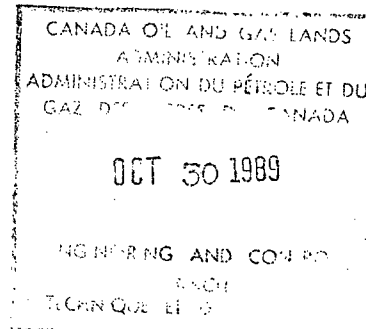


DRILL STEM TEST - Technical Report

Report date: 89/ 3/ 6



Wellname.....PARAMOUNT ET AL CAMERON  
Location.....3 - - - W  
U. well id.....L - 47  
Test number..... 4  
Interval tested....1335.0 m. to 1359.0 m.  
Formation.....SLAVE POINT  
Date of test.....89/ 3/ 3

Conducted by:

Scott Testers (1978) Ltd.  
#325, 808 - 4 th. Ave. S.W.  
Calgary, Alberta, Canada T2P 3E8  
Telephone (403) 262-7222

Analyzed and reported by:

Meyer Technical Services  
1501 - 7 th. Str.  
Nisku, Alberta  
Telephone (403) 955-7066

Test date : 89/ 3/ 3

DST # : 4

Report page :

Well name: PARAMOUNT ET AL CAMERON

Interval: 1335.0 m. to 1359.0 m.

Location: 3 - - - W

Interval(subsea): -612.0 m. to -636.0 m.

Formation: SLAVE POINT

Recorder information :

Serial #..... 13829

Position..... 0

Depth..... 1335.9 m.

Subsea depth.. -612.9 m.

Capacity..... 26717 kPa

Pressure (kPa)

1) Initial Hydro. : 1577

2) 1st. Flow Start : 83

3) 1st. Flow End : 79

4) END 1st. Shutin :

5) 2nd. Flow Start :

6) 2nd. Flow End :

7) END 2nd. Shutin :

8) Final Hydro. : 1575

Test Times (min.)

1st. Flow : 10

1st. Shutin : 0

2nd. Flow : 0

2nd. Shutin : 0

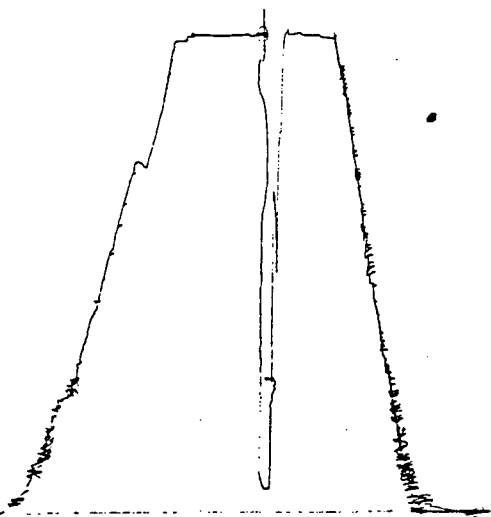
Recovery Data Summary :

Total fluid recovered was 72 m of mud cut inhibitor.

Remarks :

Misrun - the tool was pulled loose to check for frost plugs when there was no blow at surface on pre-flow. On the re-set the top packer blew.

PARAMOUNT RESOURCES DST# 4 Rec# 13829



Test date : 89/ 3/ 3

DST # : 4

Report page : 2

Test type.....INFLATE STRADDLE

Company :

Started in hole @...01:00:00

Tool opened @.....04:49:00

Reset?..... NO

PARAMOUNT RESOURCES LTD.

#4100, 350 - 7TH AVE SW

CALGARY, ALTA.

T2P 3W5

K.B. elevation... 723.0 m.

Grd. elevation... 719.3 m.

TD @ test date... 1565 m.

Contractor & Rig#...SIERRA 3

Ticket number....2064

Unit number.....EDM

Company rep...M CHOLACH

Tester.....B FRIESEN

---

**Mud and hole data:**

Mud type.....GEL CHEM

Mud weight.....1160.0 kg/m<sup>3</sup>

Mud viscosity..... 65.0 s/l

Filter cake..... 1.6 mm.

M.hole or C.size....222.0 mm.

Water loss..... 7.00 ml.

Calipered hole size @ test depth.....

Hole condition @ test time..... UNKNOWN

Hole conditioned prior to test..... YES

Temperature @ 1335.9 m..... 42.0 C.

---

**Total fluid recovery :**

Total fluid recovered 72 metres  
consisting of:

Reverse circulated ? NO

# of fluid samples..... 3

Samples sent to.....C&G LABS

B.H. sampler #.....302

B.H. smplr sent to.....

72 m. of MUD CUT INHIBITOR

---

**Blow description:**

On pre-flow, dead.

**Gas Measurements :**

Device.....  
Riser size... 50.8 mm.

Gas Bomb #.....  
Gas Bomb sent to...

No gas readings.

---

**Time-pressure listing:**

| Chart<br>Label | Comments            | Time<br>(min.) | Delta P.<br>(kPa) | Press.<br>(kPa) | (T+dt)/dt<br>(Dim.time) |
|----------------|---------------------|----------------|-------------------|-----------------|-------------------------|
| 1              | INITIAL Hydrostatic |                |                   | 15779           |                         |
| 2              | START of 1st. flow  | 0              |                   | 833             |                         |
| 3              | END of 1st. flow    | 10             |                   | 794             |                         |
|                | 1st. shutin period  |                |                   |                 |                         |
| 4              | End of 1st. shutin  |                |                   | 0               |                         |
| 5              | START of 2nd. flow  | 0              |                   | 0               |                         |
| 6              | END of 2nd. flow    | 0              |                   | 0               |                         |
|                | 2nd. shutin period  |                |                   |                 |                         |
| 7              | End of 2nd. shutin  |                |                   | 0               |                         |
| 8              | FINAL Hydrostatic   |                |                   | 15759           |                         |

Paramount Resources DST# 4 Recd 13831

Serial#.....13831  
 Position....I  
 Depth.....1323.2 m.  
 Capacity.... 26544 kPa

Pressure (kPa)

1) Initial Hydro. : 1569  
 2) 1st. Flow Start : 71  
 3) 1st. Flow End : 70  
 4) END 1st. Shutin :  
 5) 2nd. Flow Start :  
 6) 2nd. Flow End :  
 7) END 2nd. Shutin :  
 8) Final Hydro. : 1569

Test Times (min.)

1 st. flow : 10  
 1 st. shutin : 0  
 2 nd. flow : 0  
 2 nd. shutin : 0

Paramount Resources DST# 4 Recd 4516

Serial#.....4516  
 Position....A  
 Depth.....1315.9 m.  
 Capacity.... 18270 kPa

Pressure (kPa)

1) Start preflow : 346  
 2) End preflow : 526  
 3) Start valve op: 0  
 4) End valve op: 0  
 5) Hydro of recov: 0

## Recorder summary:

Paramount Resources DST# 4 Rec# 13829

Serial#.....13829  
 Position.....0  
 Depth.....1335.9 m.  
 Capacity.... 26717 kPa

Pressure (kPa)

1) Initial Hydro. : 1577  
 2) 1st. Flow Start : 82  
 3) 1st. Flow End : 79  
 4) END 1st. Shutin :  
 5) 2nd. Flow Start :  
 6) 2nd. Flow End :  
 7) END 2nd. Shutin :  
 8) Final Hydro. : 1575

Test Times (min.)

1 st. flow : 10  
 1 st. shutin : 0  
 2 nd. flow : 0  
 2 nd. shutin : 0

Paramount Resources DST# 4 Rec# 3077

Serial#.....3077  
 Position.....0  
 Depth.....1335.8 m.  
 Capacity.... 29302 kPa

Pressure (kPa)

1) Initial Hydro. : 1577  
 2) 1st. Flow Start : 79  
 3) 1st. Flow End : 78  
 4) END 1st. Shutin :  
 5) 2nd. Flow Start :  
 6) 2nd. Flow End :  
 7) END 2nd. Shutin :  
 8) Final Hydro. : 1577



## CHEMICAL &amp; GEOLOGICAL LABORATORIES LTD.



## WATER ANALYSIS

|                        |  |                                                                                     |  |
|------------------------|--|-------------------------------------------------------------------------------------|--|
| CONTAINER IDENTITY     |  | LABORATORY NUMBER                                                                   |  |
|                        |  | C89-4344-1                                                                          |  |
| LICENCE NUMBER         |  | OPERATOR NAME                                                                       |  |
|                        |  | PARAMOUNT RESOURCES LTD.                                                            |  |
| LOCATION               |  | WELL NAME                                                                           |  |
| 60-06-31.55 -117 39    |  | PARAMOUNT ET AL CAMERON L-47                                                        |  |
| FIELD OR AREA          |  | POOL OR ZONE                                                                        |  |
| CAMERON                |  | SLAVE POINT                                                                         |  |
| TEST TYPE              |  | TEST RECOVERY                                                                       |  |
| DST                    |  | 72 M MUD CUT INHIBITOR                                                              |  |
| NO.                    |  |                                                                                     |  |
| 4                      |  |                                                                                     |  |
| MULTIPLE RECOVERY      |  |                                                                                     |  |
| Y N                    |  |                                                                                     |  |
| X                      |  |                                                                                     |  |
| TEST INTERVAL (metres) |  | SAMPLING POINT                                                                      |  |
| 1335 - 1359            |  | COLLARS - BOTTOM                                                                    |  |
| PERFORATIONS (metres)  |  | AMT. & TYPE OF CUSHION                                                              |  |
|                        |  |                                                                                     |  |
|                        |  | MUD RESISTIVITY                                                                     |  |
|                        |  | (at 25°C)                                                                           |  |
|                        |  | TYPE OF PRODUCTION                                                                  |  |
|                        |  | PUMPING FLOWING GAS LIFT SWAB                                                       |  |
|                        |  | PRODUCTION RATES                                                                    |  |
|                        |  | WATER m <sup>3</sup> /d OIL m <sup>3</sup> /d GAS 10 <sup>3</sup> m <sup>3</sup> /d |  |
|                        |  | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED                                 |  |
|                        |  | GAUGE PRESSURE kPa                                                                  |  |
|                        |  | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED                                 |  |
|                        |  | TEMPERATURE °C                                                                      |  |
| DATE SAMPLED (Y-M-D)   |  | DATE RECEIVED (Y-M-D)                                                               |  |
| 89-03-03               |  | 89-03-07                                                                            |  |
| DATE REPORTED (Y-M-D)  |  | ANALYST                                                                             |  |
| 89-03-09               |  | S. SARGIOUS                                                                         |  |
|                        |  | OTHER INFORMATION                                                                   |  |
|                        |  |                                                                                     |  |

| ION | Mg/l  | Mass Fraction | Meq/l  | ION              | Mg/l   | Mass Fraction | Meq/l  |
|-----|-------|---------------|--------|------------------|--------|---------------|--------|
| Na  | 7 125 | 0.3100        | 309.94 | Cl               | 900    | 0.0392        | 25.38  |
| K   | 40    | 0.0017        | 1.02   | Br               |        |               |        |
| Ca  | 240   | 0.0104        | 11.98  | I                |        |               |        |
| Mg  | 12    | 0.0005        | 0.99   | HCO <sub>3</sub> | 458    | 0.0199        | 7.51   |
| Ba  |       |               |        | SO <sub>4</sub>  | 14 210 | 0.6182        | 295.57 |
| Sr  |       |               |        | CO <sub>3</sub>  | 0      | 0.0000        | 0.00   |
| Fe  | MUCH  |               |        | OH               | 0      | 0.0000        | 0.00   |
|     |       |               |        | H <sub>2</sub> S | NIL    |               |        |
|     |       |               |        |                  |        |               |        |
|     |       |               |        |                  |        |               |        |

## TOTAL SOLIDS Mg/l

EVAPORATED @ 110°C

26 270

EVAPORATED @ 180°C

AT IGNITION

22 110

CALCULATED

22 985

## ORGANICS: MUCH

RELATIVE DENSITY

1.014 @ 25°C

REFRACTIVE INDEX

1.3362 @ 25°C

OBSERVED pH

8.2 @ 23 °C

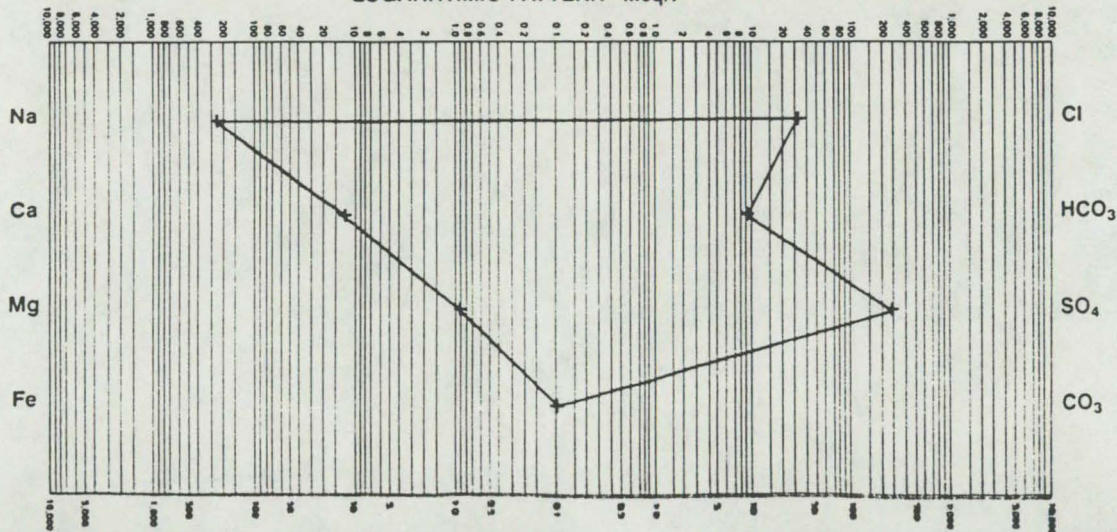
RESISTIVITY (Ohm m)

0.433 @ 25°C

## REMARKS

BROWN COLORED FIL-  
TRATE RECOVERED FROM  
MUDDY WATER.

## LOGARITHMIC PATTERN Meq/l





## CHEMICAL &amp; GEOLOGICAL LABORATORIES LTD.



|                        |                                                                                     |                        |                     |
|------------------------|-------------------------------------------------------------------------------------|------------------------|---------------------|
| CONTAINER IDENTITY     |                                                                                     | LABORATORY NUMBER      |                     |
|                        |                                                                                     | C89-4344-2             |                     |
| LICENCE NUMBER         | OPERATOR NAME                                                                       |                        |                     |
|                        | PARAMOUNT RESOURCES LTD.                                                            |                        |                     |
| LOCATION               | WELL NAME                                                                           |                        | ELEVATIONS (metres) |
| 60-06-31.55 -117 39    | PARAMOUNT ET AL CAMERON L-47                                                        |                        | K.B. 723 GRD. 719.3 |
| FIELD OR AREA          | POOL OR ZONE                                                                        | NAME OF SAMPLER        | COMPANY             |
| CAMERON                | SLAVE POINT                                                                         |                        | SCOTT TESTERS       |
| TEST TYPE              | NO.                                                                                 | TEST RECOVERY          |                     |
| DST                    | 4                                                                                   | 72 M MUD CUT INHIBITOR |                     |
| MULTIPLE RECOVERY      | Y N                                                                                 |                        |                     |
|                        | X                                                                                   |                        |                     |
| TEST INTERVAL (metres) | SAMPLING POINT                                                                      |                        |                     |
| 1335 - 1359            |                                                                                     |                        |                     |
| PERFORATIONS (metres)  | AMT. & TYPE OF CUSHION                                                              |                        |                     |
|                        |                                                                                     |                        |                     |
|                        | MUD RESISTIVITY                                                                     |                        |                     |
|                        | (a 25°C)                                                                            |                        |                     |
|                        | TYPE OF PRODUCTION                                                                  |                        |                     |
|                        | PUMPING FLOWING GAS LIFT SWAB                                                       |                        |                     |
|                        | PRODUCTION RATES                                                                    |                        |                     |
|                        | WATER m <sup>3</sup> /d OIL m <sup>3</sup> /d GAS 10 <sup>3</sup> m <sup>3</sup> /d |                        |                     |
|                        | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED                                 |                        |                     |
|                        | GAUGE PRESSURE kPa                                                                  |                        |                     |
|                        | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED                                 |                        |                     |
|                        | TEMPERATURE °C                                                                      |                        |                     |
| DATE SAMPLED (Y-M-D)   | DATE RECEIVED (Y-M-D)                                                               | DATE REPORTED (Y-M-D)  | ANALYST             |
| 89-03-03               | 89-03-07                                                                            | 89-03-09               | S. SARGIOUS         |
| OTHER INFORMATION      |                                                                                     |                        |                     |

COLLARS - TOP

RESISTIVITY: 0.625 OHM M @ 25C

BROWN COLORED FILTRATE RECOVERED FROM MUDDY WATER.

COLLARS - MIDDLE

RESISTIVITY: 0.609 OHM M @ 25C

BROWN COLORED FILTRATE RECOVERED FROM MUDDY WATER.

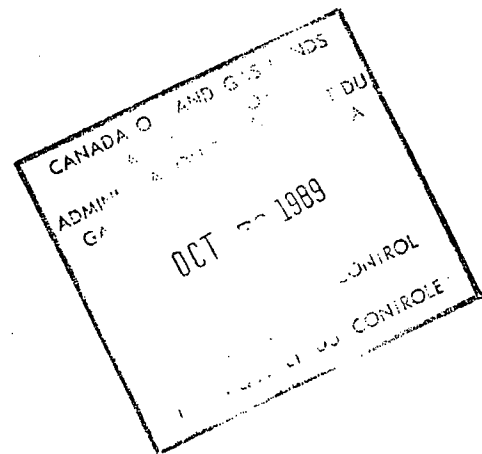
CANADA OIL AND GAS LANDS  
ADMINISTRATION  
ADMINISTRATION DU PÉTROLE ET DU  
GAZ DES TERRES CANADA

OCT 30 1989

ENGINEERING AND CONTROL  
BRANCH  
TECHNIQUE ET DU CONTRÔLE

## DRILL STEM TEST - Technical Report

Report date: 89/ 3/ 6



Wellname.....PARAMOUNT ET AL CAMERON  
 Location.....3 - - - W  
 U. well id.....L - 47  
 Test number..... 5  
 Interval tested....1335.0 m. to 1359.0 m.  
 Formation.....SLAVE POINT  
 Date of test.....89/ 3/ 4

### Conducted by:

Scott Testers (1978) Ltd.  
 #325, 808 - 4 th. Ave. S.W.  
 Calgary, Alberta, Canada T2P 3E8  
 Telephone (403) 262-7222

### Analyzed and reported by:

Meyer Technical Services  
 1501 - 7 th. Str.  
 Nisku, Alberta  
 Telephone (403) 955-7066

Test date : 89/ 3/ 4

DST # : 5

Report page :

Well name: PARAMOUNT ET AL CAMERON

Interval: 1335.0 m. to 1359.0 m.

Location: 3 - - - W

Interval(subsea): -612.0 m. to -636.0 m.

Formation: SLAVE POINT

Recorder information :

Serial #..... 13829

Position..... 0

Depth..... 1335.8 m.

Subsea depth.. -612.8 m.

Capacity..... 26717 kPa

Pressure (kPa)

1) Initial Hydro. : 1382

2) 1st. Flow Start : 95

3) 1st. Flow End : 94

4) END 1st. Shutin : 985

5) 2nd. Flow Start : 123

6) 2nd. Flow End : 122

7) END 2nd. Shutin : 1045

8) Final Hydro. : 1571

Test Times (min.)

1st. Flow : 10

1st. Shutin : 55

2nd. Flow : 60

2nd. Shutin : 120

Extrapolated Horner P @ 2nd. Shutin : 11090.1 kPa

Horner slope @ 2nd. Shutin : 3061.54 kPa/cyc

Recovery Data Summary :

Total fluid recovered on this test was 85 m of inhibitor cut mud. No gas to surface.

Remarks :

Test results indicate a mechanically successful test. Bottom hole pressures and the shape of the shutin curves suggest LOW PERMEABILITY within the interval tested.

Test type.....INFLATE STRADDLE

Company :

Started in hole @...03:30:00

Tool opened @.....08:00:00

Reset?..... NO

PARAMOUNT RESOURCES LTD.

#4100, 350 - 7TH AVE SW

CALGARY, ALTA.

T2P 3W5

K.B. elevation... 723.0 m.

Grd. elevation... 719.3 m.

TD @ test date... 1565 m.

Contractor &amp; Rig#...SIERRA 3

Ticket number....2065

Company rep...M CHOLACH

Unit number.....EDM

Tester.....B FRIESEN

---

Mud and hole data:

Mud type.....GEL CHEM

Filter cake..... 1.6 mm.

Mud weight.....1170.0 kg/m<sup>3</sup>

M.hole or C.size....222.0 mm.

Mud viscosity..... 70.0 s/l

Water loss..... 7.00 ml.

Calipered hole size @ test depth..... 224 mm.

Hole condition @ test time..... UNKNOWN

Hole conditioned prior to test..... YES

Temperature @ 1335.8 m..... 42.0 C.

---

Total fluid recovery :Total fluid recovered 85 metres  
consisting of:

Reverse circulated ? NO

# of fluid samples..... 3

Samples sent to.....C&amp;G LABS

B.H. sampler #.....302

B.H. smplr sent to..... C&amp;G LABS

85 m. of INHIBITOR CUT MUD

---

Blow description:On pre-flow, weak air blow throughout, no gas to  
surface.

On valve open, weak air blow. No gas to surface.

**Gas Measurements :**

Device.....

Gas Bomb #.....

Riser size... 50.8 mm.

Gas Bomb sent to...

No gas readings.

**Time-pressure listing:**

| Chart<br>Label | Comments            | Time<br>(min.) | Delta P.<br>(kPa) | Press.<br>(kPa) | (T+dt)/dt<br>(Dim.time) |
|----------------|---------------------|----------------|-------------------|-----------------|-------------------------|
| 1              | INITIAL Hydrostatic |                |                   | 13829           |                         |
| 2              | START of 1st. flow  | 0              |                   | 958             |                         |
| 3              | END of 1st. flow    | 10             |                   | 945             |                         |
|                | 1st. shutin period  |                |                   |                 |                         |
| 4              | End of 1st. shutin  |                |                   | 9852            |                         |
| 5              | START of 2nd. flow  | 0              |                   | 1234            |                         |
| 6              | END of 2nd. flow    | 60             |                   | 1221            |                         |
|                | 2nd. shutin period  | 0              |                   | 1221            |                         |
|                |                     | 2              | 46                | 1267            | 36.0000                 |
|                |                     | 4              | 177               | 1398            | 18.5000                 |
|                |                     | 6              | 348               | 1569            | 12.6667                 |
|                |                     | 8              | 558               | 1779            | 9.7500                  |
|                |                     | 10             | 762               | 1983            | 8.0000                  |
|                |                     | 12             | 1051              | 2272            | 6.8333                  |
|                |                     | 14             | 1359              | 2580            | 6.0000                  |
|                |                     | 16             | 1707              | 2928            | 5.3750                  |
|                |                     | 18             | 2068              | 3289            | 4.8889                  |
|                |                     | 20             | 2489              | 3710            | 4.5000                  |
|                |                     | 25             | 3880              | 5101            | 3.8000                  |
|                |                     | 30             | 5371              | 6592            | 3.3333                  |
|                |                     | 35             | 6672              | 7893            | 3.0000                  |
|                |                     | 40             | 7555              | 8776            | 2.7500                  |
|                |                     | 45             | 8098              | 9319            | 2.5556                  |
|                |                     | 50             | 8392              | 9613            | 2.4000                  |
|                |                     | 55             | 8598              | 9819            | 2.2727                  |
|                |                     | 60             | 8745              | 9966            | 2.1667                  |
|                |                     | 70             | 8931              | 10152           | 2.0000                  |
|                |                     | 80             | 9038              | 10259           | 1.8750                  |
|                |                     | 90             | 9125              | 10346           | 1.7778                  |
|                |                     | 100            | 9171              | 10392           | 1.7000                  |

**Time-pressure listing:**

| Chart<br>Label | Comments           | Time<br>(min.) | Delta P.<br>(kPa) | Press.<br>(kPa) | (T+dt)/dt<br>(Dim.time) |
|----------------|--------------------|----------------|-------------------|-----------------|-------------------------|
|                |                    | 110            | 9218              | 10439           | 1.6364                  |
| 7              | End of 2nd. shutin | 120            | 9238              | 10459           | 1.5833                  |
| 8              | FINAL Hydrostatic  |                |                   | 15712           |                         |

Horner Extrapolation based on 2nd.Shutin : 11090.1 kPa  
corresponding Horner slope : 3061.540 kPa/cyc

1608 psi @ -2010

For use with following Horner calculations

Initial shutin:

| $(Ft+t)/t$ | $\log_{10}((Ft+t)/t)$ | Pressures (kPa or $\text{kPa}^2/10^6$ ) |
|------------|-----------------------|-----------------------------------------|
|------------|-----------------------|-----------------------------------------|

Second shutin:

| $(Ft+t)/t$ | $\log_{10}((Ft+t)/t)$ | Pressures (kPa or $\text{kPa}^2/10^6$ ) |
|------------|-----------------------|-----------------------------------------|
| 36.0000    | 1.5563                | 1267.000000                             |
| 18.5000    | 1.2672                | 1398.000000                             |
| 12.6667    | 1.1027                | 1569.000000                             |
| 9.7500     | 0.9890                | 1779.000000                             |
| 8.0000     | 0.9031                | 1983.000000                             |
| 6.8333     | 0.8346                | 2272.000000                             |
| 6.0000     | 0.7782                | 2580.000000                             |
| 5.3750     | 0.7304                | 2928.000000                             |
| 4.8889     | 0.6892                | 3289.000000                             |
| 4.5000     | 0.6532                | 3710.000000                             |
| 3.8000     | 0.5798                | 5101.000000                             |
| 3.3333     | 0.5229                | 6592.000000                             |
| 3.0000     | 0.4771                | 7893.000000                             |
| 2.7500     | 0.4393                | 8776.000000                             |
| 2.5556     | 0.4075                | 9319.000000                             |
| 2.4000     | 0.3802                | 9613.000000                             |
| 2.2727     | 0.3565                | 9819.000000                             |
| 2.1667     | 0.3358                | 9966.000000                             |
| 2.0000     | 0.3010                | 10152.000000                            |
| 1.8750     | 0.2730                | 10259.000000                            |
| 1.7778     | 0.2499                | 10346.000000                            |
| 1.7000     | 0.2304                | 10392.000000                            |
| 1.6364     | 0.2139                | 10439.000000                            |
| 1.5833     | 0.1996                | 10459.000000                            |

MEYER  
TECHNICAL SERVICES  
CALGARY, ALBERTA

Second shutin Horner Plot  
Location: 3

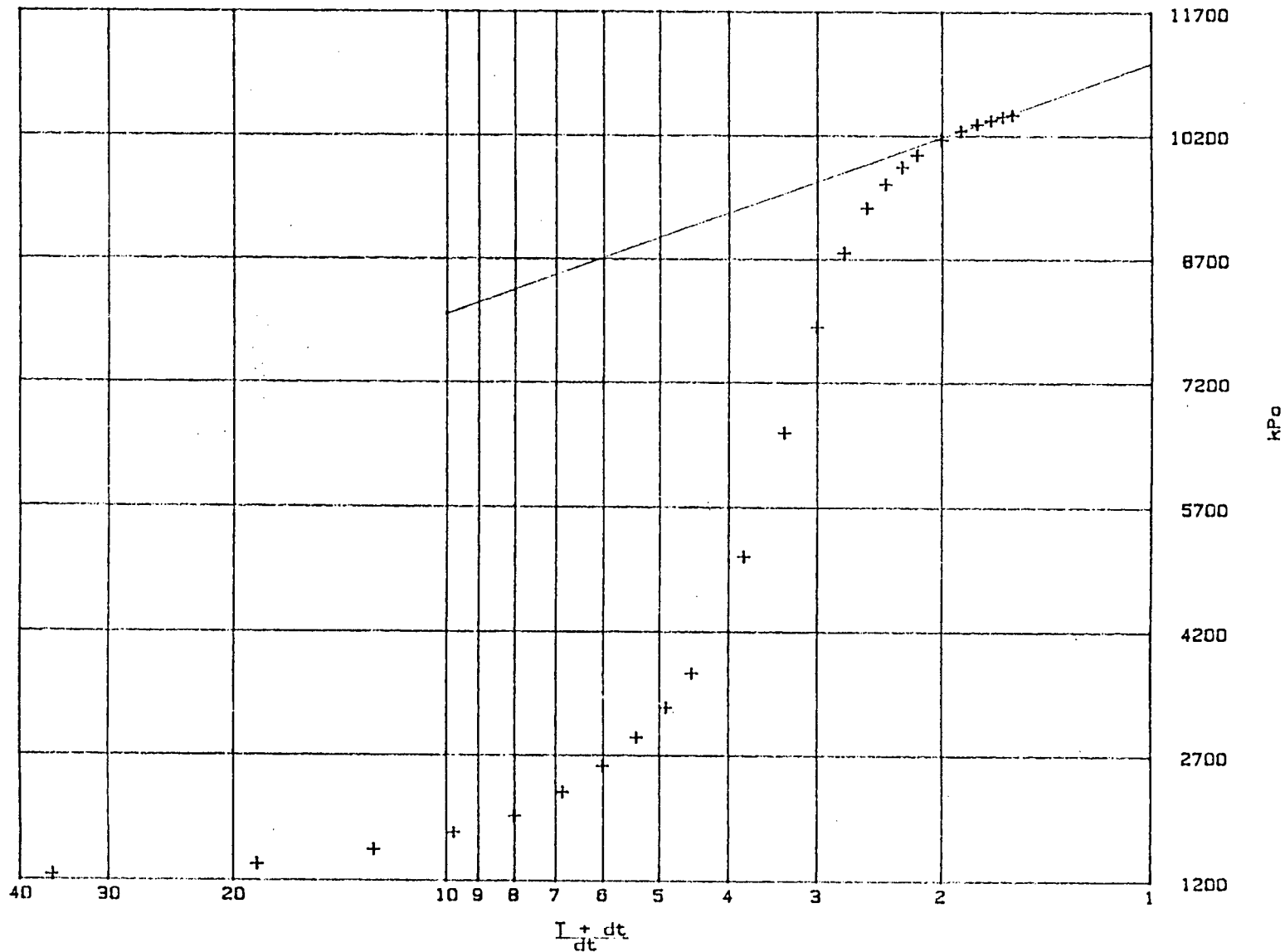
PARAMOUNT\_ET\_AL\_CAMERON  
Dat# 5

Test date: 89/03/04  
Rec. Serial: 13829

Horner extrapolated  
pressure:

11090.1  
kPa

Horner slope:  
3061.5400  
kPa/cycle



## Recorder summary:

Paramount DST #5 Rec# 13829

Serial#.....13829  
 Position.....0  
 Depth.....1335.8 m.  
 Capacity.... 26717 kPa

Pressure (kPa)

1) Initial Hydro. : 13829  
 2) 1st. Flow Start : 958  
 3) 1st. Flow End : 945  
 4) END 1st. Shutin : 9852  
 5) 2nd. Flow Start : 1234  
 6) 2nd. Flow End : 1221  
 7) END 2nd. Shutin : 10459  
 8) Final Hydro. : 15712

Test Times (min.)

