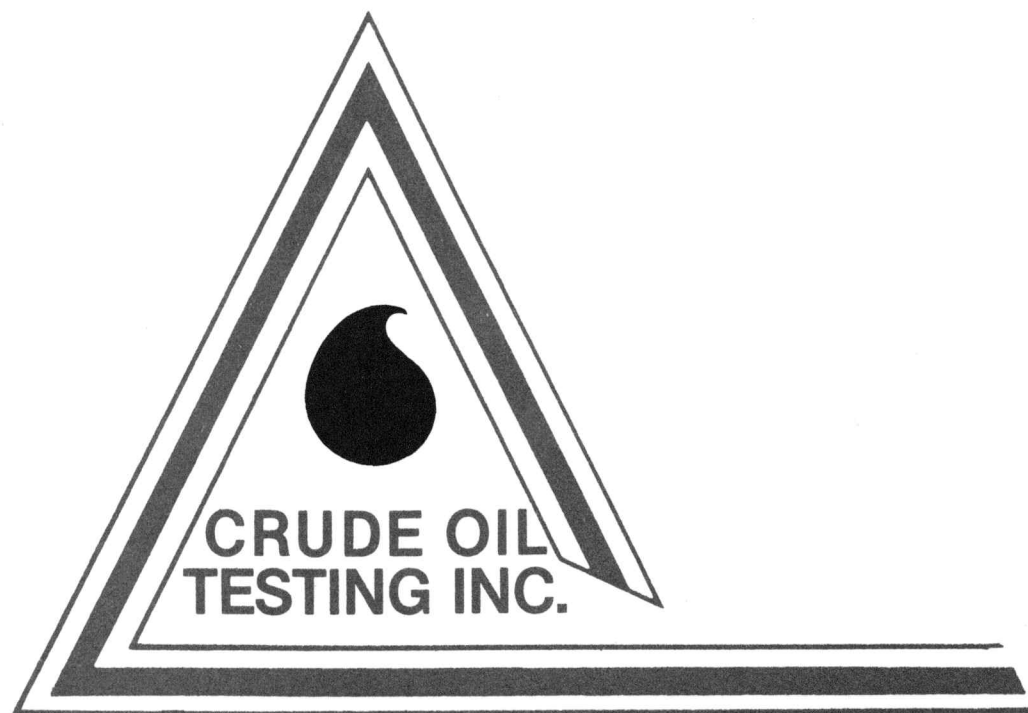


15-171-20312

9-19-33W



# FORMATION TESTING SERVICE REPORT

# CRUDE OIL TESTING, INC.

DATE 11/13/85

TEST TICKET NO. 5642

Company: A. Scott Ritchie  
 Company Address: 125 N. Market #950 Wichita KS 67202  
 Location: Sec. 9 Twp. 19S Range 22W Co. Scott State KS  
 Well Name & Number: H.C. Miller #1 33 Code E4

|                     |                 |         |                     |       |          |
|---------------------|-----------------|---------|---------------------|-------|----------|
| ENGINEERING<br>DATA | Elevation       | 2964 KB | Drill Pipe Length   | 2801  | ID 3.8 " |
|                     | Mud Viscosity   | 39      | Weight Pipe Length  | 603   | ID 2.76" |
|                     | Mud Weight      | 9.4     | Drill Collar Length | 244   | ID 2.25" |
|                     | Water Loss      | 11.2    | Top Packer Depth    | 3645  |          |
|                     | Type of Mud     | Starch  | Bottom Packer Depth | 3650  |          |
|                     | Anchor Length   | 120     | Tool Joint Size     | 4.5   | FH       |
|                     | Hole Size       | 7 7/8   | Test Tool Size      | 5 1/2 |          |
|                     | Casing Size     | 8 5/8   | Packer Size         | 6 3/4 |          |
|                     | Surface Choke   | 3/4     | Reversed Out        | No    |          |
|                     | Bottom Choke    | 3/4     | Recorder #          | 11084 |          |
|                     | Extra Equipment |         | None                |       |          |

REMARKS DST #1  
 Mud pit sample 35000 P.P.M.  
 Read bottom chart please

|                                                   |                                                    |                            |
|---------------------------------------------------|----------------------------------------------------|----------------------------|
| FORMATION                                         | Upper Topeka Zone                                  | Test Type Conventional     |
|                                                   | Interval 3650 To 3770                              | Total Depth 3770           |
|                                                   | Open 30 Shut In 30                                 | Open 30 Shut In 30         |
|                                                   | Packer(s) Set 09:28AM                              | Started Off Bottom 11:30AM |
|                                                   | Blow 1st Opening Strong blow off bottom in 13 min. |                            |
| 2nd Opening Weak increasing blow to 6 in. in bkt. |                                                    |                            |

RECOVERY Total Feet 540  
 Recovered 540 feet of Oil cut muddy water

|                        |                       |     |    |                      |       |                                 |       |
|------------------------|-----------------------|-----|----|----------------------|-------|---------------------------------|-------|
| CALCULATED<br>RECOVERY | Gas                   | Oil | 54 | Water                | 286.5 | Mud                             | 199.5 |
|                        | Gravity (Oil)         |     |    | Test Water Chlorides |       | 28,000 PPM                      |       |
|                        | Test Area Temperature |     |    | 116F                 |       | Mud System Chlorides 34,000 PPM |       |

|          | FIELD<br>READING                 | OFFICE<br>READING |          |
|----------|----------------------------------|-------------------|----------|
| PRESSURE | (A) Initial Hydrostatic Mud      | 1895              | 1865 PSI |
|          | (B) First Initial Flow Pressure  | 87                | 87 PSI   |
|          | (C) First Final Flow Pressure    | 206               | 211 PSI  |
|          | (D) Initial Closed-In Pressure   | 1004              | 995 PSI  |
|          | (E) Second Initial Flow Pressure | 249               | 240 PSI  |
|          | (F) Second Final Flow Pressure   | 303               | 315 PSI  |
|          | (G) Final Closed-In Pressure     | 972               | 972 PSI  |
|          | (H) Final Hydrostatic Mud        | 1873              | 1833 PSI |

# CRUDE OIL TESTING INC.

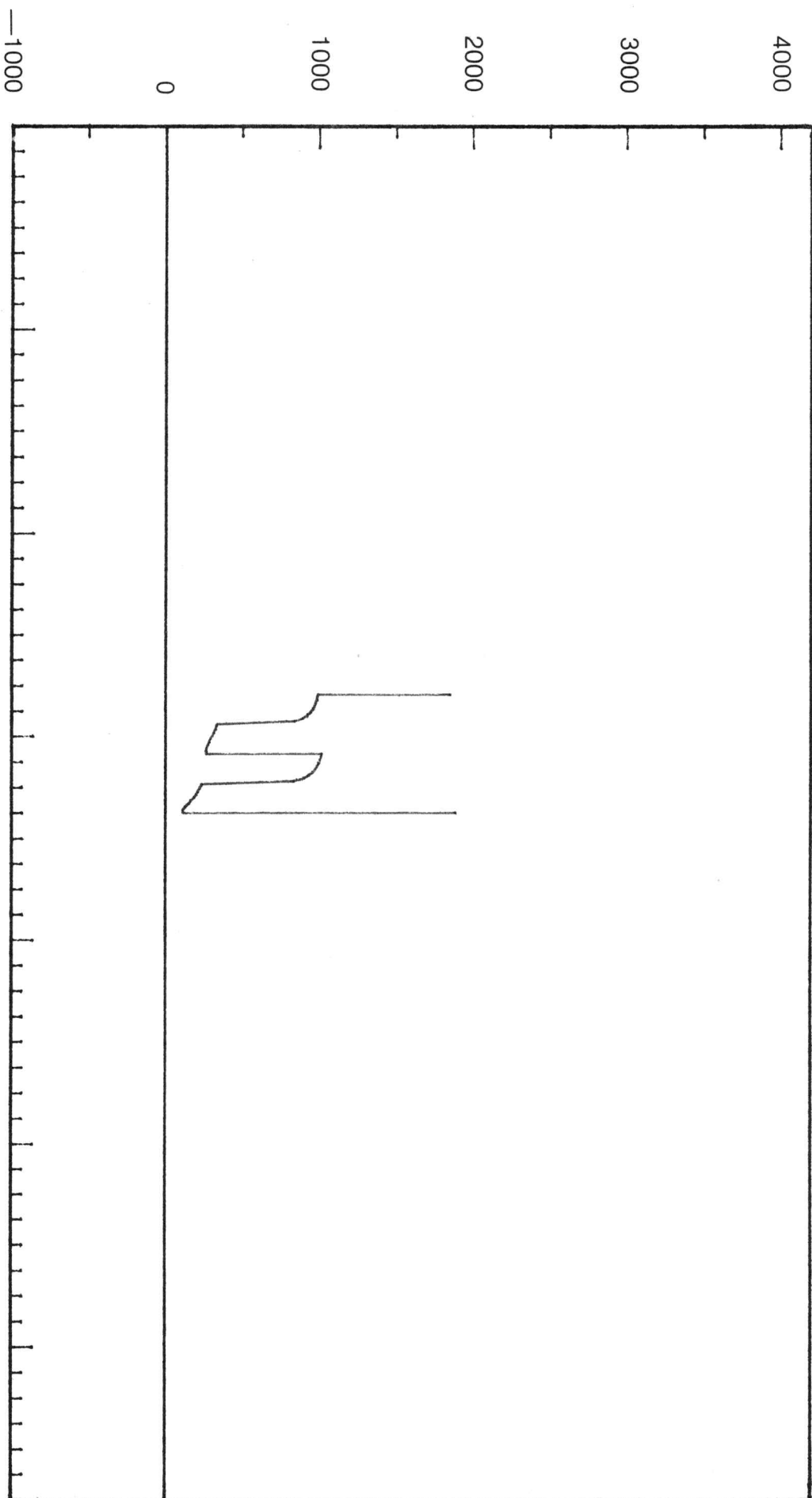
FOR: A. Scott Ritchie

TEST 5642

DST 1

11/13/85

PRESSURE



—675

—475

—275

—75

125

325

525

TIME (MINUTES)

# PRESSURE BREAKDOWN

TEST TICKET NO. 5642

DST Number: 1 Recorder Number: 11084 Clock Number: 23934

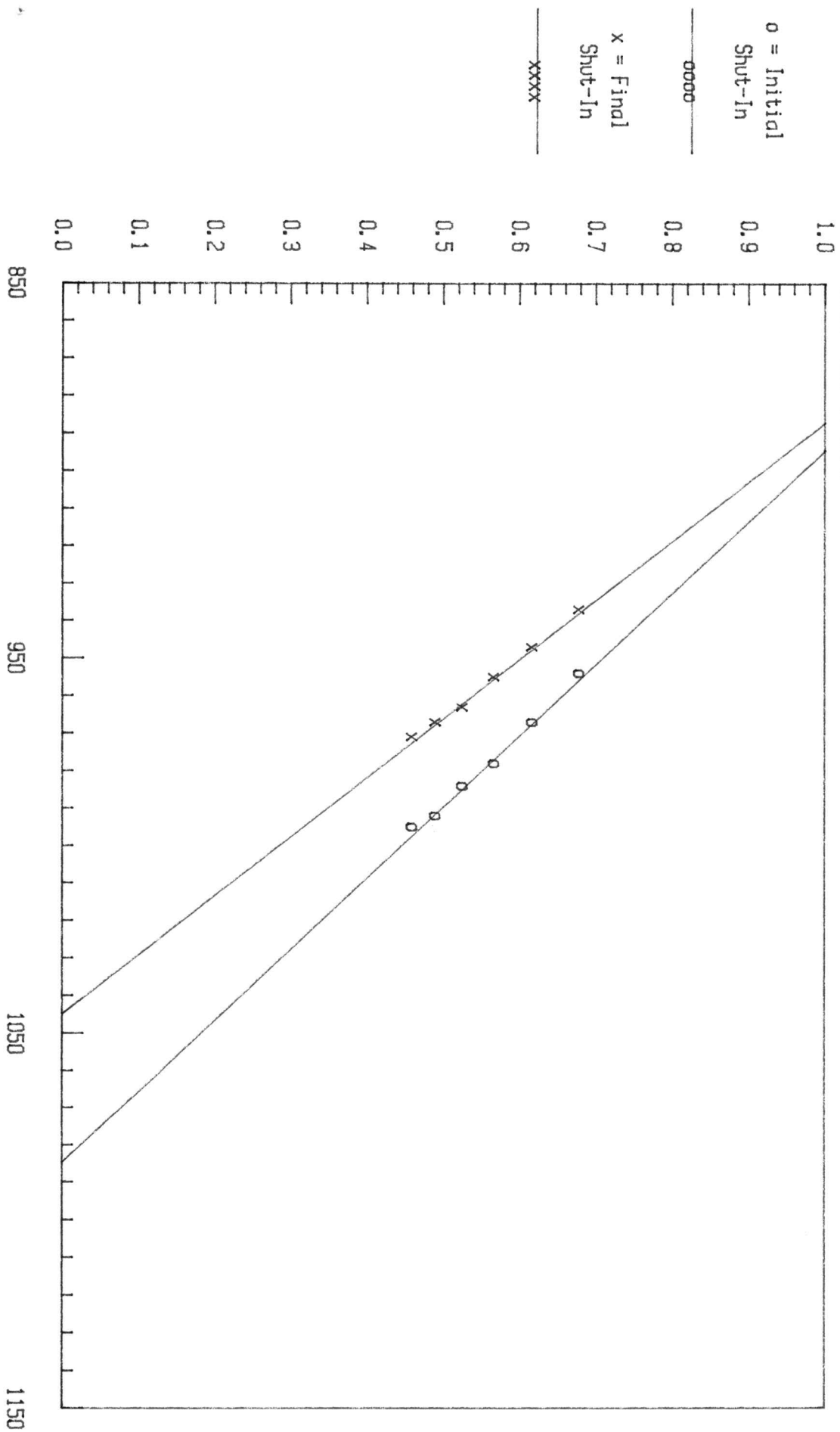
| First Flow<br>Pressure | Initial<br>Shut-In | Second Flow<br>Pressure | Final<br>Shut-In |
|------------------------|--------------------|-------------------------|------------------|
| Mins. Press.           | Mins. Press.       | Mins. Press.            | Mins. Press.     |
| 0 87                   | 0 210              | 0 240                   | 0 314            |
| 3 91                   | 3 814              | 3 241                   | 3 819            |
| 6 106                  | 6 881              | 6 243                   | 6 875            |
| 9 127                  | 9 913              | 9 253                   | 9 904            |
| 12 141                 | 12 938             | 12 261                  | 12 923           |
| 15 162                 | 15 954             | 15 269                  | 15 937           |
| 18 175                 | 18 967             | 18 281                  | 18 947           |
| 21 186                 | 21 978             | 21 291                  | 21 955           |
| 24 197                 | 24 984             | 24 301                  | 24 963           |
| 27 209                 | 27 992             | 27 307                  | 27 967           |
| 28 210                 | 30 995             | 29 314                  | 30 971           |

# CRUDE OIL TESTING INC TEST 5642 DST 1

FOR: A. Scott Ritchie

11/13/85

TIME: LOG (T+t)/t



# ZONE EVALUATION - Page 1

DST NUMBER 1

TEST TICKET NO. 5642

Company: A. Scott Ritchie

Date: 11/13/85

| Drill Collar Feet | ID    | Weight Feet | Pipe ID | Drill Pipe Feet | Pipe ID | Average ID | Gals/ Foot |
|-------------------|-------|-------------|---------|-----------------|---------|------------|------------|
| 54                | 2.250 | 0           | 2.760   | 0               | 3.800   | 2.2500     | 0.207      |

Bbls Recovered/Test = 0.2795 Est Bbls/Day = 7.0621 T = 57

| PRESS. TIME | Initial Shut-In |         |         |             |
|-------------|-----------------|---------|---------|-------------|
|             | T/t             | (T+t)/t | LOG T/t | LOG (T+t)/t |
| 995 30      | 1.900           | 2.900   | 0.27875 | 0.46240     |
| 992 27      | 2.111           | 3.111   | 0.32451 | 0.49292     |
| 984 24      | 2.375           | 3.375   | 0.37566 | 0.52827     |
| 978 21      | 2.714           | 3.714   | 0.43366 | 0.56988     |
| 967 18      | 3.167           | 4.167   | 0.50060 | 0.61979     |
| 954 15      | 3.800           | 4.800   | 0.57978 | 0.68124     |

| Press. Time | Final Shut-In |         |         |             |
|-------------|---------------|---------|---------|-------------|
|             | T/t           | (T+t)/t | Log T/t | Log (T+t)/t |
| 971 30      | 1.900         | 2.900   | 0.27875 | 0.46240     |
| 967 27      | 2.111         | 3.111   | 0.32451 | 0.49292     |
| 963 24      | 2.375         | 3.375   | 0.37566 | 0.52827     |
| 955 21      | 2.714         | 3.714   | 0.43366 | 0.56988     |
| 947 18      | 3.167         | 4.167   | 0.50060 | 0.61979     |
| 937 15      | 3.800         | 4.800   | 0.57978 | 0.68124     |

| IP(0)  | IP(1) | Time Option is Log (T+t)/t |       |       |       | DR    | Q1     | Pts |
|--------|-------|----------------------------|-------|-------|-------|-------|--------|-----|
|        |       | FP(0)                      | FP(1) | M     | Kh/B  |       |        |     |
| 1072.2 | 905.2 | 1027.2                     | 905.7 | 121.4 | 9.456 | 1.939 | 13.692 | 1,3 |
| 1073.7 | 905.1 | 1026.9                     | 905.7 | 121.2 | 9.473 | 1.940 | 13.704 | 1-3 |
| 1072.1 | 906.8 | 1039.2                     | 892.8 | 146.4 | 7.843 | 1.779 | 12.561 | 1-4 |
| 1079.4 | 899.5 | 1043.0                     | 888.8 | 154.2 | 7.447 | 1.739 | 12.283 | 1-5 |
| 1084.7 | 894.4 | 1044.9                     | 887.1 | 157.8 | 7.275 | 1.722 | 12.163 | 1-6 |

## Graph Data For Points

| Initial |          | Final  |          |
|---------|----------|--------|----------|
| Time    | Pressure | Time   | Pressure |
| 0.4623  | 995      | 0.4623 | 971      |
| 0.4929  | 992      | 0.4929 | 967      |
| 0.5282  | 984      | 0.5282 | 963      |
| 0.5698  | 978      | 0.5698 | 955      |
| 0.6197  | 967      | 0.6197 | 947      |
| 0.6812  | 954      | 0.6812 | 937      |

## Graph Data For Lines

|   |         |   |         |
|---|---------|---|---------|
| 0 | 1084.70 | 0 | 1044.91 |
| 1 | 894.45  | 1 | 887.07  |

ZONE EVALUATION - Page 2

DST Number 1

TEST TICKET NO. 5642

Company: A. Scott Ritchie

Date: 11/13/85

P.S.I. Slope Cycle (From Log  $\frac{T + t}{t}$ )

$$M = G_0 - G_1 \quad 157.84$$

Damage Ratio:

$$DR = .183 \frac{P_s - P_f}{M} \quad 1.72$$

Effective Pay:

$$\frac{K_h}{B} = \frac{162.6 Q}{M} \quad 7.27 \text{ Md. Ft.}$$

Theoretical Potential With  
Damage Removed (for DR greater than 1):

$$Q_1 = Q DR \quad 12.16 \text{ Bbls/Day}$$

Production:

$$Q = \frac{1440 R}{T} \quad 0.28 \text{ Bbls/Hour}$$

$$7.06 \text{ Bbls/Day}$$

These calculations are based upon information furnished by you and taken from drill stem test pressure charts and are furnished for your information. In furnishing such calculations and evaluations, Crude Oil Testing Inc. is merely expressing an opinion. You agree that Crude Oil Testing Inc. makes no warranty as to the accuracy of such calculations or opinions, and Crude Oil Testing Inc. shall not be liable for any loss or damage, whether due to negligence or otherwise in connection with such calculations and opinions.

