
COMPANY : POGO PRODUCING CO.

INSTRUMENT NO. SLSR-777

WELL : WBR FEDERAL #5, DST #1

DEPTH : 14489 FT

Electronic Temperature Data

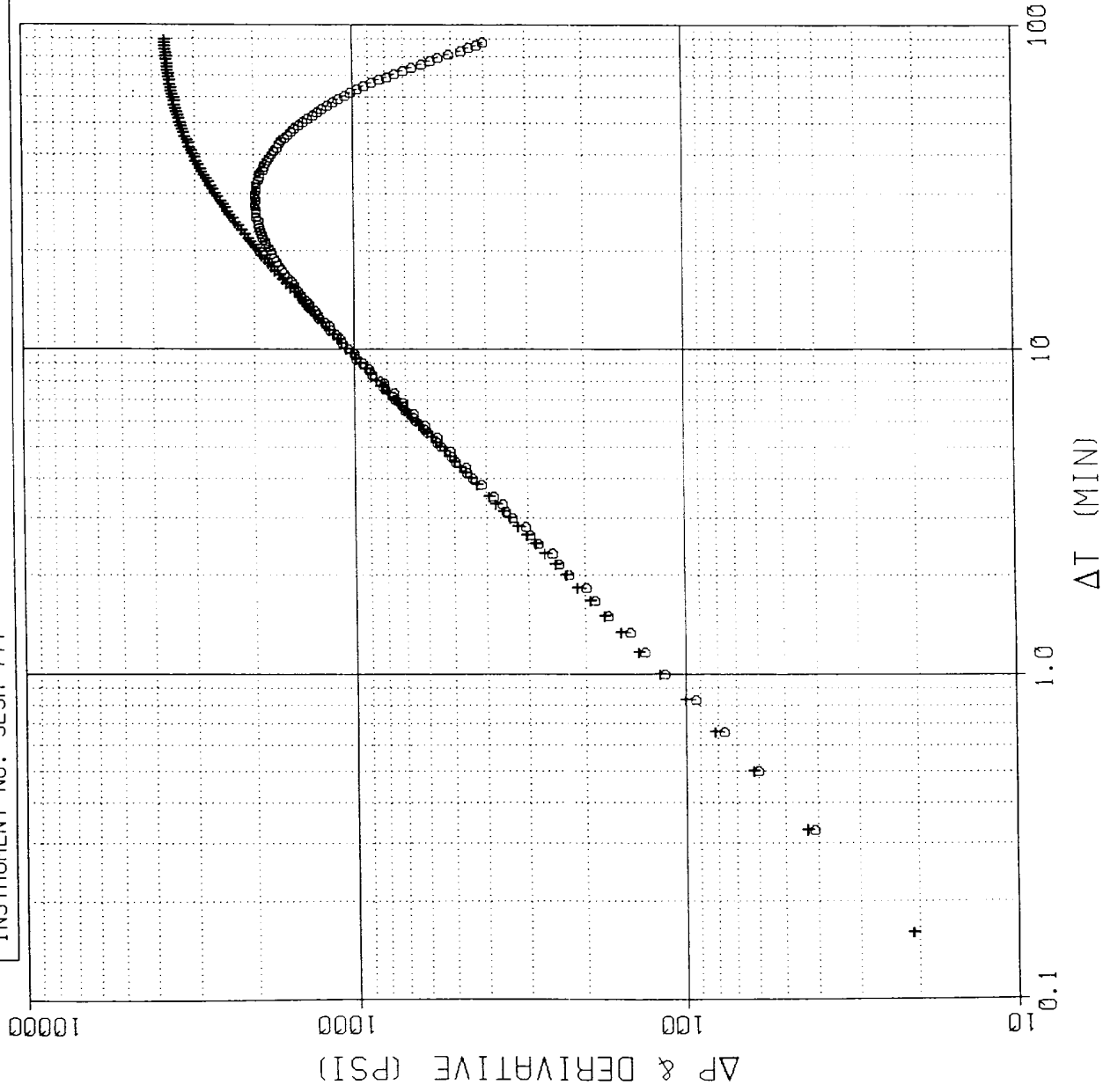




