BENSON-MONTIN-GREER DRILLING CORP.
EXHIBIT IN CASE NO. 9111
BEFORE THE OIL CONSERVATION COMMISSION OF THE
NEW MEXICO DEPARTMENT OF ENERGY AND MINERALS

MARCH 17, 1988

E-1

CANADA OJITOS UNIT
GENERAL INFORMATION
REGARDING EXPANSION OF PRESSURE MAINTENANCE PROJECT
TO INCLUDE LANDS ADDED
BY THE THIRTEENTH REVISION OF PARTICIPATING AREA

Albert R. Greer

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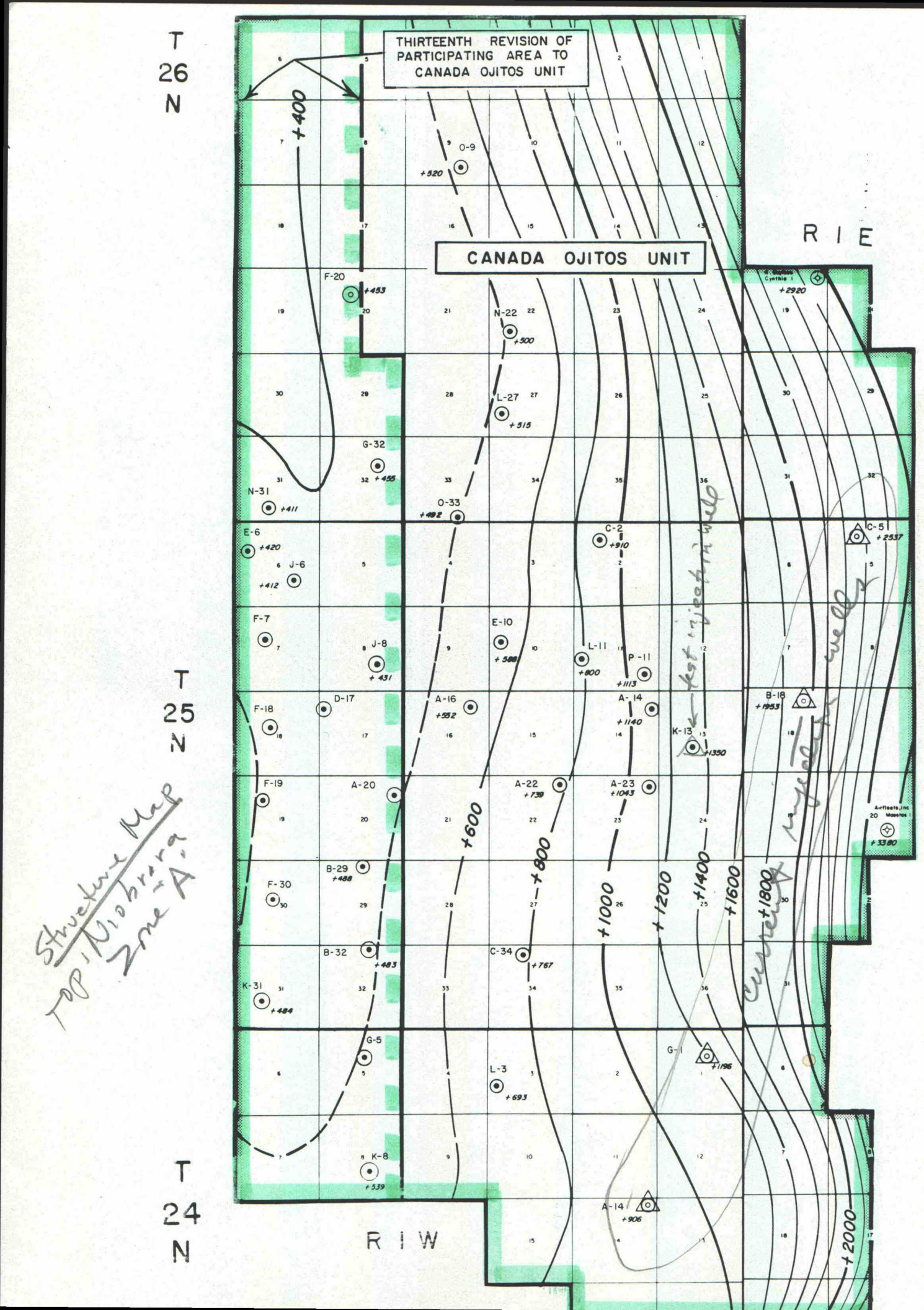
INTRO


THIRTEENTH REVISION OF PARTICIPATING AREA TO CANADA OJITOS UNIT
CANADA OJITOS UNIT
T 26 N
T 25 N
T 24 N
R 1 E
R 1 W
+400
+600
+800
+1000
+1200
+1400
+1600
+1800
+2000
O-9 +520
F-20 +453
N-22 +500
L-27 +515
G-32 +455
N-31 +411
O-33 +492
E-6 +420
J-6 +412
C-2 +910
C-5 +2537
F-7
E-10 +588
J-8 +431
L-11 +800
P-11 +1113
B-18 +1953
F-18
D-17
A-16 +552
A-14 +1140
K-13 +1350
F-19
A-20
A-22 +739
A-23 +1043
+3380
B-29 +488
F-30
B-32 +483
C-34 +767
K-31 +484
G-5
L-3 +693
G-1 +1196
K-8 +539
A-14 +906
Structure Map Top Niobrara Zone A
Contour wells
Not Niobrara wells

CANADA OJITOS UNIT
GENERAL INFORMATION
REGARDING EXPANSION OF PRESSURE MAINTENANCE PROJECT
TO INCLUDE LANDS ADDED
BY THE THIRTEENTH REVISION OF PARTICIPATING AREA

INTRODUCTION

The plat on the facing page shows outline of the Canada Ojitos Unit; an identified thereon is the 13th revision of the participating area. All lands within the unit boundary are within the 13th revised participating area.

The existing pressure maintenance project area covers all lands except those added by the 13th revision. The Unit Operator has proposed that lands added by the thirteenth revision of the participating area also be added to the pressure maintenance project area.

Set out in this exhibit, along with concurrently presented separate exhibits, is data supporting the expansion proposal.

This exhibit is divided into four parts with subjects as follows:

Part I: Reservoir Description.
Schematic Fracture System and AB & C Zone Plats.

Part II: Benefits of Pressure Maintenance.
Basic Depletion Plan.

Part III: Evidence of Reservoir Stratification.

1. Production Logging: L-27.
2. Production Logging: B-32.
3. Restoring equity to boundary wells requires pressure maintenance credit.

Part IV: Evidence of Communication of Wells in Proposed Pressure Maintenance Project Expansion Lands with Existing Project Area.

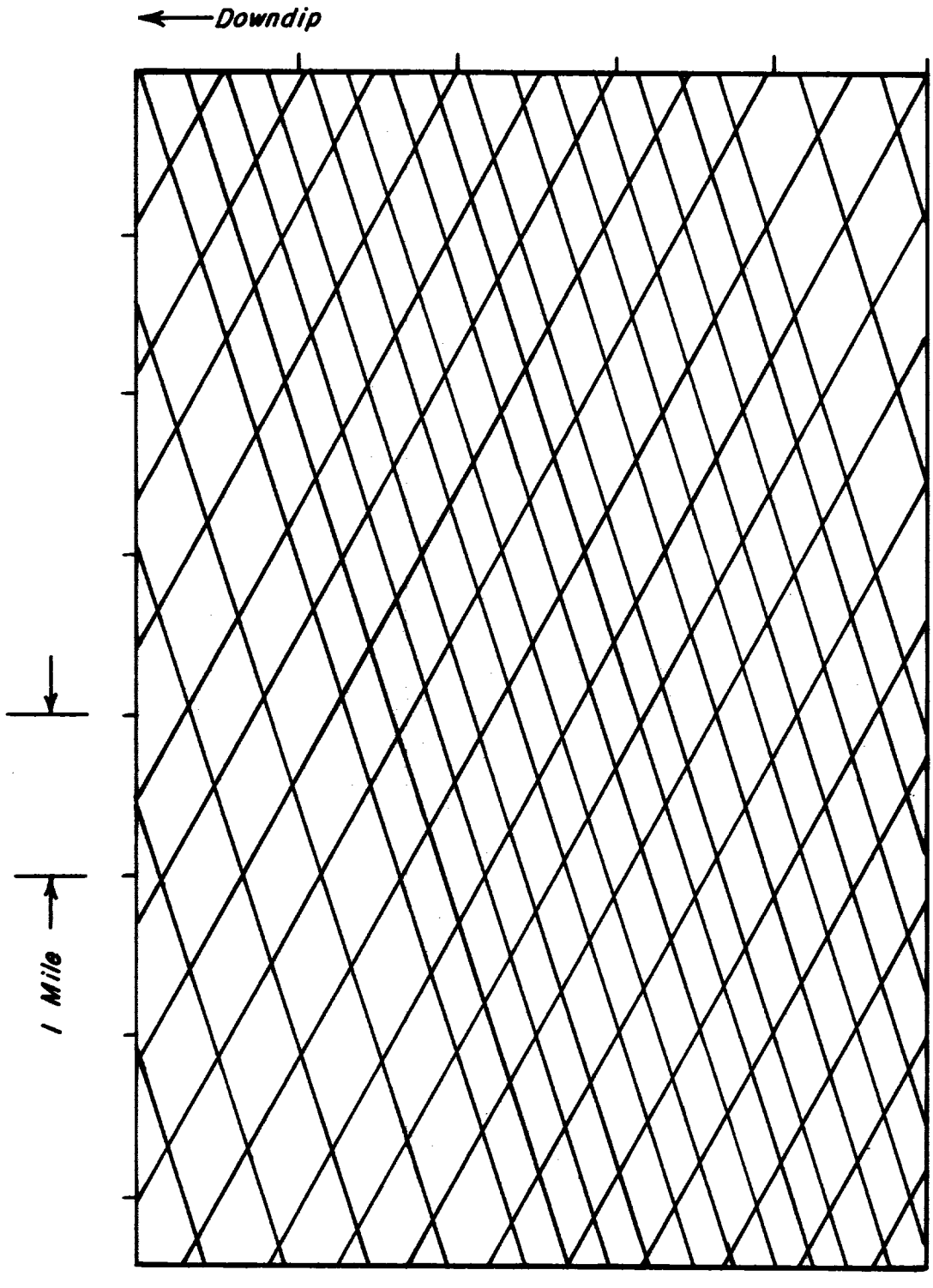
1. By pressure interference during fracturing ("frac pulse").*
2. By overinjection.
3. By pressure gradient across the reservoir.
4. By pressure increase of shut in wells (B-32 and B-29)
5. By gas-oil ratios.
6. By C-34 (and D-17) bottom hole pressure history for July thorugh December 1987.
7. By reservoir pressure decline of proposed expansion area.

* Presented in this case in separate exhibits will be the following:

1. Statistics of frac pulse tests.
2. Analyses of frac pulse tests.

A

SCHEMATIC FRACTURE SYSTEM
Fracture Blocks ± 80 Ac. & 160 Ac.



CANADA OJITOS UNIT
GENERAL INFORMATION
REGARDING EXPANSION OF PRESSURE MAINTENANCE PROJECT
TO INCLUDE LANDS ADDED
BY THE THIRTEENTH REVISION OF PARTICIPATING AREA

PART I
RESERVOIR DESCRIPTION

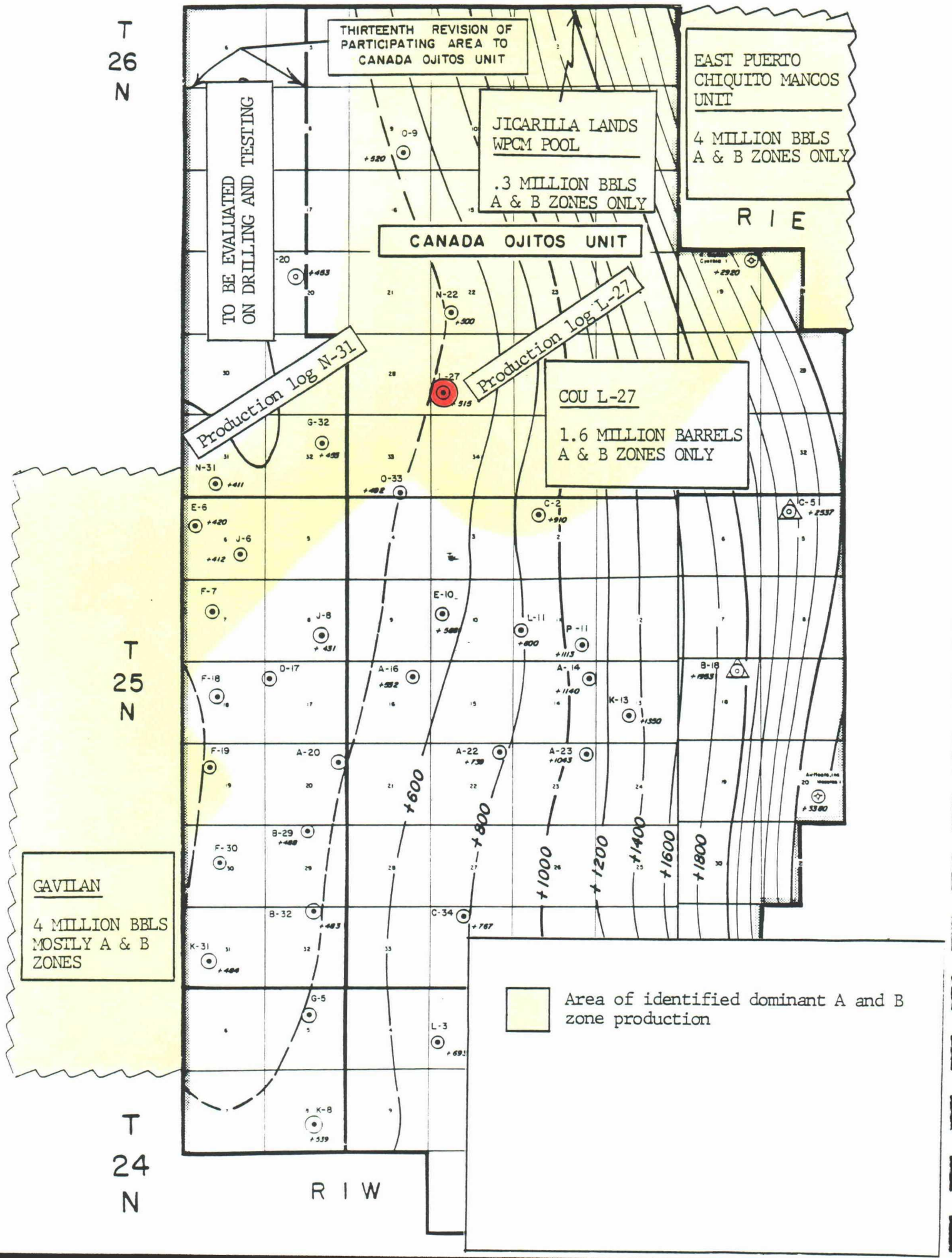
Wells in the West Puerto Chiquito Mancos pool produce from a stratified reservoir within the Niobrara member of the Mancos formation. The three principal zones are locally designated "A", "B", and "C". The zones have a high degree of lateral communication, but are isolated vertically by the intervening plastic shales; except that reservoir-wide a certain degree of communication exists among the zones. This is thought to be the result of occasional faults, or possibly man-made communication through wellbores and hydraulic fracturing.

The reservoir geometry is one of "tight blocks" surrounded by a high capacity fracture system. The high capacity fracture system contains a substantial proportion of the total reservoir oil. This is in contrast to the typical "naturally fractured reservoir" whcih comprises a matrix porosity laced with fractures.

Segregation of reservoir fluids by gravity, not only downdip, but along the occasional faults (thereby connecting vertically the stratified zones), cause the A zone production to have early high gas saturation and mobility. If all three zones are produced concurrently, injected gas can be expected to invade the A zone first, compounding this phenomenon.

The Unit Operator recognized this when pressure maintenance was started in 1968; and as a result, wherever practicable, developed the production from the C (lowermost) zone initially.

The unit's long-range plan included opening up the A and B zones and cycling gas through all zones in the updip wells while at the same time providing pressure maintenance in the lowermost recovery wells. With all zones open gas typically will invade first the A and B zones, increasing GOR's, and additional gas handling facilities are therefore from time to time required. This is just one of the features of the pressure maintenance project which the owners recognize must be dealt with - that is, when gas breaks through it must necessarily be handled.


T 26 N
T 25 N
T 24 N
R I W
R I E
THIRTEENTH REVISION OF PARTICIPATING AREA TO CANADA OJITOS UNIT
TO BE EVALUATED ON DRILLING AND TESTING
JICARILLA LANDS WPCM POOL
.3 MILLION BBLS A & B ZONES ONLY
EAST PUERTO CHIQUITO MANCOS UNIT
4 MILLION BBLS A & B ZONES ONLY
CANADA OJITOS UNIT
Production log N-31
Production log L-27
COU L-27
1.6 MILLION BARRELS A & B ZONES ONLY
GAVILAN
4 MILLION BBLS MOSTLY A & B ZONES
+600
+800
+1000
+1200
+1400
+1600
+1800
Area of identified dominant A and B zone production

AREAS OF IDENTIFIED DOMINANT A AND B ZONE PRODUCTION

Some witnesses in Case 9113 (March and April 1987) were skeptical about the Canada Ojitos Unit L-27 production coming from the A and B zones.

To settle this issue, and to provide the Unit Operator with additional reservoir information to make informed decisions with respect to handling of the pressure maintenance project, a production log was run in the L-27 in August 1987. This confirmed that production from this well was indeed coming from the A and B zones.

That the A and B zones are productive int he area of the L-27 is not something unique. Rather, when viewed on a broad basis, the area of the L-27 should be expected to produce in the A and B zones.

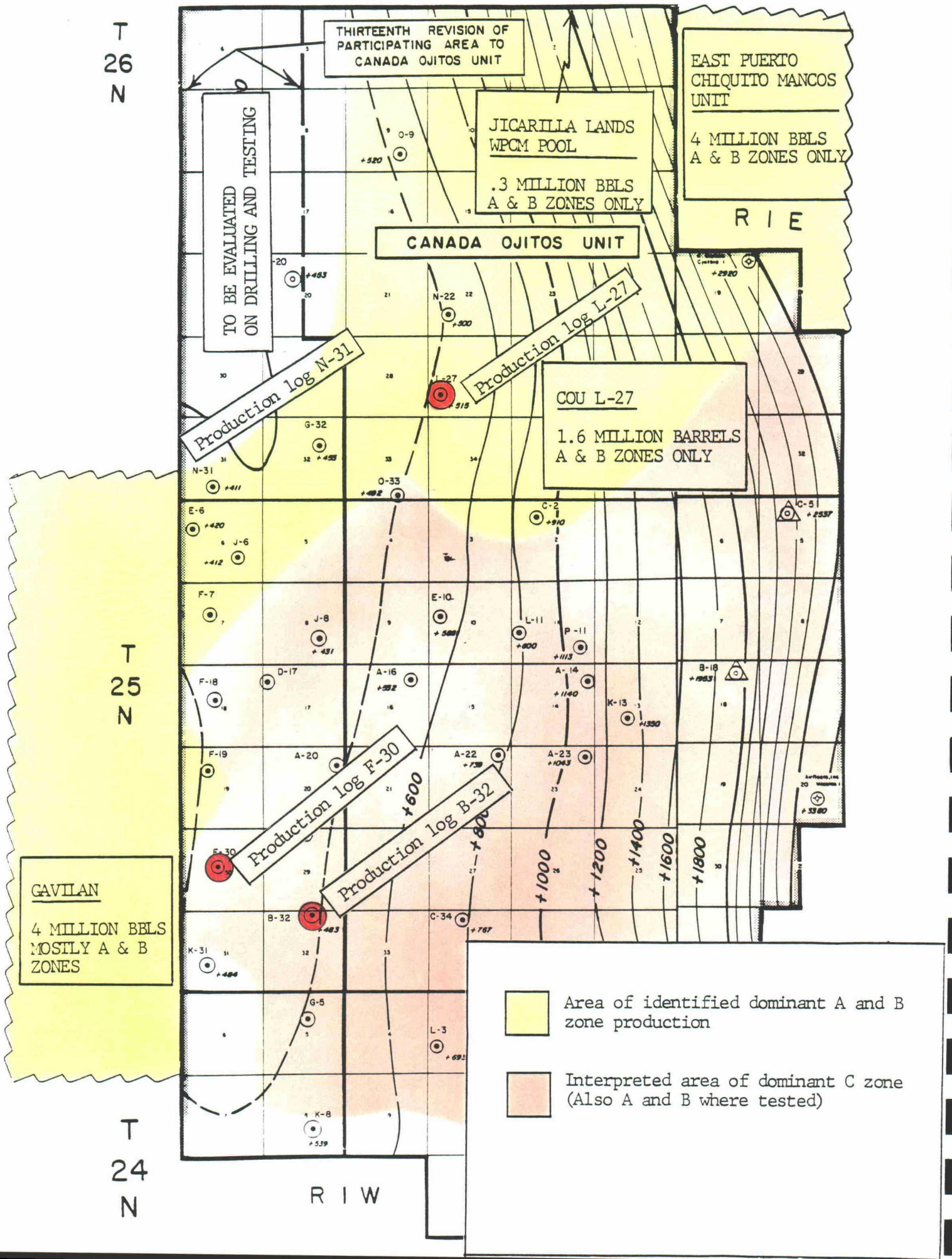
The plat on the facing page shows areas in which the A and B zones only are productive or are the dominant zones.

This plat shows in color, the main area across the Canada Ojitos Unit with dominant A and B zone production. (We note here that a strong fracture system also exists along this southwest-northeast "trend" - as shown in a separate exhibit in this Case 9111.)

It is also noted here, as pointed out in Case 9113, that concurrently with rapidly rising reservoir voidage in Gavilan in 1985 and 1986 that the GOR's increased in the Canada Ojitos Unit C-2 and L-27 wells; followed in 1987 by increasing GOR's in the N-31 and E-6.

This very well could have been the consequence of reducing the pressure in the A and B zones on the west side of the unit and permitting the injected gas to invade these areas - particularly in the A zone, as shown by the production logs of the N-31 and L-27.

Comparison of areas of the dominant A and B zone production with dominant C zone production is show on the next plat.


T 26 N
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T 24 N
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EAST PUERTO CHIQUITO MANCOS UNIT
4 MILLION BBLS A & B ZONES ONLY
CANADA OJITOS UNIT
Production log N-31
Production log L-27
COU L-27
1.6 MILLION BARRELS A & B ZONES ONLY
Production log F-30
Production log B-32
GAVILAN
4 MILLION BBLS MOSTLY A & B ZONES
+600
+800
+1000
+1200
+1400
+1600
+1800
Area of identified dominant A and B zone production
Interpreted area of dominant C zone (Also A and B where tested)

AREAS OF INTERPRETED DOMINANT C ZONE PRODUCTION

Plat on the facing page is the same as the preceding plat for A and B zones; and in addition shows interpreted area of dominant C zone production (some wells in the dominant C zone area also have A and B zone production).

Of particular interest is the proposed expansion area in which production logs have been run on both the F-30 and B-32: the F-30 reported in Case 9113; and the B-32 as shown elsewhere in this exhibit. As shown by the production logs oil from these two wells comes principally from the C zone.

Production behavior of the B-29 is similar to that of the B-32; and accordingly it is believed that production from this well is principally from the C zone.

Also because of the low GOR exhibited by the F-18 (500 to 600 cubic feet per barrel) production from this well is almost certainly from the C zone.

B

CANADA OJITOS UNIT
GENERAL INFORMATION
REGARDING EXPANSION OF PRESSURE MAINTENANCE PROJECT
TO INCLUDE LANDS ADDED
BY THE THIRTEENTH REVISION OF PARTICIPATING AREA

PART II
BENEFITS OF PRESSURE MAINTENANCE

1. Keeps the oil viscosity low and formation volume factor high with consequent increase in the otherwise ultimate recovery.

2. Keeps the productivity high: fewer wells required to deplete the reservoir in a given amount of time.

3. Provides gas cap in which to conduct "cycling" operations once gas breakthrough has occurred in most of the downdip wells; or at an earlier time if so selected ("cycling" gas in the upper part of the reservoir can still maintain pressure - or move low GOR oil from the upper to the lower part of the reservoir).

4. Cycling operations offer the potential of additional recovery if a gasoline plant is installed to recover the liquids: stripped gas returned to the reservoir will pick up additional hydrocarbons over and above that which could be recovered in any other fashion.

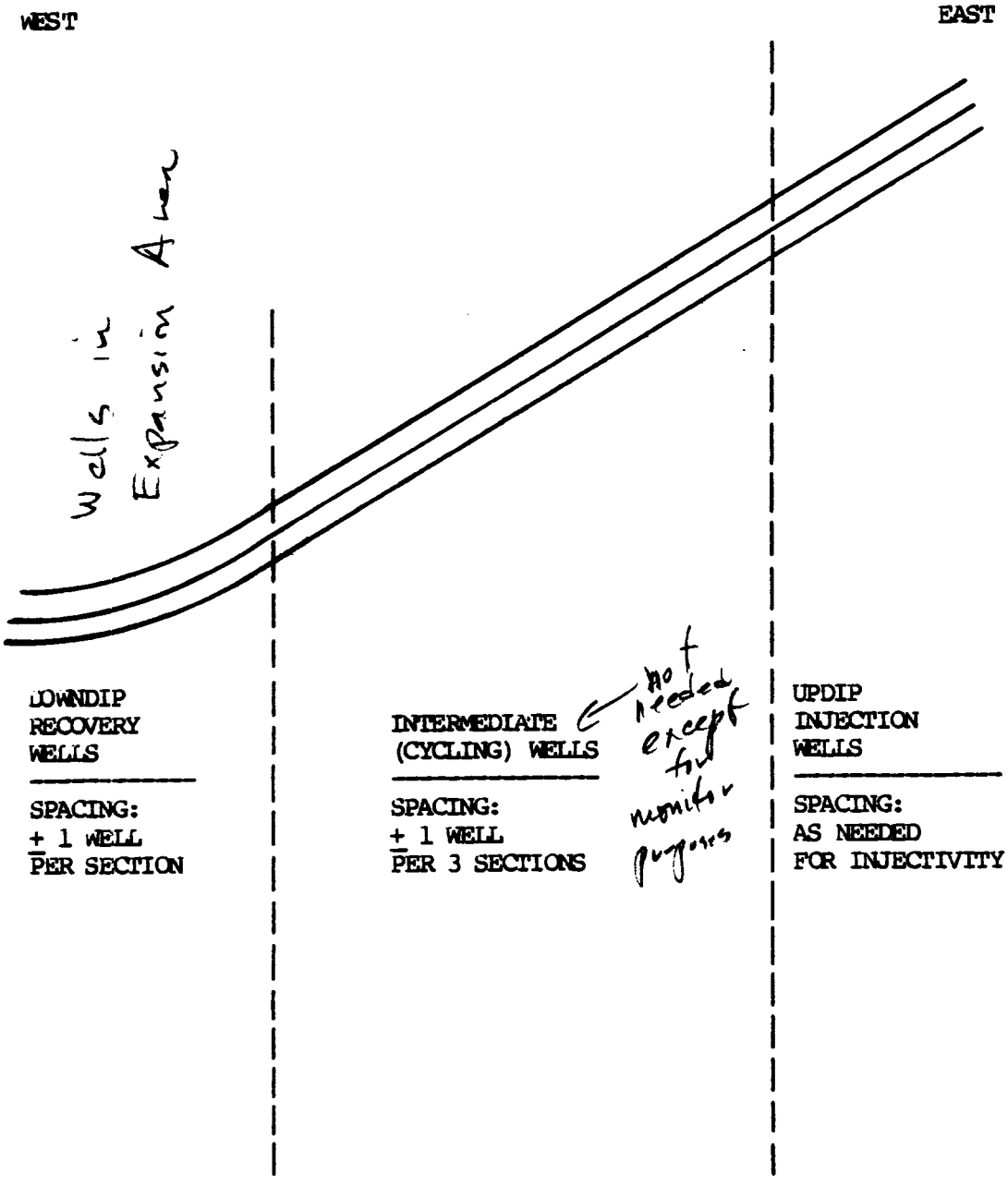
5. Augmenting gravity drainage by pressure maintenance tends to keep fractures open - maintaining higher productivity - and as a consequence higher rate of gravity drainage.

6. Lower operating costs:

   a. No rod and tubing wear.
   b. No bottom hole pumps to maintain.
   c. No risk of excessive expense arising from pulling wells and suffering fishing jobs, lost holes, etc.
   d. All mechanical repairs necessary are on surface (compressors).
   e. Can flow wells to depletion: first by conventional gas lift; finally by "injected gas lift" (injected gas providing the energy both to help move oil to the wellbores and then to lift it to the surface).

7. Any oil remaining in the tighter parts of the reservoir will be produced during the last stages of gas cycling at low pressures (semi "blow-down").

SCHEMATIC DIAGRAM
CROSS-SECTION
SHOWING ARRANGEMENT OF CANADA OJITOS UNIT WELLS



INITIAL BASIC DEPLETION PLAN

1. Produce the reservoir under pressure maintenance: gas injection wells updip; recovery wells downdip, with minimal number of wells between the updip injection area and the downdip recovery area.

2. Produce C zone first (efficiency of operation).

3. Shut in intermediate (between updip injection and downdip recovery) wells as GOR's increase above 2000 to 3000 cubic feet per barrel.

4. When GOR's commence increasing in downdip C zone wells; then open up A and B zones in all wells and commence "cycling" gas in the intermediate wells and continue pressure maintenance in the downdip wells.

5. At this stage of depletion, install gasoline plant to strip gas before it is injected.

6. Continue pressure maintenance until income approaches economic limit and then continue on partial pressure maintenance marketing part of the gas. Depending upon amount of reservoir liquids picked up by the stripped gas, economics of final stages of depletion of reservoir may depend upon economics of gasoline plant.

MODIFICATION TO BASIC DEPLETION PLAN AS CONSEQUENCE OF GAVILAN PRODUCTION

1. With Gavilan production on unit's west boundary and all three zones open to production in Gavilan, it is necessary, in an effort to protect from drainage, to open up all three zones in the boundary area.

2. Problem arises of how to continue pressure maintenance and mitigate migration to Gavilan. Severity of the problem is directly related to Gavilan allowables.

3. A new factor which may control timing of gas marketing will be reservoir pressure in Gavilan and the differential pressure from the Canada Ojitos Unit gas cap area to Gavilan.

4. If Gavilan pressures are allowed to continue to decline sharply, final stages of depletion may require return to gas-lift (in addition to energy supplied by gas injection) to lift oil.

NOTE ON STRATIFICATION

In the early stages of development of the Canada Ojitos Unit and nearby areas (1960's) higher gas saturations were found generally in the A zone as compared to the B zone; and in the B zone compared to the C zone. It was apparent that if pressure maintenance operations were conducted that gas channeling could be anticipated in the A and B zones resulting in a relatively large volume of gas to be handled with respect to C zone production.

For this reason it was initially determined to attempt to essentially deplete the C zone before opening up the A and B zones and commencing a large volume of gas cycling.

Where the C zone was not productive it was necessary to open the A and B zones; and the Unit Operator recognized that on gas breakthrough the gas would necessarily have to be "handled" - with attendant increased costs of compression and injection.

Although the zones are stratified, as found in the early 1960's, they are connected reservoir-wide by faults, fractures and man-made avenues (wellbores); such that communication - in varying degrees - exists throughout.

Where all zones are open, and recognizing the occasional vertical communication of zones - along with gravity segregation - it is to be anticipated that the upper A and B zones will be the first to develop high gas saturation and breakthrough of gas from the pressure maintenance project.

C

EVIDENCE OF STRATIFICATION
SHOWN BY PRODUCTION LOGS
CANADA OJITOS UNIT L-27 AND B-32 WELLS

Since the March hearing in Case 9113, production logs have been run in two additional Canada Ojitos Unit wells:

L-27: Section 27, Township 26 North, Range 1 West
B-32: Section 32, Township 25 North, Range 1 West.

Results of these production log surveys show the following:

L-27

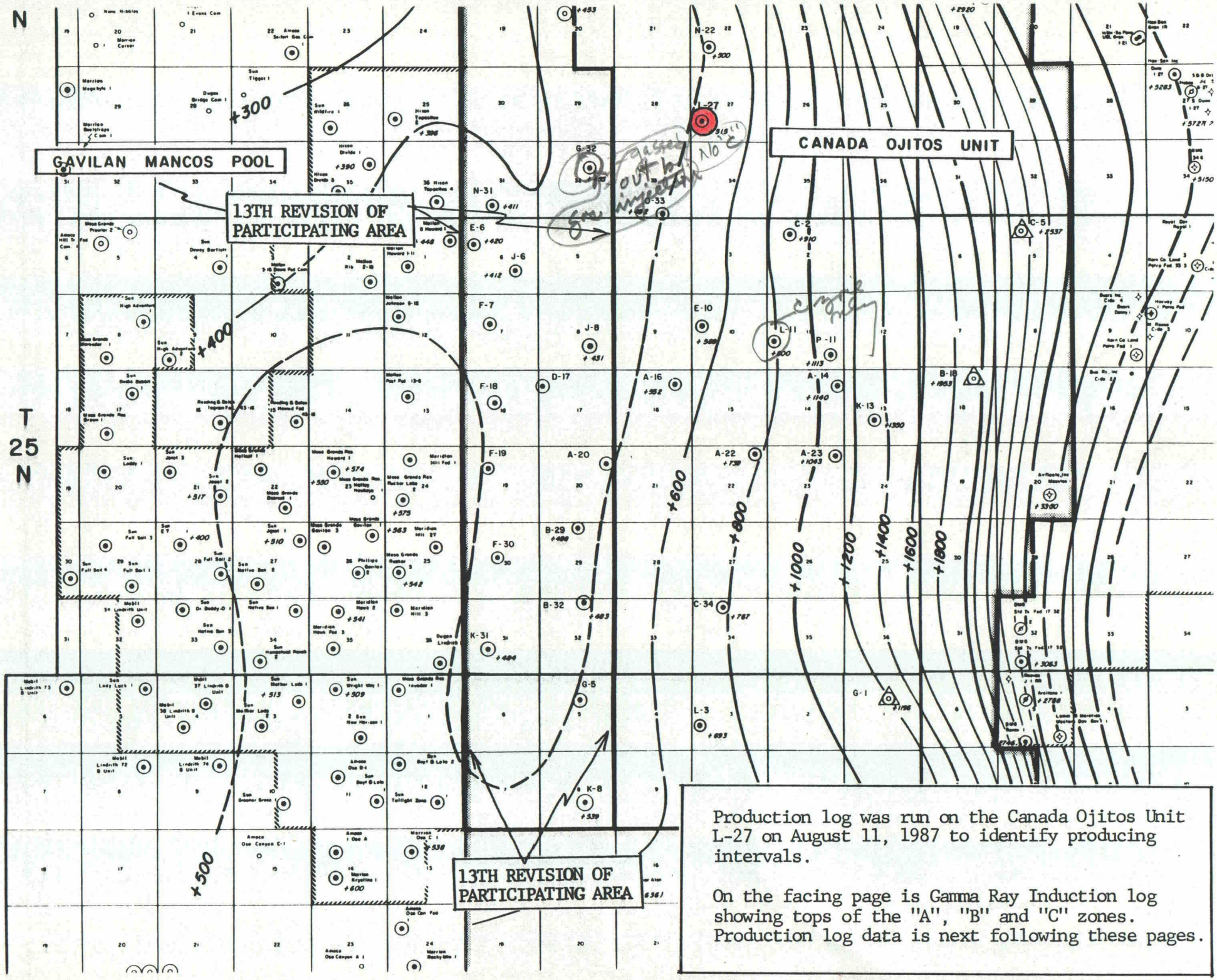
Confirmation that production zones are the A and B zones; that the C zone is not contributing production at this location.

