

# SUPERIOR TESTERS ENTERPRISES INC.

## WELL IDENTIFICATION DATA

|                               |                               |
|-------------------------------|-------------------------------|
| COMPANY : MACH PETROLEUM INC. | WELL NAME : ZINK #1           |
| ADDRESS : P.O.BOX 35583.TULSA | LOCATION : NW-NW-SE 20-25S-9W |
| STATE & COUNTY : KANSAS.RENO  | FIELD :                       |
| ELEV.(GR) : 1701 (KB) : 1709  | TEST DATE : 11-11-1993        |

## EQUIPMENT AND HOLE DATA

|                                |                                  |
|--------------------------------|----------------------------------|
| FORMATION TESTED : MISSISSIPPI | DRILL PIPE LENGTH(ft) : 3877     |
| TEST INT. KB : 3900 to 3923    | DRILL PIPE O.D.(in) : 3.82       |
| ANCHOR LENGTH(ft) : 23         | WEIGHT PIPE LENGTH(ft) :         |
| TYPE OF TEST : Conventional    | WEIGHT PIPE ID : 2.75            |
| TOTAL DEPTH(ft-kb) : 3923      | DRILL COLLAR LENGTH(ft) :        |
| MAIN HOLE SIZE(in) : 7 7/8     | DRILL COLLAR I.D.(in) : 2.259    |
| MUD WEIGHT : 9.4               | TOP PACKER DEPTH(kb) : 3895-3900 |
| MUD VISCOSITY : 42             | BOTTOM PACKER DEPTH(kb) : 3923   |
| MUD CHLORIDES : 5000           | DUAL PACKERS :                   |
| SURFACE CHOKE : 3/4            | PACKER SIZE(in) : 6 3/4          |
| BOTTOM CHOKE(in) : 3/4         | PACKER HOLD : Yes                |
| TOOL SIZE(O.D.) : 5 1/2        | TOOL PLUG : No                   |
| TOOL JOINT SIZE(F.H.) : 4 1/2  | REVERSED OUT : No                |
| RESERVOIR TEMPERATURE(F) : 118 | TEST TICKET NUMBER : 11086       |

EXTRA EQUIPMENT : -JARS -SAFETY JOINT -EXTRA PACKER  
-STRADDLE

ELEMENT SERIAL NO. : 13561  
RANGE : 0 - 4175 CLOCK RANGE : 12 HOURS  
CAL. EQU. : 1048.18 \* Defl. + .46

## SURFACE BLOW

1st Opening : STRONG BLOW BOTTOM OF THE BUCKET IN 2 MINUTES  
2nd Opening : STRONG BLOW BOTTOM OF THE BUCKET IN 10 MINUTES

## RECOVERY

Recovered 2150 feet of GAS IN THE PIPE  
Recovered 20 feet of *clear oil*  
Recovered 50 feet of OIL CUT MUD  
Recovered 60 feet of SLIGHTLY OIL CUT MUDDY WATER  
Recovered 300 feet of WATER CHLORIDES 89000  
REMARKS :

WITNESSED BY : DAN FREDLUND

TOOL OPERATOR : PAT STEVENSON

INTERPRETATION BY : SUPERIOR TESTERS ENTERPRISES INC.

# SUPERIOR TESTERS ENTERPRISES INC.

## SUBSURFACE PRESSURE MEASUREMENTS

COMPANY : MACH PETROLEUM INC.  
 DATE OF TEST : 11-11-1993  
 DEPTH : 3915.0

WELL NAME : ZINK #1  
 LOCATION : NW-NW-SE 20-25S-9W  
 SERIAL NO. : 13561

| COMMENTS             | TIME<br>min | DEFL<br>in | PRESSURE PSIG |       |           |
|----------------------|-------------|------------|---------------|-------|-----------|
|                      |             |            | -----<br>CALC | CORR  | CORRECTED |
| TEST NO.:1           |             |            |               |       |           |
| Depth : 3915.0 ft-kb |             |            |               |       |           |
| -1ST HYDROSTATIC     | 0.0         | 1.894      | 1985.71       | -2.41 | 1983.30   |
| -4:15 1ST FLOW       | 0.0         | .076       | 80.12         | -.29  | 79.83     |
| - 4:20               | 5.0         | .076       | 80.12         | -.29  | 79.83     |
| - 4:25               | 10.0        | .076       | 80.12         | -.29  | 79.83     |
| - 4:30               | 15.0        | .079       | 83.27         | -.29  | 82.98     |
| - 4:35               | 20.0        | .084       | 88.51         | -.27  | 88.24     |
| - 4:40               | 25.0        | .091       | 95.85         | -.26  | 95.59     |
| - 4:45               | 30.0        | .097       | 102.14        | -.25  | 101.89    |
| - 4:50               | 35.0        | .105       | 110.52        | -.23  | 110.29    |
| - 4:55               | 40.0        | .114       | 119.95        | -.21  | 119.75    |
| - 5:00               | 45.0        | .121       | 127.29        | -.19  | 127.10    |
| - 5:05               | 50.0        | .129       | 135.68        | -.17  | 135.50    |
| - 5:10               | 55.0        | .137       | 144.06        | -.16  | 143.91    |
| - 5:15               | 60.0        | .142       | 149.30        | -.14  | 149.16    |
| -5:15 END FLOW       | 0.0         | .142       | 149.30        | -.14  | 149.16    |
| - 5:18               | 3.0         | .209       | 219.53        | .01   | 219.54    |
| - 5:21               | 6.0         | .461       | 483.67        | .57   | 484.24    |
| - 5:24               | 9.0         | .577       | 605.26        | .83   | 606.09    |
| - 5:27               | 12.0        | .639       | 670.25        | .97   | 671.22    |
| - 5:30               | 15.0        | .675       | 707.98        | 1.05  | 709.03    |
| - 5:33               | 18.0        | .703       | 737.33        | 1.11  | 738.45    |
| - 5:36               | 21.0        | .723       | 758.29        | 1.16  | 759.45    |
| - 5:39               | 24.0        | .738       | 774.02        | 1.19  | 775.21    |
| - 5:42               | 27.0        | .750       | 786.60        | 1.22  | 787.82    |
| - 5:45               | 30.0        | .759       | 796.03        | 1.24  | 797.27    |
| - 5:48               | 33.0        | .767       | 804.41        | 1.26  | 805.67    |
| - 5:51               | 36.0        | .774       | 811.75        | 1.27  | 813.03    |
| - 5:54               | 39.0        | .781       | 819.09        | 1.29  | 820.38    |
| - 5:57               | 42.0        | .787       | 825.38        | 1.30  | 826.68    |
| - 6:00               | 45.0        | .792       | 830.62        | 1.31  | 831.93    |
| - 6:03               | 48.0        | .796       | 834.81        | 1.32  | 836.13    |
| - 6:06               | 51.0        | .800       | 839.00        | 1.33  | 840.34    |
| - 6:09               | 54.0        | .802       | 841.10        | 1.34  | 842.44    |
| - 6:12               | 57.0        | .808       | 847.39        | 1.35  | 848.74    |
| -6:12 1ST SHUT-IN    | 0.0         | .808       | 847.39        | 1.35  | 848.74    |
| -6:12 2ND FLOW       | 0.0         | .183       | 192.28        | -.05  | 192.23    |
| - 6:17               | 5.0         | .183       | 192.28        | -.05  | 192.23    |
| - 6:22               | 10.0        | .183       | 192.28        | -.05  | 192.23    |
| - 6:27               | 15.0        | .186       | 195.42        | -.05  | 195.38    |
| - 6:32               | 20.0        | .190       | 199.62        | -.04  | 199.58    |

