

CONSISTENT VALUES OF PRODUCTION DATA,
Koh AND PRESSURE DIFFERENTIAL FOR
EAST TO WEST OIL FLOW
MARCH 15 TO 23, 1988 TEST OF C ZONE WELLS
IN PROPOSED EXPANSION AREA

The foregoing information shows the expansion area C zone wells produced during this March test with practically no pressure decline. This means that oil production from the well's tracts was not the consequence of depletion of the tracts, but that they were receiving external support.

From the linear flow equation:

$$Q = \frac{1.127 \ K \ A \ \Delta P}{\mu \ L}$$

and substituting hw for A and using Qo and uo, the relations can be expressed as:

$$Koh = \frac{Qo \ \mu_o \ L}{1.127 \ P \ W}$$

Where Koh = darcy feet
Qo = barrels oil per day
 ΔP = psi
 μ_o = viscosity, cp
L = length parallel to flow
W = width

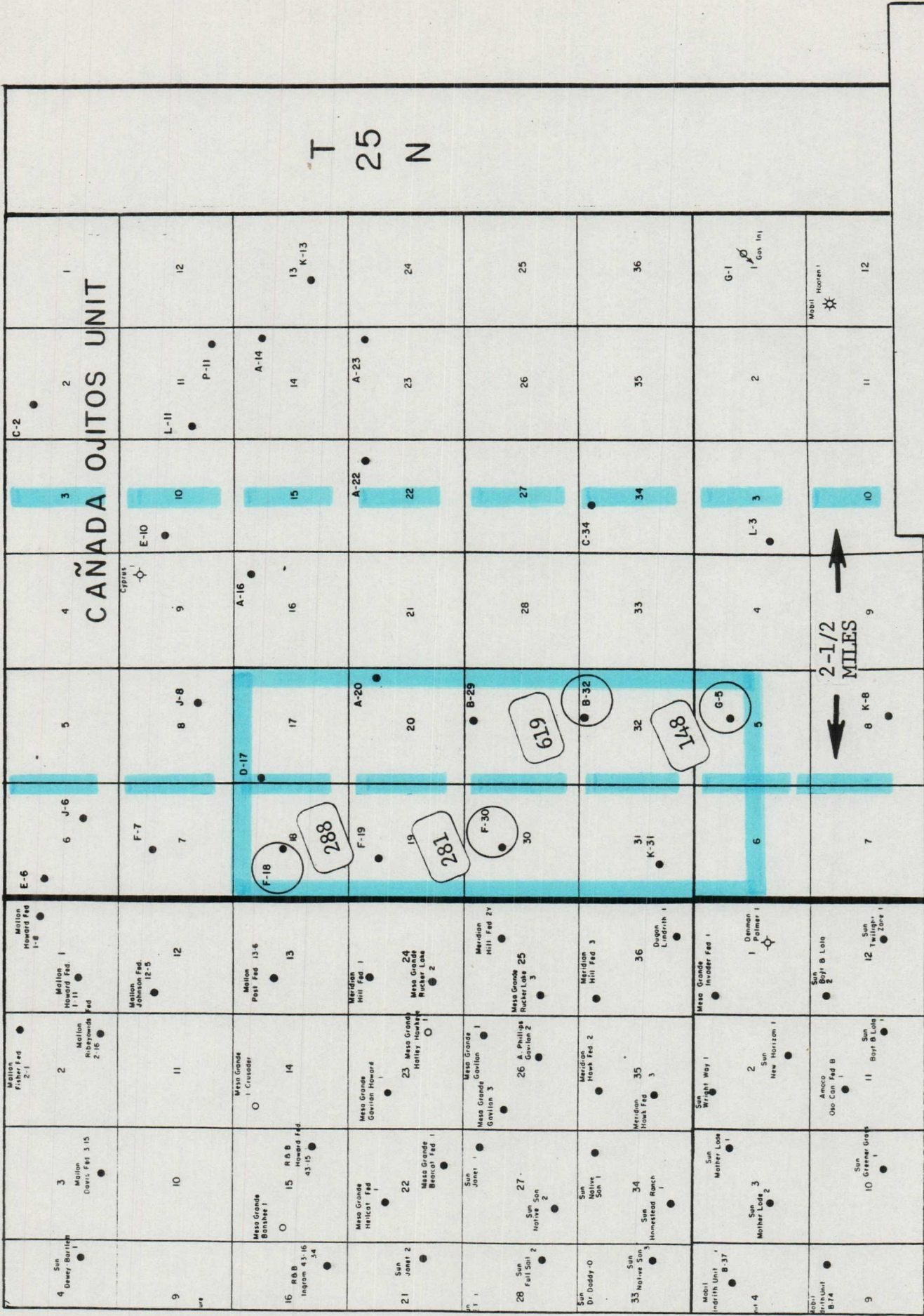
If there is a 400' differential pressure support from an average distance east of 2-1/2 miles for the 4-1/2 mile wide section of reservoir, the value of Koh required with these parameters is:

$$Koh = \frac{1336 \times .78 \times 2.5}{1.127 \times 400 \times 3.5} = 1.3 \text{ darcy feet.} \quad (\text{plus additional Koh to maintain flow west without pressure decline})$$

This is not inconsistent with the 10 darcy feet shown for average transmissibility in the interference test area covering Sections 31, 32, 33 and 34, et al (reference Case 9111, March 17, 1988, B-M-G Exhibit 3, Section F) in view of the north-south directional permeability¹ and possible intervening tight formation.

The two well interference (frac pulse) test which showed 10 darcy feet - like all other two well interference tests - reveals a combination of averages of transmissibility; and does not in itself show exact transmissibility in a straight line between two wells.

¹Reference: "Interference Analysis for Anisotropic Formations - A Case History", H.J. Ramey, Jr., Journal of Petroleum Technology, October 1975.



CONSISTENT VALUES OF PRODUCTION RATE
Koh AND PRESSURE DIFFERENTIAL FOR EAST
TO WEST OIL FLOW

R 1 W

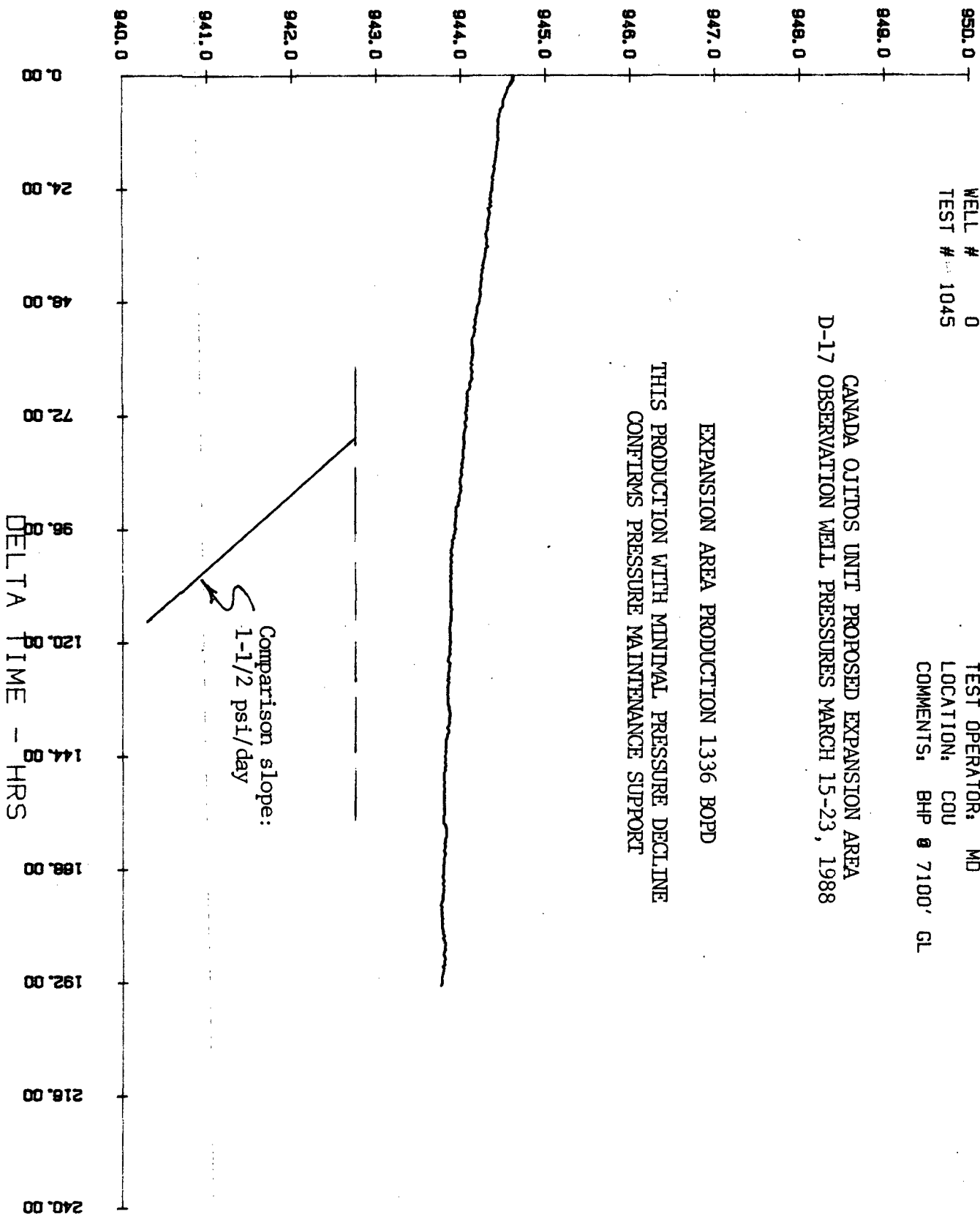
R 2 W

DATE: 3/15/88
 STARTING TIME: 16:48:0
 GAUGE #70059
 WELL # 0
 TEST # 1045

COMPANY: BMG
 CLIENT:
 WELL NAME: D-17
 TEST OPERATOR: MD
 LOCATION: COU
 COMMENTS: BHP @ 7100' GL

CANADA OJITOS UNIT PROPOSED EXPANSION AREA
 D-17 OBSERVATION WELL PRESSURES MARCH 15-23, 1988

EXPANSION AREA PRODUCTION 1336 BOPD
 THIS PRODUCTION WITH MINIMAL PRESSURE DECLINE
 CONFIRMS PRESSURE MAINTENANCE SUPPORT