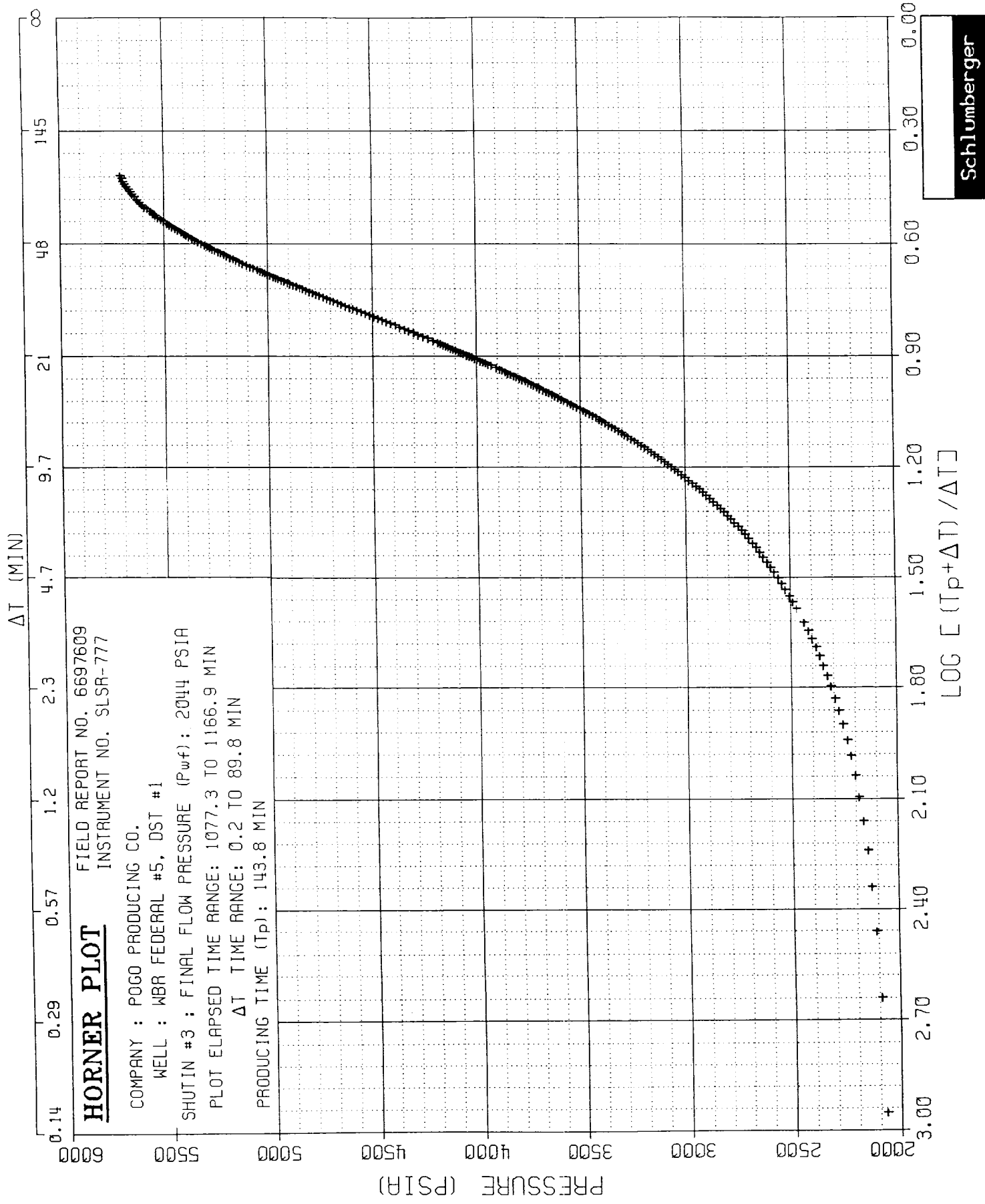
# LOG LOG PLOT

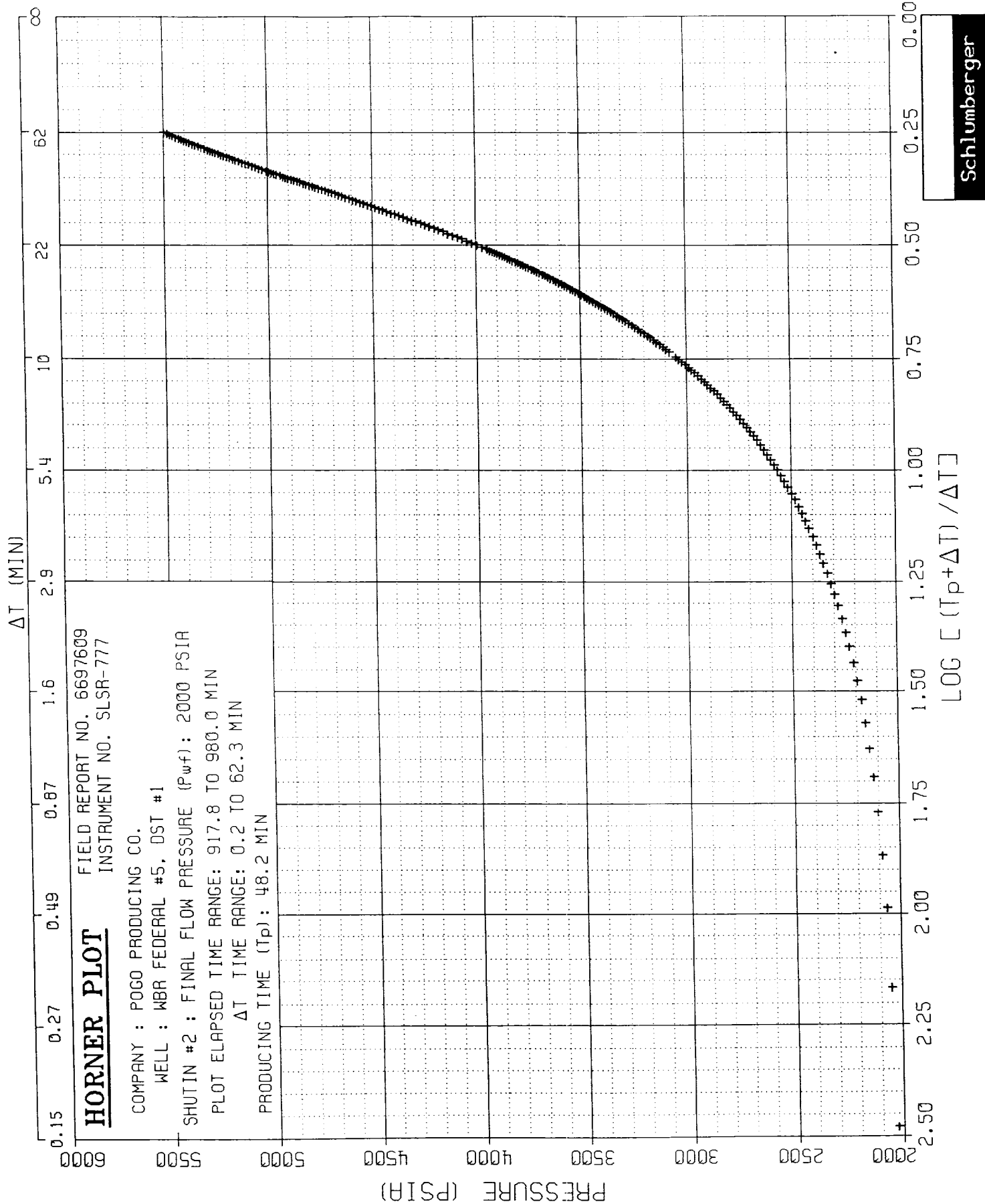
COMPANY : POGO PRODUCING CO.  
WELL : WBR FEDERAL #5, DST #1  
FIELD REPORT NO. 6697609  
INSTRUMENT NO. SLSR-777