# SUPERIOR TESTERS ENTERPRISES INC.

## SUBSURFACE PRESSURE MEASUREMENTS

COMPANY : MACH PETROLEUM INC.  
 DATE OF TEST : 11-11-1993  
 DEPTH : 3915.0

WELL NAME : ZINK #1  
 LOCATION : NW-NW-SE 20-25S-9W  
 SERIAL NO. : 13561

| COMMENTS       | TIME<br>min | DEFL<br>in | ----- PRESSURE PSIG ----- |      |           |
|----------------|-------------|------------|---------------------------|------|-----------|
|                |             |            | CALC                      | CORR | CORRECTED |
| TEST NO.: 1    |             |            |                           |      |           |
| - 6:37         | 25.0        | .193       | 202.76                    | -.03 | 202.73    |
| - 6:42         | 30.0        | .199       | 209.05                    | -.02 | 209.03    |
| - 6:47         | 35.0        | .207       | 217.44                    | 0.00 | 217.44    |
| - 6:52         | 40.0        | .214       | 224.77                    | .02  | 224.79    |
| - 6:57         | 45.0        | .218       | 228.97                    | .03  | 228.99    |
| - 7:02         | 50.0        | .224       | 235.25                    | .04  | 235.29    |
| - 7:07         | 55.0        | .228       | 239.45                    | .05  | 239.50    |
| - 7:12         | 60.0        | .233       | 244.69                    | .06  | 244.75    |
| -7:12 END FLOW | 0.0         | .233       | 244.69                    | .06  | 244.75    |
| - 7:15         | 3.0         | .292       | 306.53                    | .19  | 306.72    |
| - 7:18         | 6.0         | .470       | 493.11                    | .59  | 493.70    |
| - 7:21         | 9.0         | .581       | 609.45                    | .84  | 610.29    |
| - 7:24         | 12.0        | .632       | 662.91                    | .95  | 663.87    |
| - 7:27         | 15.0        | .670       | 702.74                    | 1.04 | 703.78    |
| - 7:30         | 18.0        | .696       | 729.99                    | 1.10 | 731.09    |
| - 7:33         | 21.0        | .715       | 749.91                    | 1.14 | 751.05    |
| - 7:36         | 24.0        | .728       | 763.54                    | 1.17 | 764.71    |
| - 7:39         | 27.0        | .739       | 775.07                    | 1.19 | 776.26    |
| - 7:42         | 30.0        | .749       | 785.55                    | 1.22 | 786.76    |
| - 7:45         | 33.0        | .755       | 791.84                    | 1.23 | 793.07    |
| - 7:48         | 36.0        | .761       | 798.13                    | 1.24 | 799.37    |
| - 7:51         | 39.0        | .767       | 804.41                    | 1.26 | 805.67    |
| - 7:54         | 42.0        | .773       | 810.70                    | 1.27 | 811.97    |
| - 7:57         | 45.0        | .777       | 814.90                    | 1.28 | 816.18    |
| - 8:00         | 48.0        | .781       | 819.09                    | 1.29 | 820.38    |
| - 8:03         | 51.0        | .784       | 822.23                    | 1.30 | 823.53    |
| - 8:06         | 54.0        | .788       | 826.43                    | 1.30 | 827.73    |
| - 8:09         | 57.0        | .791       | 829.57                    | 1.31 | 830.88    |
| - 8:12         | 60.0        | .794       | 832.72                    | 1.32 | 834.03    |
| - 8:15         | 63.0        | .796       | 834.81                    | 1.32 | 836.13    |
| - 8:18         | 66.0        | .798       | 836.91                    | 1.33 | 838.24    |
| - 8:21         | 69.0        | .801       | 840.05                    | 1.33 | 841.39    |
| - 8:24         | 72.0        | .803       | 842.15                    | 1.34 | 843.49    |
| - 8:27         | 75.0        | .805       | 844.25                    | 1.34 | 845.59    |
| - 8:30         | 78.0        | .806       | 845.29                    | 1.35 | 846.64    |
| - 8:33         | 81.0        | .808       | 847.39                    | 1.35 | 848.74    |
| - 8:36         | 84.0        | .810       | 849.49                    | 1.35 | 850.84    |
| - 8:39         | 87.0        | .811       | 850.53                    | 1.36 | 851.89    |
| - 8:42         | 90.0        | .812       | 851.58                    | 1.36 | 852.94    |
| - 8:45         | 93.0        | .814       | 853.68                    | 1.36 | 855.04    |