## EQUIPMENT DATA

## TOOL SEQUENCE REPORT

DST Number: 1

TEST TICKET NO. 5642

WELL NAME: H.C. Miller #1

WELL LOCATION: 9-19S-22W

| Tool #      | Tool              | Length  | I.D.  | O.D. |
|-------------|-------------------|---------|-------|------|
| 1           | Drill Pipe - 4.5" | 2801.00 | 3.826 | 4.50 |
| 3           | Weight Pipe       | 603.00  | 2.760 | 4.50 |
| 4           | Drill Collar - 6" | 244.00  | 2.250 | 6.00 |
| 8           | Circulating Sub   | 1.00    | 3.000 | 5.00 |
| 7           | Changeover Sub    | 2.00    | 3.000 | 5.00 |
| 9           | Shut-In Tool      | 5.45    | 0.870 | 5.00 |
| 10          | Hydraulic Tool    | 5.60    | 1.000 | 5.00 |
| 14          | Packer            | 5.35    | 1.530 | 6.75 |
| 14          | Packer            | 5.35    | 1.530 | 6.75 |
| 6           | Anchor            | 116.00  | 2.750 | 5.00 |
| 15          | Recorder Carrier  | 1.00    |       | 5.00 |
| 16          | Bull Plug         | 2.00    |       | 5.00 |
| Total Depth |                   | 3791.75 |       |      |

# CALCULATED RECOVERY ANALYSIS

DST Number: 1

TEST TICKET NO. 5642

| Sample # | Total Feet | ***** Gas % | ***** Feet  | ***** Oil % | ***** Feet   | ***** Mud % | ***** Feet    |
|----------|------------|-------------|-------------|-------------|--------------|-------------|---------------|
| 1        | 30         | 0.00        | 0.00        | 25.00       | 7.50         | 45.00       | 13.50         |
| 2        | 30         | 0.00        | 0.00        | 15.00       | 4.50         | 60.00       | 18.00         |
| 3        | 60         | 0.00        | 0.00        | 20.00       | 12.00        | 40.00       | 24.00         |
| 4        | 60         | 0.00        | 0.00        | 15.00       | 9.00         | 50.00       | 30.00         |
| 5        | 60         | 0.00        | 0.00        | 10.00       | 6.00         | 40.00       | 24.00         |
| 6        | 120        | 0.00        | 0.00        | 5.00        | 6.00         | 30.00       | 36.00         |
| 7        | 120        | 0.00        | 0.00        | 5.00        | 6.00         | 30.00       | 36.00         |
| 8        | 60         | 0.00        | 0.00        | 5.00        | 3.00         | 30.00       | 18.00         |
| TOTAL    | <u>540</u> | 0.00        | <u>0.00</u> | 10.00       | <u>54.00</u> | 36.94       | <u>199.50</u> |

| Sample # | ***** Water % | *** Feet      | Chlorides (PPM) | Resistivity (Ohms) | Temperature (Deg) |
|----------|---------------|---------------|-----------------|--------------------|-------------------|
| 1        | 30.00         | 9.00          | 28,000          |                    |                   |
| 2        | 25.00         | 7.50          |                 |                    |                   |
| 3        | 40.00         | 24.00         |                 |                    |                   |
| 4        | 35.00         | 21.00         |                 |                    |                   |
| 5        | 50.00         | 30.00         |                 |                    |                   |
| 6        | 65.00         | 78.00         |                 |                    |                   |
| 7        | 65.00         | 78.00         |                 |                    |                   |
| 8        | 65.00         | 39.00         |                 |                    |                   |
| TOTAL    | 53.06         | <u>286.50</u> |                 |                    |                   |

# CRUDE OIL TESTING, INC.

DATE 11/13/85

TEST TICKET NO. 5643

Company: A. Scott Ritchie  
 Company Address: 125 N. Market #950 Wichita KS 67202  
 Location: Sec. 9 Twp. 19S Range 22W Co. Scott State KS  
 Well Name & Number: H.C.Miller #1 Code E4

|                     |                 |         |                     |        |          |
|---------------------|-----------------|---------|---------------------|--------|----------|
| ENGINEERING<br>DATA | Elevation       | 2964 KB | Drill Pipe Length   | 2803   | ID 3.8 " |
|                     | Mud Viscosity   | 36      | Weight Pipe Length  | 570    | ID 2.76" |
|                     | Mud Weight      | 9.4     | Drill Collar Length | 244    | ID 2.25" |
|                     | Water Loss      | 10.2    | Top Packer Depth    | 3598   |          |
|                     | Type of Mud     | Starch  | Bottom Packer Depth | 3638   |          |
|                     | Anchor Length   | 40      | Tool Joint Size     | 4.5 FH |          |
|                     | Hole Size       | 7 7/8   | Test Tool Size      | 5 1/2  |          |
|                     | Casing Size     | 8 5/8   | Packer Size         | 6 3/4  |          |
|                     | Surface Choke   | 3/4     | Reversed Out        | No     |          |
|                     | Bottom Choke    | 3/4     | Recorder #          | 11084  |          |
|                     | Extra Equipment |         | None                |        |          |

REMARKS  
 DST #2  
 Tore up top packer no charge  
 Slid 15ft.to bottom  
 Had trouble pulling off bottom 3 stands

|           |                                                      |                            |
|-----------|------------------------------------------------------|----------------------------|
| FORMATION | Upper Topeka Zone                                    | Test Type Straddle         |
|           | Interval 3598 To 3638                                | Total Depth 3638           |
|           | Open 30 Shut In 30                                   | Open 30 Shut In 30         |
|           | Packer(s) Set 04:28PM                                | Started Off Bottom 06:30PM |
|           | Blow 1st Opening 6in. surging blow, bled off no blow |                            |

2nd Opening No blow, flushed tool, nice surge

RECOVERY  
 Total Feet 180  
 Recovered 180 feet of Drilling mud

|                        |                       |      |                      |        |     |
|------------------------|-----------------------|------|----------------------|--------|-----|
| CALCULATED<br>RECOVERY | Gas                   | Oil  | Water                | Mud    | 180 |
|                        | Gravity (Oil)         |      | Test Water Chlorides |        | PPM |
|                        | Test Area Temperature | 116F | Mud System Chlorides | 18,000 | PPM |

| PRESSURE |                              | FIELD   | OFFICE  |     |
|----------|------------------------------|---------|---------|-----|
|          |                              | READING | READING |     |
| (A)      | Initial Hydrostatic Mud      | 1832    | 1794    | PSI |
| (B)      | First Initial Flow Pressure  | 99      | 96      | PSI |
| (C)      | First Final Flow Pressure    | 99      | 101     | PSI |
| (D)      | Initial Closed-In Pressure   | 905     | 895     | PSI |
| (E)      | Second Initial Flow Pressure | 99      | 101     | PSI |
| (F)      | Second Final Flow Pressure   | 99      | 102     | PSI |
| (G)      | Final Closed-In Pressure     | 861     | 861     | PSI |
| (H)      | Final Hydrostatic Mud        | 1810    | 1774    | PSI |

# CRUDE OIL TESTING INC.

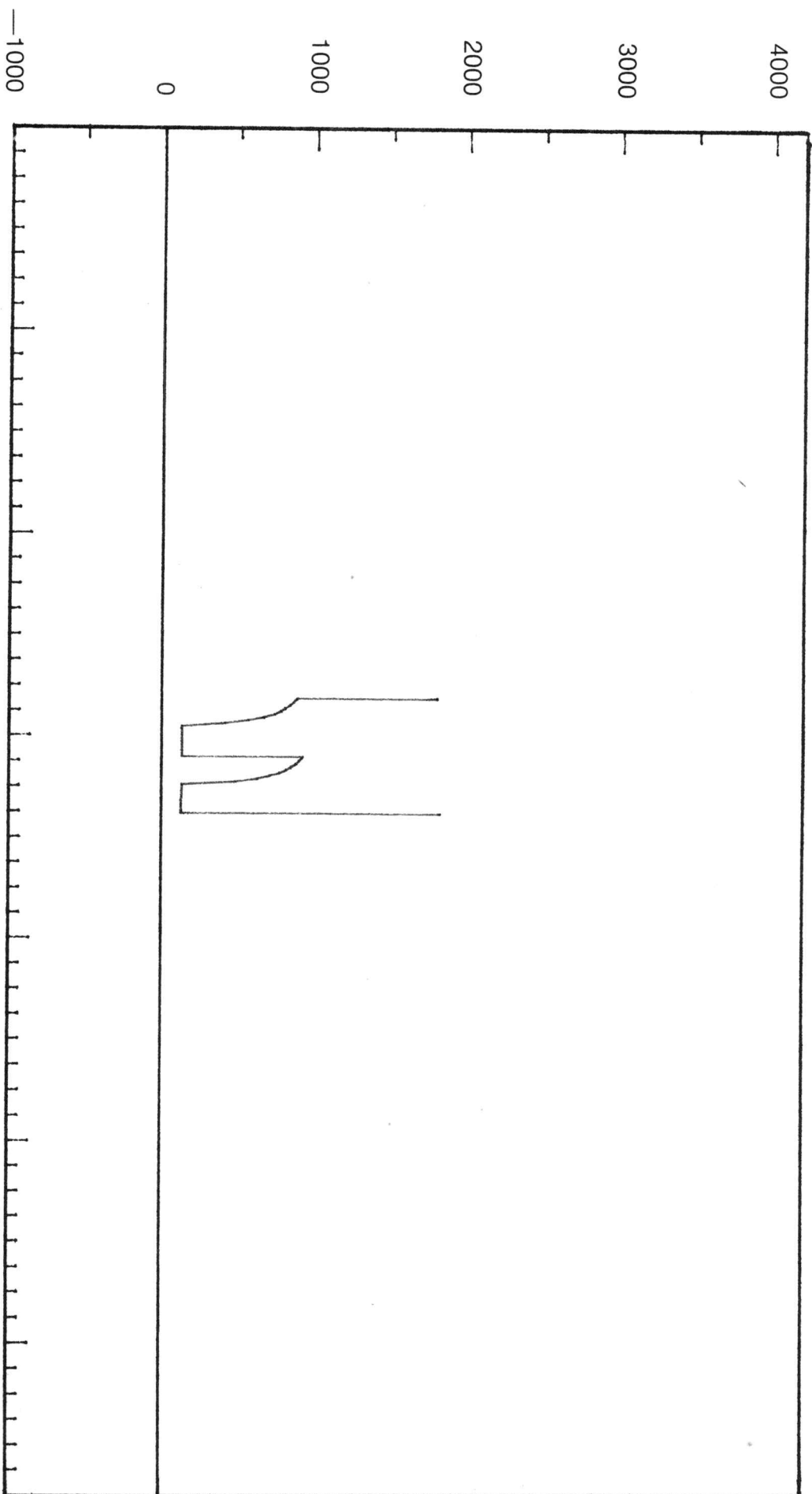
FOR: A. Scott Ritchie

TEST 5643

DST 2

11/13/85

PRESSURE



TIME (MINUTES)

# PRESSURE BREAKDOWN

TEST TICKET NO. 5643

DST Number: 2 Recorder Number: 11084 Clock Number: 23934

| First Flow<br>Pressure | Initial<br>Shut-In | Second Flow<br>Pressure | Final<br>Shut-In |
|------------------------|--------------------|-------------------------|------------------|
| Mins. Press.           | Mins. Press.       | Mins. Press.            | Mins. Press.     |
| 0 95                   | 0 101              | 0 101                   | 0 102            |
| 3 96                   | 3 453              | 3 101                   | 3 384            |
| 6 96                   | 6 596              | 6 101                   | 6 539            |
| 9 96                   | 9 679              | 9 101                   | 9 641            |
| 12 96                  | 12 745             | 12 101                  | 12 710           |
| 15 99                  | 15 789             | 15 101                  | 15 750           |
| 18 99                  | 18 821             | 18 101                  | 18 780           |
| 21 99                  | 21 852             | 21 101                  | 21 811           |
| 24 100                 | 24 873             | 24 101                  | 24 837           |
| 27 101                 | 27 889             | 27 101                  | 27 855           |
| 28 101                 | 28 894             | 30 102                  | 28 861           |

## EQUIPMENT DATA

## TOOL SEQUENCE REPORT

DST Number: 2

TEST TICKET NO. 5643

WELL NAME: H.C.Miller #1

WELL LOCATION: 9-19S-22W

| Tool # | Tool              | Length  | I.D.  | O.D. |
|--------|-------------------|---------|-------|------|
| 1      | Drill Pipe - 4.5" | 2803.00 | 3.826 | 4.50 |
| 3      | Weight Pipe       | 570.00  | 2.760 | 4.50 |
| 4      | Drill Collar - 6" | 244.00  | 2.250 | 6.00 |
| 8      | Circulating Sub   | 1.00    | 3.000 | 5.00 |
| 9      | Shut-In Tool      | 5.45    | 0.870 | 5.00 |
| 10     | Hydraulic Tool    | 5.60    | 1.000 | 5.00 |
| 14     | Packer            | 5.35    | 1.530 | 6.75 |
| 6      | Anchor            | 40.00   | 2.750 | 5.00 |
| 15     | Recorder Carrier  | 1.00    |       | 5.00 |
| 14     | Packer            | 5.35    | 1.530 | 6.75 |
| 6      | Anchor            | 128.00  | 2.750 | 5.00 |
| 16     | Bull Plug         | 2.00    |       | 5.00 |
|        | Total Depth       | 3810.75 |       |      |

# CALCULATED RECOVERY ANALYSIS

DST Number: 2

TEST TICKET NO. 5643

| Sample # | Total Feet | ***** Gas % | ***** Feet  | ***** Oil % | ***** Feet  | ***** Mud % | ***** Feet    |
|----------|------------|-------------|-------------|-------------|-------------|-------------|---------------|
| 1        | 180        | 0.00        | 0.00        | 0.00        | 0.00        | 100.00      | 180.00        |
| TOTAL    | <u>180</u> | 0.00        | <u>0.00</u> | 0.00        | <u>0.00</u> | 100.00      | <u>180.00</u> |

| Sample # | **** Water % | *** Feet    | Chlorides (PPM) | Resistivity (Ohms) | Temperature (Deg) |
|----------|--------------|-------------|-----------------|--------------------|-------------------|
| 1        | 0.00         | 0.00        |                 |                    |                   |
| TOTAL    | 0.00         | <u>0.00</u> |                 |                    |                   |

# CRUDE OIL TESTING, INC.

DATE 11/14/85

TEST TICKET NO. 5644

Company: A. Scott Ritchie  
 Company Address: 125 N. Market #950 Wichita KS 67202  
 Location: Sec. 9 Twp. 19S Range 22W Co. Scott State KS  
 Well Name & Number: H.C.Miller #1 Code E4

|                  |                    |                          |          |
|------------------|--------------------|--------------------------|----------|
| ENGINEERING DATA | Elevation 2964 KB  | Drill Pipe Length 2864   | ID 3.8 " |
|                  | Mud Viscosity 42   | Weight Pipe Length 699   | ID 2.76" |
|                  | Mud Weight 9.3     | Drill Collar Length 244  | ID 2.25" |
|                  | Water Loss 10.2    | Top Packer Depth 3790    |          |
|                  | Type of Mud Starch | Bottom Packer Depth 3795 |          |
|                  | Anchor Length 39   | Tool Joint Size 4.5 FH   |          |
|                  | Hole Size 7 7/8    | Test Tool Size 5 1/2     |          |
|                  | Casing Size 8 5/8  | Packer Size 6 3/4        |          |
|                  | Surface Choke 3/4  | Reversed Out No          |          |
|                  | Bottom Choke 3/4   | Recorder # 11084         |          |
|                  | Extra Equipment    | None                     |          |

REMARKS DST #3  
 Mud pit sample 20000 PPM

FORMATION Lower Topeka Zone Test Type Conventional  
 Interval 3795 To 3834 Total Depth 3834  
 Open 30 Shut In 30 Open 30 Shut In 30  
 Packer(s) Set 08:13AM Started Off Bottom 10:15AM  
 Blow 1st Opening Strong blow off bottom in 10 min.  
 2nd Opening Fair increasing blow to 7 in.in bkt.

