

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:

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

and substituting hW for A and using Q_o and μ_o , the relations can be expressed as:

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

Where Koh = darcy feet
 Q_o = 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:

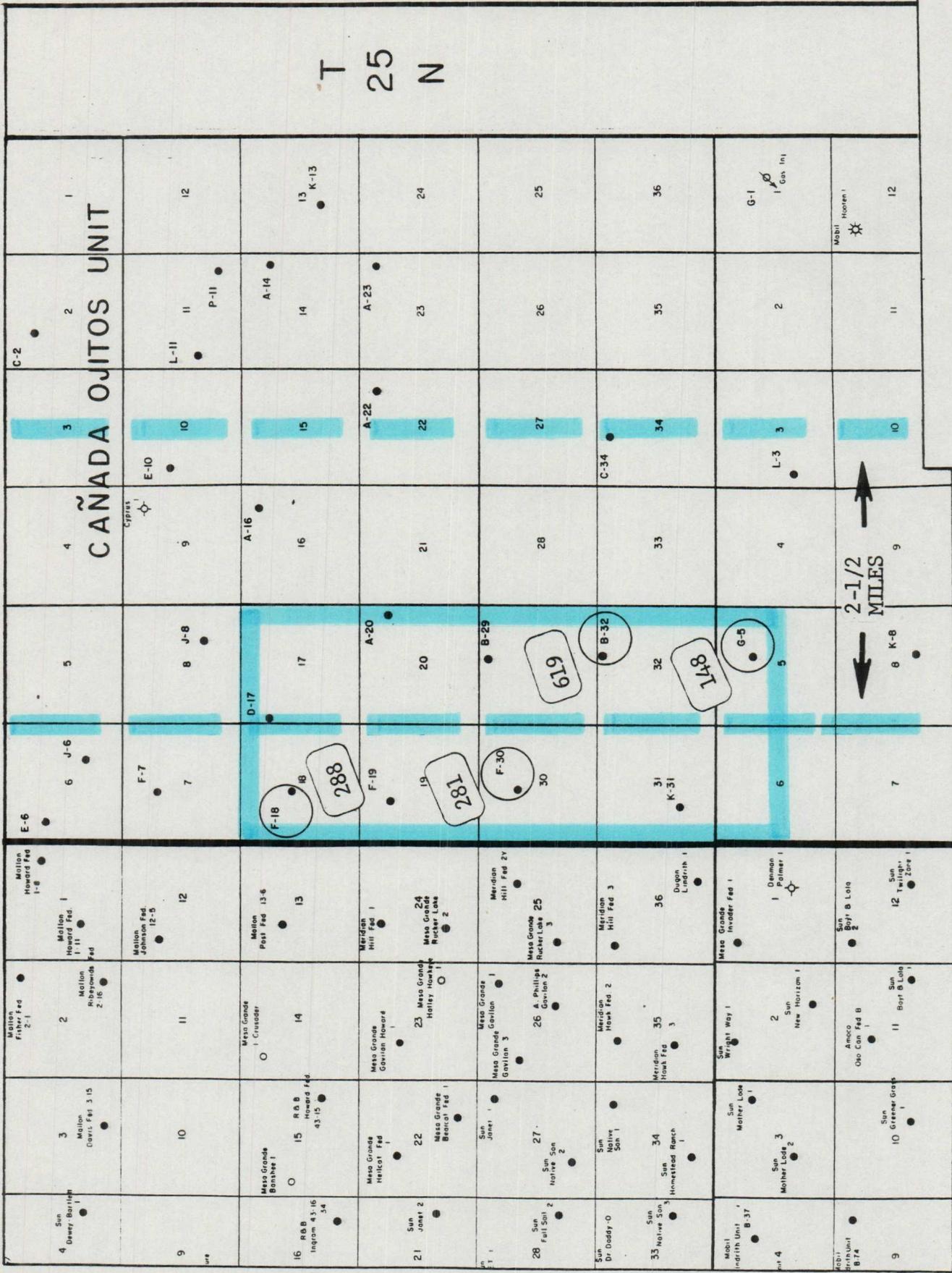
$$Koh = \frac{1336 \times .78 \times 2.5}{1.127 \times 400 \times 3.5} = 1.3 \text{ darcy feet.}$$

(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 permeability 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.