1 st. flow : 10  
 1 st. shutin : 55  
 2 nd. flow : 60  
 2 nd. shutin : 120

Serial#.....3077  
 Position.....0  
 Depth.....1335.8 m.  
 Capacity.... 29302 kPa

Pressure (kPa)

1) Initial Hydro. : 15904  
 2) 1st. Flow Start : 957  
 3) 1st. Flow End : 964  
 4) END 1st. Shutin : 9862  
 5) 2nd. Flow Start : 1284  
 6) 2nd. Flow End : 1238  
 7) END 2nd. Shutin : 10465  
 8) Final Hydro. : 15729

Paramount DST #5 Rec# 3077

Paramount DST#5 Recd# 13831

Serial#.....13831  
 Position....I  
 Depth.....1323.2 m.  
 Capacity.... 26544 kPa

Pressure (kPa)

1) Initial Hydro. : 15704  
 2) 1st. Flow Start : 823  
 3) 1st. Flow End : 810  
 4) END 1st. Shutin : 9668  
 5) 2nd. Flow Start : 1108  
 6) 2nd. Flow End : 1082  
 7) END 2nd. Shutin : 10289  
 8) Final Hydro. : 15533

Test Times (min.)

1 st. flow : 10  
 1 st. shutin : 55  
 2 nd. flow : 60  
 2 nd. shutin : 120

Serial#.....4516  
 Position....A  
 Depth.....1335.8 m.  
 Capacity.... 26717 kPa

Pressure (kPa)

1) Start preflow : 433  
 2) End preflow : 636  
 3) Start valve op: 636  
 4) End value op: 992  
 5) Hydro of recov: 992

Paramount DST#5 Recd# 4516



## CHEMICAL &amp; GEOLOGICAL LABORATORIES LTD.



## GAS ANALYSIS

|                                       |  |                                                                                                         |  |
|---------------------------------------|--|---------------------------------------------------------------------------------------------------------|--|
| CONTAINER IDENTITY<br>DHS #302        |  | LABORATORY NUMBER<br>CB9-4345-1                                                                         |  |
| LICENCE NUMBER                        |  | OPERATOR NAME<br>PARAMOUNT RESOURCES LTD.                                                               |  |
| LOCATION<br>60-06-31.55 -117 39       |  | WELL NAME<br>PARAMOUNT ET AL CAMERON L-47                                                               |  |
| FIELD OR AREA<br>CAMERON              |  | POOL OR ZONE<br>SLAVE POINT                                                                             |  |
| TEST TYPE<br>DST                      |  | TEST RECOVERY<br>85 M MUD CUT INHIBITOR                                                                 |  |
| NO.<br>5                              |  | ELEVATIONS (metres)<br>K.B. 723 GRD. 719.3                                                              |  |
| MULTIPLE RECOVERY<br>Y N<br>X         |  | COMPANY<br>SCOTT TESTERS                                                                                |  |
| TEST INTERVAL (metres)<br>1335 - 1359 |  | SAMPLING POINT<br>DOWN HOLE SAMPLER #302                                                                |  |
| PERFORATIONS (metres)                 |  | AMT. & TYPE OF CUSHION                                                                                  |  |
|                                       |  | MUD RESISTIVITY @ 25°C                                                                                  |  |
|                                       |  | TYPE OF PRODUCTION<br>PUMPING FLOWING GAS LIFT SWAB                                                     |  |
|                                       |  | PRODUCTION RATES<br>WATER m <sup>3</sup> /d OIL m <sup>3</sup> /d GAS 10 <sup>3</sup> m <sup>3</sup> /d |  |
|                                       |  | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED<br>GAUGE PRESSURE kPa 450                           |  |
|                                       |  | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED<br>TEMPERATURE °C 20                                |  |
| DATE SAMPLED (Y-M-D)<br>89-03-04      |  | DATE RECEIVED (Y-M-D)<br>89-03-07                                                                       |  |
| DATE REPORTED (Y-M-D)<br>89-03-09     |  | ANALYST<br>B. ANDERSON                                                                                  |  |
|                                       |  | OTHER INFORMATION                                                                                       |  |

| COMP             | MOLE FRACTION        |                        | PETROLEUM LIQUID CONTENT<br>ml/m <sup>3</sup> |
|------------------|----------------------|------------------------|-----------------------------------------------|
|                  | AIR FREE AS RECEIVED | AIR FREE ACID GAS FREE |                                               |
| H <sub>2</sub>   | 0.0124               | 0.0124                 |                                               |
| He               | 0.0009               | 0.0009                 |                                               |
| N <sub>2</sub>   | 0.0220               | 0.0220                 |                                               |
| CO <sub>2</sub>  | 0.0005               | 0.0000                 |                                               |
| H <sub>2</sub> S | 0.0000               | 0.0000                 |                                               |
| C <sub>1</sub>   | 0.9276               | 0.9281                 |                                               |
| C <sub>2</sub>   | 0.0205               | 0.0205                 |                                               |
| C <sub>3</sub>   | 0.0100               | 0.0100                 | 36.8                                          |
| IC <sub>4</sub>  | 0.0015               | 0.0015                 | 6.5                                           |
| NC <sub>4</sub>  | 0.0026               | 0.0026                 | 10.9                                          |
| IC <sub>5</sub>  | 0.0007               | 0.0007                 | 3.4                                           |
| NC <sub>5</sub>  | 0.0006               | 0.0006                 | 2.9                                           |
| C <sub>6</sub>   | 0.0004               | 0.0004                 | 2.2                                           |
| C <sub>7</sub>   | 0.0001               | 0.0001                 | 0.6                                           |
| C <sub>8</sub>   | 0.0002               | 0.0002                 | 1.4                                           |
| C <sub>9</sub>   | TRACE                | TRACE                  | 0.0                                           |
| C <sub>10+</sub> | 0.0000               | 0.0000                 | 0.0                                           |
| TOTAL            | 1.0000               | 1.0000                 | 64.7                                          |

|                                                               |                     |                                        |                                             |
|---------------------------------------------------------------|---------------------|----------------------------------------|---------------------------------------------|
| GROSS HEATING VALUE MJ/m <sup>3</sup><br>15°C AND 101.325 kPa |                     |                                        |                                             |
| MOISTURE AND ACID GAS FREE<br>MEASURED                        | CALCULATED<br>38.35 | DETERMINED<br>DEW POINT<br>°C          | VAPOUR PRESSURE<br>PENTANES PLUS<br>96. kPa |
| RELATIVE DENSITY                                              |                     |                                        |                                             |
| MOISTURE FREE AS SAMPLED<br>MEASURED                          | CALCULATED<br>0.587 | MOISTURE AND ACID GAS FREE<br>MEASURED | CALCULATED<br>0.586                         |
| PSEUDO CRITICAL PROPERTIES (CALCULATED)                       |                     |                                        |                                             |
| AS SAMPLED<br>pPc(aba)<br>4521. kPa                           | pTc<br>192.7 K      | ACID GAS FREE<br>pPc(aba)<br>4520. kPa | pTc<br>192.6 K                              |
| H <sub>2</sub> S<br>g/m <sup>3</sup>                          | 0.00                |                                        |                                             |
| RELATIVE MOLECULAR MASS                                       | TOTAL GAS<br>17.00  | C <sub>7+</sub> 109.56                 |                                             |

C5+ ML/MOL 0.248

GROSS HEATING VALUE AS PER AGA REPORT #5

38.33 MAJ/M3 @ 15C AND 101.325 KPA

THE DOWN HOLE SAMPLER WAS RECEIVED WITH AN OPENING PRESSURE OF 450 KPAG @ 20C. IT CONTAINED 145010 ML GAS, 400 ML OIL AND 3600 ML MUDDY WATER @ 20C & 88.5 KPA.

GOR: 311.24 M3/M3 @ 15C &amp; 101.325 KPA



## CHEMICAL &amp; GEOLOGICAL LABORATORIES LTD.



## OIL ANALYSIS

|                                                     |     |                                                                                     |  |
|-----------------------------------------------------|-----|-------------------------------------------------------------------------------------|--|
| CONTAINER IDENTITY                                  |     | LABORATORY NUMBER                                                                   |  |
|                                                     |     | C89-4345-2                                                                          |  |
| LICENCE NUMBER                                      |     | OPERATOR NAME                                                                       |  |
|                                                     |     | PARAMOUNT RESOURCES LTD.                                                            |  |
| LOCATION                                            |     | WELL NAME                                                                           |  |
| 60-06-31.55 -117 39                                 |     | PARAMOUNT ET AL CAMERON L-47                                                        |  |
| FIELD OR AREA                                       |     | POOL OR ZONE                                                                        |  |
| CAMERON                                             |     | SLAVE POINT                                                                         |  |
| NAME OF SAMPLER                                     |     | COMPANY                                                                             |  |
|                                                     |     | SCOTT TESTERS                                                                       |  |
| TEST TYPE                                           | NO. | TEST RECOVERY                                                                       |  |
| DST                                                 | 5   | 85 M MUD CUT INHIBITOR                                                              |  |
| MULTIPLE RECOVERY                                   |     |                                                                                     |  |
| Y N                                                 |     |                                                                                     |  |
| X                                                   |     |                                                                                     |  |
| TEST INTERVAL (metres)                              |     | SAMPLING POINT                                                                      |  |
| 1335 - 1359                                         |     | DOWN HOLE SAMPLER #302                                                              |  |
| PERFORATIONS (metres)                               |     | AMT. & TYPE OF CUSHION                                                              |  |
|                                                     |     |                                                                                     |  |
|                                                     |     | MUD RESISTIVITY                                                                     |  |
|                                                     |     | @ 25°C                                                                              |  |
|                                                     |     | TYPE OF PRODUCTION                                                                  |  |
|                                                     |     | PUMPING FLOWING GAS LIFT SWAB                                                       |  |
|                                                     |     | PRODUCTION RATES                                                                    |  |
|                                                     |     | WATER m <sup>3</sup> /d OIL m <sup>3</sup> /d GAS 10 <sup>3</sup> m <sup>3</sup> /d |  |
|                                                     |     | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED                                 |  |
| GAUGE PRESSURE kPa                                  |     |                                                                                     |  |
| SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED |     |                                                                                     |  |
| TEMPERATURE °C                                      |     |                                                                                     |  |
| DATE SAMPLED (Y-M-D)                                |     | DATE RECEIVED (Y-M-D)                                                               |  |
| 89-03-04                                            |     | 89-03-07                                                                            |  |
| DATE REPORTED (Y-M-D)                               |     | ANALYST                                                                             |  |
| 89-03-09                                            |     | S. SARGIOUS                                                                         |  |
|                                                     |     | OTHER INFORMATION                                                                   |  |
|                                                     |     |                                                                                     |  |

## SAMPLE PROPERTIES

|                                |                |                              |                |       |
|--------------------------------|----------------|------------------------------|----------------|-------|
| COLOR OF CLEAN OIL             |                | B.S. & W. (VOLUME FRACTION)  |                |       |
| BROWN                          |                | WATER                        | SEDIMENT       | TOTAL |
|                                |                | 0.400                        | 0.500          | 0.900 |
| DENSITY at 15°C                |                |                              |                |       |
| RELATIVE                       |                | ABSOLUTE kg/m <sup>3</sup>   |                |       |
| AS RECEIVED                    | AFTER CLEANING | AS RECEIVED                  | AFTER CLEANING |       |
|                                | 0.852          |                              | 851            |       |
| A.P.I. GRAVITY                 |                |                              |                |       |
| 34.6                           |                |                              |                |       |
| TOTAL SULFUR                   |                | POUR POINT °C                |                |       |
| (MASS FRACTION)                | g/kg.          | U.S.B.M.                     | A.S.T.M.       |       |
| 0.0088                         | 8.8            | -13                          |                |       |
| CARBON RESIDUE (MASS FRACTION) |                |                              |                |       |
| RVP kPa                        | CONRADSON      | RAMSBOTTOM                   |                |       |
|                                | 0.0111         |                              |                |       |
| VISCOSITY                      |                |                              |                |       |
| TEMP. °C                       | ABSOLUTE mPa.s | KINEMATIC mm <sup>2</sup> /s |                |       |
| 10                             | 12.2           | 14.2                         |                |       |
| 20                             | 7.68           | 9.04                         |                |       |
| 40                             | 3.92           | 4.69                         |                |       |

## DISTILLATION

|                                        |                |                     |  |
|----------------------------------------|----------------|---------------------|--|
| VOLUME FRACTION DISTILLED              | TEMP. °C       | METHOD              |  |
| L.B.P.                                 |                |                     |  |
| 0.05                                   |                |                     |  |
| 0.10                                   |                |                     |  |
| 0.15                                   |                |                     |  |
| 0.20                                   |                |                     |  |
| 0.25                                   |                |                     |  |
| 0.30                                   |                |                     |  |
| 0.35                                   |                |                     |  |
| 0.40                                   |                |                     |  |
| 0.45                                   |                |                     |  |
| 0.50                                   |                |                     |  |
| 0.55                                   |                |                     |  |
| 0.60                                   |                |                     |  |
| 0.65                                   |                |                     |  |
| 0.70                                   |                |                     |  |
| 0.75                                   |                |                     |  |
| 0.80                                   |                |                     |  |
| 0.85                                   |                |                     |  |
| 0.90                                   |                |                     |  |
| 0.95                                   |                |                     |  |
| 1.00                                   |                |                     |  |
| F.B.P.                                 |                |                     |  |
| CRACKED                                |                |                     |  |
| DISTILLATION SUMMARY (VOLUME FRACTION) |                |                     |  |
| 200°C NAPHTHA                          | 275°C KEROSENE | 350°C LIGHT GAS OIL |  |
|                                        |                |                     |  |
| RECOVERED                              | RESIDUE        | DISTILLATION LOSS   |  |
|                                        |                |                     |  |
| BASE TYPE:                             |                |                     |  |
| CHARACTERIZATION FACTOR:               |                | 11.8                |  |

BS & W DETERMINED ON SAMPLE AS RECEIVED. REMAINDER OF ANALYSIS DETERMINED ON SAMPLE AFTER CLEANING BY CENTRIFUGING. INSUFFICIENT RECOVERABLE OIL FOR FURTHER ANALYSIS.



## CHEMICAL &amp; GEOLOGICAL LABORATORIES LTD.



## WATER ANALYSIS

|                                                     |  |                                                                                     |  |
|-----------------------------------------------------|--|-------------------------------------------------------------------------------------|--|
| CONTAINER IDENTITY                                  |  | LABORATORY NUMBER                                                                   |  |
|                                                     |  | C89-4345-3                                                                          |  |
| LICENCE NUMBER                                      |  | OPERATOR NAME                                                                       |  |
|                                                     |  | PARAMOUNT RESOURCES LTD.                                                            |  |
| LOCATION                                            |  | WELL NAME                                                                           |  |
| 60-06-31.55 -117 39                                 |  | PARAMOUNT ET AL CAMERON 1-47                                                        |  |
| FIELD OR AREA                                       |  | POOL OR ZONE                                                                        |  |
| CAMERON                                             |  | SLAVE POINT                                                                         |  |
| TEST TYPE                                           |  | TEST RECOVERY                                                                       |  |
| DST                                                 |  |                                                                                     |  |
| NO                                                  |  | 85 M MUD CUT INHIBITOR                                                              |  |
| 5                                                   |  |                                                                                     |  |
| Y N                                                 |  |                                                                                     |  |
| MULTIPLE RECOVERY                                   |  |                                                                                     |  |
| X                                                   |  |                                                                                     |  |
| TEST INTERVAL (metres)                              |  | SAMPLING POINT                                                                      |  |
| 1335 - 1359                                         |  | DOWN HOLE SAMPLER #302                                                              |  |
| PERFORATIONS (metres)                               |  | AMT. & TYPE OF CUSHION                                                              |  |
|                                                     |  |                                                                                     |  |
|                                                     |  | MUD RESISTIVITY                                                                     |  |
|                                                     |  | (at 25°C)                                                                           |  |
|                                                     |  |                                                                                     |  |
|                                                     |  | TYPE OF PRODUCTION                                                                  |  |
|                                                     |  | PUMPING FLOWING GAS LIFT SWAB                                                       |  |
|                                                     |  | PRODUCTION RATES                                                                    |  |
|                                                     |  | WATER m <sup>3</sup> /d OIL m <sup>3</sup> /d GAS 10 <sup>3</sup> m <sup>3</sup> /d |  |
|                                                     |  | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED                                 |  |
| GAUGE PRESSURE kPa                                  |  |                                                                                     |  |
| SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED |  |                                                                                     |  |
| TEMPERATURE °C                                      |  |                                                                                     |  |
| DATE SAMPLED (Y-M-D)                                |  | DATE RECEIVED (Y-M-D)                                                               |  |
| 89-03-04                                            |  | 89-03-07                                                                            |  |
| DATE REPORTED (Y-M-D)                               |  | ANALYST                                                                             |  |
| 89-03-09                                            |  | S. SARGIOUS                                                                         |  |
|                                                     |  | OTHER INFORMATION                                                                   |  |
|                                                     |  |                                                                                     |  |

| ION | Mg/l  | Mass Fraction | Meq/l  | ION              | Mg/l   | Mass Fraction | Meq/l  |
|-----|-------|---------------|--------|------------------|--------|---------------|--------|
| Na  | 8 460 | 0.2938        | 368.01 | Cl               | 6 780  | 0.2354        | 191.20 |
| K   | 63    | 0.0022        | 1.61   | Br               |        |               |        |
| Ca  | 601   | 0.0209        | 29.99  | I                |        |               |        |
| Mg  | 388   | 0.0135        | 31.89  | HCO <sub>3</sub> | 915    | 0.0318        | 15.01  |
| Ba  |       |               |        | SO <sub>4</sub>  | 11 590 | 0.4025        | 241.07 |
| Sr  |       |               |        | CO <sub>3</sub>  | 0      | 0.0000        | 0.00   |
| Fe  | MUCH  |               |        | OH               | 0      | 0.0000        | 0.00   |
|     |       |               |        | H <sub>2</sub> S | NIL    |               |        |
|     |       |               |        |                  |        |               |        |
|     |       |               |        |                  |        |               |        |

## TOTAL SOLIDS Mg/l

EVAPORATED @ 110°C

31 790

EVAPORATED @ 180°C

AT IGNITION

27 560

CALCULATED

28 797

## ORGANICS: MUCH

RELATIVE DENSITY

1.027 @ 25°C

REFRACTIVE INDEX

1.3373 @ 25°C

OBSERVED pH

7.9 @ 23 °C

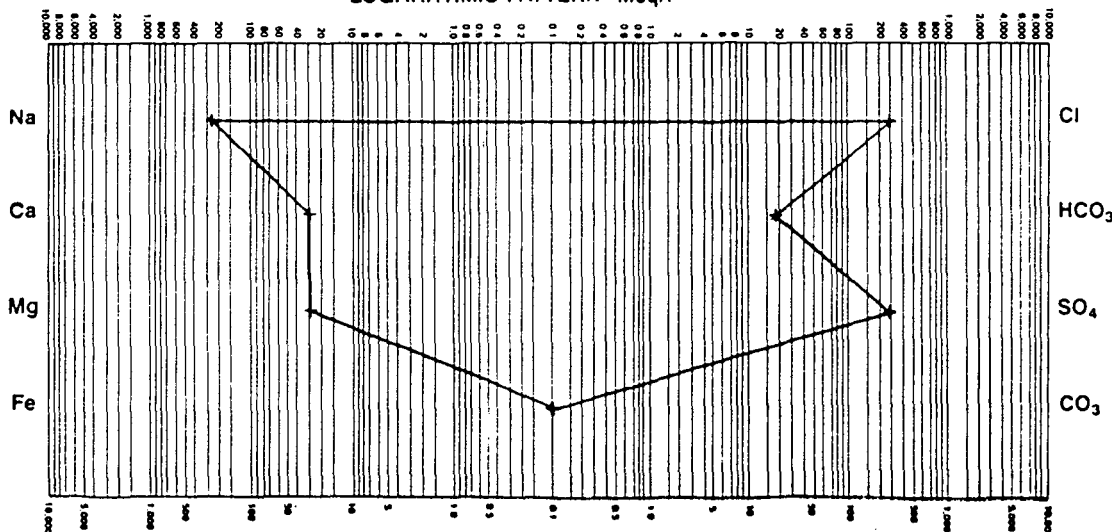
RESISTIVITY (Ohm m)

0.306 @ 25°C

## REMARKS

BROWN COLORED FIL-  
TRATE RECOVERED FROM  
THE WATER PORTION OF  
THE SAMPLE.

## LOGARITHMIC PATTERN Meq/l





## CHEMICAL &amp; GEOLOGICAL LABORATORIES LTD.



|                        |                                                                                     |                        |                     |
|------------------------|-------------------------------------------------------------------------------------|------------------------|---------------------|
| CONTAINER IDENTITY     |                                                                                     | LABORATORY NUMBER      |                     |
|                        |                                                                                     | C89-4345-4             |                     |
| LICENCE NUMBER         | OPERATOR NAME                                                                       |                        |                     |
|                        | PARAMOUNT RESOURCES LTD.                                                            |                        |                     |
| LOCATION               | WELL NAME                                                                           |                        | ELEVATIONS (metres) |
| 60-06-31.55 -117 39    | PARAMOUNT ET AL CAMERON L-47                                                        |                        | K.B. 723 GRD. 719.3 |
| FIELD OR AREA          | POOL OR ZONE                                                                        | NAME OF SAMPLER        | COMPANY             |
| CAMERON                | SLAVE POINT                                                                         |                        | SCOTT TESTERS       |
| TEST TYPE              | NO.                                                                                 | TEST RECOVERY          |                     |
| DST                    | 5                                                                                   | 85 M MUD CUT INHIBITOR |                     |
| MULTIPLE RECOVERY      | Y N                                                                                 |                        |                     |
|                        | X                                                                                   |                        |                     |
| TEST INTERVAL (metres) | SAMPLING POINT                                                                      |                        |                     |
| 1335 - 1359            |                                                                                     |                        |                     |
| PERFORATIONS (metres)  | AMT. & TYPE OF CUSHION                                                              |                        |                     |
|                        |                                                                                     |                        |                     |
|                        | MUD RESISTIVITY (a 25°C)                                                            |                        |                     |
|                        |                                                                                     |                        |                     |
|                        | TYPE OF PRODUCTION                                                                  |                        |                     |
|                        | PUMPING FLOWING GAS LIFT SWAB                                                       |                        |                     |
|                        | PRODUCTION RATES                                                                    |                        |                     |
|                        | WATER m <sup>3</sup> /d OIL m <sup>3</sup> /d GAS 10 <sup>3</sup> m <sup>3</sup> /d |                        |                     |
|                        | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED                                 |                        |                     |
|                        | GAUGE PRESSURE kPa                                                                  |                        |                     |
|                        | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED                                 |                        |                     |
|                        | TEMPERATURE °C                                                                      |                        |                     |
| DATE SAMPLED (Y-M-D)   | DATE RECEIVED (Y-M-D)                                                               | DATE REPORTED (Y-M-D)  | ANALYST             |
| 89-03-04               | 89-03-07                                                                            | 89-03-09               | S. SARGIOUS         |
| OTHER INFORMATION      |                                                                                     |                        |                     |

TOP

RESISTIVITY: 0.645 OHM M @ 25C  
BROWN COLORED FILTRATE RECOVERED FROM A SAMPLE CONTAINING APPROXIMATELY  
25% SEDIMENT.

MIDDLE

RESISTIVITY: 0.449 OHM M @ 25C  
BROWN COLORED FILTRATE RECOVERED FROM MUDDY WATER.

BOTTOM

RESISTIVITY: 0.389 OHM M @ 25C  
BROWN COLORED FILTRATE RECOVERED FROM MUDDY WATER.

CANADA OIL AND GAS LANDS  
ADMINISTRATION  
ADMINISTRATION DU PÉTROLE ET DU  
GAZ DES TERRES CANADA

OCT 30 1989

ENGINEERING AND CONTROL  
BRANCH  
TECHNIQUE ET DU CONTRÔLE

PARA ET AL CAMERON L-47 60.632/117.

400/ 60.632 / 117.392 /00

DST#01

1408.00m to 1430.00m

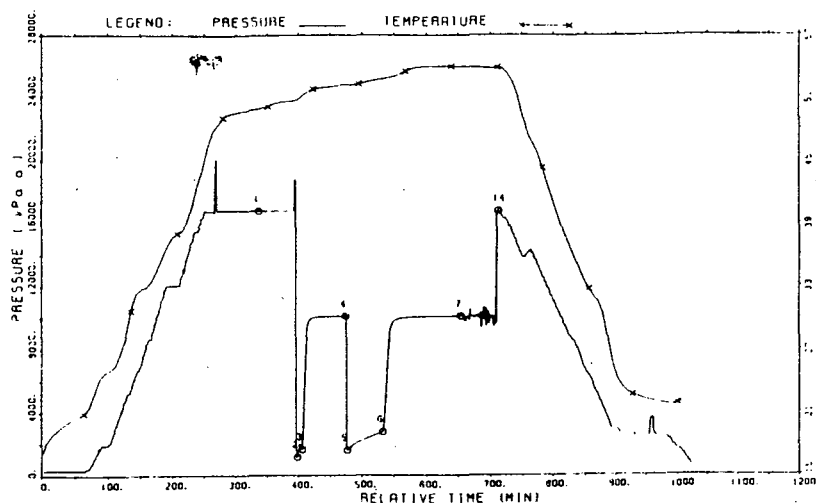
SULPHUR POINT

OTTAWA COPY

DEPTH: 1410.00m

PRESSURE  
kPa(a)

RECORDER # 002077



- 1) Initial Hydro : 16776.
- 2) 1st Flow Start: 1164.
- 3) 1st Flow End : 1664.
- 4) END 1st Shutin: 10112.
- 5) 2nd Flow Start: 1595.
- 6) 2nd Flow End : 2759.
- 7) END 2nd Shutin: 10103.
- 14) Final Hydro. : 16767.