RECOVERY Total Feet 690  
 Recovered 690 feet of Oil spotted muddy water (sulfur water)

CALCULATED RECOVERY Gas Oil Water 514.5 Mud 175.5  
 Gravity (Oil) Test Water Chlorides 35,000 PPM  
 Test Area Temperature 116F Mud System Chlorides 18,000 PPM

|                                      | FIELD READING | OFFICE READING |     |
|--------------------------------------|---------------|----------------|-----|
| PRESSURE (A) Initial Hydrostatic Mud | 1918          | 1912           | PSI |
| (B) First Initial Flow Pressure      | 99            | 98             | PSI |
| (C) First Final Flow Pressure        | 219           | 216            | PSI |
| (D) Initial Closed-In Pressure       | 1002          | 997            | PSI |
| (E) Second Initial Flow Pressure     | 285           | 274            | PSI |
| (F) Second Final Flow Pressure       | 340           | 347            | PSI |
| (G) Final Closed-In Pressure         | 1002          | 997            | PSI |
| (H) Final Hydrostatic Mud            | 1897          | 1902           | PSI |

# CRUDE OIL TESTING INC.

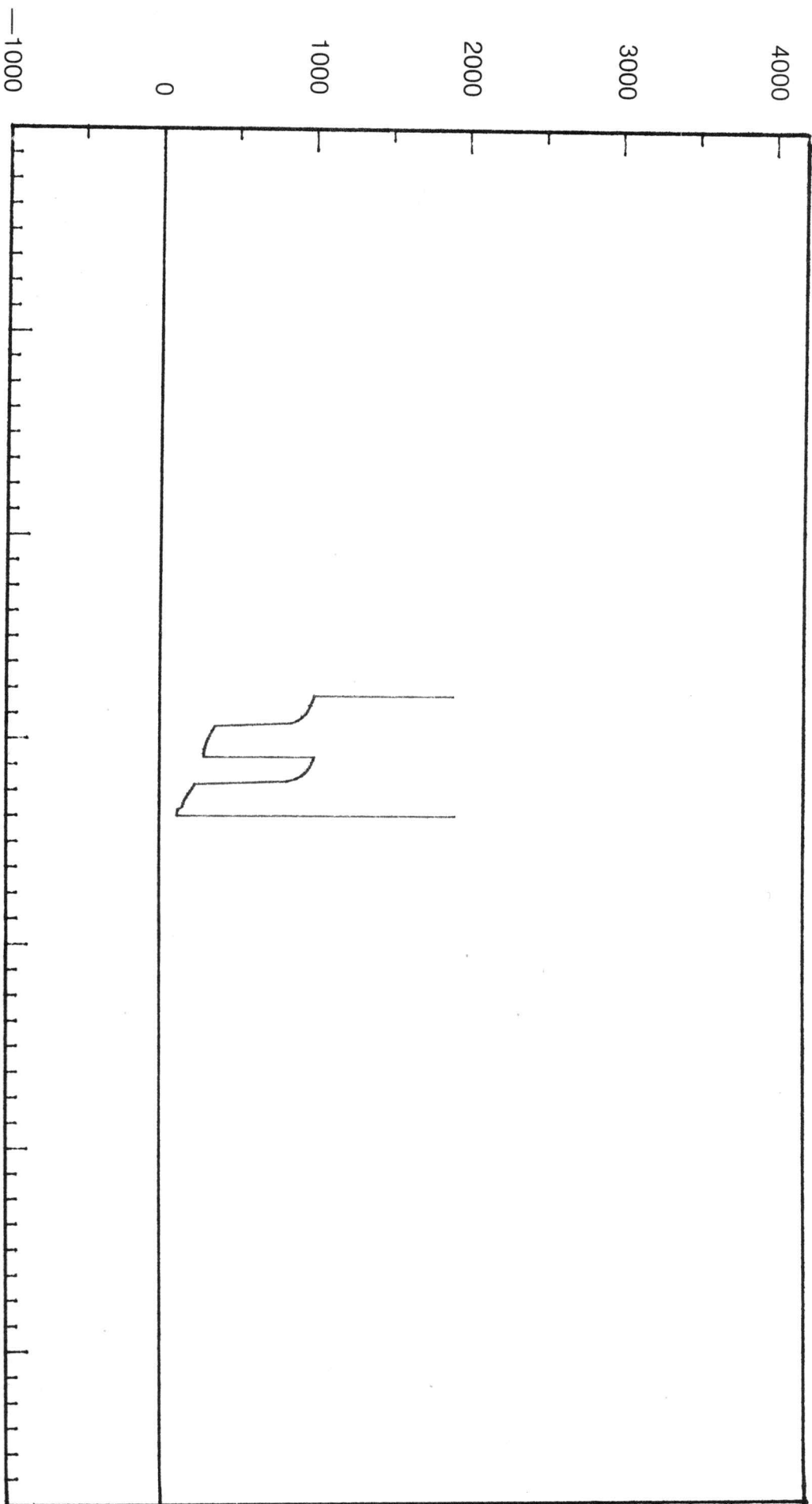
FOR: A. Scott Ritchie

TEST 5644

DST 3

11/14/85

PRESSURE



TIME (MINUTES)

# PRESSURE BREAKDOWN

TEST TICKET NO. 5644

DST Number: 3 Recorder Number: 11084 Clock Number: 23934

| First Flow<br>Pressure | Initial<br>Shut-In | Second Flow<br>Pressure | Final<br>Shut-In |
|------------------------|--------------------|-------------------------|------------------|
| Mins. Press.           | Mins. Press.       | Mins. Press.            | Mins. Press.     |
| 0 98                   | 0 216              | 0 274                   | 0 347            |
| 3 100                  | 3 822              | 3 274                   | 3 850            |
| 6 107                  | 6 885              | 6 277                   | 6 893            |
| 9 135                  | 9 919              | 9 282                   | 9 920            |
| 12 140                 | 12 942             | 12 287                  | 12 940           |
| 15 148                 | 15 958             | 15 294                  | 15 955           |
| 18 159                 | 18 971             | 18 304                  | 18 966           |
| 21 172                 | 21 981             | 21 314                  | 21 973           |
| 24 186                 | 24 991             | 24 325                  | 24 983           |
| 27 199                 | 27 996             | 27 337                  | 27 992           |
| 30 211                 |                    | 30 347                  | 30 996           |
| 31 216                 |                    |                         |                  |

## EQUIPMENT DATA

## TOOL SEQUENCE REPORT

DST Number: 3

TEST TICKET NO. 5644

WELL NAME: H.C.Miller #1

WELL LOCATION: 9-19S-22W

| Tool # | Tool              | Length  | I.D.  | O.D. |
|--------|-------------------|---------|-------|------|
| 1      | Drill Pipe - 4.5" | 2864.00 | 3.826 | 4.50 |
| 3      | Weight Pipe       | 699.00  | 2.760 | 4.50 |
| 4      | Drill Collar - 6" | 244.00  | 2.250 | 6.00 |
| 8      | Circulating Sub   | 1.00    | 3.000 | 5.00 |
| 9      | Shut-In Tool      | 5.45    | 0.870 | 5.00 |
| 10     | Hydraulic Tool    | 5.60    | 1.000 | 5.00 |
| 14     | Packer            | 5.35    | 1.530 | 6.75 |
| 14     | Packer            | 5.35    | 1.530 | 6.75 |
| 6      | Anchor            | 35.00   | 2.750 | 5.00 |
| 15     | Recorder Carrier  | 1.00    |       | 5.00 |
| 16     | Bull Plug         | 2.00    |       | 5.00 |
|        | Total Depth       | 3867.75 |       |      |

# CALCULATED RECOVERY ANALYSIS

DST Number: 3

TEST TICKET NO. 5644

| Sample # | Total Feet | ***** Gas % | ***** Feet  | ***** Oil % | ***** Feet  | ***** Mud % | ***** Feet    |
|----------|------------|-------------|-------------|-------------|-------------|-------------|---------------|
| 1        | 30         | 0.00        | 0.00        | 0.00        | 0.00        | 45.00       | 13.50         |
| 2        | 60         | 0.00        | 0.00        | 0.00        | 0.00        | 50.00       | 30.00         |
| 3        | 120        | 0.00        | 0.00        | 0.00        | 0.00        | 45.00       | 54.00         |
| 4        | 120        | 0.00        | 0.00        | 0.00        | 0.00        | 35.00       | 42.00         |
| 5        | 120        | 0.00        | 0.00        | 0.00        | 0.00        | 20.00       | 24.00         |
| 6        | 120        | 0.00        | 0.00        | 0.00        | 0.00        | 5.00        | 6.00          |
| 7        | 120        | 0.00        | 0.00        | 0.00        | 0.00        | 5.00        | 6.00          |
| TOTAL    | <u>690</u> | 0.00        | <u>0.00</u> | 0.00        | <u>0.00</u> | 25.43       | <u>175.50</u> |

| Sample # | **** Water % | *** Feet      | Chlorides (PPM) | Resistivity (Ohms) | Temperature (Deg) |
|----------|--------------|---------------|-----------------|--------------------|-------------------|
| 1        | 55.00        | 16.50         | 35,000          |                    |                   |
| 2        | 50.00        | 30.00         |                 |                    |                   |
| 3        | 55.00        | 66.00         |                 |                    |                   |
| 4        | 65.00        | 78.00         |                 |                    |                   |
| 5        | 80.00        | 96.00         |                 |                    |                   |
| 6        | 95.00        | 114.00        |                 |                    |                   |
| 7        | 95.00        | 114.00        |                 |                    |                   |
| TOTAL    | 74.57        | <u>514.50</u> |                 |                    |                   |

# CRUDE OIL TESTING, INC.

DATE 11/14/85

TEST TICKET NO. 5645

Company: A. Scott Ritchie  
 Company Address: 125 N. Market #950 Wichita KS 67202  
 Location: Sec. 9 Twp. 19S Range 22W Co. Scott State KS  
 Well Name & Number: H.C.Miller #1 Code E4

|                     |                 |         |                     |        |          |
|---------------------|-----------------|---------|---------------------|--------|----------|
| ENGINEERING<br>DATA | Elevation       | 2964 KB | Drill Pipe Length   | 2927   | ID 3.8 " |
|                     | Mud Viscosity   | 37      | Weight Pipe Length  | 699    | ID 2.76" |
|                     | Mud Weight      | 9.4     | Drill Collar Length | 244    | ID 2.25" |
|                     | Water Loss      | 11.6    | Top Packer Depth    | 3865   |          |
|                     | Type of Mud     | Starch  | Bottom Packer Depth | 3870   |          |
|                     | Anchor Length   | 15      | Tool Joint Size     | 4.5 FH |          |
|                     | Hole Size       | 7 7/8   | Test Tool Size      | 5 1/2  |          |
|                     | Casing Size     | 8 5/8   | Packer Size         | 6 3/4  |          |
|                     | Surface Choke   | 3/4     | Reversed Out        | No     |          |
|                     | Bottom Choke    | 3/4     | Recorder #          | 11084  |          |
|                     | Extra Equipment |         | None                |        |          |

REMARKS DST #4  
 Mud pit sample 22000 PPM

FORMATION Toronto Zone Test Type Conventional  
 Interval 3870 To 3885 Total Depth 3885  
 Open 20 Shut In 30 Open 15 Shut In 30  
 Packer(s) Set 10:43PM Started Off Bottom 12:20AM  
 Blow 1st Opening Very strong blow as soon as tool opened  
 2nd Opening Strong blow off bottom in 1 min.

RECOVERY Total Feet 2220  
 Recovered 2220 feet of Sulfur water (no show of oil)

CALCULATED Gas Oil Water 2148 Mud 72  
 RECOVERY Gravity (Oil) Test Water Chlorides 42,000 PPM  
 Test Area Temperature 117F Mud System Chlorides 21,000 PPM

|                                      | FIELD<br>READING | OFFICE<br>READING |     |
|--------------------------------------|------------------|-------------------|-----|
| PRESSURE (A) Initial Hydrostatic Mud | 1994             | 1987              | PSI |
| (B) First Initial Flow Pressure      | 450              | 437               | PSI |
| (C) First Final Flow Pressure        | 861              | 894               | PSI |
| (D) Initial Closed-In Pressure       | 1056             | 1047              | PSI |
| (E) Second Initial Flow Pressure     | 991              | 993               | PSI |
| (F) Second Final Flow Pressure       | 1024             | 1023              | PSI |
| (G) Final Closed-In Pressure         | 1056             | 1057              | PSI |
| (H) Final Hydrostatic Mud            | 1972             | 1917              | PSI |

# CRUDE OIL TESTING INC.

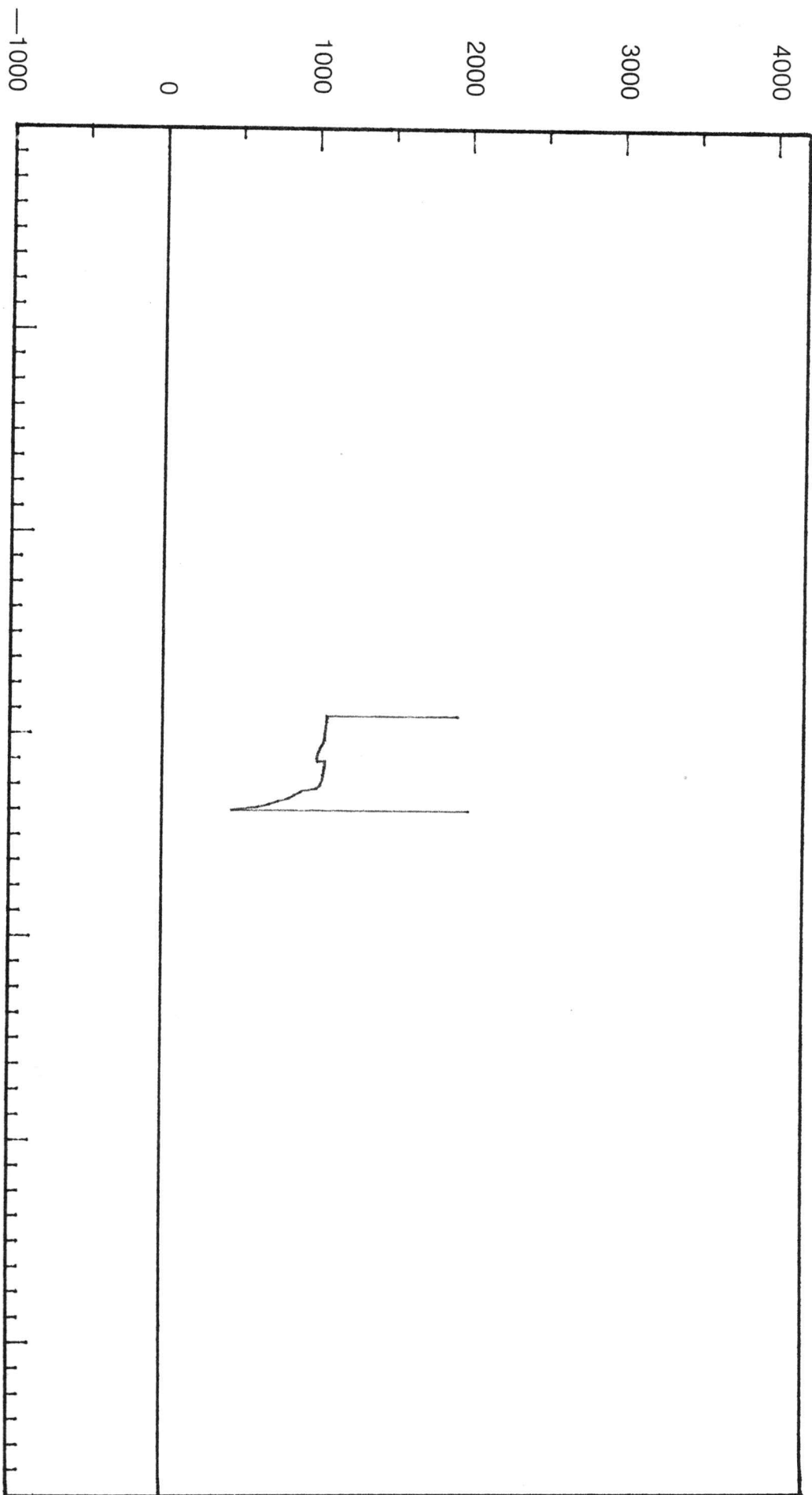
FOR: A. Scott Ritchie

TEST 5645

DST 4

11/14/85

PRESSURE



TIME (MINUTES)

# PRESSURE BREAKDOWN

TEST TICKET NO. 5645

DST Number: 4 Recorder Number: 11084 Clock Number: 23934

| First Flow<br>Pressure | Initial<br>Shut-In | Second Flow<br>Pressure | Final<br>Shut-In |
|------------------------|--------------------|-------------------------|------------------|
| Mins. Press.           | Mins. Press.       | Mins. Press.            | Mins. Press.     |
| 0 436                  | 0 893              | 0 993                   | 0 1022           |
| 3 607                  | 3 993              | 3 994                   | 3 1035           |
| 6 682                  | 6 1013             | 6 998                   | 6 1039           |
| 9 738                  | 9 1020             | 9 1004                  | 9 1043           |
| 12 813                 | 12 1029            | 12 1012                 | 12 1045          |
| 15 846                 | 15 1032            | 15 1022                 | 15 1048          |
| 18 885                 | 18 1036            |                         | 18 1050          |
| 19 893                 | 21 1038            |                         | 21 1052          |
|                        | 24 1043            |                         | 24 1054          |
|                        | 27 1047            |                         | 27 1057          |
|                        | 30 1047            |                         | 30 1057          |

## EQUIPMENT DATA

## TOOL SEQUENCE REPORT

DST Number: 4

TEST TICKET NO. 5645

WELL NAME: H.C.Miller #1

WELL LOCATION: 9-19S-22W

| Tool #      | Tool              | Length  | I.D.  | O.D. |
|-------------|-------------------|---------|-------|------|
| 1           | Drill Pipe - 4.5" | 2927.00 | 3.826 | 4.50 |
| 3           | Weight Pipe       | 699.00  | 2.760 | 4.50 |
| 4           | Drill Collar - 6" | 244.00  | 2.250 | 6.00 |
| 8           | Circulating Sub   | 1.00    | 3.000 | 5.00 |
| 9           | Shut-In Tool      | 5.45    | 0.870 | 5.00 |
| 10          | Hydraulic Tool    | 5.60    | 1.000 | 5.00 |
| 14          | Packer            | 5.35    | 1.530 | 6.75 |
| 14          | Packer            | 5.35    | 1.530 | 6.75 |
| 6           | Anchor            | 11.00   | 2.750 | 5.00 |
| 15          | Recorder Carrier  | 1.00    |       | 5.00 |
| 16          | Bull Plug         | 2.00    |       | 5.00 |
| Total Depth |                   | 3906.75 |       |      |

# CALCULATED RECOVERY ANALYSIS

DST Number: 4

TEST TICKET NO. 5645

| Sample # | Total Feet  | ***** Gas % | ***** Oil % | ***** Mud %       |
|----------|-------------|-------------|-------------|-------------------|
|          |             | Feet        | Feet        | Feet              |
| 1        | 60          | 0.00        | 0.00        | 35.00             |
| 2        | 60          | 0.00        | 0.00        | 30.00             |
| 3        | 300         | 0.00        | 0.00        | 5.00              |
| 4        | 300         | 0.00        | 0.00        | 1.00              |
| 5        | 300         | 0.00        | 0.00        | 1.00              |
| 6        | 300         | 0.00        | 0.00        | 1.00              |
| 7        | 300         | 0.00        | 0.00        | 1.00              |
| 8        | 300         | 0.00        | 0.00        | 1.00              |
| 9        | 300         | 0.00        | 0.00        | 1.00              |
| TOTAL    | <u>2220</u> | 0.00        | <u>0.00</u> | 3.24 <u>72.00</u> |

| Sample # | **** Water % | *** Feet       | Chlorides (PPM) | Resistivity (Ohms) | Temperature (Deg) |
|----------|--------------|----------------|-----------------|--------------------|-------------------|
| 1        | 65.00        | 39.00          | 41,000          |                    |                   |
| 2        | 70.00        | 42.00          | 41,000          |                    |                   |
| 3        | 95.00        | 285.00         | 42,000          |                    |                   |
| 4        | 99.00        | 297.00         | 42,000          |                    |                   |
| 5        | 99.00        | 297.00         | 42,000          |                    |                   |
| 6        | 99.00        | 297.00         | 42,000          |                    |                   |
| 7        | 99.00        | 297.00         | 42,000          |                    |                   |
| 8        | 99.00        | 297.00         | 42,000          |                    |                   |
| 9        | 99.00        | 297.00         | 42,000          |                    |                   |
| TOTAL    | 96.76        | <u>2148.00</u> |                 |                    |                   |

# CRUDE OIL TESTING, INC.

DATE 11/15/85

TEST TICKET NO. 5646

Company: A. Scott Ritchie  
 Company Address: 125 N. Market #950 Wichita KS 67202  
 Location: Sec. 9 Twp. 19S Range 22W Co. Scott State KS  
 Well Name & Number: H.C.Miller #1 Code E4

|                  |                 |         |                     |       |          |
|------------------|-----------------|---------|---------------------|-------|----------|
| ENGINEERING DATA | Elevation       | 2964 KB | Drill Pipe Length   | 2958  | ID 3.8 " |
|                  | Mud Viscosity   | 39      | Weight Pipe Length  | 699   | ID 2.76" |
|                  | Mud Weight      | 10      | Drill Collar Length | 244   | ID 2.25" |
|                  | Water Loss      | 10      | Top Packer Depth    | 3893  |          |
|                  | Type of Mud     | Starch  | Bottom Packer Depth | 3895  |          |
|                  | Anchor Length   | 18      | Tool Joint Size     | 4.5   | FH       |
|                  | Hole Size       | 7 7/8   | Test Tool Size      | 5 1/2 |          |
|                  | Casing Size     | 8 5/8   | Packer Size         | 6 3/4 |          |
|                  | Surface Choke   | 3/4     | Reversed Out        | No    |          |
|                  | Bottom Choke    | 3/4     | Recorder #          | 10995 |          |
|                  | Extra Equipment |         | None                |       |          |

REMARKS  
 DST #5  
 Read bottom chart please  
 Mud pit sample 30000 PPM

FORMATION  
 Lansing K.C. Zone Top  
 Interval 3898 To 3916  
 Open 30 Shut In 30  
 Packer(s) Set 12:43AM  
 Blow 1st Opening Strong blow off bottom in 5 min.  
 2nd Opening Strong blow off bottom in 7 min.

