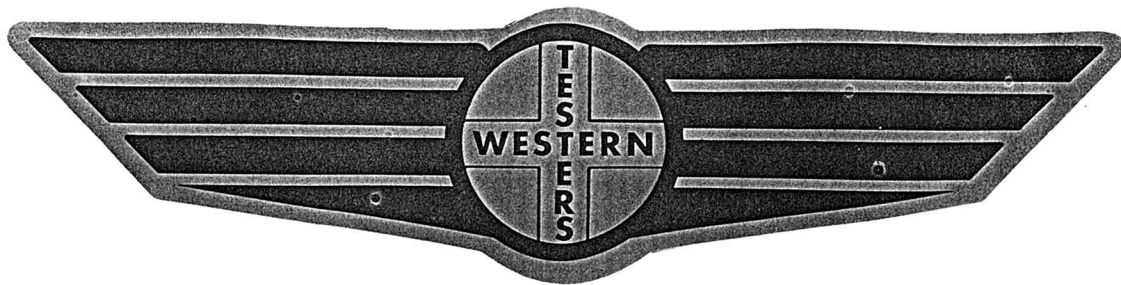


# FORMATION TEST REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone 1-800-688-7021

## DST REPORT

### GENERAL INFORMATION

|            |                          |            |              |
|------------|--------------------------|------------|--------------|
| DATE       | : 11/11/94               | TICKET     | : 20999      |
| CUSTOMER   | : GLACIER PETROLEUM INC. | LEASE      | : OLSEN      |
| WELL       | : #7                     | TEST:      | 1            |
| ELEVATION: | 1526GL                   | GEOLOGIST: | BRADLEY      |
| SECTION    | : 20                     | FORMATION: | SIMPSON SAND |
| RANGE      | : 10E                    | TOWNSHIP   | : 14S        |
| GAUGE SN#: | 1051                     | STATE      | : KS         |
|            | COUNTY: WABAUNSEE        | CLOCK      | : 12         |
|            | RANGE : 4250             |            |              |

### WELL INFORMATION

|                            |            |                    |            |            |           |
|----------------------------|------------|--------------------|------------|------------|-----------|
| PERFORATION INTERVAL FROM: | 3421.00 ft | TO:                | 3425.00 ft | TVD:       | 3425.0 ft |
| DEPTH OF SELECTIVE ZONE:   |            |                    |            | TEST TYPE: | OIL       |
| DEPTH OF RECORDERS:        | 3413.0 ft  |                    | 3422.0 ft  |            |           |
| TEMPERATURE:               | 109.0      |                    |            |            |           |
| DRILL COLLAR LENGTH:       | 362.0 ft   | I.D.:              |            | 2.250 in   |           |
| WEIGHT PIPE LENGTH :       | 0.0 ft     | I.D.:              |            | 0.000 in   |           |
| DRILL PIPE LENGTH :        | 3040.0 ft  | I.D.:              |            | 3.800 in   |           |
| TEST TOOL LENGTH :         | 19.0 ft    | TOOL SIZE :        |            | 5.500 in   |           |
| ANCHOR LENGTH :            | 4.0 ft     | ANCHOR SIZE:       |            | 5.500 in   |           |
| SURFACE CHOKE SIZE :       | 0.750 in   | BOTTOM CHOKE SIZE: |            | 0.750 in   |           |
| MAIN HOLE SIZE :           | 7.875 in   | TOOL JOINT SIZE :  |            | 4.5XH      |           |
| PACKER DEPTH:              | 3421.0 ft  | SIZE:              |            | 6.625 in   |           |
| PACKER DEPTH:              | 0.0 ft     | SIZE:              |            | 0.000 in   |           |
| PACKER DEPTH:              | 0.0 ft     | SIZE:              |            | 0.000 in   |           |
| PACKER DEPTH:              | 0.0 ft     | SIZE:              |            | 0.000 in   |           |

### MUD INFORMATION

|                 |                 |                |          |
|-----------------|-----------------|----------------|----------|
| DRILLING CON. : | SUMMIT DRILLING | VISCOSITY :    | 40.00 cp |
| MUD TYPE :      | CHEMICAL        | WATER LOSS:    | 0.000 cc |
| WEIGHT :        | 9.400 ppg       |                |          |
| CHLORIDES :     | 0 ppm           | SERIAL NUMBER: |          |
| JARS-MAKE :     |                 | REVERSED OUT?: | NO       |
| DID WELL FLOW?: | NO              |                |          |

### COMMENTS

#### Comment

INITIAL FLOW: STRONG BLOW IN 15 MINUTES.  
FINAL FLOW: STRONG BLOW.  
OFFICE RECEIVED ONLY THE INSIDE CHART.