In addition practically all of the free gas is coming from the A zone (believed to be gas breakthrough from the pressure maintenance project).

B-32

Most of the oil production is currently from the C zone at a GOR approximating solution ratio. The principal gas production is from both the A and B zones. It is believed that these zones initially produced oil but now are evidencing gas breakthrough from the pressure maintenance project.

Details of these surveys are set out in this Section C and the following Section D.



Production log was run on the Canada Ojitos Unit L-27 on August 11, 1987 to identify producing intervals.

On the facing page is Gamma Ray Induction log showing tops of the "A", "B" and "C" zones. Production log data is next following these pages.

SCHLUMBERGER

INDUCTION-ELECTRICAL LOG
INDUCTION-GAMMA RAY LOG

COUNTY RIO ARRIBA
FIELD or LOCATION CANADA OJITOS UNIT
WELL CANADA OJITOS UNIT #13 (L-27)
COMPANY BENSON-MONTIN-GREER

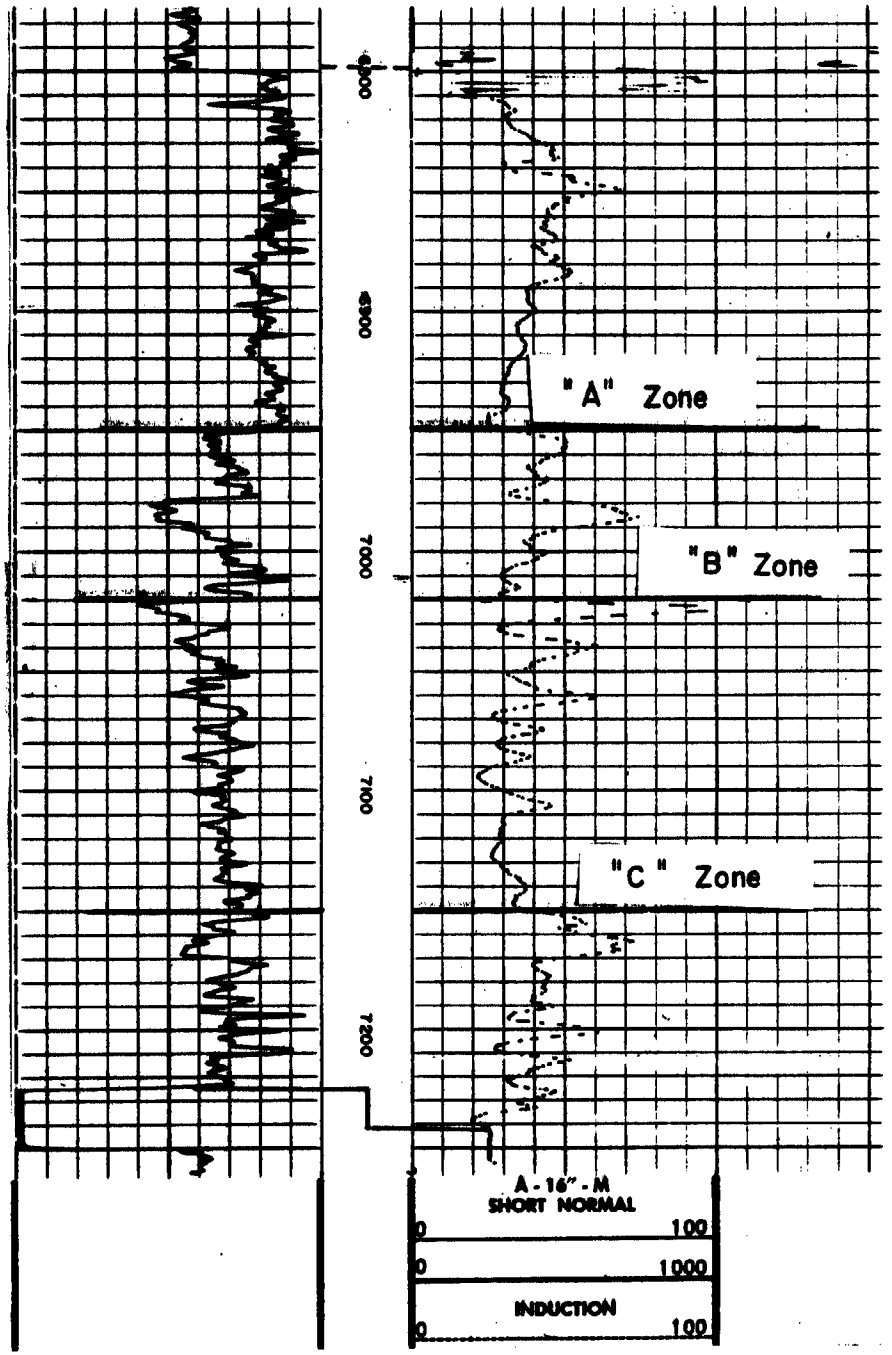
COMPANY BENSON-MONTIN-GREER DRILLING CORPORATION
WELL CANADA OJITOS UNIT #13 (L-27)
FIELD CANADA OJITOS UNIT
COUNTY RIO ARRIBA STATE NEW MEXICO
LOCATION 1415'S 740'W
Sec. 27 Twp. 26N Rge. 1W

Other Services: NONE

Permanent Datum: GL Elev. 7451
Log Measured From KB 14 Ft. Above Perm. Datum
Drilling Measured From KB

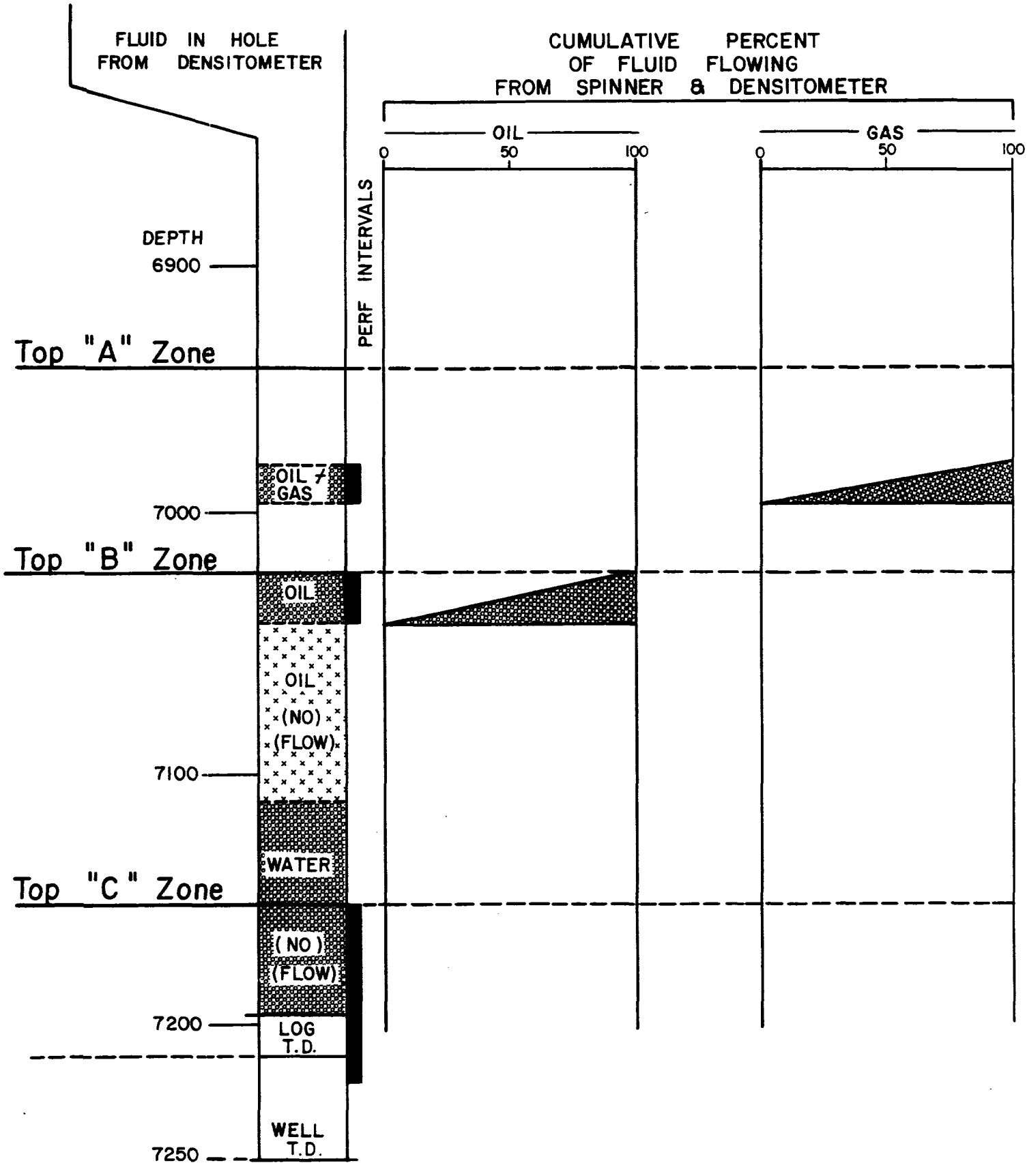
Elev.: K.B. 7465
D.F. 7464
G.L. 7451

Date	7-31-69		8-7-69								
Run No.	ONE		TWO								
Depth—Driller	6633		7248								
Depth—Logger	6625		7250								
Btm. Log Interval	6624		7243								
Top Log Interval	322		6799								
Casing—Driller	10 3/4 @ 319		7 5/8 @ 6799								
Casing—Logger	322		6799								
Bit Size	9 7/8		6 3/4								
Type Fluid in Hole	FGM		OIL								
Dens. / Visc.	8.4	76	-	-							
pH / Fluid Loss	-	6.5ml	-	- ml			ml				ml
Source of Sample	MUDPIT		-								
R_m @ Meas. Temp.	3.26 @ 87°F		- @ - °F		@	°F		@	°F		
R_{mf} @ Meas. Temp.	1.91 @ 84°F		- @ - °F		@	°F		@	°F		
R_{mc} @ Meas. Temp.	- @ - °F		- @ - °F		@	°F		@	°F		
Source: R_{mf} R_{mc}	M	-	-	-							
R_m @ BHT	2.18 @ 130°F		- @ - °F		@	°F		@	°F		
Time Since Circ.	3 HOURS		4 HOURS								
Max. Rec. Temp.	130°F		- °F			°F					°F
Equip. / Location	4542 / FARM		3872 / FARM								
Recorded By	ROBERTSON		SCHULTZ								
Witnessed By	MR. STOARS & MR. LONDON										



COU L-27
Sec. 27 - T25N - R1W

SUMMARY OF PRODUCTION LOG 8-11-87



Western Atlas International
A Litton/Dresser Company

Western Geophysical
Atlas Wireline Services
Core Laboratories
LRS
Aero Service
Downhole Seismic Service
J.S. Nolen & Associates

2-4-88

Atlas Wireline Services

Benson-Montin-Greer, Canada Ojitos Unit Well L-27
(intervals numbered from top downward)

Surface Rates	Downhole Rates
148 BOPD	182 BOPD
396.64 MSCFD	1160 BGPD
39 API	38 basket RPS** in total flow
0.7 gas gravity	38/1342 = .0283 RPS/BPD
850 psi downhole	
161 °F downhole	

Interval one (6978-6993)

947 BGPD
*RPS = 26.8

According to stationary data**, this interval's production reduces the density of the flow from 0.69 to 0.17 gm/cc, indicating the majority of the production is gas. This interval contributes the majority of the free gas.

Interval two (7020-7040)

Portion above 7030 produces a flow of density 0.69 gm/cc according to stationary data**; majority is oil, minority is gas. This portion contributes the produced oil. No contribution below 7030.

Interval three (7152-7196)

No contribution. According to stationary data**, there is water in this interval, with no measurable flow. From Fluid Density log on composite presentation, the top of the water column is at 7102.

---

*Indicates differential RPS across interval or portion of interval.

** Stationary data are presented at bottom of log, with recording depths shown handwritten at right. Each line of data corresponds to a single stationary recording; the column headed "DEP" does not indicate recording depth. Average of Fluid Density data recorded stationary is more representative than data recorded with tool moving, which comprise the Fluid Density curve shown by the composite presentation.

Volumetric flow rates apply to downhole conditions and are not adjusted to surface.

Downhole rates determined from formation volume factors based on COU L-11 fluid sample analysis, as furnished by Benson-Montin-Greer.

Dresser Atlas

DRESSER

PRODUCTION LOGGING SERVICES

FILE NO.

API NO.

COMPANY BENSON-MONTIN-GREER DRILLING CORPORATION

WELL CANADA OJITOS UNIT NO. 13 (L-27)

FIELD CANADA OJITOS UNIT

COUNTY RIO ARRIBA STATE NEW MEXICO

FIELD PRINT

LOCATION:

1415' FSL & 740' FWL

SEC 27 TWP 26N RGE 1W

OTHER SERVICES

PCM:
GR HP
FDN FMTR
TEMP

PERMANENT DATUM GROUND LEVEL ELEV. 7451'

LOGGING MEASURED FROM K.B. 14 FT. ABOVE P.D.

DRILLING MEASURED FROM K.B.

ELEVATIONS

KB 7465'
DF 7464'
GL 7451'

DATE	11 AUG 1987	
RUN	1	
SERVICE ORDER	147033	
DEPTH-DRILLER	7210'	
DEPTH-LOGGER	7199'	
BOTTOM LOGGED INTERVAL	7199'	
TOP LOGGED INTERVAL	6600'	
TYPE FLUID IN HOLE	GAS/OIL/WATER	
SALINITY PPM CL.	20000	
DENSITY LB/GAL.	SEE LOG	
LEVEL	FLOWING	
MAX. REC. TEMP. DEG. F	166	
OPR. RIG TIME	MAST	
EQUIP. NO. / LOC.	HP-6385 HOBBS NM	
RECORDED BY	CHRISFIELD/STANLEY	
WITNESSED BY	MR. MILLER	

BOREHOLE RECORD

NO.	BIT	FROM	TO

NOTE REGARDING ATLAS WELL SERVICE TERMINOLOGY OF PRODUCTION LOG

On the facing page, the column headings are abbreviated:

DEP	FMTR	FDN	TEMP	HPCP
Depth	Flow Meter	Fluid Density	Temperature	Hewlett Packard Continuous Pressure

Depth of Instruments

In bold handwritten figures are depths of the instruments at each setting (from 10 to 20 readings taken at each depth and averaged).

DEP: Depth: This is depth signal sent to computer. To get more than one reading at a set depth, the computer is told it is at a new depth.

FMTR: Flow Meter: Readings are in revolutions per second.

FDN: Density of flow stream in gmc/cc.

TEMP: Temperature in degrees F.

HPCP: Hewlett Packard continuous pressure: pressure in psia.

BENSON-MONTIN-GREER
C.P.U. NO. 12 (L-ET)

SEPIA TABLE ***P 4338*** FILE LABEL # 6

TAPE LEVEL SPACING : 0.25 TAPE STARTING DEPTH : 7080.00
PRINT LEVEL SPACING : 0.00 TAPE ENDING DEPTH : 99999.00

** UNITS OF MEASURE **

DEPTH	FT
ACOUSTIC	US/FT
CALIPER	IN
TENSION	LBS
TEMPERATURE	F
PRESSURE	PSI
VOLUME	FT3

*** END OF LIST ***

7000

DEP	FMTP	FDN	TEMP	HPCP	
7175.00	0.00	1.02	165.35	902.93	
7180.00	0.00	1.03	165.34	903.09	
7190.00	0.00	1.05	165.32	903.24	FMTR 7170'
7200.00	0.00	1.02	165.32	903.26	
7210.00	0.00	1.02	165.32	903.47	FDN 7165'
7220.00	0.00	0.99	165.32	903.36	
7230.00	0.00	1.01	165.33	903.42	
7240.00	0.00	1.01	165.34	903.38	
7250.00	-0.35	1.00	165.35	903.31	
7255.00	0.00	0.99	165.33	902.64	
** INTERVAL AVERAGES					
0.00	-0.01	1.02	165.33	903.30	
7330.00	0.00	1.04	164.23	892.19	FMTR 7140'
7340.00	0.00	1.04	164.23	892.41	
7350.00	0.00	0.99	164.23	892.37	FDN 7135'
7360.00	0.00	1.05	164.24	892.11	
7370.00	0.00	1.01	164.24	892.14	
** INTERVAL AVERAGES					
0.00	0.00	1.02	164.24	892.26	
7085.00	0.00	0.77	162.38	870.21	
7090.00	0.00	0.78	162.37	870.34	
7100.00	0.00	0.79	162.36	870.28	FMTR 7080'
7110.00	0.00	0.77	162.35	870.45	FDN 7075'
7120.00	0.00	0.79	162.33	870.32	
7130.00	0.00	0.79	162.34	870.39	
7135.00	0.00	0.77	162.34	870.41	
** INTERVAL AVERAGES					
0.00	0.00	0.78	162.35	870.35	

7215.00	-4.34	0.76	162.28	853.88
7220.00	0.00	0.77	162.28	853.79
7230.00	0.00	0.79	162.28	853.72
7240.00	0.00	0.78	162.29	853.86
7250.00	0.00	0.77	162.29	853.69
7260.00	0.34	0.77	162.29	853.75
7270.00	0.30	0.78	162.30	853.60
7280.00	0.00	0.78	162.30	853.72
7285.00	0.00	0.77	162.30	853.69

FATR 7030'
FDN 7015'

** INTERVAL AVERAGES

0.00	-0.07	0.78	162.29	853.74

7359.00	10.20	0.68	161.59	847.98
7360.00	10.18	0.69	161.58	848.07
7370.00	10.42	0.68	161.59	848.04
7380.00	10.34	0.68	161.60	848.02
7390.00	10.55	0.70	161.61	847.92
7400.00	10.31	0.69	161.62	847.72
7410.00	10.52	0.70	161.63	847.75
7420.00	10.36	0.70	161.63	847.67
7430.00	10.53	0.71	161.63	847.69
7440.00	10.43	0.68	161.63	847.48
7450.00	5.67	0.70	161.64	847.59

FATR 7010'
FDN 7005'

** INTERVAL AVERAGES

0.00	10.44	0.69	161.61	847.83

7495.00	12.82	0.17	160.83	844.58
7500.00	12.55	0.16	160.83	844.59
7510.00	12.49	0.16	160.86	844.40
7520.00	12.86	0.16	160.86	844.26
7530.00	12.49	0.17	160.87	844.09
7540.00	12.22	0.16	160.81	844.03
7550.00	12.31	0.15	160.81	843.98
7560.00	12.37	0.17	160.82	843.77
7570.00	12.37	0.18	160.83	843.69
7580.00	12.45	0.17	160.83	843.62
7590.00	12.84	0.16	160.85	843.77
7595.00	12.78	0.18	160.83	843.79

FATR 6983'
FDN 6978'

** INTERVAL AVERAGES

0.00	12.62	0.16	160.84	844.03

7630.00	36.37	0.14	159.63	843.51
7640.00	34.70	0.19	159.59	843.52
7650.00	35.25	0.17	159.58	843.47
7660.00	37.38	0.16	159.58	843.50
7670.00	37.50	0.18	159.58	843.51
7680.00	36.87	0.14	159.56	843.32
7690.00	35.65	0.18	159.56	843.21
7700.00	35.33	0.17	159.56	843.29
7710.00	36.18	0.15	159.55	843.17
7720.00	32.79	0.18	159.55	843.04
7730.00	36.89	0.18	159.55	843.00

FATR 6970'
FDN 6965'

** INTERVAL AVERAGES

0.00	36.36	0.17	159.57	843.33

7780.00	30.95	0.17	159.51	841.28
7790.00	37.14	0.15	159.51	841.56
7800.00	37.62	0.19	159.51	841.72
7810.00	30.45	0.21	159.50	841.61
7820.00	43.22	0.18	159.50	841.71
7830.00	31.50	0.19	159.49	841.60
7840.00	37.32	0.20	159.49	841.48
7850.00	36.93	0.18	159.49	841.48
7860.00	37.74	0.18	159.47	841.15
7870.00	34.54	0.19	159.48	841.26
7875.00	41.24	0.17	159.48	841.27

FMR 6990'
FDN 6945'

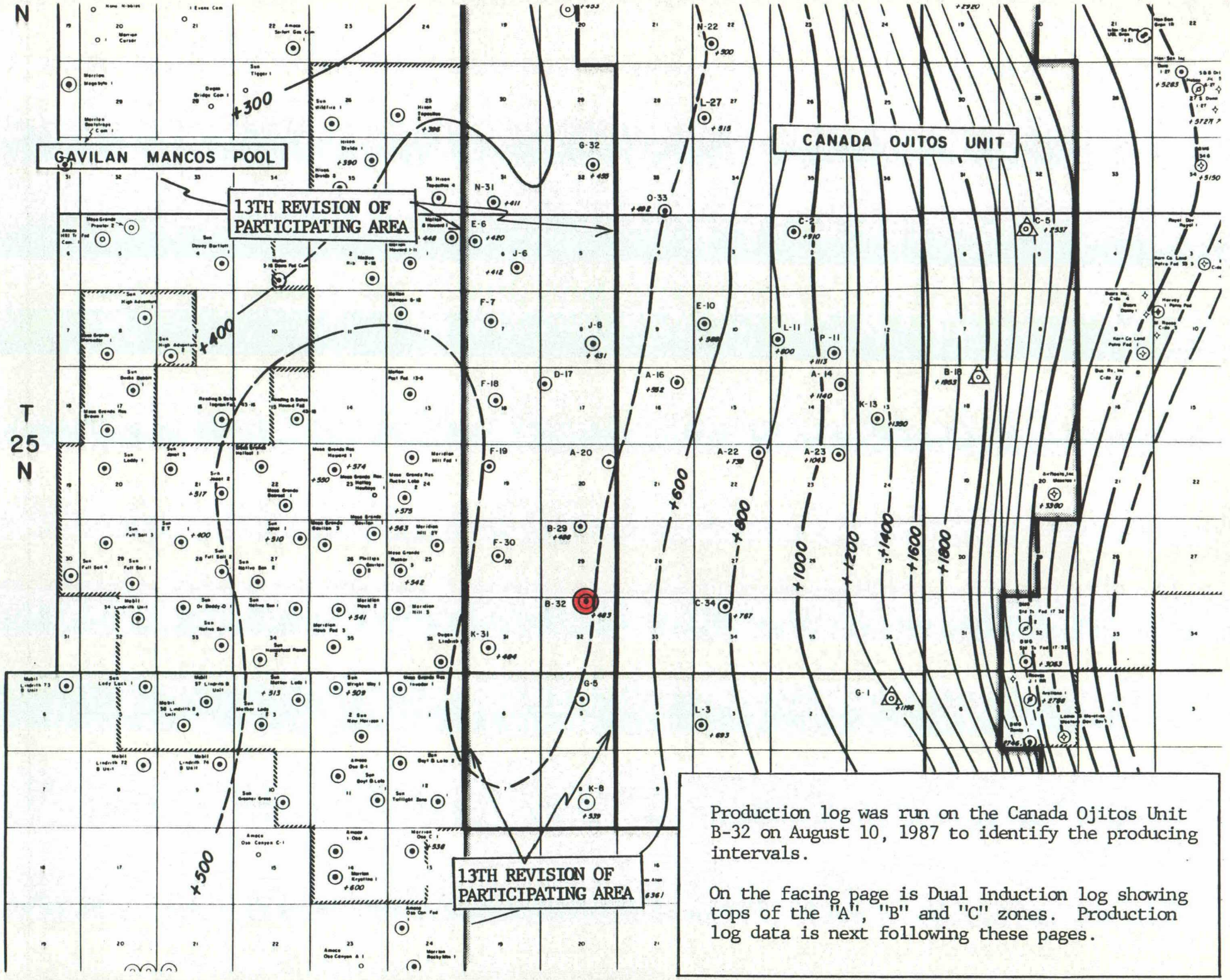
** INTERVAL AVERAGES ----------

0.00	38.04	0.18	159.50	841.49

D

EVIDENCE OF STRATIFICATION SHOWN BY PRODUCTION LOGS CANADA OJITOS UNIT L-27 AND B-32 WELLS

See Section C for introduction.



Production log was run on the Canada Ojitos Unit B-32 on August 10, 1987 to identify the producing intervals.

On the facing page is Dual Induction log showing tops of the "A", "B" and "C" zones. Production log data is next following these pages.

DUAL INDUCTION-SFL

CSU

COMPANY: BENSON MONTIN GREER DRILLING CORP.

WELL: CANADA OJITOS UNIT #25 (B-32)

FIELD: PUERTO CHIQUITO WEST MANCOS
COUNTY: RIO ARRIBA
STATE: NEW MEXICO

LOCATION: 231 FNL 2218 FEL

SEC: 32 TWP: 25 N RGE: 1 W

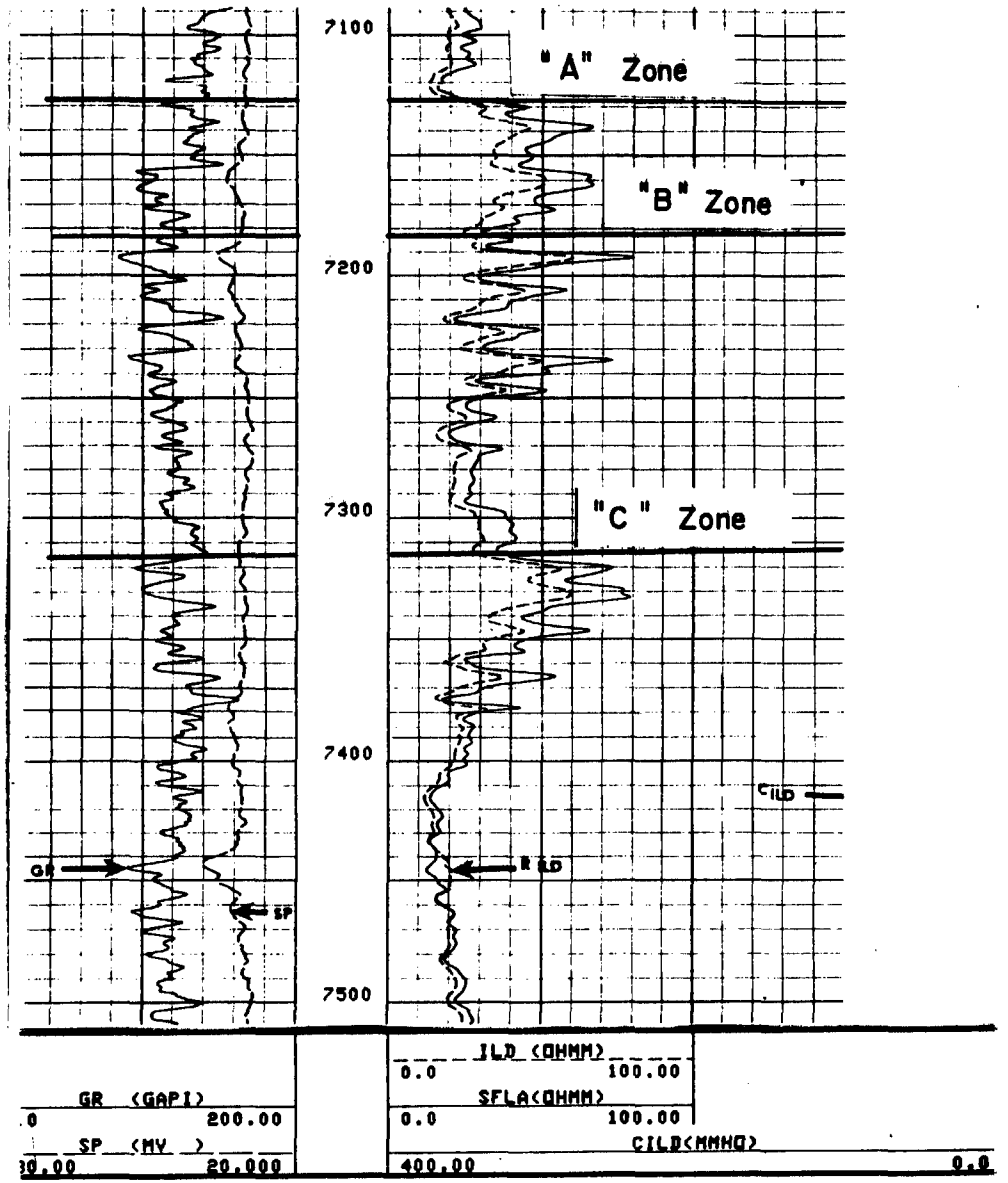
PERMANENT DATUM: GL ELEVATIONS-
ELEV. OF PERM. DATUM: 7599.0 F KB: 7611.0 F
LOG MEASURED FROM: KB DF: 7610.0 F
12.0 F ABOVE PERM. DATUM GL: 7599.0 F
DRLG. MEASURED FROM: KB

DATE: 11 SEP 84
RUN NO: 1

DEPTH-DRILLER: 7600.0 F
DEPTH-LOGGER: 7594.0 F
BTM. LOG INTERVAL: 7588.0 F
TOP LOG INTERVAL: 493.0 F

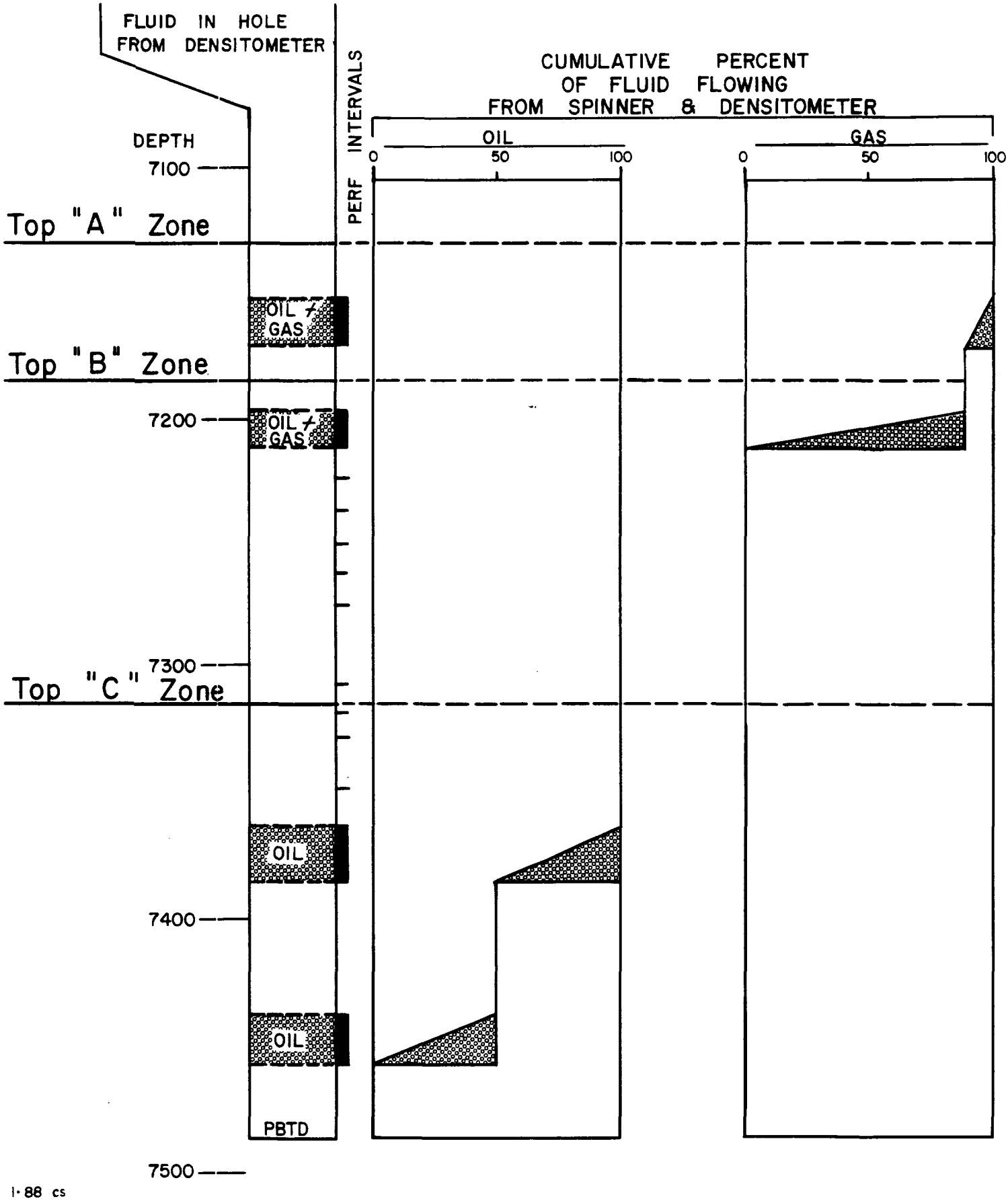
CASING-DRILLER: 492 F
CASING-LOGGER: 493 F
CASING: 9 5/8

BIT SIZE: 8 3/4



SUMMARY OF
PRODUCTION LOG
8-10-87

COU B-32
Sec. 32 - T25N - R1W



1-88 cs

Western Atlas International
A Litton/Dresser Company

Western Geophysical
Atlas Wireline Services
Core Laboratories
LRS
Aero Service
Downhole Seismic Service
J.S Nolen & Associates

2-4-88

Atlas Wireline Services

Benson-Montin-Greer, Canada Ojitos Unit Well B-32
(intervals numbered from top downward)

Surface Rates	Downhole Rates
648 BOPD	805 BOPD
894.24 MSCFD	1920 BGPD
39 API	56.7 basket RPS** in total flow
0.7 gas gravity	56.7/2725 = .0208 RPS/BPD
960 psi downhole	
166 °F downhole	

Interval one (7150-7170)

240 BGPD (13% of total free gas)
*RPS = 5

Interval two (7190-7210)

1682 BGPD (87% of total free gas)
*RPS = 35

Interval three (7362-7382)

409 BOPD (53% of total oil)
*RPS = 8.5

Interval four (7436-7456)

361 BOPD (47% of total oil)
*RPS = 7.5

---

* Indicates differential RPS across interval.

** Stationary data are presented at bottom of log, with recording depths shown handwritten at right. Each line of data corresponds to a single stationary recording; the column headed "DEP" does not indicate recording depth. Average of Fluid Density data recorded stationary is more representative than data recorded with tool moving, which comprise the Fluid Density curve shown by the composite presentation.

Volumetric flow rates apply to downhole conditions and are not adjusted to surface.

Downhole rates determined from formation volume factors based on COU L-11 fluid sample analysis, as furnished by Benson-Montin-Greer.

Dresser Atlas

DRESSER

PRODUCTION LOGGING SERVICES

FILE NO

REF NO

FIELD PRINT

COMPANY BENSON-MONTIN-GREER DRILLING CORPORATION

WELL CANADA OJITOS UNIT NO. 25 (B-32)

FIELD PUERTO CHIQUITO WEST MANCOS

COUNTY RIO ARRIBA STATE NEW MEXICO

LOCATION:

231' FNL & 2218' FEL

SEC 32 TWP 25N RGE 1W

OTHER SERVICES

PCM:
GR HP
FDN FMTR
TEMP

PERMANENT DATUM GROUND LEVEL ELEV. 7599'

LOGGING MEASURED FROM K.B. 12 FT. ABOVE P.D.