## TEST TIMES (MIN)

1st FLOW : 8.0  
 SHUTIN: 69.0  
 2nd FLOW : 57.0  
 SHUTIN: 121.0

## RECOVERY DATA

TOTAL FLUID RECOVERY OF 232 METERS CONSISTED OF 45 METERS OF CLOBBED DRILLING MUD AND 187 METERS OF MUD CUT WATER. NO GAS TO SURFACE.

## REMARKS AND TEST SUMMARY

Test results indicate a mechanically successful test. Bottom hole pressures and the shape of the shut-in curves suggest RELATIVELY HIGH PERMEABILITY within the interval tested. Recorder #19531 - clock problems; data unusable. Prior to starting the test, 136.26 liters of inhibitor was added to the drill pipe. Hit three tight spots 10 meters from bottom. The tool was jarred loose with 40 000 daN over string weight at end of test.

## TABLE OF CONTENTS

| PAGE 1           | PAGE 2            | PAGE 3   | PAGE 4                 |
|------------------|-------------------|----------|------------------------|
| General Data     | Tool Sequence     | PRESSURE | Plot Summary           |
| Blow Description | Recorder Summary  | -TIME    | Reservoir Calculations |
| Liquid Recovery  | Mud and Hole Data | LISTING  | -Parameters used       |
| Gas Measurements |                   |          | -Results               |

\*\*\*\*\* RECORDER PAGES &amp; FIGURES \*\*\*\*\*

|                                                 |                          |
|-------------------------------------------------|--------------------------|
| Well name : PARA ET AL CAMERON L-47 60.632/117. | K.B.Elevation : 723.00m  |
| Location : 400/ 60.632 / 117.392 /00            | Grd.Elevation : 719.32m  |
| Interval : 1408.00m to 1430.00m                 | TD @ test Date: 1430.00m |
| Test Date : 89/02/23                            | Ticket Number : 79787    |
| Test Type : DUAL CONVENTIONAL BOTTOM HOLE       | Unit Number : 880233     |
| Formation : SULPHUR POINT                       |                          |

Started in hole at : 0930 hrs  
Tool opened at : 1616 hrs  
Reverse circulated?: YES  
Contractor & Rig No: SIERRA #2  
Baker#1 : 1 of 1 on the same trip.

Operator: PARAMOUNT RESOURCES LTD.  
4100  
350 - 7TH AVE. S.W.  
CALGARY ALBERTA  
T2P3W5

Company Rep : CHOALCH M  
Testers : MANCA B

5 REPORTS(S) TO: LLOYD JEFFRIES  
Company:

-----  
BLOW DESCRIPTION  
-----

PREFLOW: Weak blow increasing to strong air blow in 1.5 minutes. No gas to surface.

FINAL FLOW: Weak blow increasing to strong air blow in 1 minute, strong throughout. No gas to surface.

-----  
TOTAL LIQUID RECOVERY : 232.00m  
-----

For DST# 1 through DST# 1

3 Fluid Samples

Sent to: C&G

Field Est. Salinity :100000.0g/m3

Btm. Hole Sampler #: 228

Sent to: C&G

45.00m CLOBBED DRILLING MUD.  
187.00m MUD CUT WATER.

-----  
GAS MEASUREMENTS  
-----

No Gas Measurements

PARA ET AL CAMERON L-47 60.632/117.  
1408.00m to 1430.00m

## \*TOOL SEQUENCE\*

## \*\*\*RECORDER SUMMARY\*\*\*

SUB

LENGTH

(m )

|                   |      |
|-------------------|------|
| PUMP OUT SUB      | .33  |
| CROSS OVER SUB    | .31  |
| INSIDE RECORDER   | 1.38 |
| SHUT-IN TOOL      | 2.58 |
| BTM HOLE SAMPLER  | 1.03 |
| HYDRAULIC TOOL    | 1.50 |
| INSIDE RECORDER   | 1.69 |
| HYDRAULIC JARS    | 2.22 |
| SAFETY JOINT      | .65  |
| CONV. PACKER      | 2.28 |
| CONV. PACKER      | 1.24 |
| PACKER STICK DOWN | 1.04 |
| PERFORATIONS      | 3.06 |
| OUTSIDE RECORDER  | 2.02 |
| SPACING           | 5.49 |
| CROSS OVER SUB    | .30  |
| DRILL COLLARS     | 9.18 |
| CROSS OVER SUB    | .30  |
| BULL NOSE         | .61  |

|                       |                   |
|-----------------------|-------------------|
| 1) NUMBER : 002077    | ELECTRONIC GAUGE. |
| TYPE : DMRB           |                   |
| LOCATION: OUTSIDE     |                   |
| RANGE: 34500.00kPa(a) |                   |
| DEPTH : 1410.00m      |                   |
|                       |                   |
| 2) NUMBER : 006009    | ELECTRONIC GAUGE. |
| TYPE : DMRB           | ABOVE INTERVAL.   |
| LOCATION: OUTSIDE     |                   |
| RANGE: 68900.00kPa(a) |                   |
| DEPTH : 1398.00m      |                   |
|                       |                   |
| 3) NUMBER : 012767    | ABOVE HYDRAULIC   |
| TYPE : K-3            | TOOL.             |
| LOCATION: INSIDE      |                   |
| RANGE: 19700.00kPa    |                   |
| DEPTH : 1394.00m      |                   |
|                       |                   |
| 4) NUMBER : 017724    |                   |
| TYPE : K-3            |                   |
| LOCATION: OUTSIDE     |                   |
| RANGE: 20300.00kPa    |                   |
| DEPTH : 1410.00m      |                   |
|                       |                   |
| 5) NUMBER : 019531    | CLOCK STOPPED.    |
| TYPE : K-3            | NO READINGS.      |
| LOCATION: OUTSIDE     |                   |
| RANGE: 22400.00kPa    |                   |
| DEPTH : 1410.00m      |                   |

\*\*\*\*\* TOOL TOTAL 37.21

DRILL COLLARS

ID= 60.0mm: 137.56  
ID= :

DRILL PIPE

OD=114.3mm: 1260.66  
OD= :

COLLAR-PIPE TOTAL 1398.22

STICK UP ABOVE TABLE : 5.43  
TOOL ABOVE INTERVAL : 15.21  
TOTAL INTERVAL : 22.00  
BOTTOM CHOKE SIZE: 25.40 mm

## MUD AND HOLE DATA

|                                            |                               |
|--------------------------------------------|-------------------------------|
| Calipered Hole Size @ Test Depth: 222.00mm | Water Loss : 8.0cc/s          |
| Hole Condition at Test Time : GOOD         | Filter Cake: 1.0 mm           |
| Hole Conditioned Prior to Test? : YES      |                               |
| Mud Weight : 1160.0 kg/m3                  | Main Hole Size: 222.00mm      |
| Mud Type : GEL CHEMICAL                    |                               |
| Viscosity : 62.0s/l                        | Temperature @1410.00m = 53.9C |

PARA ET AL CAMERON L-47 60.632/117.  
1408.00 m to 1430.00 m

Location: 400/ 60.632 / 117.392 /00

Recorder Number: 002077

Test Type: DUAL CONVENTIONAL BOTTOM HOLE

Recorder Depth: 1410.00 m

Formation: SULPHUR POINT

Subsea Depth: -687.00 m

# TIME-PRESSURE LISTING

| CHART<br>LABEL | COMMENTS            | TIME<br>MIN. | DELTA P<br>kPa | PRESSURE (T+dt)/dt<br>kPa (a) | ABSCISSA |
|----------------|---------------------|--------------|----------------|-------------------------------|----------|
| 1              | INITIAL HYDROSTATIC |              |                | 16776                         |          |
| 2              | START OF 1st FLOW   | 0.0          |                | 1164                          |          |
|                |                     | 1.0          |                | 1483                          |          |
|                |                     | 3.0          |                | 1578                          |          |
|                |                     | 4.0          |                | 1690                          |          |
|                |                     | 5.0          |                | 2026                          |          |
|                |                     | 6.0          |                | 1733                          |          |
|                |                     | 7.0          |                | 1647                          |          |
| 3              | END OF 1st FLOW     | 8.0          |                | 1664                          |          |
|                | 1st SHUTIN PERIOD   | 0.0          |                | 1664                          |          |
|                |                     | 3.0          | 2017           | 3681                          | 3.6667   |
|                |                     | 5.0          | 4466           | 6129                          | 2.6000   |
|                |                     | 7.0          | 6750           | 8414                          | 2.1429   |
|                |                     | 9.0          | 7802           | 9466                          | 1.8889   |
|                |                     | 12.0         | 8207           | 9871                          | 1.6667   |
|                |                     | 14.0         | 8293           | 9957                          | 1.5714   |
|                |                     | 16.0         | 8345           | 10009                         | 1.5000   |
|                |                     | 19.0         | 8379           | 10043                         | 1.4211   |
|                |                     | 21.0         | 8388           | 10052                         | 1.3810   |
|                |                     | 23.0         | 8405           | 10069                         | 1.3478   |
|                |                     | 25.0         | 8414           | 10078                         | 1.3200*  |
|                |                     | 28.0         | 8414           | 10078                         | 1.2857*  |
|                |                     | 30.0         | 8422           | 10086                         | 1.2667*  |
|                |                     | 32.0         | 8431           | 10095                         | 1.2500*  |
|                |                     | 35.0         | 8431           | 10095                         | 1.2286*  |
|                |                     | 37.0         | 8440           | 10103                         | 1.2162*  |
|                |                     | 39.0         | 8440           | 10103                         | 1.2051*  |
|                |                     | 41.0         | 8440           | 10103                         | 1.1951*  |
|                |                     | 44.0         | 8440           | 10103                         | 1.1818*  |
|                |                     | 46.0         | 8440           | 10103                         | 1.1739*  |
|                |                     | 48.0         | 8448           | 10112                         | 1.1667*  |
|                |                     | 51.0         | 8448           | 10112                         | 1.1569*  |

\* VALUES USED FOR EXTRAPOLATIONS

PARA ET AL CAMERON L-47 60.632/117.  
1408.00 m to 1430.00 m

Location: 400/ 60.632 / 117.392 /00

Recorder Number: 002077

Test Type: DUAL CONVENTIONAL BOTTOM HOLE

Recorder Depth: 1410.00 m

Formation: SULPHUR POINT

Subsea Depth: -687.00 m

# TIME-PRESSURE LISTING

| CHART<br>LABEL | COMMENTS          | TIME<br>MIN. | DELTA P<br>kPa | PRESSURE(T+dt)/dt<br>kPa(a) | ABSCISSA |
|----------------|-------------------|--------------|----------------|-----------------------------|----------|
|                |                   | 53.0         | 8448           | 10112                       | 1.1509*  |
|                |                   | 55.0         | 8448           | 10112                       | 1.1455*  |
|                |                   | 57.0         | 8448           | 10112                       | 1.1404*  |
|                |                   | 60.0         | 8448           | 10112                       | 1.1333*  |
|                |                   | 62.0         | 8448           | 10112                       | 1.1290*  |
|                |                   | 64.0         | 8448           | 10112                       | 1.1250*  |
|                |                   | 67.0         | 8448           | 10112                       | 1.1194*  |
| 4              | END OF 1st SHUTIN | 69.0         | 8448           | 10112                       | 1.1159*  |
| 5              | START OF 2nd FLOW | 0.0          |                | 1595                        |          |
|                |                   | 2.0          |                | 1672                        |          |
|                |                   | 5.0          |                | 1750                        |          |
|                |                   | 7.0          |                | 1819                        |          |
|                |                   | 9.0          |                | 1905                        |          |
|                |                   | 12.0         |                | 1983                        |          |
|                |                   | 14.0         |                | 2035                        |          |
|                |                   | 16.0         |                | 2069                        |          |
|                |                   | 18.0         |                | 2103                        |          |
|                |                   | 21.0         |                | 2155                        |          |
|                |                   | 23.0         |                | 2181                        |          |
|                |                   | 25.0         |                | 2224                        |          |
|                |                   | 28.0         |                | 2285                        |          |
|                |                   | 30.0         |                | 2310                        |          |
|                |                   | 32.0         |                | 2353                        |          |
|                |                   | 34.0         |                | 2388                        |          |
|                |                   | 37.0         |                | 2440                        |          |
|                |                   | 39.0         |                | 2466                        |          |
|                |                   | 41.0         |                | 2500                        |          |
|                |                   | 44.0         |                | 2560                        |          |
|                |                   | 46.0         |                | 2569                        |          |
|                |                   | 48.0         |                | 2612                        |          |
|                |                   | 50.0         |                | 2647                        |          |
|                |                   | 53.0         |                | 2707                        |          |
|                |                   | 55.0         |                | 2733                        |          |
| 6              | END OF 2nd FLOW   | 57.0         |                | 2759                        |          |

\* VALUES USED FOR EXTRAPOLATIONS

Location: 400/ 60.632 / 117.392 /00 Recorder Number: 002077  
 Test Type: DUAL CONVENTIONAL BOTTOM HOLE Recorder Depth: 1410.00 m  
 Formation: SULPHUR POINT Subsea Depth: -687.00 m

TIME-PRESSURE LISTING  
 -----

| CHART<br>LABEL | COMMENTS      | TIME<br>MIN. | DELTA P<br>kPa | PRESSURE(T+dt)/dt<br>kPa(a) | ABSCISSA |
|----------------|---------------|--------------|----------------|-----------------------------|----------|
| 2nd            | SHUTIN PERIOD | 0.0          |                | 2759                        |          |
|                |               | 3.0          | 1052           | 3810                        | 22.6667  |
|                |               | 5.0          | 2655           | 5414                        | 14.0000  |
|                |               | 7.0          | 4354           | 7112                        | 10.2857  |
|                |               | 9.0          | 5698           | 8457                        | 8.2222   |
|                |               | 12.0         | 6638           | 9397                        | 6.4167   |
|                |               | 14.0         | 6879           | 9638                        | 5.6429   |
|                |               | 16.0         | 7009           | 9767                        | 5.0625   |
|                |               | 19.0         | 7112           | 9871                        | 4.4211   |
|                |               | 21.0         | 7155           | 9914                        | 4.0952   |
|                |               | 23.0         | 7190           | 9948                        | 3.8261   |
|                |               | 25.0         | 7216           | 9974                        | 3.6000   |
|                |               | 28.0         | 7233           | 9991                        | 3.3214   |
|                |               | 30.0         | 7250           | 10009                       | 3.1667   |
|                |               | 32.0         | 7259           | 10017                       | 3.0313*  |
|                |               | 35.0         | 7267           | 10026                       | 2.8571*  |
|                |               | 37.0         | 7276           | 10035                       | 2.7568*  |
|                |               | 39.0         | 7285           | 10043                       | 2.6667*  |
|                |               | 41.0         | 7285           | 10043                       | 2.5854*  |
|                |               | 44.0         | 7293           | 10052                       | 2.4773*  |
|                |               | 46.0         | 7302           | 10060                       | 2.4130*  |
|                |               | 48.0         | 7302           | 10060                       | 2.3542*  |
|                |               | 51.0         | 7310           | 10069                       | 2.2745*  |
|                |               | 53.0         | 7310           | 10069                       | 2.2264*  |
|                |               | 55.0         | 7310           | 10069                       | 2.1818*  |
|                |               | 57.0         | 7319           | 10078                       | 2.1404*  |
|                |               | 60.0         | 7319           | 10078                       | 2.0833*  |
|                |               | 62.0         | 7319           | 10078                       | 2.0484*  |
|                |               | 64.0         | 7319           | 10078                       | 2.0156*  |
|                |               | 67.0         | 7328           | 10086                       | 1.9701*  |
|                |               | 69.0         | 7328           | 10086                       | 1.9420*  |
|                |               | 71.0         | 7328           | 10086                       | 1.9155*  |
|                |               | 73.0         | 7328           | 10086                       | 1.8904*  |
|                |               | 76.0         | 7328           | 10086                       | 1.8553*  |
|                |               | 78.0         | 7328           | 10086                       | 1.8333*  |

\* VALUES USED FOR EXTRAPOLATIONS

Location: 400/ 60.632 / 117.392 /00      Recorder Number: 002077  
 Test Type: DUAL CONVENTIONAL BOTTOM HOLE      Recorder Depth: 1410.00 m  
 Formation: SULPHUR POINT      Subsea Depth: -687.00 m

TIME-PRESSURE LISTING

| CHART<br>LABEL | COMMENTS          | TIME<br>MIN. | DELTA P<br>kPa | PRESSURE (T+dt)/dt<br>kPa (a) | ABSCISSA |
|----------------|-------------------|--------------|----------------|-------------------------------|----------|
|                |                   | 80.0         | 7328           | 10086                         | 1.8125*  |
|                |                   | 83.0         | 7336           | 10095                         | 1.7831*  |
|                |                   | 85.0         | 7336           | 10095                         | 1.7647*  |
|                |                   | 87.0         | 7336           | 10095                         | 1.7471*  |
|                |                   | 89.0         | 7336           | 10095                         | 1.7303*  |
|                |                   | 92.0         | 7336           | 10095                         | 1.7065*  |
|                |                   | 94.0         | 7336           | 10095                         | 1.6915*  |
|                |                   | 96.0         | 7336           | 10095                         | 1.6771*  |
|                |                   | 99.0         | 7336           | 10095                         | 1.6566*  |
|                |                   | 101.0        | 7336           | 10095                         | 1.6436*  |
|                |                   | 103.0        | 7336           | 10095                         | 1.6311*  |
|                |                   | 105.0        | 7336           | 10095                         | 1.6190*  |
|                |                   | 108.0        | 7345           | 10103                         | 1.6019*  |
|                |                   | 110.0        | 7336           | 10095                         | 1.5909*  |
|                |                   | 112.0        | 7345           | 10103                         | 1.5804*  |
|                |                   | 115.0        | 7345           | 10103                         | 1.5652*  |
|                |                   | 117.0        | 7345           | 10103                         | 1.5556*  |
|                |                   | 119.0        | 7345           | 10103                         | 1.5462*  |
| 7              | END OF 2nd SHUTIN | 121.0        | 7345           | 10103                         | 1.5372*  |
| 14             | FINAL HYDROSTATIC |              |                | 16767                         |          |

\* VALUES USED FOR EXTRAPOLATIONS

1st SHUT-IN  
 HORNER EXTRAPOLATION 10141.15 kPa(a)  
 HORNER SLOPE 514.21362 kPa/cycle

2nd SHUT-IN  
 HORNER EXTRAPOLATION 10156.70 kPa(a)  
 HORNER SLOPE 265.66583 kPa/cycle

1472 p"

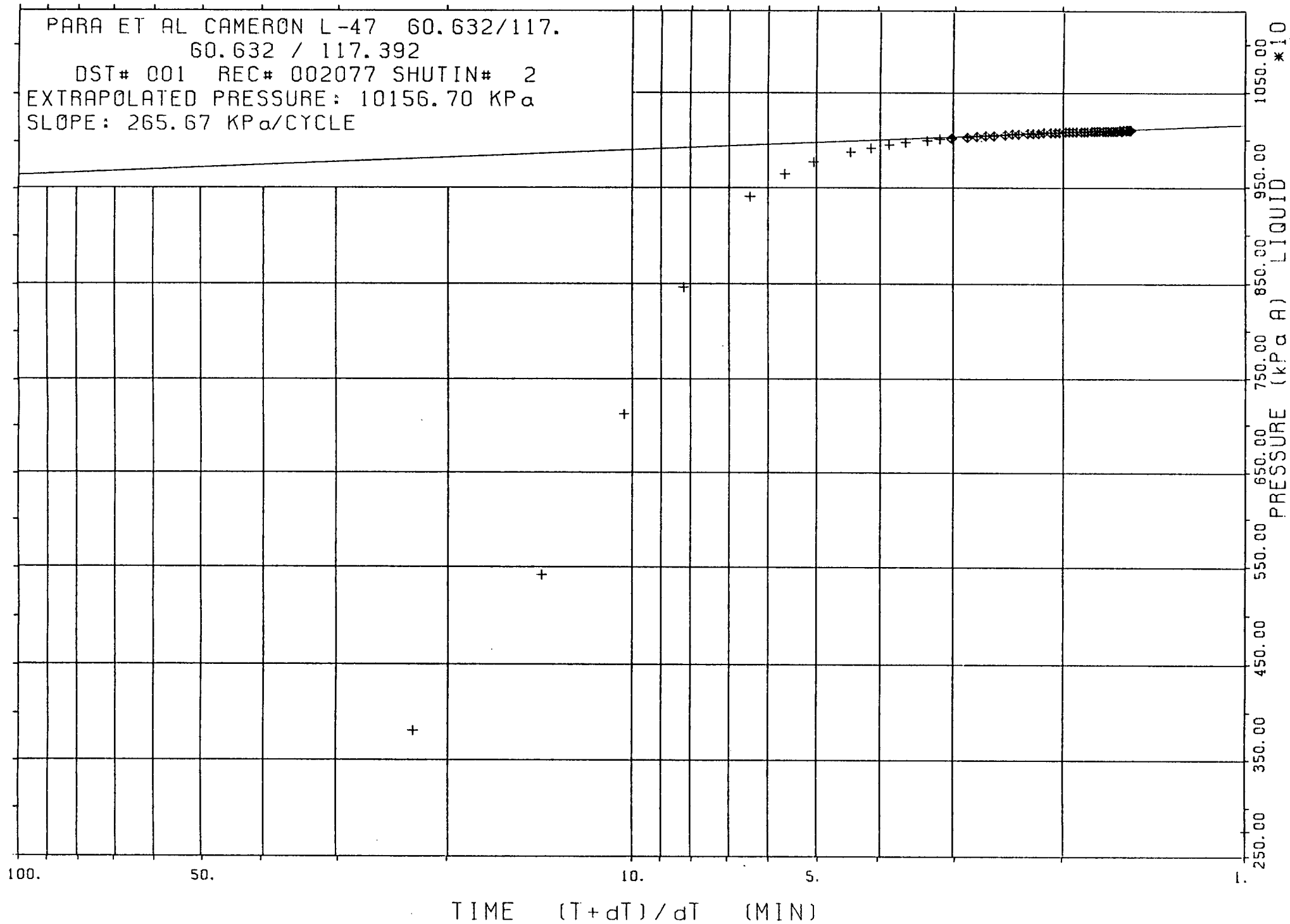
PARA ET AL CAMERON L-47 60.632/117.

60.632 / 117.392

DST# 001 REC# 002077 SHUTIN# 2

EXTRAPOLATED PRESSURE: 10156.70 KPa

SLOPE: 265.67 KPa/CYCLE



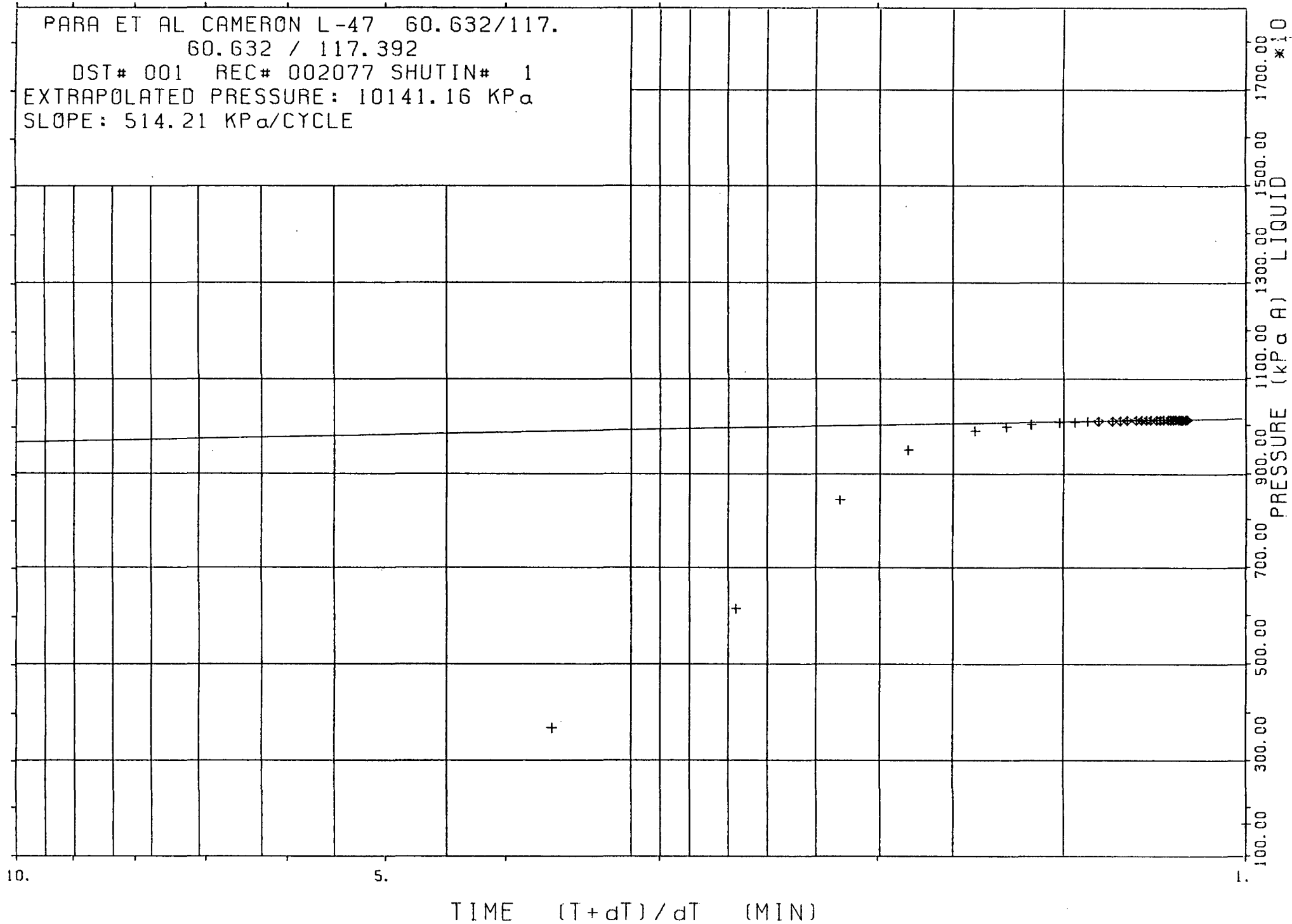
PARA ET AL CAMERON L-47 60.632/117.

60.632 / 117.392

DST# 001 REC# 002077 SHUTIN# 1

EXTRAPOLATED PRESSURE: 10141.16 KPa

SLOPE: 514.21 KPa/CYCLE



PARA ET AL CAMERON L-47 60.632/117.