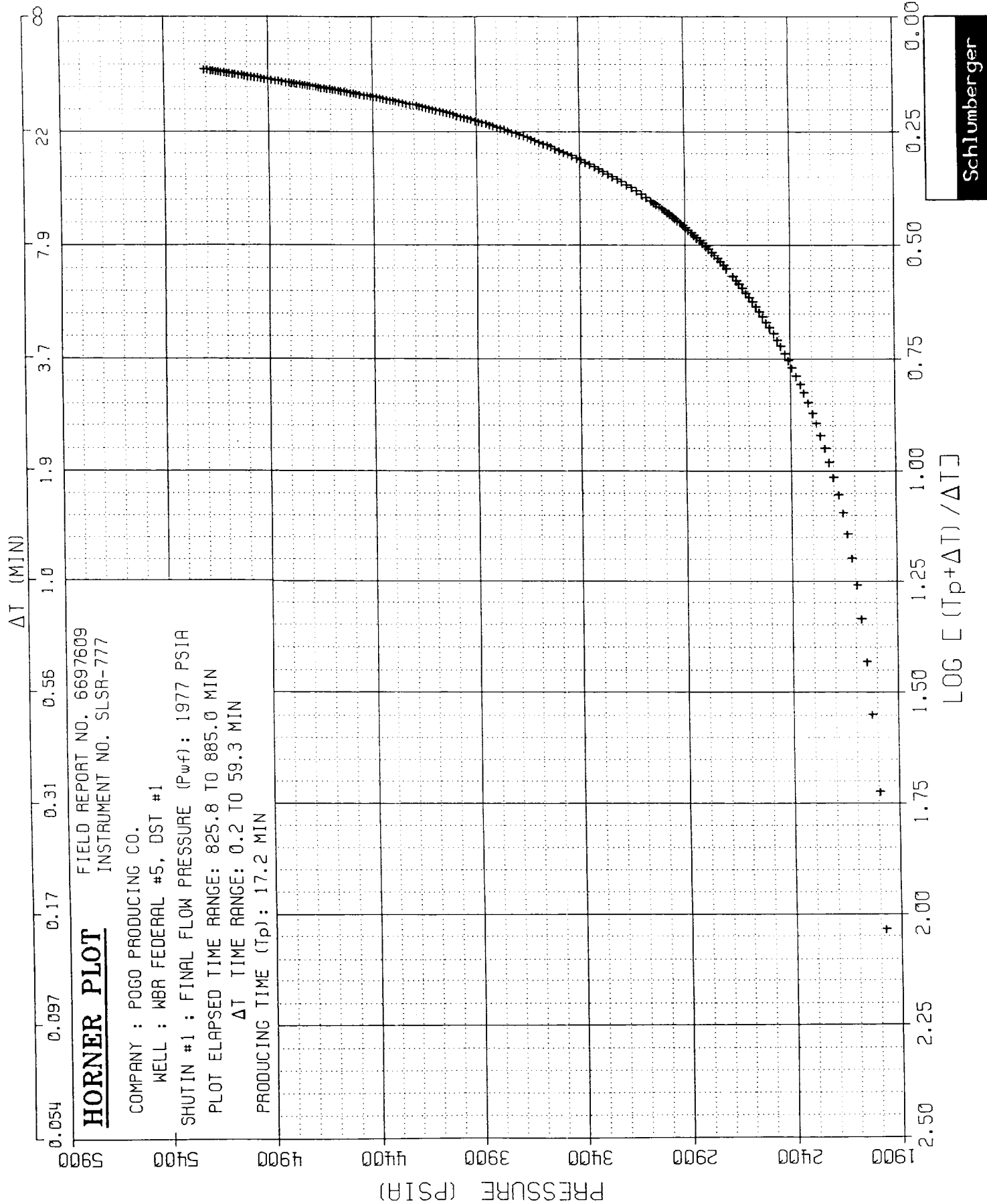
SHUTIN #3 : PRODUCING TIME (Tp): 143.8 MIN  
FINAL FLOW PRESSURE (Pwf): 2044 PSIA  
PLOT ELAPSED TIME RANGE: 1077.3 TO 1166.9 MIN  
 $\Delta T$  TIME RANGE: 0.2 TO 89.8 MIN