DRILLING MEASURED FROM K.B.

ELEVATIONS

KB 7611'
DF 7610'
GL 7599'

DATE	11 AUG 1987	
RUN	1	
SERVICE ORDER	147032	
DEPTH-DRILLER	7485'	
DEPTH-LOGGER	7440'	
BOTTOM LOGGED INTERVAL	7440'	
TOP LOGGED INTERVAL	6700'	
TYPE FLUID IN HOLE	GAS/OIL	
SALINITY PPM CL.	20000	
DENSITY LB/GAL.	SEE LOG	
LEVEL	FLOWING	
MAX. REC. TEMP. DEG. F	170	
OPR RIG TIME	MAST	
EQUIP NO. / LOC.	HP-6385 HOBBS NM	
RECORDED BY	CHRISFIELD/STANLEY	
WITNESSED BY	MR. MILLER	

BOREHOLE RECORD

NO.	BIT	FROM	TO

NOTE REGARDING ATLAS WELL SERVICE TERMINOLOGY OF PRODUCTION LOG

On the facing page, the column headings are abbreviated:

DEP	FMTR	FDN	TEMP	HPCP
Depth	Flow Meter	Fluid Density	Temperature	Hewlett Packard Continuous Pressure

Depth of Instruments

In bold handwritten figures are depths of the instruments at each setting (from 10 to 20 readings taken at each depth and averaged).

DEP: Depth: This is depth signal sent to computer. To get more than one reading at a set depth, the computer is told it is at a new depth.

FMTR: Flow Meter: Readings are in revolutions per second.

FDN: Density of flow stream in gmc/cc.

TEMP: Temperature in degrees F.

HPCP: Hewlett Packard continuous pressure: pressure in psia.

BENSON-MONTIN-GREER
C.O.U. NO. 35 (B-32)

SERVICE TABLE ***A 433B*** FILE LABEL # 6

TAPE LEVEL SPACING : 0.25 TAPE STARTING DEPTH : 7400.00
PRINT LEVEL SPACING : 0.00 TAPE ENDING DEPTH : 99999.00

** UNITS OF MEASURE **

DEPTH	FT
ACOUSTIC	US/FT
CALIPER	IN
TENSION	LBS
TEMPERATURE	F
PRESSURE	PSI
VOLUME	FT3

*** END OF LIST ***

DEP	FMTR	FDN	TEMP	HPRS
7405.00	7.62	0.73	170.67	1037.63
7410.00	7.56	0.73	170.67	1037.67
7420.00	7.35	0.73	170.67	1037.63
7430.00	7.37	0.73	170.66	1037.70
7440.00	7.15	0.72	170.67	1037.75
7450.00	7.33	0.75	170.67	1037.70
7460.00	7.56	0.73	170.67	1037.70
7470.00	7.77	0.71	170.67	1037.65
7480.00	7.24	0.70	170.66	1037.57
7490.00	7.64	0.73	170.66	1037.54
7500.00	7.35	0.70	170.66	1037.48
7510.00	7.64	0.73	170.67	1037.46
7520.00	7.92	0.72	170.67	1037.43
7530.00	7.66	0.71	170.67	1037.41
7540.00	7.51	0.73	170.67	1037.31
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

FMTR 7405'
FDN 7400'

** INTERVAL AVERAGES ----------
0.00 7.52 0.72 170.67 1037.58

7360.00	16.15	0.73	170.15	1023.11
7370.00	16.07	0.71	170.14	1023.07
7380.00	16.10	0.71	170.13	1023.04
7390.00	15.93	0.72	170.13	1023.00
7400.00	15.84	0.73	170.13	1022.96
7410.00	16.10	0.73	170.12	1022.86
7420.00	16.11	0.71	170.12	1022.82
7430.00	16.00	0.73	170.13	1022.83
7440.00	15.81	0.74	170.12	1022.82
7450.00	15.85	0.73	170.12	1022.86
7460.00	15.88	0.73	170.12	1022.75

FMTR 7360'
FDN 7395'

** INTERVAL AVERAGES ----------
0.00 16.01 0.73 170.13 1022.83

DEP	FMTP	FDN	TEMP	HPCP
7540.00	16.65	0.68	169.92	1008.49
7550.00	17.19	0.67	169.92	1008.47
7560.00	17.34	0.68	169.92	1008.43
7570.00	17.17	0.68	169.91	1008.45
7580.00	17.09	0.73	169.91	1008.48
7590.00	16.98	0.71	169.90	1008.42
7600.00	16.84	0.70	169.90	1008.38
7610.00	16.66	0.72	169.90	1008.41
7620.00	16.54	0.73	169.90	1008.39
7630.00	16.50	0.71	169.89	1008.36
** INTERVAL AVERAGES				
0.00	16.98	0.71	169.91	1008.42

FATR 7315'
FDN 7310'

7667.00	15.40	0.67	169.83	1001.06
7670.00	15.51	0.67	169.83	1001.06
7680.00	15.33	0.69	169.82	1001.05
7690.00	15.62	0.70	169.81	1001.07
7700.00	15.96	0.70	169.81	1001.08
7710.00	15.73	0.68	169.80	1001.04
7720.00	15.85	0.68	169.80	1001.03
7730.00	15.95	0.68	169.79	1000.96
7740.00	15.87	0.69	169.79	1000.92
7750.00	15.93	0.66	169.79	1000.88
7757.00	16.17	0.67	169.79	1000.86
** INTERVAL AVERAGES				
0.00	15.81	0.68	169.80	1001.00

FATR 7290'
FDN 7285'

7805.00	16.53	0.66	169.69	990.55
7810.00	16.79	0.66	169.69	990.49
7820.00	16.79	0.63	169.68	990.44
7830.00	16.77	0.65	169.67	990.42
7840.00	17.04	0.67	169.67	990.34
7850.00	16.57	0.66	169.67	990.29
7860.00	16.94	0.68	169.66	990.27
7870.00	16.62	0.71	169.66	990.26
7880.00	16.72	0.67	169.66	990.24
7890.00	16.73	0.67	169.66	990.28
7900.00	16.83	0.67	169.66	990.28
7905.00	16.74	0.70	169.65	990.25
** INTERVAL AVERAGES				
0.00	16.86	0.67	169.67	990.33

FATR 7235'
FDN 7230'

7945.00	16.04	0.68	169.58	984.47
7950.00	16.14	0.65	169.58	984.47
7960.00	16.33	0.67	169.57	984.47
7970.00	16.47	0.64	169.57	984.47
7980.00	16.46	0.66	169.56	984.47
7990.00	16.34	0.69	169.56	984.45
8000.00	16.57	0.69	169.56	984.41
8010.00	16.33	0.69	169.56	984.42
8020.00	16.37	0.65	169.56	984.39
8030.00	16.63	0.65	169.56	984.35
8040.00	16.33	0.67	169.55	984.32
8045.00	16.43	0.63	169.56	984.25
** INTERVAL AVERAGES				
0.00	16.42	0.67	169.56	984.43

8085.00	26.55	0.43	169.42	977.33
8090.00	27.02	0.45	169.41	977.48
8100.00	26.71	0.48	169.41	977.61
8110.00	26.74	0.48	169.40	977.57
8120.00	27.29	0.48	169.40	977.43
8130.00	26.72	0.49	169.40	977.22
8140.00	27.26	0.51	169.40	977.10
8150.00	27.05	0.48	169.40	976.99
8160.00	26.70	0.50	169.40	976.87
8170.00	27.10	0.50	169.40	976.81
8180.00	26.99	0.49	169.40	976.77
8185.00	27.06	0.48	169.40	976.74

FMTR 7205'
FDN 7200'

** INTERVAL AVERAGES ----------

0.00	26.90	0.49	169.40	977.19

8225.00	50.01	0.23	168.50	974.20
8230.00	50.41	0.23	168.52	974.09
8240.00	51.36	0.23	168.51	973.92
8250.00	51.06	0.24	168.52	973.81
8260.00	51.39	0.26	168.52	973.71
8270.00	51.61	0.26	168.53	973.66
8280.00	52.08	0.25	168.53	973.64
8290.00	51.97	0.26	168.53	973.64
8300.00	52.20	0.24	168.53	973.66
8310.00	52.35	0.25	168.51	973.65
8320.00	52.22	0.25	168.52	973.67
8325.00	52.71	0.24	168.52	973.68

FMTR 7185'
FDN 7180'

** INTERVAL AVERAGES ----------

0.00	51.66	0.25	168.52	973.75

8395.00	54.93	0.23	167.98	968.37
8400.00	55.48	0.22	167.97	968.31
8410.00	56.37	0.24	167.96	968.31
8420.00	56.23	0.22	167.95	968.31
8430.00	56.53	0.19	167.94	968.25
8440.00	56.33	0.21	167.93	968.18
8450.00	56.69	0.21	167.93	968.14
8460.00	56.29	0.20	167.93	968.05
8470.00	57.27	0.21	167.93	967.98
8480.00	57.24	0.22	167.93	967.96
8490.00	57.35	0.22	167.93	967.87
8495.00	57.82	0.22	167.93	967.87

FMTR 7135'
FDN 7130'

** INTERVAL AVERAGES ----------

0.00	56.72	0.21	167.94	968.14

7065.00	58.18	0.21	167.54	960.64
7070.00	57.52	0.20	167.54	960.60
7080.00	57.51	0.20	167.54	960.52
7090.00	57.58	0.20	167.54	960.43
7100.00	57.70	0.18	167.54	960.38
7110.00	57.32	0.21	167.54	960.28
7120.00	57.24	0.19	167.54	960.20
7130.00	56.99	0.21	167.54	960.14
7140.00	57.09	0.20	167.54	960.03
7150.00	57.35	0.21	167.54	959.97
7160.00	57.46	0.21	167.54	959.93
7170.00	57.43	0.21	167.54	959.91
7180.00	57.76	0.20	167.54	959.84
7190.00	57.62	0.21	167.55	959.80
7200.00	57.75	0.22	167.55	959.78
7205.00	57.53	0.21	167.55	959.76

FMTR 7065'
FDN 7060'

** INTERVAL AVERAGES ----------

0.00	57.43	0.20	167.55	960.13

E

RESERVOIR STRATIFICATION: ITS EFFECT ON PRODUCED GAS-OIL RATIOS

(AS NOTED EARLIER HEREIN - AND IN PRACTICALLY EVERY CASE BEFORE THE OIL CONSERVATION COMMISSION OF WEST PUERTO CHIQUITO - NOTE HAS BEEN MADE OF RESERVOIR STRATIFICATION, THE OPERATOR'S RECOGNITION OF IT AND ITS CONSEQUENT GAS HANDLING PROBLEMS)

PLATE I

CONSIDER A PERFECTLY STRATIFIED AND SEALED RESERVOIR:

A GAS ZONE AND AN OIL ZONE

GAS: 1000 MCF/D
OIL: 100 BOPD
GOR: 10,000 CF/BBL

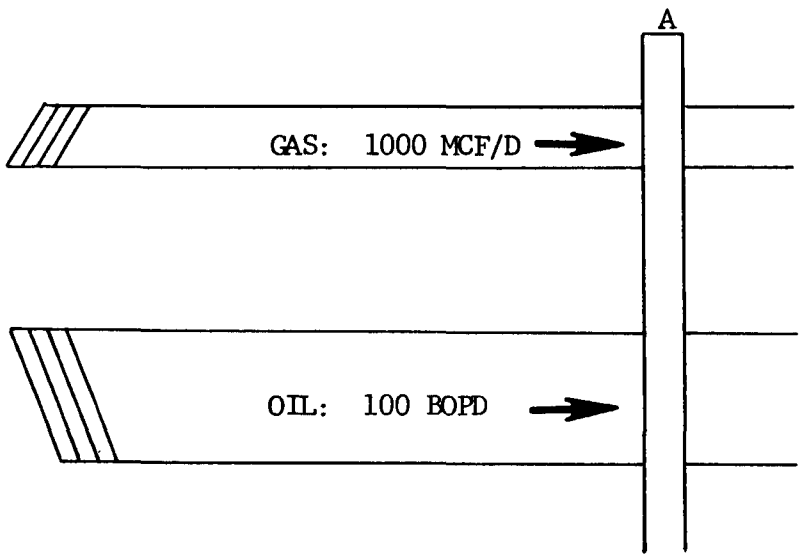


PLATE II

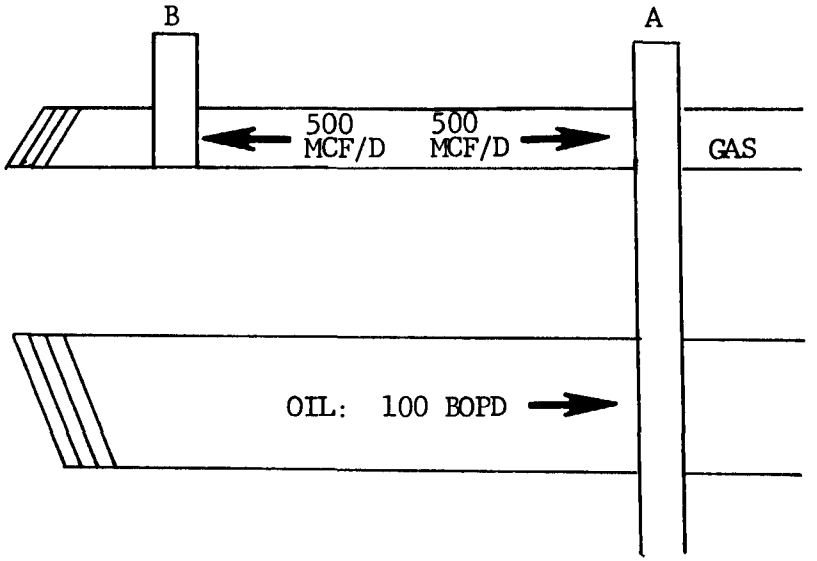
ADD TO CONDITIONS OF PLATE I:
A WELL COMPLETED ONLY IN THE GAS ZONE

WELL B

GAS: 500 MCF/D

WELL A

GAS: 500 MCF/D
OIL: 100 BOPD
GOR: 5000 CF/BBL



NOTE: WELL A GOR HAS DECREASED: BUT EFFICIENCY OF RECOVERY FROM OIL ZONE IS UNAFFECTED.

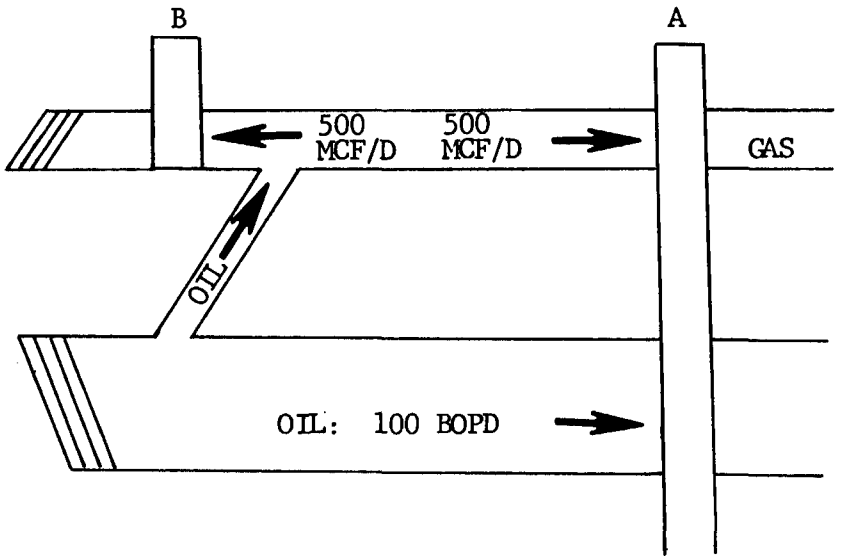
PLATE III

CONSIDER NOW CONDITION OF PLATE II EXCEPT THAT THE ZONES ARE
OCCASIONALLY CONNECTED BY NATURAL FAULTS AND/OR FRACTURES
OR
MAN-MADE HYDRAULICALLY INDUCED FRACTURES

THE HIGH MOBILITY OF THE GAS CAUSES THE GAS ZONE TO DIFFERENTIALLY DEPLETE FASTER THAN THE OIL ZONE, PERMITTING OIL TO MIGRATE INTO THE GAS ZONE WITH CONSEQUENT LOSS OF EFFICIENCY

WELL B

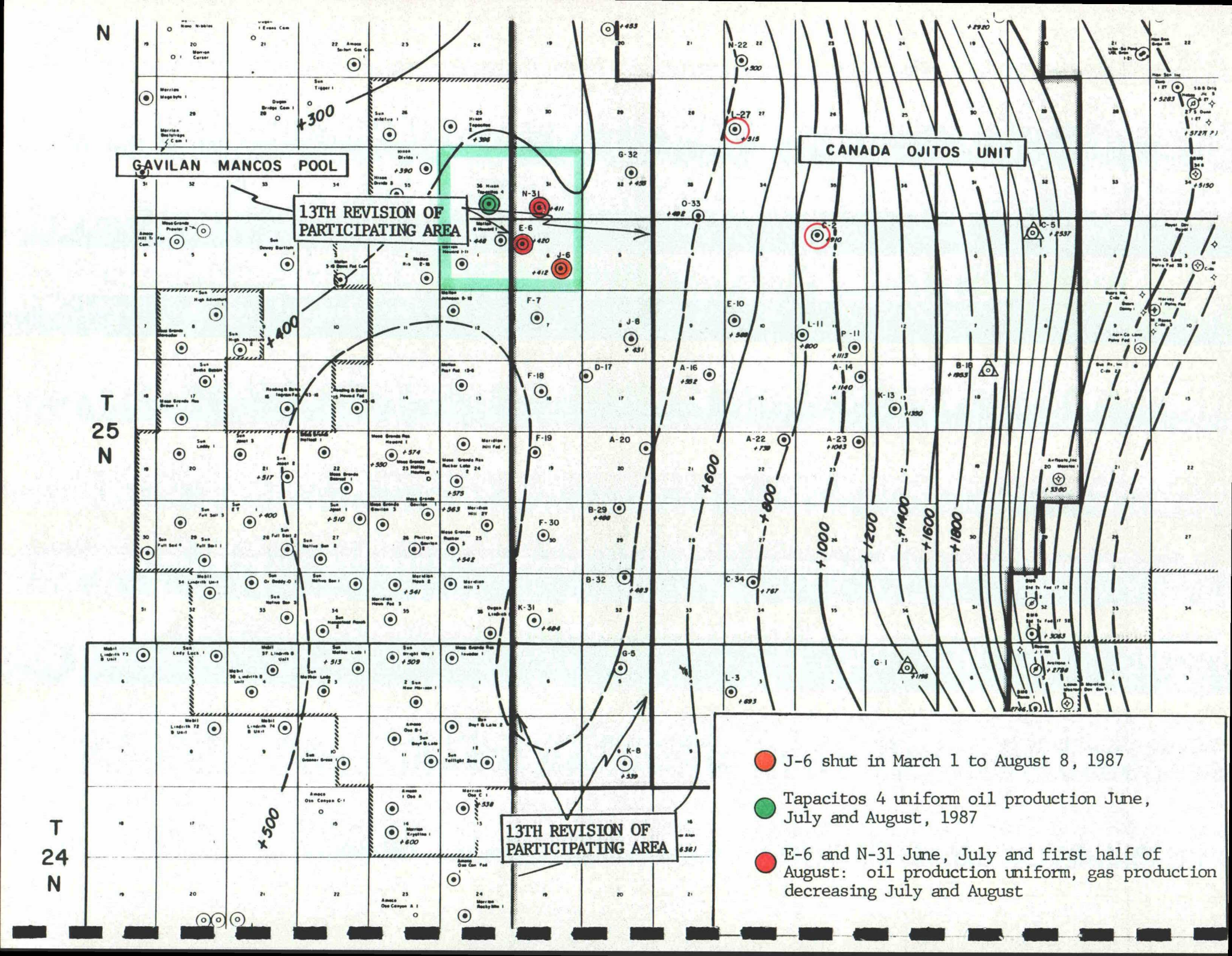
GAS: 500 MCF/D



WELL A

GAS: 500 MCF/D
OIL: 100 BOPD
GOR: 5000 CF/BBL

END RESULT: ADDITION OF WELL B AND ITS GAS ONLY PRODUCTION CAUSES A LOWERING OF THE GOR IN WELL A: BUT CONCURRENTLY A DECREASE IN OIL RESERVOIR RECOVERY EFFICIENCY - NOT AN INCREASE.


N
T 25 N
T 24 N
GAVILAN MANCOS POOL
13TH REVISION OF PARTICIPATING AREA
CANADA OJITOS UNIT
13TH REVISION OF PARTICIPATING AREA
+300
+400
+500
+600
+800
+1000
+1200
+1400
+1600
+1800
J-6 shut in March 1 to August 8, 1987
Tapacitos 4 uniform oil production June, July and August, 1987
E-6 and N-31 June, July and first half of August: oil production uniform, gas production decreasing July and August

EXAMPLE OF RESERVOIR STRATIFICATION AND REQUIREMENT FOR PRESSURE MAINTENANCE CREDIT TO RESTORE EQUITY IN BOUNDARY WELLS

Stratification of producing zones was described in Case No. 9113, March and April 1987. Further confirmation of stratification in the N-31 area (as shown by B-M-G Exhibit No. 1, Section G, of that case) and its associated gas handling problem as noted in Reservoir Description herein is illustrated by the production from the E-6, N-31 and Tapacitos 4 wells in July and August, 1987 (see plat on facing page).

The New Mexico Oil Conservation Commission ordered a period of high allowables commencing July 1, 1987. Traditionally the Unit Operator has produced wells at rates lower than their allowables and well completion practices and surface equipment were not designed to handle the large production rates permitted by the very high allowables set for this period. (Maximum allowable for 640 acre spaced wells in West Puerto Chiquito was 1280 BOPD and 2560 MCF/D). It took the Unit Operator several weeks to redesign and re-equip wells to produce at higher rates. Only minimal changes were required in the E-6 well; however none of the unit wells was produced at high rates until some of the modifications were completed. The subject E-6 well (and also the N-31) was produced in July and the first half of August under exactly the same conditions as had previously obtained; that is, with the same size chokes and same amount of input gas for gas lift. Apparently the Tapacitos 4 (operated by Hixon Development Corp.) was also produced at unchanged conditions.

The oil rate of these wells (E-6, N-31 and Tapacitos 4) during June, July and August was quite stable. However during July and August the gas volume dropped substantially; and as a consequence so did the GOR's. Since no change was made in the manner of production of the these three wells (and the J-6 was shut in), the cause of the lowering gas volume was not, as some have supposed, the result of more efficient reservoir mechanics at higher rates of production - since the production rates were not raised - rather, it could only be a consequence of drainage from these wells to the offset wells in Gavilan caused by the increased production from these offset wells. This means then, that the offending wells were those in Section 1, Township 25 North, Range 2 West which were produced at low rates or shut in for the months preceding July and then at high rates.

Concurrently with the high rates of production of the two wells in Section 1 (Howard 1-8, NE Section 1, and Howard 1-11, SW Section 1), the gas volumes - and accordingly the GOR's - on the E-6 and N-31, and Tapacitos 4, as well, commenced dropping. Statistics of the subject wells, and graph and detailed statistics for the E-6 production are shown on the following pages, along with some of the data for the wells in Section 1.

Of significance in analyzing this part of reservoir performance is that Gavilan's dominant zones appear to be the A and B zones. The same is true for the Canada Ojitos Unit N-31 (solid red circle, production log March 1987), the L-27 (open red circle, initial drilling and production log August 1987), the Canada Ojitos Unit C-2 (open red circle, initial completion data); and believed to be the same for the Canada Ojitos Unit E-6 (proximity to N-31 plus frac pulse test).

EXAMPLE OF RESERVOIR STRATIFICATION
AND
REQUIREMENT FOR PRESSURE MAINTENANCE CREDIT TO RESTORE EQUITY IN BOUNDARY WELLS

The graph on the facing page shows oil and gas production for the E-6 well during the subject test period. The high rate of gas production during July and August from the offsetting wells in Section 1, Township 25 North, Range 2 West pulled gas from the area of the E-6 (and N-31 and Tapacitos 4, as well).

Since in these three wells, the gas production was affected but the oil production was not, our assessment is that the majority of the gas is coming from a stratified zone - probably the A zone*, and it is probable that a substantial part of the gas is that which has been injected in the pressure maintenance project. (If the zones were not stratified or fluids segregated by gravity, then, not only the gas but the oil rate as well, would have been affected; and, if as some have concluded, the production mechanism is solution gas drive, the GOR's would have remained the same.)

A rational conclusion then is that to the extent that excess injected gas is intercepted by unit wells, the offsetting wells in Section 1 would be spared the high gas volumes and high GOR's; and instead would have exhibited more stable GOR's.

It is clear then that absent the Unit Operator's being permitted to produce the excess injected gas as contemplated by the pressure maintenance project rules that two inequities result:

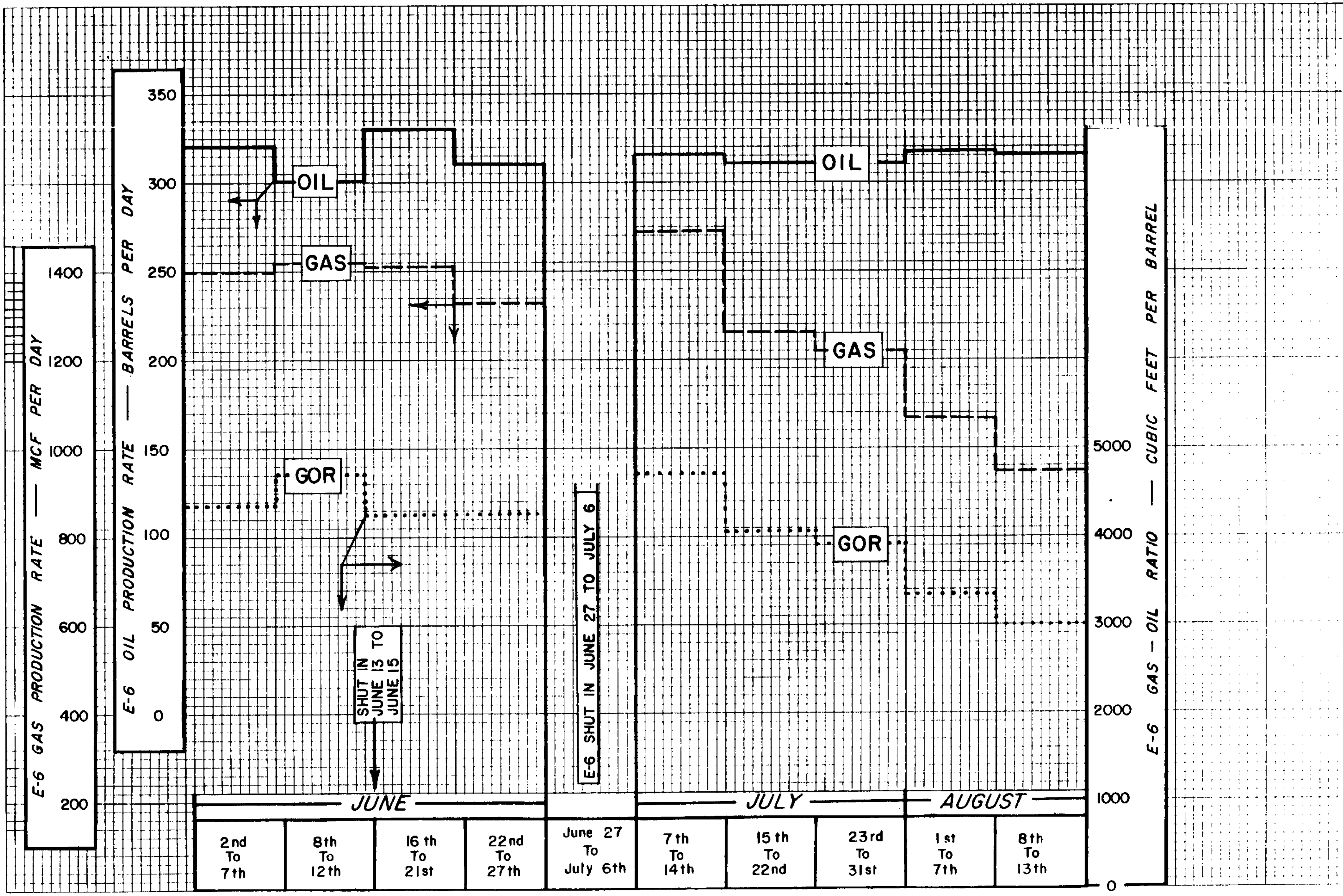
(1) unit gas is drawn to wells outside the unit (inequity suffered by the unit wells); and

(2) the excess gas to the outside wells causes GOR's of these outside wells to be higher than would otherwise be the case - and their oil allowables consequently reduced because of high GOR (inequity suffered by the outside wells).

The amount of the gas production from the offsetting wells in Section 1 is shown by an overlay on the next succeeding graph.

* Production log of the N-31 March 10, 1987 showed most of the gas coming from the A zone (New Mexico Oil Conservation Commission Case 9113, March and April 1987, B-M-G Exhibit No. 1, Section G). Also, gas breakthrough in the A zone has occurred in the L-27 (reference plat at beginning of this section and production log of August 1987); and is probably the same for the C-2.

CANADA OJITOS UNIT E-6 PRODUCTION STATISTICS JUNE, JULY & AUGUST 1987



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EXAMPLE OF RESERVOIR STRATIFICATION
AND
REQUIREMENT FOR PRESSURE MAINTENANCE CREDIT TO RESTORE EQUITY IN BOUNDARY WELLS

The graph on the facing page is the same as the preceding graph with an overlay (shaded) of the sum of the gas production from the two wells in Section 1, Township 25 North, Range 2 West.

It shows high rates of gas production from the Section 1 wells in July and August is coincident with lowering of gas production and GOR of the Canada Ojitos Unit E-6.

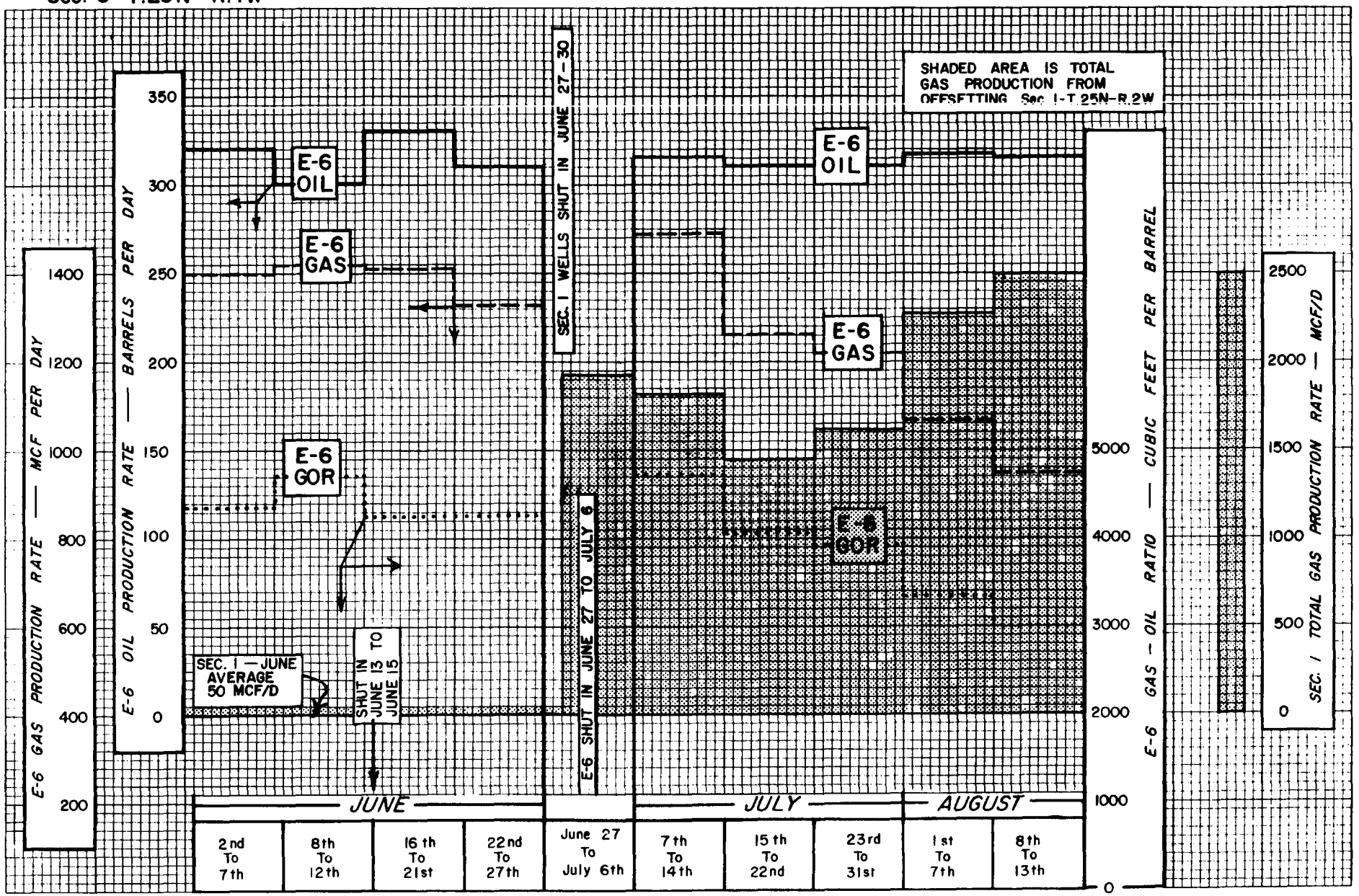
SUMMARY OF PRODUCTION STATISTICS OF SUBJECT WELLS
(J-6 SHUT IN UNTIL SECOND WEEK IN AUGUST)

	COU E-6			COU N-31			Tapacitos 4			Howard 1-8			Howard 1-11		
	Oil	Gas	GOR	Oil	Gas	GOR	Oil	Gas	GOR	Oil	Gas	GOR	Oil	Gas	GOR
1987															
April	1290	2560	1985	1967	5330	2710	4592	2667	581	363	2240	6171	815	5901	7240
May	-	-	-	936	2283	2439	4548	4562	1003	1177	2438	2071	-	-	-
June	7128*	31191*	4376	3850*	10011*	2600	3320*	3048*	918	-	2595	-	-	-	-
July	7820	32926	4210	5288	13611	2574	4350	3676	845	7697	20686	2688	5419	27947	5157
August	11180	28046	2509	5912	7956	1346	4240	3007	709	8596	27795	3233	5400	31760	5881

* Produced 24 days in June.