RECOVERY  
 Total Feet 1140  
 Recovered 1140 feet of Sulfur water-few oil spots in fluid

CALCULATED RECOVERY  
 Gas Oil Water 1093.8 Mud 46.2  
 Gravity (Oil) Test Water Chlorides 43,000 PPM  
 Test Area Temperature 117F Mud System Chlorides 30,000 PPM

|                                      | FIELD READING | OFFICE READING |     |
|--------------------------------------|---------------|----------------|-----|
| PRESSURE (A) Initial Hydrostatic Mud | 1949          | 1916           | PSI |
| (B) First Initial Flow Pressure      | 43            | 53             | PSI |
| (C) First Final Flow Pressure        | 368           | 371            | PSI |
| (D) Initial Closed-In Pressure       | 961           | 968            | PSI |
| (E) Second Initial Flow Pressure     | 390           | 388            | PSI |
| (F) Second Final Flow Pressure       | 519           | 524            | PSI |
| (G) Final Closed-In Pressure         | 940           | 942            | PSI |
| (H) Final Hydrostatic Mud            | 1927          | 1870           | PSI |

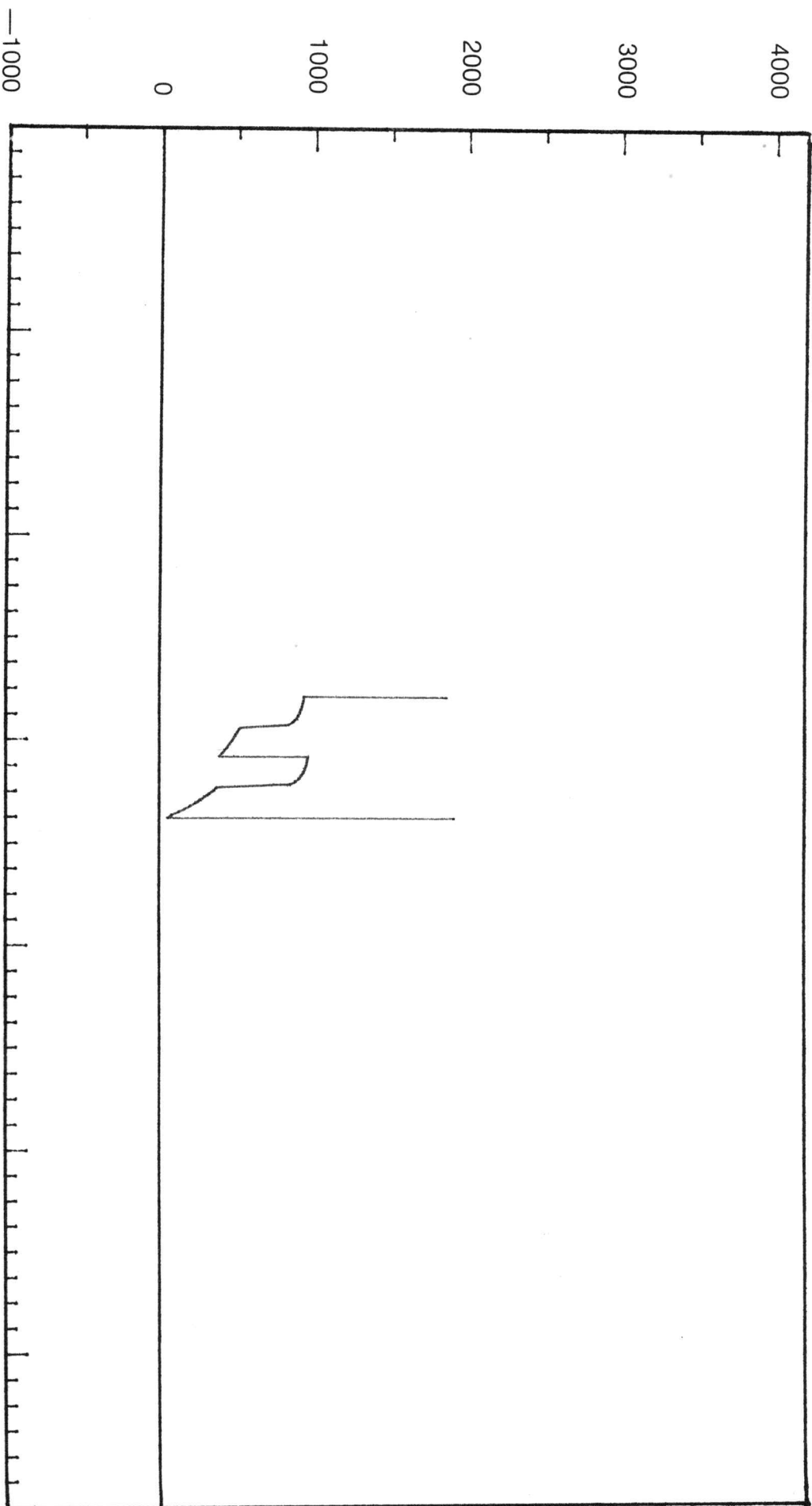
# CRUDE OIL TESTING INC.

FOR: A. Scott Ritchie

TEST 5646

DST 5 11/15/85

PRESSURE



TIME (MINUTES)

# PRESSURE BREAKDOWN

TEST TICKET NO. 5646

DST Number: 5 Recorder Number: 10995 Clock Number: 25114

| First Flow<br>Pressure | Initial<br>Shut-In | Second Flow<br>Pressure | Final<br>Shut-In |
|------------------------|--------------------|-------------------------|------------------|
| Mins. Press.           | Mins. Press.       | Mins. Press.            | Mins. Press.     |
| 0 53                   | 0 371              | 0 388                   | 0 524            |
| 3 78                   | 3 853              | 3 406                   | 3 839            |
| 6 126                  | 6 888              | 6 424                   | 6 872            |
| 9 167                  | 9 911              | 9 440                   | 9 891            |
| 12 202                 | 12 927             | 12 454                  | 12 904           |
| 15 238                 | 15 939             | 15 468                  | 15 912           |
| 18 266                 | 18 948             | 18 481                  | 18 921           |
| 21 295                 | 21 955             | 21 492                  | 21 929           |
| 24 324                 | 24 961             | 24 504                  | 24 933           |
| 27 352                 | 27 965             | 27 518                  | 27 938           |
| 30 371                 | 30 968             | 28 524                  | 30 942           |
|                        |                    |                         | 31 942           |

## EQUIPMENT DATA

## TOOL SEQUENCE REPORT

DST Number: 5

TEST TICKET NO. 5646

WELL NAME: H.C.Miller #1

WELL LOCATION: 9-19S-22W

| Tool # | Tool              | Length  | I.D.  | O.D. |
|--------|-------------------|---------|-------|------|
| 1      | Drill Pipe - 4.5" | 2958.00 | 3.826 | 4.50 |
| 3      | Weight Pipe       | 699.00  | 2.760 | 4.50 |
| 4      | Drill Collar - 6" | 244.00  | 2.250 | 6.00 |
| 8      | Circulating Sub   | 1.00    | 3.000 | 5.00 |
| 9      | Shut-In Tool      | 5.45    | 0.870 | 5.00 |
| 10     | Hydraulic Tool    | 5.60    | 1.000 | 5.00 |
| 14     | Packer            | 5.35    | 1.530 | 6.75 |
| 14     | Packer            | 5.35    | 1.530 | 6.75 |
| 6      | Anchor            | 14.00   | 2.750 | 5.00 |
| 15     | Recorder Carrier  | 1.00    |       | 5.00 |
| 16     | Bull Plug         | 2.00    |       | 5.00 |
|        | Total Depth       | 3940.75 |       |      |

# CALCULATED RECOVERY ANALYSIS

DST Number: 5

TEST TICKET NO. 5646

| Sample # | Total Feet  | ***** Gas % | ***** Feet  | ***** Oil % | ***** Feet  | ***** Mud % | ***** Feet   |
|----------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| 1        | 60          | 0.00        | 0.00        | 0.00        | 0.00        | 30.00       | 18.00        |
| 2        | 60          | 0.00        | 0.00        | 0.00        | 0.00        | 10.00       | 6.00         |
| 3        | 300         | 0.00        | 0.00        | 0.00        | 0.00        | 5.00        | 15.00        |
| 4        | 300         | 0.00        | 0.00        | 0.00        | 0.00        | 1.00        | 3.00         |
| 5        | 300         | 0.00        | 0.00        | 0.00        | 0.00        | 1.00        | 3.00         |
| 6        | 120         | 0.00        | 0.00        | 0.00        | 0.00        | 1.00        | 1.20         |
| TOTAL    | <u>1140</u> | 0.00        | <u>0.00</u> | 0.00        | <u>0.00</u> | 4.05        | <u>46.20</u> |

| Sample # | **** Water % | *** Feet       | Chlorides (PPM) | Resistivity (Ohms) | Temperature (Deg) |
|----------|--------------|----------------|-----------------|--------------------|-------------------|
| 1        | 70.00        | 42.00          | 42,000          |                    |                   |
| 2        | 90.00        | 54.00          | 42,000          |                    |                   |
| 3        | 95.00        | 285.00         | 43,000          |                    |                   |
| 4        | 99.00        | 297.00         | 43,000          |                    |                   |
| 5        | 99.00        | 297.00         | 43,000          |                    |                   |
| 6        | 99.00        | 118.80         | 43,000          |                    |                   |
| TOTAL    | 95.95        | <u>1093.80</u> |                 |                    |                   |

# CRUDE OIL TESTING, INC.

DATE 11/16/85

TEST TICKET NO. 5647

Company: A. Scott Ritchie  
 Company Address: 125 N. Market #950 Wichita KS 67202  
 Location: Sec. 9 Twp. 19S Range 22W Co. Scott State KS  
 Well Name & Number: H.C.Miller #1 Code E4

|                     |                 |         |                     |        |          |
|---------------------|-----------------|---------|---------------------|--------|----------|
| ENGINEERING<br>DATA | Elevation       | 2964 KB | Drill Pipe Length   | 3052   | ID 3.8 " |
|                     | Mud Viscosity   | 40      | Weight Pipe Length  | 667    | ID 2.76" |
|                     | Mud Weight      | 9.4     | Drill Collar Length | 244    | ID 2.25" |
|                     | Water Loss      | 10      | Top Packer Depth    | 3953   |          |
|                     | Type of Mud     | Starch  | Bottom Packer Depth | 3958   |          |
|                     | Anchor Length   | 54      | Tool Joint Size     | 4.5 FH |          |
|                     | Hole Size       | 7 7/8   | Test Tool Size      | 5 1/2  |          |
|                     | Casing Size     | 8 5/8   | Packer Size         | 6 3/4  |          |
|                     | Surface Choke   | 3/4     | Reversed Out        | No     |          |
|                     | Bottom Choke    | 3/4     | Recorder #          | 11084  |          |
|                     | Extra Equipment |         | None                |        |          |

REMARKS DST #6  
 Mud pit sample 35000 PPM

|           |                                                                                                      |                            |
|-----------|------------------------------------------------------------------------------------------------------|----------------------------|
| FORMATION | Lansing K.C. Zone C,D,E                                                                              | Test Type Conventional     |
|           | Interval 3958 To 4012                                                                                | Total Depth 4012           |
|           | Open 30 Shut In 45                                                                                   | Open 30 Shut In 45         |
|           | Packer(s) Set 07:58AM                                                                                | Started Off Bottom 10:30AM |
|           | Blow 1st Opening Weak blow increased to 2 in. in bucket<br>2nd Opening No blow, flushed tool no help |                            |

RECOVERY Total Feet 70  
 Recovered 70 feet of Thin watery mud-few oil spots in tool

|                        |                            |     |                      |    |            |    |
|------------------------|----------------------------|-----|----------------------|----|------------|----|
| CALCULATED<br>RECOVERY | Gas                        | Oil | Water                | 29 | Mud        | 41 |
|                        | Gravity (Oil)              |     | Test Water Chlorides |    | 26,000 PPM |    |
|                        | Test Area Temperature 117F |     | Mud System Chlorides |    | 30,000 PPM |    |

| PRESSURE |                                  | FIELD   | OFFICE  |     |
|----------|----------------------------------|---------|---------|-----|
|          |                                  | READING | READING |     |
|          | (A) Initial Hydrostatic Mud      | 1994    | 1991    | PSI |
|          | (B) First Initial Flow Pressure  | 66      | 58      | PSI |
|          | (C) First Final Flow Pressure    | 66      | 65      | PSI |
|          | (D) Initial Closed-In Pressure   | 1067    | 1058    | PSI |
|          | (E) Second Initial Flow Pressure | 99      | 90      | PSI |
|          | (F) Second Final Flow Pressure   | 99      | 95      | PSI |
|          | (G) Final Closed-In Pressure     | 1045    | 1037    | PSI |
|          | (H) Final Hydrostatic Mud        | 1972    | 1991    | PSI |

# CRUDE OIL TESTING, INC.

DATE 11/17/85

TEST TICKET NO. 5648

Company: A. Scott Ritchie

Company Address: 125 N. Market #950 Wichita KS 67202

Location: Sec. 9 Twp. 19S Range 22W Co. Scott State KS

Well Name & Number: H.C.Miller #1 Code E4

|                     |                 |         |                     |        |          |
|---------------------|-----------------|---------|---------------------|--------|----------|
| ENGINEERING<br>DATA | Elevation       | 2964 KB | Drill Pipe Length   | 3176   | ID 3.8 " |
|                     | Mud Viscosity   | 39      | Weight Pipe Length  | 699    | ID 2.76" |
|                     | Mud Weight      | 9.4     | Drill Collar Length | 244    | ID 2.25" |
|                     | Water Loss      | 10.6    | Top Packer Depth    | 4118   |          |
|                     | Type of Mud     | Starch  | Bottom Packer Depth | 4123   |          |
|                     | Anchor Length   | 41      | Tool Joint Size     | 4.5 FH |          |
|                     | Hole Size       | 7 7/8   | Test Tool Size      | 5 1/2  |          |
|                     | Casing Size     | 8 5/8   | Packer Size         | 6 3/4  |          |
|                     | Surface Choke   | 3/4     | Reversed Out        | No     |          |
|                     | Bottom Choke    | 3/4     | Recorder #          | 11084  |          |
|                     | Extra Equipment |         | None                |        |          |

REMARKS DST #7

|                                                    |                                                          |                            |
|----------------------------------------------------|----------------------------------------------------------|----------------------------|
| FORMATION                                          | Lansing K.C. Zone I                                      | Test Type Conventional     |
|                                                    | Interval 4123 To 4164                                    | Total Depth 4164           |
|                                                    | Open 30 Shut In 45                                       | Open 30 Shut In 45         |
|                                                    | Packer(s) Set 09:43AM                                    | Started Off Bottom 12:15PM |
|                                                    | Blow 1st Opening Fair increasing blow to 6 1/2 in in bkt |                            |
| 2nd Opening Weak increasing blow to 2 in in bucket |                                                          |                            |

RECOVERY Total Feet 330  
Recovered 330 feet of Sulfur water (oil spots in tool)

|                        |                       |      |                      |            |     |     |
|------------------------|-----------------------|------|----------------------|------------|-----|-----|
| CALCULATED<br>RECOVERY | Gas                   | Oil  | Water                | 195        | Mud | 135 |
|                        | Gravity (Oil)         |      | Test Water Chlorides | 32,000 PPM |     |     |
|                        | Test Area Temperature | 117F | Mud System Chlorides | 30,000 PPM |     |     |

|          |                                  | FIELD<br>READING | OFFICE<br>READING |     |
|----------|----------------------------------|------------------|-------------------|-----|
| PRESSURE | (A) Initial Hydrostatic Mud      | 2134             | 2088              | PSI |
|          | (B) First Initial Flow Pressure  | 77               | 66                | PSI |
|          | (C) First Final Flow Pressure    | 121              | 116               | PSI |
|          | (D) Initial Closed-In Pressure   | 1142             | 1138              | PSI |
|          | (E) Second Initial Flow Pressure | 175              | 159               | PSI |
|          | (F) Second Final Flow Pressure   | 186              | 182               | PSI |
|          | (G) Final Closed-In Pressure     | 1121             | 1112              | PSI |
|          | (H) Final Hydrostatic Mud        | 2112             | 2045              | PSI |