Reference: "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

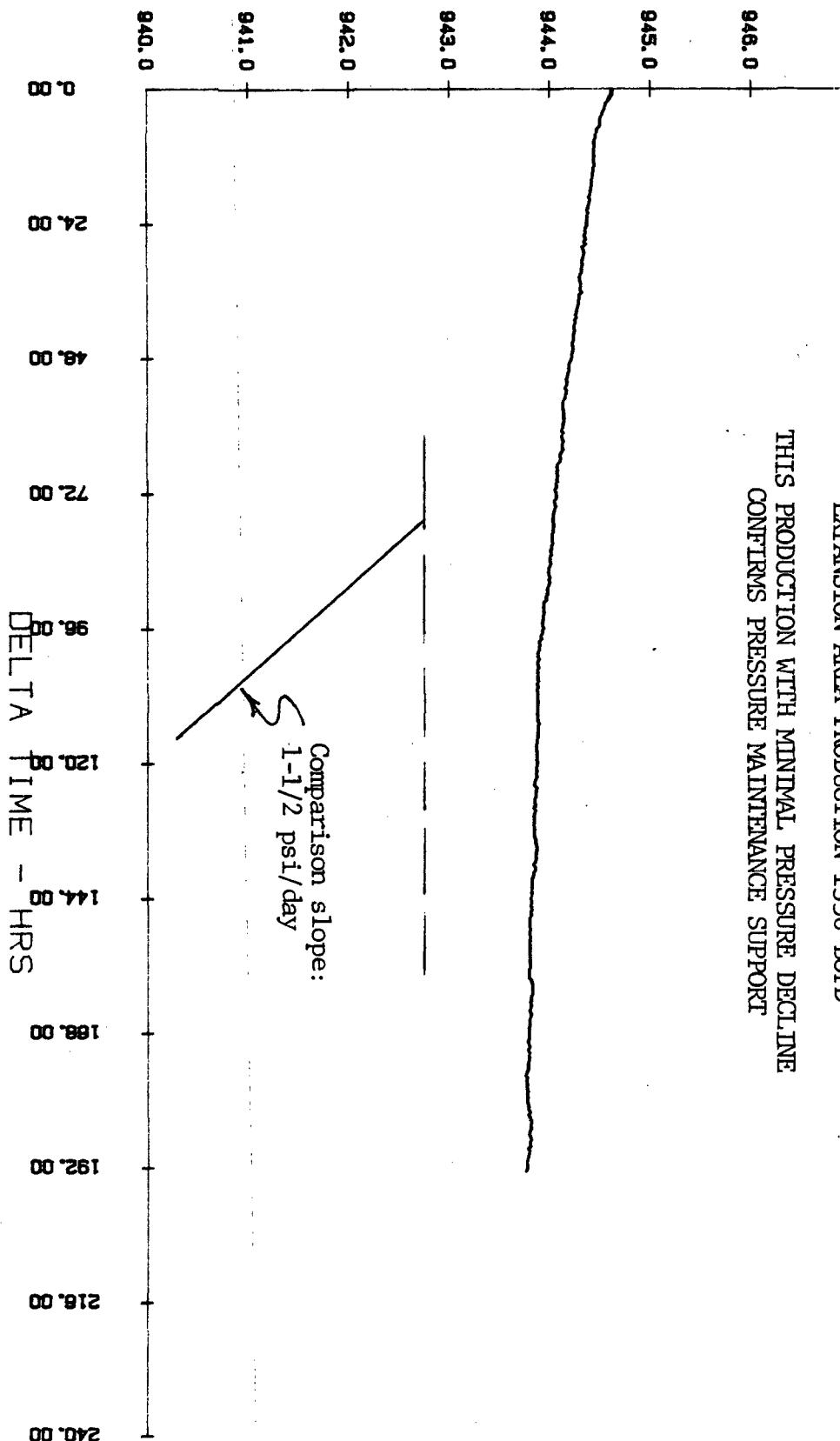
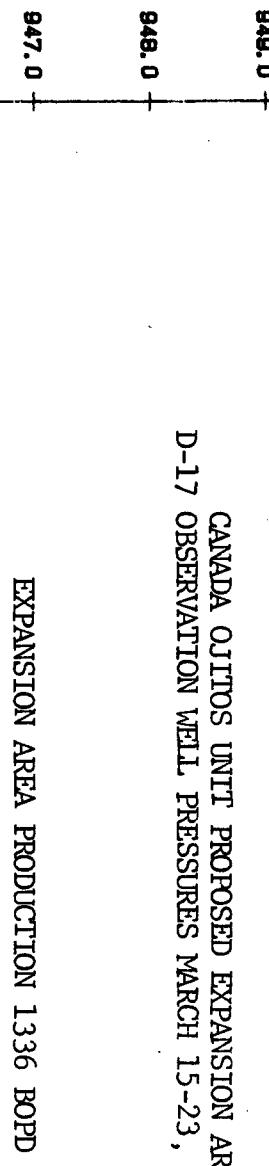
R 2 W