CANADA OJITOS UNIT E-6
Sec. 6-T.25N-R.1W

PRODUCTION STATISTICS JUNE, JULY & AUGUST 1987



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CANADA OJITOS UNIT E-6
JUNE, 1987 PRODUCTION
CORRECTED FIELD READINGS (ADJUSTED TO CONFORM WITH ACTUAL MONTHLY TOTALS)

Date	Uncorrected Daily Field Readings Oil BOPD	Uncorrected Daily Field Readings Gas MCF/D	Corrected Daily Field Readings Oil BOPD	Corrected Daily Field Readings Gas MCF/D	Summaries by periods of approx. one week: Dates Averaged	No. Days	Total Oil Bbls	Total Gas MCF	Averages for Period: Oil BOPD	Gas MCF/D	GOR CF/Bbl
6-2	347	1450	341	1480							
6-3	334	1400	328	1429							
6-4	325	1360	319	1389							
6-5	320	1340	314	1368							
6-6	320	1340	314	1368							
6-7	318	1330	312	1358	6/2-6-7	6	1928	8392	321	1399	4358
6-8	283	1280	278	1307							
6-9	230	1040	226*	1062*							
6-10	296	1340	291	1368							
6-11	316	1430	310	1460							
6-12	322	1460	316	1491	6/8-6/12	5	1505	7076	301	1415	4701
6-13	-	-	-	-							
6-14	-	-	-	-							
6-15	-	-	-	-							
6-16	384	1570	377	1603							
6-17	342	1400	336	1429							
6-18	334	1370	328	1399							
6-19	326	1340	320	1368							
6-20	316	1300	310	1327							
6-21	244	1000	240*	1021*	6/16-6/21	6	1981	8446	330	1408	4267
6-22	322	1320	316	1348							
6-23	314	1290	308	1317							
6-24	322	1320	316	1348							
6-25	319	1310	314	1337							
6-26	303	1240	299	1266							
6-27	321	1320	315	1348	6/22-6/27	6	1868	7964	311	1327	4267
6-28	-	-	-	-							
6-29	-	-	-	-							
6-30	-	-	-	-							
	7258	30550	7128	31191							

* Note: Well produced only 18 hours 6/9 and 6/21: in averages use 310 BOPD both days and 1450 MCF 6/9 and 1320 MCF 6/21.

CANADA OJITOS UNIT E-6
JULY, 1987 PRODUCTION
CORRECTED FIELD READINGS (ADJUSTED TO CONFORM WITH ACTUAL MONTHLY TOTALS)

Date	Uncorrected Daily Field Readings Oil BOPD	Uncorrected Daily Field Readings Gas MCF/D	Corrected Daily Field Readings Oil BOPD	Corrected Daily Field Readings Gas MCF/D
7-1	-	-	-	-
7-2	-	-	-	-
7-3	-	-	-	-
7-4	-	-	-	-
7-5	-	-	-	-
7-6	-	-	-	-
7-7	349	1540	355	1678
7-8	335	1470	341	1602
7-9	319	1400	324	1525
7-10	304	1340	309	1460
7-11	289	1270	294	1384
7-12	292	1280	297	1395
7-13	294	1290	299	1406
7-14	301	1320	306	1438
7-15	308	1350	313	1471
7-16	314	1200	319	1307
7-17	299	1150	304	1253
7-18	298	1100	303	1198
7-19	301	1100	306	1198
7-20	312	1130	317	1231
7-21	305	1100	310	1198
7-22	311	1130	316	1231
7-23	321	1160	326	1264
7-24	285	1050	290	1144
7-25	310	1130	315	1231
7-26	309	1130	314	1231
7-27	285	1050	290	1144
7-28	293	1050	298	1144
7-29	282	1030	287	1122
7-30	346	1250	352	1363
7-31	330	1200	335	1308
	7692	30220	7820	32926

Summaries by periods of approx. one week

Dates Averaged	No. Days	Total Oil Bbls	Total Gas MCF	Averages for Period Oil BOPD	Gas MCF/D	GOR CF/Bbl
7/7-7/14	8	2525	11888	316	1486	4703
7/15-7/22	8	2488	10087	311	1261	4055
7/23-7/31	9	2807	10951	312	1217	3901

CANADA OJITOS UNIT E-6
AUGUST, 1987 PRODUCTION
CORRECTED FIELD READINGS (ADJUSTED TO CONFORM WITH ACTUAL MONTHLY TOTALS)

Date	Uncorrected Daily Field Readings Oil BOPD	Uncorrected Daily Field Readings Gas MCF/D	Corrected Daily Field Readings Oil BOPD	Corrected Daily Field Readings Gas MCF/D
8-1	326	1050	323	1121
8-2	312	1030	309	1100
8-3	324	1000	321	1068
8-4	297	1000	294	1068
8-5	338	980	335	1047
8-6	327	960	324	1025
8-7	314	940	311	1004
8-8	308	920	305	983
8-9	301	900	298	961
8-10	320	900	317	961
8-11	348	890	345	951
8-12	324	870	321	929
8-13	314	850	311	908
8-14	22	40	22	43
8-15	343	920	340	983
8-16	439	840	435	897
8-17	421	840	417	897
8-18	438	840	434	897
8-19	431	820	427	876
8-20	425	820	421	876
8-21	379	800	376	854
8-22	401	800	397	854
8-23	428	800	424	854
8-24	406	780	402	833
8-25	413	770	409	822
8-26	399	760	395	812
8-27	401	760	397	812
8-28	386	730	382	780
8-29	471	890	467	951
8-30	459	870	456	928
8-31	468	890	465	951
	11283	26260	11180	28046

Summaries by periods of approx. one week

Dates Averaged	No. Days	Total Oil Bbls	Total Gas MCF	Averages for Period Oil BOPD	Gas MCF/D	GOR CF/Bbl
8/1-8/7	7	2217	7433	317	1062	3350
8/8-8/13	6	1897	5693	316	949	3003
8/15-8/23	9	3671	7988	408	888	2176
8/24-8/31	8	3373	6889	422	861	2040

Note: August 14 shut in 23 hours - data omitted. Commenced increasing production rate August 15.

MALLON HOWARD 1-8 AND HOWARD 1-11
SECTION 1, TOWNSHIP 25 NORTH, RANGE 2 WEST

JULY AND AUGUST, 1987 GAS PRODUCTION
CORRECTED FIELD READINGS (ADJUSTED TO CONFORM WITH ACTUAL MONTHLY TOTALS)

	HOWARD 1-8 Daily Averages in MCF/D		HOWARD 1-11 Daily Averages in MCF/D		
Date	Uncorrected Daily Field Readings	Corrected Daily Field Readings	Uncorrected Daily Field Readings	Corrected Daily Field Readings	Total Corrected Field Readings
July					
1- 6	643	562	1708	1352	1914
7-14	977	855	1210	958	1813
15-22	1038	908	674	534	1442
23-31	852	745	1109	878	1623
Total MCF/Mo	23649	20686	35298	27947	
August					
1- 7	872	736	1340	1540	2276
8-13	1133	957	1330	1530	2487
Total MCF/Mo	32922	27795	27628	31760	

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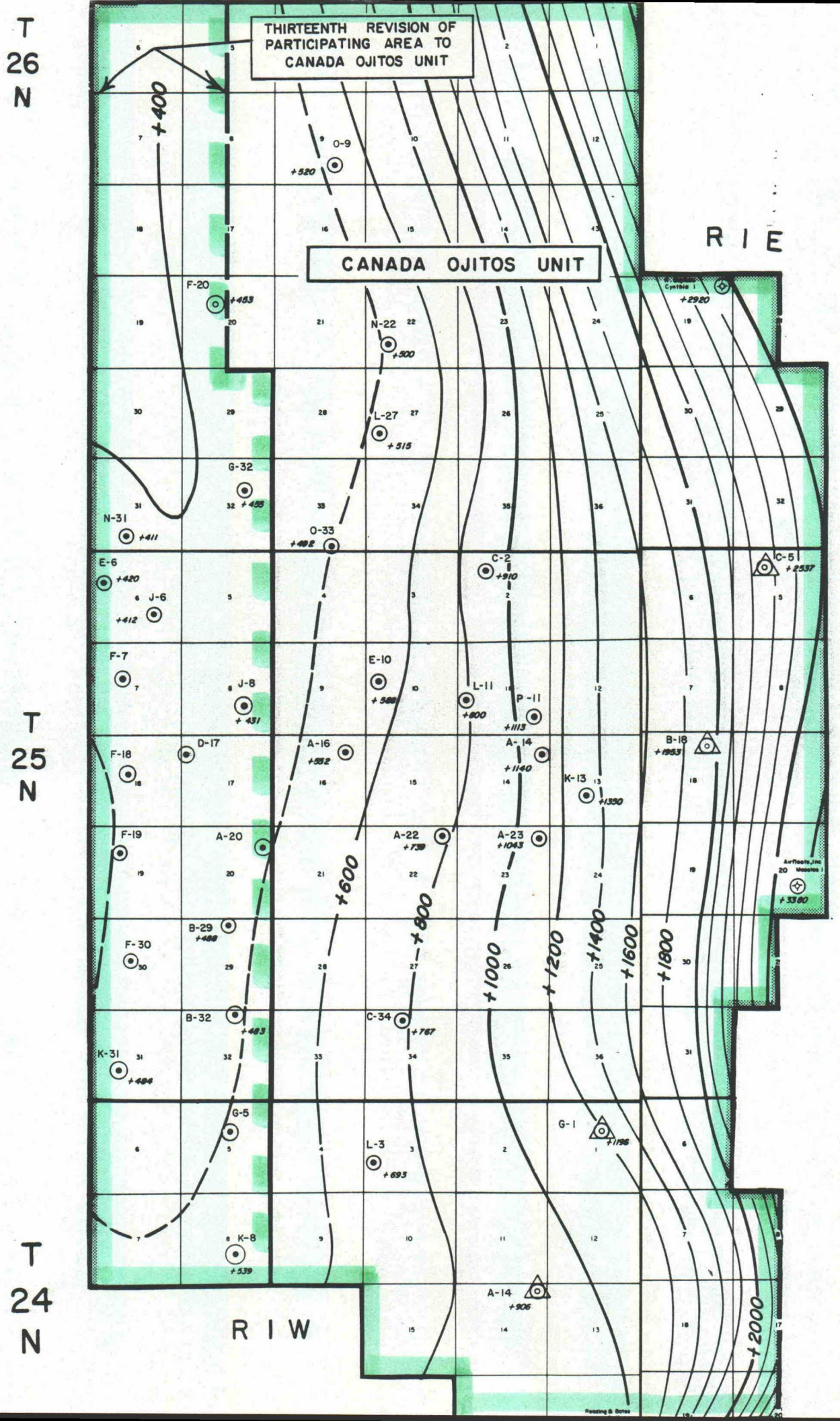

THIRTEENTH REVISION OF PARTICIPATING AREA TO CANADA OJITOS UNIT
CANADA OJITOS UNIT
T 26 N
T 25 N
T 24 N
R I W
R I E
+400
+600
+800
+1000
+1200
+1400
+1600
+1800
+2000
O-9 +520
F-20 +453
N-22 +500
L-27 +515
G-32 +455
N-31 +411
O-33 +492
E-6 +420
J-6 +412
C-2 +910
Cymbia 1 +2920
IC-5 +2537
F-7
J-8 +451
E-10 +588
L-11 +800
P-11 +1113
F-18
D-17
A-16 +552
A-14 +1140
B-18 +1953
K-13 +1350
F-19
A-20
A-22 +739
A-23 +1043
Airfloats, Inc Maestro 1 +3380
B-29 +488
F-30
B-32 +483
C-34 +767
K-31 +484
G-5
L-3 +693
G-1 +1196
K-8 +539
A-14 +906

COMMUNICATION OF CANADA OJITOS UNIT PRESSURE MAINTENANCE PROJECT AREA WITH PROPOSED EXPANSION AREA AS EVIDENCED BY OVERINJECTION

The plat on the facing page shows outline of the Canada Ojitos Unit; and identified thereon is the 13th revision of the participating area.

The existing pressure maintenance project area covers all lands except those added by the 13th revision. The Unit Operator proposes that the lands added to the participating area in the 13th revision also be added to the pressure maintenance project. The reservoir under the lands added to the pressure maintenance project must be in communication with it.

One measure of communication of the present project area with the proposed expansion area is gas injection of a substantial amount of reservoir volume above reservoir withdrawals ("overinjection") in the existing project area with no measureable increase in pressure.

As shown by the statistics on the following pages, during the NMOCC-ordered test period July through November 1987, the existing project area was "overinjected" at an average rate of approximately 3300 reservoir barrels per day, without a pressure increase. Also for the test period November 1987 to February 20, 1988, the existing project area was overinjected at an average rate of 1900 reservoir barrels per day without a pressure increase.

Summaries of these statistics for the existing project area are set out below:

	Test Period July 1987 to November 1987	Test Period Nov. 1987 to February 1988
Withdrawals for test period (M reservoir barrels/day):	515	152
Injection for test period (M reservoir barrels/day):	954	319
Injection less withdrawals (M reservoir barrels/day):	439	167
Test period (days):	135	90
Average rate of overinjection (M reservoir barrels/day):	3.3M ~~3300~~	1.9M ~~1900~~

(Presumably the transfer from the existing project area into the expansion area was part oil and part gas).

It is reasonable to assume that this overinjection was dissipated in only one place: the reservoir west of the existing project area.

This logic is supported by the direction of pressure gradients across the reservoir as described in the three sections following.

SUMMARY OF RESERVOIR WITHDRAWALS AND INJECTION
CANADA OJITOS UNIT PRESSURE MAINTENANCE PROJECT AREA
FOR PERIOD JULY TO NOVEMBER, 1987

WITHDRAWALS

	L-11		E-10		L-27		N-22		O-9		L-3		A-16		O-33	
	Oil (Bbls)	Gas (MCF)	Oil (Bbls)	Gas (MCF)	Oil (Bbls)	Gas (MCF)	Oil (Bbls)	Gas (MCF)	Oil (Bbls)	Gas (MCF)	Oil (Bbls)	Gas (MCF)	Oil (Bbls)	Gas (MCF)	Oil (Bbls)	Gas (MCF)
July	-	-	11571	38789	3961	10376	2253	2084	324	379	-	-	257	189	588	1716
August	110	23211	9180	48427	4737	13463	1994	1073	18	26	-	-	20	35	216	1176
September	9	3542	5853	41124	4879	11453	2267	894	292	300	486	345	141	555	740	2221
October	-	-	905	7080	4654	11455	2113	850	-	-	383	302	-	-	609	1629
November	-	-	3656	29803	3733	10161	2139	920	148	174	234	185	-	-	249	566
	119	26753	31165	165223	21964	56908	10766	5821	782	879	1103	832	418	779	2402	7308
Reservoir Bbls (M Bbls)	0.2	48.1	39.9	275.0	28.1	86.6	13.8	2.7	1.0	1.0	1.4	0.7	0.5	1.1	3.1	11.4

Total M Bbls 515

Note: Reservoir voidage determined by using oil FVF of 1.28 and 1.8 bbls/MCF of free gas above 400 cf/bbl.

INJECTION

	B-18	C-5	G-1	A-14	Total
July	114769	10917	14957	22867	163510
August	69395	8762	13059	18489	109705
September	49194	5466	8022	8020	70702
October	91423	13208	15609	21315	141555
November	42172	2189	923	776	46060
	366953	40542	52570	71467	531532
Totals (MMCF)	366	40	53	71	530

Gas volume injected converted to resrevoir barrels at 1.8 bbls/MCF: 530 MMCF x 1.8 = 954 M reservoir bbls.

954 M reservoir bbls
Less 515 M reservoir bbls
439 M reservoir bbls overinjected

439,000 bbls divided by 135 days = ± 3300 reservoir bbls per day overinjection.

PRESSURE CHANGE IN PRESSURE MAINTENANCE PROJECT AREA
CANADA OJITOS UNIT
JULY TO NOVEMBER, 1987

THREE-DAY SHUT-IN PRESSURES TAKEN AT TIMES OF NMOCC-ORDERED PRESSURE SURVEYS OF JUNE AND NOVEMBER, 1987

	Surface Pressures (Psig DWT)							Bottom Hole Pressures (Psia)
Well:	C-5	B-18	G-1	A-14	K-13	C-2	C-34	C-34
Zones Open:	ABC	ABC	ABC	C	C	ABC	AB	AB
Survey Date								
7-01-87	1587	1687.5	1422.5	1422.5	1252.5	1167	1161	1438
11-19-87	1746	1693	1340	1171	1248	1140	1130	1403
Pressure Change	+159	+6	-83	-252	-4	-27	-31	-35

Notes:

C-5: No injection for 10 years prior to July 1 survey. Pressure at November survey is following injection.

C-34: November pressure taken 11-20-87.

C-2: July pressure taken 7-18-87.

Because of interference effects of both injection wells and production wells, it is difficult to determine an accurate weighted average pressure for the project area; or pressure change during the subject test period. However, a reasonable interpretation of the available data indicates that pressure did not increase during the test period - rather, the injection area suffered a pressure decline. The only well with a substantial pressure increase was the C-5. This well is in an exceptionally tight part of the reservoir, receiving only 8% of the total injection; so its pressure increase is believed to be primarily interference effect. Only a small amount of gas was injected in the G-1 and A-14 during November; so these wells had a better opportunity to reflect pressures over wider areas.

The C-34 is believed to be less influenced by injection or production than the other above-listed wells with perhaps the C-2 next. Both surface and bottom hole pressures are available for the C-34 but only surface pressures for the C-2. The GOR for the C-2 is high enough to suggest that the surface pressure changes will reflect bottom hole pressure changes in this well (after allowing for weight of column of gas); and should be accurate as to this element.

SUMMARY OF RESERVOIR WITHDRAWALS AND INJECTION
CANADA OJITOS UNIT PRESSURE MAINTENANCE PROJECT AREA
FOR PERIOD DECEMBER, 1987 TO FEBRUARY 20, 1988

WITHDRAWALS

	L-11		E-10		L-27		N-22		O-9		L-3		C-34		O-33	
	Oil (Bbls)	Gas (MCF)	Oil (Bbls)	Gas (MCF)	Oil (Bbls)	Gas (MCF)	Oil (Bbls)	Gas (MCF)	Oil (Bbls)	Gas (MCF)	Oil (Bbls)	Gas (MCF)	Oil (Bbls)	Gas (MCF)	Oil (Bbls)	Gas (MCF)
December	-	-	227	1829	3274	7582	2057	858	325	359	323	223	382	3908	347	979
January	-	-	1548	14026	4734	12573	1955	963	269	312	278	255	118	1584	382	1305
February	418	3542	556	12900	2848	7120	1384	555	226	210	-	-	225	2670	-	-
	418	26753	2331	28755	10856	27275	5396	2376	820	881	601	478	725	8162	729	2284
Reservoir Bbls (M Bbls)	0.5	13.4	3.0	50.1	13.9	41.3	6.9	0.4	1.0	1.0	0.8	0.4	0.9	14.2	0.9	3.6

Total M Bbls 152.3

Note: Reservoir voidage determined by using oil FVF of 1.28 and 1.8 bbls/MCF of free gas above 400 cf/bbl.

INJECTION

	B-18	C-5	G-1	A-14	Total
December	32679	-	1122	2272	36073
January	47049	-	41788	26837	115674
Feburary	25630	-	-	-	25630
	105358	0	42910	29109	177377
Totals (MMCF)	105	0	42	29	177

Gas volume injected converted to reservoir barrels at 1.8 bbls/MCF: 177 MMCF x 1.8 = 319.3 M reservoir bbls.

319.3 M reservoir bbls
Less 152.3 M reservoir bbls
167.0 M reservoir bbls overinjected

167,000 bbls divided by 90 days = ± 1900 reservoir bbls per day overinjection.

PRESSURE CHANGE IN PRESSURE MAINTENANCE PROJECT AREA
CANADA OJITOS UNIT
NOVEMBER 1987 TO FEBRUARY, 1988

THREE-DAY SHUT-IN PRESSURES TAKEN AT TIMES OF NMOCC-ORDERED PRESSURE SURVEYS OF NOVEMBER 1987 AND FEBRUARY 1988

	Surface Pressures (Psig DWT)					
Well:	C-5	B-18	G-1	A-14	K-13	C-2
Zones Open:	ABC	ABC	ABC	C	C	ABC
Survey Date						
11-19-87	1746	1693	1340	1171	1248	1140
2-23-88	1592	1604	1344	1178	1214	1142
Pressure Change	-154	-89	+4	+7	-34	+2

Notes:

C-5: Pressure taken 2-24-88 at 8:46 AM.

Because of interference effects of both injection wells and production wells, it is difficult to determine an accurate weighted average pressure for the project area; or pressure change during the subject test period. However, a reasonable interpretation of the available data indicates that pressure did not increase during the test period - rather, the injection area suffered a pressure decline.

PRESSURE CHANGE IN PRESSURE MAINTENANCE PROJECT AREA
CANADA OJITOS UNIT
JULY 1987 TO FEBRUARY, 1988

THREE-DAY SHUT-IN PRESSURES TAKEN AT TIMES OF NMOCC-ORDERED PRESSURE SURVEYS OF JULY 1987 AND FEBRUARY 1988

	Surface Pressures (Psig DWT)					
Well:	C-5	B-18	G-1	A-14	K-13	C-2
Zones Open:	ABC	ABC	ABC	C	C	ABC
Survey Date						
7-01-87	1587	1687.5	1422.5	1422.5	1252.5	1167
2-23-88	1592	1604	1344	1178	1214	1142
Pressure Change	+5	-83.5	-78.5	-244.5	-38.5	-25

Notes:

C-2: July pressure taken 7-18-87.

C-5: February pressure taken 2-24-88 at 8:46 AM.

Because of interference effects of both injection wells and production wells, it is difficult to determine an accurate weighted average pressure for the project area; or pressure change during the subject test period. However, a reasonable interpretation of the available data indicates that pressure did not increase during the test period - rather, the injection area suffered a pressure decline.

The above comparison of pressures for the 8 month period from July 1987 to February 1988 is more definitive of the pressure change than are the individual surveys for the two periods.

Total overinjection:

July 1987 to November 1987:	439 M reservoir barrels
November 1987 to February 1988:	167 M reservoir barrels
	606 M reservoir barrels

G

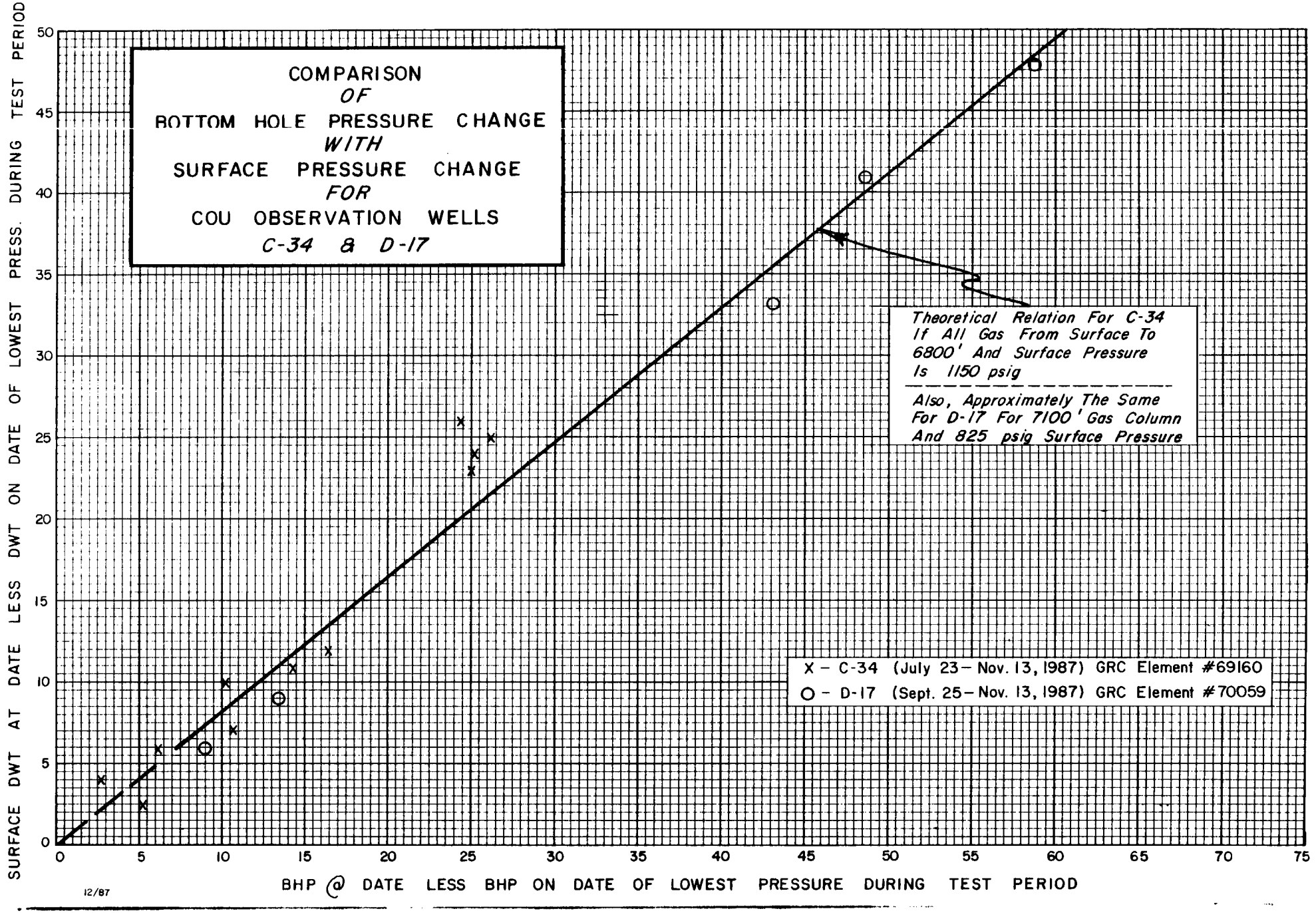
EVIDENCE OF COMMUNICATION OF WELLS IN PROPOSED PRESSURE MAINTENANCE PROJECT EXPANSION LANDS WITH EXISTING PROJECT AREA BY PRESSURE GRADIENT ACROSS THE RESERVOIR (PRESSURE SURVEY NOVEMBER 28, 1987)

As noted in the preceding section, the existing pressure maintenance project area was overinjected during the July to November period (even though gas was marketed part of this time). That the overinjection was dissipated in the proposed expansion area is evidenced by the strong pressure gradient across the reservoir from injection wells to the proposed expansion area.

Information in this section provides the basis for constructing a pressure contour map showing this strong pressure gradient. This pressure contour map is based on surface pressures adjusted to a common (7500') elevation in the manner described in the following pages.

For the reasons set out in the following pages, surface pressures (as opposed to bottom hole pressures) were used to construct the pressure contour map. Given the GOR's of the wells used for the map - and the fact that they are produced by gas lift - these surface pressures are an accurate reflection of the well's reservoir pressures.

An example of this reflection of bottom hole pressure in surface pressures is shown by changes in bottom hole pressures as reflected by changes in surface pressures of two Canada Ojitos Unit wells in which a comparison was made over a number of tests (next succeeding pages - 2 yellow sheets and 2 green sheets).


COMPARISON
OF
BOTTOM HOLE PRESSURE CHANGE
WITH
SURFACE PRESSURE CHANGE
FOR
COU OBSERVATION WELLS
C-34 & D-17
Theoretical Relation For C-34 If All Gas From Surface To 6800' And Surface Pressure Is 1150 psig
Also, Approximately The Same For D-17 For 7100' Gas Column And 825 psig Surface Pressure
X - C-34 (July 23 - Nov. 13, 1987) GRC Element #69160
O - D-17 (Sept. 25 - Nov. 13, 1987) GRC Element #70059
SURFACE DWT AT DATE LESS DWT ON DATE OF LOWEST PRESS. DURING TEST PERIOD
BHP @ DATE LESS BHP ON DATE OF LOWEST PRESSURE DURING TEST PERIOD
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
12/87

EVIDENCE OF COMMUNICATION OF WELLS IN PROPOSED PRESSURE MAINTENANCE PROJECT EXPANSION LANDS WITH EXISTING PROJECT AREA BY PRESSURE GRADIENT ACROSS THE RESERVOIR (USE OF SURFACE PRESSURES IN ESTIMATING BOTTOM HOLE PRESSURES)

Most of the producing wells in the Canada Ojitos Unit now (1987) have GOR's of 1000 cubic feet per barrel or greater. For these wells which are produced by gas lift and with low flowing pressure drawdowns (and consequent small pressure increase or "build-up"), the surface shut-in pressures are a rather accurate reflection of producing formation pressures since, under the circumstances a gas column exists from the surface to the producing formation.

Example of the reflection of changes in bottom hole pressures in changes of surface pressures is shown for the two observation wells C-34 and D-17 on the graph facing this page. Statistics of the data used in preparing the graph are set out on the following pages.

The straight line on the graph shows the theoretical relation of change in bottom hole pressure with change in surface pressure for the conditions shown. For example, if the surface pressure changes 30#, one would expect a 36# change in bottom hole pressure.

CANADA QUITOS UNIT OBSERVATION WELL C-34
COMPARISON OF
SURFACE DEAD WEIGHTS WITH BOTTOM HOLE PRESSURES

(BOTTOM HOLE PRESSURES MEASURED WITH GRC 520 PRESSURE GAUGES)

1987 Date	Dead Weight (Psig)	Bottom Hole Pressure (Psia)	Difference From Low Reading of 9-25-87	
			Dead Weight	Bottom Hole Pressure
7-23	1155	1425.1	26	24.4
7-31	1154	1425.5	25	26.2
8- 5	1153	1424.6	24	25.3
8-11	1152	1424.4	23	25.0
9-11	1139	1409.6	10	10.3
9-18	1135	1405.5	6	6.1
9-25	1129	1399.3	0	0
10- 2	1133	1402.0	4	2.7
10-16	1140	1413.7	11	14.4
11- 2	1141	1415.8	12	16.5
11- 7	1136	1410.1	7	10.8
11-13	1131.5	1404.2	2.5	5.4

CANADA OJITOS UNIT OBSERVATION WELL D-17
COMPARISON OF
SURFACE DEAD WEIGHTS WITH BOTTOM HOLE PRESSURES

(BOTTOM HOLE PRESSURES MEASURED WITH GRC 520 PRESSURE GAUGES)

1987 Date	Dead Weight (Psig)	Bottom Hole Pressure (Psia)	Difference From Low Reading of 11-13-87	
			Dead Weight	Bottom Hole Pressure
9-25	855	1052.7	48	58.7
10- 2	848	1042.7	41	48.7
10- 9	840	1037.6	33	43.6
11- 2	816	1006.7	9	13.7
11- 7	813	1002.1	6	9.1
11-13	807	994.0	0	0

EVIDENCE OF COMMUNICATION OF WELLS IN PROPOSED PRESSURE MAINTENANCE PROJECT EXPANSION LANDS WITH EXISTING PROJECT AREA BY PRESSURE GRADIENT ACROSS THE RESERVOIR (PRESSURE SURVEY NOVEMBER 28, 1987)

A strong pressure gradient exists from the area of the injection wells to the downdip producing wells in the Canada Ojitos Unit. This pressure gradient is identified by the contour map of surface pressures next following these introductory pages.

As noted in the preceding part of this section - given the GOR's of the unit wells used for the contour map and the fact that they are produced by gas lift - the surface pressures of these wells will be rather accurate reflections of their bottom hole pressures.

If the density of the reservoir fluids were that of gas - the same as in the wellbores - then the surface pressures (when adjusted to a common elevation) would provide a proportionately exact reflection of pressure differences ("pressure gradients") among the wells across the reservoir.

The density of the reservoir fluids is presumably greater than that of gas so exact areal reservoir pressure gradients cannot be made from surface pressures alone. However, in this instance minimum pressure gradients can be determined independent of the reservoir fluid density since the structure dips from east to west - in the same direction as the surface pressures indicate the gradient to be - so any adjustment of pressures to a common datum (from reservoir fluid density and structural position) would show a stronger pressure gradient than that indicated from surface pressures alone.

For this survey it was desirable to determine a trend of individual well pressures with time over the 10-day shut-in period. To do this with bottom hole equipment would require more pressure gauges and manpower than would be practicable. In addition for our purposes here, there are virtues in using surface pressures adjusted to a common surface elevation as opposed to using bottom hole pressures adjusted to a common datum to determine area-wide pressure gradients. These virtues are identified below in comparing the sources of error of one type survey with the other.

1. Error of bomb calibration: It is practically impossible to achieve a high degree of accuracy when a number of different bombs are used, different deadweight testers for standards, different methods of calibration, different responses to temperature changes, etc. (For the Amerada RPG-3 instruments corrections for temperature alone - for the same instrument but calibrated at different times - has shown pressure differences of several pounds for the same subsurface temperature).

Since the important matter in determining pressure gradients across the reservoir is the difference in pressures from well to well, if the same deadweight tester is used, then the error of calibration is eliminated entirely.

2. Error of hole deviation: If the hole deviates from vertical, then the true vertical depth will be different from the measured depth. Using bottom hole pressures this error will show up in the adjustment of pressure to a common datum. On the other hand, using surface pressures and for a hole filled with gas, the surface pressure reflected by the bottom hole pressure will be a consequence of the true vertical depth - and hole deviation will not affect the measured pressure.

3. Error of depth as shown by wireline: Unless the wirelines are calibrated, there is no assurance that pressures measured will be comparable. This affects the accuracy of the bottom hole pressure. Use of surface pressures eliminates entirely this source of error.

4. Error of surface elevation: In dealing with bottom hole pressures, if the formation fluids have a reservoir density equivalent to oil, then this density will be about three times (.3# per square inch per foot versus .03# per square inch per foot) that for gas; so although a 10 foot error in surface elevation would translate to a 3# per square inch error in bottom hole pressure adjusted to a datum, the corresponding 10 foot error in adjusting surface pressures to a common elevation would be only 1/10 of that, or about .3#.

5. Error of density of reservoir fluids: Once GOR's have increased substantially above the solution GOR, it is virtually impossible to determine the density of the reservoir fluids for the purpose of adjusting to a common datum. It is probable that in some parts of the reservoir the density is practically the same as free gas; whereas in some parts - lower - of the reservoir, if the wells have low GOR's the density may approach that of oil. Use of bottom hole pressures adjusted to a datum suffers this infirmity. Surface pressures avoid the problem.

The strong pressure gradient existing in late 1987 is a consequence of the high rate of reservoir voidage in the adjoining Gavilan pool along with gas injection of the pressure maintenance project.

As described in previous hearings before the Oil Conservation Commission, although the reservoir is stratified, there are non-sealing faults and man-made communication among the zones such that reservoir-wide there is a degree of communication among all three zones and the pressure maintenance project effectively introduces injected gas into all zones.

Data for the pressure survey described in this section was obtained during and following the NMOCC-ordered shut-in period and pressure survey of November 1987 (wells shut in November 16 and pressures measured November 19). Following this pressure survey, all wells in the Canada Ojitos Unit in Township 25 North, Range 1 West were kept shut in for an additional ten days. Also a substantial amount of the Gavilan production was shut in this same period.

During this extended shut in period surface pressures were measured in a number of the Canada Ojitos Unit wells. The pressures gathered during this time are set out on the individual well data sheets at the end of this section and summarized on the gold colored sheet following thepressure contour plat. Among other things, the individual well tests show the pressures increasing throughout the test period.

We note here that for this survey the control instrument was a 2000 psi deadweight tester which was overhauled in the first half of 1987. It was checked for accuracy during the July pressure survey with a 5000 psi deadweight tester the Unit Operator maintains for calibration work. This check showed a difference of 1 psi in the 1200 psi range. For some of the pressures which were less than 1000 psi, further check of the pressures was made with a 1000 psi tester, sensitive to .1 psi. The pressures taken by both testers are shown in the schedules herein.

Description of the pressure survey taken during this time along with pressure contour plat are next following.

PRESSURE SURVEY NOVEMBER 28, 1987
CANADA OJITOS UNIT

The extended shut-in period beyond November 19 until November 28 assured that the pressure in all wells had built up to the reservoir pressure in their vicinities such that pressure changes at that time reflected - not local pressure build-up around the wellbores - but readjustment of pressures as influenced by the higher gas cap pressures. During this time only a small amount of production was taken from Township 24 North, Range 1 West and Township 26 North, Range 1 West and a small volume of gas injected in the B-18 in Township 25 North, Range 1 East.