# SUPERIOR TESTERS ENTERPRISES INC.

## SUBSURFACE PRESSURE MEASUREMENTS

COMPANY : MACH PETROLEUM INC.  
 DATE OF TEST : 11-11-1993  
 DEPTH : 3915.0

WELL NAME : ZINK #1  
 LOCATION : NW-NW-SE 20-25S-9W  
 SERIAL NO. : 13561

| COMMENTS    | TIME<br>min | DEFL<br>in | -----<br>CALC | PRESSURE PSIG<br>CORR | -----<br>CORRECTED |
|-------------|-------------|------------|---------------|-----------------------|--------------------|
| TEST NO.: 1 |             |            |               |                       |                    |
| - 8:48      | 96.0        | .814       | 853.68        | 1.36                  | 855.04             |
| - 8:51      | 99.0        | .816       | 855.78        | 1.37                  | 857.14             |
| - 8:54      | 102.0       | .817       | 856.82        | 1.37                  | 858.19             |
| - 8:57      | 105.0       | .818       | 857.87        | 1.37                  | 859.24             |
| - 9:00      | 108.0       | .820       | 859.97        | 1.38                  | 861.34             |
| - 9:03      | 111.0       | .821       | 861.02        | 1.38                  | 862.39             |
| - 9:06      | 114.0       | .822       | 862.06        | 1.38                  | 863.45             |
| - 9:09      | 117.0       | .824       | 864.16        | 1.39                  | 865.55             |
| - 9:12      | 120.0       | .824       | 864.16        | 1.39                  | 865.55             |
| - 9:15      | 123.0       | .825       | 865.21        | 1.39                  | 866.60             |
| - 9:18      | 126.0       | .826       | 866.26        | 1.39                  | 867.65             |
| - 9:21      | 129.0       | .827       | 867.31        | 1.39                  | 868.70             |
| - 9:24      | 132.0       | .828       | 868.35        | 1.39                  | 869.75             |
| - 9:27      | 135.0       | .829       | 869.40        | 1.40                  | 870.80             |
| - 9:30      | 138.0       | .830       | 870.45        | 1.40                  | 871.85             |
| - 9:33      | 141.0       | .831       | 871.50        | 1.40                  | 872.90             |
| - 9:36      | 144.0       | .831       | 871.50        | 1.40                  | 872.90             |
| - 9:39      | 147.0       | .832       | 872.55        | 1.40                  | 873.95             |
| - 9:42      | 150.0       | .832       | 872.55        | 1.40                  | 873.95             |
| - 9:45      | 153.0       | .833       | 873.59        | 1.41                  | 875.00             |
| - 9:48      | 156.0       | .834       | 874.64        | 1.41                  | 876.05             |
| - 9:51      | 159.0       | .835       | 875.69        | 1.41                  | 877.10             |
| - 9:54      | 162.0       | .835       | 875.69        | 1.41                  | 877.10             |
| - 9:57      | 165.0       | .837       | 877.79        | 1.41                  | 879.20             |
| - 10:00     | 168.0       | .837       | 877.79        | 1.41                  | 879.20             |
| - 10:03     | 171.0       | .838       | 878.84        | 1.42                  | 880.25             |
| - 10:06     | 174.0       | .838       | 878.84        | 1.42                  | 880.25             |
| - 10:09     | 177.0       | .839       | 879.88        | 1.42                  | 881.30             |
| - 10:12     | 180.0       | .840       | 880.93        | 1.42                  | 882.35             |
| - 10:15     | 183.0       | .841       | 881.98        | 1.42                  | 883.40             |
| - 10:18     | 186.0       | .841       | 881.98        | 1.42                  | 883.40             |
| - 10:21     | 189.0       | .842       | 883.03        | 1.43                  | 884.45             |
| - 10:24     | 192.0       | .842       | 883.03        | 1.43                  | 884.45             |
| - 10:27     | 195.0       | .842       | 883.03        | 1.43                  | 884.45             |
| - 10:30     | 198.0       | .843       | 884.08        | 1.43                  | 885.50             |
| - 10:33     | 201.0       | .843       | 884.08        | 1.43                  | 885.50             |
| - 10:36     | 204.0       | .843       | 884.08        | 1.43                  | 885.50             |
| - 10:39     | 207.0       | .843       | 884.08        | 1.43                  | 885.50             |
| - 10:42     | 210.0       | .843       | 884.08        | 1.43                  | 885.50             |
| - 10:45     | 213.0       | .844       | 885.12        | 1.43                  | 886.55             |