R 1 W

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

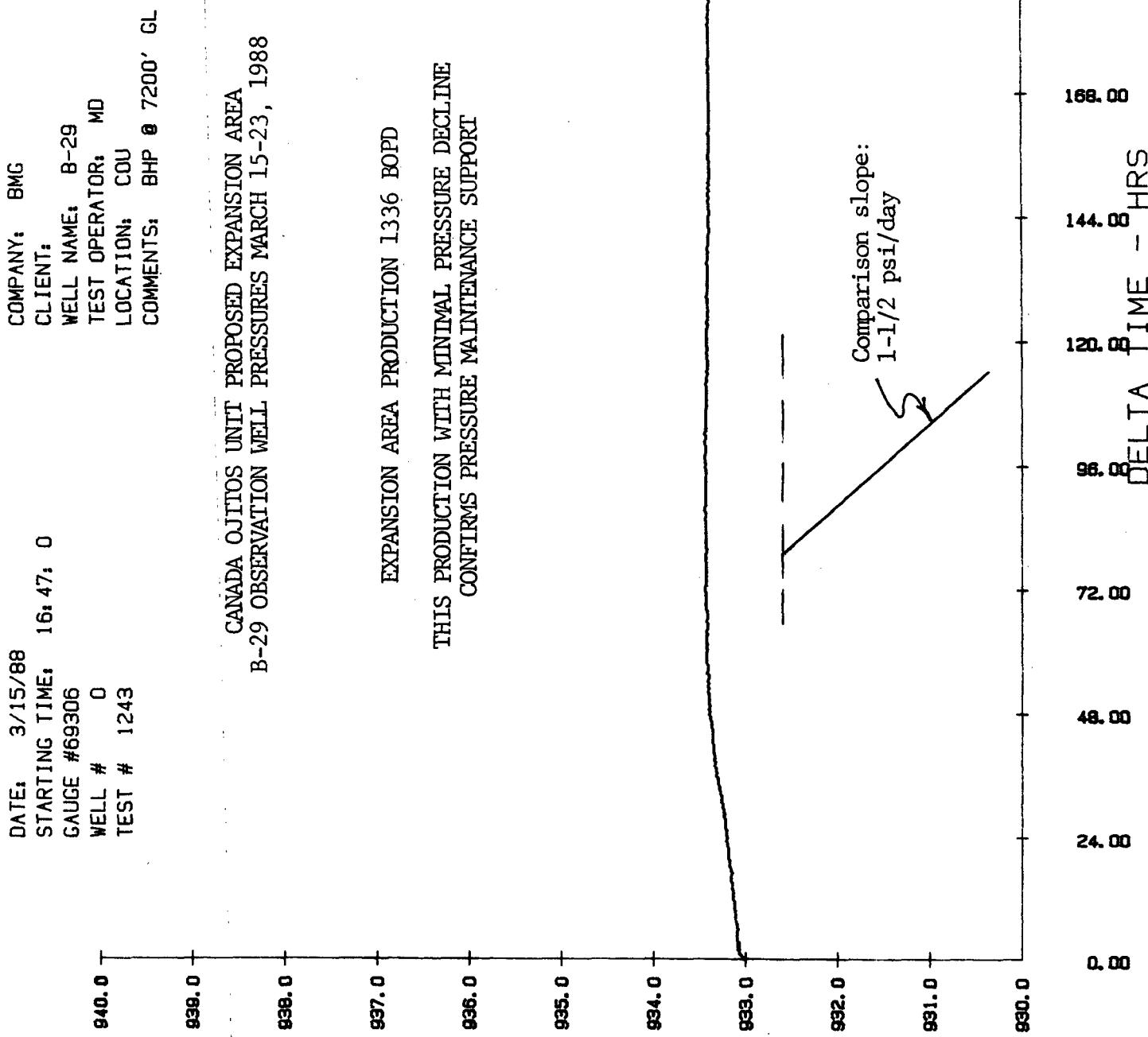
COMPANY: BMG
CLIENT:
WELL NAME: D-17
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7100' GL