Pressures shown on the plat on the facing page were all taken November 28 except for the L-27 in Township 26 North, Range 1 West and the B-18 in Township 25 North, Range 1 East. The pressures for these wells were measured November 19.

CONTOUR INTERVAL

In the main producing area where the wells are located relatively close together (approximately one well per section) the contour interval is 10# (yellow and brown colors), the red colored area is from 850# to 1000#, the green area is 1000# to 1200#, the blue area is 1200# to 1400# and the orange area is for pressures above 1400#.

ZONES OPEN

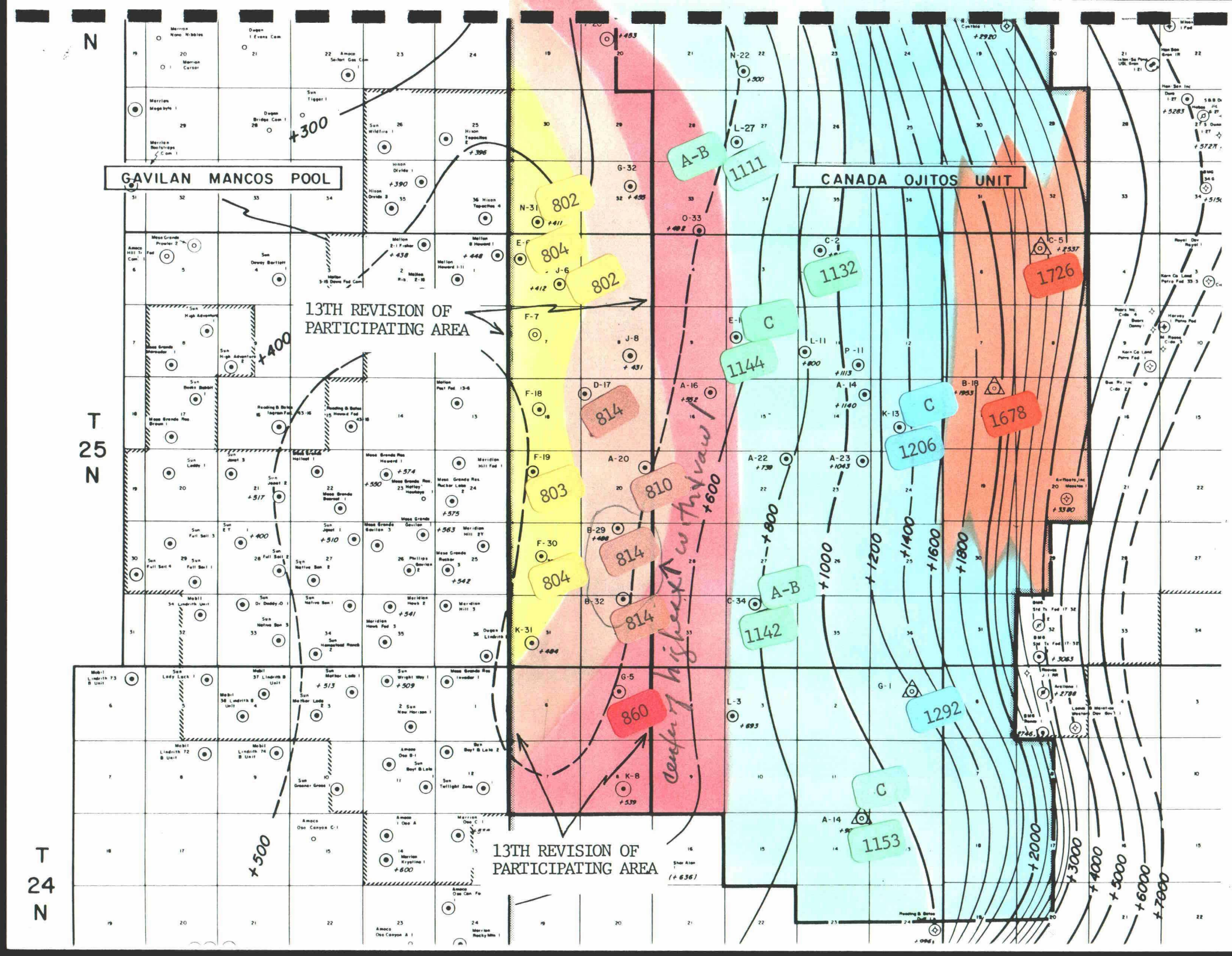
All three (A, B and C) zones are open to the wellbore in all of the wells on the plat on the facing page that show pressures except those whose zones are individually marked.

PRESSURES ADJUSTED TO COMMON ELEVATION OF 7500'

The surface pressures measured Novmeber 28 as shown on the plat were adjusted to a common elevation of 7500' by taking into account the weight of the column of gas from the well's elevation to an elevation of 7500'. The pressure data for this plat are summarized on the gold colored sheet next following. Details of these pressure data are shown in the next section on the white pages therein.

GAS CAP INFLUENCE ON PRESSURE GRADIENT ACROSS AREA OF THIRTEENTH REVISION OF PARTICIPATING AREA

Some of the wells in Gavilan were put on production between November 19 and the date of the survey November 28. This small amount of production, however, did not cause the pressure gradients shown in the area proposed for expansion of the pressure maintenance project November 28. (If production from wells west of the unit were cause of the pressure gradient during this short time interval, then pressures in the observation wells would have been declining. Instead, they were increasing during the period November 19 to November 28 - positive evidence of the influence of the higher gas cap pressures.)


N
T 25 N
T 24 N
GAVILAN MANCOS POOL
CANADA OJITOS UNIT
13TH REVISION OF PARTICIPATING AREA
13TH REVISION OF PARTICIPATING AREA
802
804
802
814
803
810
814
804
814
860
1111
A-B
1132
C
1144
C
1206
1678
1726
A-B
1142
1292
C
1153
+300
+400
+500
+600
+800
+1000
+1200
+1400
+1600
+1800
+2000
+3000
+4000
+5000
+6000
+7000

SUMMARY OF
CANADA OJITOS UNIT WELLHEAD PRESSURES
NOVEMBER 28, 1987
AND EQUIVALENT PRESSURES ADJUSTED TO COMMON ELEVATION OF 7500'

Well	Ground Elevation	Surface DWT (2000# Tester) Pressure 11-28-87 (psig)	Equivalent Surface Pressure Adjusted to G.L. of 7500' (psig)
F-30	7671	799.5	804.2
F-19	7652	798.7	802.9
E-6	7493	803.7	803.5
N-31	7569	800.0	801.9
J-6	7444	803.0	801.5
G-5	7551	858.7	860.1
B-32	7599	811.2	813.9
B-29	7496	814.0	813.9
A-20	7432	812.0	810.1
D-17	7465	814.7	813.7
C-34	7415	1145.5	1142.1
E-10	7329	1155.2	1144.2
C-2	7278	1141.0	1131.7
C-5	7470	1728	1726.5
G-1	7140	1308	1292.5
K-13	7088	1223.2	1206.3
A-14	7130	1167.5	1152.7
L-27*	7450	1113	1111.3
B-18*	7193	1693	1677.7

Example:

799.5# at 7671'

is equivalent to

804.2# at 7500'

* Pressures for the L-27 and B-18 measured 11-19-87.

H

EVIDENCE OF COMMUNICATION OF WELLS IN PROPOSED PRESSURE MAINTENANCE PROJECT EXPANSION LANDS WITH EXISTING PROJECT AREA

PRESSURE MAINTENANCE EFFECT ON PRESSURES OF CANADA OJITOS UNIT B-29 AND B-32 WELLS DURING EXTENDED SHUT-IN PERIOD NOVEMBER 19 TO 28, 1987

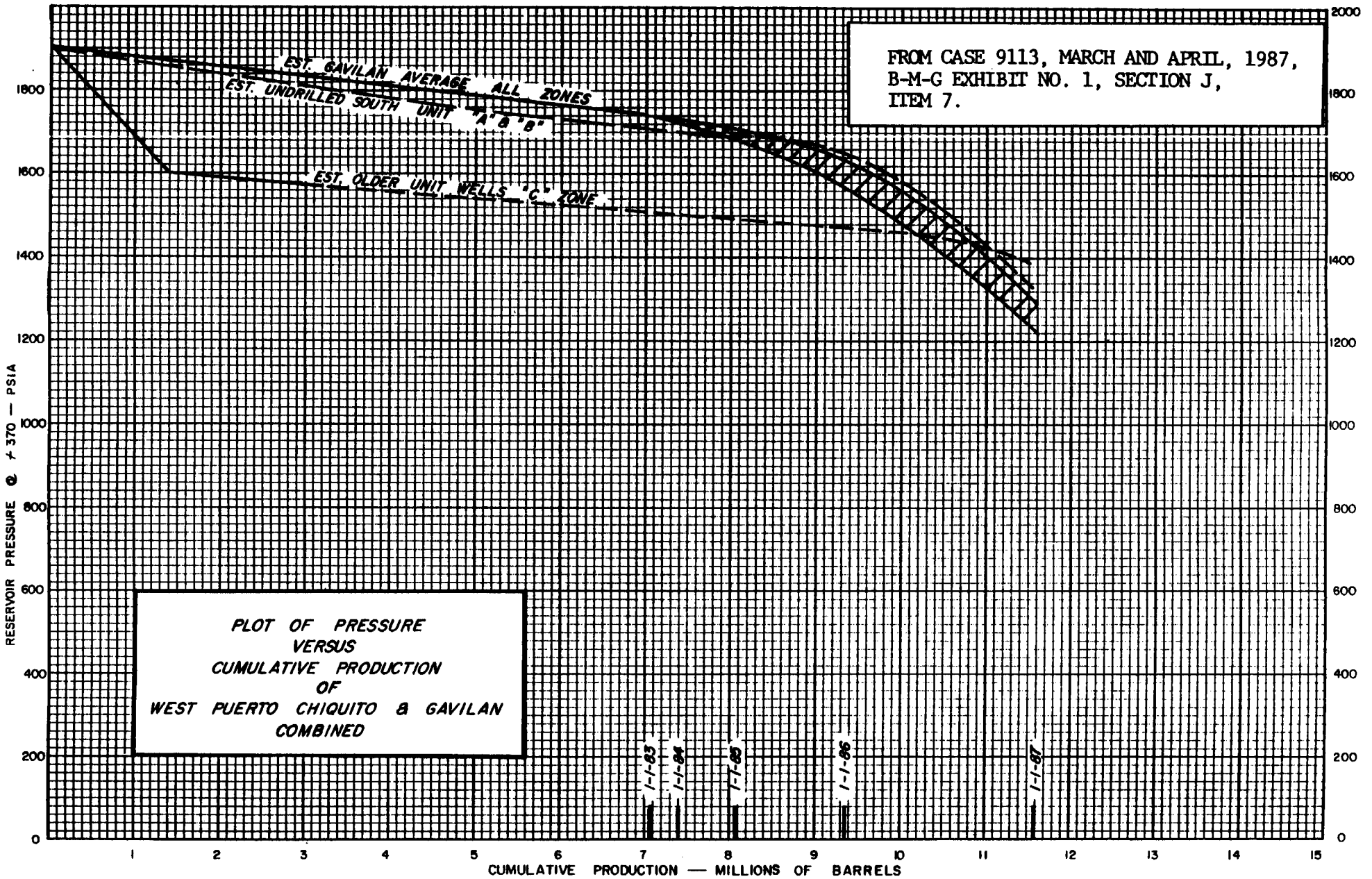
Following the three-day pressure buildup survey set by the NMOCC for November 16 to 19, 1987, most of the Canada Ojitos Unit wells were shut in for an additional ten days.

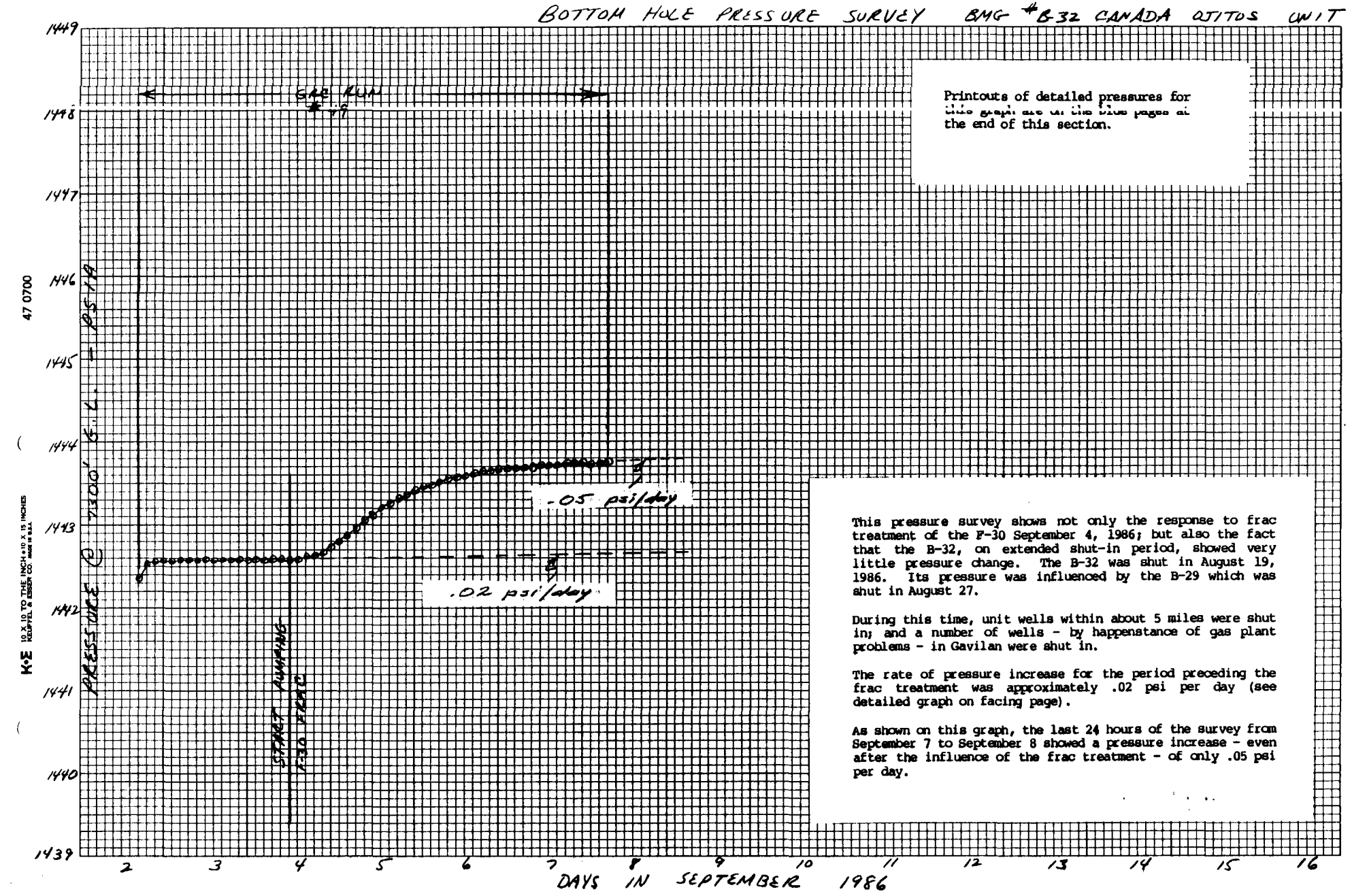
During this time pressures increased in wells in the proposed expansion area, as a consequence of pressure support from gas injection. At the time of the November 1987 surveys, the pressure in the wells in the project area 2 to 3 miles east of the B-29 and B-32 had pressures of approximately 400# greater than these two wells. This pressure differential causes the pressure of the shut-in wells to rise while they are shut in as the reservoir attempts to establish equalization.

When pressures across the area were about the same, there were no measureable pressure increases in the area proposed for expansion of the pressure maintenance project on extended shut-in periods. This was noted in the E-6 in August 1986 and in the B-32 in September 1986.

As shown in Case 9113, March and April 1987, B-M-G Exhibit No. 1, Section J, Item 7, copy of which is reproduced on the facing page, pressures in all zones in all wells (except injection wells) were approximately 1400# at a cumulative production of Gavilan and West Puerto Chiquito (Canada Ojitos Unit) of 11 million barrels which occurred in the fall of 1986.

At this time pressures for an extended (12 day) shut-in period of the B-32 showed minimal increase as shown on the graphs next following.


FROM CASE 9113, MARCH AND APRIL, 1987,
B-M-G EXHIBIT NO. 1, SECTION J,
ITEM 7.
EST. GAVILAN AVERAGE ALL ZONES
EST. UNDRILLED SOUTH UNIT "A" & "B"
EST. OLDER UNIT WELLS "C" ZONE
PLOT OF PRESSURE
VERSUS
CUMULATIVE PRODUCTION
OF
WEST PUERTO CHIQUITO & GAVILAN
COMBINED
1-1-83
1-1-84
1-1-85
1-1-86
1-1-87
RESERVOIR PRESSURE @ +370 — PSIA
0
200
400
600
800
1000
1200
1400
1600
1800
2000
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
CUMULATIVE PRODUCTION — MILLIONS OF BARRELS

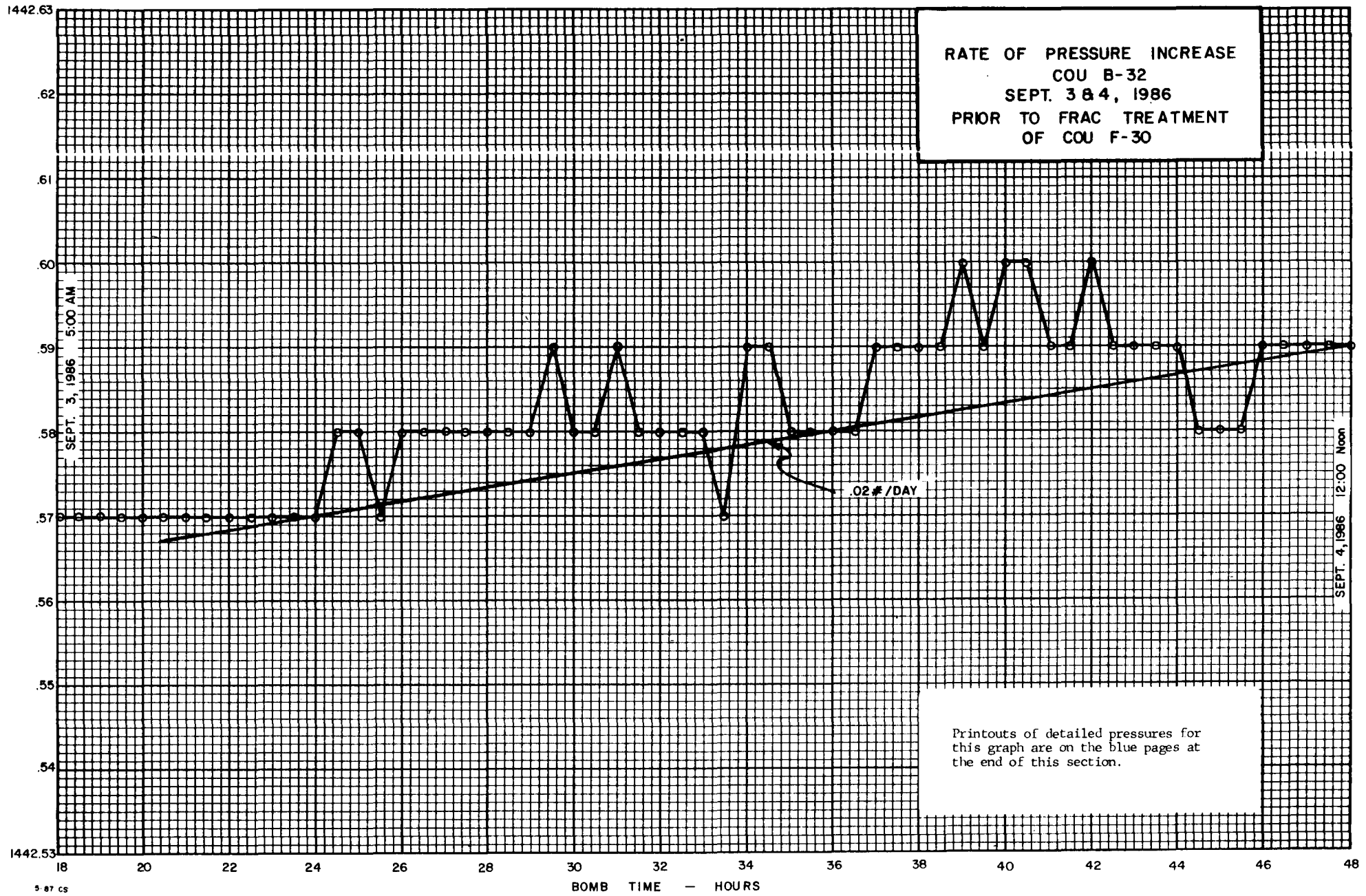


This pressure survey shows not only the response to frac treatment of the F-30 September 4, 1986; but also the fact that the B-32, on extended shut-in period, showed very little pressure change. The B-32 was shut in August 19, 1986. Its pressure was influenced by the B-29 which was shut in August 27.

During this time, unit wells within about 5 miles were shut in; and a number of wells - by happenstance of gas plant problems - in Gavilan were shut in.

The rate of pressure increase for the period preceding the frac treatment was approximately .02 psi per day (see detailed graph on facing page).

As shown on this graph, the last 24 hours of the survey from September 7 to September 8 showed a pressure increase - even after the influence of the frac treatment - of only .05 psi per day.


RATE OF PRESSURE INCREASE
COU B-32
SEPT. 3 & 4, 1986
PRIOR TO FRAC TREATMENT
OF COU F-30
1442.63
.62
.61
.60
.59
.58
.57
.56
.55
.54
1442.53
SEPT. 3, 1986 5:00 AM
SEPT. 4, 1986 12:00 Noon
.02 #/DAY
18
20
22
24
26
28
30
32
34
36
38
40
42
44
46
48
BOMB TIME — HOURS
Printouts of detailed pressures for this graph are on the blue pages at the end of this section.

5-87 CS

EVIDENCE OF COMMUNICATION OF WELLS IN PROPOSED PRESSURE MAINTENANCE PROJECT EXPANSION LANDS WITH EXISTING PROJECT AREA

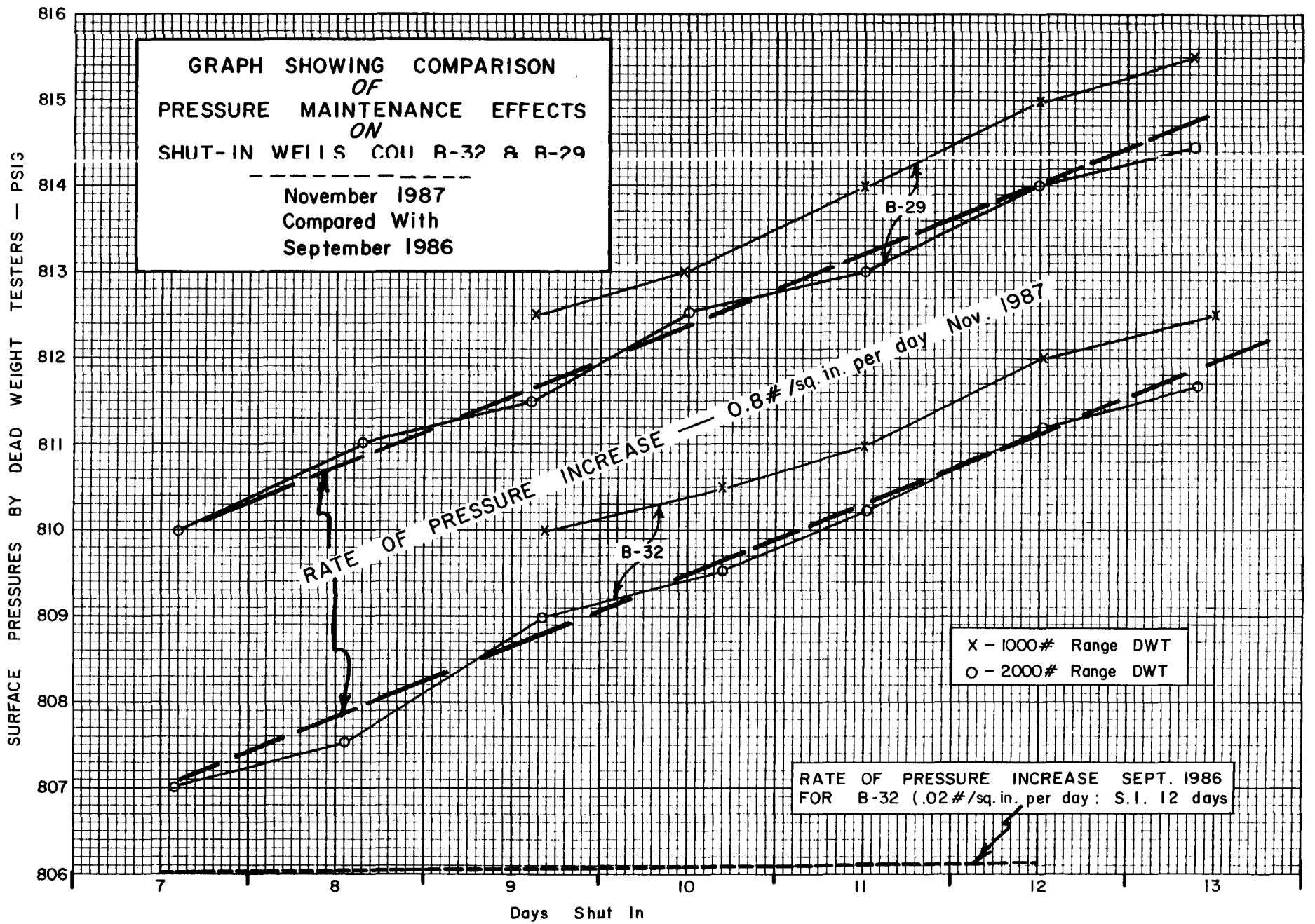
PRESSURE MAINTENANCE EFFECT ON PRESSURES OF CANADA OUTOS UNIT B-29 AND B-32 WELLS DURING EXTENDED SHUT-IN PERIOD NOVEMBER 19 TO 28, 1987

Plat on the opposite page shows - at the bottom - the rate of bottom hole pressure increase for the B-32 during the 12-day shut in period in September 1986; and this is compared with the rate of pressure increase of the B-32 - and the B-29 nearby as well - during the extended shut-in period of November 1987. Here the pressures not only are increasing for the 12-day period, but increasing at a steady rate - not at all like the leveling off of pressures which would be anticipated for normal buildup of wells in which the pressure has been drawn down by production in their drainage area.

Details of the pressure buildup of these two wells is shown on the two pink pages following.

Other wells in the proposed pressure maintenance project area showed pressure increases during the same time; as shown by the individual well sheets (white pages) following.

Printouts of the September 1986 pressure survey are on the blue sheets at the end of this section.


GRAPH SHOWING COMPARISON
OF
PRESSURE MAINTENANCE EFFECTS
ON
SHUT-IN WELLS COU B-32 & B-29
November 1987
Compared With
September 1986
SURFACE PRESSURES BY DEAD WEIGHT TESTERS — PSIG
816
815
814
813
812
811
810
809
808
807
806
7
8
9
10
11
12
13
Days Shut In
B-29
B-32
RATE OF PRESSURE INCREASE — 0.8# /sq. in. per day Nov. 1987
X – 1000# Range DWT
O – 2000# Range DWT
RATE OF PRESSURE INCREASE SEPT. 1986
FOR B-32 (.02#/sq. in. per day : S.I. 12 days

12 87 cs

CANADA OJITOS UNIT B-29
SURFACE DEAD WEIGHTS

(NOVEMBER 23 TO NOVEMBER 29, 1987 PRESSURE SURVEY)

Date	Time	2000# DWT	1000# DWT	Remarks
11-23	3:10 PM	810		
11-24	4:29 PM	811		
11-25	3:49 PM	811.5		
	3:55 PM		812.5	
11-26	11:21 AM		813.0	
	11:24 AM	812.5		
11-27	12:06 PM	813		
	12:12 PM		814.0	
11-28	11:28 AM	814.0		
	11:48 AM		815.0	
11-29	8:47 AM	814.5		
	8:52 AM		815.5	

CANADA QUITOS UNIT B-32
SURFACE DEAD WEIGHTS

(NOVEMBER 23 TO NOVEMBER 29, 1987 PRESSURE SURVEY)

Date	Time	2000# DWT	1000# DWT	Remarks
11-23	3:36 PM	807		
11-24	12:55 PM	807.5		
11-25	4:18 PM	809		
	4:22 PM		810.0	
11-26	12:21 PM		810.5	
	12:24 PM	809.5		
11-27	12:48 PM	810.2		
	12:54 PM		811.0	
11-28	12:08 PM	811.2		
	12:14 PM		812.0	
11-29	9:04 AM	811.7		
	9:09 AM		812.5	

CANADA QUITOS UNIT F-30
SURFACE DEAD WEIGHTS

(NOVEMBER 23 TO NOVEMBER 29, 1987 PRESSURE SURVEY)

Date	Time	2000# DWT	1000# DWT	Remarks
11-23	3:25 PM	795		
11-24	12:44 AM	795.5		
11-25	4:06 PM	796.5		
	4:10 PM		797.5	
11-26	11:40 AM	797.5		
	11:37 AM		798.5	
11-27	12:27 PM	798.7		
	12:34 PM		799.1	
11-28	11:48 AM	799.5		
	11:54 AM		800.0	
11-29	9:22 AM	799.7		
	9:29 AM		800.5	

CANADA OJITOS UNIT F-19
SURFACE DEAD WEIGHTS

(NOVEMBER 23 TO NOVEMBER 29, 1987 PRESSURE SURVEY)

Date	Time	2000# DWT	1000# DWT	Remarks
11-23	1:41 PM	796		
11-24	9:40 AM	796.5		
11-25	3:00 PM	797.5		
	12:30 PM		797.5	
11-26	10:30 AM	798.5		
	10:30 AM		798.0	
11-27	10:45 AM	798.5		
	10:52 AM		799.2	
11-28	10:38 AM	798.7		
	10:44 AM		799.5	
11-29	8:20 AM	799		
	0:25 AM		800.0	

CANADA OJITOS UNIT E-6
SURFACE DEAD WEIGHTS

(NOVEMBER 23 TO NOVEMBER 29, 1987 PRESSURE SURVEY)

Date	Time	2000# DWT	1000# DWT	Remarks
11-23	11:21 AM	802		BHP Survey - Lubricator pressure
	2:28 PM	802		
11-24	11:28 AM	802		
11-25	11:40 AM		803.5	
	2:08 PM	803		
11-26	9:45 AM		804.5	
	9:48 AM	804		
11-27	9:20 AM	803.7		
	9:29 AM		803.5	
11-28	9:10 AM	803.7		
	9:16 AM		804.5	

CANADA OJITOS UNIT N-31
SURFACE DEAD WEIGHTS

(NOVEMBER 23 TO NOVEMBER 29, 1987 PRESSURE SURVEY)

Date	Time	2000# DWT	1000# DWT	Remarks
11-28	9:28 AM	800.0		
	9:35 AM		800.7	
11-29	7:51 AM	800.0		
	7:57 AM		801.0	

CANADA OJITOS UNIT J-6
SURFACE DEAD WEIGHTS

(NOVEMBER 23 TO NOVEMBER 29, 1987 PRESSURE SURVEY)

Date	Time	2000# DWT	1000# DWT	Remarks
11-23	10:32 AM	798.5		BHP Survey - Lubricator pressure
	2:38 PM	802		
11-24	11:39 AM	801		
11-25	10:11 AM	801.5		
	11:15 AM		802.5	
11-26	9:17 AM	803		
	9:30 AM		803.6	
11-27	8:57 AM	803.0		
	9:03 AM		803.9	
11-28	8:49 AM	803		
	8:56 AM		804.2	

CANADA OJITOS UNIT G-5
SURFACE DEAD WEIGHTS

(NOVEMBER 23 TO NOVEMBER 29, 1987 PRESSURE SURVEY)

Date	Time	2000# DWT	1000# DWT	Remarks
11-23	3:50 PM	855		
11-24	1:11 PM	857.5		
11-25	4:35 PM	858		
	4:39 PM		859.3	
11-26	12:02 PM		858.9	
	12:05 PM	858		
11-27	1:29 PM	858.7		
	1:35 PM		859.2	
11-28	12:45 PM	858.7		
	12:52 PM		859.5	

CANADA OJITOS UNIT B-32
SURFACE DEAD WEIGHTS

(NOVEMBER 23 TO NOVEMBER 29, 1987 PRESSURE SURVEY)

Date	Time	2000# DWT	1000# DWT	Remarks
11-23	3:36 PM	807		
11-24	12:55 PM	807.5		
11-25	4:18 PM	809		
	4:22 PM		810.0	
11-26	12:21 PM		810.5	
	12:24 PM	809.5		
11-27	12:48 PM	810.2		
	12:54 PM		811.0	
11-28	12:08 PM	811.2		
	12:14 PM		812.0	
11-29	9:04 AM	811.7		
	9:09 AM		812.5	

CANADA OJITOS UNIT B-29
SURFACE DEAD WEIGHTS

(NOVEMBER 23 TO NOVEMBER 29, 1987 PRESSURE SURVEY)

Date	Time	2000# DWT	1000# DWT	Remarks
11-23	3:10 PM	810		
11-24	4:29 PM	811		
11-25	3:49 PM	811.5		
	3:55 PM		812.5	
11-26	11:21 AM		813.0	
	11:24 AM	812.5		
11-27	12:06 PM	813		
	12:12 PM		814.0	
11-28	11:28 AM	814.0		
	11:48 AM		815.0	
11-29	8:47 AM	814.5		
	8:52 AM		815.5	

CANADA OJITOS UNIT A-20
SURFACE DEAD WEIGHTS

(NOVEMBER 23 TO NOVEMBER 29, 1987 PRESSURE SURVEY)

Date	Time	2000# DWT	1000# DWT	Remarks
11-23	2:58 PM	807		
11-24	11:58 AM	808		
11-25	3:30 PM	809.5		
	3:36 PM		810.0	
11-26	11:10 AM	810.5		
	11:06 AM		811.5	
11-27	11:49 AM	811.2		
	11:54 AM		812.0	
11-28	11:09 AM	812.0		
	11:16 AM		812.5	

CANADA OJITOS UNIT D-17
SURFACE DEAD WEIGHTS

(NOVEMBER 23 TO NOVEMBER 29, 1987 PRESSURE SURVEY)

Date	Time	2000# DWT	1000# DWT	Remarks
11-23	12:27 PM	808		BHP Survey - Lubricator pressure
	2:05 PM	812		
11-24	10:54 AM	812		
11-25	12:53 PM		813.9	
	3:10 PM	813.5		
11-26	10:15 AM	814		
	10:10 AM		814.0	
11-27	9:54 AM	814.2		
	10:00 AM		814.7	
11-28	9:57 AM	814.7		
	10:00 AM		815.5	

CANADA OJITOS UNIT C-34
SURFACE DEAD WEIGHTS

(NOVEMBER 23 TO NOVEMBER 29, 1987 PRESSURE SURVEY)

Date	Time	2000# DWT	Remarks
11-23	4:31 PM	1144	
11-24	8:36 AM	1144	
11-25	8:54 AM	1144	
11-26	8:35 AM	1145	
11-27	8:16 AM	1145.5	
11-28	8:14 AM	1145.5	

CANADA QUITOS UNIT E-10
SURFACE DEAD WEIGHTS

(NOVEMBER 23 TO NOVEMBER 29, 1987 PRESSURE SURVEY)