# DST REPORT (CONTINUED)

## FLUID RECOVERY

| Feet of Fluid | % Oil | % Gas | % Water | % Mud | Comments           |
|---------------|-------|-------|---------|-------|--------------------|
| 300.0         | 100.0 | 0.0   | 0.0     | 0.0   | FREE OIL           |
| 90.0          | 70.0  | 0.0   | 30.0    | 0.0   | WATER CUT OIL      |
| 62.0          | 20.0  | 0.0   | 80.0    | 0.0   | OIL CUT WATER      |
| 0.0           | 0.0   | 0.0   | 0.0     | 0.0   | CHLORIDES 7800 PPM |
| 362.0         | 0.0   | 0.0   | 100.0   | 0.0   | WATER              |
| 0.0           | 0.0   | 0.0   | 0.0     | 0.0   | CHLORIDES 9000 PPM |

## RATE INFORMATION

|               |        |     |                     |                |
|---------------|--------|-----|---------------------|----------------|
| OIL VOLUME:   | 5.2655 | STB |                     |                |
| GAS VOLUME:   | 0.0000 | SCF |                     |                |
| MUD VOLUME:   | 0.0000 | STB |                     |                |
| WATER VOLUME: | 2.8545 | STB |                     |                |
| TOTAL FLUID : | 8.1200 | STB |                     |                |
|               |        |     | TOTAL FLOW TIME:    | 60.0000 min.   |
|               |        |     | AVERAGE OIL RATE:   | 126.3718 STB/D |
|               |        |     | AVERAGE WATER RATE: | 68.5091 STB/D  |

## FIELD TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 1706.00

| Description     | Duration | p1     | p End  |
|-----------------|----------|--------|--------|
| INITIAL FLOW    | 30.00    | 86.00  | 161.00 |
| INITIAL SHUT-IN | 30.00    |        | 835.00 |
| FINAL FLOW      | 30.00    | 247.00 | 247.00 |
| FINAL SHUT-IN   | 30.00    |        | 835.00 |

FINAL HYDROSTATIC PRESSURE: 1706.00

## OFFICE TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 1717.00

| Description     | Duration | p1     | p End  |
|-----------------|----------|--------|--------|
| INITIAL FLOW    | 30.00    | 82.00  | 169.00 |
| INITIAL SHUT-IN | 30.00    |        | 834.00 |
| FINAL FLOW      | 30.00    | 249.00 | 249.00 |
| FINAL SHUT-IN   | 30.00    |        | 839.00 |

FINAL HYDROSTATIC PRESSURE: 1706.00

# PRESSURE TRANSIENT REPORT

## GENERAL INFORMATION

|            |                          |                   |                    |
|------------|--------------------------|-------------------|--------------------|
| DATE       | : 11/11/94               | TICKET            | : 20999            |
| CUSTOMER   | : GLACIER PETROLEUM INC. | LEASE             | : OLSEN            |
| WELL       | : #7                     | TEST: 1           | GEOLOGIST: BRADLEY |
| ELEVATION: | 1526GL                   | FORMATION:        | SIMPSON SAND       |
| SECTION    | : 20                     | TOWNSHIP          | : 14S              |
| RANGE      | : 10E                    | COUNTY: WABAUNSEE | STATE : KS         |
| GAUGE SN#: | 1051                     | RANGE : 4250      | CLOCK : 12         |

## INITIAL FLOW

| Time<br>(min) | Pressure | Delta P |
|---------------|----------|---------|
| 0.00          | 82.00    | 82.00   |
| 5.00          | 87.00    | 5.00    |
| 10.00         | 111.00   | 24.00   |
| 15.00         | 123.00   | 12.00   |
| 20.00         | 135.00   | 12.00   |
| 25.00         | 150.00   | 15.00   |
| 30.00         | 169.00   | 19.00   |

## INITIAL SHUT IN

| Time<br>(min) | Pressure | Delta P | Horner T |
|---------------|----------|---------|----------|
| 3.00          | 673.00   | 673.00  | 11.00    |
| 6.00          | 721.00   | 48.00   | 6.00     |
| 9.00          | 753.00   | 32.00   | 4.33     |
| 12.00         | 773.00   | 20.00   | 3.50     |
| 15.00         | 790.00   | 17.00   | 3.00     |
| 18.00         | 804.00   | 14.00   | 2.67     |
| 21.00         | 816.00   | 12.00   | 2.43     |
| 24.00         | 823.00   | 7.00    | 2.25     |
| 27.00         | 829.00   | 6.00    | 2.11     |
| 30.00         | 834.00   | 5.00    | 2.00     |

## FINAL FLOW

| Time<br>(min) | Pressure | Delta P |
|---------------|----------|---------|
| 0.00          | 249.00   | 249.00  |

**PRESSURE TRANSIENT REPORT (CONTINUED)**

**FINAL FLOW (CONTINUED)**

| <u>Time<br/>(min)</u> | <u>Pressure</u> | <u>Delta P</u> |
|-----------------------|-----------------|----------------|
| 5.00                  | 249.00          | 0.00           |
| 10.00                 | 249.00          | 0.00           |
| 15.00                 | 249.00          | 0.00           |
| 20.00                 | 249.00          | 0.00           |
| 25.00                 | 249.00          | 0.00           |
| 30.00                 | 249.00          | 0.00           |