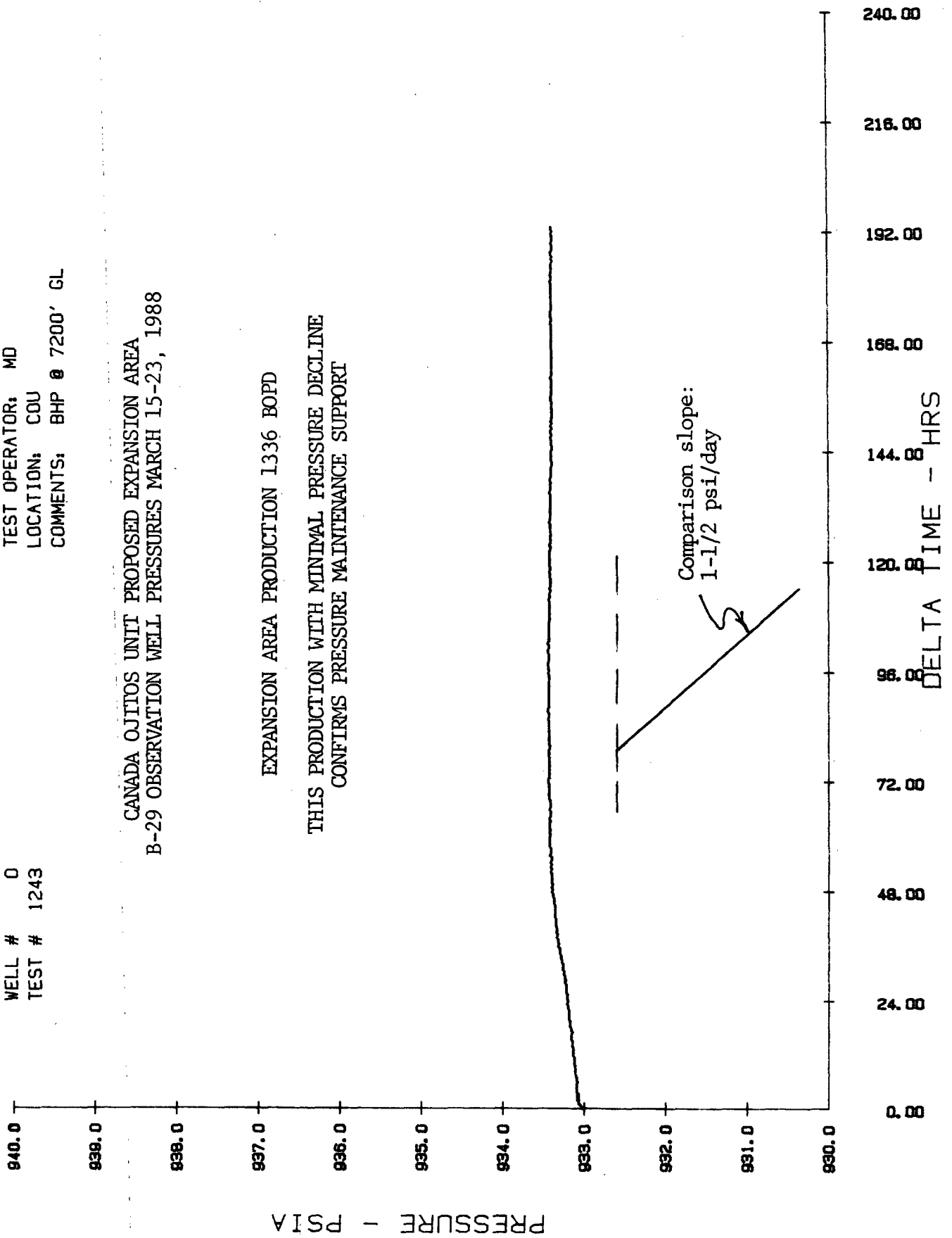
*** LINEAR PLOT ***

*** LINEAR PLOT ***

DATE: 3/15/88
 STARTING TIME: 16:47:0
 GAUGE #69306
 WELL # 0
 TEST # 1243
 COMPANY: BMG
 CLIENT:
 WELL NAME: B-29
 TEST OPERATOR: MD
 LOCATION: COU
 COMMENTS: BHP @ 7200' GL

CANADA OJTIOS UNIT PROPOSED EXPANSION AREA
 B-29 OBSERVATION WELL PRESSURES MARCH 15-23, 1988

EXPANSION AREA PRODUCTION 1336 BOPD
 THIS PRODUCTION WITH MINIMAL PRESSURE DECLINE
 CONFIRMS PRESSURE MAINTENANCE SUPPORT



CANADA OJITOS UNIT

R I W

R2W

EVIDENCE OF PRESSURE SUPPORT
FROM PRESSURE MAINTENANCE PROJECT
FOR WELLS IN PROPOSED EXPANSION AREA

Tests were run in both February and March in which only C zone wells in the expansion area were being produced.

In February the wells were produced at a rate of 1500 BOPD and showed a recovery coefficient of 10,000 barrels per pound (reported in Case 9111, March 17, 1988, B-M-G Exhibit 1, Section K). Another test was run in March in which the pressure decline was practically zero.

These tests confirm pressure support from the pressure maintenance project.

Average oil production rates and GOR's for these wells during this period (average for month of March) are set out below:

	<u>BOPPD</u>	<u>BOPCD</u>	<u>GOR (cf/bbl)</u>
B-32	619	619	885
F-30	281	281	973
F-18	288	288	601
G-5	<u>148</u>	<u>148</u>	<u>1442</u>
	1336	1336	

These wells are identified on the plat on the facing page. On the next two pages are graphs showing pressures in observation wells D-17 and B-29.