Date	Time	2000# DWT	1000# DWT	Remarks
11-25	9:52 AM	1154		
11-28	11:22 AM	1155.2		

CANADA OJITOS UNIT C-2
SURFACE DEAD WEIGHTS

(NOVEMBER 23 TO NOVEMBER 29, 1987 PRESSURE SURVEY)

Date	Time	2000# DWT	1000# DWT	Remarks
11-25	9:20 AM	1140		
11-28	1:40 PM	1141		

CANADA QUITOS UNIT C-5
SURFACE DEAD WEIGHTS

(NOVEMBER 23 TO NOVEMBER 29, 1987 PRESSURE SURVEY)

Date	Time	2000# DWT	1000# DWT	Remarks
11-23	5:05 PM	1739		
11-28	2:21 PM	1728		

CANADA OJITOS UNIT G-1
SURFACE DEAD WEIGHTS

(NOVEMBER 23 TO NOVEMBER 29, 1987 PRESSURE SURVEY)

Date	Time	2000# DWT	1000# DWT	Remarks
11-23	4:49 PM	1323		
11-28	2:04 PM	1308		

CANADA QUITOS UNIT K-13
SURFACE DEAD WEIGHTS

(NOVEMBER 23 TO NOVEMBER 29, 1987 PRESSURE SURVEY)

Date	Time	2000# DWT	Remarks
11-27	2:11 PM	1224.5	
11-28	1:57 PM	1223.2	

CANADA OJITOS UNIT A-14
SURFACE DEAD WEIGHTS

(NOVEMBER 23 TO NOVEMBER 29, 1987 PRESSURE SURVEY)

Date	Time	2000# DWT	1000# DWT	Remarks
11-24	7:14 AM	1167		
11-28	7:27 AM	1167.5		

CANADA OJITOS UNIT L-27
SURFACE DEAD WEIGHTS

(NOVEMBER 19, 1987)

Date	Time	2000# DWT	1000# DWT	Remarks
11-19	12:28 PM	1113		

CANADA QUITOS UNIT B-18
SURFACE DEAD WEIGHTS

(NOVEMBER 19, 1987)

Date	Time	2000# DWT	1000# DWT	Remarks
11-19	6:34 PM	1693		

DATE: 9/ 2/86
GAUGE SN #64160
WELL # 0
TEST # 49

DATA FILE: 1

COMPANY: RMG
CLIENT:
WELL NAME: B-32
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7300" GL
9-02-86 to 9-8-86

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
1	12: 2: 0	0.000	6654.54		75.17
2	12:17: 0	0.250	10620.24	16.53	
3	12:32: 0	0.500	6643.82		74.32
4	12:47: 0	0.750	10619.75	15.83	
5	13: 2: 0	1.000	6726.39		80.85
6	13:17: 0	1.250	10618.92	16.68	
7	13:32: 0	1.500	6733.77		81.44
8	13:47: 0	1.750	10617.97	15.90	
9	14: 2: 0	2.000	6717.43		80.14
10	14:17: 0	2.250	10617.97	15.57	
11	14:32: 0	2.500	6706.65		79.29
12	14:47: 0	2.750	10617.29	14.69	
13	15: 2: 0	3.000	6692.29		78.15
14	15:17: 0	3.250	10619.14	16.21	
15	15:32: 0	3.500	6697.33		78.55
16	15:47: 0	3.750	10616.78	14.01	
17	16: 2: 0	4.000	6966.94		99.96
18	16:17: 0	4.250	11867.31	1430.36	
19	16:32: 0	4.500	7807.58		167.69
20	16:47: 0	4.750	11867.51	1442.37	
21	17: 2: 0	5.000	7812.77		168.11
22	17:17: 0	5.250	11867.49	1442.45	
23	17:32: 0	5.500	7814.63		168.26
24	17:47: 0	5.750	11867.48	1442.50	
25	18: 2: 0	6.000	7815.18		168.31
26	18:17: 0	6.250	11867.48	1442.51	
27	18:32: 0	6.500	7815.42		168.33
28	18:47: 0	6.750	11867.50	1442.52	
29	19: 2: 0	7.000	7815.49		168.33
30	19:17: 0	7.250	11867.50	1442.52	
31	19:32: 0	7.500	7815.59		168.34
32	19:47: 0	7.750	11867.51	1442.54	
33	20: 2: 0	8.000	7815.61		168.34
34	20:17: 0	8.250	11867.51	1442.54	
35	20:32: 0	8.500	7815.64		168.34
36	20:47: 0	8.750	11867.51	1442.54	
37	21: 2: 0	9.000	7815.69		168.35
38	21:17: 0	9.250	11867.51	1442.54	
39	21:32: 0	9.500	7815.64		168.34
40	21:47: 0	9.750	11867.52	1442.55	
41	22: 2: 0	10.000	7815.64		168.35
42	22:17: 0	10.250	11867.52	1442.55	
43	22:32: 0	10.500	7815.68		168.35
44	22:47: 0	10.750	11867.52	1442.56	
45	23: 2: 0	11.000	7815.69		168.35
46	23:17: 0	11.250	11867.52	1442.56	
47	23:32: 0	11.500	7815.71		168.35
48	23:47: 0	11.750	11867.52	1442.56	
49	0: 2: 0	12.000	7815.73		168.35
50	0:17: 0	12.250	11867.52	1442.56	

DATE: 9/ 3/86
GAUGE SN #89160
WELL # 0
TEST # 49

DATA FILE: 1

COMPANY: BMG
CLIENT:
WELL NAME: B-32
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7300' GL
9-02-86 to 9-8-86

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE °F
51	0:32: 0	12.500	7815.70		168.35
52	0:47: 0	12.750	11867.52	1442.56	
53	1: 2: 0	13.000	7815.70		168.35
54	1:17: 0	13.250	11867.52	1442.56	
55	1:32: 0	13.500	7815.71		168.35
56	1:47: 0	13.750	11867.52	1442.56	
57	2: 2: 0	14.000	7815.74		168.35
58	2:17: 0	14.250	11867.52	1442.56	
59	2:32: 0	14.500	7815.75		168.36
60	2:47: 0	14.750	11867.52	1442.56	
61	3: 2: 0	15.000	7815.73		168.35
62	3:17: 0	15.250	11867.53	1442.56	
63	3:32: 0	15.500	7815.78		168.36
64	3:47: 0	15.750	11867.53	1442.57	
65	4: 2: 0	16.000	7815.76		168.35
66	4:17: 0	16.250	11867.53	1442.57	
67	4:32: 0	16.500	7815.79		168.36
68	4:47: 0	16.750	11867.53	1442.57	
69	5: 2: 0	17.000	7815.83		168.36
70	5:17: 0	17.250	11867.53	1442.57	
71	5:32: 0	17.500	7815.79		168.36
72	5:47: 0	17.750	11867.53	1442.57	
73	6: 2: 0	18.000	7815.77		168.36
74	6:17: 0	18.250	11867.53	1442.57	
75	6:32: 0	18.500	7815.80		168.36
76	6:47: 0	18.750	11867.53	1442.57	
77	7: 2: 0	19.000	7815.78		168.36
78	7:17: 0	19.250	11867.53	1442.57	
79	7:32: 0	19.500	7815.79		168.36
80	7:47: 0	19.750	11867.53	1442.57	
81	8: 2: 0	20.000	7815.79		168.36
82	8:17: 0	20.250	11867.54	1442.58	
83	8:32: 0	20.500	7815.77		168.36
84	8:47: 0	20.750	11867.54	1442.58	
85	9: 2: 0	21.000	7815.77		168.36
86	9:17: 0	21.250	11867.54	1442.58	
87	9:32: 0	21.500	7815.77		168.36
88	9:47: 0	21.750	11867.53	1442.57	
89	10: 2: 0	22.000	7815.76		168.36
90	10:17: 0	22.250	11867.53	1442.57	
91	10:32: 0	22.500	7815.79		168.36
92	10:47: 0	22.750	11867.53	1442.57	
93	11: 2: 0	23.000	7815.76		168.35
94	11:17: 0	23.250	11867.53	1442.57	
95	11:32: 0	23.500	7815.75		168.35
96	11:47: 0	23.750	11867.53	1442.56	
97	12: 2: 0	24.000	7815.79		168.36
98	12:17: 0	24.250	11867.53	1442.57	
99	12:32: 0	24.500	7815.76		168.36
100	12:47: 0	24.750	11867.53	1442.57	

DATE: 9/ 3/86
GAUGE SN #69160
WELL # 0
TEST # 49

DATA FILE: 2

COMPANY: BMG
CLIENT:
WELL NAME: B-32
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7300' GL
9-02-86 to 9-8-86

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
1	13: 2: 0	25.000	7815.73		168.35
2	13:17: 0	25.250	11867.53	1442.56	
3	13:32: 0	25.500	7815.75		168.35
4	13:47: 0	25.750	11867.53	1442.56	
5	14: 2: 0	26.000	7815.79		168.36
6	14:17: 0	26.250	11867.53	1442.57	
7	14:32: 0	26.500	7815.73		168.35
8	14:47: 0	26.750	11867.53	1442.56	
9	15: 2: 0	27.000	7815.75		168.35
10	15:17: 0	27.250	11867.53	1442.57	
11	15:32: 0	27.500	7815.76		168.35
12	15:47: 0	27.750	11867.53	1442.57	
13	16: 2: 0	28.000	7815.75		168.35
14	16:17: 0	28.250	11867.53	1442.57	
15	16:32: 0	28.500	7815.70		168.35
16	16:47: 0	28.750	11867.53	1442.57	
17	17: 2: 0	29.000	7815.73		168.35
18	17:17: 0	29.250	11867.54	1442.58	
19	17:32: 0	29.500	7815.73		168.35
20	17:47: 0	29.750	11867.54	1442.58	
21	18: 2: 0	30.000	7815.73		168.35
22	18:17: 0	30.250	11867.54	1442.58	
23	18:32: 0	30.500	7815.71		168.35
24	18:47: 0	30.750	11867.54	1442.58	
25	19: 2: 0	31.000	7815.75		168.35
26	19:17: 0	31.250	11867.53	1442.57	
27	19:32: 0	31.500	7815.76		168.35
28	19:47: 0	31.750	11867.53	1442.57	
29	20: 2: 0	32.000	7815.79		168.36
30	20:17: 0	32.250	11867.54	1442.59	
31	20:32: 0	32.500	7815.70		168.35
32	20:47: 0	32.750	11867.54	1442.58	
33	21: 2: 0	33.000	7815.78		168.36
34	21:17: 0	33.250	11867.54	1442.58	
35	21:32: 0	33.500	7815.76		168.35
36	21:47: 0	33.750	11867.54	1442.58	
37	22: 2: 0	34.000	7815.74		168.35
38	22:17: 0	34.250	11867.54	1442.58	
39	22:32: 0	34.500	7815.72		168.35
40	22:47: 0	34.750	11867.53	1442.57	
41	23: 2: 0	35.000	7815.73		168.35
42	23:17: 0	35.250	11867.54	1442.58	
43	23:32: 0	35.500	7815.73		168.35
44	23:47: 0	35.750	11867.54	1442.58	
45	0: 2: 0	36.000	7815.70		168.35
46	0:17: 0	36.250	11867.53	1442.57	
47	0:32: 0	36.500	7815.70		168.35
48	0:47: 0	36.750	11867.54	1442.58	
49	1: 2: 0	37.000	7815.73		168.35
50	1:17: 0	37.250	11867.54	1442.58	

DATE: 9/ 4/86
SAUGE SN #69160
WELL # 0
TEST # 49

DATA FILE: 2

COMPANY: BMG
CLIENT:
WELL NAME: B-32
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7300' GL
9-02-86 to 9-8-86

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE °F
51	1:32: 0	37.500	7815.70		168.35
52	1:47: 0	37.750	11867.54	1442.58	
53	2: 2: 0	38.000	7815.67		168.35
54	2:17: 0	38.250	11867.54	1442.58	
55	2:32: 0	38.500	7815.69		168.35
56	2:47: 0	38.750	11867.54	1442.58	
57	3: 2: 0	39.000	7815.71		168.35
58	3:17: 0	39.250	11867.54	1442.58	
59	3:32: 0	39.500	7815.66		168.35
60	3:47: 0	39.750	11867.54	1442.58	
61	4: 2: 0	40.000	7815.71		168.35
62	4:17: 0	40.250	11867.54	1442.59	
63	4:32: 0	40.500	7815.67		168.35
64	4:47: 0	40.750	11867.54	1442.58	
65	5: 2: 0	41.000	7815.66		168.35
66	5:17: 0	41.250	11867.54	1442.59	
67	5:32: 0	41.500	7815.71		168.35
68	5:47: 0	41.750	11867.54	1442.59	
69	6: 2: 0	42.000	7815.68		168.35
70	6:17: 0	42.250	11867.55	1442.59	
71	6:32: 0	42.500	7815.73		168.35
72	6:47: 0	42.750	11867.55	1442.59	
73	7: 2: 0	43.000	7815.69		168.35
74	7:17: 0	43.250	11867.55	1442.59	
75	7:32: 0	43.500	7815.70		168.35
76	7:47: 0	43.750	11867.56	1442.59	
77	8: 2: 0	44.000	7815.74		168.35
78	8:17: 0	44.250	11867.55	1442.59	
79	8:32: 0	44.500	7815.71		168.35
80	8:47: 0	44.750	11867.55	1442.58	
81	9: 2: 0	45.000	7815.72		168.35
82	9:17: 0	45.250	11867.54	1442.59	
83	9:32: 0	45.500	7815.74		168.35
84	9:47: 0	45.750	11867.55	1442.59	
85	10: 2: 0	46.000	7815.72		168.35
86	10:17: 0	46.250	11867.54	1442.59	
87	10:32: 0	46.500	7815.71		168.35
88	10:47: 0	46.750	11867.54	1442.59	
89	11: 2: 0	47.000	7815.69		168.35
90	11:17: 0	47.250	11867.55	1442.59	
91	11:32: 0	47.500	7815.73		168.35
92	11:47: 0	47.750	11867.54	1442.59	
93	12: 2: 0	48.000	7815.70		168.35
94	12:17: 0	48.250	11867.54	1442.58	
95	12:32: 0	48.500	7815.69		168.35
96	12:47: 0	48.750	11867.54	1442.59	
97	13: 2: 0	49.000	7815.70		168.35
98	13:17: 0	49.250	11867.54	1442.59	
99	13:32: 0	49.500	7815.73		168.35
100	13:47: 0	49.750	11867.55	1442.59	

DATE: 9/ 4/86
GAUGE SN #69160
WELL # 0
TEST # 49

DATA FILE: 3

COMPANY: BMG
CLIENT:
WELL NAME: B-32
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7300' GL
9-02-86 to 9-8-86

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
1	14: 2: 0	50.000	7815.69		168.35
2	14:17: 0	50.250	11867.55	1442.59	
3	14:32: 0	50.500	7815.66		168.35
4	14:47: 0	50.750	11867.55	1442.59	
5	15: 2: 0	51.000	7815.70		168.35
6	15:17: 0	51.250	11867.56	1442.60	
7	15:32: 0	51.500	7815.68		168.35
8	15:47: 0	51.750	11867.56	1442.60	
9	16: 2: 0	52.000	7815.68		168.35
10	16:17: 0	52.250	11867.56	1442.60	
11	16:32: 0	52.500	7815.71		168.35
12	16:47: 0	52.750	11867.56	1442.61	
13	17: 2: 0	53.000	7815.70		168.35
14	17:17: 0	53.250	11867.56	1442.61	
15	17:32: 0	53.500	7815.68		168.35
16	17:47: 0	53.750	11867.56	1442.61	
17	18: 2: 0	54.000	7815.65		168.35
18	18:17: 0	54.250	11867.57	1442.61	
19	18:32: 0	54.500	7815.69		168.35
20	18:47: 0	54.750	11867.57	1442.61	
21	19: 2: 0	55.000	7815.67		168.35
22	19:17: 0	55.250	11867.58	1442.63	
23	19:32: 0	55.500	7815.69		168.35
24	19:47: 0	55.750	11867.58	1442.64	
25	20: 2: 0	56.000	7815.70		168.35
26	20:17: 0	56.250	11867.59	1442.64	
27	20:32: 0	56.500	7815.70		168.35
28	20:47: 0	56.750	11867.59	1442.65	
29	21: 2: 0	57.000	7815.66		168.35
30	21:17: 0	57.250	11867.60	1442.66	
31	21:32: 0	57.500	7815.67		168.35
32	21:47: 0	57.750	11867.61	1442.67	
33	22: 2: 0	58.000	7815.66		168.35
34	22:17: 0	58.250	11867.62	1442.68	
35	22:32: 0	58.500	7815.65		168.35
36	22:47: 0	58.750	11867.63	1442.69	
37	23: 2: 0	59.000	7815.66		168.35
38	23:17: 0	59.250	11867.63	1442.70	
39	23:32: 0	59.500	7815.68		168.35
40	23:47: 0	59.750	11867.65	1442.71	
41	0: 2: 0	60.000	7815.71		168.35
42	0:17: 0	60.250	11867.66	1442.73	
43	0:32: 0	60.500	7815.64		168.34
44	0:47: 0	60.750	11867.67	1442.74	
45	1: 2: 0	61.000	7815.68		168.35
46	1:17: 0	61.250	11867.68	1442.76	
47	1:32: 0	61.500	7815.66		168.35
48	1:47: 0	61.750	11867.69	1442.77	
49	2: 2: 0	62.000	7815.69		168.35
50	2:17: 0	62.250	11867.70	1442.79	

DATE: 9/ 5/86
GAUGE SN #E9160
WELL # 0
TEST # 49

DATA FILE: 3

COMPANY: BMG
CLIENT:
WELL NAME: B-32
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7300' GL
9-02-86 to 9-8-86

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
51	2:32: 0	62.500	7815.64		168.35
52	2:47: 0	62.750	11867.71	1442.80	
53	3: 2: 0	63.000	7815.70		168.35
54	3:17: 0	63.250	11867.73	1442.83	
55	3:32: 0	63.500	7815.68		168.35
56	3:47: 0	63.750	11867.75	1442.84	
57	4: 2: 0	64.000	7815.66		168.35
58	4:17: 0	64.250	11867.76	1442.86	
59	4:32: 0	64.500	7815.66		168.35
60	4:47: 0	64.750	11867.77	1442.88	
61	5: 2: 0	65.000	7815.64		168.34
62	5:17: 0	65.250	11867.78	1442.89	
63	5:32: 0	65.500	7815.67		168.35
64	5:47: 0	65.750	11867.80	1442.92	
65	6: 2: 0	66.000	7815.66		168.35
66	6:17: 0	66.250	11867.82	1442.94	
67	6:32: 0	66.500	7815.70		168.35
68	6:47: 0	66.750	11867.83	1442.95	
69	7: 2: 0	67.000	7815.64		168.35
70	7:17: 0	67.250	11867.85	1442.97	
71	7:32: 0	67.500	7815.65		168.35
72	7:47: 0	67.750	11867.86	1442.99	
73	8: 2: 0	68.000	7815.64		168.34
74	8:17: 0	68.250	11867.87	1443.01	
75	8:32: 0	68.500	7815.68		168.35
76	8:47: 0	68.750	11867.89	1443.02	
77	9: 2: 0	69.000	7815.69		168.35
78	9:17: 0	69.250	11867.90	1443.04	
79	9:32: 0	69.500	7815.66		168.35
80	9:47: 0	69.750	11867.91	1443.06	
81	10: 2: 0	70.000	7815.64		168.35
82	10:17: 0	70.250	11867.92	1443.07	
83	10:32: 0	70.500	7815.63		168.34
84	10:47: 0	70.750	11867.93	1443.08	
85	11: 2: 0	71.000	7815.65		168.35
86	11:17: 0	71.250	11867.94	1443.10	
87	11:32: 0	71.500	7815.69		168.35
88	11:47: 0	71.750	11867.95	1443.11	
89	12: 2: 0	72.000	7815.67		168.35
90	12:17: 0	72.250	11867.96	1443.12	
91	12:32: 0	72.500	7815.69		168.35
92	12:47: 0	72.750	11867.97	1443.14	
93	13: 2: 0	73.000	7815.66		168.35
94	13:17: 0	73.250	11867.99	1443.15	
95	13:32: 0	73.500	7815.65		168.35
96	13:47: 0	73.750	11868.00	1443.17	
97	14: 2: 0	74.000	7815.68		168.35
98	14:17: 0	74.250	11868.01	1443.18	
99	14:32: 0	74.500	7815.66		168.35
100	14:47: 0	74.750	11868.02	1443.20	

DATE: 9/ 5/86
GAUGE SN #69160
WELL # 0
TEST # 49

DATA FILE: 4

COMPANY: BMG
CLIENT:
WELL NAME: B-32
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7300' GL
9-02-86 to 9-8-86

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
1	15: 2: 0	75.000	7815.71		168.35
2	15:17: 0	75.250	11868.02	1443.20	
3	15:32: 0	75.500	7815.65		168.35
4	15:47: 0	75.750	11868.04	1443.22	
5	16: 2: 0	76.000	7815.68		168.35
6	16:17: 0	76.250	11868.05	1443.23	
7	16:32: 0	76.500	7815.73		168.35
8	16:47: 0	76.750	11868.06	1443.25	
9	17: 2: 0	77.000	7815.73		168.35
10	17:17: 0	77.250	11868.07	1443.27	
11	17:32: 0	77.500	7815.69		168.35
12	17:47: 0	77.750	11868.08	1443.28	
13	18: 2: 0	78.000	7815.68		168.35
14	18:17: 0	78.250	11868.09	1443.29	
15	18:32: 0	78.500	7815.70		168.35
16	18:47: 0	78.750	11868.10	1443.30	
17	19: 2: 0	79.000	7815.66		168.35
18	19:17: 0	79.250	11868.11	1443.31	
19	19:32: 0	79.500	7815.66		168.35
20	19:47: 0	79.750	11868.11	1443.32	
21	20: 2: 0	80.000	7815.66		168.35
22	20:17: 0	80.250	11868.13	1443.33	
23	20:32: 0	80.500	7815.66		168.35
24	20:47: 0	80.750	11868.14	1443.35	
25	21: 2: 0	81.000	7815.65		168.35
26	21:17: 0	81.250	11868.14	1443.35	
27	21:32: 0	81.500	7815.65		168.35
28	21:47: 0	81.750	11868.15	1443.36	
29	22: 2: 0	82.000	7815.65		168.35
30	22:17: 0	82.250	11868.15	1443.37	
31	22:32: 0	82.500	7815.64		168.34
32	22:47: 0	82.750	11868.16	1443.38	
33	23: 2: 0	83.000	7815.66		168.35
34	23:17: 0	83.250	11868.17	1443.39	
35	23:32: 0	83.500	7815.66		168.35
36	23:47: 0	83.750	11868.18	1443.40	
37	0: 2: 0	84.000	7815.65		168.35
38	0:17: 0	84.250	11868.18	1443.40	
39	0:32: 0	84.500	7815.65		168.35
40	0:47: 0	84.750	11868.19	1443.41	
41	1: 2: 0	85.000	7815.65		168.35
42	1:17: 0	85.250	11868.19	1443.42	
43	1:32: 0	85.500	7815.65		168.35
44	1:47: 0	85.750	11868.20	1443.43	
45	2: 2: 0	86.000	7815.66		168.35
46	2:17: 0	86.250	11868.20	1443.43	
47	2:32: 0	86.500	7815.65		168.35
48	2:47: 0	86.750	11868.21	1443.44	
49	3: 2: 0	87.000	7815.67		168.35
50	3:17: 0	87.250	11868.22	1443.45	

DATE: 9/ 6/86
GAUGE SN #69160
WELL # 0
TEST # 49

DATA FILE: 4

COMPANY: BMG
CLIENT:
WELL NAME: B-32
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7300' GL
9-02-86 to 9-8-86

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
51	3:32: 0	87.500	7815.68		168.35
52	3:47: 0	87.750	11868.23	1443.46	
53	4: 2: 0	88.000	7815.68		168.35
54	4:17: 0	88.250	11868.23	1443.47	
55	4:32: 0	88.500	7815.67		168.35
56	4:47: 0	88.750	11868.23	1443.47	
57	5: 2: 0	89.000	7815.69		168.35
58	5:17: 0	89.250	11868.25	1443.49	
59	5:32: 0	89.500	7815.66		168.35
60	5:47: 0	89.750	11868.25	1443.49	
61	6: 2: 0	90.000	7815.69		168.35
62	6:17: 0	90.250	11868.26	1443.51	
63	6:32: 0	90.500	7815.70		168.35
64	6:47: 0	90.750	11868.26	1443.51	
65	7: 2: 0	91.000	7815.69		168.35
66	7:17: 0	91.250	11868.27	1443.52	
67	7:32: 0	91.500	7815.69		168.35
68	7:47: 0	91.750	11868.28	1443.53	
69	8: 2: 0	92.000	7815.71		168.35
70	8:17: 0	92.250	11868.28	1443.53	
71	8:32: 0	92.500	7815.71		168.35
72	8:47: 0	92.750	11868.29	1443.54	
73	9: 2: 0	93.000	7815.69		168.35
74	9:17: 0	93.250	11868.29	1443.54	
75	9:32: 0	93.500	7815.72		168.35
76	9:47: 0	93.750	11868.29	1443.55	
77	10: 2: 0	94.000	7815.68		168.35
78	10:17: 0	94.250	11868.30	1443.56	
79	10:32: 0	94.500	7815.70		168.35
80	10:47: 0	94.750	11868.30	1443.56	
81	11: 2: 0	95.000	7815.70		168.35
82	11:17: 0	95.250	11868.30	1443.56	
83	11:32: 0	95.500	7815.69		168.35
84	11:47: 0	95.750	11868.30	1443.56	
85	12: 2: 0	96.000	7815.71		168.35
86	12:17: 0	96.250	11868.31	1443.57	
87	12:32: 0	96.500	7815.66		168.35
88	12:47: 0	96.750	11868.31	1443.57	
89	13: 2: 0	97.000	7815.68		168.35
90	13:17: 0	97.250	11868.31	1443.58	
91	13:32: 0	97.500	7815.69		168.35
92	13:47: 0	97.750	11868.31	1443.58	
93	14: 2: 0	98.000	7815.71		168.35
94	14:17: 0	98.250	11868.32	1443.59	
95	14:32: 0	98.500	7815.71		168.35
96	14:47: 0	98.750	11868.33	1443.59	
97	15: 2: 0	99.000	7815.72		168.35
98	15:17: 0	99.250	11868.33	1443.59	
99	15:32: 0	99.500	7815.71		168.35
100	15:47: 0	99.750	11868.33	1443.60	

DATE: 9/ 6/86
GAUGE SN #69160
WELL # 0
TEST # 49

DATA FILE: S

COMPANY: BMG
CLIENT:
WELL NAME: B-32
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7300' GL
9-02-86 to 9-8-86

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
1	16: 2: 0	100.000	7815.72		168.35
2	16:17: 0	100.250	11868.34	1443.61	
3	16:32: 0	100.500	7815.75		168.35
4	16:47: 0	100.750	11868.34	1443.61	
5	17: 2: 0	101.000	7815.76		168.35
6	17:17: 0	101.250	11868.34	1443.61	
7	17:32: 0	101.500	7815.76		168.35
8	17:47: 0	101.750	11868.34	1443.61	
9	18: 2: 0	102.000	7815.75		168.35
10	18:17: 0	102.250	11868.35	1443.63	
11	18:32: 0	102.500	7815.69		168.35
12	18:47: 0	102.750	11868.35	1443.63	
13	19: 2: 0	103.000	7815.71		168.35
14	19:17: 0	103.250	11868.35	1443.63	
15	19:32: 0	103.500	7815.75		168.35
16	19:47: 0	103.750	11868.35	1443.63	
17	20: 2: 0	104.000	7815.74		168.35
18	20:17: 0	104.250	11868.36	1443.64	
19	20:32: 0	104.500	7815.74		168.35
20	20:47: 0	104.750	11868.37	1443.64	
21	21: 2: 0	105.000	7815.74		168.35
22	21:17: 0	105.250	11868.37	1443.64	
23	21:32: 0	105.500	7815.76		168.35
24	21:47: 0	105.750	11868.37	1443.65	
25	22: 2: 0	106.000	7815.73		168.35
26	22:17: 0	106.250	11868.37	1443.65	
27	22:32: 0	106.500	7815.70		168.35
28	22:47: 0	106.750	11868.37	1443.65	
29	23: 2: 0	107.000	7815.72		168.35
30	23:17: 0	107.250	11868.38	1443.66	
31	23:32: 0	107.500	7815.74		168.35
32	23:47: 0	107.750	11868.38	1443.66	
33	0: 2: 0	108.000	7815.76		168.35
34	0:17: 0	108.250	11868.38	1443.66	
35	0:32: 0	108.500	7815.77		168.36
36	0:47: 0	108.750	11868.38	1443.66	
37	1: 2: 0	109.000	7815.73		168.35
38	1:17: 0	109.250	11868.38	1443.66	
39	1:32: 0	109.500	7815.71		168.35
40	1:47: 0	109.750	11868.38	1443.66	
41	2: 2: 0	110.000	7815.74		168.35
42	2:17: 0	110.250	11868.38	1443.66	
43	2:32: 0	110.500	7815.73		168.35
44	2:47: 0	110.750	11868.39	1443.67	
45	3: 2: 0	111.000	7815.71		168.35
46	3:17: 0	111.250	11868.39	1443.67	
47	3:32: 0	111.500	7815.68		168.35
48	3:47: 0	111.750	11868.39	1443.67	
49	4: 2: 0	112.000	7815.71		168.35
50	4:17: 0	112.250	11868.39	1443.67	

DATE: 9/ 7/86
GAUGE SN #69160
WELL # 0
TEST # 49

DATA FILE: 5

COMPANY: BMG
CLIENT:
WELL NAME: B-32
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7300' GL
9-02-86 to 9-8-86

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE °F
51	4:32: 0	112.500	7815.73		168.35
52	4:47: 0	112.750	11868.39	1443.68	
53	5: 2: 0	113.000	7815.73		168.35
54	5:17: 0	113.250	11868.39	1443.68	
55	5:32: 0	113.500	7815.73		168.35
56	5:47: 0	113.750	11868.40	1443.69	
57	6: 2: 0	114.000	7815.69		168.35
58	6:17: 0	114.250	11868.40	1443.69	
59	6:32: 0	114.500	7815.72		168.35
60	6:47: 0	114.750	11868.40	1443.69	
61	7: 2: 0	115.000	7815.69		168.35
62	7:17: 0	115.250	11868.40	1443.69	
63	7:32: 0	115.500	7815.75		168.35
64	7:47: 0	115.750	11868.40	1443.69	
65	8: 2: 0	116.000	7815.75		168.35
66	8:17: 0	116.250	11868.41	1443.70	
67	8:32: 0	116.500	7815.73		168.35
68	8:47: 0	116.750	11868.42	1443.71	
69	9: 2: 0	117.000	7815.71		168.35
70	9:17: 0	117.250	11868.42	1443.71	
71	9:32: 0	117.500	7815.70		168.35
72	9:47: 0	117.750	11868.41	1443.70	
73	10: 2: 0	118.000	7815.71		168.35
74	10:17: 0	118.250	11868.42	1443.71	
75	10:32: 0	118.500	7815.73		168.35
76	10:47: 0	118.750	11868.42	1443.71	
77	11: 2: 0	119.000	7815.74		168.35
78	11:17: 0	119.250	11868.42	1443.71	
79	11:32: 0	119.500	7815.73		168.35
80	11:47: 0	119.750	11868.42	1443.71	
81	12: 2: 0	120.000	7815.71		168.35
82	12:17: 0	120.250	11868.42	1443.71	
83	12:32: 0	120.500	7815.70		168.35
84	12:47: 0	120.750	11868.42	1443.71	
85	13: 2: 0	121.000	7815.73		168.35
86	13:17: 0	121.250	11868.42	1443.72	
87	13:32: 0	121.500	7815.71		168.35
88	13:47: 0	121.750	11868.42	1443.71	
89	14: 2: 0	122.000	7815.71		168.35
90	14:17: 0	122.250	11868.42	1443.71	
91	14:32: 0	122.500	7815.72		168.35
92	14:47: 0	122.750	11868.42	1443.71	
93	15: 2: 0	123.000	7815.73		168.35
94	15:17: 0	123.250	11868.42	1443.71	
95	15:32: 0	123.500	7815.74		168.35
96	15:47: 0	123.750	11868.42	1443.72	
97	16: 2: 0	124.000	7815.73		98 16:17: 0 1
99	16:32: 0	124.500	7815.73		168.35
100	16:47: 0	124.750	11868.42	1443.71	

DATE: 9/ 7/86
GAUGE SN #69160
WELL # 0
TEST # 49

DATA FILE: 6

COMPANY: BMG
CLIENT:
WELL NAME: B-3Z
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7300' GL
9-02-86 to 9-8-86

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
1	17: 2: 0	125.000	7815.73		168.35
2	17:17: 0	125.250	11868.43	1443.72	
3	17:32: 0	125.500	7815.73		168.35
4	17:47: 0	125.750	11868.43	1443.72	
5	18: 2: 0	126.000	7815.71		168.35
6	18:17: 0	126.250	11868.43	1443.72	
7	18:32: 0	126.500	7815.73		168.35
8	18:47: 0	126.750	11868.43	1443.72	
9	19: 2: 0	127.000	7815.68		168.35
10	19:17: 0	127.250	11868.43	1443.73	
11	19:32: 0	127.500	7815.69		168.35
12	19:47: 0	127.750	11868.43	1443.73	
13	20: 2: 0	128.000	7815.71		168.35
14	20:17: 0	128.250	11868.43	1443.73	
15	20:32: 0	128.500	7815.70		168.35
16	20:47: 0	128.750	11868.43	1443.73	
17	21: 2: 0	129.000	7815.69		168.35
18	21:17: 0	129.250	11868.44	1443.74	
19	21:32: 0	129.500	7815.68		168.35
20	21:47: 0	129.750	11868.43	1443.73	
21	22: 2: 0	130.000	7815.73		168.35
22	22:17: 0	130.250	11868.44	1443.74	
23	22:32: 0	130.500	7815.67		168.35
24	22:47: 0	130.750	11868.43	1443.73	
25	23: 2: 0	131.000	7815.67		168.35
26	23:17: 0	131.250	11868.43	1443.73	
27	23:32: 0	131.500	7815.69		168.35
28	23:47: 0	131.750	11868.43	1443.73	
29	0: 2: 0	132.000	7815.66		168.35
30	0:17: 0	132.250	11868.44	1443.74	
31	0:32: 0	132.500	7815.68		168.35
32	0:47: 0	132.750	11868.43	1443.73	
33	1: 2: 0	133.000	7815.66		168.35
34	1:17: 0	133.250	11868.43	1443.73	
35	1:32: 0	133.500	7815.69		168.35
36	1:47: 0	133.750	11868.43	1443.73	
37	2: 2: 0	134.000	7815.75		168.35
38	2:17: 0	134.250	11868.43	1443.73	
39	2:32: 0	134.500	7815.70		168.35
40	2:47: 0	134.750	11868.43	1443.72	
41	3: 2: 0	135.000	7815.69		42 3:17: 0 1
43	3:32: 0	135.500	7815.74		168.35
44	3:47: 0	135.750	11868.43	1443.73	
45	4: 2: 0	136.000	7815.71		168.35
46	4:17: 0	136.250	11868.43	1443.73	
47	4:32: 0	136.500	7815.72		168.35
48	4:47: 0	136.750	11868.43	1443.73	
49	5: 2: 0	137.000	7815.73		168.35
50	5:17: 0	137.250	11868.43	1443.73	