REC#002077

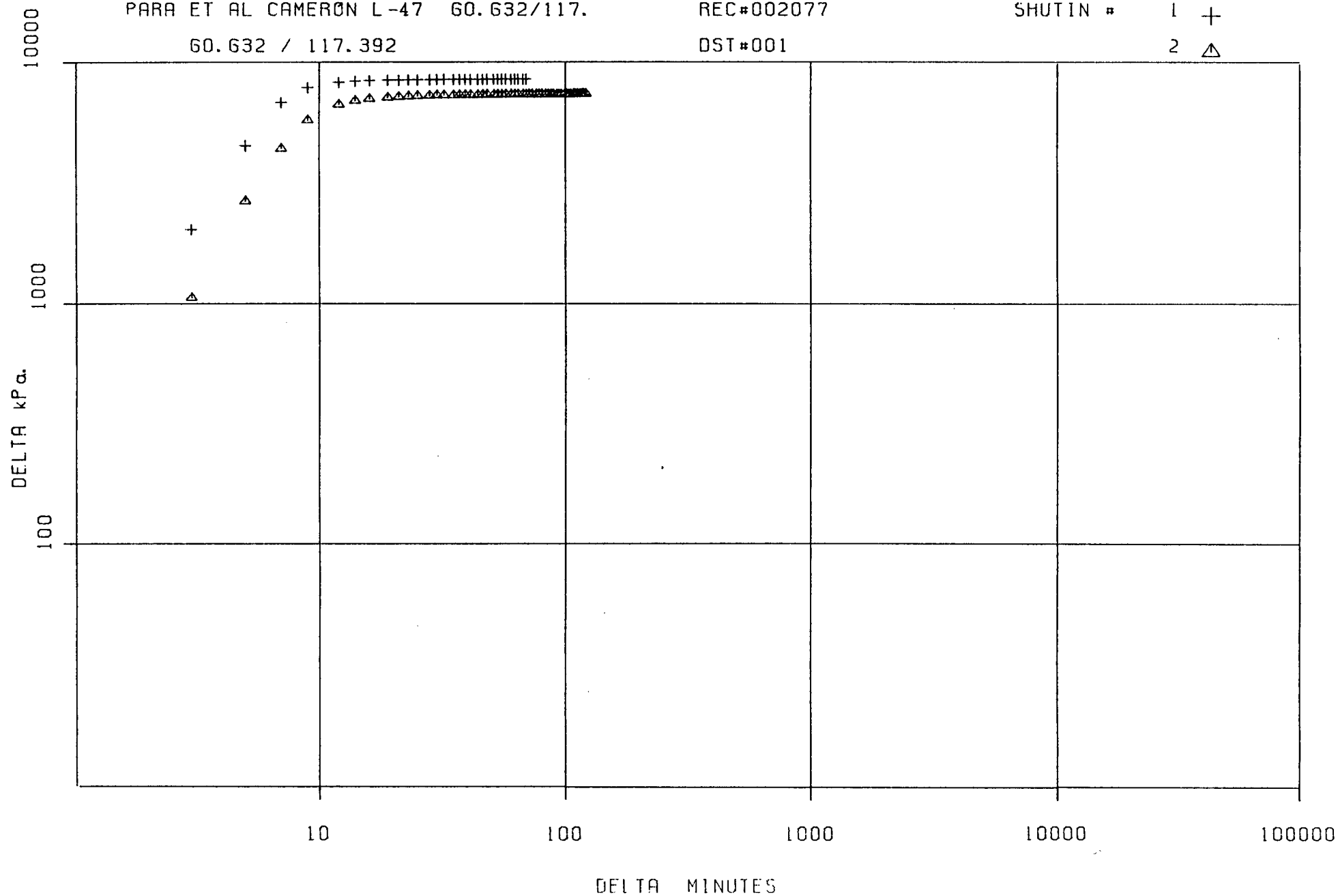
SHUTIN #

1 +

60.632 / 117.392

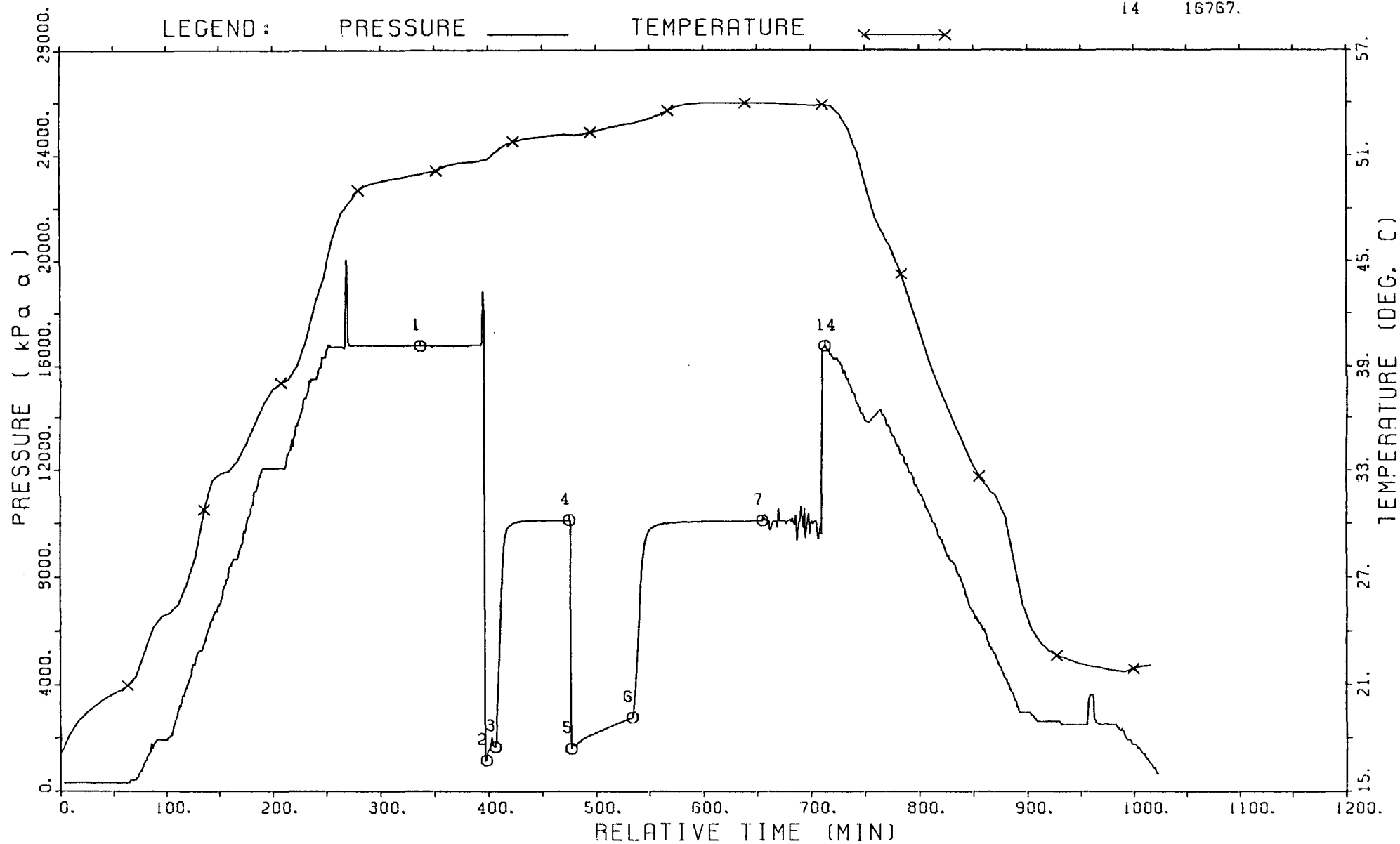
DST#001

2 Δ



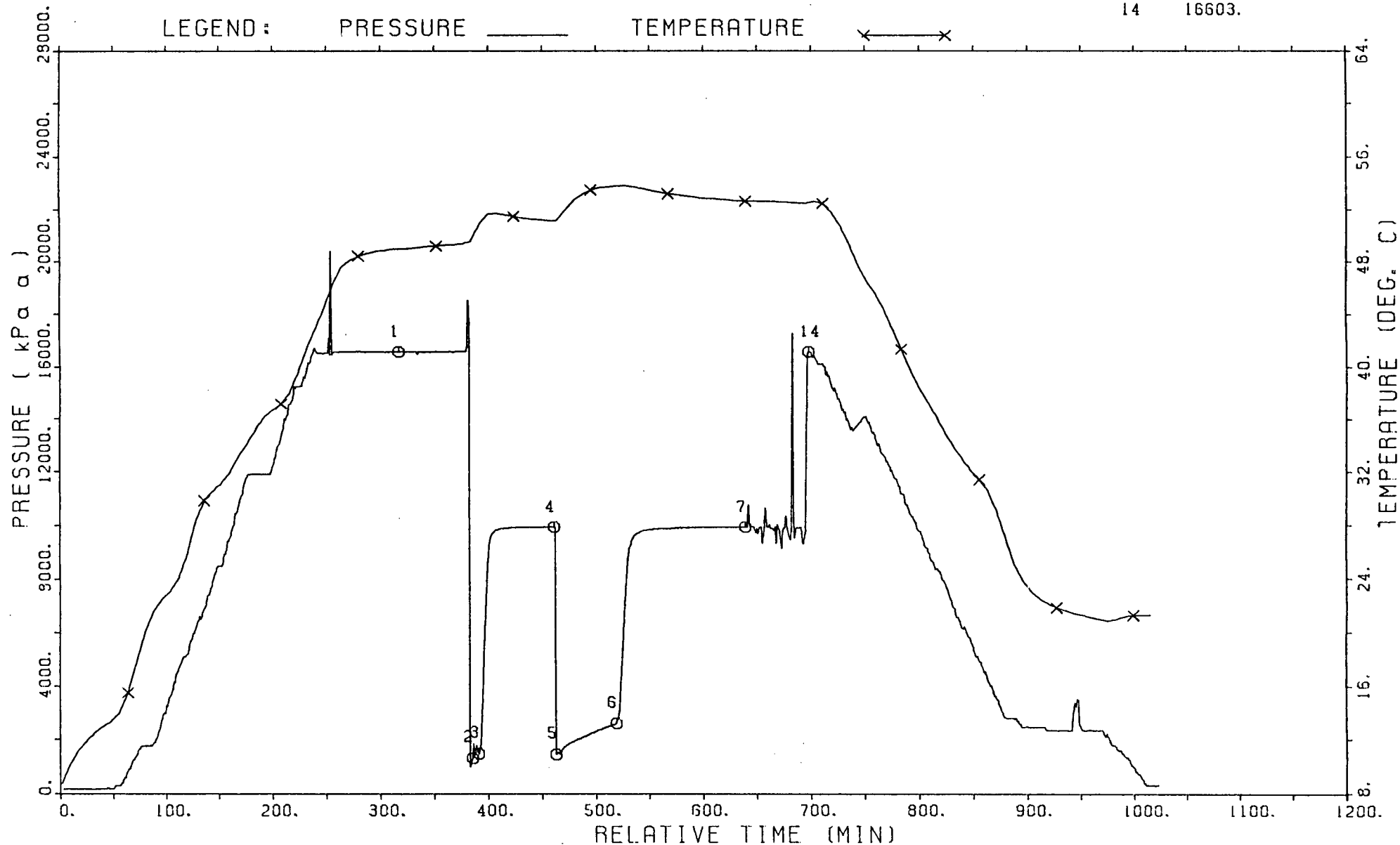
PARAMOUNT ET AL CAMERON  
60.631/117.392 DST #1  
ELECTRONIC GAUGE #2077

LEGEND: ○ 1 = 16776. kPa(a)  
2 1164.  
3 1664.  
4 10112.  
5 1595.  
6 2759.  
7 10103.  
14 16767.



PARAMOUNT ET AL CAMERON  
60.631/117.392 DST #1  
ELECTRONIC GAUGE #6009

LEGEND:  $\odot$  1 = 16603. kPa(a)  
2 1345.  
3 1500.  
4 9966.  
5 1483.  
6 2638.  
7 9966.  
14 16603.



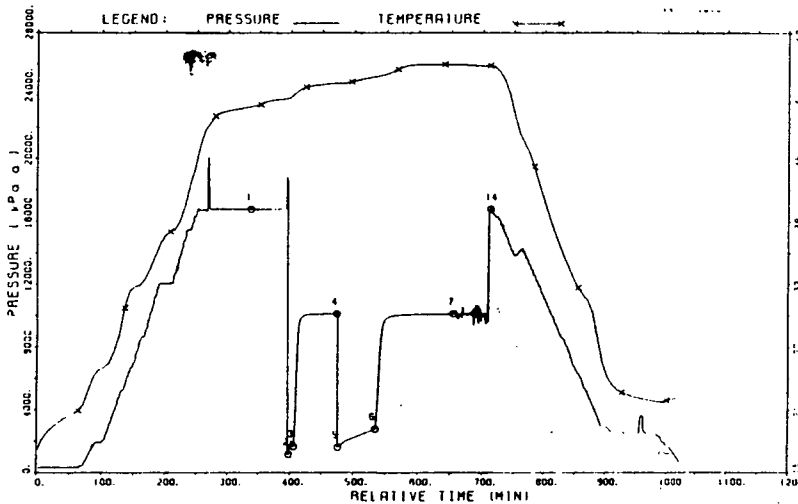
PRESSURE RECORDER NUMBER : 002077

DEPTH : 1410.00m LOCATION : OUTSIDE  
 TYPE : DMRB CAPACITY : 34500.00kPa(a)

PRESSURE  
kPa(a)

\*\*\*\*\* TEMPERATURE AT RECORDER DEPTH = 53.9 C

- 1) Initial Hydro :16776.
- 2) 1st Flow Start: 1164.
- 3) 1st Flow End : 1664.
- 4) END 1st Shutin:10112.
- 5) 2nd Flow Start: 1595.
- 6) 2nd Flow End : 2759.
- 7) END 2nd Shutin:10103.
- 14) Final Hydro. :16767.



ELECTRONIC GAUGE.

TEST TIMES(MIN)  
 1st FLOW : 8.0  
 SHUTIN: 69.0  
 2nd FLOW : 57.0  
 SHUTIN: 121.0

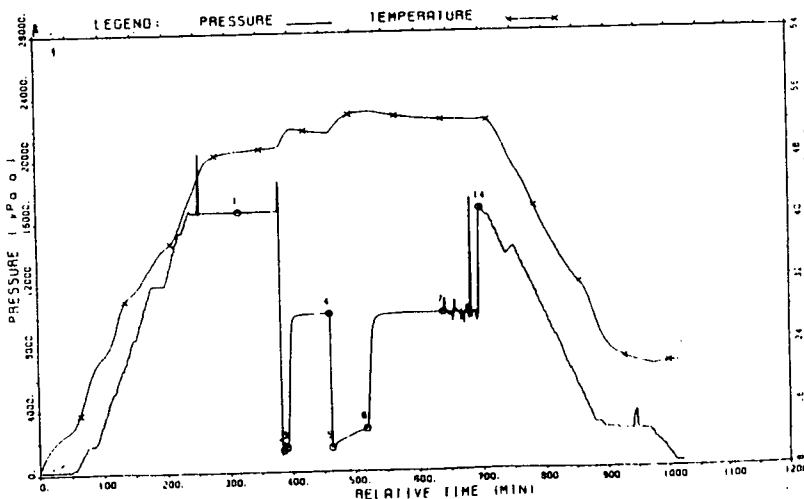
PRESSURE RECORDER NUMBER : 006009

DEPTH : 1398.00m LOCATION : OUTSIDE  
 TYPE : DMRB CAPACITY : 68900.00kPa(a)

PRESSURE  
kPa(a)

\*\*\*\*\* TEMPERATURE AT RECORDER DEPTH = 53.4 C

- 1) Initial Hydro :16603.
- 2) 1st Flow Start: 1345.
- 3) 1st Flow End : 1500.
- 4) END 1st Shutin: 9966.
- 5) 2nd Flow Start: 1483.
- 6) 2nd Flow End : 2638.
- 7) END 2nd Shutin: 9966.
- 14) Final Hydro. :16603.



ELECTRONIC GAUGE.  
 ABOVE INTERVAL.

DST#01  
PARA ET AL CAMERON L-47 60.632/117.  
1408.00m to 1430.00m

PRESSURE RECORDER NUMBER : 012767

DEPTH : 1394.00m  
TYPE : K-3

LOCATION : INSIDE  
CAPACITY : 19700.00 kPa

PRESSURE  
kPa

- 1) Initial Hydro :
- 2) 1st Flow Start: 212.
- 3) 1st Flow End : 1204.
- 4) END 1st Shutin:
- 5) 2nd Flow Start: 1235.
- 6) 2nd Flow End : 2459.
- 7) END 2nd Shutin: 2496.
- 14) Final Hydro. :

Above Hydraulic Tool

ABOVE HYDRAULIC  
TOOL.

TEST TIMES (MIN)

- 1st FLOW : 8.0  
SHUTIN: 69.0  
2nd FLOW : 57.0  
SHUTIN: 121.0

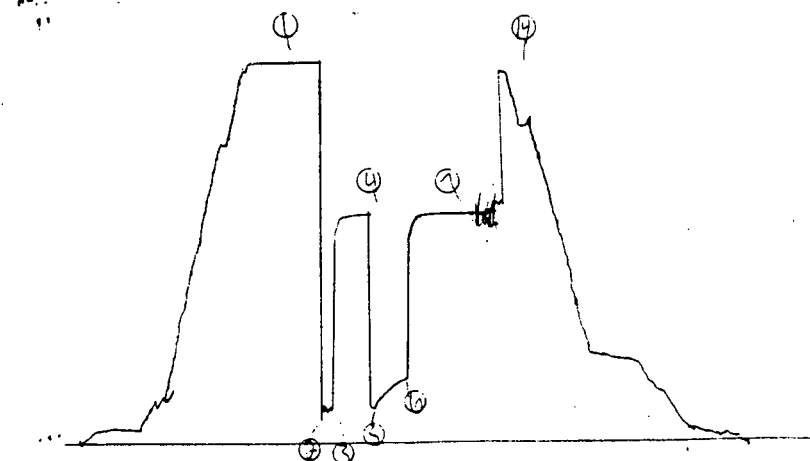
PRESSURE RECORDER NUMBER : 017724

DEPTH : 1410.00m  
TYPE : K-3

LOCATION : OUTSIDE  
CAPACITY : 20300.00 kPa

PRESSURE  
kPa

- 1) Initial Hydro : 16770.
- 2) 1st Flow Start: 1114.
- 3) 1st Flow End : 1626.
- 4) END 1st Shutin: 9982.
- 5) 2nd Flow Start: 1577.
- 6) 2nd Flow End : 2591.
- 7) END 2nd Shutin: 9947.
- 14) Final Hydro. : 16703.



DST#01  
PARA ET AL CAMERON L-47 60.632/117.  
1408.00m to 1430.00m

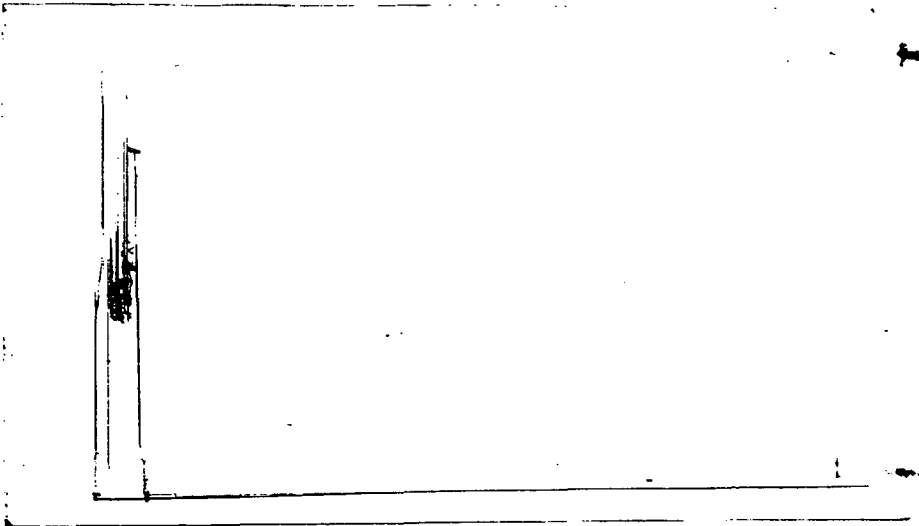
PRESSURE RECORDER NUMBER : 019531

DEPTH : 1410.00m  
TYPE : K-3

LOCATION : OUTSIDE  
CAPACITY : 22400.00 kPa

PRESSURE  
kPa

1) Initial Hydro :  
14) Final Hydro. :



CLOCK STOPPED.  
NO READINGS.

TEST TIMES (MIN)  
1st FLOW : 8.0  
SHUTIN: 69.0  
2nd FLOW : 57.0  
SHUTIN: 121.0



## CHEMICAL &amp; GEOLOGICAL LABORATORIES LTD.



|                        |                                                                                     |                       |                         |
|------------------------|-------------------------------------------------------------------------------------|-----------------------|-------------------------|
| CONTAINER IDENTITY     |                                                                                     | LABORATORY NUMBER     |                         |
|                        |                                                                                     | G89-2275              |                         |
| LICENCE NUMBER         | OPERATOR NAME                                                                       |                       |                         |
| EA 1390                | PARAMOUNT RESOURCES LTD.                                                            |                       |                         |
| LOCATION               | WELL NAME                                                                           |                       | ELEVATIONS (metres)     |
| 60-6-31.55-117-39-18.6 | PARAMOUNT et al CAMERON L-47                                                        |                       | K.B. 723.00 GAD. 719.32 |
| FIELD OR AREA          | POOL OR ZONE                                                                        | NAME OF SAMPLER       | COMPANY                 |
| CAMERON                | SULPHUR POINT                                                                       |                       | BAKER OIL TOOL          |
| TEST TYPE              | NO.                                                                                 | TEST RECOVERY         |                         |
| DST                    | 1                                                                                   | 232 METRES            |                         |
| MULTIPLE RECOVERY      | Y N                                                                                 |                       |                         |
|                        | X                                                                                   |                       |                         |
| TEST INTERVAL (metres) | SAMPLING POINT                                                                      |                       |                         |
| 1408 - 1430            | SEE BELOW                                                                           |                       |                         |
| PERFORATIONS (metres)  | TYPE OF PRODUCTION                                                                  |                       |                         |
|                        | PUMPING FLOWING GAS LIFT SWAB                                                       |                       |                         |
|                        | PRODUCTION RATES                                                                    |                       |                         |
|                        | WATER m <sup>3</sup> /d OIL m <sup>3</sup> /d GAS 10 <sup>3</sup> m <sup>3</sup> /d |                       |                         |
|                        | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED                                 |                       |                         |
|                        | GAUGE PRESSURE kPa                                                                  |                       |                         |
|                        | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED                                 |                       |                         |
|                        | TEMPERATURE °C                                                                      |                       |                         |
| DATE SAMPLED (Y-M-D)   | DATE RECEIVED (Y-M-D)                                                               | DATE REPORTED (Y-M-D) | ANALYST                 |
| 89-02-24               | 89-03-01                                                                            | 89-03-10              | K. SINCLAIR             |
| OTHER INFORMATION      |                                                                                     |                       |                         |

SAMPLE #1 - SAMPLED FROM TOP.

SAMPLE CONSISTED OF WATERY MUD WITH A BROWN COLORED FILTRATE.

RESISTIVITY OF THE FILTRATE: 0.911 OHM-METRES @ 25 C.

SAMPLE #2 - SAMPLED FROM MIDDLE.

SAMPLE CONSISTED OF H<sub>2</sub>S CUT WATER WITH A YELLOW COLORED FILTRATE.

RESISTIVITY OF THE FILTRATE: 0.085 OHM-METRES @ 25 C.

SAMPLE #3 - SAMPLED FROM BOTTOM.

SAMPLE CONSISTED OF MUD WITH A BROWN COLORED FILTRATE.

RESISTIVITY OF THE FILTRATE: 0.723 OHM-METRES @25 C.



## WATER ANALYSIS

|                        |                                                                                            |                   |                         |
|------------------------|--------------------------------------------------------------------------------------------|-------------------|-------------------------|
| CONTAINER IDENTITY     |                                                                                            | LABORATORY NUMBER |                         |
|                        |                                                                                            | G89-2275-1        |                         |
| LICENCE NUMBER         | OPERATOR NAME                                                                              |                   |                         |
| EA 1390                | PARAMOUNT RESOURCES LTD.                                                                   |                   |                         |
| LOCATION               | WELL NAME                                                                                  |                   | ELEVATIONS (metres)     |
| 60-6-31.55-117-39-18.6 | PARAMOUNT et al CAMERON L-47                                                               |                   | K.B. 723.00 GRD. 719.32 |
| FIELD OR AREA          | POOL OR ZONE                                                                               | NAME OF SAMPLER   | COMPANY                 |
| CAMERON                | SULPHUR POINT                                                                              |                   | BAKER OIL TOOL          |
| TEST TYPE              | NO.                                                                                        | TEST RECOVERY     |                         |
| DST                    | 1                                                                                          | 232 METRES        |                         |
| MULTIPLE RECOVERY      | Y N                                                                                        |                   |                         |
|                        | X                                                                                          |                   |                         |
| TEST INTERVAL (metres) | SAMPLING POINT                                                                             |                   |                         |
| 1408 - 1430            | DOWNHOLE SAMPLER #228                                                                      |                   |                         |
| PERFORATIONS (metres)  | AMT. & TYPE OF CUSHION                                                                     |                   |                         |
|                        |                                                                                            |                   |                         |
|                        | MUD RESISTIVITY                                                                            |                   |                         |
|                        | (at 25°C)                                                                                  |                   |                         |
|                        | TYPE OF PRODUCTION                                                                         |                   |                         |
|                        | PUMPING FLOWING GAS LIFT SWAB                                                              |                   |                         |
|                        | PRODUCTION RATES                                                                           |                   |                         |
|                        | WATER m <sup>3</sup> /d OIL m <sup>3</sup> /d GAS 10 <sup>3</sup> m <sup>3</sup> /d        |                   |                         |
|                        | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED                                        |                   |                         |
|                        | GAUGE PRESSURE kPa                                                                         |                   |                         |
|                        | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED                                        |                   |                         |
|                        | TEMPERATURE °C                                                                             |                   |                         |
|                        | DATE SAMPLED (Y-M-D) DATE RECEIVED (Y-M-D) DATE REPORTED (Y-M-D) ANALYST OTHER INFORMATION |                   |                         |
|                        | 89-02-24 89-03-01 89-03-10 D. SHMYR                                                        |                   |                         |

| ION | Mg/l    | Mass Fraction | Meq/l    | ION              | Mg/l   | Mass Fraction | Meq/l    |
|-----|---------|---------------|----------|------------------|--------|---------------|----------|
| Na  | 26 106  | 0.2960        | 1 135.61 | Cl               | 50 500 | 0.5726        | 1 424.10 |
| K   | 978     | 0.0111        | 25.04    | Br               |        |               |          |
| Ca  | 7 207   | 0.0817        | 359.63   | I                |        |               |          |
| Mg  | 910     | 0.0103        | 74.80    | HCO <sub>3</sub> | 744    | 0.0084        | 12.20    |
| Ba  |         |               |          | SO <sub>4</sub>  | 1 745  | 0.0198        | 36.30    |
| Sr  |         |               |          | CO <sub>3</sub>  | 0      | 0.0000        | 0.00     |
| Fe  | PRESENT |               |          | OH               | 0      | 0.0000        | 0.00     |
|     |         |               |          | H <sub>2</sub> S | TRACE  |               |          |
|     |         |               |          |                  |        |               |          |
|     |         |               |          |                  |        |               |          |

## TOTAL SOLIDS Mg/l

EVAPORATED @ 110°C EVAPORATED @ 180°C

93 220

AT IGNITION

CALCULATED

76 840

88 190

## ORGANICS: NIL

RELATIVE DENSITY

REFRACTIVE INDEX

1.078 @ 25°C

1.3521 @ 25°C

OBSERVED pH

RESISTIVITY (Ohm m)

7.7 18°C

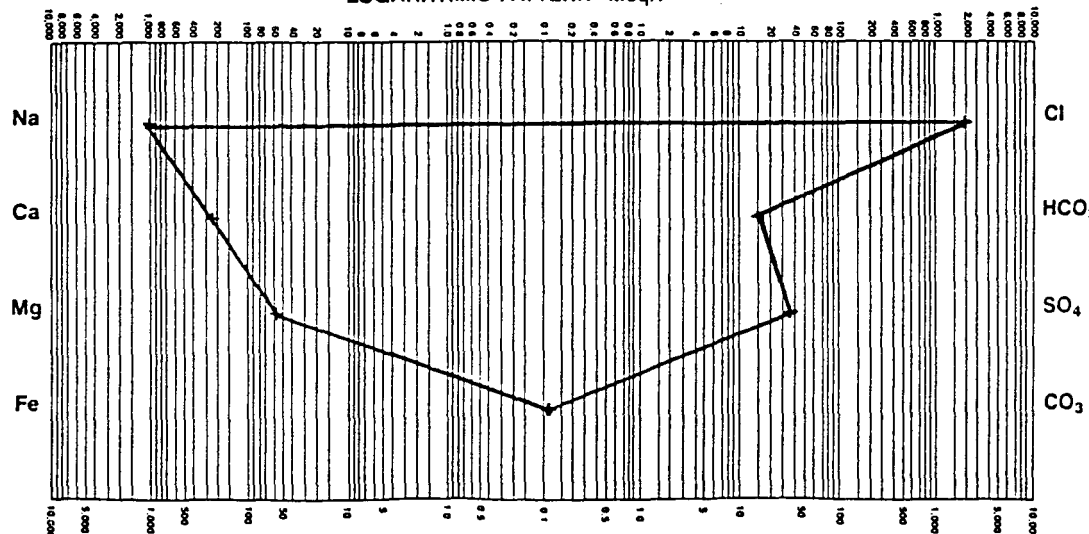
0.083 @ 25°C

## REMARKS

BAKER OIL TOOLS  
DOWNHOLE SAMPLER #228  
WAS RECOVERED AT  
ATMOSPHERIC PRESSURE.  
CONTAINED IN A  
CHAMBER WAS 2.25  
LITRES OF H<sub>2</sub>S CUT  
BLACKISH WATER.