Schlumberger







\*\*\*\*\*  
 \*\* WELL TEST DATA PRINTOUT \*\*  
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COMPANY: POGO PRODUCING CO.  
 WELL: WBR FEDERAL #5, DST #1

FIELD REPORT NO. 6697609  
 INSTRUMENT NO. SLSR-777

RECORDER CAPACITY: 10000 PSI    PORT OPENING: INSIDE    DEPTH: 14489 FT

LABEL POINT INFORMATION  
 \*\*\*\*\*

| #  | TIME<br>OF DAY<br>HH:MM:SS | DATE<br>DD-MMM | EXPLANATION              | ELAPSED<br>TIME, MIN | BOT HOLE<br>PRESSURE<br>PSIA | BOT HOLE<br>TEMP.<br>DEG F |
|----|----------------------------|----------------|--------------------------|----------------------|------------------------------|----------------------------|
| 1  | 3:48:37                    | 8-JAN          | HYDROSTATIC MUD          | 805.62               | 8177.92                      | 203.74                     |
| 2  | 3:51:27                    | 8-JAN          | START FLOW               | 808.45               | 1958.53                      | 196.07                     |
| 3  | 4:08:37                    | 8-JAN          | END FLOW & START SHUT-IN | 825.62               | 1976.90                      | 195.40                     |
| 4  | 5:07:57                    | 8-JAN          | END SHUT-IN              | 884.95               | 5217.15                      | 201.40                     |
| 5  | 5:09:37                    | 8-JAN          | START FLOW               | 886.62               | 1973.58                      | 197.31                     |
| 6  | 5:28:47                    | 8-JAN          | CYCLED TOOL              | 905.78               | 1989.32                      | 196.50                     |
| 7  | 5:33:17                    | 8-JAN          | CYCLED TOOL              | 910.28               | 1982.37                      | 196.59                     |
| 8  | 5:40:37                    | 8-JAN          | END FLOW & START SHUT-IN | 917.62               | 2000.18                      | 196.74                     |
| 9  | 6:42:57                    | 8-JAN          | END SHUT-IN              | 979.95               | 5503.93                      | 202.78                     |
| 10 | 6:44:27                    | 8-JAN          | START FLOW               | 981.45               | 1984.98                      | 198.03                     |
| 11 | 8:20:07                    | 8-JAN          | END FLOW & START SHUT-IN | 1077.12              | 2044.49                      | 197.73                     |
| 12 | 9:49:57                    | 8-JAN          | END SHUT-IN              | 1166.95              | 5711.78                      | 204.64                     |
| 13 | 9:58:07                    | 8-JAN          | HYDROSTATIC MUD          | 1175.12              | 8128.11                      | 208.87                     |

SUMMARY OF FLOW PERIODS  
 \*\*\*\*\*

| PERIOD | START<br>ELAPSED<br>TIME, MIN | END<br>ELAPSED<br>TIME, MIN | DURATION<br>MIN | START<br>PRESSURE<br>PSIA | END<br>PRESSURE<br>PSIA | INITIAL<br>PRESSURE<br>PSIA |
|--------|-------------------------------|-----------------------------|-----------------|---------------------------|-------------------------|-----------------------------|
| 1      | 808.45                        | 825.62                      | 17.17           | 1958.53                   | 1976.90                 | 1958.53                     |
| 2      | 886.62                        | 917.62                      | 31.00           | 1973.58                   | 2000.18                 | 1973.58                     |
| 3      | 981.45                        | 1077.12                     | 95.67           | 1984.98                   | 2044.49                 | 1984.98                     |