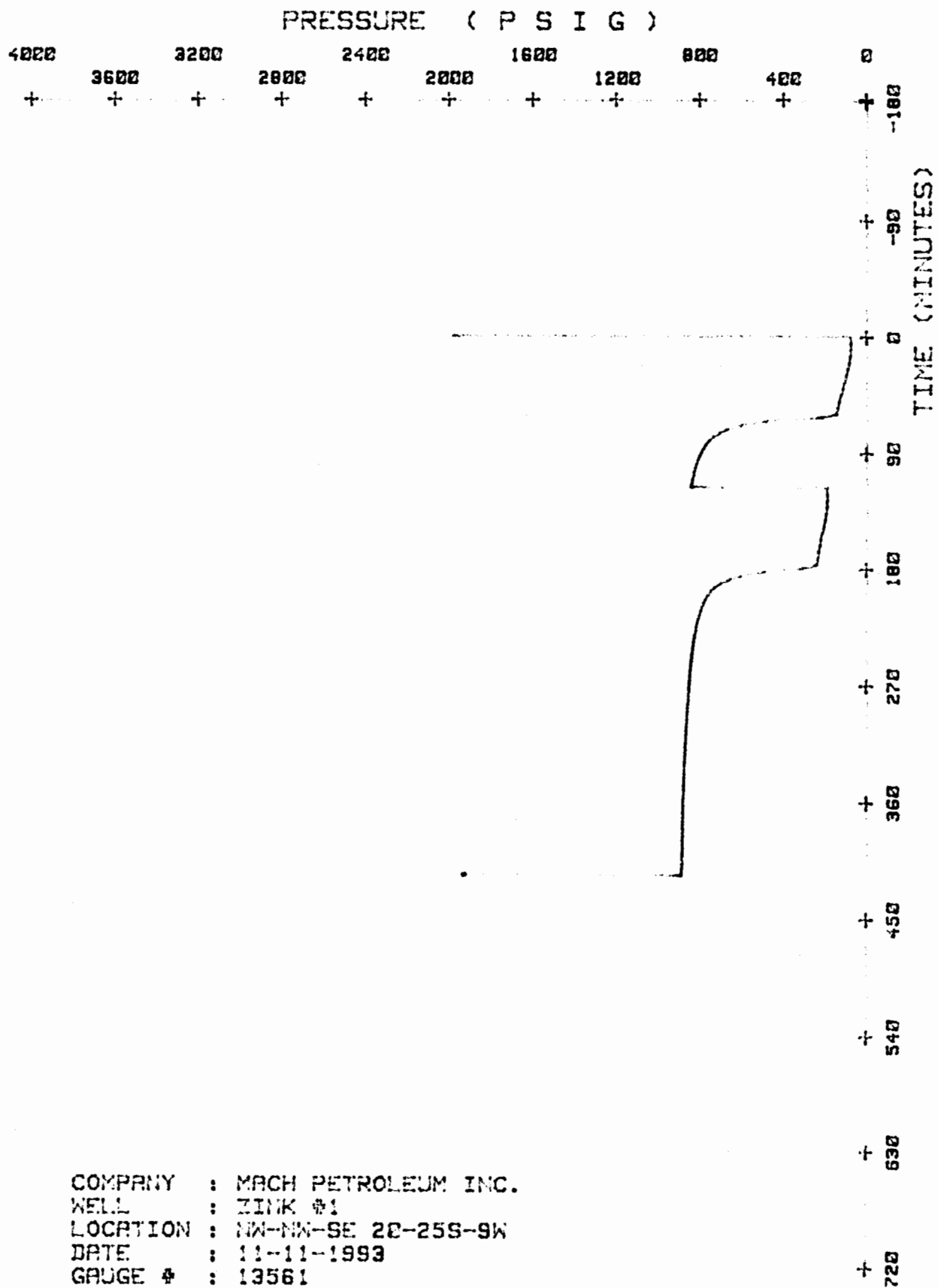
# SUPERIOR TESTERS ENTERPRISES INC.

## SUBSURFACE PRESSURE MEASUREMENTS

COMPANY : MACH PETROLEUM INC.  
 DATE OF TEST : 11-11-1993  
 DEPTH : 3915.0

WELL NAME : ZINK #1  
 LOCATION : NW-NW-SE 20-25S-9W  
 SERIAL NO. : 13561

| COMMENTS           | TIME<br>min | DEFL<br>in | PRESSURE PSIG |       |           |
|--------------------|-------------|------------|---------------|-------|-----------|
|                    |             |            | CALC          | CORR  | CORRECTED |
| TEST NO.:1         |             |            |               |       |           |
| - 10:48            | 216.0       | .844       | 885.12        | 1.43  | 886.55    |
| - 10:51            | 219.0       | .844       | 885.12        | 1.43  | 886.55    |
| - 10:54            | 222.0       | .844       | 885.12        | 1.43  | 886.55    |
| - 10:57            | 225.0       | .845       | 886.17        | 1.43  | 887.61    |
| - 11:00            | 228.0       | .846       | 887.22        | 1.43  | 888.66    |
| - 11:03            | 231.0       | .846       | 887.22        | 1.43  | 888.66    |
| - 11:06            | 234.0       | .846       | 887.22        | 1.43  | 888.66    |
| - 11:09            | 237.0       | .847       | 888.27        | 1.44  | 889.71    |
| - 11:12            | 240.0       | .849       | 890.37        | 1.44  | 891.81    |
| -11:12 2ND SHUT-IN | 0.0         | .849       | 890.37        | 1.44  | 891.81    |
| - 11:12            | 0.0         | 1.843      | 1932.25       | -2.19 | 1930.06   |
| -2ND HYDROSTATIC   | 0.0         | 1.843      | 1932.25       | -2.19 | 1930.06   |



GAUGE # : 13561

DATE : 11-11-1993

LOCATION : NW-NW-SE 20-25S-SW

$P_{wf}$  149

\* Initial Shut In Extrapolated Pressure  $p^* = 960$

$\frac{1.2}{T}$

1

1

2000

1800

1600

1400

1200

1000

800

600

400

200

0

PRESSURE (CORRECTED, PSI)

+

+

+

+

+

+

+

+

+

+

+

+

+

+

+

+

100

10

1

TIME (MINUTES) : (T+dt)/dt - (Semi log scale)

# SUPERIOR TESTERS ENTERPRISES INC.

## HORNER ANALYSIS

COMPANY : MACH PETROLEUM INC.  
 WELL NAME : ZINK #1  
 LOCATION : NW-NW-SE 20-25S-9W  
 STATE & COUNTY : KANSAS.REND  
 DATE OF TEST : 11-11-1993  
 TEST INT. KB : 3900 to 3923  
 TOTAL INTERVAL (ft) K.B. : 23.00  
 ELEV.(GR) : 1701 (KB) : 1709  
 FIELD :

ELEMENT SERIAL NO. : 13561  
 LATEST CALIBRATION :

| COMMENTS          | TIME<br>min  | (T+dt)/dt<br>min | -----<br>PRESSURES<br>CORR PSIG | ----- |
|-------------------|--------------|------------------|---------------------------------|-------|
| Refer. depth :    | 3915.0 ft-kb |                  |                                 |       |
| -5:15 END FLOW    | 0.00         | 0.00             | 149.16                          |       |
|                   | 3.00         | 21.00            | 219.54                          |       |
|                   | 6.00         | 11.00            | 484.24                          |       |
|                   | 9.00         | 7.67             | 606.09                          |       |
|                   | 12.00        | 6.00             | 671.22                          |       |
|                   | 15.00        | 5.00             | 709.03                          |       |
|                   | 18.00        | 4.33             | 738.45                          |       |
|                   | 21.00        | 3.86             | 759.45                          |       |
|                   | 24.00        | 3.50             | 775.21                          |       |
|                   | 27.00        | 3.22             | 787.82                          |       |
|                   | 30.00        | 3.00             | 797.27                          |       |
|                   | 33.00        | 2.82             | 805.67                          |       |
|                   | 36.00        | 2.67             | 813.03                          |       |
|                   | 39.00        | 2.54             | 820.38                          |       |
|                   | 42.00        | 2.43             | 826.68                          |       |
|                   | 45.00        | 2.33             | 831.93                          |       |
|                   | 48.00        | 2.25             | 836.13                          |       |
|                   | 51.00        | 2.18             | 840.34                          |       |
|                   | 54.00        | 2.11             | 842.44                          |       |
|                   | 57.00        | 2.05             | 848.74                          |       |
| -6:12 1ST SHUT-IN | 0.00         | 0.00             | 848.74                          |       |

INTERPRETATION BY : SUPERIOR TESTERS ENTERPRISES. INC.