ANALYSIS INDICATIVE  
OF A SALT WATER.

## LOGARITHMIC PATTERN Meq/l



CANADA OIL AND GAS LANDS  
ADMINISTRATION  
ADMINISTRATION DU PÉTROLE ET DU  
GAZ DES TERRES CANADA

OCT 30 1989

ENGINEERING AND CONTROL  
BRANCH  
TECHNIQUE ET DU CONTRÔLE

DRILL STEM TEST RESULTSWell Name: PARAMOUNT ETAL CAMERON L-47Dat. # Two Interval: 1486-1510m

Test Type:            Conventional Straddle  
      X       Inflatable Straddle  
               Conventional Bottom Hole  
               Inflatable Bottom Hole

Zone(s): Keg River

Times: Preflow: 40 mins.  
 Initial Shut-in:            mins.  
 Valve Open:            mins.  
 Final Shut-in: 365 mins. 365m

Results: Preflow: Strong Air Blow in 3 minutes, GTS  
in 11 minutes, OTS in 40 minutes  
 V.O.:           

Recovered: 1 cubic metre very gassified Oil. 3 1/2% Drile Mud.  
No indication of Water. 32.5° API Gravity at 60°F

Pressures: Initial Hydrostatic (IHP): ~ 33.5 17700 kPa  
 Recorder #3077 Final Hydrostatic (FHP): 17482 kPa  
 Preflow (Pref.): (a) 5318 (b) 8340 kPa 1209 psi  
 Initial Shut-in (I.S.I.P.): 10766 kPa 1561 psi  
 Final Shut-in (F.S.I.P.):            kPa  
 Initial Flow (IFF):            kPa  
 Final Flow (FFP):            kPa

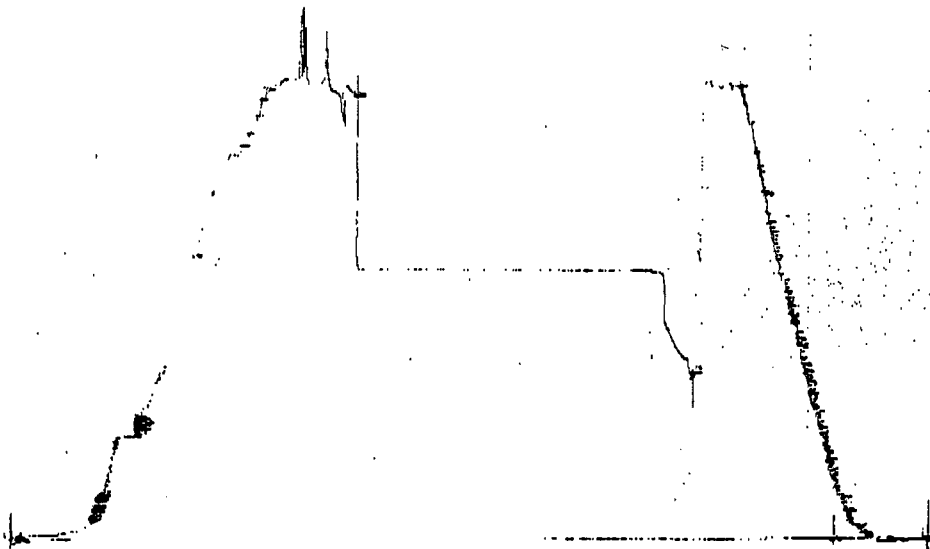
Remarks: H<sub>2</sub>S content 15,000 p.p.m to 35,000 p.p.m.  
Shut in Test Tool. Waiting for Day light and  
Tank to reverse circulate fluid from Drill  
Pipe. Oil dark brown colour.  
BHT: 42°C

**MISRUN** ☐

| TEST DATA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | GENERAL INFORMATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| FORMATION TESTED <u>Mey River</u> T.D. <u>1565</u> m<br>INTERVAL TESTED FROM <u>1482</u> m TO <u>1510</u> m<br>TEST TYPE <u>Initial</u> RESET YES <input type="checkbox"/> NO <input checked="" type="checkbox"/><br>CUSHION: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> TYPE <u>Inhibitor</u> AMOUNT _____ m<br>STARTED IN HOLE @ <u>20:45</u> HRS. OPENED TOOL @ <u>20:03</u> HRS.<br>TEST TIMES:<br>PRE-FLOW <u>45</u> MIN INITIAL SHUT-IN _____ MIN.<br>SECOND FLOW _____ MIN SECOND SHUT-IN _____ MIN.<br>FINAL FLOW _____ MIN FINAL SHUT-IN <u>365</u> MIN.<br>PRE-FLOW BLOW DESCRIPTION <u>SFA 3 min</u><br><u>GTS 10 min Oil f.a. surface 40m</u><br><u>15000 RPM H2S Gas TS.T.R.</u><br>FINAL FLOW BLOW DESCRIPTION: _____<br>_____ |  | COMPANY <u>Precambrian Resources Ltd</u><br>WELL NAME <u>Precambrian-1-Cameron</u><br>LOCATION <u>L-42</u><br>K.B. <u>723</u> m GROUND ELEV. <u>719.3</u> m<br>COMPANY REP. <u>N.I.P.</u><br>TESTER: <u>Brett</u><br>CONTRACTOR <u>S.A.C.E.R.A.</u> RIG No. <u>2</u><br>TICKET No. <u>2062</u> DATE Yr. <u>82</u> Mo. <u>2</u> Day <u>28</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | MUD & HOLE DATA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | HOLE CONDITION @ TEST TIME:<br>EXCELLENT <input type="checkbox"/> GOOD <input checked="" type="checkbox"/> FAIR <input type="checkbox"/> POOR <input type="checkbox"/><br>WAS HOLE CONDITIONED PRIOR TO TEST: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/><br>CALIPER LOG RUN PRIOR TO TEST: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/><br>TYPE OF CALIPER LOG: SHORT ARM <input type="checkbox"/> LONG ARM <input type="checkbox"/><br>CALIPERED HOLE SIZE @ TEST DEPTH <u>Gauge</u> MAX mm<br>MUD TYPE <u>Gel. Ch. m</u><br>WEIGHT <u>1140</u> kg/m <sup>3</sup> VISCOSITY <u>92</u> WATER LOSS <u>?</u><br>FILTER CAKE _____ mm TEMPERATURE <u>42.2</u> °C<br>DRILL PIPE SIZE O.D. <u>114</u> mm I.D. _____ mm WEIGHT <u>24.2</u> g/m<br>DRILL COLLARS O.D. <u>119</u> mm I.D. <u>71</u> mm RUN <u>126.24</u> m<br>MAIN HOLE OR CASING SIZE: <u>232</u> mm |  |
| RECORDED DATA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | GAS MEASUREMENTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| No. <u>4516</u> IN OUT No. <u>13821</u> IN OUT<br>DEPTH <u>1466.9</u> m DEPTH <u>1472.42</u> m DEPTH <u>1474.27</u> m<br>CAP <u>18220</u> CAP <u>116°C</u> CAP <u>26544</u><br>CLOCK <u>24</u> CLOCK _____ CLOCK <u>24</u><br>No. <u>13829</u> IN OUT No. <u>2077</u> IN OUT<br>DEPTH <u>1486.85</u> m DEPTH <u>1486.9</u> m DEPTH _____ m<br>CAP _____ CAP <u>29302</u> CAP _____<br>CLOCK _____ CLOCK _____ CLOCK _____                                                                                                                                                                                                                                                                                                                                             |  | MEASURED WITH:<br>SIDE STATIC <input type="checkbox"/> CRITICAL FLOW PROVER <input type="checkbox"/><br>OTHER _____ ORIFICE WELL TESTER <input type="checkbox"/><br>RISER SIZE: 50.8 mm or _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| REMARKS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | TIME SURFACE CHOKE mm READING kPa m <sup>3</sup> /D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |
| SEQUENCE OF TEST EVENTS:<br><u>Note Tool was shut in to wait on tank to connect</u><br><u>Note sample #1 measured 15% gas 3% vol. 8% oil 31.5 API at 30°F</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |
| FIELD READINGS REC. No. <u>3077</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | OFFICE ONLY REC. No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| DEFLECTION PRESSURE kPa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | DEFLECTION PRESSURE kPa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |
| 2390 17700                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| 700 25318                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| 1110 38340                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| 1440 10766                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| 2260 17482                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  | 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  | 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| TOTAL FLUID RECOVERED _____ m CONSISTING OF:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | BTM. H SAMPLER <u>(111)</u> SENT TO <u>C+G</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |
| _____ m OF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | GAS BOMB # _____ SENT TO: _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |
| _____ m OF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | NO. OF FLUID SAMPLES TAKEN <u>2</u> SENT TO: <u>C+G</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |
| _____ m OF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | RECOVERY REVERSED OUT YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> SALINITY _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |
| _____ m OF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | RECOVERY VERIFICATION SIGNATURE: _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |

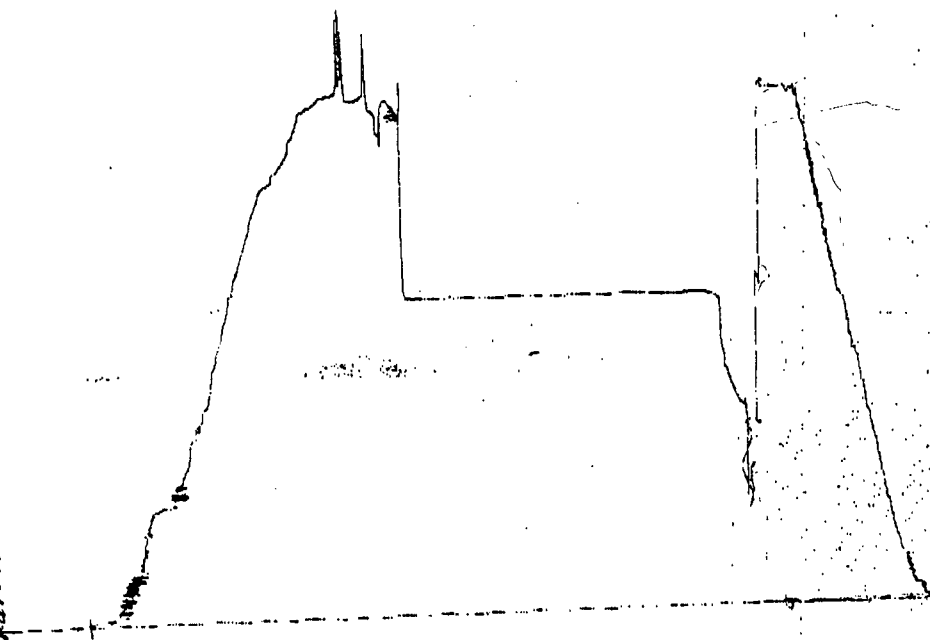
# DST #2.

Paramount DST#2 Acct# 3077



✓  
Chart  
#3077  
[Interval  
Recorder]

Paramount DST#2 Acct# 13831



✓  
Chart  
#13831  
[Inside  
Recorder]  
Above

DRILL STEM TEST - Technical Report  
Report date: 89/ 3/ 6

Wellname.....PARAMOUNT ET AL CAMERON  
Location.....3 - - - W  
U. well id.....L - 47  
Test number..... 2  
Interval tested....1486.0 m. to 1510.0 m.  
Formation.....KEG RIVER  
Date of test.....89/ 2/28

Conducted by:

Scott Testers (1978) Ltd.  
#325, 808 - 4 th. Ave. S.W.  
Calgary, Alberta, Canada T2P 3E8  
Telephone (403) 262-7222

Analyzed and reported by:

Meyer Technical Services  
1501 - 7 th. Str.  
Nisku, Alberta  
Telephone (403) 955-7066

Test date : 89/ 2/28

DST # : 2

Report page :

Well name: PARAMOUNT ET AL CAMERON

Interval: 1486.0 m. to 1510.0 m.

Location: 3 - - - W

Interval(subsea): -763.0 m. to -787.0 m.

Formation: KEG RIVER

Recorder information :

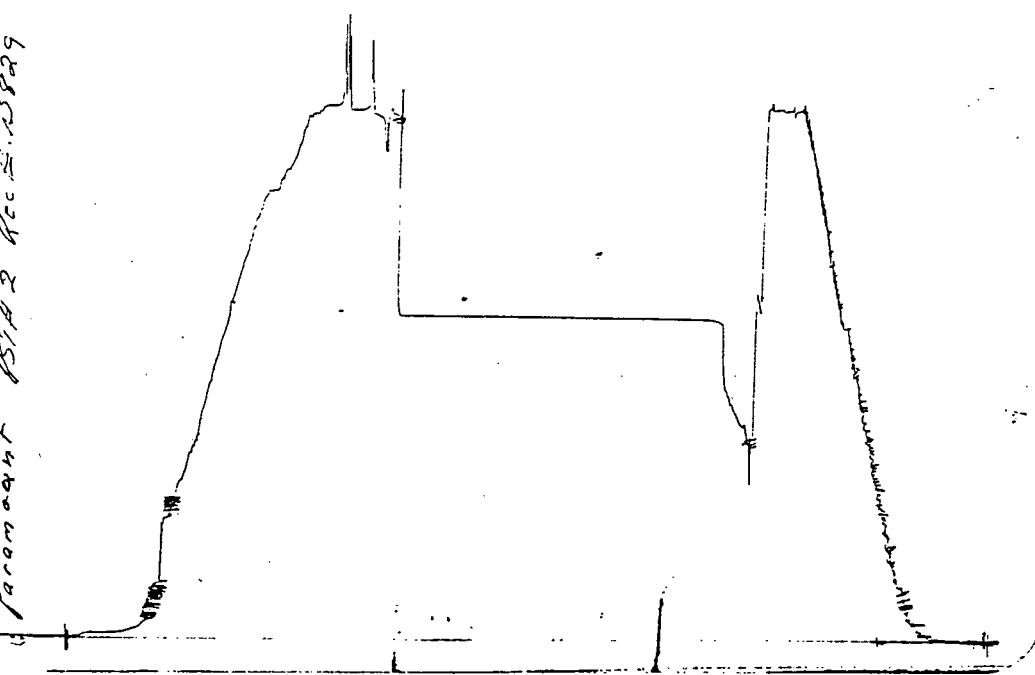
Serial #..... 13829 ✓  
Position..... 0  
Depth..... 1486.8 m.  
Subsea depth.. -763.8 m.  
Capacity..... 26717 kPa

Pressure (kPa)

1) Initial Hydro. : 17440  
2) 1st. Flow Start : 0  
3) 1st. Flow End : 0  
4) END 1st. Shutin : 0  
5) 2nd. Flow Start : 6199  
6) 2nd. Flow End : 8233  
7) END 2nd. Shutin : 10619  
8) Final Hydro. : 17348

Test Times (min.)

1st. Flow : 0  
1st. Shutin : 0  
2nd. Flow : 45  
2nd. Shutin : 365



Extrapolated Horner P @ 2nd. Shutin : 10667.0 kPa

Horner slope @ 2nd. Shutin : 952.83 kPa/cyc

Recovery Data Summary :

Total fluid recovered on this test was 1 m measured in the pumpout tank. Sample spun out 82% oil, 15% gas and 3% solids. Measured 31.5 deg API @ 30 F. Flowed gas to surface too small to measure. 15000 ppm H2S.

OTS @ 40min

Remarks :

There was only one flow and shutin on this test. The tool was left shutin waiting on tank to reverse out. Test results indicate a mechanically successful test. Bottom hole pressures and the shape of the shutin indicate HIGH PERMEABILITY within the interval tested. This report was made from data faxed in from the well site. Pressures will vary slightly when the original charts are read.

Cell 7

Test date : 89/ 2/28

DST # : 2

Report page : 2

Test type.....INFLATE STRADDLE

Company :

Started in hole @...20:45:00

Tool opened @.....00:03:00

Reset?..... NO

PARAMOUNT RESOURCES LTD.

#4100, 350 - 7TH AVE SW

CALGARY, ALTA.

T2P 3W5

K.B. elevation... 723.0 m.

Grd. elevation... 719.3 m.

TD @ test date... 1565 m.

Contractor & Rig#...SIERRA 3

Ticket number....2062

Company rep...MIKE CHOLACH

Unit number.....EDM

Tester.....B FRIESEN

---

**Mud and hole data:**

Mud type.....GEL CHEM

Filter cake..... 1.6 mm.

Mud weight.....1140.0 kg/m<sup>3</sup>

M.hole or C.size....222.0 mm.

Mud viscosity..... 92.0 s/l

Water loss..... 7.00 ml.

Calipered hole size @ test depth.....

Hole condition @ test time..... GOOD

Hole conditioned prior to test..... YES

Temperature @ 1486.8 m..... 42.0 C.

---

**Total fluid recovery :**

Total fluid recovered 0 metres  
consisting of:

Reverse circulated ? YES

# of fluid samples..... 7

Samples sent to.....C&G LABS

B.H. sampler #.....101

B.H. smplr sent to..... C&G LABS

---

**Blow description:**

On the flow period, strong air blow in 3 minutes.

Gas to surface too small to measure.

**Gas Measurements :**

Device.....  
 Riser size... 50.8 mm.

Gas Bomb #.....  
 Gas Bomb sent to...

No gas readings.

**Time-pressure listing:**

| Chart<br>Label | Comments            | Time<br>(min.) | Delta P.<br>(kPa) | Press.<br>(kPa) | (T+dt)/dt<br>(Dim.time) |
|----------------|---------------------|----------------|-------------------|-----------------|-------------------------|
| 1              | INITIAL Hydrostatic |                |                   | 17448           |                         |
| 2              | START of 1st. flow  | 0              |                   | 0               |                         |
| 3              | END of 1st. flow    | 0              |                   | 0               |                         |
|                | 1st. shutin period  |                |                   |                 |                         |
| 4              | End of 1st. shutin  |                |                   | 0               |                         |
| 5              | START of 2nd. flow  | 0              |                   | 6199            |                         |
| 6              | END of 2nd. flow    | 45             |                   | 8233            |                         |
|                | 2nd. shutin period  | 0              |                   | 8233            |                         |
|                |                     | 2              | 517               | 8750            | 23.5000                 |
|                |                     | 4              | 2146              | 10379           | 12.2500                 |
|                |                     | 6              | 2186              | 10419           | 8.5000                  |
|                |                     | 8              | 2213              | 10446           | 6.6250                  |
|                |                     | 10             | 2233              | 10466           | 5.5000                  |
|                |                     | 12             | 2246              | 10479           | 4.7500                  |
|                |                     | 14             | 2259              | 10492           | 4.2143                  |
|                |                     | 16             | 2266              | 10499           | 3.8125                  |
|                |                     | 18             | 2273              | 10506           | 3.5000                  |
|                |                     | 20             | 2279              | 10512           | 3.2500                  |
|                |                     | 25             | 2286              | 10519           | 2.8000                  |
|                |                     | 30             | 2293              | 10526           | 2.5000                  |
|                |                     | 35             | 2293              | 10526           | 2.2857                  |
|                |                     | 40             | 2293              | 10526           | 2.1250                  |
|                |                     | 45             | 2299              | 10532           | 2.0000                  |
|                |                     | 50             | 2299              | 10532           | 1.9000                  |
|                |                     | 55             | 2299              | 10532           | 1.8182                  |
|                |                     | 60             | 2299              | 10532           | 1.7500                  |
|                |                     | 70             | 2306              | 10539           | 1.6429                  |
|                |                     | 80             | 2313              | 10546           | 1.5625                  |
|                |                     | 90             | 2319              | 10552           | 1.5000                  |
|                |                     | 100            | 2319              | 10552           | 1.4500                  |

## Time-pressure listing:

| Chart<br>Label | Comments           | Time<br>(min.) | Delta P.<br>(kPa) | Press.<br>(kPa) | (T+dt)/dt<br>(Dim.time) |
|----------------|--------------------|----------------|-------------------|-----------------|-------------------------|
|                |                    | 110            | 2326              | 10559           | 1.4091                  |
|                |                    | 125            | 2326              | 10559           | 1.3600                  |
|                |                    | 165            | 2333              | 10566           | 1.2727                  |
|                |                    | 205            | 2353              | 10586           | 1.2195                  |
|                |                    | 245            | 2366              | 10599           | 1.1837                  |
|                |                    | 285            | 2373              | 10606           | 1.1579                  |
|                |                    | 325            | 2379              | 10612           | 1.1385                  |
| 7              | End of 2nd. shutin | 365            | 2386              | 10619           | 1.1233                  |
| 8              | FINAL Hydrostatic  |                |                   | 17348           |                         |

Horner Extrapolation based on 2nd.Shutin : 10667.0 kPa  
corresponding Horner slope : 952.829 kPa/cyc

1547 @ 2506

For use with following Horner calculations

Initial shutin:  
(Ft+t)/t      log10((Ft+t)/t)      Pressures (kPa or kPa<sup>2</sup>/10<sup>6</sup>)

Second shutin:  
(Ft+t)/t      log10((Ft+t)/t)      Pressures (kPa or kPa<sup>2</sup>/10<sup>6</sup>)

|         |        |              |
|---------|--------|--------------|
| 23.5000 | 1.3711 | 8750.000000  |
| 12.2500 | 1.0881 | 10379.000000 |
| 8.5000  | 0.9294 | 10419.000000 |
| 6.6250  | 0.8212 | 10446.000000 |
| 5.5000  | 0.7404 | 10466.000000 |
| 4.7500  | 0.6767 | 10479.000000 |
| 4.2143  | 0.6247 | 10492.000000 |
| 3.8125  | 0.5812 | 10499.000000 |
| 3.5000  | 0.5441 | 10506.000000 |
| 3.2500  | 0.5119 | 10512.000000 |
| 2.8000  | 0.4472 | 10519.000000 |
| 2.5000  | 0.3979 | 10526.000000 |
| 2.2857  | 0.3590 | 10526.000000 |
| 2.1250  | 0.3274 | 10526.000000 |
| 2.0000  | 0.3010 | 10532.000000 |
| 1.9000  | 0.2788 | 10532.000000 |
| 1.8182  | 0.2596 | 10532.000000 |
| 1.7500  | 0.2430 | 10532.000000 |
| 1.6429  | 0.2156 | 10539.000000 |
| 1.5625  | 0.1938 | 10546.000000 |
| 1.5000  | 0.1761 | 10552.000000 |
| 1.4500  | 0.1614 | 10552.000000 |
| 1.4091  | 0.1489 | 10559.000000 |
| 1.3600  | 0.1335 | 10559.000000 |
| 1.2727  | 0.1047 | 10566.000000 |
| 1.2195  | 0.0862 | 10586.000000 |
| 1.1837  | 0.0732 | 10599.000000 |
| 1.1579  | 0.0637 | 10606.000000 |
| 1.1385  | 0.0563 | 10612.000000 |
| 1.1233  | 0.0505 | 10619.000000 |

BEYER  
TECHNICAL SERVICES  
CALGARY, ALBERTA

Second shutin Horner Plot  
Location: 3

PARAMOUNT\_ET\_AL\_CAMERON  
Det# 2

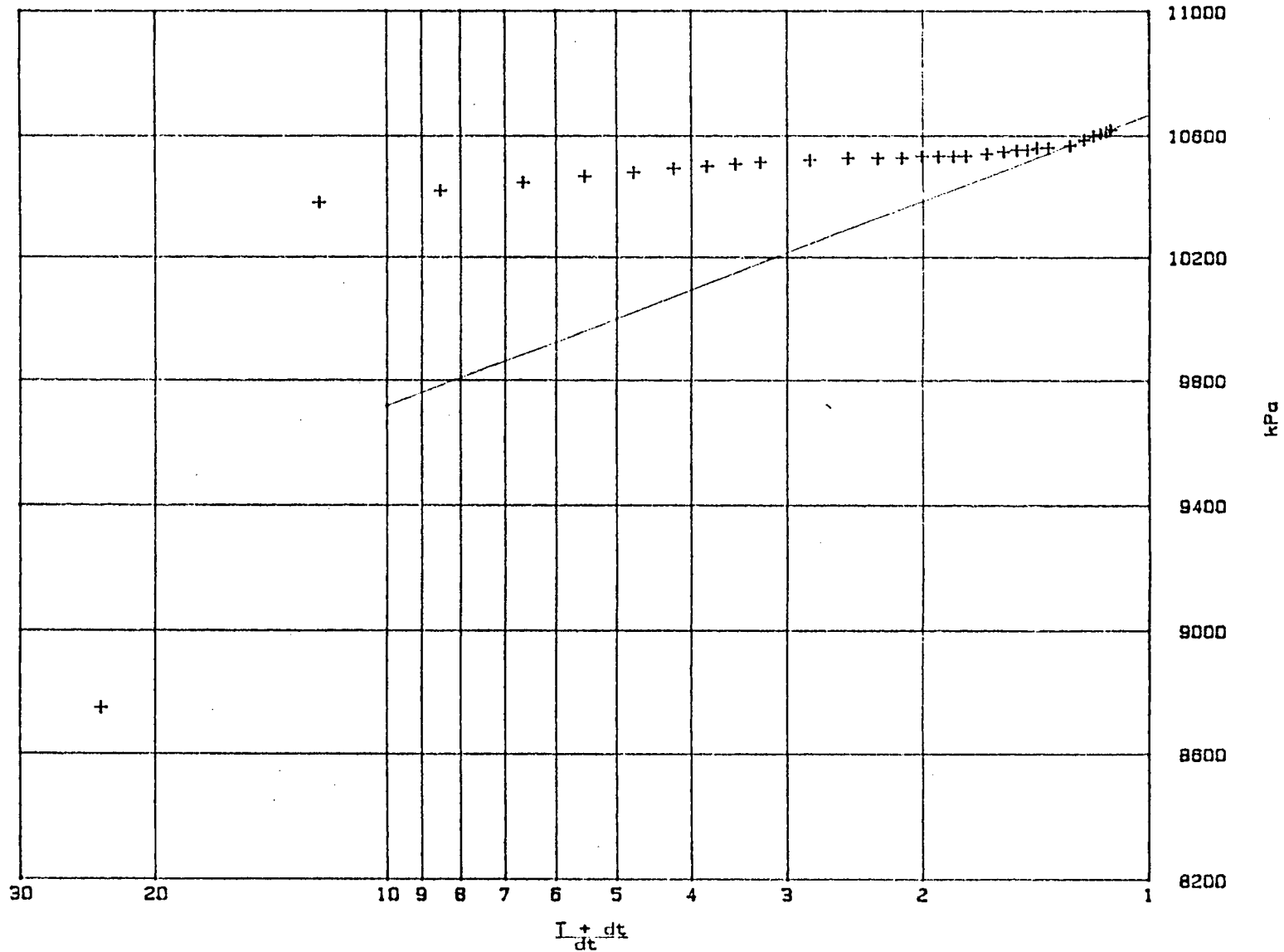
Test date: 89/02/28  
Rec. Serial: 13829

Horner extrapolated  
pressure:

10667.0  
kPa

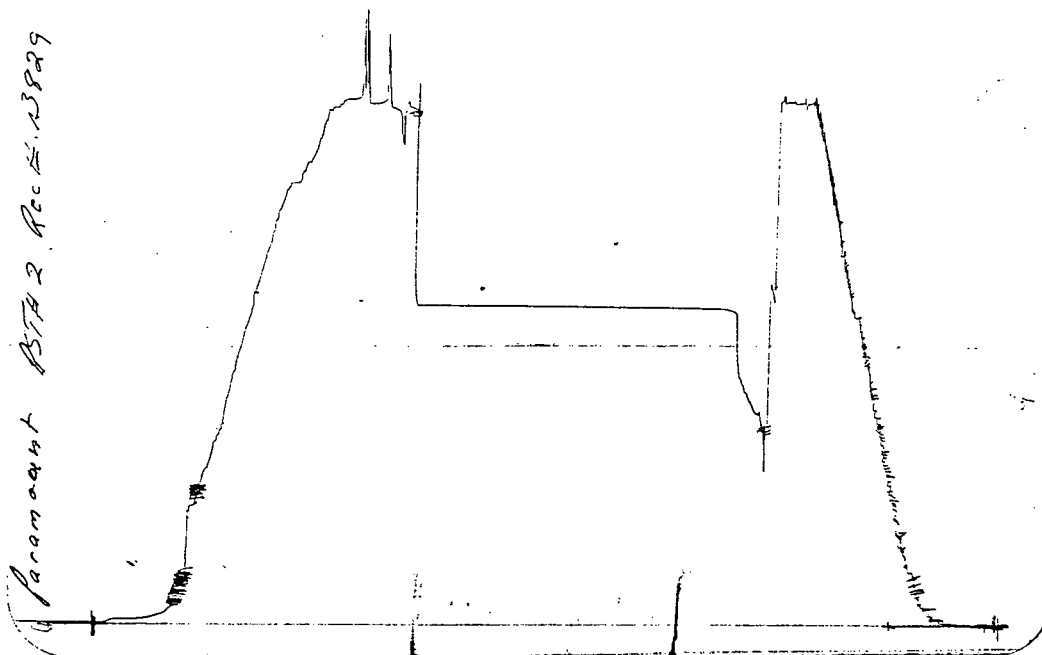
Horner slope:

952.8290  
kPa/cycle



## Recorder summary:

Paramount BTH 2 Rec# 13829



Serial#.....13829 ✓  
 Position.....0  
 Depth.....1486.8 m.  
 Capacity.... 26717 kPa

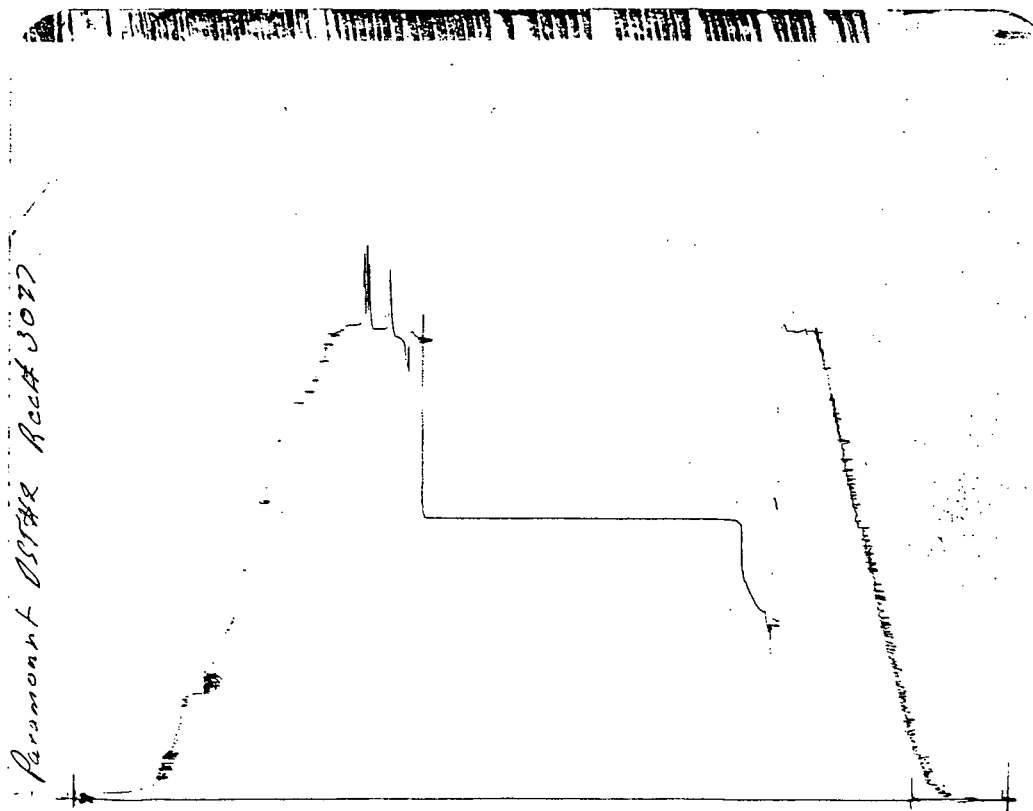
Pressure (kPa)

1) Initial Hydro. : 17448  
 2) 1st. Flow Start : 0  
 3) 1st. Flow End : 0  
 4) END 1st. Shutin : 0  
 5) 2nd. Flow Start : 6199  
 6) 2nd. Flow End : 8233  
 7) END 2nd. Shutin : 10619  
 8) Final Hydro. : 17348

Test Times (min.)

1 st. flow : 0  
 1 st. shutin : 0  
 2 nd. flow : 45  
 2 nd. shutin : 365

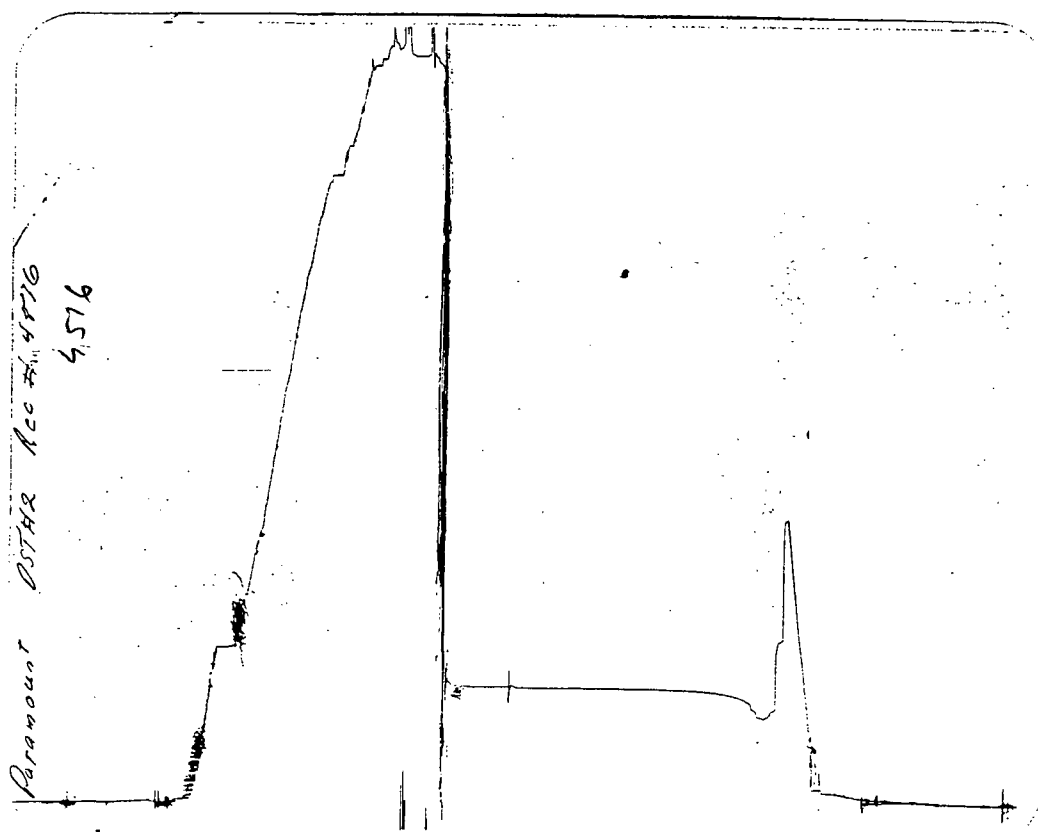
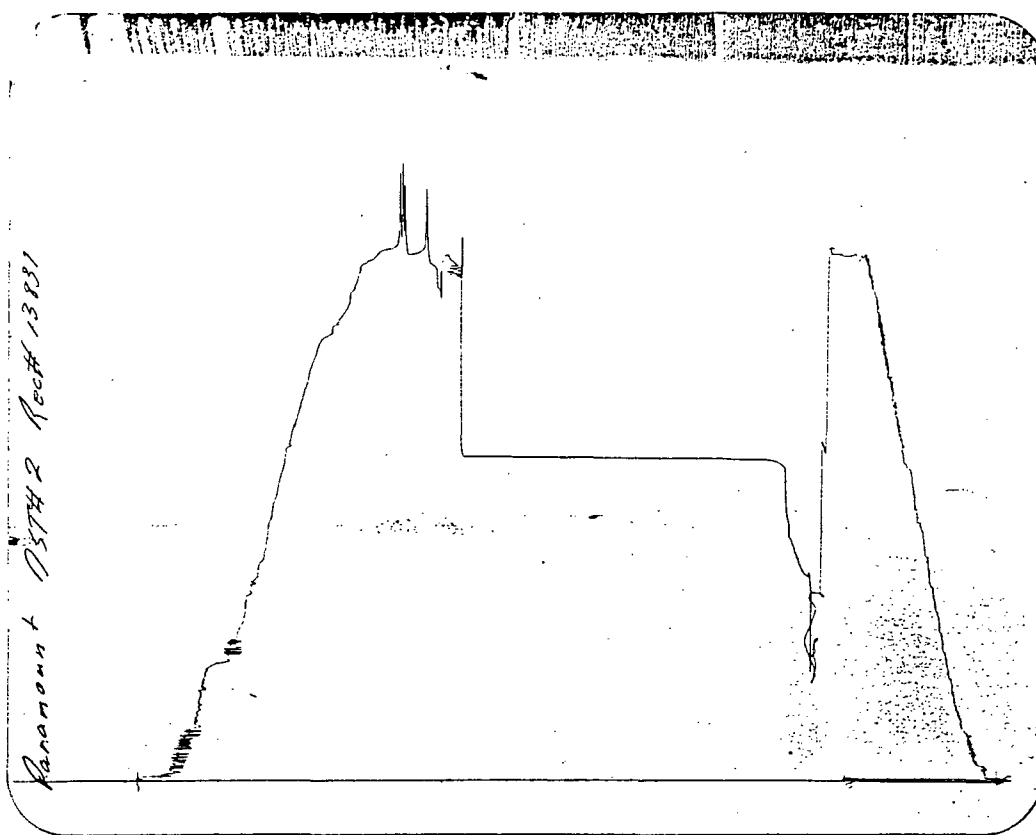
Paramount BTH 2 Rec# 3077



Serial#.....3077 ✓  
 Position.....0  
 Depth.....1486.8 m.  
 Capacity.... 29302 kPa

Pressure (kPa)

1) Initial Hydro. : 17685  
 2) 1st. Flow Start : 0  
 3) 1st. Flow End : 0  
 4) END 1st. Shutin : 0  
 5) 2nd. Flow Start : 6508  
 6) 2nd. Flow End : 8406  
 7) END 2nd. Shutin : 10781  
 8) Final Hydro. : 17460





## CHEMICAL &amp; GEOLOGICAL LABORATORIES LTD.



|                                       |  |                                                                                                         |  |
|---------------------------------------|--|---------------------------------------------------------------------------------------------------------|--|
| CONTAINER IDENTITY<br>PVT #7          |  | LABORATORY NUMBER<br>C89-4362                                                                           |  |
| LICENCE NUMBER                        |  | OPERATOR NAME<br>PARAMOUNT RESOURCES LTD.                                                               |  |
| LOCATION                              |  | WELL NAME<br>PARAMOUNT ET AL CAMERON L-47                                                               |  |
| FIELD OR AREA<br>CAMERON              |  | POOL OR ZONE                                                                                            |  |
| TEST TYPE<br>DST                      |  | TEST RECOVERY                                                                                           |  |
| NO.<br>2                              |  |                                                                                                         |  |
| MULTIPLE RECOVERY<br>Y N              |  |                                                                                                         |  |
| TEST INTERVAL (metres)<br>1486 - 1510 |  | SAMPLING POINT<br>DOWN HOLE SAMPLER                                                                     |  |
| PERFORATIONS (metres)                 |  | AMT. & TYPE OF CUSHION                                                                                  |  |
|                                       |  | MUD RESISTIVITY<br>(at 25°C)                                                                            |  |
|                                       |  | TYPE OF PRODUCTION<br>PUMPING FLOWING GAS LIFT SWAB                                                     |  |
|                                       |  | PRODUCTION RATES<br>WATER m <sup>3</sup> /d OIL m <sup>3</sup> /d GAS 10 <sup>3</sup> m <sup>3</sup> /d |  |
|                                       |  | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED<br>GAUGE PRESSURE kPa 6205                          |  |
|                                       |  | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED<br>TEMPERATURE °C 23                                |  |
| DATE SAMPLED (Y-M-D)<br>89-03-05      |  | DATE RECEIVED (Y-M-D)<br>89-03-08                                                                       |  |
|                                       |  | DATE REPORTED (Y-M-D)<br>89-03-22                                                                       |  |
|                                       |  | ANALYST<br>K. BRUNNER                                                                                   |  |
|                                       |  | OTHER INFORMATION                                                                                       |  |

BUBBLE POINT DETERMINATION @ 42°C: 10 322 KPA

rec ~2.5 l oil

density .856 33.75 °API

BS+W

sed .005 wtr .095 Total .10



## CHEMICAL &amp; GEOLOGICAL LABORATORIES LTD.



## OIL ANALYSIS

|                        |  |                                                                                     |  |
|------------------------|--|-------------------------------------------------------------------------------------|--|
| CONTAINER IDENTITY     |  | LABORATORY NUMBER                                                                   |  |
|                        |  | C89-4295-1                                                                          |  |
| LICENCE NUMBER         |  | OPERATOR NAME                                                                       |  |
|                        |  | PARAMOUNT RESOURCES LTD.                                                            |  |
| LOCATION               |  | WELL NAME                                                                           |  |
| 60-06-31.55 -117 39    |  | PARAMOUNT ET AL CAMERON 1-47                                                        |  |
| FIELD OR AREA          |  | POOL OR ZONE                                                                        |  |
| CAMERON                |  | KEG RIVER                                                                           |  |
| TEST TYPE              |  | TEST RECOVERY                                                                       |  |
| DST                    |  | REVERSED 1 M3 GAS CUT OIL, H2S                                                      |  |
| NO.                    |  |                                                                                     |  |
| 2                      |  |                                                                                     |  |
| MULTIPLE RECOVERY      |  |                                                                                     |  |
| Y N                    |  |                                                                                     |  |
| X                      |  |                                                                                     |  |
| TEST INTERVAL (metres) |  | SAMPLING POINT                                                                      |  |
| 1486 - 1510            |  | BUBBLE HOSE #4                                                                      |  |
| PERFORATIONS (metres)  |  | AMT. & TYPE OF CUSHION                                                              |  |
|                        |  |                                                                                     |  |
|                        |  | MUD RESISTIVITY                                                                     |  |
|                        |  | @ 25°C                                                                              |  |
|                        |  | TYPE OF PRODUCTION                                                                  |  |
|                        |  | PUMPING FLOWING GAS LIFT SWAB                                                       |  |
|                        |  | PRODUCTION RATES                                                                    |  |
|                        |  | WATER m <sup>3</sup> /d OIL m <sup>3</sup> /d GAS 10 <sup>3</sup> m <sup>3</sup> /d |  |
|                        |  | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED                                 |  |
|                        |  | GAUGE PRESSURE kPa                                                                  |  |
|                        |  | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED                                 |  |
|                        |  | TEMPERATURE °C                                                                      |  |
| DATE SAMPLED (Y-M-D)   |  | ANALYST                                                                             |  |
| 89-03-01               |  | S. SARGIOUS                                                                         |  |
| DATE RECEIVED (Y-M-D)  |  | OTHER INFORMATION                                                                   |  |
| 89-03-03               |  |                                                                                     |  |
| DATE REPORTED (Y-M-D)  |  |                                                                                     |  |
| 89-03-06               |  |                                                                                     |  |

## SAMPLE PROPERTIES

|                                |                |                              |                |       |
|--------------------------------|----------------|------------------------------|----------------|-------|
| COLOR OF CLEAN OIL             |                | B.S. & W. (VOLUME FRACTION)  |                |       |
| BROWN                          |                | WATER                        | SEDIMENT       | TOTAL |
|                                |                | 0.032                        | 0.020          | 0.052 |
| DENSITY at 15°C                |                |                              |                |       |
| RELATIVE                       |                | ABSOLUTE kg/m <sup>3</sup>   |                |       |
| AS RECEIVED                    | AFTER CLEANING | AS RECEIVED                  | AFTER CLEANING |       |
|                                | 0.855          |                              | 854            |       |
| A.P.I. GRAVITY                 |                |                              |                |       |
| 34.0                           |                |                              |                |       |
| TOTAL SULFUR                   |                | POUR POINT °C                |                |       |
| (MASS FRACTION)                | g/kg           | U.S.B.M.                     | A.S.T.M.       |       |
| 0.0091                         | 9.1            | -3                           |                |       |
| CARBON RESIDUE (MASS FRACTION) |                |                              |                |       |
| RVP kPa                        | CONRADSON      |                              | RAMSBOTTOM     |       |
|                                | 0.0214         |                              |                |       |
| VISCOSITY                      |                |                              |                |       |
| TEMP. °C                       | ABSOLUTE mPa.s | KINEMATIC mm <sup>2</sup> /s |                |       |
| 10                             | 19.4           | 22.6                         |                |       |
| 20                             | 9.60           | 11.3                         |                |       |
| 40                             | 4.95           | 5.90                         |                |       |

## DISTILLATION

|                                        |                |                     |
|----------------------------------------|----------------|---------------------|
| VOLUME FRACTION DISTILLED              |                | TEMP. °C            |
| L.B.P.                                 | 72             |                     |
| 0.05                                   | 118            |                     |
| 0.10                                   | 145            |                     |
| 0.15                                   | 176            |                     |
| 0.20                                   | 203            |                     |
| 0.25                                   | 228            |                     |
| 0.30                                   | 251            |                     |
| 0.35                                   | 273            |                     |
| 0.40                                   | 293            |                     |
| 0.45                                   | 314            |                     |
| 0.50                                   | 333            |                     |
| 0.55                                   | 350            |                     |
| 0.60                                   | 363            |                     |
| 0.65                                   |                |                     |
| 0.70                                   |                |                     |
| 0.75                                   |                |                     |
| 0.80                                   |                |                     |
| 0.85                                   |                |                     |
| 0.90                                   |                |                     |
| 0.95                                   |                |                     |
| 1.00                                   |                |                     |
| F.B.P.                                 |                |                     |
| CRACKED                                | 366            |                     |
| METHOD                                 |                |                     |
| MODIFIED ASTM D-86                     |                |                     |
| BAROM. PRESS. kPa (abs)                |                |                     |
| 89.9                                   |                |                     |
| ROOM TEMP. °C                          |                |                     |
| 22                                     |                |                     |
| DISTILLATION SUMMARY (VOLUME FRACTION) |                |                     |
| 200°C NAPHTHA                          | 275°C KEROSENE | 350°C LIGHT GAS OIL |
| 0.195                                  | 0.165          | 0.190               |
| RECOVERED                              | RESIDUE        | DISTILLATION LOSS   |
|                                        |                |                     |
| BASE TYPE: MIXED                       |                |                     |
| CHARACTERIZATION FACTOR: 11.9          |                |                     |

BS & W DETERMINED ON SAMPLE AS RECEIVED. REMAINDER OF ANALYSIS DETERMINED ON SAMPLE AFTER CLEANING BY CENTRIFUGING.



## CHEMICAL &amp; GEOLOGICAL LABORATORIES LTD.



|                        |                       |                                                                                     |             |
|------------------------|-----------------------|-------------------------------------------------------------------------------------|-------------|
| CONTAINER IDENTITY     |                       | LABORATORY NUMBER                                                                   |             |
|                        |                       | C89-4295-2                                                                          |             |
| LICENCE NUMBER         |                       | OPERATOR NAME                                                                       |             |
|                        |                       | PARAMOUNT RESOURCES LTD.                                                            |             |
| LOCATION               |                       | WELL NAME                                                                           |             |
| 60-06-31.55 -117 39    |                       | PARAMOUNT ET AL CAMERON L-47                                                        |             |
| FIELD OR AREA          |                       | POOL OR ZONE                                                                        |             |
| CAMERON                |                       | KEG RIVER                                                                           |             |
| NAME OF SAMPLER        |                       | COMPANY                                                                             |             |
|                        |                       | SCOTT TESTERS                                                                       |             |
| TEST TYPE              | NO.                   | TEST RECOVERY                                                                       |             |
| DST                    | 2                     | REVERSED 1 M3 GAS CUT OIL, H2S                                                      |             |
| MULTIPLE RECOVERY      | Y N                   |                                                                                     |             |
|                        | X                     |                                                                                     |             |
| TEST INTERVAL (metres) |                       | SAMPLING POINT                                                                      |             |
| 1486 - 1510            |                       |                                                                                     |             |
| PERFORATIONS (metres)  |                       | AMT. & TYPE OF CUSHION                                                              |             |
|                        |                       |                                                                                     |             |
|                        |                       | MUD RESISTIVITY                                                                     |             |
|                        |                       | (u 25°C)                                                                            |             |
|                        |                       | TYPE OF PRODUCTION                                                                  |             |
|                        |                       | PUMPING FLOWING GAS LIFT SWAB                                                       |             |
|                        |                       | PRODUCTION RATES                                                                    |             |
|                        |                       | WATER m <sup>3</sup> /d OIL m <sup>3</sup> /d GAS 10 <sup>3</sup> m <sup>3</sup> /d |             |
|                        |                       | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED                                 |             |
| GAUGE PRESSURE kPa     |                       |                                                                                     |             |
|                        |                       | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED                                 |             |
| TEMPERATURE °C         |                       |                                                                                     |             |
|                        |                       |                                                                                     |             |
| DATE SAMPLED (Y-M-D)   | DATE RECEIVED (Y-M-D) | DATE REPORTED (Y-M-D)                                                               | ANALYST     |
| 89-03-01               | 89-03-03              | 89-03-06                                                                            | S. SARGIOUS |
|                        |                       | OTHER INFORMATION                                                                   |             |
|                        |                       |                                                                                     |             |

|                | BS & W (VOLUME FRACTION) |          |       | DENSITY @ 15C |      |             |
|----------------|--------------------------|----------|-------|---------------|------|-------------|
|                | WATER                    | SEDIMENT | TOTAL | REL.          | ABS. | API GRAVITY |
| BUBBLE HOSE #1 | 0.011                    | 0.015    | 0.026 | 0.859         | 858  | 33.2        |
| BUBBLE HOSE #2 | 0.028                    | 0.036    | 0.064 | 0.858         | 857  | 33.4        |
| BUBBLE HOSE #3 | 0.016                    | 0.016    | 0.032 | 0.857         | 856  | 33.6        |
| BUBBLE HOSE #5 | 0.066                    | 0.038    | 0.104 | 0.856         | 855  | 33.8        |
| BUBBLE HOSE #6 | 0.180                    | 0.260    | 0.440 | 0.856         | 855  | 33.8        |
| TOP OF TOOL    | 0.080                    | 0.460    | 0.540 | 0.856         | 855  | 33.8        |



## WATER ANALYSIS

|                        |  |                                                                                     |  |
|------------------------|--|-------------------------------------------------------------------------------------|--|
| CONTAINER IDENTITY     |  | LABORATORY NUMBER                                                                   |  |
|                        |  | C89-4295-3                                                                          |  |
| LICENCE NUMBER         |  | OPERATOR NAME                                                                       |  |
|                        |  | PARAMOUNT RESOURCES LTD.                                                            |  |
| LOCATION               |  | WELL NAME                                                                           |  |
| 60-06-31.55 -117 39    |  | PARAMOUNT ET AL CAMERON L-47                                                        |  |
| FIELD OR AREA          |  | POOL OR ZONE                                                                        |  |
| CAMERON                |  | KEG RIVER                                                                           |  |
| TEST TYPE              |  | TEST RECOVERY                                                                       |  |
| DST                    |  | REVERSED 1 M3 GAS CUT OIL, H2S                                                      |  |
| NO.                    |  |                                                                                     |  |
| 2                      |  |                                                                                     |  |
| MULTIPLE RECOVERY      |  |                                                                                     |  |
| Y N                    |  |                                                                                     |  |
| X                      |  |                                                                                     |  |
| TEST INTERVAL (metres) |  | SAMPLING POINT                                                                      |  |
| 1486 - 1510            |  | BUBBLE HOSE #6                                                                      |  |
| PERFORATIONS (metres)  |  | AMT. & TYPE OF CUSHION                                                              |  |
|                        |  |                                                                                     |  |
|                        |  | MUD RESISTIVITY                                                                     |  |
|                        |  | (a 25°C)                                                                            |  |
|                        |  | TYPE OF PRODUCTION                                                                  |  |
|                        |  | PUMPING FLOWING GAS LIFT SWAB                                                       |  |
|                        |  | PRODUCTION RATES                                                                    |  |
|                        |  | WATER m <sup>3</sup> /d OIL m <sup>3</sup> /d GAS 10 <sup>3</sup> m <sup>3</sup> /d |  |
|                        |  | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED                                 |  |
|                        |  | GAUGE PRESSURE kPa                                                                  |  |
|                        |  | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED                                 |  |
|                        |  | TEMPERATURE °C                                                                      |  |
| DATE SAMPLED (Y-M-D)   |  | DATE RECEIVED (Y-M-D)                                                               |  |
| 89-03-01               |  | 89-03-03                                                                            |  |
| DATE REPORTED (Y-M-D)  |  | ANALYST                                                                             |  |
| 89-03-06               |  | S. SARGIOUS                                                                         |  |
|                        |  | OTHER INFORMATION                                                                   |  |
|                        |  |                                                                                     |  |

| ION | Mg/l   | Mass Fraction | Meq/l  | ION              | Mg/l    | Mass Fraction | Meq/l  |
|-----|--------|---------------|--------|------------------|---------|---------------|--------|
| Na  | 11 400 | 0.3029        | 495.90 | Cl               | 13 400  | 0.3560        | 377.88 |
| K   | 160    | 0.0043        | 4.10   | Br               |         |               |        |
| Ca  | 1 273  | 0.0338        | 63.52  | I                |         |               |        |
| Mg  | 381    | 0.0101        | 31.32  | HCO <sub>3</sub> | 1 220   | 0.0324        | 20.01  |
| Ba  |        |               |        | SO <sub>4</sub>  | 9 802   | 0.2604        | 203.88 |
| Sr  |        |               |        | CO <sub>3</sub>  | 0       | 0.0000        | 0.00   |
| Fe  | MUCH   |               |        | OH               | 0       | 0.0000        | 0.00   |
|     |        |               |        | H <sub>2</sub> S | PRESENT |               |        |
|     |        |               |        |                  |         |               |        |
|     |        |               |        |                  |         |               |        |

## TOTAL SOLIDS Mg/l

EVAPORATED @ 110°C

43 730

EVAPORATED @ 180°C

AT IGNITION

37 540

CALCULATED

37 636

## ORGANICS: MUCH

RELATIVE DENSITY

1.031 @ 25°C

REFRACTIVE INDEX

1.3398 @ 25°C

OBSERVED pH

7.9 @ 23 °C

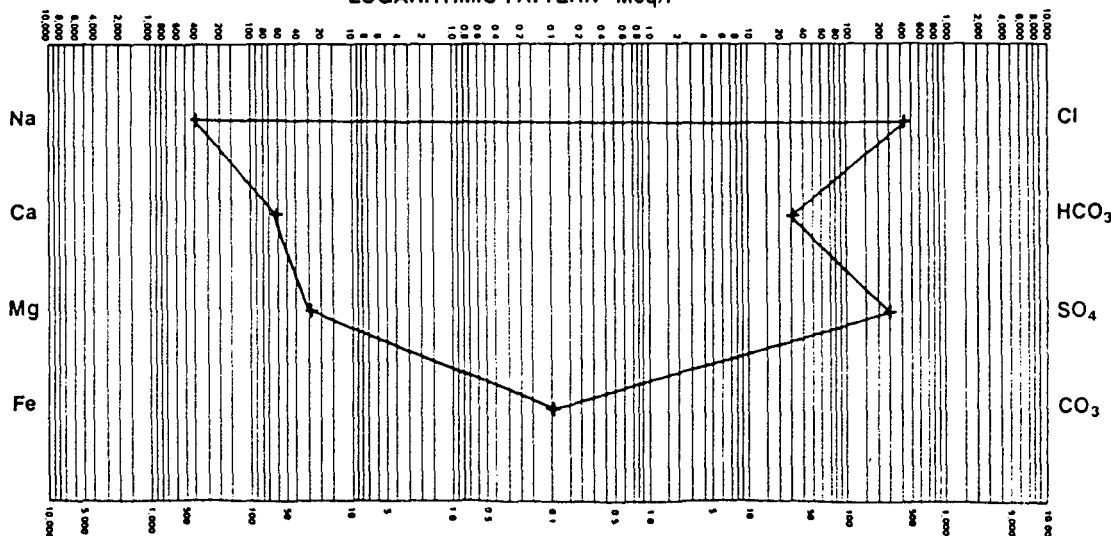
RESISTIVITY (Ohm m)

0.220 @ 25°C

## REMARKS

BROWN COLORED FIL-  
TRATE RECOVERED FROM  
THE WATER PORTION OF  
THE SAMPLE.