SUMMARY OF SHUTIN PERIODS  
 \*\*\*\*\*

| PERIOD | START<br>ELAPSED<br>TIME, MIN | END<br>ELAPSED<br>TIME, MIN | DURATION<br>MIN | START<br>PRESSURE<br>PSIA | END<br>PRESSURE<br>PSIA | FINAL FLOW<br>PRESSURE<br>PSIA | PRODUCING<br>TIME, MIN |
|--------|-------------------------------|-----------------------------|-----------------|---------------------------|-------------------------|--------------------------------|------------------------|
| 1      | 825.62                        | 884.95                      | 59.33           | 1976.90                   | 5217.15                 | 1976.90                        | 17.17                  |
| 2      | 917.62                        | 979.95                      | 62.33           | 2000.18                   | 5503.93                 | 2000.18                        | 48.17                  |
| 3      | 1077.12                       | 1166.95                     | 89.83           | 2044.49                   | 5711.78                 | 2044.49                        | 143.84                 |

## TEST PHASE: FLOW PERIOD # 1

| TIME<br>OF DAY<br>HH:MM:SS | DATE<br>DD-MMM | ELAPSED<br>TIME, MIN | DELTA<br>TIME, MIN | BOT HOLE<br>TEMP.<br>DEG F | BOT HOLE<br>PRESSURE<br>PSIA |
|----------------------------|----------------|----------------------|--------------------|----------------------------|------------------------------|
| 3:51:27                    | 8-JAN          | 808.45               | 0.00               | 196.07                     | 1958.53                      |
| 4:06:27                    | 8-JAN          | 823.45               | 15.00              | 195.35                     | 1975.77                      |
| 4:08:37                    | 8-JAN          | 825.62               | 17.17              | 195.40                     | 1976.90                      |

## TEST PHASE: SHUTIN PERIOD # 1

FINAL FLOW PRESSURE = 1976.90 PSIA  
PRODUCING TIME = 17.17 MIN

| TIME<br>OF DAY<br>HH:MM:SS | DATE<br>DD-MMM | ELAPSED<br>TIME, MIN | DELTA<br>TIME, MIN | BOT HOLE<br>TEMP.<br>DEG F | BOT HOLE<br>PRESSURE<br>PSIA | DELTA P<br>PSI | LOG<br>HORNER<br>TIME |
|----------------------------|----------------|----------------------|--------------------|----------------------------|------------------------------|----------------|-----------------------|
| 4:08:37                    | 8-JAN          | 825.62               | 0.00               | 195.40                     | 1976.90                      | 0.00           |                       |
| 4:09:37                    | 8-JAN          | 826.62               | 1.00               | 195.58                     | 2092.36                      | 115.46         | 1.2594                |
| 4:10:37                    | 8-JAN          | 827.62               | 2.00               | 195.75                     | 2218.74                      | 241.84         | 0.9816                |
| 4:11:37                    | 8-JAN          | 828.62               | 3.00               | 195.93                     | 2335.67                      | 358.77         | 0.8276                |
| 4:12:37                    | 8-JAN          | 829.62               | 4.00               | 196.11                     | 2444.51                      | 467.61         | 0.7237                |
| 4:13:37                    | 8-JAN          | 830.62               | 5.00               | 196.29                     | 2545.75                      | 568.85         | 0.6468                |
| 4:14:37                    | 8-JAN          | 831.62               | 6.00               | 196.45                     | 2640.31                      | 663.41         | 0.5868                |
| 4:15:37                    | 8-JAN          | 832.62               | 7.00               | 196.61                     | 2729.60                      | 752.70         | 0.5382                |
| 4:16:37                    | 8-JAN          | 833.62               | 8.00               | 196.77                     | 2814.38                      | 837.48         | 0.4978                |
| 4:17:37                    | 8-JAN          | 834.62               | 9.00               | 196.92                     | 2894.98                      | 918.08         | 0.4636                |
| 4:18:37                    | 8-JAN          | 835.62               | 10.00              | 197.06                     | 2972.26                      | 995.36         | 0.4341                |
| 4:20:37                    | 8-JAN          | 837.62               | 12.00              | 197.37                     | 3117.76                      | 1140.86        | 0.3858                |
| 4:22:37                    | 8-JAN          | 839.62               | 14.00              | 197.64                     | 3255.14                      | 1278.24        | 0.3476                |
| 4:24:37                    | 8-JAN          | 841.62               | 16.00              | 197.89                     | 3384.02                      | 1407.12        | 0.3166                |
| 4:26:37                    | 8-JAN          | 843.62               | 18.00              | 198.14                     | 3506.65                      | 1529.75        | 0.2909                |
| 4:28:37                    | 8-JAN          | 845.62               | 20.00              | 198.39                     | 3623.71                      | 1646.81        | 0.2692                |
| 4:30:37                    | 8-JAN          | 847.62               | 22.00              | 198.61                     | 3736.45                      | 1759.55        | 0.2505                |
| 4:32:37                    | 8-JAN          | 849.62               | 24.00              | 198.82                     | 3844.57                      | 1867.67        | 0.2344                |
| 4:34:37                    | 8-JAN          | 851.62               | 26.00              | 199.04                     | 3948.91                      | 1972.01        | 0.2202                |
| 4:36:37                    | 8-JAN          | 853.62               | 28.00              | 199.26                     | 4050.03                      | 2073.13        | 0.2077                |
| 4:38:37                    | 8-JAN          | 855.62               | 30.00              | 199.44                     | 4147.61                      | 2170.71        | 0.1965                |
| 4:43:37                    | 8-JAN          | 860.62               | 35.00              | 199.90                     | 4385.57                      | 2408.67        | 0.1734                |
| 4:48:37                    | 8-JAN          | 865.62               | 40.00              | 200.28                     | 4601.44                      | 2624.54        | 0.1551                |
| 4:53:37                    | 8-JAN          | 870.62               | 45.00              | 200.64                     | 4795.22                      | 2818.32        | 0.1404                |
| 4:58:37                    | 8-JAN          | 875.62               | 50.00              | 200.95                     | 4965.95                      | 2989.05        | 0.1282                |
| 5:03:37                    | 8-JAN          | 880.62               | 55.00              | 201.22                     | 5111.44                      | 3134.54        | 0.1180                |
| 5:07:57                    | 8-JAN          | 884.95               | 59.33              | 201.40                     | 5217.15                      | 3240.25        | 0.1104                |