# SUPERIOR TESTERS ENTERPRISES INC.

## D A T A   S U M M A R Y

|                               |                               |
|-------------------------------|-------------------------------|
| COMPANY : MACH PETROLEUM INC. | WELL NAME : ZINK #1           |
| DATE OF TEST : 11-11-1993     | LOCATION : NW-NW-SE 20-25S-9W |
| DST. NO : 1                   | SHUT-IN PERIOD : 1            |

### INTERPRETIVE DATA            (OIL)

|                                                |        |
|------------------------------------------------|--------|
| EXTRAPOLATED RESERVOIR PRESSURE (psi): .....   | 960.00 |
| Slope of Build-up Curve (psi/log cycle): ..... | 347.54 |
| Effective Producing Time (min): .....          | 60.00  |

INTERPRETATION BY : SUPERIOR TESTERS ENTERPRISES, INC.

LOCATION : NW-NW-SE 20-25S-9W

DATE : 11-11-1993

GAUGE # : 13561

2000

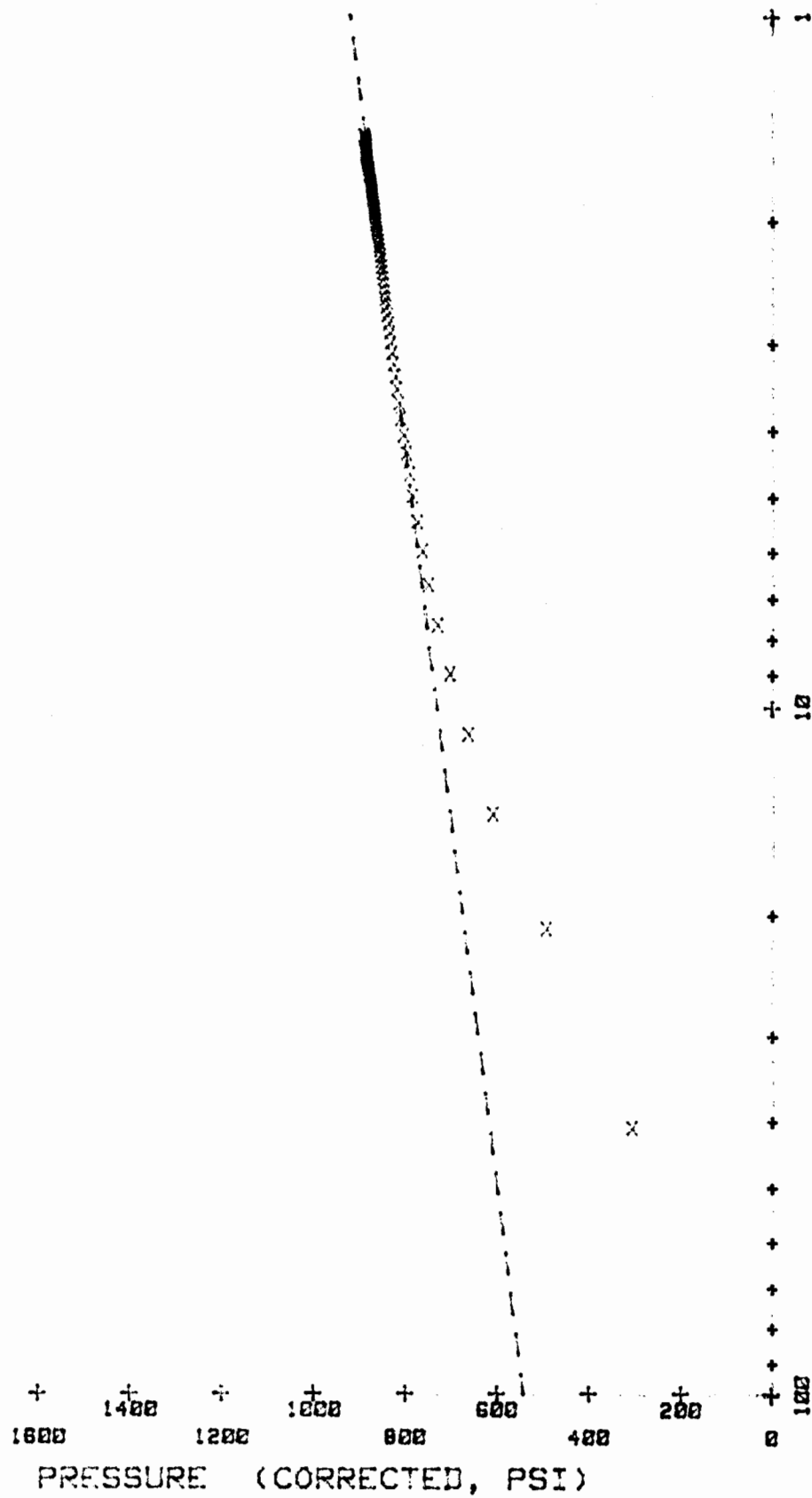
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一、

1822

**Pwf 243**

X Final Shut In Extrapolated Pressure ps = 923



# SUPERIOR TESTERS ENTERPRISES INC.

## HORNER ANALYSIS

COMPANY : MACH PETROLEUM INC.  
 WELL NAME : ZINK #1  
 LOCATION : NW-NW-SE 20-25S-9W  
 STATE & COUNTY : KANSAS.REND  
 DATE OF TEST : 11-11-1993  
 TEST INT. KB : 3900 to 3923  
 TOTAL INTERVAL (ft) K.B. : 23.00  
 ELEV.(GR) : 1701 (KB) : 1709  
 FIELD :