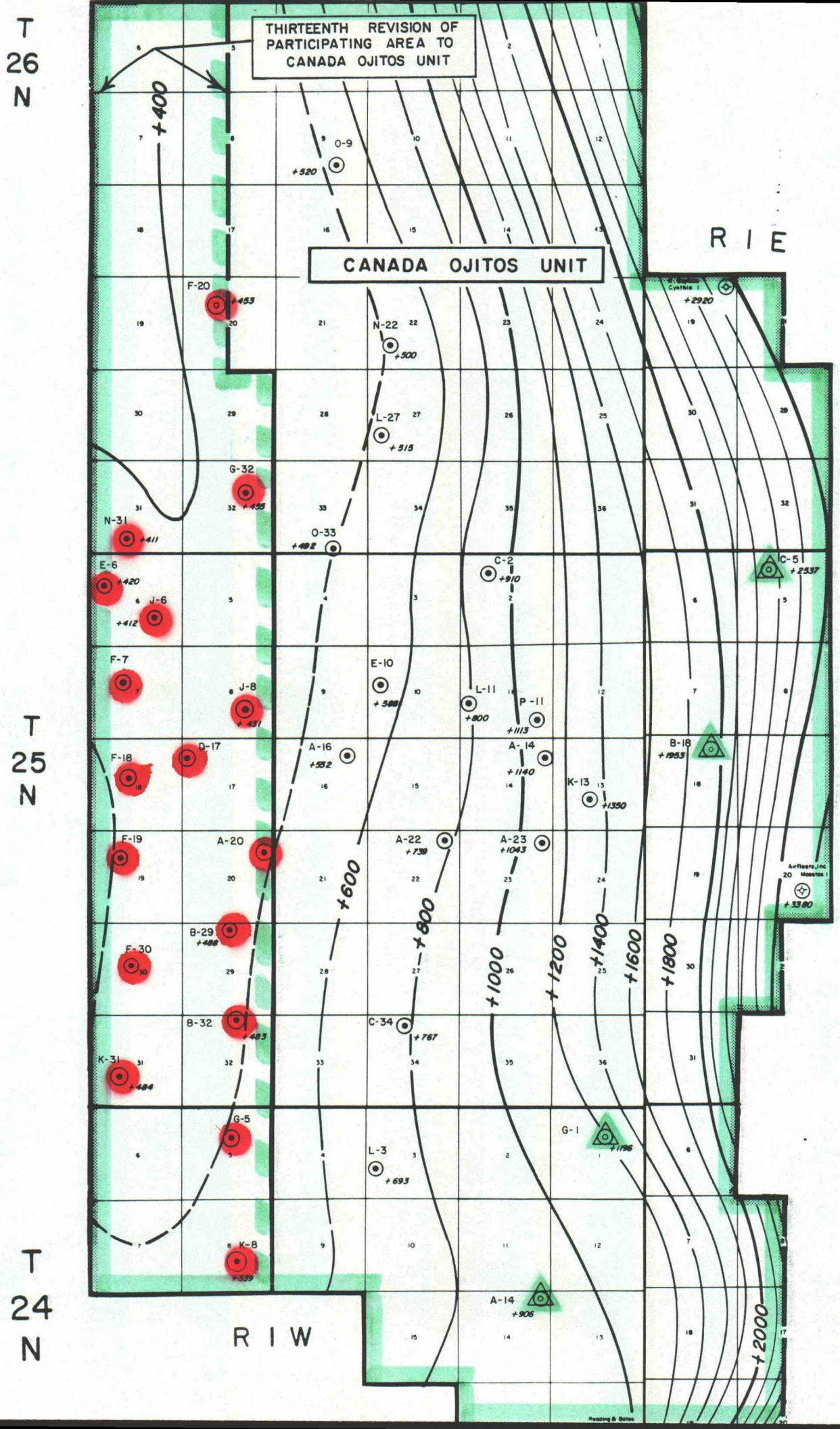
DATE: 9/ 8/86
GAUGE SN #65160
WELL # 0
TEST # 49

DATA FILE: 6

COMPANY: BMG
CLIENT:
WELL NAME: B-32
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7300' GL
9-02-86 to 9-8-86

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
51	5:32: 0	137.500	7815.71		168.35
52	5:47: 0	137.750	11868.43	1443.73	
53	6: 2: 0	138.000	7815.76		168.36
54	6:17: 0	138.250	11868.44	1443.74	
55	6:32: 0	138.500	7815.72		168.35
56	6:47: 0	138.750	11868.44	1443.74	
57	7: 2: 0	139.000	7815.71		168.35
58	7:17: 0	139.250	11868.44	1443.74	
59	7:32: 0	139.500	7815.70		168.35
60	7:47: 0	139.750	11868.44	1443.74	
61	8: 2: 0	140.000	7815.89		168.35

I

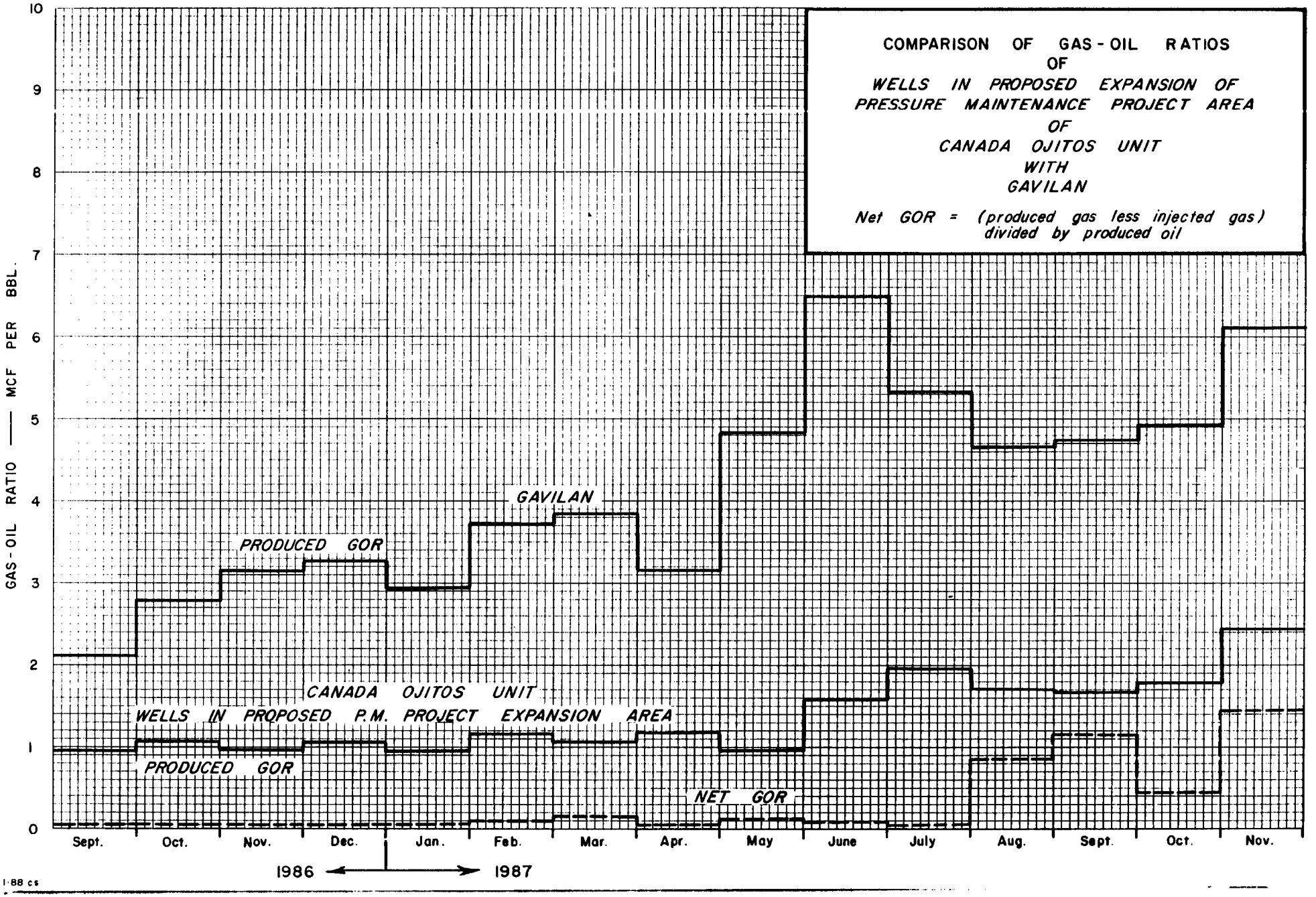

THIRTEENTH REVISION OF PARTICIPATING AREA TO CANADA OJITOS UNIT
CANADA OJITOS UNIT
T 26 N
T 25 N
T 24 N
R 1 W
R 1 E
+400
+600
+800
+1000
+1200
+1400
+1600
+1800
+2000
F-20 +453
G-32 +455
N-31 +411
E-6 +420
J-6 +412
F-7
J-8 +431
F-18
D-17
F-19
A-20
B-29 +488
F-30
B-32 +483
K-31 +484
G-5
K-8 +339
O-9 +520
N-22 +500
L-27 +515
O-33 +492
E-10 +588
A-16 +552
A-22 +739
C-34 +767
L-3 +693
C-2 +910
L-11 +800
P-11 +1113
A-14 +1140
A-23 +1043
K-13 +1350
A-14 +906
G-1 +1196
Cynthia 1 +2920
C-5 +2537
B-18 +1953
Airfloats, Inc 20 Maestas 1 +3380
Reading & Bates

EVIDENCE OF COMMUNICATION OF WELLS IN PROPOSED PRESSURE MAINTENANCE PROJECT EXPANSION LANDS WITH EXISTING PROJECT AREA BY GAS-OIL RATIOS

The plat on the facing page shows wells drilled in the proposed pressure maintenance project expansion area. All the wells shown thereon have been completed except the northernmost, F-20, which is waiting on stimulaton.

On average these wells show substantially lower GOR's than the adjoining Gavilan wells.

The GOR of the F-18 well is at, or slightly above, the solution GOR. Production logging of the Canada Ojitos Unit F-30 and B-32 wells in this proposed expansion area show most of the oil production from the two wells to be coming from the C zone with GOR's approximating solution rates. The current pressure is several hundred pounds less than the bubble point pressure as determined by any of the data for this reservoir. This means then that the depletion process is necessarily gravity drainage - or gravity drainage augmented by pressure maintenance; which, in turn, and in recognition of the east to west pressure gradient for the reservoir, means that the source of the oil for these wells is the updip area of the existing pressure maintenance project.


COMPARISON OF GAS - OIL RATIOS
OF
WELLS IN PROPOSED EXPANSION OF
PRESSURE MAINTENANCE PROJECT AREA
OF
CANADA OJITOS UNIT
WITH
GAVILAN
Net GOR = (produced gas less injected gas) divided by produced oil
GAS - OIL RATIO — MCF PER BBL.
10
9
8
7
6
5
4
3
2
1
0
GAVILAN
PRODUCED GOR
CANADA OJITOS UNIT
WELLS IN PROPOSED P.M. PROJECT EXPANSION AREA
PRODUCED GOR
NET GOR
Sept.
Oct.
Nov.
Dec.
Jan.
Feb.
Mar.
Apr.
May
June
July
Aug.
Sept.
Oct.
Nov.
1986
1987
1-88 cs

EVIDENCE OF COMMUNICATION OF WELLS IN PROPOSED PRESSURE MAINTENANCE PROJECT EXPANSION LANDS WITH EXISTING PROJECT AREA BY GAS-OIL RATIOS

As shown by the graph* on the facing page, the average GOR of wells in the proposed expansion area is substantially less than nearby Gavilan.

The origin of the bulk of the unit's low GOR oil is within the existing pressure maintenance project area, east of the proposed expansion area. This is described in a little more detail on the following pages.

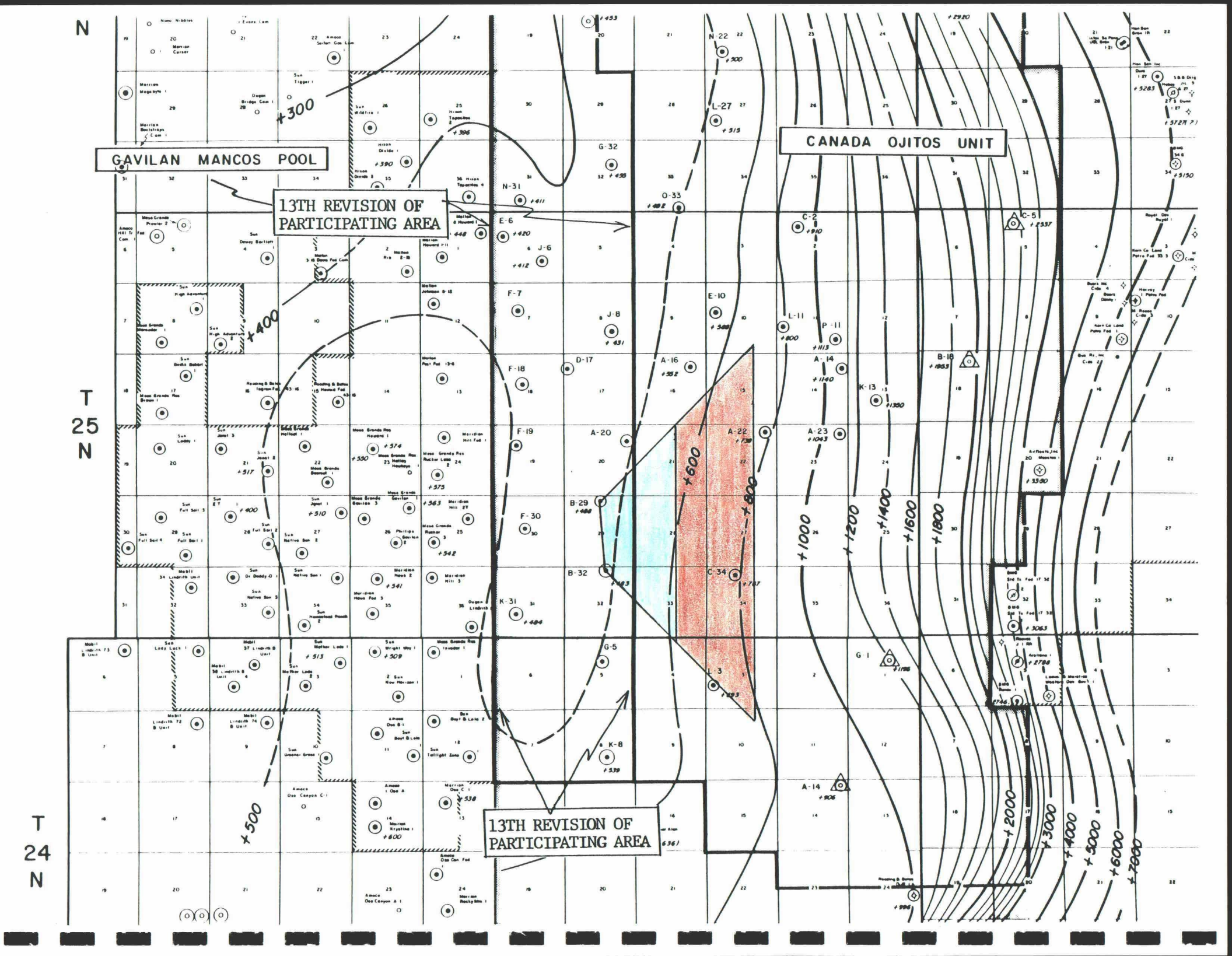
---

* Schedules of data from which the graph is constructed are included here at the end of this section.

For the period of the graph, the average GOR for Gavilan was 4015 cf/bbl.

For the Canada Ojitos Unit expansion area the average produced GOR was 1400; and the net GOR was 384 cf/bbl.

This means that, as compared to Gavilan, on average, oil produced from the unit used 1/3 as much reservoir energy as Gavilan, disregarding injected gas. Recognizing injected gas and net GOR, the unit used only 10% as much reservoir energy per barrel of oil produced.


N
GAVILAN MANCOS POOL
13TH REVISION OF PARTICIPATING AREA
CANADA OJITOS UNIT
13TH REVISION OF PARTICIPATING AREA
T 25 N
T 24 N
+300
+400
+500
+600
+800
+1000
+1200
+1400
+1600
+1800
+2000
+3000
+4000
+5000
+6000
+7000
N-22
L-27
G-32
N-31
O-33
E-6
J-6
C-2
C-5
F-7
J-8
E-10
L-11
P-11
B-18
D-17
A-16
A-14
K-13
F-18
F-19
A-20
A-22
A-23
B-29
F-30
B-32
C-34
K-31
G-5
L-3
G-1
K-8
A-14

EVIDENCE OF COMMUNICATION OF WELLS IN PROPOSED PRESSURE MAINTENANCE PROJECT EXPANSION LANDS WITH EXISTING PROJECT AREA BY AREA OF ORIGIN OF PRODUCTION FOR CANADA OJITOS UNIT B-32 AND B-29 WELLS

As noted on the preceding pages production from the B-32 and B-29 originating from updip of these two wells must necessarily be an area somewhat as shown by the shading on the plat on the facing page for the different recovery percentages set out below (reference Case 9113, March and April 1987, B-M-G Exhibit 1, Section O). We now (February 1988) know that all three zones are productive here - but even if per acre recoveries are to be twice as high as the estimates below, a large drainage area exists for the B-29 and B-32, which is inside the existing project area.

Clearly the B-29 and B-32 and the shaded areas updip of them belong in the same pressure maintenance project area.

MINIMUM AREA BEING DRAINED BY B-32 AND B-29 WELLS

Production through 12-31-87 (M Bbls):	B-32	554
	B-29	464
	Total	1018

Percent of Ultimate Recovery Produced to 12-31-87 (Percent)	Ultimate Recovery for the two wells (M bbls)	Per Well Ultimate Recovery (M bbls)	Area Being Drained by Both Wells (Acres)	Area Colored on Map on Facing Page
100	1018	509	1450	
66-2/3	1530	715	2180	Blue
33-1/3	3060	1530	4350	Blue and tan

Above figures assume an ultimate recovery of 700 barrels per acre, which is based on one zone at 2500 barrels oil per acre hydrocarbon pore space (± 2000 stock tank barrels per acre oil in place), 1/2 of which provides gravity drainage recovery at 55% of oil in place, and 1/2 of which provides combination gravity drainage and solution gas drive for 15% of oil in place.

PRODUCTION STATISTICS

CANADA OJITOS UNIT
WELLS IN PROPOSED EXPANSION AREA OF PRESSURE MAINTENANCE PROJECT

OIL PRODUCTION

	G-32	J-8	B-32	K-31	K-8	B-29	E-6	F-30	N-31	J-6	F-18	F-19	D-17	A-20	G-5	TOTALS
09/86	-	61	14101	51	196	19507	12695	3354	7854	5315	-	-	-	-	-	63134
10/86	-	135	17632	40	246	25686	15034	9212	7393	3789	-	-	-	-	-	79167
11/86	83	103	15330	163	572	24098	8694	10330	5600	3409	-	-	-	-	-	68382
12/86	-	110	16190	82	311	24367	12956	6590	5451	4301	-	-	-	-	-	70358
01/87	82	37	15072	49	216	22314	12177	10847	5619	2690	-	-	-	-	-	69103
02/87	-	25	12355	18	70	-	420	7480	2934	948	-	-	-	650	-	24900
03/87	-	71	11233	-	146	8141	-	11993	3781	-	-	-	-	286	-	35651
04/87	-	125	8143	-	251	12315	1290	8534	1967	-	-	-	-	-	-	32625
05/87	-	20	10188	100	129	11859	-	3207	936	-	-	-	-	-	-	26439
06/87	-	-	15832	-	96	18433	7128	9951	3850	-	-	92	201	-	-	55583
07/87	75	-	12938	-	240	18104	7820	10155	5288	-	3830	1935	177	128	-	60690
08/87	-	-	19297	-	19	20912	11180	11599	5912	1901	9806	2172	-	1082	-	83880
09/87	81	21	26922	-	40	31439	12518	12204	5592	1397	9433	1346	-	1309	1873	104175
10/87	-	-	23884	-	-	30767	9714	10332	4935	128	11100	136	-	155	3058	94209
11/87	-	-	11881	-	-	16981	3949	5698	1870	257	5004	730	-	526	3310	50206
															Total	918502

GAS PRODUCTION

	G-32	J-8	B-32	K-31	K-8	B-29	E-6	F-30	N-31	J-6	F-18	F-19	D-17	A-20	G-5	TOTALS
09/86	-	24	13480	36	104	17264	15361	2012	4712	6750	-	-	-	-	-	59743
10/86	-	54	16398	28	126	22655	18687	15384	4436	7331	-	-	-	-	-	85099
11/86	157	41	14717	114	305	17880	8137	11156	3920	8113	-	-	-	-	-	64540
12/86	-	51	17864	66	192	24284	10539	8094	3158	6778	-	-	-	-	-	71026
01/87	82	15	12374	34	115	18409	13638	10760	3512	8000	-	-	-	-	-	66939
02/87	-	10	10123	12	32	-	406	6262	3574	7535	-	-	-	1000	-	28954
03/87	-	26	10700	-	75	6997	-	11066	8547	-	-	-	-	495	-	37906
04/87	-	50	7985	-	133	13376	2560	9063	5330	-	-	-	-	-	-	38497
05/87	-	7	7790	63	62	11510	-	3065	2283	-	-	-	-	-	-	24780
06/87	-	-	13890	-	56	21061	31191	10856	10011	-	-	100	220	-	-	87385
07/87	65	-	15929	-	120	23068	32926	12232	13611	-	2492	17400	177	183	-	118203
08/87	-	-	26177	-	24	28817	28046	12614	7956	7695	4754	22687	-	3310	-	142080
09/87	80	40	29958	-	82	59449	25471	12554	5637	7635	4988	17217	-	6867	1427	171405
10/87	-	-	29490	-	-	66939	31236	11790	8424	3286	4535	1606	-	803	8731	166840
11/87	-	-	15315	-	-	41295	17914	6886	6239	9689	2709	11790	-	3284	6887	122008
															Total	1285405

Total average GOR for period: 1400 cf/bbl.

CANADA OJITOS UNIT
WELLS IN 13TH REVISION OF PARTICIPATING AREA

NET GAS VOLUMES

	G-32	J-8	B-32	K-31	K-8	B-29	E-6	F-30	N-31	J-6	F-18	F-19	D-17	A-20	G-5	TOTALS
09/86	-	2	923	2	7	1181	1051	138	322	462	-	-	-	-	-	4088
10/86	-	4	1127	2	9	1558	1285	1058	305	504	-	-	-	-	-	5852
11/86	11	3	1012	8	21	1229	559	767	270	558	-	-	-	-	-	4438
12/86	-	-	890	-	-	1218	531	402	158	340	-	-	-	-	-	3539
01/87	5	1	678	2	6	1004	962	586	191	213	-	-	-	-	-	3648
02/87	-	1	976	1	3	-	236	606	346	532	-	-	-	97	-	2798
03/87	-	5	1853	-	13	1164	-	1919	1478	-	-	-	-	86	-	6518
04/87	-	3	448	-	8	739	196	512	299	-	-	-	-	-	-	2205
05/87	-	1	1060	9	9	1554	-	420	440	-	-	-	-	-	-	3493
06/87	-	-	792	-	3	1198	1775	617	624	-	-	6	13	-	-	5028
07/87	3	-	763	-	6	1104	1572	589	650	-	119	83	8	-	-	4897
08/87	-	-	13662	-	13	15036	14646	6588	4156	4017	2275	11842	-	1728	-	73963
09/87	56	28	20838	-	57	41311	17700	8726	3920	5306	3471	11965	-	4773	993	119144
10/87	-	-	7452	-	-	16583	7732	2924	2088	82	1121	398	-	199	951	39530
11/87	-	-	10895	-	-	22262	12874	4946	4484	696	1947	8475	-	2360	4948	73887
															Total	353028

(Total oil from previous page 918502 bbls)

Total average net GOR for period: 353028/918502 = 384 cf/bbl.

CANADA QUITOS UNIT

WELLS IN PROPOSED EXPANSION AREA OF PRESSURE MAINTENANCE PROJECT

	GROSS STATISTICS			NET STATISTICS	
	OIL	GAS	GOR	GAS VOLUME	GOR
09/86	63134	59743	946	4088	65
10/86	79167	85099	1075	5852	74
11/86	68382	64540	944	4438	65
12/86	70358	71026	1009	3539	50
01/87	69103	66939	969	3648	53
02/87	24900	28954	1163	2798	112
03/87	35651	37906	1063	6518	183
04/87	32625	38497	1180	2205	68
05/87	26439	24780	937	3493	132
06/87	55583	87385	1572	5028	90
07/87	60690	118203	1948	4897	81
08/87	83880	142080	1694	73963	882
09/87	104175	171405	1645	119144	1144
10/87	94209	166840	1771	39530	420
11/87	50206	122008	2430	73887	1472

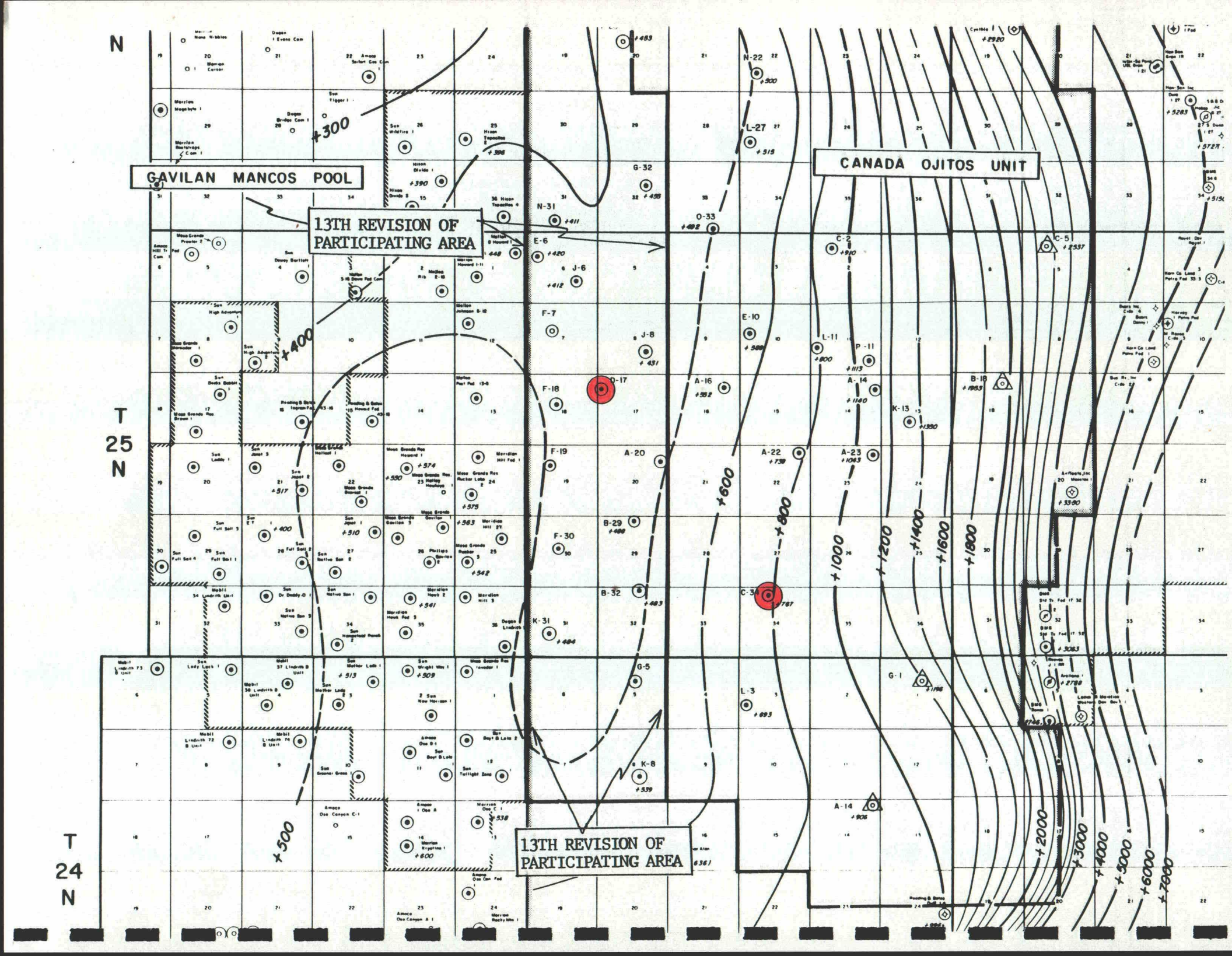
GAVILAN MANCOS POOL,, RIO ARRIBA CO., NM
GAVILAN MANCOS POOL TOTAL.

				OIL				GAS			GOR	WATER	
YR	MO	NO PROD WELLS	WELL DAYS PROD	BOPM	AVE BOPPD	AVE BOPCD	CUM MBO	MCF/M	AVE MCF/D	CUM MMCF	SCF/BBL	Month	AVE BWPD
1986	9	41	716	86793.0	121.2	70.6	2665.4	184219.0	257.3	3881.0	2122.5	532.0	0.7
1986	10	48	1129	101728.0	90.1	68.4	2767.2	284917.0	252.4	4166.0	2800.8	658.0	0.6
1986	11	50	1187	99292.0	83.6	66.2	2866.5	316441.0	266.6	4482.4	3187.0	657.0	0.6
1986	12	49	1242	98042.0	78.9	64.5	2964.5	321674.0	259.0	4804.1	3281.0	875.0	0.7
1987	1	53	1200	81304.0	67.8	49.5	3045.8	238322.0	198.6	5042.4	2931.2	832.0	0.7
1987	2	51	974	65768.0	67.5	46.1	3111.6	245676.0	252.2	5288.1	3735.5	659.0	0.7
1987	3	51	1034	67157.0	64.9	42.5	3178.7	259377.0	250.8	5547.5	3862.2	653.0	0.6
1987	4	57	1133	87024.0	76.8	50.9	3265.8	273856.0	241.7	5821.3	3146.9	1606.0	1.4
1987	5	56	1323	62986.0	47.6	36.3	3328.7	304890.0	230.5	6126.2	4840.6	1826.0	1.4
1987	6	55	1117	45798.0	41.0	27.8	3374.5	296850.0	265.8	6423.0	6481.7	1096.0	1.0
1987	7	59	1667	99567.0	59.7	54.4	3474.1	528027.0	316.8	6951.1	5303.2	1021.0	0.6
1987	8	56	1539	102190.0	66.4	58.9	3576.3	477662.0	310.4	7428.7	4674.3	1174.0	0.8
1987	9	56	1462	96343.0	65.9	57.3	3672.6	454482.0	310.9	7883.2	4717.3	938.0	0.6
1987	10	57	1498	91977.0	61.4	52.1	3764.6	452641.0	302.2	8335.9	4921.2	1181.0	0.8
1987	11	56	1235	58409.0	47.3	34.8	3823.0	357181.0	289.2	8693.0	6115.2	710.0	0.6

Totals for period: Gas 4,996,215 MCF
Oil 1,244,378 Bbls.

Total Average GOR 4015 cf/bbl.

J


N
T 25 N
T 24 N
GAVILAN MANCOS POOL
13TH REVISION OF PARTICIPATING AREA
CANADA OJITOS UNIT
13TH REVISION OF PARTICIPATING AREA
+300
+400
+500
+600
+800
+1000
+1200
+1400
+1600
+1800
+2000
+3000
+4000
+5000
+6000
+7000
N-22
L-27
G-32
N-31
O-33
E-6
J-6
C-2
C-5
F-7
J-8
E-10
L-11
P-11
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B-18
K-13
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A-20
A-22
A-23
B-29
F-30
B-32
C-34
K-31
G-5
L-3
G-1
K-8
A-14

EVIDENCE OF COMMUNICATION OF WELLS IN PROPOSED PRESSURE MAINTENANCE PROJECT EXPANSION LANDS WITH EXISTING PROJECT AREA AS EVIDENCED BY PRESSURE BEHAVIOR OF WELL CANADA OJITOS UNIT C-34 (SECTION 34, TOWNSHIP 25 NORTH, RANGE 1 WEST) WHILE USED AS AN OBSERVATION WELL DURING PART OF 1987

The plat on the facing page shows location of the Canada Ojitos Unit C-34. During part of 1987 this well was used as an observation well for pressures. At the time of the pressure surveys, the zones open were the A and B zones.

The graph next following shows pressure behavior of this observation well from July to November 1987.

Except for the small producing well, L-3, the nearest significant producer, the B-32, is located about two miles distant. The nearest injection well, the G-1, is 2-1/2 miles distant.

Also during November the D-17, centrally located in the proposed expansion area, was used as an observation well (identified on the plat). It too showed a similar response to the production and shutting in of the producing wells.

Solid Lines Show Pressures For Times Of Continuous BHP Surveys

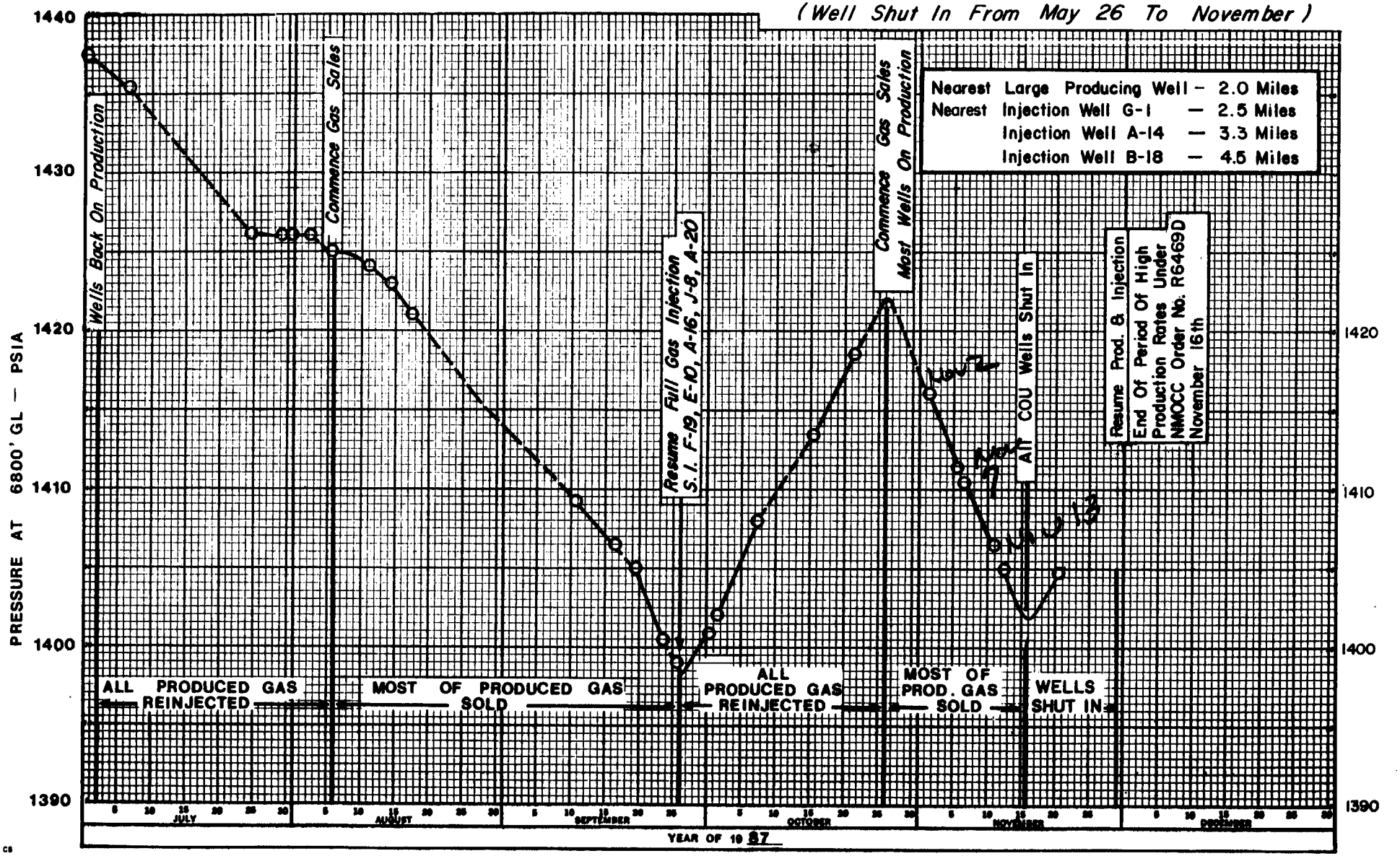
Dashed Lines Are For Times Of No BHP Data

COU C-34 OBSERVATION WELL

Sec. 34 - T.25N - R.1W

BOTTOM HOLE PRESSURE HISTORY

(Well Shut In From May 26 To November)



11-87 cs

EVIDENCE OF COMMUNICATION OF WELLS
IN PROPOSED PRESSURE MAINTENANCE PROJECT EXPANSION LANDS
WITH EXISTING PROJECT AREA
AS EVIDENCED BY PRESSURE BEHAVIOR OF WELL CANADA OJITOS UNIT C-34
(SECTION 34, TOWNSHIP 25 NORTH, RANGE 1 WEST)
WHILE USED AS AN OBSERVATION WELL DURING PART OF 1987

As can be seen from the graph on the facing page, pressures in this well respond to production and injection despite the long distances from the producing and injection wells.