## TEST PHASE: FLOW PERIOD # 2

| TIME<br>OF DAY<br>HH:MM:SS | DATE<br>DD-MMM | ELAPSED<br>TIME, MIN | DELTA<br>TIME, MIN | BOT HOLE<br>TEMP.<br>DEG F | BOT HOLE<br>PRESSURE<br>PSIA |
|----------------------------|----------------|----------------------|--------------------|----------------------------|------------------------------|
| 5:09:37                    | 8-JAN          | 886.62               | 0.00               | 197.31                     | 1973.58                      |
| 5:24:37                    | 8-JAN          | 901.62               | 15.00              | 196.47                     | 1985.80                      |
| 5:39:37                    | 8-JAN          | 916.62               | 30.00              | 196.72                     | 1997.09                      |
| 5:40:37                    | 8-JAN          | 917.62               | 31.00              | 196.74                     | 2000.18                      |

TEST PHASE: SHUTIN PERIOD # 2

FINAL FLOW PRESSURE = 2000.18 PSIA

PRODUCING TIME = 48.17 MIN

| TIME<br>OF DAY<br>HH:MM:SS | DATE<br>DD-MMM | ELAPSED<br>TIME,MIN | DELTA<br>TIME,MIN | BOT HOLE<br>TEMP.<br>DEG F | BOT HOLE<br>PRESSURE<br>PSIA | DELTA P<br>PSI | LOG<br>HORNER<br>TIME |
|----------------------------|----------------|---------------------|-------------------|----------------------------|------------------------------|----------------|-----------------------|
| 5:40:37                    | 8-JAN          | 917.62              | 0.00              | 196.74                     | 2000.18                      | 0.00           |                       |
| 5:41:37                    | 8-JAN          | 918.62              | 1.00              | 196.90                     | 2119.06                      | 118.88         | 1.6917                |
| 5:42:37                    | 8-JAN          | 919.62              | 2.00              | 197.06                     | 2225.83                      | 225.65         | 1.3994                |
| 5:43:37                    | 8-JAN          | 920.62              | 3.00              | 197.20                     | 2329.93                      | 329.75         | 1.2319                |
| 5:44:37                    | 8-JAN          | 921.62              | 4.00              | 197.37                     | 2431.69                      | 431.51         | 1.1154                |
| 5:45:37                    | 8-JAN          | 922.62              | 5.00              | 197.53                     | 2531.54                      | 531.36         | 1.0267                |
| 5:46:37                    | 8-JAN          | 923.62              | 6.00              | 197.67                     | 2629.50                      | 629.32         | 0.9556                |
| 5:47:37                    | 8-JAN          | 924.62              | 7.00              | 197.83                     | 2725.52                      | 725.34         | 0.8966                |
| 5:48:37                    | 8-JAN          | 925.62              | 8.00              | 198.00                     | 2819.89                      | 819.71         | 0.8464                |
| 5:49:37                    | 8-JAN          | 926.62              | 9.00              | 198.16                     | 2912.57                      | 912.39         | 0.8029                |
| 5:50:37                    | 8-JAN          | 927.62              | 10.00             | 198.32                     | 3003.99                      | 1003.81        | 0.7647                |
| 5:52:37                    | 8-JAN          | 929.62              | 12.00             | 198.64                     | 3181.97                      | 1181.79        | 0.7002                |
| 5:54:37                    | 8-JAN          | 931.62              | 14.00             | 198.95                     | 3354.12                      | 1353.94        | 0.6475                |
| 5:56:37                    | 8-JAN          | 933.62              | 16.00             | 199.26                     | 3520.22                      | 1520.04        | 0.6032                |
| 5:58:37                    | 8-JAN          | 935.62              | 18.00             | 199.56                     | 3680.47                      | 1680.29        | 0.5654                |
| 6:00:37                    | 8-JAN          | 937.62              | 20.00             | 199.83                     | 3834.18                      | 1834.00        | 0.5326                |
| 6:02:37                    | 8-JAN          | 939.62              | 22.00             | 200.10                     | 3980.91                      | 1980.73        | 0.5037                |
| 6:04:37                    | 8-JAN          | 941.62              | 24.00             | 200.37                     | 4120.47                      | 2120.29        | 0.4781                |
| 6:06:37                    | 8-JAN          | 943.62              | 26.00             | 200.61                     | 4252.33                      | 2252.15        | 0.4553                |
| 6:08:37                    | 8-JAN          | 945.62              | 28.00             | 200.86                     | 4376.37                      | 2376.19        | 0.4346                |
| 6:10:37                    | 8-JAN          | 947.62              | 30.00             | 201.06                     | 4492.29                      | 2492.11        | 0.4159                |
| 6:15:37                    | 8-JAN          | 952.62              | 35.00             | 201.54                     | 4747.40                      | 2747.22        | 0.3759                |
| 6:20:37                    | 8-JAN          | 957.62              | 40.00             | 201.92                     | 4957.01                      | 2956.83        | 0.3433                |
| 6:25:37                    | 8-JAN          | 962.62              | 45.00             | 202.21                     | 5127.42                      | 3127.24        | 0.3161                |
| 6:30:37                    | 8-JAN          | 967.62              | 50.00             | 202.42                     | 5265.25                      | 3265.07        | 0.2930                |
| 6:35:37                    | 8-JAN          | 972.62              | 55.00             | 202.60                     | 5376.74                      | 3376.56        | 0.2732                |
| 6:40:37                    | 8-JAN          | 977.62              | 60.00             | 202.73                     | 5467.50                      | 3467.32        | 0.2560                |
| 6:42:57                    | 8-JAN          | 979.95              | 62.33             | 202.78                     | 5503.93                      | 3503.75        | 0.2487                |