ELEMENT SERIAL NO. : 13561  
 LATEST CALIBRATION :

| COMMENTS                    | TIME<br>min | (T+dt)/dt<br>min | ----- PRESSURES -----<br>CORR PSIG |
|-----------------------------|-------------|------------------|------------------------------------|
| Refer. depth : 3915.0 ft-kb |             |                  |                                    |
| -7:12 END FLOW              | 0.00        | 0.00             | 244.75                             |
|                             | 3.00        | 41.00            | 306.72                             |
|                             | 6.00        | 21.00            | 493.70                             |
|                             | 9.00        | 14.33            | 610.29                             |
|                             | 12.00       | 11.00            | 663.87                             |
|                             | 15.00       | 9.00             | 703.78                             |
|                             | 18.00       | 7.67             | 731.09                             |
|                             | 21.00       | 6.71             | 751.05                             |
|                             | 24.00       | 6.00             | 764.71                             |
|                             | 27.00       | 5.44             | 776.26                             |
|                             | 30.00       | 5.00             | 786.76                             |
|                             | 33.00       | 4.64             | 793.07                             |
|                             | 36.00       | 4.33             | 799.37                             |
|                             | 39.00       | 4.08             | 805.67                             |
|                             | 42.00       | 3.86             | 811.97                             |
|                             | 45.00       | 3.67             | 816.18                             |
|                             | 48.00       | 3.50             | 820.38                             |
|                             | 51.00       | 3.35             | 823.53                             |
|                             | 54.00       | 3.22             | 827.73                             |
|                             | 57.00       | 3.11             | 830.88                             |
|                             | 60.00       | 3.00             | 834.03                             |
|                             | 63.00       | 2.90             | 836.13                             |
|                             | 66.00       | 2.82             | 838.24                             |
|                             | 69.00       | 2.74             | 841.39                             |
|                             | 72.00       | 2.67             | 843.49                             |
|                             | 75.00       | 2.60             | 845.59                             |
|                             | 78.00       | 2.54             | 846.64                             |
|                             | 81.00       | 2.48             | 848.74                             |
|                             | 84.00       | 2.43             | 850.84                             |
|                             | 87.00       | 2.38             | 851.89                             |

INTERPRETATION BY : SUPERIOR TESTERS ENTERPRISES. INC.

# SUPERIOR TESTERS ENTERPRISES INC.

## HORNER ANALYSIS

COMPANY : MACH PETROLEUM INC.  
 DATE OF TEST : 11-11-1993  
 REFERENCE DEPTH : 3915.0

WELL NAME : ZINK #1  
 LOCATION : NW-NW-SE 20-25S-9W  
 SERIAL NO. : 13561

| COMMENTS | TIME<br>min | (T+dt)/dt<br>min | ---- PRESSURES ----<br>CORR PSIG |
|----------|-------------|------------------|----------------------------------|
|          | 90.00       | 2.33             | 852.94                           |
|          | 93.00       | 2.29             | 855.04                           |
|          | 96.00       | 2.25             | 855.04                           |
|          | 99.00       | 2.21             | 857.14                           |
|          | 102.00      | 2.18             | 858.19                           |
|          | 105.00      | 2.14             | 859.24                           |
|          | 108.00      | 2.11             | 861.34                           |
|          | 111.00      | 2.08             | 862.39                           |
|          | 114.00      | 2.05             | 863.45                           |
|          | 117.00      | 2.03             | 865.55                           |
|          | 120.00      | 2.00             | 865.55                           |
|          | 123.00      | 1.98             | 866.60                           |
|          | 126.00      | 1.95             | 867.65                           |
|          | 129.00      | 1.93             | 868.70                           |
|          | 132.00      | 1.91             | 869.75                           |
|          | 135.00      | 1.89             | 870.80                           |
|          | 138.00      | 1.87             | 871.85                           |
|          | 141.00      | 1.85             | 872.90                           |
|          | 144.00      | 1.83             | 872.90                           |
|          | 147.00      | 1.82             | 873.95                           |
|          | 150.00      | 1.80             | 873.95                           |
|          | 153.00      | 1.78             | 875.00                           |
|          | 156.00      | 1.77             | 876.05                           |
|          | 159.00      | 1.75             | 877.10                           |
|          | 162.00      | 1.74             | 877.10                           |
|          | 165.00      | 1.73             | 879.20                           |
|          | 168.00      | 1.71             | 879.20                           |
|          | 171.00      | 1.70             | 880.25                           |
|          | 174.00      | 1.69             | 880.25                           |
|          | 177.00      | 1.68             | 881.30                           |
|          | 180.00      | 1.67             | 882.35                           |
|          | 183.00      | 1.66             | 883.40                           |
|          | 186.00      | 1.65             | 883.40                           |
|          | 189.00      | 1.63             | 884.45                           |
|          | 192.00      | 1.63             | 884.45                           |
|          | 195.00      | 1.62             | 884.45                           |
|          | 198.00      | 1.61             | 885.50                           |
|          | 201.00      | 1.60             | 885.50                           |
|          | 204.00      | 1.59             | 885.50                           |
|          | 207.00      | 1.58             | 885.50                           |

# SUPERIOR TESTERS ENTERPRISES INC.

## HORNER ANALYSIS

COMPANY : MACH PETROLEUM INC.  
 DATE OF TEST : 11-11-1993  
 REFERENCE DEPTH : 3915.0

WELL NAME : ZINK #1  
 LOCATION : NW-NW-SE 20-25S-9W  
 SERIAL NO. : 13561

| COMMENTS           | TIME<br>min | (T+dt)/dt<br>min | -----<br>PRESSURES<br>CORR PSIG | ----- |
|--------------------|-------------|------------------|---------------------------------|-------|
|                    | 210.00      | 1.57             | 885.50                          |       |
|                    | 213.00      | 1.56             | 886.55                          |       |
|                    | 216.00      | 1.56             | 886.55                          |       |
|                    | 219.00      | 1.55             | 886.55                          |       |
|                    | 222.00      | 1.54             | 886.55                          |       |
|                    | 225.00      | 1.53             | 887.61                          |       |
|                    | 228.00      | 1.53             | 888.66                          |       |
|                    | 231.00      | 1.52             | 888.66                          |       |
|                    | 234.00      | 1.51             | 888.66                          |       |
|                    | 237.00      | 1.51             | 889.71                          |       |
|                    | 240.00      | 1.50             | 891.81                          |       |
| -11:12 2ND SHUT-IN | 0.00        | 0.00             | 891.81                          |       |