**FINAL SHUT IN**

| <u>Time<br/>(min)</u> | <u>Pressure</u> | <u>Delta P</u> | <u>Horner T</u> |
|-----------------------|-----------------|----------------|-----------------|
| 3.00                  | 710.00          | 710.00         | 11.00           |
| 6.00                  | 751.00          | 41.00          | 6.00            |
| 9.00                  | 776.00          | 25.00          | 4.33            |
| 12.00                 | 789.00          | 13.00          | 3.50            |
| 15.00                 | 802.00          | 13.00          | 3.00            |
| 18.00                 | 811.00          | 9.00           | 2.67            |
| 21.00                 | 820.00          | 9.00           | 2.43            |
| 24.00                 | 826.00          | 6.00           | 2.25            |
| 27.00                 | 833.00          | 7.00           | 2.11            |
| 30.00                 | 839.00          | 6.00           | 2.00            |

# WESTERN TESTING CO., INC.

## Pressure Data

Date 11/11/94

Test Ticket No. 20999

Recorder No. 1051

Capacity

Location

Ft.

Clock No. \_\_\_\_\_ Elevation \_\_\_\_\_

Well Temperature \_\_\_\_\_

°F

Point

Pressure

Time  
Given

Time  
Computed

A Initial Hydrostatic Mud 1717 P.S.I.

Open Tool

M

B First Initial Flow Pressure \_\_\_\_\_ P.S.I.

First Flow Pressure

Mins.

Mins.

C First Final Flow Pressure \_\_\_\_\_ P.S.I.

Initial Closed-in Pressure

Mins.

Mins.

D Initial Closed-in Pressure \_\_\_\_\_ P.S.I.

Second Flow Pressure

Mins.

Mins.

E Second Initial Flow Pressure \_\_\_\_\_ P.S.I.

Final Closed-in Pressure

Mins.

Mins.

F Second Final Flow Pressure \_\_\_\_\_ P.S.I.

G Final Closed-in Pressure \_\_\_\_\_ P.S.I.

H Final Hydrostatic Mud 1706 P.S.I.

## PRESSURE BREAKDOWN

### First Flow Pressure

Breakdown: \_\_\_\_\_ Inc.

of 5 mins. and a

final inc. of 0 Min.

### Initial Shut-In

Breakdown: \_\_\_\_\_ Inc.

of 3 mins. and a

final inc. of 0 Min.

### Second Flow Pressure

Breakdown: \_\_\_\_\_ Inc.

of 5 mins. and a

final inc. of 0 Min.

### Final Shut-In

Breakdown: \_\_\_\_\_ Inc.

of 3 mins. and a

final inc. of 0 Min.

| Point<br>Mins. | Press. | Point<br>Minutes | Press. | Point<br>Minutes | Press. | Point<br>Minutes | Press.         |
|----------------|--------|------------------|--------|------------------|--------|------------------|----------------|
| P 1 0          | 82     | 0                | 169    | 0                | 249    | 0                | 249            |
| P 2 5          | 87     | 3                | 673    | 5                |        | 3                | 710            |
| P 3 10         | 111    | 6                | 721    | 10               |        | 6 751            | <del>710</del> |
| P 4 15         | 123    | 9                | 753    | 15               |        | 9                | 776            |
| P 5 20         | 135    | 12               | 773    | 20               |        | 12               | 789            |
| P 6 25         | 150    | 15               | 790    | 25               |        | 15               | 802            |
| P 7 30         | 169    | 18               | 804    | 30               | 249    | 18               | 811            |
| P 8 35         |        | 21               | 816    | 35               |        | 21               | 820            |
| P 9 40         |        | 24               | 823    | 40               |        | 24               | 826            |
| P10 45         |        | 27               | 829    | 45               |        | 27               | 833            |
| P11 50         |        | 30               | 834    | 50               |        | 30               | 839            |
| P12 55         |        | 33               |        | 55               |        | 33               |                |
| P13 60         |        | 36               |        | 60               |        | 36               |                |
| P14 65         |        | 39               |        | 65               |        | 39               |                |
| P15 70         |        | 42               |        | 70               |        | 42               |                |
| P16 75         |        | 45               |        | 75               |        | 45               |                |
| P17 80         |        | 48               |        | 80               |        | 48               |                |
| P18 85         |        | 51               |        | 85               |        | 51               |                |
| P19 90         |        | 54               |        | 90               |        | 54               |                |
| P20 95         |        | 57               |        | 95               |        | 57               |                |
| 100            |        | 60               |        | 100              |        | 60               |                |

1051 Dst #1



Ticket # 20999

I