# PRESSURE BREAKDOWN

TEST TICKET NO. 5647

DST Number: 6 Recorder Number: 11084 Clock Number: 23934

| First Flow<br>Pressure | Initial<br>Shut-In | Second Flow<br>Pressure | Final<br>Shut-In |
|------------------------|--------------------|-------------------------|------------------|
| Mins. Press.           | Mins. Press.       | Mins. Press.            | Mins. Press.     |
| 0 57                   | 0 65               | 0 90                    | 0 94             |
| 3 57                   | 3 616              | 3 90                    | 3 655            |
| 6 58                   | 6 780              | 6 90                    | 6 768            |
| 9 58                   | 9 858              | 9 91                    | 9 832            |
| 12 59                  | 12 899             | 12 91                   | 12 875           |
| 15 59                  | 15 933             | 15 91                   | 15 904           |
| 18 60                  | 18 959             | 18 93                   | 18 927           |
| 21 60                  | 21 978             | 21 93                   | 21 945           |
| 24 61                  | 24 995             | 24 94                   | 24 961           |
| 27 64                  | 27 1010            | 27 94                   | 27 978           |
| 30 65                  | 30 1023            | 30 94                   | 30 991           |
|                        | 33 1032            |                         | 33 999           |
|                        | 36 1041            |                         | 36 1010          |
|                        | 39 1049            |                         | 39 1017          |
|                        | 42 1056            |                         | 42 1024          |
|                        | 43 1058            |                         | 45 1032          |
|                        |                    |                         | 47 1036          |

## EQUIPMENT DATA

## TOOL SEQUENCE REPORT

DST Number: 6

TEST TICKET NO. 5647

WELL NAME: H.C.Miller #1

WELL LOCATION: 9-19S-22W

| Tool # | Tool              | Length  | I.D.  | O.D. |
|--------|-------------------|---------|-------|------|
| 1      | Drill Pipe - 4.5" | 3052.00 | 3.826 | 4.50 |
| 3      | Weight Pipe       | 667.00  | 2.760 | 4.50 |
| 4      | Drill Collar - 6" | 244.00  | 2.250 | 6.00 |
| 8      | Circulating Sub   | 1.00    | 3.000 | 5.00 |
| 9      | Shut-In Tool      | 5.45    | 0.870 | 5.00 |
| 10     | Hydraulic Tool    | 5.60    | 1.000 | 5.00 |
| 14     | Packer            | 5.35    | 1.530 | 6.75 |
| 14     | Packer            | 5.35    | 1.530 | 6.75 |
| 6      | Anchor            | 50.00   | 2.750 | 5.00 |
| 15     | Recorder Carrier  | 1.00    |       | 5.00 |
| 16     | Bull Plug         | 2.00    |       | 5.00 |
|        | Total Depth       | 4038.75 |       |      |

# CALCULATED RECOVERY ANALYSIS

DST Number: 6

TEST TICKET NO. 5647

| Sample # | Total Feet | ***** Gas % | ***** Feet  | ***** Oil % | ***** Feet  | ***** Mud % | ***** Feet   |
|----------|------------|-------------|-------------|-------------|-------------|-------------|--------------|
| 1        | 10         | 0.00        | 0.00        | 0.00        | 0.00        | 50.00       | 5.00         |
| 2        | 60         | 0.00        | 0.00        | 0.00        | 0.00        | 60.00       | 36.00        |
| TOTAL    | <u>70</u>  | 0.00        | <u>0.00</u> | 0.00        | <u>0.00</u> | 58.57       | <u>41.00</u> |

| Sample # | **** Water % | *** Feet     | Chlorides (PPM) | Resistivity (Ohms) | Temperature (Deg) |
|----------|--------------|--------------|-----------------|--------------------|-------------------|
| 1        | 50.00        | 5.00         | 26,000          |                    |                   |
| 2        | 40.00        | 24.00        | 26,000          |                    |                   |
| TOTAL    | 41.43        | <u>29.00</u> |                 |                    |                   |

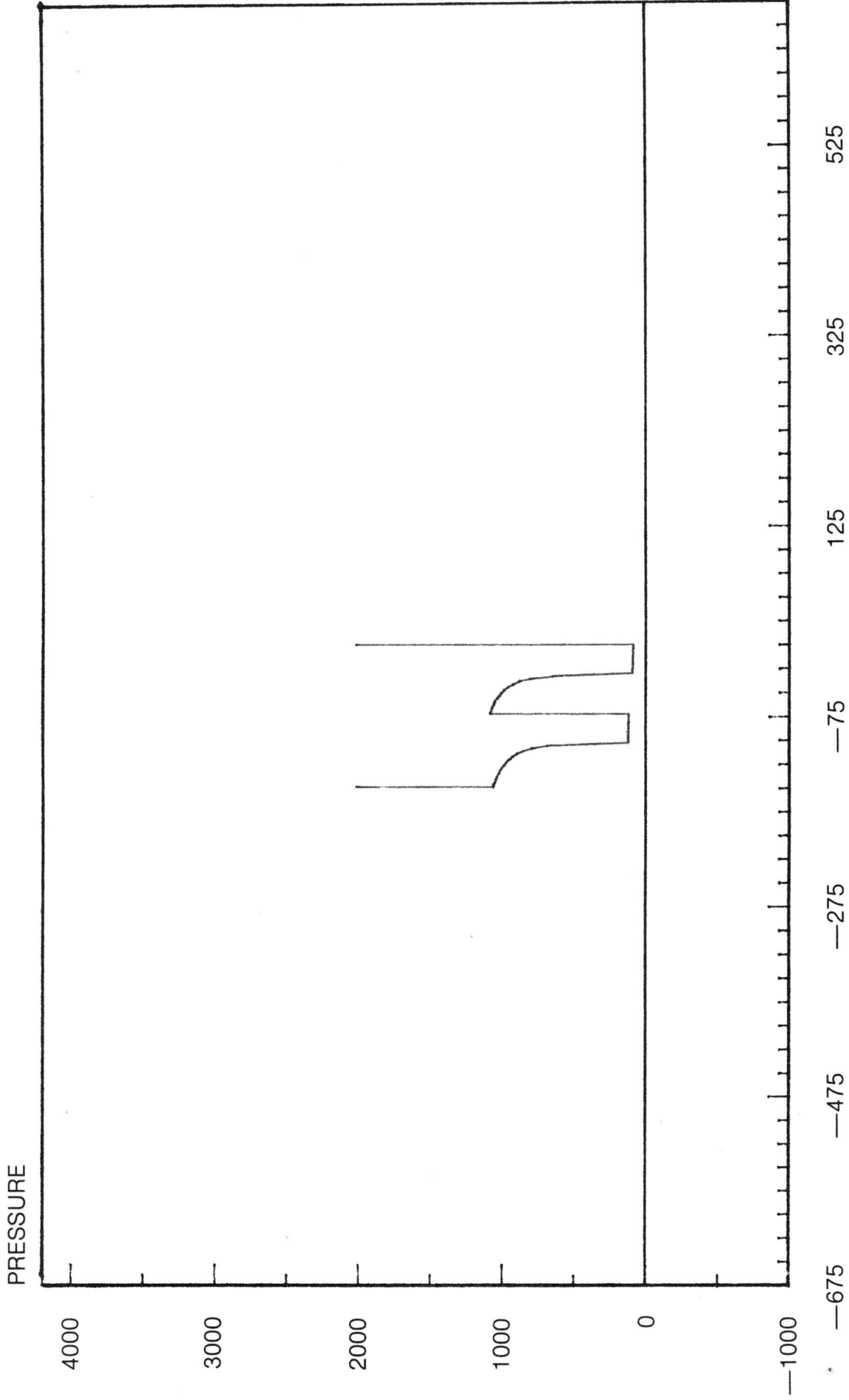
# CRUDE OIL TESTING INC.

FOR: A. Scott Ritchie

TEST 5647

DST 6

11/16/85



# CRUDE OIL TESTING INC.

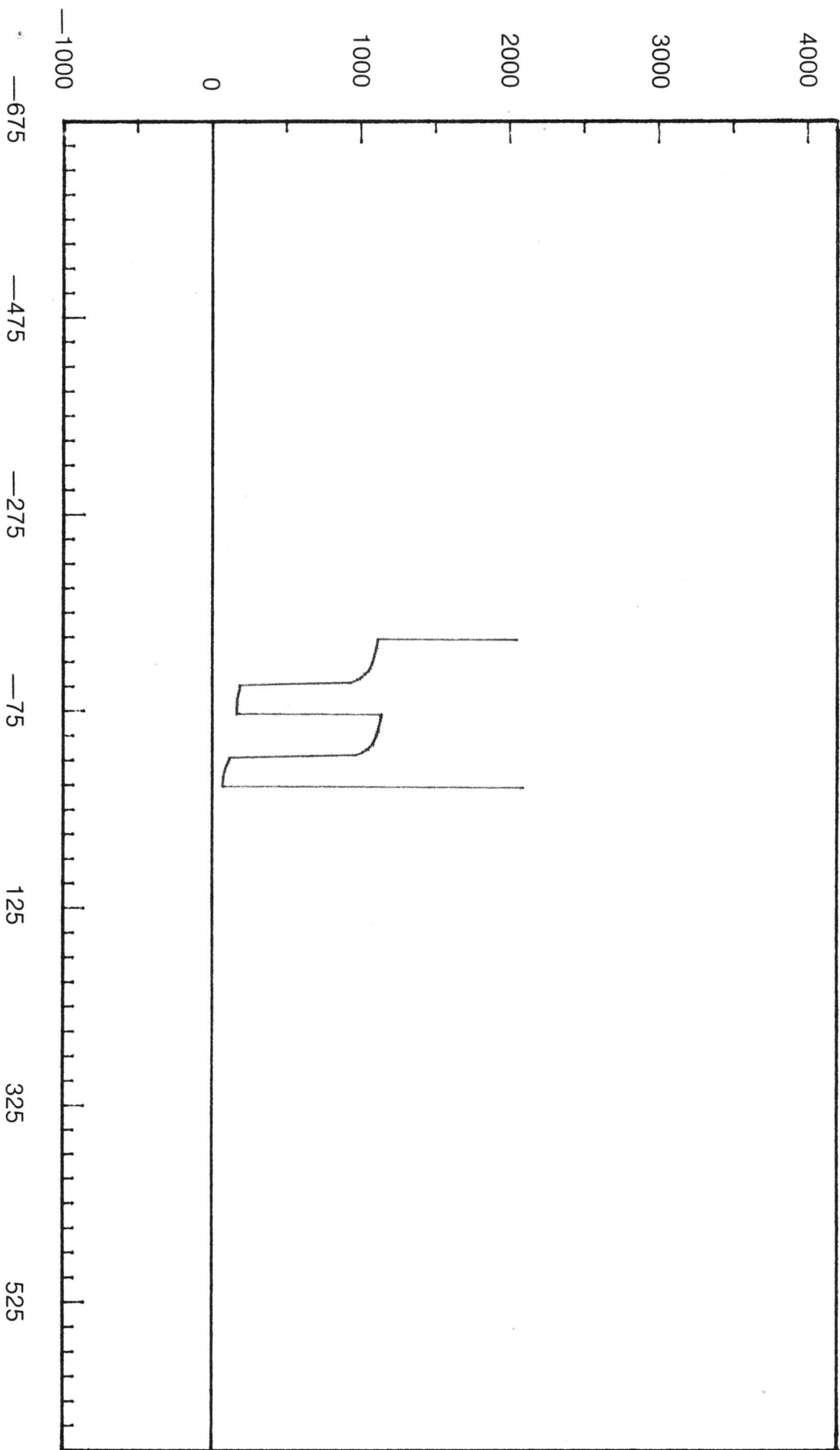
FOR: A. Scott Ritchie

TEST 5648

DST 7

11/17/85

PRESSURE



# PRESSURE BREAKDOWN

TEST TICKET NO. 5648

DST Number: 7 Recorder Number: 11084 Clock Number: 23934

| First Flow<br>Pressure | Initial<br>Shut-In | Second Flow<br>Pressure | Final<br>Shut-In |
|------------------------|--------------------|-------------------------|------------------|
| Mins. Press.           | Mins. Press.       | Mins. Press.            | Mins. Press.     |
| 0 66                   | 0 115              | 0 159                   | 0 182            |
| 3 67                   | 3 969              | 3 160                   | 3 930            |
| 6 69                   | 6 1014             | 6 160                   | 6 977            |
| 9 71                   | 9 1041             | 9 161                   | 9 1007           |
| 12 75                  | 12 1062            | 12 162                  | 12 1026          |
| 15 80                  | 15 1077            | 15 165                  | 15 1046          |
| 18 86                  | 18 1088            | 18 169                  | 18 1058          |
| 21 93                  | 21 1097            | 21 173                  | 21 1067          |
| 24 102                 | 24 1105            | 24 179                  | 24 1075          |
| 27 111                 | 27 1112            | 27 181                  | 27 1081          |
| 29 115                 | 30 1117            | 29 182                  | 30 1087          |
|                        | 33 1122            |                         | 33 1092          |
|                        | 36 1126            |                         | 36 1097          |
|                        | 39 1131            |                         | 39 1101          |
|                        | 42 1134            |                         | 42 1104          |
|                        | 45 1138            |                         | 45 1108          |
|                        |                    |                         | 48 1112          |

## EQUIPMENT DATA

## TOOL SEQUENCE REPORT

DST Number: 7

TEST TICKET NO. 5648

WELL NAME: H.C.Miller #1

WELL LOCATION: 9-19S-22W

| Tool # | Tool              | Length  | I.D.  | O.D. |
|--------|-------------------|---------|-------|------|
| 1      | Drill Pipe - 4.5" | 3176.00 | 3.826 | 4.50 |
| 3      | Weight Pipe       | 699.00  | 2.760 | 4.50 |
| 4      | Drill Collar - 6" | 244.00  | 2.250 | 6.00 |
| 8      | Circulating Sub   | 1.00    | 3.000 | 5.00 |
| 9      | Shut-In Tool      | 5.45    | 0.870 | 5.00 |
| 10     | Hydraulic Tool    | 5.60    | 1.000 | 5.00 |
| 14     | Packer            | 5.35    | 1.530 | 6.75 |
| 14     | Packer            | 5.35    | 1.530 | 6.75 |
| 6      | Anchor            | 37.00   | 2.750 | 5.00 |
| 15     | Recorder Carrier  | 1.00    |       | 5.00 |
| 16     | Bull Plug         | 2.00    |       | 5.00 |
|        | Total Depth       | 4181.75 |       |      |

# CALCULATED RECOVERY ANALYSIS

DST Number: 7

TEST TICKET NO. 5648

| Sample # | Total Feet | ***** Gas % | ***** Feet  | ***** Oil % | ***** Feet  | ***** Mud % | ***** Feet    |
|----------|------------|-------------|-------------|-------------|-------------|-------------|---------------|
| 1        | 30         | 0.00        | 0.00        | 0.00        | 0.00        | 50.00       | 15.00         |
| 2        | 60         | 0.00        | 0.00        | 0.00        | 0.00        | 50.00       | 30.00         |
| 3        | 120        | 0.00        | 0.00        | 0.00        | 0.00        | 45.00       | 54.00         |
| 4        | 120        | 0.00        | 0.00        | 0.00        | 0.00        | 30.00       | 36.00         |
| TOTAL    | <u>330</u> | 0.00        | <u>0.00</u> | 0.00        | <u>0.00</u> | 40.91       | <u>135.00</u> |

| Sample # | ***** Water % | *** Feet      | Chlorides (PPM) | Resistivity (Ohms) | Temperature (Deg) |
|----------|---------------|---------------|-----------------|--------------------|-------------------|
| 1        | 50.00         | 15.00         | 32,000          |                    |                   |
| 2        | 50.00         | 30.00         | 32,000          |                    |                   |
| 3        | 55.00         | 66.00         | 32,000          |                    |                   |
| 4        | 70.00         | 84.00         | 32,000          |                    |                   |
| TOTAL    | 59.09         | <u>195.00</u> |                 |                    |                   |

# CRUDE OIL TESTING, INC.

DATE 11/18/85

TEST TICKET NO. 5649

Company: A. Scott Ritchie  
 Company Address: 125 N. Market #950 Wichita KS 67202  
 Location: Sec. 9 Twp. 19S Range 22W Co. Scott State KS  
 Well Name & Number: H.C.Miller #1 Code E4

|             |                 |         |                     |       |          |
|-------------|-----------------|---------|---------------------|-------|----------|
| ENGINEERING | Elevation       | 2964 KB | Drill Pipe Length   | 3238  | ID 3.8 " |
| DATA        | Mud Viscosity   | 40      | Weight Pipe Length  | 699   | ID 2.76" |
|             | Mud Weight      | 9.2     | Drill Collar Length | 244   | ID 2.25" |
|             | Water Loss      | 11.6    | Top Packer Depth    | 4184  |          |
|             | Type of Mud     | Starch  | Bottom Packer Depth | 4189  |          |
|             | Anchor Length   | 19      | Tool Joint Size     | 4.5   | FH       |
|             | Hole Size       | 7 7/8   | Test Tool Size      | 5 1/2 |          |
|             | Casing Size     | 8 5/8   | Packer Size         | 6 3/4 |          |
|             | Surface Choke   | 3/4     | Reversed Out        | No    |          |
|             | Bottom Choke    | 3/4     | Recorder #          | 11084 |          |
|             | Extra Equipment |         | None                |       |          |

REMARKS DST #8  
 Mud pit sample 30000 PPM

|           |                                                        |                            |
|-----------|--------------------------------------------------------|----------------------------|
| FORMATION | Lansing K.C. Zone J                                    | Test Type Conventional     |
|           | Interval 4189 To 4208                                  | Total Depth 4208           |
|           | Open 15 Shut In 30                                     | Open 15 Shut In 30         |
|           | Packer(s) Set 01:58AM                                  | Started Off Bottom 03:30AM |
|           | Blow 1st Opening Very strong blow off bottom in 1 min. |                            |
|           | 2nd Opening Very strong blow off bottom in 2 min.      |                            |

RECOVERY Total Feet 1680  
 Recovered 1680 feet of Sulfur water (few spots of oil in tool)

|            |                       |      |                      |            |
|------------|-----------------------|------|----------------------|------------|
| CALCULATED | Gas                   | Oil  | Water 1618.8         | Mud 61.2   |
| RECOVERY   | Gravity (Oil)         |      | Test Water Chlorides | 33,000 PPM |
|            | Test Area Temperature | 118F | Mud System Chlorides | 30,000 PPM |

|          |                                  | FIELD<br>READING | OFFICE<br>READING |     |
|----------|----------------------------------|------------------|-------------------|-----|
| PRESSURE | (A) Initial Hydrostatic Mud      | 2091             | 2084              | PSI |
|          | (B) First Initial Flow Pressure  | 186              | 183               | PSI |
|          | (C) First Final Flow Pressure    | 569              | 572               | PSI |
|          | (D) Initial Closed-In Pressure   | 1185             | 1193              | PSI |
|          | (E) Second Initial Flow Pressure | 677              | 659               | PSI |
|          | (F) Second Final Flow Pressure   | 786              | 778               | PSI |
|          | (G) Final Closed-In Pressure     | 1185             | 1193              | PSI |
|          | (H) Final Hydrostatic Mud        | 2069             | 2062              | PSI |