# SUPERIOR TESTERS ENTERPRISES INC.

## DATA SUMMARY

|                               |                               |
|-------------------------------|-------------------------------|
| COMPANY : MACH PETROLEUM INC. | WELL NAME : ZINK #1           |
| DATE OF TEST : 11-11-1993     | LOCATION : NW-NW-SE 20-25S-9W |
| DST. NO : 1                   | SHUT-IN PERIOD : 2            |

### INTERPRETIVE DATA (OIL)

#### TRANSMISSIBILITY

|                       |      |
|-----------------------|------|
| Oil (md.ft/cp): ..... | 5.10 |
| Gas (md.ft/cp): ..... | 0.00 |

#### EFFECTIVE PERMEABILITY

|                 |      |
|-----------------|------|
| Oil (md): ..... | .42  |
| Gas (md): ..... | 0.00 |

|                               |      |
|-------------------------------|------|
| TOTAL MOBILITY (md/cp): ..... | 5.26 |
|-------------------------------|------|

|                                                   |          |
|---------------------------------------------------|----------|
| TOTAL COMPRESSIBILITY (psi <sup>-1</sup> ): ..... | 6.94E-06 |
|---------------------------------------------------|----------|

|                               |     |
|-------------------------------|-----|
| ESTIMATED DAMAGE RATIO: ..... | .76 |
|-------------------------------|-----|

|                                |     |
|--------------------------------|-----|
| CALCULATED DAMAGE RATIO: ..... | .77 |
|--------------------------------|-----|

|                                                       |          |
|-------------------------------------------------------|----------|
| Reservoir Temperature (F): .....                      | 118.00   |
| Formation Porosity : .....                            | .18      |
| Formation Thickness (ft): .....                       | 10.00    |
| Wellbore Radius (in): .....                           | 3.94     |
| Reservoir Compressibility (psi <sup>-1</sup> ): ..... | 4.80E-07 |
| Calculated Skin Factor : .....                        | -1.24    |

|                                               |      |
|-----------------------------------------------|------|
| PRODUCTION WITH DAMAGE REMOVED (bbl/D): ..... | 5.93 |
|-----------------------------------------------|------|

|                                                           |              |
|-----------------------------------------------------------|--------------|
| <b>WATER PRODUCTION WITH DAMAGE REMOVED (bbl/D):.....</b> | <b>55.04</b> |
|-----------------------------------------------------------|--------------|

|                                     |     |
|-------------------------------------|-----|
| PRODUCTIVITY INDEX (bbl/psi): ..... | .01 |
|-------------------------------------|-----|

|                                  |        |
|----------------------------------|--------|
| Final Flow Pressure (psi): ..... | 245.00 |
|----------------------------------|--------|

|                                                 |       |
|-------------------------------------------------|-------|
| APPROXIMATE RADIUS OF INVESTIGATION (ft): ..... | 93.69 |
|-------------------------------------------------|-------|

|                                 |        |
|---------------------------------|--------|
| Total Flowing Time (min): ..... | 120.00 |
|---------------------------------|--------|

|                                              |        |
|----------------------------------------------|--------|
| EXTRAPOLATED RESERVOIR PRESSURE (psi): ..... | 923.00 |
|----------------------------------------------|--------|

|                                                |        |
|------------------------------------------------|--------|
| Slope of Build-up Curve (psi/log cycle): ..... | 189.08 |
|------------------------------------------------|--------|

|                                       |        |
|---------------------------------------|--------|
| Effective Producing Time (min): ..... | 120.00 |
|---------------------------------------|--------|

INTERPRETATION BY : SUPERIOR TESTERS ENTERPRISES, INC.

# Superior Testers Enterprises, Inc.

R.R. 3, Box 295B, Great Bend, Kansas 67530

(316) 792-6902

Date 11 11 93 Location NW NW SE 20 25 9 Elevation 1709<sup>KB</sup> County RENO

Company MAC K PETROLEUM, INC Number of Copies       

Charts Mailed to PO BOX 35583 TULSA OKLAHOMA 74157

Drilling Contractor DUKE DRILLING CO

Length Drill Pipe 3877 I.D. Drill Pipe 380 Tool Joint Size 4 1/2 x H

Length Weight Pipe NONE I.D. Weight Pipe NONE Tool Joint Size NONE

Length Drill Collars NONE I.D. Drill Collars NONE Tool Joint Size NONE

Top Packer Depth 3895 3900 Bottom Packer Depth 3923 Number of Packers Three Packer Size       

TESTED FROM 3900 TO 3923 ANCHOR LENGTH 23 TOTAL DEPTH 4065 Hole Size 6 1/2

LEASE & WELL NO. 21NK 1 FORMATION TESTED MISS TEST NO. 1

Mud Weight 9.4 Viscosity 42 Water Loss 96 Chlorides - Pits 5,000 D.S.T. 89,000

Maximum Temp. 118 °F Initial Hydrostatic Pressure (A) 1989 P.S.I. Final Hydrostatic Pressure (H) 1968 P.S.I.