## LOGARITHMIC PATTERN Meq/l





## CHEMICAL &amp; GEOLOGICAL LABORATORIES LTD.



|                                                     |     |                                                                                     |  |
|-----------------------------------------------------|-----|-------------------------------------------------------------------------------------|--|
| CONTAINER IDENTITY                                  |     | LABORATORY NUMBER                                                                   |  |
|                                                     |     | C89-4295-4                                                                          |  |
| LICENCE NUMBER                                      |     | OPERATOR NAME                                                                       |  |
|                                                     |     | PARAMOUNT RESOURCES LTD.                                                            |  |
| LOCATION                                            |     | WELL NAME                                                                           |  |
| 60-06-31.55 -117 39                                 |     | PARAMOUNT ET AL CAMERON L-47                                                        |  |
| FIELD OR AREA                                       |     | POOL OR ZONE                                                                        |  |
| CAMERON                                             |     | KEG RIVER                                                                           |  |
| NAME OF SAMPLER                                     |     | COMPANY                                                                             |  |
|                                                     |     | SCOTT TESTERS                                                                       |  |
| TEST TYPE                                           | NO. | TEST RECOVERY                                                                       |  |
| DST                                                 | 2   | REVERSED 1 M3 GAS CUT OIL, H2S                                                      |  |
| MULTIPLE RECOVERY                                   | Y N |                                                                                     |  |
|                                                     | X   |                                                                                     |  |
| TEST INTERVAL (metres)                              |     | SAMPLING POINT                                                                      |  |
| 1486 - 1510                                         |     |                                                                                     |  |
| PERFORATIONS (metres)                               |     | AMT. & TYPE OF CUSHION                                                              |  |
|                                                     |     |                                                                                     |  |
|                                                     |     | MUD RESISTIVITY @ 25°C                                                              |  |
|                                                     |     |                                                                                     |  |
|                                                     |     | TYPE OF PRODUCTION                                                                  |  |
|                                                     |     | PUMPING FLOWING GAS LIFT SWAB                                                       |  |
|                                                     |     | PRODUCTION RATES                                                                    |  |
|                                                     |     | WATER m <sup>3</sup> /d OIL m <sup>3</sup> /d GAS 10 <sup>3</sup> m <sup>3</sup> /d |  |
|                                                     |     | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED                                 |  |
| GAUGE PRESSURE kPa                                  |     |                                                                                     |  |
| SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED |     |                                                                                     |  |
| TEMPERATURE °C                                      |     |                                                                                     |  |
| DATE SAMPLED (Y-M-D)                                |     | DATE RECEIVED (Y-M-D)                                                               |  |
| 89-03-01                                            |     | 89-03-03                                                                            |  |
| DATE REPORTED (Y-M-D)                               |     | ANALYST                                                                             |  |
| 89-03-06                                            |     | S. SARGIOUS                                                                         |  |
| OTHER INFORMATION                                   |     |                                                                                     |  |

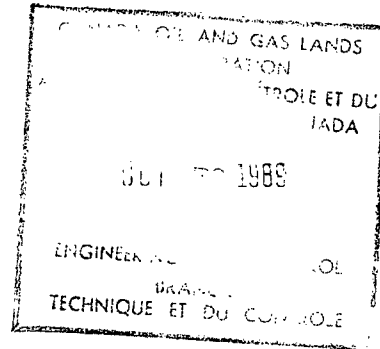
TOP OF TOOL

RESISTIVITY: 0.226 OHM M @ 25C

BROWN COLORED FILTRATE RECOVERED FROM THE WATER PORTION OF THE SAMPLE.

CANADA OIL AND GAS LANDS  
REGISTRATION  
ADMINISTRATION DU PÉTROLE ET DU  
GAS DES TERRES  
OCT 30 1989  
ENGINEERING CONTROL  
TECHNIQUE ET DU CONTRÔLE

DRILL STEM TEST - Technical Report  
Report date: 89/ 3/ 6



Wellname.....PARAMOUNT ET AL CAMERON  
Location.....3 - - - W  
U. well id.....L - 47  
Test number..... 3  
Interval tested....1510.0 m. to 1534.0 m.  
Formation.....KEG RIVER  
Date of test.....89/ 3/ 2

Conducted by:

Scott Testers (1978) Ltd.  
#325, 808 - 4 th. Ave. S.W.  
Calgary, Alberta, Canada T2P 3E8  
Telephone (403) 262-7222

Analyzed and reported by:

Meyer Technical Services  
1501 - 7 th. Str.  
Nisku, Alberta  
Telephone (403) 955-7066

Test date : 89/ 3/ 2

DST # : 3

Report page :

Well name: PARAMOUNT ET AL CAMERON

Interval: 1510.0 m. to 1534.0 m.

Location: 3 - - - W

Interval(subsea): -787.0 m. to -811.0 m.

Formation: KEG RIVER

Recorder information :

Serial #..... 13829

Position..... 0

Depth..... 1510.8 m.

Subsea depth.. -787.8 m.

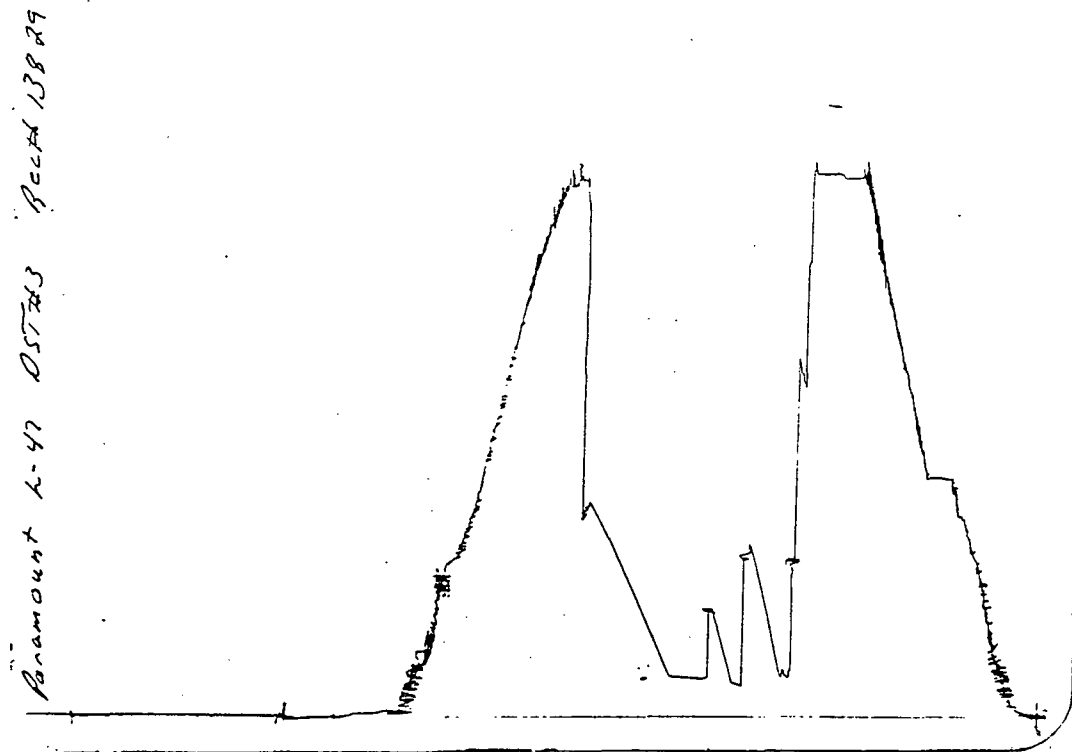
Capacity..... 26717 kPa

Pressure (kPa)

- 1) Initial Hydro. : 1789
- 2) 1st. Flow Start : 151
- 3) 1st. Flow End : 131
- 4) END 1st. Shutin : 545
- 5) 2nd. Flow Start : 100
- 6) 2nd. Flow End : 131
- 7) END 2nd. Shutin : 703
- 8) Final Hydro. : 1772

Test Times (min.)

- |             |       |
|-------------|-------|
| 1st. Flow   | : 20  |
| 1st. Shutin | : 50  |
| 2nd. Flow   | : 115 |
| 2nd. Shutin | : 120 |



Recovery Data Summary :

Total fluid recovered on this test was 108 m consisting of 45 m of mud and water cut inhibitor, 45 m oil cut mud, 45 m of brackish oil. No gas to surface.

Remarks :

Test results indicate a mechanically successful test. Bottom hole pressures and the shape of the shutin curves suggest LOW PERMEABILITY within the interval tested. The irregularity in the flow curve was caused when the tool was shutin for a short time to thaw the flare line.

Test type.....INFLATE STRADDLE  
Started in hole @...18:30:00  
Tool opened @.....23:57:00  
Reset?..... NO

Company :

PARAMOUNT RESOURCES LTD.  
#4100, 350 - 7TH AVE SW  
CALGARY, ALTA.  
T2P 3W5

K.B. elevation... 723.0 m.  
Grd. elevation... 719.3 m.  
TD @ test date... 1565 m.

Contractor &amp; Rig#...SIERRA 3

Ticket number....2063  
Unit number.....EDM

Company rep...M CHOLACH  
Tester.....B FRIESEN

---

**Mud and hole data:**

Mud type.....GEL CHEM  
Mud weight.....1140.0 kg/m<sup>3</sup>  
Mud viscosity..... 92.0 s/l

Filter cake..... 0.0 mm.  
M.hole or C.size....222.0 mm.  
Water loss..... 7.00 ml.

Caliper hole size @ test depth.....  
Hole condition @ test time..... GOOD  
Hole conditioned prior to test..... NO

Temperature @ 1510.8 m..... 42.0 C.

---

**Total fluid recovery :**

Total fluid recovered 108 metres  
consisting of:

Reverse circulated ? NO

# of fluid samples..... 3  
Samples sent to.....C&G LABS  
B.H. sampler #.....119  
B.H. smplr sent to..... C&G LABS

18 m. of MUD & WATER CUT INHIBITOR  
45 m. of OIL CUT MUD  
45 m. of BRACKISH OIL

---

**Blow description:**

On pre-flow, weak air blow increasing to strong  
air blow in 20 minutes. No gas to surface.

On valve open, fair air blow decreasing to very  
weak air blow at end of flow. No gas to surface.

**Gas Measurements :**

Device.....  
Riser size... 50.8 mm.

Gas Bomb #.....  
Gas Bomb sent to...

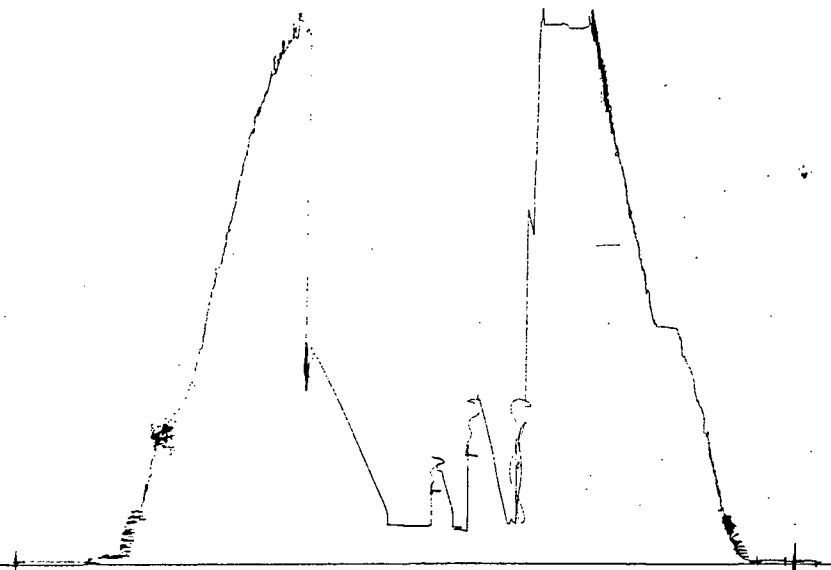
No gas readings.

---

**Time-pressure listing:**

| Chart<br>Label | Comments            | Time<br>(min.) | Delta P.<br>(kPa) | Press.<br>(kPa) | (T+dt)/dt<br>(Dim.time) |
|----------------|---------------------|----------------|-------------------|-----------------|-------------------------|
| 1              | INITIAL Hydrostatic |                |                   | 17891           |                         |
| 2              | START of 1st. flow  | 0              |                   | 1516            |                         |
| 3              | END of 1st. flow    | 20             |                   | 1313            |                         |
|                | 1st. shutin period  |                |                   |                 |                         |
| 4              | End of 1st. shutin  |                |                   | 5454            |                         |
| 5              | START of 2nd. flow  | 0              |                   | 1004            |                         |
| 6              | END of 2nd. flow    | 115            |                   | 1313            |                         |
|                | 2nd. shutin period  |                |                   |                 |                         |
| 7              | End of 2nd. shutin  |                |                   | 7030            |                         |
| 8              | FINAL Hydrostatic   |                |                   | 17723           |                         |

DST# 3 Paramount 1-47 Rec# 13831



Serial#.....13831  
 Position....I  
 Depth.....1498.2 m.  
 Capacity.... 26544 kPa

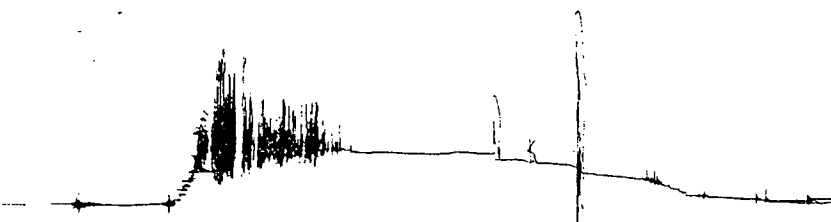
Pressure (kPa)

1) Initial Hydro. : 17763  
 2) 1st. Flow Start : 1224  
 3) 1st. Flow End : 1224  
 4) END 1st. Shutin : 5320  
 5) 2nd. Flow Start : 972  
 6) 2nd. Flow End : 1198  
 7) END 2nd. Shutin : 6868  
 8) Final Hydro. : 17630

Test Times (min.)

1 st. flow : 20  
 1 st. shutin : 50  
 2 nd. flow : 115  
 2 nd. shutin : 120

Paramount 1-47 DST# 13 Rec# 4516



Serial#.....4516  
 Position....A  
 Depth.....1490.9 m.  
 Capacity.... 18270 kPa

Pressure (kPa)

1) Start preflow : 641  
 2) End preflow : 853  
 3) Start valve op: 987  
 4) End value op: 1190  
 5) Hydro of recov: 1176

## Recorder summary:

Paramount L-47 DST#3 Recd 13829

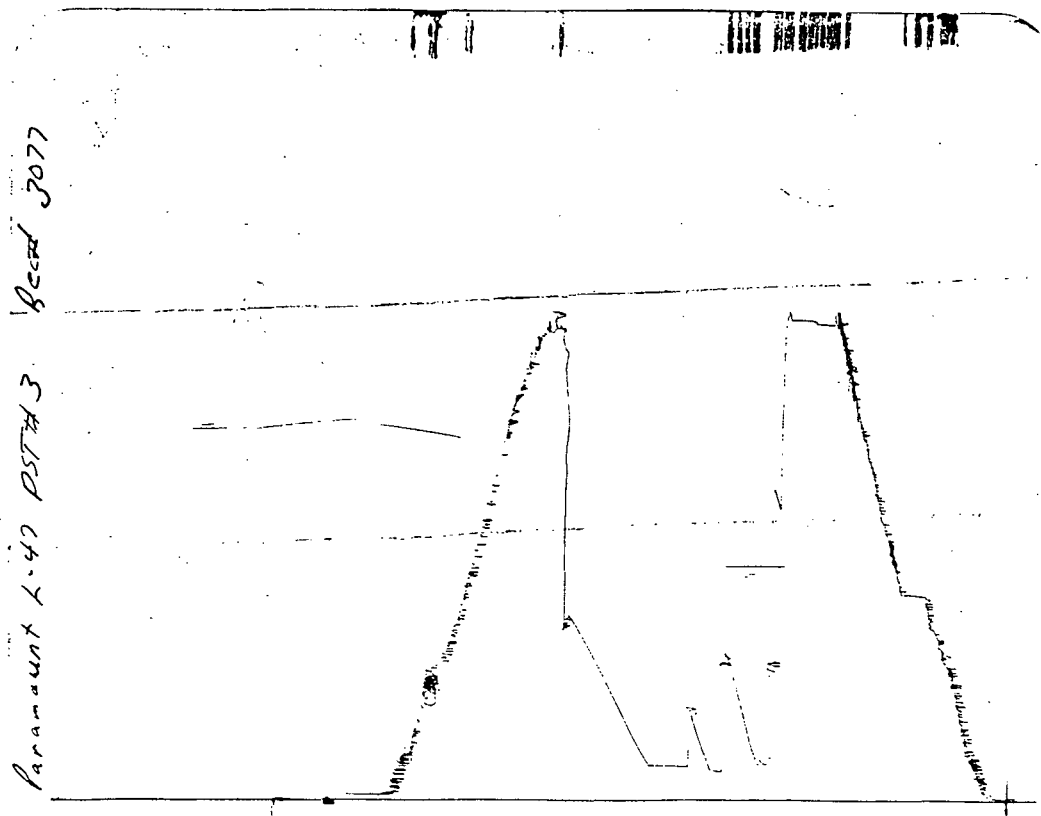
Serial#.....13829  
 Position....0  
 Depth.....1510.8 m.  
 Capacity.... 26717 kPa

Pressure (kPa)

1) Initial Hydro. : 17891  
 2) 1st. Flow Start : 1516  
 3) 1st. Flow End : 1313  
 4) END 1st. Shutin : 5454  
 5) 2nd. Flow Start : 1004  
 6) 2nd. Flow End : 1313  
 7) END 2nd. Shutin : 7030  
 8) Final Hydro. : 17723

Test Times (min.)

1 st. flow : 20  
 1 st. shutin : 50  
 2 nd. flow : 115  
 2 nd. shutin : 120



Paramount L-47 DST#3 Recd 3077

Serial#.....3077  
 Position....0  
 Depth.....1510.8 m.  
 Capacity.... 29302 kPa

Pressure (kPa)

1) Initial Hydro. : 18018  
 2) 1st. Flow Start : 1633  
 3) 1st. Flow End : 1375  
 4) END 1st. Shutin : 5699  
 5) 2nd. Flow Start : 1094  
 6) 2nd. Flow End : 1337  
 7) END 2nd. Shutin : 7141  
 8) Final Hydro. : 17772



## GAS ANALYSIS

|                                                                                       |  |                                                                                                                                                         |  |
|---------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| CONTAINER IDENTITY<br>DHS #119                                                        |  | LABORATORY NUMBER<br>CB9-4296-1                                                                                                                         |  |
| LICENCE NUMBER                                                                        |  | OPERATOR NAME<br>PARAMOUNT RESOURCES LTD.                                                                                                               |  |
| LOCATION<br>60-06-31.55 -117 39                                                       |  | WELL NAME<br>PARAMOUNT ET AL CAMERON L-47                                                                                                               |  |
| FIELD OR AREA<br>CAMERON                                                              |  | POOL OR ZONE<br>KEG RIVER                                                                                                                               |  |
| TEST TYPE<br>DST                                                                      |  | TEST RECOVERY<br>108 M                                                                                                                                  |  |
| NO.<br>3                                                                              |  | ELEVATIONS (metres)<br>K.B. 723 GRD. 719.3                                                                                                              |  |
| MULTIPLE RECOVERY<br>Y <input type="checkbox"/> N <input checked="" type="checkbox"/> |  | NAME OF SAMPLER<br>SCOTT TESTERS                                                                                                                        |  |
| TEST INTERVAL (metres)<br>1510 - 1534                                                 |  | SAMPLING POINT<br>DOWN HOLE SAMPLER #119                                                                                                                |  |
| PERFORATIONS (metres)                                                                 |  | AMT. & TYPE OF CUSHION                                                                                                                                  |  |
|                                                                                       |  | MUD RESISTIVITY @ 25°C                                                                                                                                  |  |
|                                                                                       |  | TYPE OF PRODUCTION<br>PUMPING <input type="checkbox"/> FLOWING <input type="checkbox"/> GAS LIFT <input type="checkbox"/> SWAB <input type="checkbox"/> |  |
|                                                                                       |  | PRODUCTION RATES<br>WATER m <sup>3</sup> /d OIL m <sup>3</sup> /d GAS 10 <sup>3</sup> m <sup>3</sup> /d                                                 |  |
|                                                                                       |  | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED<br>GAUGE PRESSURE kPa 700                                                                           |  |
|                                                                                       |  | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED<br>TEMPERATURE °C 20                                                                                |  |
| DATE SAMPLED (Y-M-D)<br>89-03-03                                                      |  | DATE RECEIVED (Y-M-D)<br>89-03-03                                                                                                                       |  |
|                                                                                       |  | DATE REPORTED (Y-M-D)<br>89-03-09                                                                                                                       |  |
|                                                                                       |  | ANALYST<br>B. ANDERSON                                                                                                                                  |  |
|                                                                                       |  | OTHER INFORMATION                                                                                                                                       |  |

| COMP             | MOLE FRACTION        |                        | PETROLEUM LIQUID CONTENT<br>ml/m <sup>3</sup> |
|------------------|----------------------|------------------------|-----------------------------------------------|
|                  | AIR FREE AS RECEIVED | AIR FREE ACID GAS FREE |                                               |
| H <sub>2</sub>   | 0.0094               | 0.0097                 |                                               |
| He               | 0.0004               | 0.0004                 |                                               |
| N <sub>2</sub>   | 0.0172               | 0.0178                 |                                               |
| CO <sub>2</sub>  | 0.0285               | 0.0000                 |                                               |
| H <sub>2</sub> S | 0.0049               | 0.0000                 |                                               |
| C <sub>1</sub>   | 0.8667               | 0.8967                 |                                               |
| C <sub>2</sub>   | 0.0403               | 0.0417                 |                                               |
| C <sub>3</sub>   | 0.0180               | 0.0186                 | 66.2                                          |
| IC <sub>4</sub>  | 0.0035               | 0.0036                 | 15.3                                          |
| NC <sub>4</sub>  | 0.0053               | 0.0055                 | 22.3                                          |
| IC <sub>5</sub>  | 0.0017               | 0.0018                 | 8.3                                           |
| NC <sub>5</sub>  | 0.0013               | 0.0013                 | 6.3                                           |
| C <sub>6</sub>   | 0.0008               | 0.0008                 | 4.4                                           |
| C <sub>7</sub>   | 0.0019               | 0.0020                 | 11.7                                          |
| C <sub>8</sub>   | 0.0001               | 0.0001                 | 0.7                                           |
| C <sub>9</sub>   | 0.0000               | 0.0000                 | 0.0                                           |
| C <sub>10+</sub> | 0.0000               | 0.0000                 | 0.0                                           |
| TOTAL            | 1.0000               | 1.0000                 | 135.2                                         |

|                                                               |  |                                        |  |
|---------------------------------------------------------------|--|----------------------------------------|--|
| GROSS HEATING VALUE MJ/m <sup>3</sup><br>15°C AND 101.325 kPa |  |                                        |  |
| MOISTURE AND ACID GAS FREE<br>MEASURED                        |  | DETERMINED<br>DEW POINT                |  |
| CALCULATED<br>40.68                                           |  | °C                                     |  |
| VAPOUR PRESSURE<br>PENTANES PLUS<br>80. kPa                   |  |                                        |  |
| RELATIVE DENSITY                                              |  |                                        |  |
| MOISTURE FREE AS SAMPLED<br>MEASURED                          |  | MOISTURE AND ACID GAS FREE<br>MEASURED |  |
| CALCULATED<br>0.650                                           |  | CALCULATED<br>0.622                    |  |
| PSEUDO CRITICAL PROPERTIES (CALCULATED)                       |  |                                        |  |
| AS SAMPLED<br>pPc(aba)<br>4631. kPa                           |  | ACID GAS FREE<br>pPc<br>203.7 K        |  |
| pTc<br>4528. kPa                                              |  | pTc<br>198.9 K                         |  |
| H <sub>2</sub> S g/m <sup>3</sup> 7.12                        |  |                                        |  |
| RELATIVE MOLECULAR MASS                                       |  | TOTAL GAS 18.82 c <sub>7+</sub> 100.91 |  |

C5+ ML/MOL 0.742

GROSS HEATING VALUE AS PER AGA REPORT #5

39.44 MAJ/M3 @ 15C AND 101.325 KPA

THE DOWN HOLE SAMPLER WAS RECEIVED WITH AN  
OPENING PRESSURE OF 700 KPAG @ 20C. IT CON-  
TAINED 641970 ML GAS, 1944 ML OIL AND 756 ML  
MUDDY WATER @ 20C & 88.5 KPA.

GOR: 283.51 M3/M3 @ 15C &amp; 101.325 KPA



## CHEMICAL &amp; GEOLOGICAL LABORATORIES LTD.



## OIL ANALYSIS

|                                                     |     |                                                                                     |  |
|-----------------------------------------------------|-----|-------------------------------------------------------------------------------------|--|
| CONTAINER IDENTITY                                  |     | LABORATORY NUMBER                                                                   |  |
|                                                     |     | C89-4296-2                                                                          |  |
| LICENCE NUMBER                                      |     | OPERATOR NAME                                                                       |  |
|                                                     |     | PARAMOUNT RESOURCES LTD.                                                            |  |
| LOCATION                                            |     | WELL NAME                                                                           |  |
| 60-06-31.55 -117 39                                 |     | PARAMOUNT ET AL CAMERON L-47                                                        |  |
| FIELD OR AREA                                       |     | POOL OR ZONE                                                                        |  |
| CAMERON                                             |     | KEG RIVER                                                                           |  |
| NAME OF SAMPLER                                     |     | COMPANY                                                                             |  |
|                                                     |     | SCOTT TESTERS                                                                       |  |
| TEST TYPE                                           | NO. | TEST RECOVERY                                                                       |  |
| DST                                                 | 3   | 108 M                                                                               |  |
| MULTIPLE RECOVERY                                   |     |                                                                                     |  |
| Y N                                                 |     |                                                                                     |  |
| TEST INTERVAL (metres)                              |     | SAMPLING POINT                                                                      |  |
| 1510 - 1534                                         |     | DOWN HOLE SAMPLER #119                                                              |  |
| PERFORATIONS (metres)                               |     | AMT. & TYPE OF CUSHION                                                              |  |
|                                                     |     |                                                                                     |  |
|                                                     |     | MUD RESISTIVITY                                                                     |  |
|                                                     |     | @ 25°C                                                                              |  |
|                                                     |     | TYPE OF PRODUCTION                                                                  |  |
|                                                     |     | PUMPING FLOWING GAS LIFT SWAB                                                       |  |
|                                                     |     | PRODUCTION RATES                                                                    |  |
|                                                     |     | WATER m <sup>3</sup> /d OIL m <sup>3</sup> /d GAS 10 <sup>3</sup> m <sup>3</sup> /d |  |
|                                                     |     | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED                                 |  |
| GAUGE PRESSURE kPa                                  |     |                                                                                     |  |
| SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED |     |                                                                                     |  |
| TEMPERATURE °C                                      |     |                                                                                     |  |
| DATE SAMPLED (Y-M-D)                                |     | DATE RECEIVED (Y-M-D)                                                               |  |
| 89-03-03                                            |     | 89-03-03                                                                            |  |
| DATE REPORTED (Y-M-D)                               |     | ANALYST                                                                             |  |
| 89-03-09                                            |     | S. SARGIOUS                                                                         |  |
|                                                     |     | OTHER INFORMATION                                                                   |  |
|                                                     |     |                                                                                     |  |

## SAMPLE PROPERTIES

|                                |                |                              |                |       |
|--------------------------------|----------------|------------------------------|----------------|-------|
| COLOR OF CLEAN OIL             |                | B.S. & W. (VOLUME FRACTION)  |                |       |
| BROWN                          |                | WATER                        | SEDIMENT       | TOTAL |
|                                |                | 0.172                        | 0.108          | 0.280 |
| DENSITY at 15°C                |                |                              |                |       |
| RELATIVE                       |                | ABSOLUTE kg/m <sup>3</sup>   |                |       |
| AS RECEIVED                    | AFTER CLEANING | AS RECEIVED                  | AFTER CLEANING |       |
|                                | 0.855          |                              | 854            |       |
| A.P.I. GRAVITY                 |                |                              |                |       |
| 34.0                           |                |                              |                |       |
| TOTAL SULFUR                   |                | POUR POINT °C                |                |       |
| (MASS FRACTION)                | g/kg           | U.S.B.M.                     | A.S.T.M.       |       |
| 0.0122                         | 12.2           | -13                          |                |       |
| CARBON RESIDUE (MASS FRACTION) |                |                              |                |       |
| RVP kPa                        | CONRADSON      |                              | RAMSBOTTOM     |       |
|                                | 0.0256         |                              |                |       |
| VISCOSITY                      |                |                              |                |       |
| TEMP. °C                       | ABSOLUTE mPa.s | KINEMATIC mm <sup>2</sup> /s |                |       |
| 10                             | 13.6           | 15.8                         |                |       |
| 20                             | 8.54           | 10.0                         |                |       |
| 40                             | 4.46           | 5.32                         |                |       |

## DISTILLATION

|                                        |                |                     |
|----------------------------------------|----------------|---------------------|
| METHOD                                 |                |                     |
| MODIFIED ASTM D 86                     |                |                     |
| BAROM. PRESS. kPa (abs)                |                |                     |
| 88.9                                   |                |                     |
| ROOM TEMP. °C                          |                |                     |
| 25                                     |                |                     |
| DISTILLATION SUMMARY (VOLUME FRACTION) |                |                     |
| 200°C NAPHTHA                          | 275°C KEROSENE | 350°C LIGHT GAS OIL |
| 0.245                                  | 0.145          | 0.160               |
| RECOVERED                              |                | RESIDUE             |
|                                        |                |                     |
| DISTILLATION LOSS                      |                |                     |
|                                        |                |                     |
| F.B.P.                                 |                |                     |
|                                        |                |                     |
| CRACKED                                | 360            |                     |
| BASE TYPE: MIXED                       |                |                     |
| CHARACTERIZATION FACTOR: 11.9          |                |                     |

BS & W DETERMINED ON SAMPLE AS RECEIVED. REMAINDER OF ANALYSIS DETERMINED ON SAMPLE AFTER CLEANING BY CENTRIFUGING.