TEST PHASE: FLOW PERIOD # 3

| TIME<br>OF DAY<br>HH:MM:SS | DATE<br>DD-MMM | ELAPSED<br>TIME,MIN | DELTA<br>TIME,MIN | BOT HOLE<br>TEMP.<br>DEG F | BOT HOLE<br>PRESSURE<br>PSIA |
|----------------------------|----------------|---------------------|-------------------|----------------------------|------------------------------|
| 6:44:27                    | 8-JAN          | 981.45              | 0.00              | 198.03                     | 1984.98                      |
| 6:59:27                    | 8-JAN          | 996.45              | 15.00             | 196.86                     | 1997.42                      |
| 7:14:27                    | 8-JAN          | 1011.45             | 30.00             | 197.08                     | 2011.21                      |
| 7:29:27                    | 8-JAN          | 1026.45             | 45.00             | 197.33                     | 2017.66                      |
| 7:44:27                    | 8-JAN          | 1041.45             | 60.00             | 197.49                     | 2024.89                      |
| 7:59:27                    | 8-JAN          | 1056.45             | 75.00             | 197.62                     | 2040.11                      |
| 8:14:27                    | 8-JAN          | 1071.45             | 90.00             | 197.69                     | 2044.40                      |
| 8:20:07                    | 8-JAN          | 1077.12             | 95.67             | 197.73                     | 2044.49                      |