# CRUDE OIL TESTING INC.

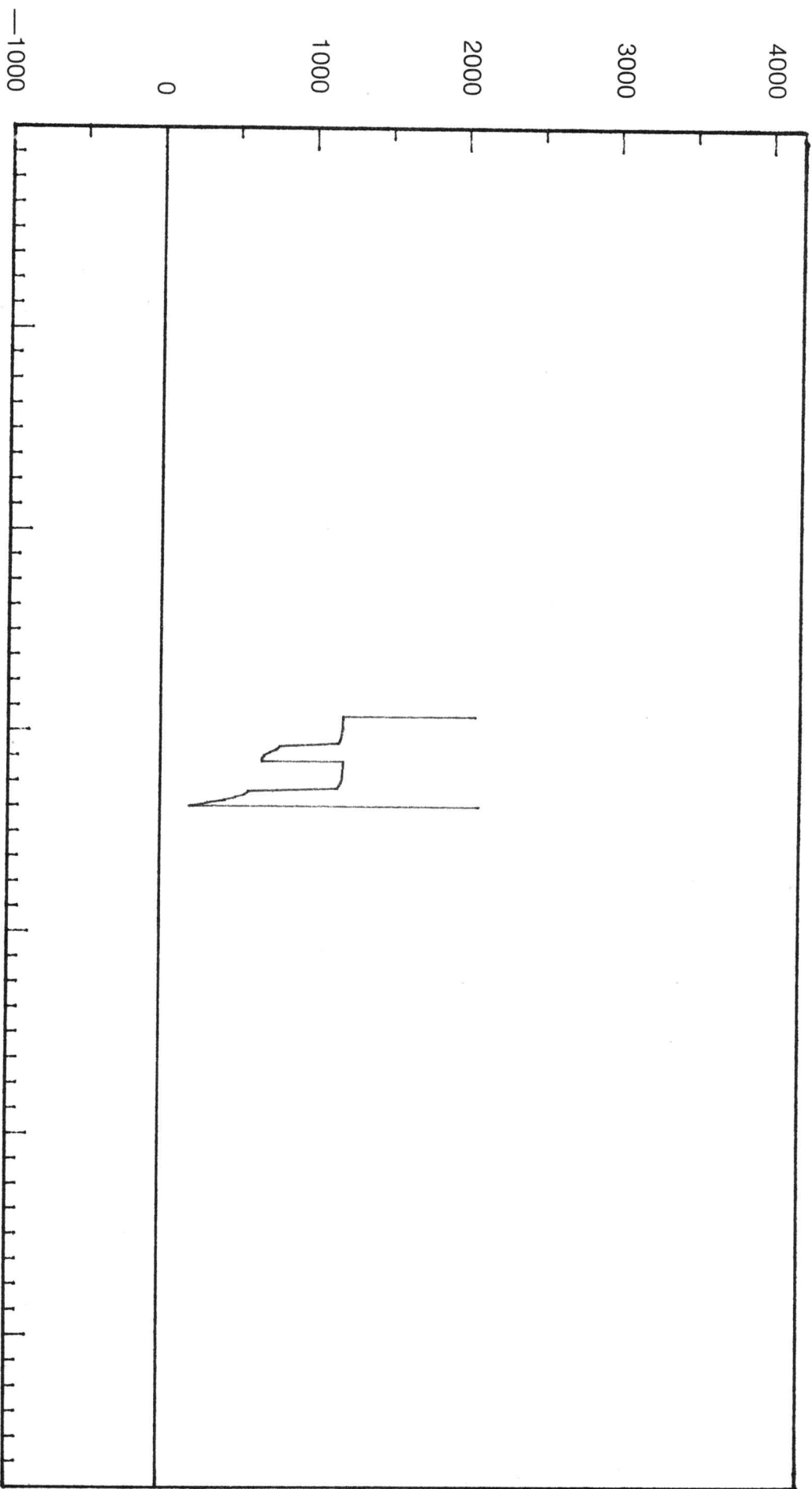
FOR: A. Scott Ritchie

TEST 5649

DST 8

11/18/85

PRESSURE



# PRESSURE BREAKDOWN

TEST TICKET NO. 5649

DST Number: 8 Recorder Number: 11084 Clock Number: 23934

| First Flow<br>Pressure | Initial<br>Shut-In | Second Flow<br>Pressure | Final<br>Shut-In |
|------------------------|--------------------|-------------------------|------------------|
| Mins. Press.           | Mins. Press.       | Mins. Press.            | Mins. Press.     |
| 0 183                  | 0 571              | 0 658                   | 0 777            |
| 3 293                  | 3 1153             | 3 661                   | 3 1161           |
| 6 408                  | 6 1167             | 6 675                   | 6 1172           |
| 9 484                  | 9 1175             | 9 712                   | 9 1180           |
| 12 547                 | 12 1182            | 12 755                  | 12 1183          |
| 15 571                 | 15 1184            | 15 777                  | 15 1185          |
|                        | 18 1186            |                         | 18 1187          |
|                        | 21 1188            |                         | 21 1188          |
|                        | 24 1191            |                         | 24 1189          |
|                        | 27 1193            |                         | 27 1192          |
|                        | 30 1193            |                         | 30 1193          |

## EQUIPMENT DATA

## TOOL SEQUENCE REPORT

DST Number: 8

TEST TICKET NO. 5649

WELL NAME: H.C.Miller #1

WELL LOCATION: 9-19S-22W

| Tool # | Tool              | Length  | I.D.  | O.D. |
|--------|-------------------|---------|-------|------|
| 1      | Drill Pipe - 4.5" | 3238.00 | 3.826 | 4.50 |
| 3      | Weight Pipe       | 699.00  | 2.760 | 4.50 |
| 4      | Drill Collar - 6" | 244.00  | 2.250 | 6.00 |
| 8      | Circulating Sub   | 1.00    | 3.000 | 5.00 |
| 9      | Shut-In Tool      | 5.45    | 0.870 | 5.00 |
| 10     | Hydraulic Tool    | 5.60    | 1.000 | 5.00 |
| 14     | Packer            | 5.35    | 1.530 | 6.75 |
| 14     | Packer            | 5.35    | 1.530 | 6.75 |
| 6      | Anchor            | 15.00   | 2.750 | 5.00 |
| 15     | Recorder Carrier  | 1.00    |       | 5.00 |
| 16     | Bull Plug         | 2.00    |       | 5.00 |
|        | Total Depth       | 4221.75 |       |      |

# CALCULATED RECOVERY ANALYSIS

DST Number: 8

TEST TICKET NO. 5649

| Sample # | Total Feet  | ***** Gas % | ***** Feet  | ***** Oil % | ***** Feet  | ***** Mud % | ***** Feet   |
|----------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| 1        | 60          | 0.00        | 0.00        | 0.00        | 0.00        | 10.00       | 6.00         |
| 2        | 300         | 0.00        | 0.00        | 0.00        | 0.00        | 10.00       | 30.00        |
| 3        | 300         | 0.00        | 0.00        | 0.00        | 0.00        | 5.00        | 15.00        |
| 4        | 300         | 0.00        | 0.00        | 0.00        | 0.00        | 1.00        | 3.00         |
| 5        | 300         | 0.00        | 0.00        | 0.00        | 0.00        | 1.00        | 3.00         |
| 6        | 300         | 0.00        | 0.00        | 0.00        | 0.00        | 1.00        | 3.00         |
| 7        | 120         | 0.00        | 0.00        | 0.00        | 0.00        | 1.00        | 1.20         |
| TOTAL    | <u>1680</u> | 0.00        | <u>0.00</u> | 0.00        | <u>0.00</u> | 3.64        | <u>61.20</u> |

| Sample # | **** Water % | *** Feet       | Chlorides (PPM) | Resistivity (Ohms) | Temperature (Deg) |
|----------|--------------|----------------|-----------------|--------------------|-------------------|
| 1        | 90.00        | 54.00          | 32,000          |                    |                   |
| 2        | 90.00        | 270.00         | 32,000          |                    |                   |
| 3        | 95.00        | 285.00         | 33,000          |                    |                   |
| 4        | 99.00        | 297.00         | 33,000          |                    |                   |
| 5        | 99.00        | 297.00         | 33,000          |                    |                   |
| 6        | 99.00        | 297.00         | 33,000          |                    |                   |
| 7        | 99.00        | 118.80         | 33,000          |                    |                   |
| TOTAL    | 96.36        | <u>1618.80</u> |                 |                    |                   |

# CRUDE OIL TESTING, INC.

DATE 11/19/85

TEST TICKET NO. 5650

Company: A. Scott Ritchie  
 Company Address: 125 N. Market #950 Wichita KS 67202  
 Location: Sec. 9 Twp. 19S Range 22W Co. Scott State KS  
 Well Name & Number: H.C.Miller #1 Code E4

|                     |                 |         |                     |       |          |
|---------------------|-----------------|---------|---------------------|-------|----------|
| ENGINEERING<br>DATA | Elevation       | 2964 KB | Drill Pipe Length   | 3362  | ID 3.8 " |
|                     | Mud Viscosity   | 37      | Weight Pipe Length  | 699   | ID 2.76" |
|                     | Mud Weight      | 9.1     | Drill Collar Length | 244   | ID 2.25" |
|                     | Water Loss      | 10.4    | Top Packer Depth    | 3515  |          |
|                     | Type of Mud     | Starch  | Bottom Packer Depth | 3520  |          |
|                     | Anchor Length   | 32      | Tool Joint Size     | 4.5   | FH       |
|                     | Hole Size       | 7 7/8   | Test Tool Size      | 5 1/2 |          |
|                     | Casing Size     | 8 5/8   | Packer Size         | 6 3/4 |          |
|                     | Surface Choke   | 3/4     | Reversed Out        | No    |          |
|                     | Bottom Choke    | 3/4     | Recorder #          | 11084 |          |
|                     | Extra Equipment |         | None                |       |          |

REMARKS DST #9  
 Mud pit sample 35000 PPM

FORMATION Marmaton Zone Test Type Conventional  
 Interval 4320 To 4352 Total Depth 4352  
 Open 45 Shut In 45 Open 45 Shut In 45  
 Packer(s) Set 02:58AM Started Off Bottom 06:00AM  
 Blow 1st Opening Built slow to 1/2 in then decreased  
 2nd Opening No blow flushed tool no help

RECOVERY Total Feet 30  
 Recovered 30 feet of Oil spotted mud

CALCULATED Gas Oil 3 Water 9 Mud 18  
 RECOVERY Gravity (Oil) Test Water Chlorides PPM  
 Test Area Temperature 118F Mud System Chlorides 35,000 PPM

|                                      | FIELD<br>READING | OFFICE<br>READING |     |
|--------------------------------------|------------------|-------------------|-----|
| PRESSURE (A) Initial Hydrostatic Mud | 2198             | 2174              | PSI |
| (B) First Initial Flow Pressure      | 66               | 49                | PSI |
| (C) First Final Flow Pressure        | 66               | 52                | PSI |
| (D) Initial Closed-In Pressure       | 450              | 431               | PSI |
| (E) Second Initial Flow Pressure     | 66               | 60                | PSI |
| (F) Second Final Flow Pressure       | 66               | 65                | PSI |
| (G) Final Closed-In Pressure         | 132              | 129               | PSI |
| (H) Final Hydrostatic Mud            | 2177             | 2174              | PSI |

# CRUDE OIL TESTING INC.

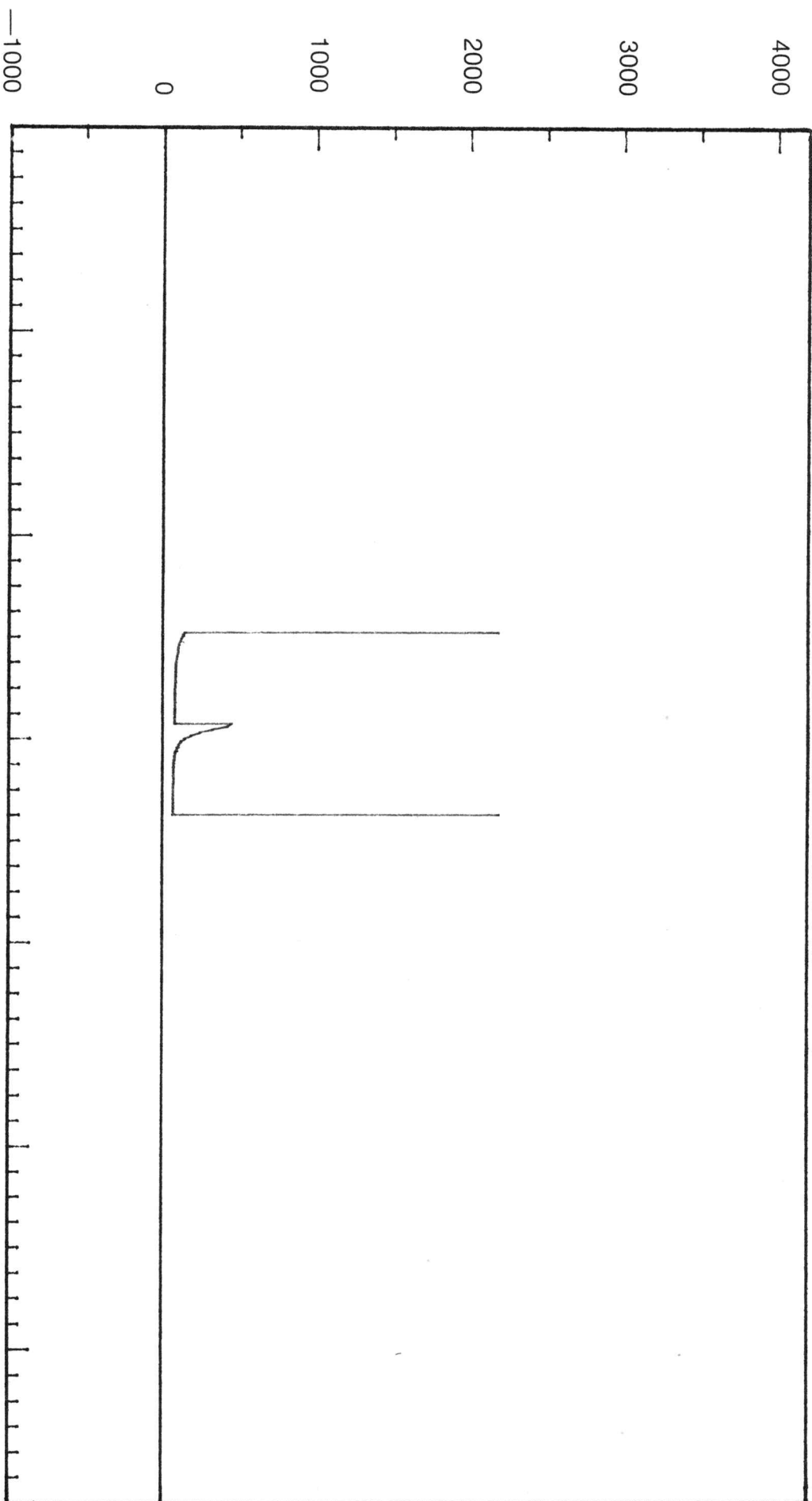
FOR: A. Scott Ritchie

TEST 5650

DST 9

11/19/85

PRESSURE



TIME (MINUTES)

# PRESSURE BREAKDOWN

TEST TICKET NO. 5650

DST Number: 9 Recorder Number: 11084 Clock Number: 23934

| First Flow<br>Pressure |        | Initial<br>Shut-In |        | Second Flow<br>Pressure |        | Final<br>Shut-In |        |
|------------------------|--------|--------------------|--------|-------------------------|--------|------------------|--------|
| Mins.                  | Press. | Mins.              | Press. | Mins.                   | Press. | Mins.            | Press. |
| 0                      | 48     | 0                  | 52     | 0                       | 59     | 0                | 65     |
| 3                      | 49     | 3                  | 52     | 3                       | 59     | 3                | 66     |
| 6                      | 49     | 6                  | 53     | 6                       | 60     | 6                | 67     |
| 9                      | 49     | 9                  | 57     | 9                       | 60     | 9                | 68     |
| 12                     | 49     | 12                 | 59     | 12                      | 61     | 12               | 69     |
| 15                     | 49     | 15                 | 62     | 15                      | 62     | 15               | 71     |
| 18                     | 49     | 18                 | 69     | 18                      | 62     | 18               | 75     |
| 21                     | 49     | 21                 | 77     | 21                      | 62     | 21               | 77     |
| 24                     | 49     | 24                 | 88     | 24                      | 62     | 24               | 81     |
| 27                     | 49     | 27                 | 104    | 27                      | 62     | 27               | 82     |
| 30                     | 50     | 30                 | 127    | 30                      | 62     | 30               | 86     |
| 33                     | 52     | 33                 | 171    | 33                      | 62     | 33               | 91     |
| 36                     | 52     | 36                 | 225    | 36                      | 65     | 36               | 99     |
| 39                     | 52     | 39                 | 309    | 39                      | 65     | 39               | 107    |
| 42                     | 52     | 42                 | 407    | 42                      | 65     | 42               | 119    |
| 45                     | 52     | 45                 | 431    | 45                      | 65     | 45               | 128    |

## EQUIPMENT DATA

## TOOL SEQUENCE REPORT

DST Number: 9

TEST TICKET NO. 5650

WELL NAME: H.C.Miller #1

WELL LOCATION: 9-19S-22W

| Tool # | Tool              | Length  | I.D.  | O.D. |
|--------|-------------------|---------|-------|------|
| 1      | Drill Pipe - 4.5" | 3362.00 | 3.826 | 4.50 |
| 3      | Weight Pipe       | 699.00  | 2.760 | 4.50 |
| 4      | Drill Collar - 6" | 244.00  | 2.250 | 6.00 |
| 8      | Circulating Sub   | 1.00    | 3.000 | 5.00 |
| 9      | Shut-In Tool      | 5.45    | 0.870 | 5.00 |
| 10     | Hydraulic Tool    | 5.60    | 1.000 | 5.00 |
| 14     | Packer            | 5.35    | 1.530 | 6.75 |
| 14     | Packer            | 5.35    | 1.530 | 6.75 |
| 6      | Anchor            | 28.00   | 2.750 | 5.00 |
| 15     | Recorder Carrier  | 1.00    |       | 5.00 |
| 16     | Bull Plug         | 2.00    |       | 5.00 |
|        | Total Depth       | 4358.75 |       |      |