Tool Open I.F.P. from 415 m to 515 m 60 min

Tool Closed I.C.I.P. from 515 m to 615 m 60 min

Tool Open F.F.P. from 615 m to 715 m 60 min

Tool Closed F.C.I.P. from 715 m to 1115 m 240 min

Initial Blow STRONG BLOW OFF BOTTOM 2"

Final Blow Weak Building slowly to bottom 10"

Total Feet Recovered 130 oil cut mud 300' WATER, 2150 GAS in PIP Gravity of Oil        Corrected

20 Feet of CLEAN OIL % Gas 100 % Oil        % Mud        % Water

50 Feet of OIL CUT MUD % Gas 12 % Oil 20 % Mud 58 % Water

60 Feet of MUDPY WATER % Gas 8 % Oil 62 % Mud 30 % Water

300 Feet of WATER % Gas        % Oil        % Mud 100 % Water

       Feet of        % Gas        % Oil        % Mud        % Water

       Feet of        % Gas        % Oil        % Mud        % Water

       Feet of        % Gas        % Oil        % Mud        % Water

       Feet of        % Gas        % Oil        % Mud        % Water

       Feet of        % Gas        % Oil        % Mud        % Water

       Feet of        % Gas        % Oil        % Mud        % Water

Remarks       

Extra Equipment - Jars YES Safety Joint YES Extra Packer YES Straddle YES Hook Wall NONE

Top Recorder No. 13561 Clock No. 13858 Depth 3915 Cir. Sub        Sampler NONE

Bottom Recorder No. 3875 Clock No. 13844 Depth 3818 Insurance NA

Price of Job       

Tool Operator PAT STEVENSON

Approved By       

No 11086

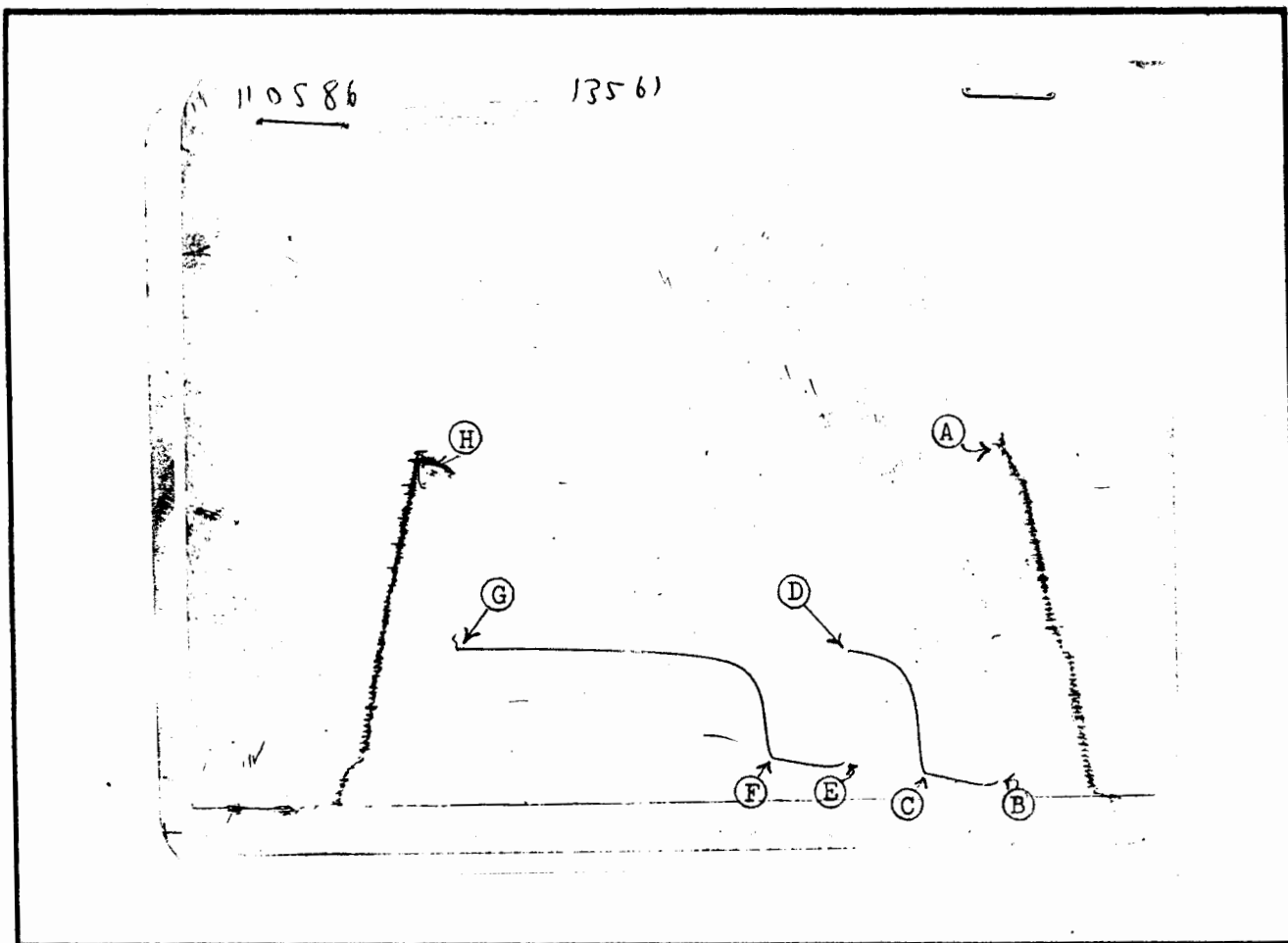
|          |            |               |            |        |
|----------|------------|---------------|------------|--------|
| from [B] | <u>63</u>  | P.S.I. to [C] | <u>136</u> | P.S.I. |
| [D]      | <u>850</u> |               |            | P.S.I. |
| from [E] | <u>199</u> | P.S.I. to [F] | <u>231</u> | P.S.I. |
| [G]      | <u>871</u> |               |            | P.S.I. |

**KCC**

JUL 5 1994

Superior Testers Enterprises, Inc. shall not be liable for damage of any kind to the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test. Tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.

API # 15-155-21301



This is an actual photograph of recorder chart.

| POINT                                  | PRESSURE         |                   | P.S.I. |
|----------------------------------------|------------------|-------------------|--------|
|                                        | FIELD<br>READING | OFFICE<br>READING |        |
| (A) Initial Hydrostatic Mud .....      | 1989             | 1983              | P.S.I. |
| (B) First Initial Flow Pressure .....  | 63               | 79                | P.S.I. |
| (C) First Final Flow Pressure .....    | 136              | 149               | P.S.I. |
| (D) Initial Closed-in Pressure .....   | 850              | 848               | P.S.I. |
| (E) Second Initial Flow Pressure ..... | 199              | 192               | P.S.I. |
| (F) Second Final Flow Pressure .....   | 231              | 244               | P.S.I. |
| (G) Final Closed-in Pressure .....     | 871              | 891               | P.S.I. |
| (H) Final Hydrostatic Mud .....        | 1968             | 1930              | P.S.I. |