TEST PHASE: SHUTIN PERIOD # 3

FINAL FLOW PRESSURE = 2044.49 PSIA

PRODUCING TIME = 143.84 MIN

| TIME<br>OF DAY<br>HH:MM:SS | DATE<br>DD-MMM | ELAPSED<br>TIME,MIN | DELTA<br>TIME,MIN | BOT HOLE<br>TEMP.<br>DEG F | BOT HOLE<br>PRESSURE<br>PSIA | DELTA P<br>PSI | LOG<br>HORNER<br>TIME |
|----------------------------|----------------|---------------------|-------------------|----------------------------|------------------------------|----------------|-----------------------|
| 8:20:07                    | 8-JAN          | 1077.12             | 0.00              | 197.73                     | 2044.49                      | 0.00           |                       |
| 8:21:07                    | 8-JAN          | 1078.12             | 1.00              | 197.87                     | 2163.22                      | 118.73         | 2.1609                |
| 8:22:07                    | 8-JAN          | 1079.12             | 2.00              | 198.03                     | 2273.80                      | 229.31         | 1.8628                |
| 8:23:07                    | 8-JAN          | 1080.12             | 3.00              | 198.18                     | 2381.92                      | 337.43         | 1.6897                |
| 8:24:07                    | 8-JAN          | 1081.12             | 4.00              | 198.34                     | 2488.30                      | 443.81         | 1.5677                |
| 8:25:07                    | 8-JAN          | 1082.12             | 5.00              | 198.50                     | 2593.17                      | 548.68         | 1.4737                |
| 8:26:07                    | 8-JAN          | 1083.12             | 6.00              | 198.66                     | 2696.46                      | 651.97         | 1.3975                |
| 8:27:07                    | 8-JAN          | 1084.12             | 7.00              | 198.82                     | 2798.12                      | 753.63         | 1.3334                |
| 8:28:07                    | 8-JAN          | 1085.12             | 8.00              | 198.99                     | 2898.53                      | 854.04         | 1.2783                |
| 8:29:07                    | 8-JAN          | 1086.12             | 9.00              | 199.17                     | 2997.68                      | 953.19         | 1.2300                |
| 8:30:07                    | 8-JAN          | 1087.12             | 10.00             | 199.33                     | 3095.55                      | 1051.06        | 1.1871                |
| 8:32:07                    | 8-JAN          | 1089.12             | 12.00             | 199.67                     | 3286.69                      | 1242.20        | 1.1135                |
| 8:34:07                    | 8-JAN          | 1091.12             | 14.00             | 200.01                     | 3471.74                      | 1427.25        | 1.0521                |
| 8:36:07                    | 8-JAN          | 1093.12             | 16.00             | 200.34                     | 3649.82                      | 1605.33        | 0.9996                |
| 8:38:07                    | 8-JAN          | 1095.12             | 18.00             | 200.68                     | 3819.93                      | 1775.44        | 0.9538                |
| 8:40:07                    | 8-JAN          | 1097.12             | 20.00             | 200.98                     | 3981.27                      | 1936.78        | 0.9134                |
| 8:42:07                    | 8-JAN          | 1099.12             | 22.00             | 201.31                     | 4133.40                      | 2088.91        | 0.8773                |
| 8:44:07                    | 8-JAN          | 1101.12             | 24.00             | 201.60                     | 4275.97                      | 2231.48        | 0.8447                |
| 8:46:07                    | 8-JAN          | 1103.12             | 26.00             | 201.88                     | 4408.74                      | 2364.25        | 0.8151                |
| 8:48:07                    | 8-JAN          | 1105.12             | 28.00             | 202.15                     | 4531.99                      | 2487.50        | 0.7880                |
| 8:50:07                    | 8-JAN          | 1107.12             | 30.00             | 202.42                     | 4645.76                      | 2601.27        | 0.7630                |
| 8:55:07                    | 8-JAN          | 1112.12             | 35.00             | 202.98                     | 4890.99                      | 2846.50        | 0.7084                |
| 9:00:07                    | 8-JAN          | 1117.12             | 40.00             | 203.47                     | 5085.90                      | 3041.41        | 0.6624                |
| 9:05:07                    | 8-JAN          | 1122.12             | 45.00             | 203.85                     | 5239.56                      | 3195.07        | 0.6229                |
| 9:10:07                    | 8-JAN          | 1127.12             | 50.00             | 204.15                     | 5359.90                      | 3315.41        | 0.5885                |
| 9:15:07                    | 8-JAN          | 1132.12             | 55.00             | 204.37                     | 5453.14                      | 3408.65        | 0.5581                |
| 9:20:07                    | 8-JAN          | 1137.12             | 60.00             | 204.51                     | 5525.59                      | 3481.10        | 0.5311                |
| 9:25:07                    | 8-JAN          | 1142.12             | 65.00             | 204.62                     | 5581.01                      | 3536.52        | 0.5069                |
| 9:30:07                    | 8-JAN          | 1147.12             | 70.00             | 204.67                     | 5623.33                      | 3578.84        | 0.4850                |
| 9:35:07                    | 8-JAN          | 1152.12             | 75.00             | 204.69                     | 5655.38                      | 3610.89        | 0.4651                |
| 9:40:07                    | 8-JAN          | 1157.12             | 80.00             | 204.69                     | 5679.64                      | 3635.15        | 0.4468                |
| 9:45:07                    | 8-JAN          | 1162.12             | 85.00             | 204.67                     | 5697.94                      | 3653.45        | 0.4301                |
| 9:49:57                    | 8-JAN          | 1166.95             | 89.83             | 204.64                     | 5711.78                      | 3667.29        | 0.4152                |



|                                                                          |                         |                                                                                   |
|--------------------------------------------------------------------------|-------------------------|-----------------------------------------------------------------------------------|
| WELL TEST INTERPRETATION REPORT #:6697609<br>CLIENT : POGO PRODUCING CO. |                         | PAGE: 12,<br>9-JAN-01                                                             |
| REGION :CSD<br>DISTRICT:HOBBS<br>BASE :MIDLAND<br>ENGINEER:GRAYSHAW/MACY | DISTRIBUTION OF REPORTS | FIELD:BOOTLEG RIDGE<br>ZONE :MORROW<br>WELL :WBR FEDERAL#5<br>LOCATION:13/22s/32e |

SCHLUMBERGER has sent copies of this report to the following:

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CURRENT  
WELLBORE DIAGRAM

|                 |                      |       |       |        |                      |          |              |
|-----------------|----------------------|-------|-------|--------|----------------------|----------|--------------|
| LEASE:          | WBR FEDERAL          | WELL: | #5    | FIELD: | BOOTLEG RIDGE MORROW | API:     | 30-015-35256 |
| LOC:            | 660' FSL & 2310' FWL | SEC:  | 13    | BLK:   |                      | REF NO:  |              |
| TWN/RNG         | T22S R32E            | GL:   | 3699' | CTY/ST | LEA/NM               | SPUD:    | 11/23/00     |
| CURRENT STATUS: | DRILLING             | KB:   | 3718' | DF:    | 3717'                | TD DATE: |              |