# CALCULATED RECOVERY ANALYSIS

DST Number: 9

TEST TICKET NO. 5650

| Sample # | Total Feet | ***** Gas % | ***** Feet  | ***** Oil % | ***** Feet  | ***** Mud % | ***** Feet   |
|----------|------------|-------------|-------------|-------------|-------------|-------------|--------------|
| 1        | 30         | 0.00        | 0.00        | 10.00       | 3.00        | 60.00       | 18.00        |
| TOTAL    | <u>30</u>  | 0.00        | <u>0.00</u> | 10.00       | <u>3.00</u> | 60.00       | <u>18.00</u> |

| Sample # | **** Water % | *** Feet    | Chlorides (PPM) | Resistivity (Ohms) | Temperature (Deg) |
|----------|--------------|-------------|-----------------|--------------------|-------------------|
| 1        | 30.00        | 9.00        | 38,000          |                    |                   |
| TOTAL    | 30.00        | <u>9.00</u> |                 |                    |                   |

# CRUDE OIL TESTING, INC.

DATE 11/19/85

TEST TICKET NO. 5504

Company: A. Scott Ritchie  
 Company Address: 125 N. Market #950 Wichita KS 67202  
 Location: Sec. 9 Twp. 19S Range 22W Co. Scott State KS  
 Well Name & Number: H.C.Miller #1 Code E4

|                     |                 |         |                     |        |          |
|---------------------|-----------------|---------|---------------------|--------|----------|
| ENGINEERING<br>DATA | Elevation       | 2964 KB | Drill Pipe Length   | 3424   | ID 3.8 " |
|                     | Mud Viscosity   | 41      | Weight Pipe Length  | 699    | ID 2.76" |
|                     | Mud Weight      | 9.2     | Drill Collar Length | 244    | ID 2.25" |
|                     | Water Loss      | 10.4    | Top Packer Depth    | 4351   |          |
|                     | Type of Mud     | Starch  | Bottom Packer Depth | 4356   |          |
|                     | Anchor Length   | 39      | Tool Joint Size     | 4.5 FH |          |
|                     | Hole Size       | 7 7/8   | Test Tool Size      | 5 1/2  |          |
|                     | Casing Size     | 8 5/8   | Packer Size         | 6 3/4  |          |
|                     | Surface Choke   | 3/4     | Reversed Out        | No     |          |
|                     | Bottom Choke    | 3/4     | Recorder #          | 11084  |          |
|                     | Extra Equipment |         | None                |        |          |

REMARKS DST #10  
 Mud pit sample 35000 PPM

FORMATION Low Marmaton Zone Test Type Conventional  
 Interval 4356 To 4395 Total Depth 4395  
 Open 15 Shut In 30 Open 15 Shut In 30  
 Packer(s) Set 08:28PM Started Off Bottom 10:00PM  
 Blow 1st Opening Very strong blow off bottom in 1 min  
 2nd Opening Very strong blow off bottom in 3 min

RECOVERY Total Feet 1000  
 Recovered 1000 feet of Gassy frothy oil

CALCULATED Gas 100 Oil 694 Water 161 Mud 45  
 RECOVERY Gravity (Oil) Test Water Chlorides PPM  
 Test Area Temperature 118F Mud System Chlorides 34,000 PPM

|                                      | FIELD<br>READING | OFFICE<br>READING |     |
|--------------------------------------|------------------|-------------------|-----|
| PRESSURE (A) Initial Hydrostatic Mud | 2188             | 2148              | PSI |
| (B) First Initial Flow Pressure      | 143              | 135               | PSI |
| (C) First Final Flow Pressure        | 296              | 303               | PSI |
| (D) Initial Closed-In Pressure       | 1131             | 1125              | PSI |
| (E) Second Initial Flow Pressure     | 395              | 389               | PSI |
| (F) Second Final Flow Pressure       | 461              | 451               | PSI |
| (G) Final Closed-In Pressure         | 1131             | 1117              | PSI |
| (H) Final Hydrostatic Mud            | 2166             | 2101              | PSI |

10  
DST

# CRUDE OIL TESTING INC.

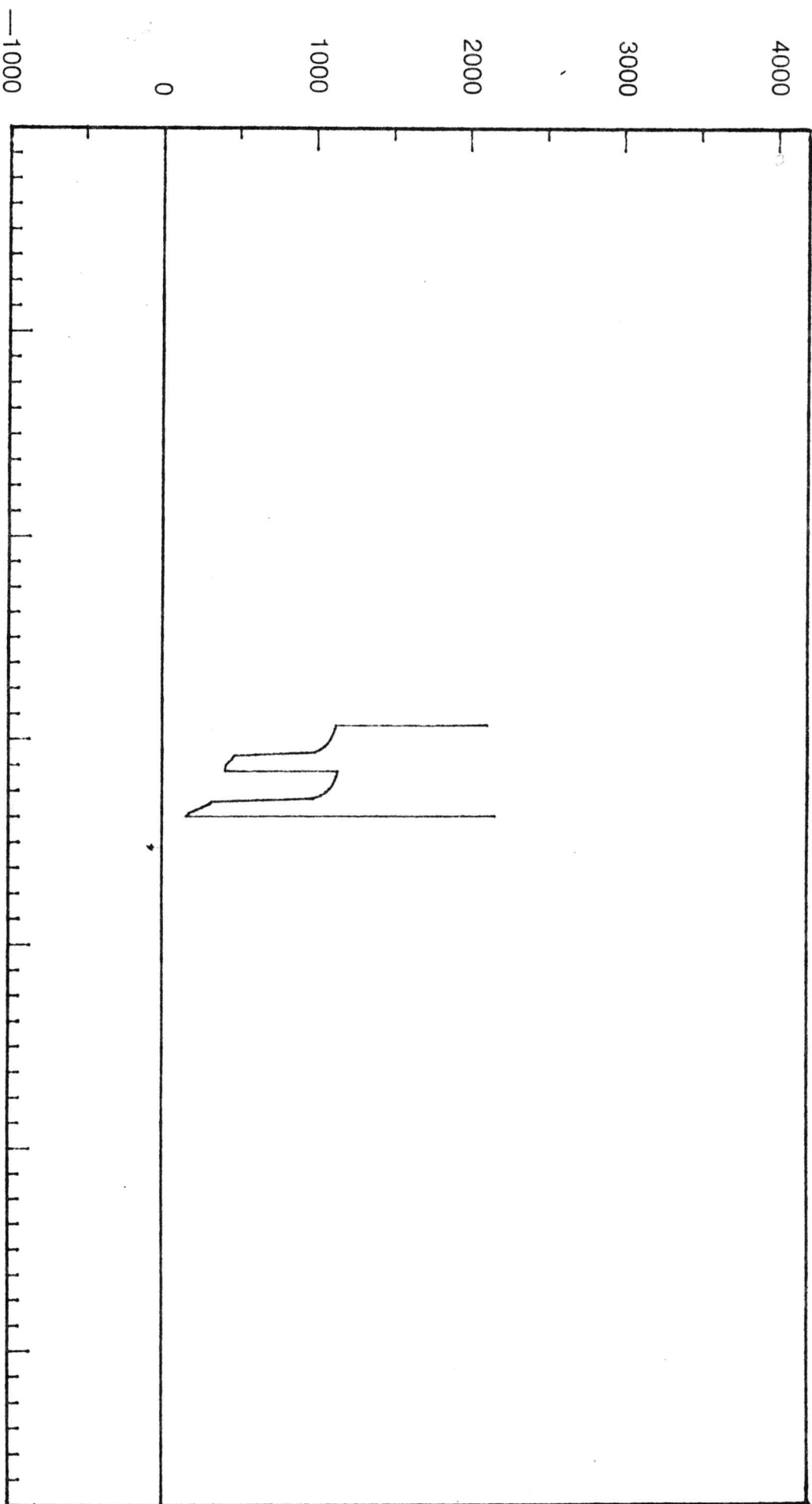
FOR: A. Scott Ritchie

TEST 5504

DST 10

11/19/85

PRESSURE



TIME (MINUTES)

# PRESSURE BREAKDOWN

TEST TICKET NO. 5504

DST Number: 10 Recorder Number: 11084 Clock Number: 23934

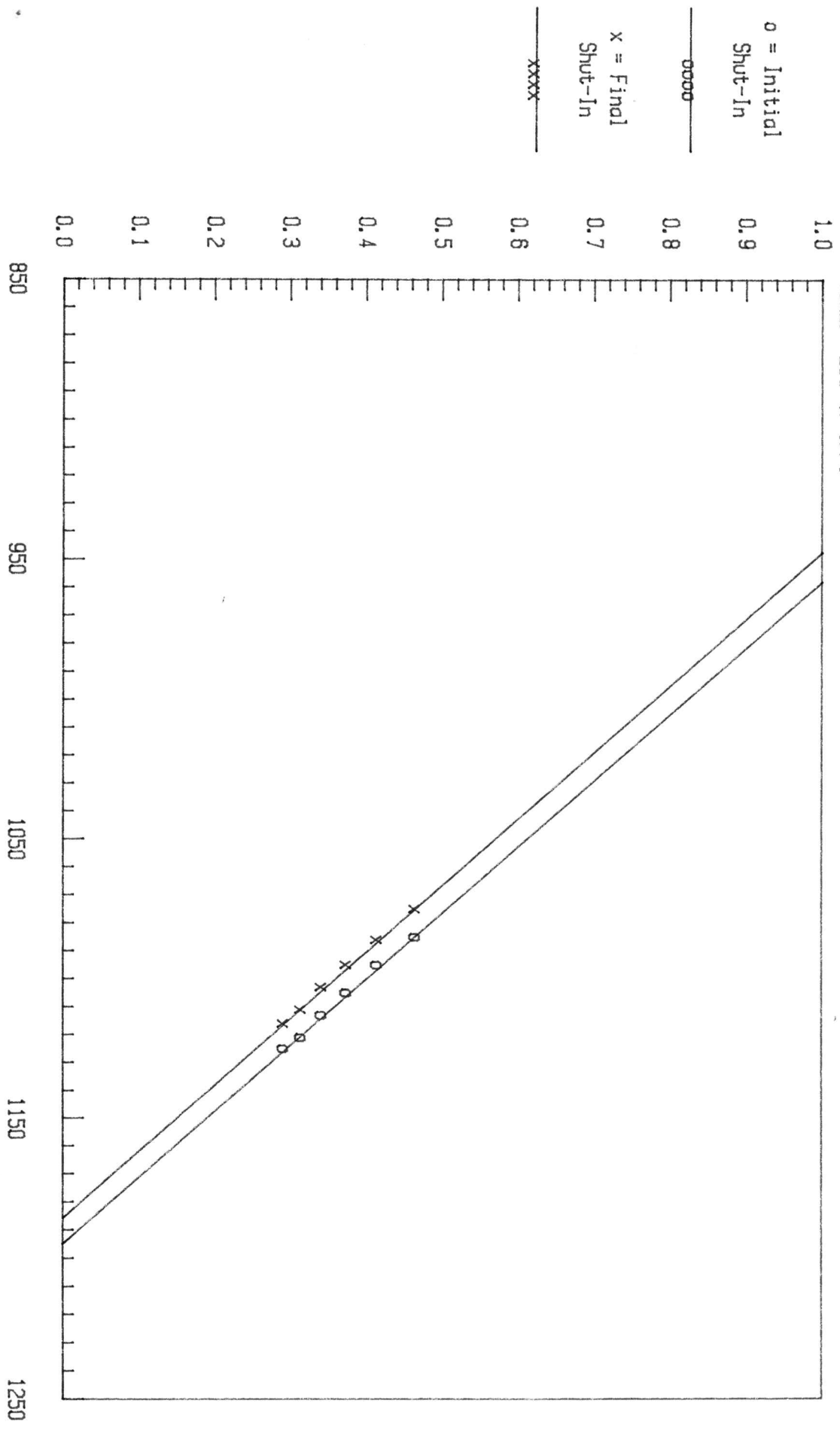
| First Flow<br>Pressure | Initial<br>Shut-In | Second Flow<br>Pressure | Final<br>Shut-In |
|------------------------|--------------------|-------------------------|------------------|
| Mins. Press.           | Mins. Press.       | Mins. Press.            | Mins. Press.     |
| 0 135                  | 0 302              | 0 388                   | 0 450            |
| 3 155                  | 3 963              | 3 391                   | 3 976            |
| 6 201                  | 6 1016             | 6 396                   | 6 1016           |
| 9 245                  | 9 1048             | 9 414                   | 9 1043           |
| 12 288                 | 12 1068            | 12 437                  | 12 1061          |
| 14 302                 | 15 1085            | 15 450                  | 15 1075          |
|                        | 18 1095            |                         | 18 1086          |
|                        | 21 1105            |                         | 21 1095          |
|                        | 24 1113            |                         | 24 1103          |
|                        | 27 1121            |                         | 27 1111          |
|                        | 30 1125            |                         | 30 1116          |

# CRUDE OIL TESTING INC TEST 5504 DST 10

FOR: A. Scott Ritchie

11/19/85

TIME: LOG (T+t)/t



# ZONE EVALUATION - Page 1

DST NUMBER 10

TEST TICKET NO. 5504

Company: A. Scott Ritchie

Date: 11/19/85

| Drill Collar Feet | ID    | Weight Pipe Feet | Pipe ID | Drill Pipe Feet | Pipe ID | Average ID | Gals/ Foot |
|-------------------|-------|------------------|---------|-----------------|---------|------------|------------|
| 244               | 2.250 | 450              | 2.760   | 0               | 3.800   | 2.5807     | 0.272      |

Bbls Recovered/Test = 9.2895      Est Bbls/Day = 461.2740      T = 29

| PRESS. | TIME | Initial Shut-In |         |          |             |
|--------|------|-----------------|---------|----------|-------------|
|        |      | T/t             | (T+t)/t | LOG T/t  | LOG (T+t)/t |
| 1125   | 30   | 0.967           | 1.967   | -0.01472 | 0.29373     |
| 1121   | 27   | 1.074           | 2.074   | 0.03103  | 0.31682     |
| 1113   | 24   | 1.208           | 2.208   | 0.08219  | 0.34406     |
| 1105   | 21   | 1.381           | 2.381   | 0.14018  | 0.37675     |
| 1095   | 18   | 1.611           | 2.611   | 0.20713  | 0.41683     |
| 1085   | 15   | 1.933           | 2.933   | 0.28631  | 0.46736     |

| Press. | Time | Final Shut-In |         |          |             |
|--------|------|---------------|---------|----------|-------------|
|        |      | T/t           | (T+t)/t | Log T/t  | Log (T+t)/t |
| 1116   | 30   | 0.967         | 1.967   | -0.01472 | 0.29373     |
| 1111   | 27   | 1.074         | 2.074   | 0.03103  | 0.31682     |
| 1103   | 24   | 1.208         | 2.208   | 0.08219  | 0.34406     |
| 1095   | 21   | 1.381         | 2.381   | 0.14018  | 0.37675     |
| 1086   | 18   | 1.611         | 2.611   | 0.20713  | 0.41683     |
| 1075   | 15   | 1.933         | 2.933   | 0.28631  | 0.46736     |

| IP(0)  | IP(1) | FP(0)  | FP(1) | Time Option is Log (T+t)/t |         | DR    | Q1      | Pts |
|--------|-------|--------|-------|----------------------------|---------|-------|---------|-----|
|        |       |        |       | M                          | Kh/B    |       |         |     |
| 1195.0 | 956.6 | 1191.9 | 933.6 | 258.3                      | 290.400 | 1.443 | 665.545 | 1,3 |
| 1196.1 | 956.0 | 1192.5 | 933.2 | 259.3                      | 289.224 | 1.441 | 664.718 | 1-3 |
| 1198.2 | 951.2 | 1191.9 | 934.6 | 257.2                      | 291.564 | 1.445 | 666.364 | 1-4 |
| 1198.8 | 950.0 | 1188.8 | 941.1 | 247.7                      | 302.859 | 1.462 | 674.309 | 1-5 |
| 1194.9 | 957.7 | 1185.7 | 947.2 | 238.5                      | 314.431 | 1.479 | 682.449 | 1-6 |

## Graph Data For Points

| Initial |          | Final  |          |
|---------|----------|--------|----------|
| Time    | Pressure | Time   | Pressure |
| 0.2937  | 1125     | 0.2937 | 1116     |
| 0.3168  | 1121     | 0.3168 | 1111     |
| 0.3440  | 1113     | 0.3440 | 1103     |
| 0.3767  | 1105     | 0.3767 | 1095     |
| 0.4168  | 1095     | 0.4168 | 1086     |
| 0.4673  | 1085     | 0.4673 | 1075     |

## Graph Data For Lines

|   |         |   |         |
|---|---------|---|---------|
| 0 | 1194.92 | 0 | 1185.75 |
| 1 | 957.72  | 1 | 947.21  |

ZONE EVALUATION - Page 2

DST Number 10

TEST TICKET NO. 5504

Company: A. Scott Ritchie

Date: 11/19/85

P.S.I. Slope Cycle (From Log  $\frac{T + t}{t}$ )

$$M = G_0 - G_1 \quad 238.54$$

Damage Ratio:

$$DR = .183 \frac{P_s - P_f}{M} \quad 1.48$$

Effective Pay:

$$\frac{K_h}{B} = \frac{162.6 Q}{M} \quad 314.43 \text{ Md. Ft.}$$

Theoretical Potential With  
Damage Removed (for DR greater than 1):

$$Q_1 = Q DR \quad 682.45 \text{ Bbls/Day}$$

Production:

9.29 Bbls/Hour

$$Q = \frac{1440 R}{T} \quad 461.27 \text{ Bbls/Day}$$

These calculations are based upon information furnished by you and taken from drill stem test pressure charts and are furnished for your information. In furnishing such calculations and evaluations, Crude Oil Testing Inc. is merely expressing an opinion. You agree that Crude Oil Testing Inc. makes no warranty as to the accuracy of such calculations or opinions, and Crude Oil Testing Inc. shall not be liable for any loss or damage, whether due to negligence or otherwise in connection with such calculations and opinions.