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



*** LINEAR PLOT ***

DATE: 3/15/88
STARTING TIME: 16:47:0
GAUGE #69306
WELL # 0
TEST # 1243



CANADA OJITOS 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																					
		Motion F-1		Motion F-2		Motion F-3		Motion F-4		Motion F-5		Motion F-6		Motion F-7		Motion F-8		Motion F-9		Motion F-10		Motion F-11	
4	Sun	Burton	3	Motion W.M. 5-15	2	Motion W.M. 1-9	1																
9	Sun		10		11																		
16	SUN	BRONZE	15	R.A. 9	14	R.A. 9	13	R.A. 9	12	R.A. 9	11	R.A. 9	10	R.A. 9	9	R.A. 9	8	R.A. 9	7	R.A. 9	6	R.A. 9	5
21	Sun	Jumento	22	Mesa Grande Burro's Fed.	23	Mesa Grande Burro's Fed.	24	Mesa Grande Burro's Fed.	25	Mesa Grande Burro's Fed.	26	Mesa Grande Burro's Fed.	27	Mesa Grande Burro's Fed.	28	Mesa Grande Burro's Fed.	29	Mesa Grande Burro's Fed.	30	Mesa Grande Burro's Fed.	31	Mesa Grande Burro's Fed.	32
33	Sun	W.H. Monday	34	Sun Native Son	35	Sun Native Son	36	Sun Native Son	37	Sun Native Son	38	Sun Native Son	39	Sun Native Son	40	Sun Native Son	41	Sun Native Son	42	Sun Native Son	43	Sun Native Son	44
41	Sun	W.H. Monday	42	Sun Native Son	43	Sun Native Son	44	Sun Native Son	45	Sun Native Son	46	Sun Native Son	47	Sun Native Son	48	Sun Native Son	49	Sun Native Son	50	Sun Native Son	51	Sun Native Son	52
51	Sun	W.H. Monday	52	Sun Native Son	53	Sun Native Son	54	Sun Native Son	55	Sun Native Son	56	Sun Native Son	57	Sun Native Son	58	Sun Native Son	59	Sun Native Son	60	Sun Native Son	61	Sun Native Son	62
63	Sun	W.H. Monday	64	Sun Native Son	65	Sun Native Son	66	Sun Native Son	67	Sun Native Son	68	Sun Native Son	69	Sun Native Son	70	Sun Native Son	71	Sun Native Son	72	Sun Native Son	73	Sun Native Son	74
75	Sun	W.H. Monday	76	Sun Native Son	77	Sun Native Son	78	Sun Native Son	79	Sun Native Son	80	Sun Native Son	81	Sun Native Son	82	Sun Native Son	83	Sun Native Son	84	Sun Native Son	85	Sun Native Son	86
87	Sun	W.H. Monday	88	Sun Native Son	89	Sun Native Son	90	Sun Native Son	91	Sun Native Son	92	Sun Native Son	93	Sun Native Son	94	Sun Native Son	95	Sun Native Son	96	Sun Native Son	97	Sun Native Son	98
99	Sun	W.H. Monday	100	Sun Native Son	101	Sun Native Son	102	Sun Native Son	103	Sun Native Son	104	Sun Native Son	105	Sun Native Son	106	Sun Native Son	107	Sun Native Son	108	Sun Native Son	109	Sun Native Son	110

R | W
R | W

C ZONE WELL PRODUCTION
MARCH 1988

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	148	148	1442
	<u>1336</u>	<u>1336</u>	

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.