## CHEMICAL &amp; GEOLOGICAL LABORATORIES LTD.



## OIL ANALYSIS

|                        |  |                                                                                     |  |
|------------------------|--|-------------------------------------------------------------------------------------|--|
| CONTAINER IDENTITY     |  | LABORATORY NUMBER                                                                   |  |
|                        |  | C89-4296-3                                                                          |  |
| LICENCE NUMBER         |  | OPERATOR NAME                                                                       |  |
|                        |  | PARAMOUNT RESOURCES LTD.                                                            |  |
| LOCATION               |  | WELL NAME                                                                           |  |
| 60-06-31.55 -117 39    |  | PARAMOUNT ET AL CAMERON L-47                                                        |  |
| FIELD OR AREA          |  | POOL OR ZONE                                                                        |  |
| CAMERON                |  | KEG RIVER                                                                           |  |
| TEST TYPE              |  | TEST RECOVERY                                                                       |  |
| DST                    |  | 108 M                                                                               |  |
| NO.                    |  |                                                                                     |  |
| 3                      |  |                                                                                     |  |
| MULTIPLE RECOVERY      |  |                                                                                     |  |
| Y N                    |  |                                                                                     |  |
| X                      |  |                                                                                     |  |
| TEST INTERVAL (metres) |  | SAMPLING POINT                                                                      |  |
| 1510 - 1534            |  | COLLARS #3                                                                          |  |
| PERFORATIONS (metres)  |  | AMT. & TYPE OF CUSHION                                                              |  |
|                        |  |                                                                                     |  |
|                        |  | MUD RESISTIVITY                                                                     |  |
|                        |  | @ 25° C                                                                             |  |
|                        |  | TYPE OF PRODUCTION                                                                  |  |
|                        |  | PUMPING FLOWING GAS LIFT SWAB                                                       |  |
|                        |  | PRODUCTION RATES                                                                    |  |
|                        |  | WATER m <sup>3</sup> /d OIL m <sup>3</sup> /d GAS 10 <sup>3</sup> m <sup>3</sup> /d |  |
|                        |  | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED                                 |  |
|                        |  | GAUGE PRESSURE kPa                                                                  |  |
|                        |  | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED                                 |  |
|                        |  | TEMPERATURE °C                                                                      |  |
|                        |  | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED                                 |  |
| DATE SAMPLED (Y-M-D)   |  | DATE RECEIVED (Y-M-D)                                                               |  |
| 89-03-03               |  | 89-03-03                                                                            |  |
|                        |  | DATE REPORTED (Y-M-D)                                                               |  |
|                        |  | 89-03-06                                                                            |  |
|                        |  | ANALYST                                                                             |  |
|                        |  | S. SARGIOUS                                                                         |  |
|                        |  | OTHER INFORMATION                                                                   |  |
|                        |  |                                                                                     |  |

## SAMPLE PROPERTIES

|                                |                |                              |                |       |
|--------------------------------|----------------|------------------------------|----------------|-------|
| COLOR OF CLEAN OIL             |                | B.S. & W. (VOLUME FRACTION)  |                |       |
| BROWN                          |                | WATER                        | SEDIMENT       | TOTAL |
|                                |                | 0.080                        | 0.900          | 0.980 |
| DENSITY at 15°C                |                |                              |                |       |
| RELATIVE                       |                | ABSOLUTE kg/m <sup>3</sup>   |                |       |
| AS RECEIVED                    | AFTER CLEANING | AS RECEIVED                  | AFTER CLEANING |       |
|                                | 0.866          |                              | 865            |       |
| A.P.I. GRAVITY                 |                |                              |                |       |
| 31.9                           |                |                              |                |       |
| TOTAL SULFUR                   |                | POUR POINT °C                |                |       |
| (MASS FRACTION)                | g/kg           | U.S.B.M.                     | A.S.T.M.       |       |
| 0.0127                         | 12.7           |                              |                |       |
| CARBON RESIDUE (MASS FRACTION) |                |                              |                |       |
| RVP kPa                        | CONRADSON      |                              | RAMSBOTTOM     |       |
|                                | 0.0278         |                              |                |       |
| VISCOSITY                      |                |                              |                |       |
| TEMP. °C                       | ABSOLUTE mPa.s | KINEMATIC mm <sup>2</sup> /s |                |       |
| 10                             | 17.6           | 20.2                         |                |       |
| 20                             | 10.1           | 11.7                         |                |       |
| 40                             | 5.03           | 5.92                         |                |       |

## DISTILLATION

|                                        |                 |                      |
|----------------------------------------|-----------------|----------------------|
| VOLUME FRACTION DISTILLED              |                 | TEMP. °C             |
| L.B.P.                                 |                 |                      |
| 0.05                                   |                 |                      |
| 0.10                                   |                 |                      |
| 0.15                                   |                 |                      |
| 0.20                                   |                 |                      |
| 0.25                                   |                 |                      |
| 0.30                                   |                 |                      |
| 0.35                                   |                 |                      |
| 0.40                                   |                 |                      |
| 0.45                                   |                 |                      |
| 0.50                                   |                 |                      |
| 0.55                                   |                 |                      |
| 0.60                                   |                 |                      |
| 0.65                                   |                 |                      |
| 0.70                                   |                 |                      |
| 0.75                                   |                 |                      |
| 0.80                                   |                 |                      |
| 0.85                                   |                 |                      |
| 0.90                                   |                 |                      |
| 0.95                                   |                 |                      |
| 1.00                                   |                 |                      |
| F.B.P.                                 |                 |                      |
| CRACKED                                |                 |                      |
| METHOD                                 |                 |                      |
| BAROM. PRESS. kPa (abs)                |                 | ROOM TEMP. °C        |
|                                        |                 |                      |
| DISTILLATION SUMMARY (VOLUME FRACTION) |                 |                      |
| 200° C NAPHTHA                         | 275° C KEROSENE | 350° C LIGHT GAS OIL |
|                                        |                 |                      |
| RECOVERED                              | RESIDUE         | DISTILLATION LOSS    |
|                                        |                 |                      |
| BASE TYPE:                             |                 |                      |
| CHARACTERIZATION FACTOR:               |                 | 11.8                 |

BS & W DETERMINED ON SAMPLE AS RECEIVED. REMAINDER OF ANALYSIS DETERMINED ON SAMPLE AFTER CLEANING BY CENTRIFUGING.

INSUFFICIENT RECOVERABLE SAMPLE FOR FURTHER ANALYSIS.



## CHEMICAL &amp; GEOLOGICAL LABORATORIES LTD.



## WATER ANALYSIS

|                        |  |                                                                                     |  |
|------------------------|--|-------------------------------------------------------------------------------------|--|
| CONTAINER IDENTITY     |  | LABORATORY NUMBER                                                                   |  |
|                        |  | C89-4296-4                                                                          |  |
| LICENCE NUMBER         |  | OPERATOR NAME                                                                       |  |
|                        |  | PARAMOUNT RESOURCES LTD.                                                            |  |
| LOCATION               |  | WELL NAME                                                                           |  |
| 60-06-31.55 -117 39    |  | PARAMOUNT ET AL CAMERON L-47                                                        |  |
| FIELD OR AREA          |  | POOL OR ZONE                                                                        |  |
| CAMERON                |  | KEG RIVER                                                                           |  |
| TEST TYPE              |  | TEST RECOVERY                                                                       |  |
| DST                    |  | 108 M                                                                               |  |
| NO.                    |  |                                                                                     |  |
| 3                      |  |                                                                                     |  |
| MULTIPLE RECOVERY      |  |                                                                                     |  |
| Y N                    |  |                                                                                     |  |
| X                      |  |                                                                                     |  |
| TEST INTERVAL (metres) |  | SAMPLING POINT                                                                      |  |
| 1510 - 1534            |  | DOWN HOLE SAMPLER #119                                                              |  |
| PERFORATIONS (metres)  |  | AMT. & TYPE OF CUSHION                                                              |  |
|                        |  |                                                                                     |  |
|                        |  | MUD RESISTIVITY                                                                     |  |
|                        |  | 25°C                                                                                |  |
|                        |  | TYPE OF PRODUCTION                                                                  |  |
|                        |  | PUMPING FLOWING GAS LIFT SWAB                                                       |  |
|                        |  | PRODUCTION RATES                                                                    |  |
|                        |  | WATER m <sup>3</sup> /d OIL m <sup>3</sup> /d GAS 10 <sup>3</sup> m <sup>3</sup> /d |  |
|                        |  | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED                                 |  |
| GAUGE PRESSURE kPa     |  |                                                                                     |  |
|                        |  | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED                                 |  |
| TEMPERATURE °C         |  |                                                                                     |  |
|                        |  |                                                                                     |  |
| DATE SAMPLED (Y-M-D)   |  | DATE RECEIVED (Y-M-D)                                                               |  |
| 89-03-03               |  | 89-03-03                                                                            |  |
|                        |  | DATE REPORTED (Y-M-D)                                                               |  |
|                        |  | 89-03-09                                                                            |  |
|                        |  | ANALYST                                                                             |  |
|                        |  | S. SARGIOUS                                                                         |  |
|                        |  | OTHER INFORMATION                                                                   |  |
|                        |  |                                                                                     |  |

| ION | Mg/l   | Mass Fraction | Meq/l  | ION              | Mg/l    | Mass Fraction | Meq/l  |
|-----|--------|---------------|--------|------------------|---------|---------------|--------|
| Na  | 13 240 | 0.3111        | 575.94 | Cl               | 17 400  | 0.4089        | 490.68 |
| K   | 205    | 0.0048        | 5.25   | Br               |         |               |        |
| Ca  | 1 642  | 0.0386        | 81.94  | I                |         |               |        |
| Mg  | 583    | 0.0137        | 47.92  | HCO <sub>3</sub> | 1 403   | 0.0330        | 23.01  |
| Ba  |        |               |        | SO <sub>4</sub>  | 8 082   | 0.1899        | 168.11 |
| Sr  |        |               |        | CO <sub>3</sub>  | 0       | 0.0000        | 0.00   |
| Fe  | MUCH   |               |        | OH               | 0       | 0.0000        | 0.00   |
|     |        |               |        | H <sub>2</sub> S | PRESENT |               |        |
|     |        |               |        |                  |         |               |        |
|     |        |               |        |                  |         |               |        |

## TOTAL SOLIDS Mg/l

EVAPORATED @ 110°C

46 850

EVAPORATED @ 180°C

AT IGNITION

41 370

CALCULATED

42 555

## ORGANICS: MUCH

RELATIVE DENSITY

1.036 @ 25°C

REFRACTIVE INDEX

1.3402 @ 25°C

OBSERVED pH

7.8 @ 23 °C

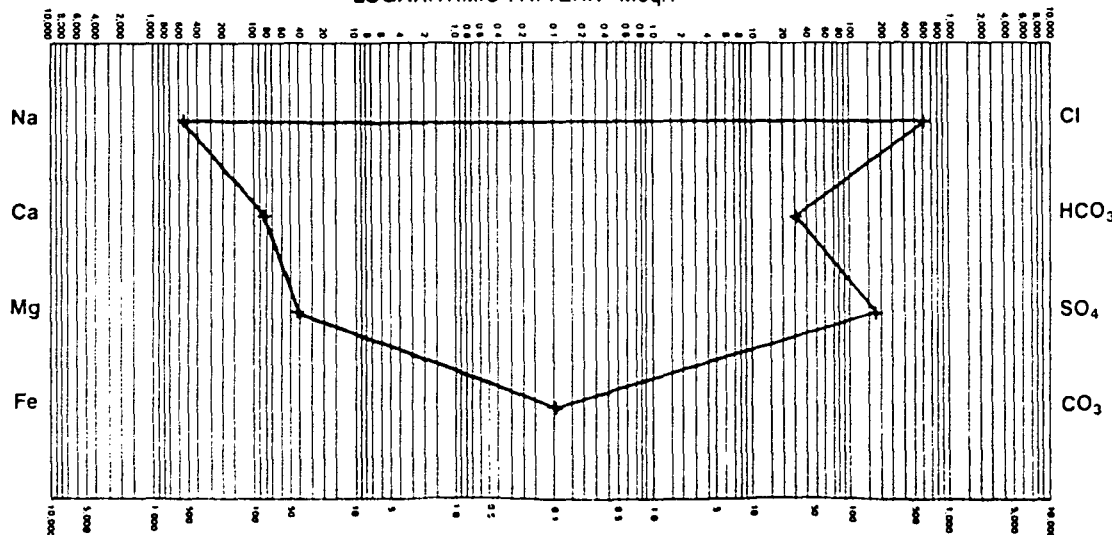
RESISTIVITY (Ohm m)

0.187 @ 25°C

## REMARKS

BROWN COLORED FIL-  
TRATE RECOVERED FROM  
THE WATER PORTION OF  
THE SAMPLE.

## LOGARITHMIC PATTERN Meq/l





## CHEMICAL &amp; GEOLOGICAL LABORATORIES LTD.



## WATER ANALYSIS

|                        |     |                                                                                     |  |
|------------------------|-----|-------------------------------------------------------------------------------------|--|
| CONTAINER IDENTITY     |     | LABORATORY NUMBER                                                                   |  |
|                        |     | C89-4296-5                                                                          |  |
| LICENCE NUMBER         |     | OPERATOR NAME                                                                       |  |
|                        |     | PARAMOUNT RESOURCES LTD.                                                            |  |
| LOCATION               |     | WELL NAME                                                                           |  |
| 60-06-31.55 -117 39    |     | PARAMOUNT ET AL CAMERON L-47                                                        |  |
| FIELD OR AREA          |     | POOL OR ZONE                                                                        |  |
| CAMERON                |     | KEG RIVER                                                                           |  |
| NAME OF SAMPLER        |     | COMPANY                                                                             |  |
|                        |     | SCOTT TESTERS                                                                       |  |
| TEST TYPE              | NO. | TEST RECOVERY                                                                       |  |
| DST                    | 3   | 108 M                                                                               |  |
| MULTIPLE RECOVERY      |     | SAMPLING POINT                                                                      |  |
| Y N                    |     | COLLARS #3                                                                          |  |
|                        |     | AMT. & TYPE OF CUSHION                                                              |  |
|                        |     |                                                                                     |  |
| TEST INTERVAL (metres) |     | MUD RESISTIVITY                                                                     |  |
| 1510 - 1534            |     | at 25°C                                                                             |  |
| PERFORATIONS (metres)  |     | TYPE OF PRODUCTION                                                                  |  |
|                        |     | PUMPING FLOWING GAS LIFT SWAB                                                       |  |
|                        |     | PRODUCTION RATES                                                                    |  |
|                        |     | WATER m <sup>3</sup> /d OIL m <sup>3</sup> /d GAS 10 <sup>3</sup> m <sup>3</sup> /d |  |
|                        |     | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED                                 |  |
| GAUGE PRESSURE kPa     |     |                                                                                     |  |
|                        |     | SEPARATOR TREATER RESERVOIR SOURCE SAMPLED RECEIVED                                 |  |
| TEMPERATURE °C         |     |                                                                                     |  |
| DATE SAMPLED (Y-M-D)   |     | DATE RECEIVED (Y-M-D)                                                               |  |
| 89-03-03               |     | 89-03-03                                                                            |  |
| DATE REPORTED (Y-M-D)  |     | ANALYST                                                                             |  |
| 89-03-06               |     | S. SARGIOUS                                                                         |  |
|                        |     | OTHER INFORMATION                                                                   |  |
|                        |     |                                                                                     |  |

| ION | Mg/l  | Mass Fraction | Meq/l  | ION              | Mg/l   | Mass Fraction | Meq/l  |
|-----|-------|---------------|--------|------------------|--------|---------------|--------|
| Na  | 7 725 | 0.2743        | 336.04 | Cl               | 4 100  | 0.1456        | 115.62 |
| K   | 16    | 0.0006        | 0.41   | Br               |        |               |        |
| Ca  | 809   | 0.0287        | 40.37  | I                |        |               |        |
| Mg  | 136   | 0.0048        | 11.18  | HCO <sub>3</sub> | 2 105  | 0.0747        | 34.52  |
| Ba  |       |               |        | SO <sub>4</sub>  | 13 270 | 0.4712        | 276.02 |
| Sr  |       |               |        | CO <sub>3</sub>  | 0      | 0.0000        | 0.00   |
| Fe  | MUCH  |               |        | OH               | 0      | 0.0000        | 0.00   |
|     |       |               |        | H <sub>2</sub> S | NIL    |               |        |
|     |       |               |        |                  |        |               |        |
|     |       |               |        |                  |        |               |        |

## TOTAL SOLIDS Mg/l

|                    |                    |
|--------------------|--------------------|
| EVAPORATED @ 110°C | EVAPORATED @ 180°C |
| 32 150             |                    |
| AT IGNITION        | CALCULATED         |
| 27 090             | 78 161             |

## ORGANICS: MUCH

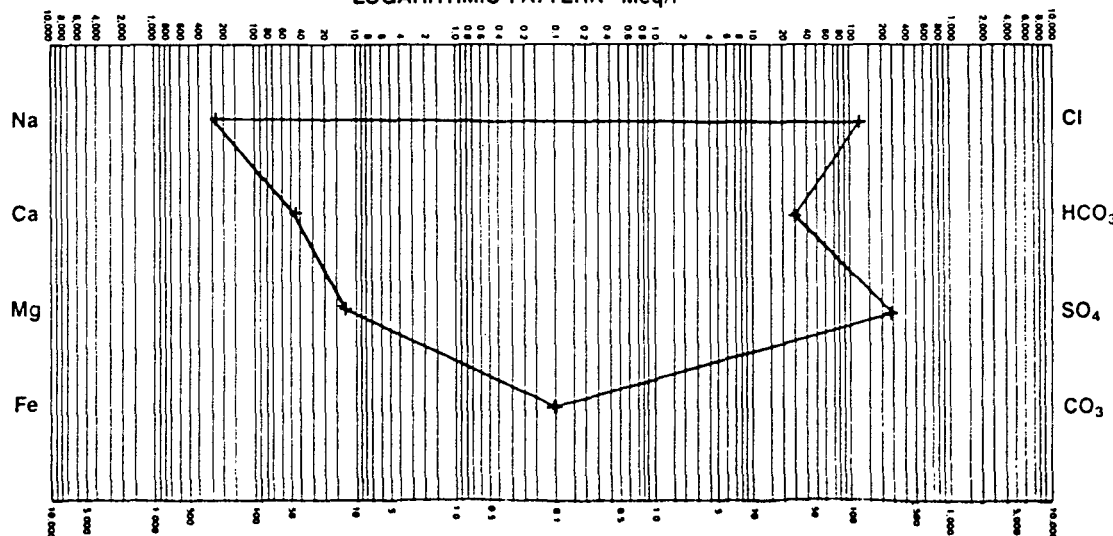
|                  |                  |
|------------------|------------------|
| RELATIVE DENSITY | REFRACTIVE INDEX |
| 1.026 @ 25°C     | 1.3378 @ 25°C    |

|             |                     |
|-------------|---------------------|
| OBSERVED pH | RESISTIVITY (Ohm m) |
| 8.0 @ 23 °C | 0.347 @ 25°C        |

## REMARKS

BROWN COLORED FIL-  
TRATE RECOVERED FROM  
THE WATER PORTION OF  
THE SAMPLE.

## LOGARITHMIC PATTERN Meq/l





|                                                                                                                                                                    |                   |                                                                                                                                                                                                                                                                                                                                                                                                                          |        |           |         |           |        |                   |                   |                                   |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------|---------|-----------|--------|-------------------|-------------------|-----------------------------------|--|
| CONTAINER IDENTITY                                                                                                                                                 |                   | LABORATORY NUMBER<br><b>C89-4296-6</b>                                                                                                                                                                                                                                                                                                                                                                                   |        |           |         |           |        |                   |                   |                                   |  |
| LICENCE NUMBER                                                                                                                                                     |                   | OPERATOR NAME<br><b>PARAMOUNT RESOURCES LTD.</b>                                                                                                                                                                                                                                                                                                                                                                         |        |           |         |           |        |                   |                   |                                   |  |
| LOCATION<br><b>60-06-31.55 -117 39</b>                                                                                                                             |                   | WELL NAME<br><b>PARAMOUNT ET AL CAMERON L-47</b>                                                                                                                                                                                                                                                                                                                                                                         |        |           |         |           |        |                   |                   |                                   |  |
| FIELD OR AREA<br><b>CAMERON</b>                                                                                                                                    |                   | ELEVATIONS (metres)<br>K.B. <b>723</b> GRD. <b>719.3</b>                                                                                                                                                                                                                                                                                                                                                                 |        |           |         |           |        |                   |                   |                                   |  |
| TEST TYPE<br><b>DST</b>                                                                                                                                            |                   | NO.<br><b>3</b>                                                                                                                                                                                                                                                                                                                                                                                                          |        |           |         |           |        |                   |                   |                                   |  |
| MULTIPLE RECOVERY<br><input type="checkbox"/> Y <input type="checkbox"/> N                                                                                         |                   | TEST RECOVERY<br><b>108 M</b>                                                                                                                                                                                                                                                                                                                                                                                            |        |           |         |           |        |                   |                   |                                   |  |
| SAMPLING POINT                                                                                                                                                     |                   | AMT. & TYPE OF CUSHION                                                                                                                                                                                                                                                                                                                                                                                                   |        |           |         |           |        |                   |                   |                                   |  |
| TYPE OF PRODUCTION<br><input type="checkbox"/> PUMPING <input checked="" type="checkbox"/> FLOWING <input type="checkbox"/> GAS LIFT <input type="checkbox"/> SWAB |                   | MUD RESISTIVITY<br>(at 25°C)                                                                                                                                                                                                                                                                                                                                                                                             |        |           |         |           |        |                   |                   |                                   |  |
| TEST INTERVAL (metres)<br><b>1510 - 1534</b>                                                                                                                       |                   | PRODUCTION RATES                                                                                                                                                                                                                                                                                                                                                                                                         |        |           |         |           |        |                   |                   |                                   |  |
| PERFORATIONS (metres)                                                                                                                                              |                   | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">WATER</td> <td style="width: 25%;">OIL</td> <td style="width: 25%;">GAS</td> <td style="width: 25%;"></td> </tr> <tr> <td style="text-align: right;">m<sup>3</sup>/d</td> <td style="text-align: right;">m<sup>3</sup>/d</td> <td style="text-align: right;">10<sup>3</sup>m<sup>3</sup>/d</td> <td></td> </tr> </table> |        | WATER     | OIL     | GAS       |        | m <sup>3</sup> /d | m <sup>3</sup> /d | 10 <sup>3</sup> m <sup>3</sup> /d |  |
| WATER                                                                                                                                                              | OIL               | GAS                                                                                                                                                                                                                                                                                                                                                                                                                      |        |           |         |           |        |                   |                   |                                   |  |
| m <sup>3</sup> /d                                                                                                                                                  | m <sup>3</sup> /d | 10 <sup>3</sup> m <sup>3</sup> /d                                                                                                                                                                                                                                                                                                                                                                                        |        |           |         |           |        |                   |                   |                                   |  |
| GAUGE PRESSURE kPa                                                                                                                                                 |                   | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">SEPARATOR</td> <td style="width: 25%;">TREATER</td> <td style="width: 25%;">RESERVOIR</td> <td style="width: 25%;">SOURCE</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>                                                                                                                         |        | SEPARATOR | TREATER | RESERVOIR | SOURCE |                   |                   |                                   |  |
| SEPARATOR                                                                                                                                                          | TREATER           | RESERVOIR                                                                                                                                                                                                                                                                                                                                                                                                                | SOURCE |           |         |           |        |                   |                   |                                   |  |
|                                                                                                                                                                    |                   |                                                                                                                                                                                                                                                                                                                                                                                                                          |        |           |         |           |        |                   |                   |                                   |  |
| TEMPERATURE °C                                                                                                                                                     |                   | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">SEPARATOR</td> <td style="width: 25%;">TREATER</td> <td style="width: 25%;">RESERVOIR</td> <td style="width: 25%;">SOURCE</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>                                                                                                                         |        | SEPARATOR | TREATER | RESERVOIR | SOURCE |                   |                   |                                   |  |
| SEPARATOR                                                                                                                                                          | TREATER           | RESERVOIR                                                                                                                                                                                                                                                                                                                                                                                                                | SOURCE |           |         |           |        |                   |                   |                                   |  |
|                                                                                                                                                                    |                   |                                                                                                                                                                                                                                                                                                                                                                                                                          |        |           |         |           |        |                   |                   |                                   |  |
| DATE SAMPLED (Y-M-D)<br><b>89-03-03</b>                                                                                                                            |                   | DATE RECEIVED (Y-M-D)<br><b>89-03-03</b>                                                                                                                                                                                                                                                                                                                                                                                 |        |           |         |           |        |                   |                   |                                   |  |
| DATE REPORTED (Y-M-D)<br><b>89-03-06</b>                                                                                                                           |                   | ANALYST<br><b>S. SARGIOUS</b>                                                                                                                                                                                                                                                                                                                                                                                            |        |           |         |           |        |                   |                   |                                   |  |
| OTHER INFORMATION                                                                                                                                                  |                   |                                                                                                                                                                                                                                                                                                                                                                                                                          |        |           |         |           |        |                   |                   |                                   |  |

BROWN COLORED FILTRATE RECOVERED FROM MUDDY WATER CONTAINING A TRACE OF HYDROCARBONS.

BROWN COLORED FILTRATE RECOVERED FROM MUDDY WATER CONTAINING A TRACE OF HYDROCARBONS.

CANADA OIL AND GAS LANDS  
ADMINISTRATION  
ADMINISTRATION DU PÉTROLE ET DU  
GAS CANADA  
OCT 30 1989  
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