EQUIPMENT DATA  
TOOL SEQUENCE REPORT

DST Number: 10

TEST TICKET NO. 5504

WELL NAME: H.C.Miller #1

WELL LOCATION: 9-19S-22W

| Tool # | Tool              | Length  | I.D.  | O.D. |
|--------|-------------------|---------|-------|------|
| 1      | Drill Pipe - 4.5" | 3424.00 | 3.826 | 4.50 |
| 3      | Weight Pipe       | 699.00  | 2.760 | 4.50 |
| 4      | Drill Collar - 6" | 244.00  | 2.250 | 6.00 |
| 8      | Circulating Sub   | 1.00    | 3.000 | 5.00 |
| 9      | Shut-In Tool      | 5.45    | 0.870 | 5.00 |
| 10     | Hydraulic Tool    | 5.60    | 1.000 | 5.00 |
| 14     | Packer            | 5.35    | 1.530 | 6.75 |
| 14     | Packer            | 5.35    | 1.530 | 6.75 |
| 6      | Anchor            | 35.00   | 2.750 | 5.00 |
| 15     | Recorder Carrier  | 1.00    |       | 5.00 |
| 16     | Bull Plug         | 2.00    |       | 5.00 |
|        | Total Depth       | 4427.75 |       |      |

# CALCULATED RECOVERY ANALYSIS

DST Number: 10

TEST TICKET NO. 5504

| Sample # | Total Feet  | ***** Gas % | **** Feet     | ***** Oil % | **** Feet     | ***** Mud % | **** Feet    |
|----------|-------------|-------------|---------------|-------------|---------------|-------------|--------------|
| 1        | 40          | 10.00       | 4.00          | 40.00       | 16.00         | 30.00       | 12.00        |
| 2        | 60          | 10.00       | 6.00          | 60.00       | 36.00         | 15.00       | 9.00         |
| 3        | 60          | 20.00       | 12.00         | 60.00       | 36.00         | 10.00       | 6.00         |
| 4        | 120         | 5.00        | 6.00          | 80.00       | 96.00         | 5.00        | 6.00         |
| 5        | 120         | 5.00        | 6.00          | 75.00       | 90.00         | 5.00        | 6.00         |
| 6        | 120         | 10.00       | 12.00         | 80.00       | 96.00         | 10.00       | 12.00        |
| 7        | 120         | 30.00       | 36.00         | 60.00       | 72.00         | 0.00        | 0.00         |
| 8        | 120         | 5.00        | 6.00          | 75.00       | 90.00         | 0.00        | 0.00         |
| 9        | 120         | 5.00        | 6.00          | 65.00       | 78.00         | 0.00        | 0.00         |
| 10       | 120         | 5.00        | 6.00          | 70.00       | 84.00         | 5.00        | 6.00         |
| TOTAL    | <u>1000</u> | 10.00       | <u>100.00</u> | 69.40       | <u>694.00</u> | 5.70        | <u>57.00</u> |

| Sample # | **** Water % | *** Feet      | Chlorides (PPM) | Resistivity (Ohms) | Temperature (Deg) |
|----------|--------------|---------------|-----------------|--------------------|-------------------|
| 1        | 20.00        | 8.00          |                 |                    |                   |
| 2        | 15.00        | 9.00          |                 |                    |                   |
| 3        | 10.00        | 6.00          |                 |                    |                   |
| 4        | 10.00        | 12.00         |                 |                    |                   |
| 5        | 15.00        | 18.00         |                 |                    |                   |
| 6        | 0.00         | 0.00          |                 |                    |                   |
| 7        | 10.00        | 12.00         |                 |                    |                   |
| 8        | 20.00        | 24.00         |                 |                    |                   |
| 9        | 30.00        | 36.00         |                 |                    |                   |
| 10       | 20.00        | 24.00         |                 |                    |                   |
| TOTAL    | 14.90        | <u>149.00</u> |                 |                    |                   |

# CRUDE OIL TESTING, INC.

DATE 11/21/85

TEST TICKET NO. 5505

Company: A. Scott Ritchie  
 Company Address: 125 N. Market #950 Wichita KS 67202  
 Location: Sec. 9 Twp. 19S Range 22W Co. Scott State KS  
 Well Name & Number: H.C.Miller #1 Code E4

|                     |                 |         |                     |        |          |
|---------------------|-----------------|---------|---------------------|--------|----------|
| ENGINEERING<br>DATA | Elevation       | 2964 KB | Drill Pipe Length   | 3580   | ID 3.8 " |
|                     | Mud Viscosity   | 42      | Weight Pipe Length  | 699    | ID 2.76" |
|                     | Mud Weight      | 9.2     | Drill Collar Length | 244    | ID 2.25" |
|                     | Water Loss      | 14      | Top Packer Depth    | 4514   |          |
|                     | Type of Mud     | Starch  | Bottom Packer Depth | 4519   |          |
|                     | Anchor Length   | 45      | Tool Joint Size     | 4.5 FH |          |
|                     | Hole Size       | 7 7/8   | Test Tool Size      | 5 1/2  |          |
|                     | Casing Size     | 8 5/8   | Packer Size         | 6 3/4  |          |
|                     | Surface Choke   | 3/4     | Reversed Out        | No     |          |
|                     | Bottom Choke    | 3/4     | Recorder #          | 11084  |          |
|                     | Extra Equipment |         | None                |        |          |

REMARKS DST #11  
 Tore up bottom packer no charge  
 Mud pit sample 43000 PPM

FORMATION Cherokee Zone Test Type Conventional  
 Interval 4519 To 4564 Total Depth 4564  
 Open 30 Shut In 30 Open 30 Shut In 30  
 Packer(s) Set 06:13AM Started Off Bottom 08:15AM  
 Blow 1st Opening Weak decreasing blow died in 20 min  
 2nd Opening No blow flushed tool no help

RECOVERY Total Feet 20  
 Recovered 20 feet of Drilling mud (few spots of oil in tool)

CALCULATED Gas Oil Water Mud 20  
 RECOVERY Gravity (Oil) Test Water Chlorides PPM  
 Test Area Temperature 118F Mud System Chlorides 43,000 PPM

|                                      | FIELD<br>READING | OFFICE<br>READING |     |
|--------------------------------------|------------------|-------------------|-----|
| PRESSURE (A) Initial Hydrostatic Mud | 2328             |                   | PSI |
| (B) First Initial Flow Pressure      | 55               |                   | PSI |
| (C) First Final Flow Pressure        | 55               |                   | PSI |
| (D) Initial Closed-In Pressure       | 66               |                   | PSI |
| (E) Second Initial Flow Pressure     | 66               |                   | PSI |
| (F) Second Final Flow Pressure       | 66               |                   | PSI |
| (G) Final Closed-In Pressure         | 66               |                   | PSI |
| (H) Final Hydrostatic Mud            | 2306             |                   | PSI |

EQUIPMENT DATA  
TOOL SEQUENCE REPORT

DST Number: 11

TEST TICKET NO. 5505

WELL NAME: H.C.Miller #1

WELL LOCATION: 9-19S-22W

| Tool # | Tool              | Length  | I.D.  | O.D. |
|--------|-------------------|---------|-------|------|
| 1      | Drill Pipe - 4.5" | 3580.00 | 3.826 | 4.50 |
| 3      | Weight Pipe       | 699.00  | 2.760 | 4.50 |
| 4      | Drill Collar - 6" | 244.00  | 2.250 | 6.00 |
| 8      | Circulating Sub   | 1.00    | 3.000 | 5.00 |
| 9      | Shut-In Tool      | 5.45    | 0.870 | 5.00 |
| 10     | Hydraulic Tool    | 5.60    | 1.000 | 5.00 |
| 14     | Packer            | 5.35    | 1.530 | 6.75 |
| 14     | Packer            | 5.35    | 1.530 | 6.75 |
| 6      | Anchor            | 41.00   | 2.750 | 5.00 |
| 15     | Recorder Carrier  | 1.00    |       | 5.00 |
| 16     | Bull Plug         | 2.00    |       | 5.00 |
|        | Total Depth       | 4589.75 |       |      |

# CALCULATED RECOVERY ANALYSIS

DST Number: 11

TEST TICKET NO. 5505

| Sample # | Total Feet | *****<br>% | Gas<br>Feet | *****<br>% | Oil<br>Feet | *****<br>% | Mud<br>Feet  | *****<br>% |
|----------|------------|------------|-------------|------------|-------------|------------|--------------|------------|
| 1        | 20         | 0.00       | 0.00        | 0.00       | 0.00        | 100.00     | 20.00        |            |
| TOTAL    | <u>20</u>  | 0.00       | <u>0.00</u> | 0.00       | <u>0.00</u> | 100.00     | <u>20.00</u> |            |

| Sample # | ****<br>% | Water<br>Feet | **** | Chlorides<br>(PPM) | Resistivity<br>(Ohms) | Temperature<br>(Deg) |
|----------|-----------|---------------|------|--------------------|-----------------------|----------------------|
| 1        | 0.00      | 0.00          |      |                    |                       |                      |
| TOTAL    | 0.00      | <u>0.00</u>   |      |                    |                       |                      |

# CRUDE OIL TESTING, INC.

DATE 11/22/85

TEST TICKET NO. 5506

Company: A. Scott Ritchie  
 Company Address: 125 N. Market #950 Wichita KS 67202  
 Location: Sec. 9 Twp. 19S Range 22W Co. Scott State KS  
 Well Name & Number: H.C.Miller #1 Code E4

|                     |                 |         |                     |        |          |
|---------------------|-----------------|---------|---------------------|--------|----------|
| ENGINEERING<br>DATA | Elevation       | 2964 KB | Drill Pipe Length   | 3673   | ID 3.8 " |
|                     | Mud Viscosity   | 44      | Weight Pipe Length  | 699    | ID 2.76" |
|                     | Mud Weight      | 9.3     | Drill Collar Length | 244    | ID 2.25" |
|                     | Water Loss      | 10.4    | Top Packer Depth    | 4619   |          |
|                     | Type of Mud     | Starch  | Bottom Packer Depth | 4624   |          |
|                     | Anchor Length   | 39      | Tool Joint Size     | 4.5 FH |          |
|                     | Hole Size       | 7 7/8   | Test Tool Size      | 5 1/2  |          |
|                     | Casing Size     | 8 5/8   | Packer Size         | 6 3/4  |          |
|                     | Surface Choke   | 3/4     | Reversed Out        | No     |          |
|                     | Bottom Choke    | 3/4     | Recorder #          | 11084  |          |
|                     | Extra Equipment |         | Safety joint        |        |          |

REMARKS DST #12  
 Mud pit sample 40000 PPM

FORMATION Marrow Zone Sand Test Type Conventional  
 Interval 4624 To 4663 Total Depth 4663  
 Open 45 Shut In 45 Open 45 Shut In 45  
 Packer(s) Set 03:43AM Started Off Bottom 06:45AM  
 Blow 1st Opening Weak increasing blow to 5 1/2in in bkt  
 2nd Opening Weak increasing blow to 2 in in bucket

RECOVERY Total Feet 365  
 Recovered 365 feet of Muddy water (few spots of oil in tool)

CALCULATED RECOVERY Gas Oil Water 300 Mud 65  
 Gravity (Oil) Test Water Chlorides 33,000 PPM  
 Test Area Temperature 135F Mud System Chlorides 40,000 PPM

|                                      | FIELD<br>READING | OFFICE<br>READING |     |
|--------------------------------------|------------------|-------------------|-----|
| PRESSURE (A) Initial Hydrostatic Mud | 2435             | 2382              | PSI |
| (B) First Initial Flow Pressure      | 66               | 61                | PSI |
| (C) First Final Flow Pressure        | 121              | 113               | PSI |
| (D) Initial Closed-In Pressure       | 1207             | 1207              | PSI |
| (E) Second Initial Flow Pressure     | 164              | 162               | PSI |
| (F) Second Final Flow Pressure       | 186              | 201               | PSI |
| (G) Final Closed-In Pressure         | 1207             | 1207              | PSI |
| (H) Final Hydrostatic Mud            | 2414             | 2294              | PSI |

# CRUDE OIL TESTING INC.

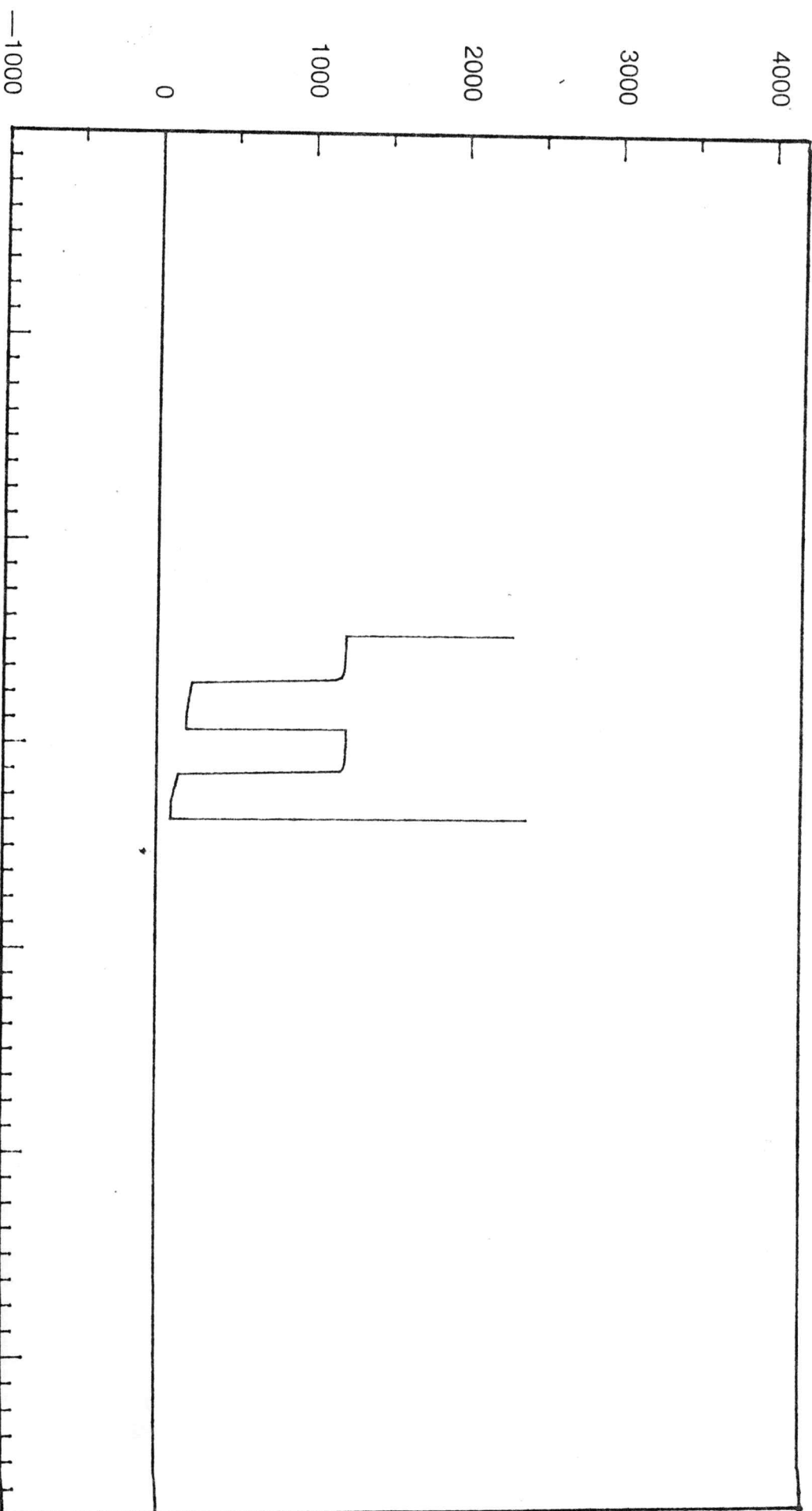
FOR: A. Scott Ritchie

TEST 5506

DST 12

11/22/85

PRESSURE



# PRESSURE BREAKDOWN

TEST TICKET NO. 5506

DST Number: 12 Recorder Number: 11084 Clock Number: 23934

| First Flow<br>Pressure | Initial<br>Shut-In | Second Flow<br>Pressure | Final<br>Shut-In |
|------------------------|--------------------|-------------------------|------------------|
| Mins. Press.           | Mins. Press.       | Mins. Press.            | Mins. Press.     |
| 0 60                   | 0 113              | 0 161                   | 0 201            |
| 3 62                   | 3 1171             | 3 162                   | 3 1139           |
| 6 64                   | 6 1187             | 6 162                   | 6 1180           |
| 9 64                   | 9 1193             | 9 163                   | 9 1188           |
| 12 64                  | 12 1196            | 12 164                  | 12 1193          |
| 15 64                  | 15 1198            | 15 167                  | 15 1196          |
| 18 67                  | 18 1200            | 18 170                  | 18 1197          |
| 21 71                  | 21 1201            | 21 173                  | 21 1198          |
| 24 77                  | 24 1203            | 24 174                  | 24 1199          |
| 27 81                  | 27 1205            | 27 178                  | 27 1201          |
| 30 86                  | 30 1206            | 30 181                  | 30 1202          |
| 33 94                  | 33 1207            | 33 185                  | 33 1205          |
| 36 99                  | 36 1207            | 36 190                  | 36 1205          |
| 39 105                 | 39 1207            | 39 193                  | 39 1207          |
| 42 110                 | 42 1207            | 42 196                  | 42 1207          |
| 44 113                 | 44 1207            | 45 201                  | 45 1207          |
|                        |                    |                         | 47 1207          |

EQUIPMENT DATA  
TOOL SEQUENCE REPORT

DST Number: 12

TEST TICKET NO. 5506

WELL NAME: H.C.Miller #1

WELL LOCATION: 9-19S-22W

| Tool # | Tool              | Length  | I.D.  | O.D. |
|--------|-------------------|---------|-------|------|
| 1      | Drill Pipe - 4.5" | 3673.00 | 3.826 | 4.50 |
| 3      | Weight Pipe       | 699.00  | 2.760 | 4.50 |
| 4      | Drill Collar - 6" | 244.00  | 2.250 | 6.00 |
| 8      | Circulating Sub   | 1.00    | 3.000 | 5.00 |
| 9      | Shut-In Tool      | 5.45    | 0.870 | 5.00 |
| 10     | Hydraulic Tool    | 5.60    | 1.000 | 5.00 |
| 13     | Safety Joint      | 2.31    | 3.000 | 5.00 |
| 14     | Packer            | 5.35    | 1.530 | 6.75 |
| 14     | Packer            | 5.35    | 1.530 | 6.75 |
| 6      | Anchor            | 35.00   | 2.750 | 5.00 |
| 15     | Recorder Carrier  | 1.00    |       | 5.00 |
| 16     | Bull Plug         | 2.00    |       | 5.00 |
|        | Total Depth       | 4679.06 |       |      |

# CALCULATED RECOVERY ANALYSIS

DST Number: 12

TEST TICKET NO. 5506

| Sample # | Total Feet | ***** Gas % | ***** Oil % | ***** Mud % |
|----------|------------|-------------|-------------|-------------|
| 1        | 5          | 0.00        | 0.00        | 0.00        |
| 2        | 60         | 0.00        | 0.00        | 40.00       |
| 3        | 120        | 0.00        | 0.00        | 40.00       |
| 4        | 120        | 0.00        | 0.00        | 25.00       |
| 5        | 60         | 0.00        | 0.00        | 5.00        |
| TOTAL    | <u>365</u> | 0.00        | <u>0.00</u> | 17.81       |

| Sample # | ***** Water % | ***** Chlorides (PPM) | Resistivity (Ohms) | Temperature (Deg) |
|----------|---------------|-----------------------|--------------------|-------------------|
| 1        | 60.00         | 33,000                |                    |                   |
| 2        | 60.00         | 33,000                |                    |                   |
| 3        | 75.00         | 33,000                |                    |                   |
| 4        | 95.00         | 33,000                |                    |                   |
| 5        | 95.00         | 33,000                |                    |                   |
| TOTAL    | 82.19         | <u>300.00</u>         |                    |                   |