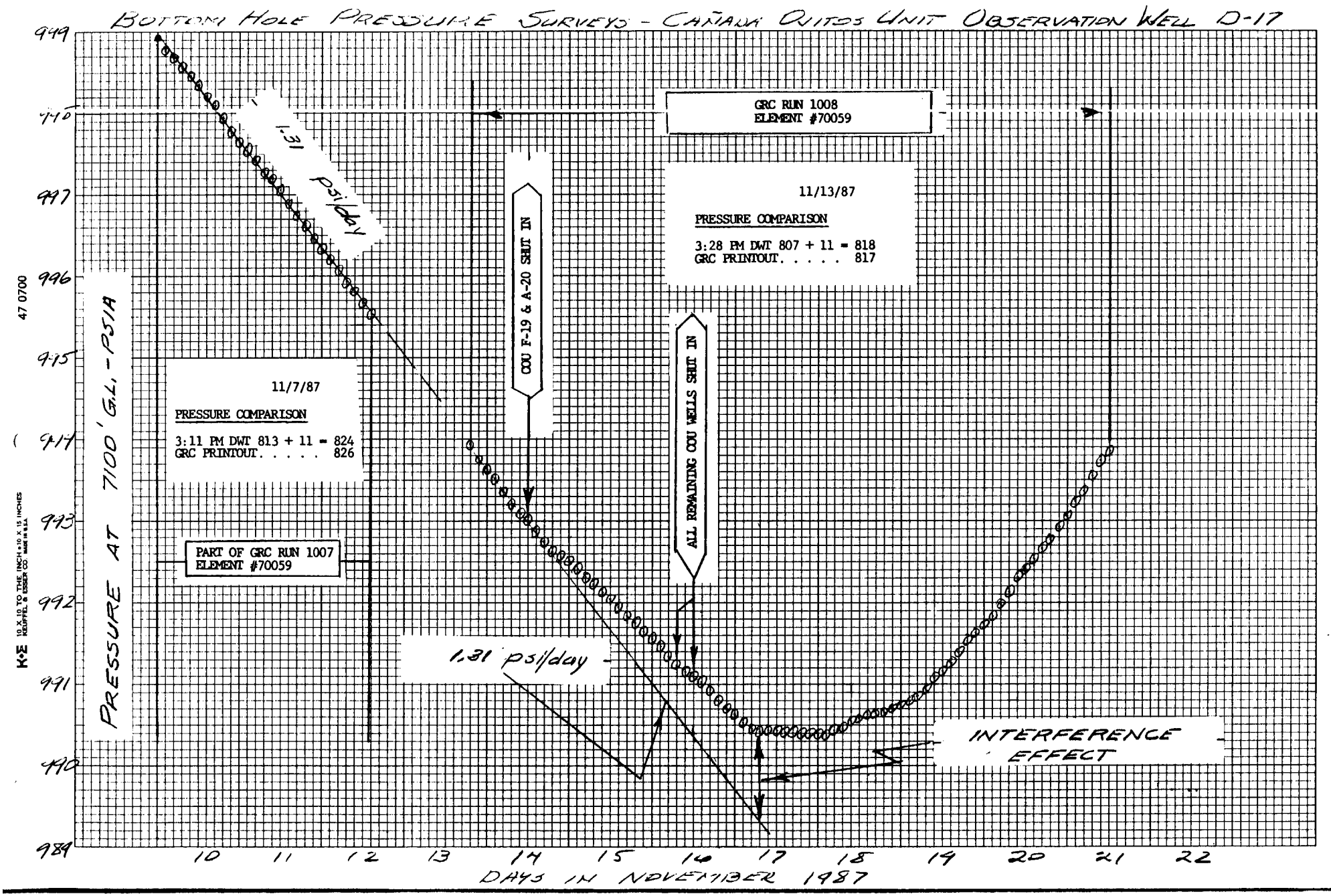
For three weeks prior to the November 16 field-wide shut-in most of the produced gas was sold and the gas which was injected was injected in the B-18, 4-1/2 miles distant. Accordingly the pressure behavior in the C-34 during November is believed to be almost entirely the consequence of producing and shutting in of the producing wells with minimum effect of the injection wells.

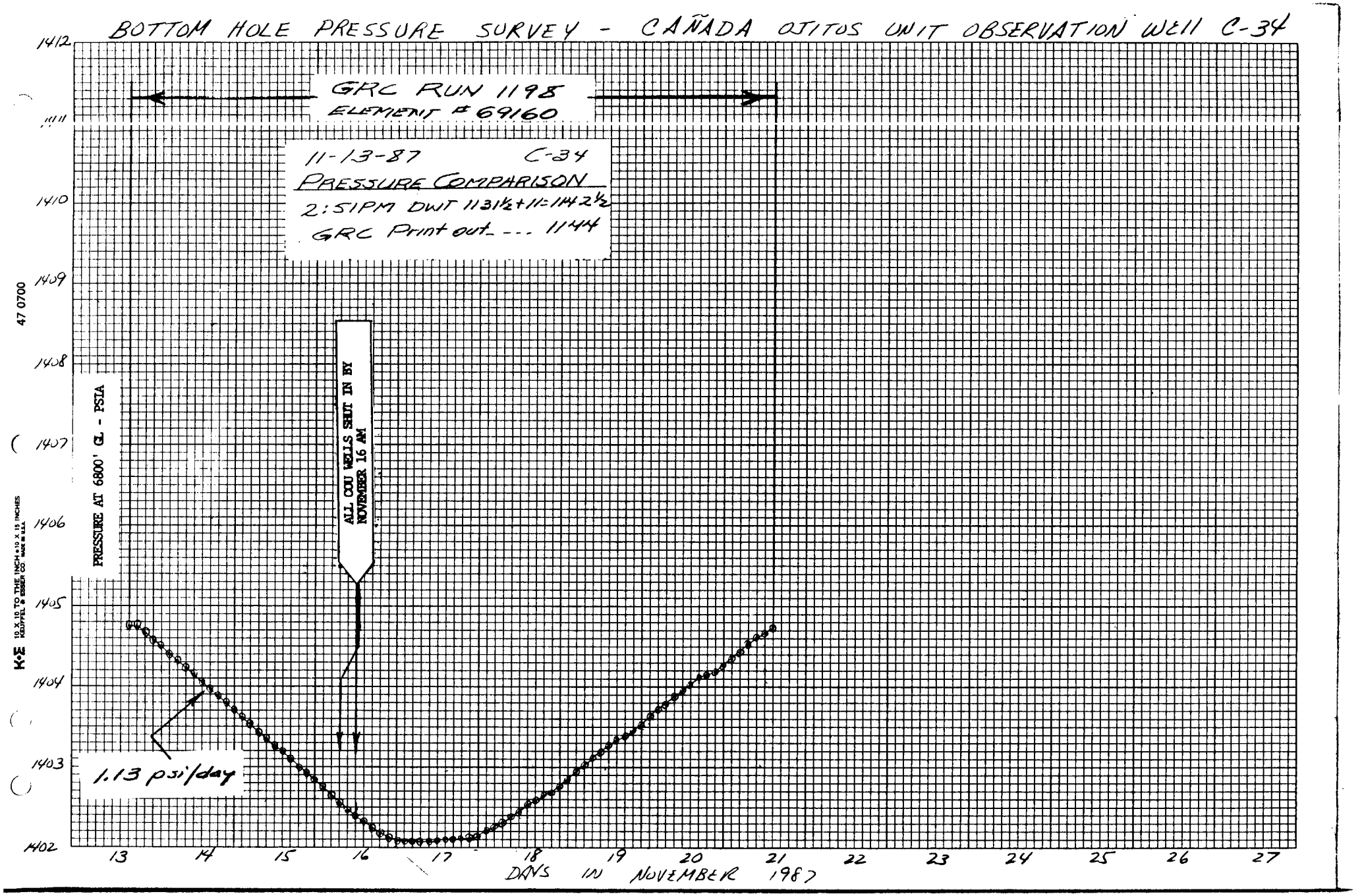
Detailed graphs - hand plotted at .1 day intervals - for both the C-34 and the D-17 during the time period surrounding the November 16, 1987 date are next following (pink color).

Mechanically plotted graphs showing each of the 1/2 hour pressure points (dots) are shown on the succeeding two pages (green).

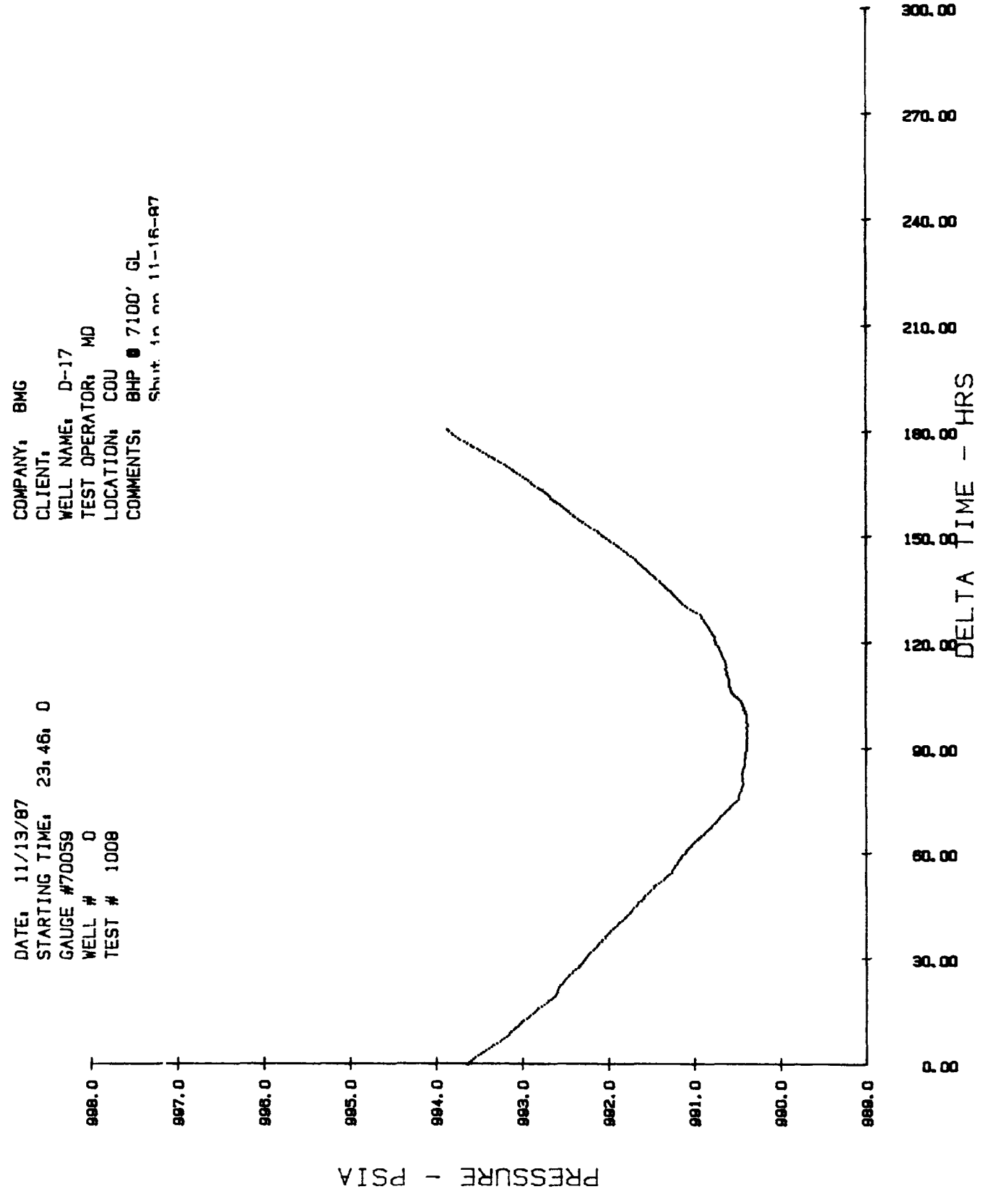
Printouts of the detailed pressure data for these two surveys are at the end of this section (yellow color for the D-17 and gold color for the C-34).

Detailed graphs of the individual surveys for the C-34 for the July to November period covered by the graph on the facing page are included herein next following the green graphs (gray color).


BOTTOM HOLE PRESSURE SURVEYS - CAÑADA QUITOS UNIT OBSERVATION WELL D-17
999
998
997
996
995
994
993
992
991
990
989
PRESSURE AT 7100' GL, - PSIA
1.31 psi/day
GRC RUN 1008
ELEMENT #70059
11/13/87
PRESSURE COMPARISON
3:28 PM DWT 807 + 11 = 818
GRC PRINTOUT. 817
COU F-19 & A-20 SHUT IN
ALL REMAINING COU WELLS SHUT IN
11/7/87
PRESSURE COMPARISON
3:11 PM DWT 813 + 11 = 824
GRC PRINTOUT. 826
PART OF GRC RUN 1007
ELEMENT #70059
1.31 psi/day
INTERFERENCE EFFECT
10
11
12
13
14
15
16
17
18
19
20
21
22
DAYS IN NOVEMBER 1987
47 0700
K+E 10 X 10 TO THE INCH • 10 X 15 INCHES
KEUFFEL & ESSER CO. MADE IN U.S.A.

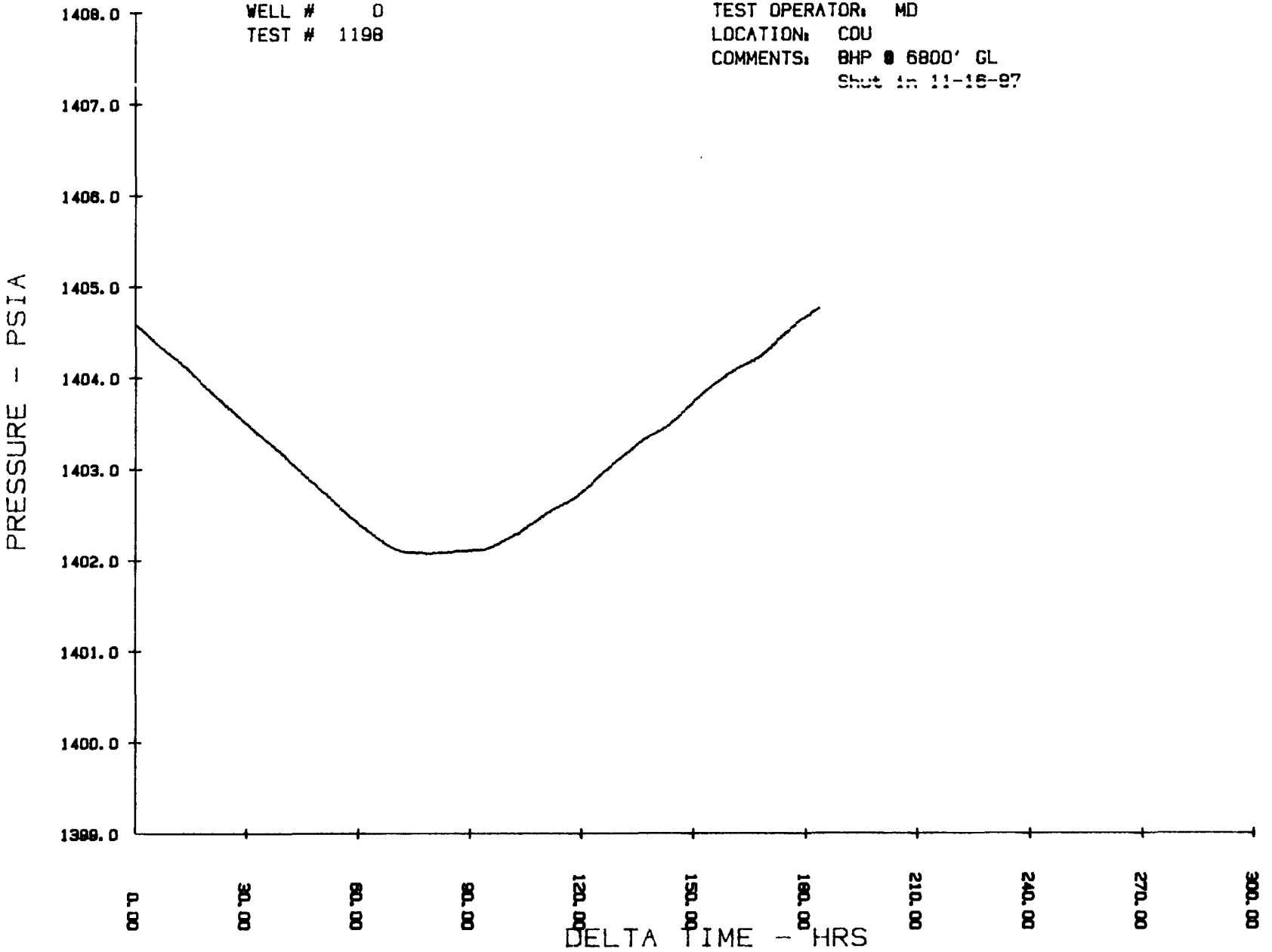

BOTTOM HOLE PRESSURE SURVEY - CAÑADA OJITOS UNIT OBSERVATION WELL C-34
GRC RUN 1198
ELEMENT # 69160
11-13-87 C-34
PRESSURE COMPARISON
2:51PM DWT 1131½+11=1142½
GRC Print out --- 1144
ALL CDU WELLS SHUT IN BY NOVEMBER 16 AM
PRESSURE AT 6800' GL - PSIA
1.13 psi/day
DAYS IN NOVEMBER 1987
1412
1411
1410
1409
1408
1407
1406
1405
1404
1403
1402
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
47 0700
K+E 10 X 10 TO THE INCH • 10 X 15 INCHES
KEUFFEL & ESSER CO. MADE IN U.S.A.

*** LINEAR PLOT ***


COMPANY: BMG
CLIENT:
WELL NAME: D-17
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7100' GL
DATE: 11/13/87
STARTING TIME: 23:46: 0
GAUGE #70059
WELL # 0
TEST # 1008
998.0
997.0
996.0
995.0
994.0
993.0
992.0
991.0
990.0
989.0
PRESSURE - PSIA
0.00
30.00
60.00
90.00
120.00
150.00
180.00
210.00
240.00
270.00
300.00
DELTA TIME - HRS

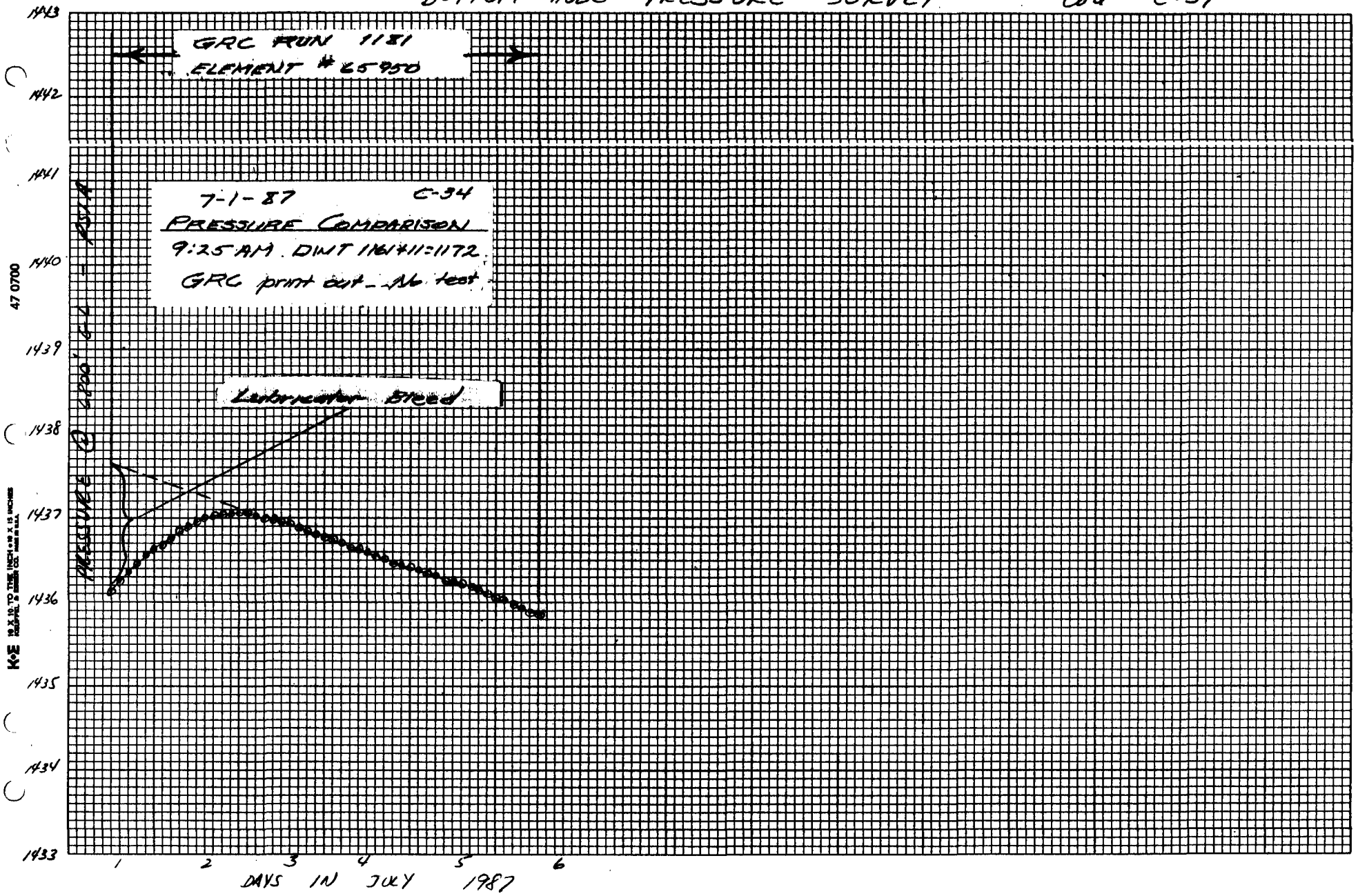
DATE: 11/13/87
STARTING TIME: 23: 46: 0
GAUGE #69160
WELL # 0
TEST # 1198

COMPANY: BMG
CLIENT:
WELL NAME: C-34
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 6800' GL
Shut in 11-15-87

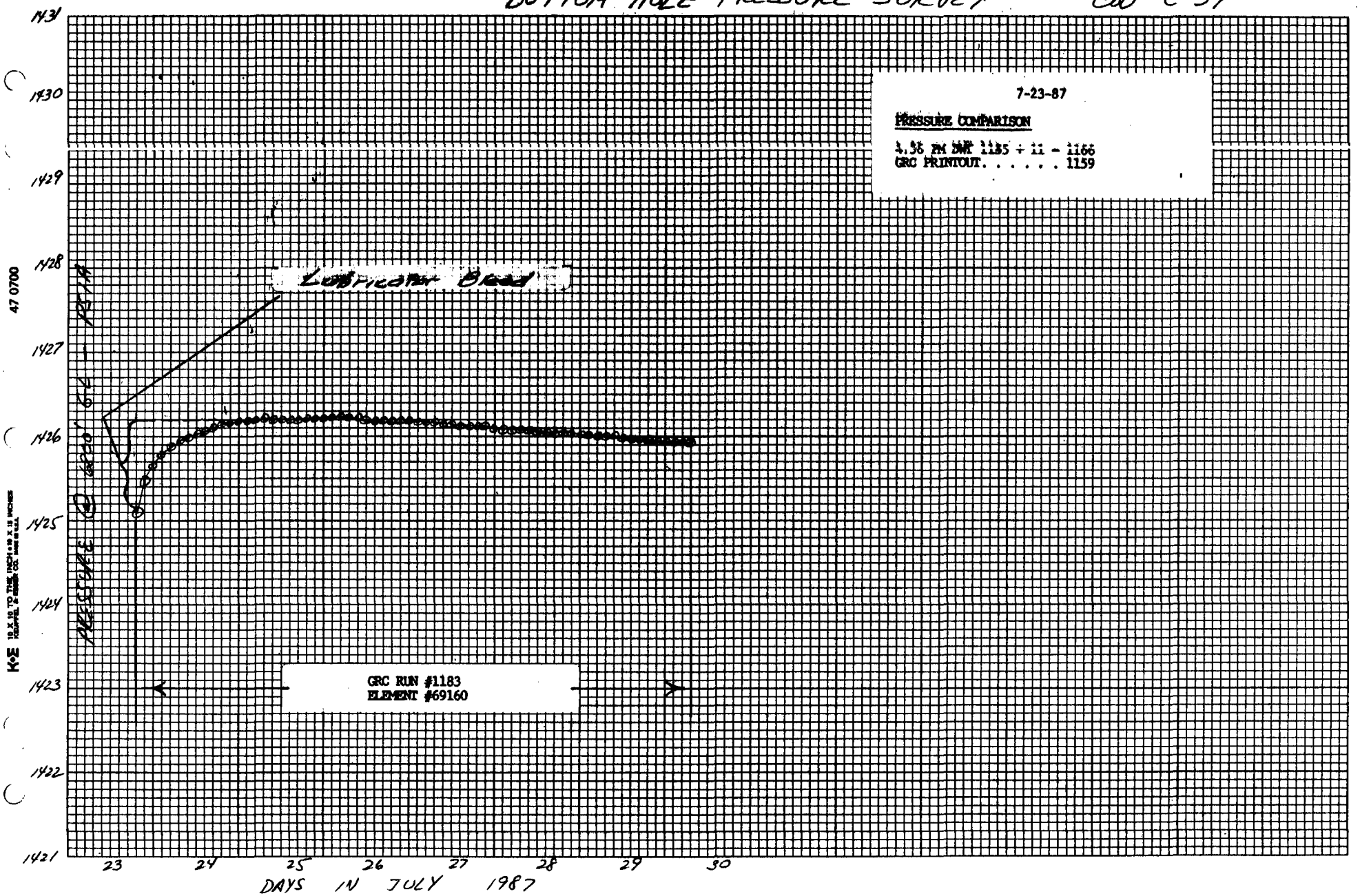


*** LINEAR PLOT ***

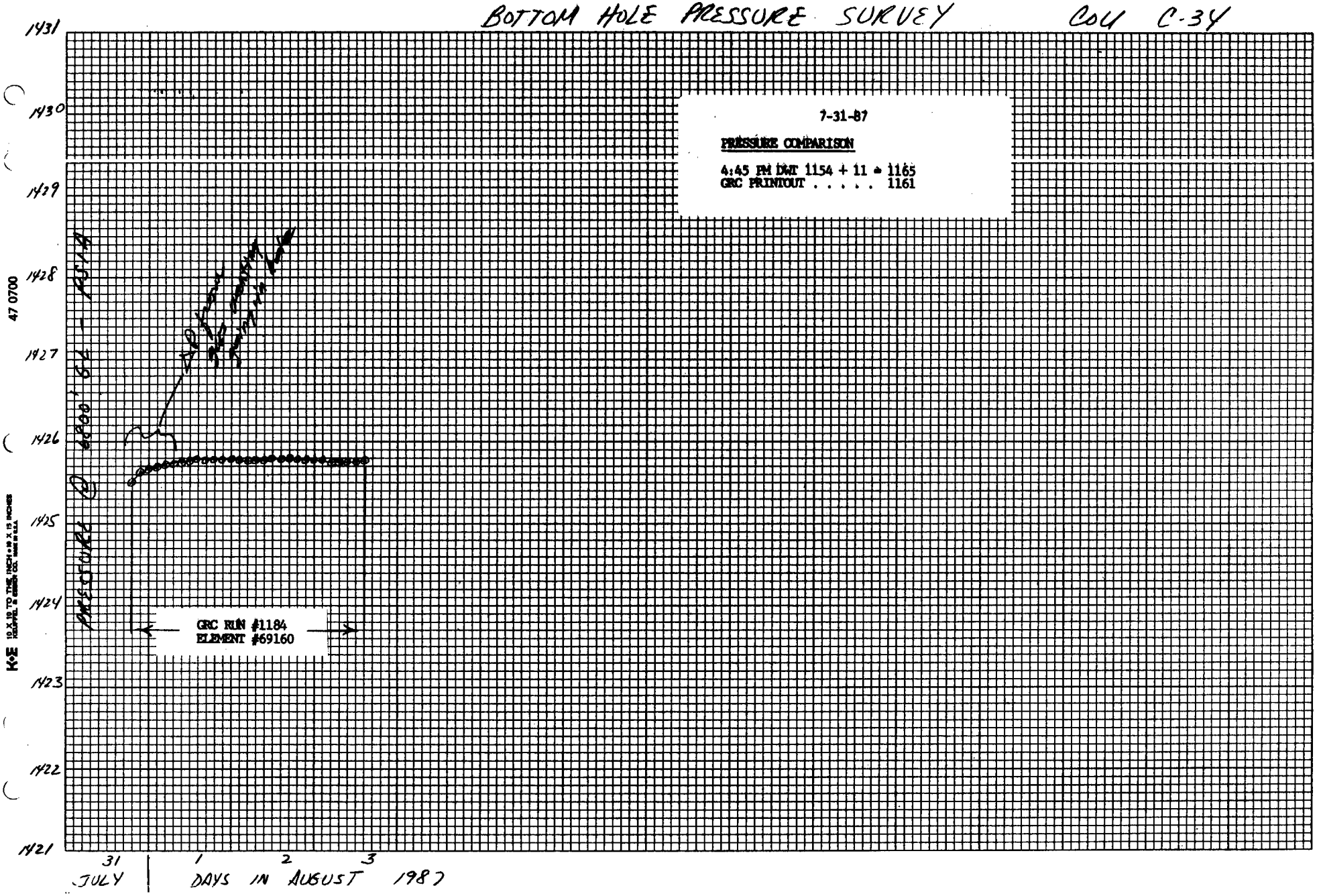
BOTTOM HOLE PRESSURE SURVEY COW C-34



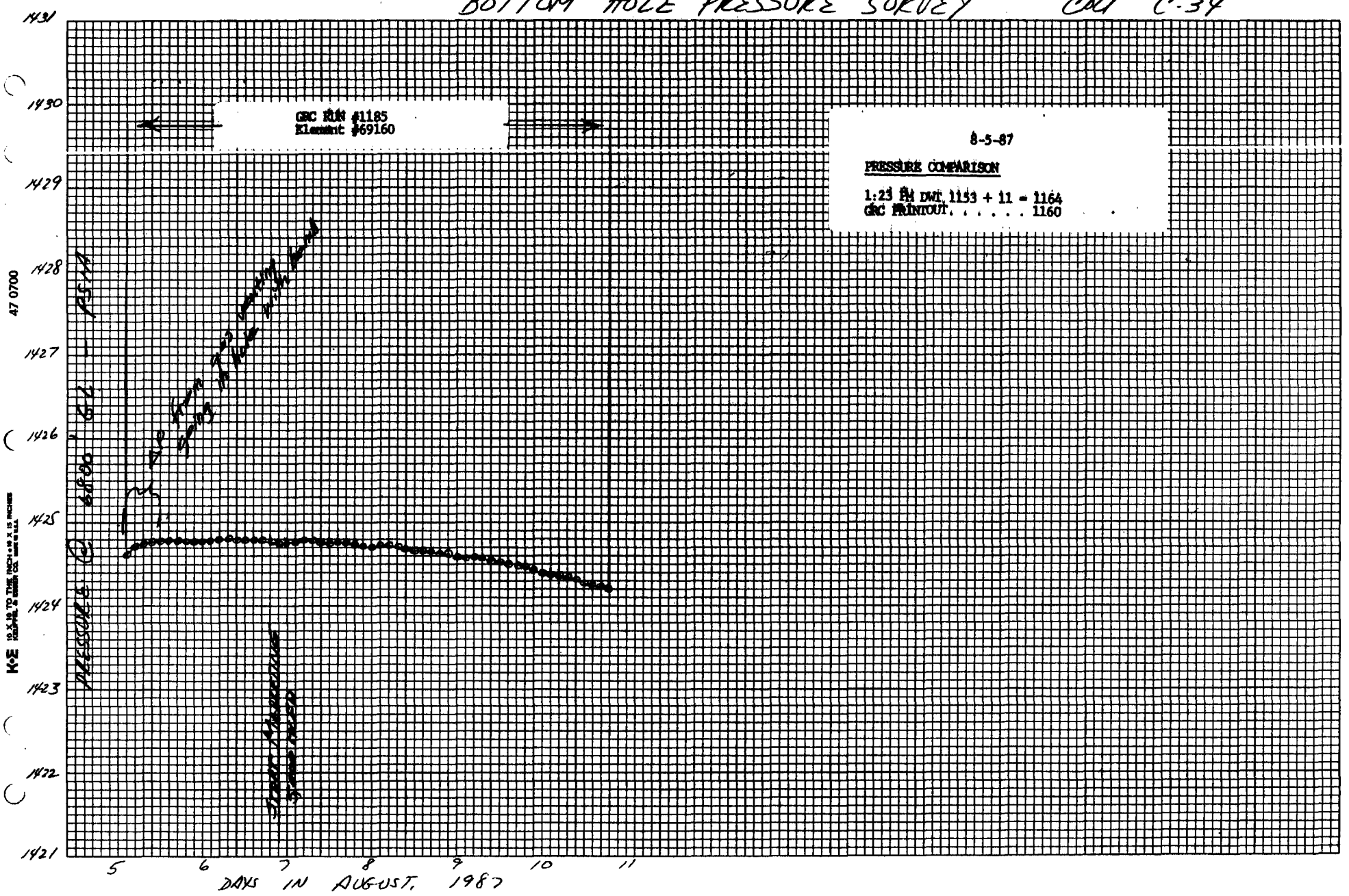
BOTTOM HOLE PRESSURE SURVEY CW C-34



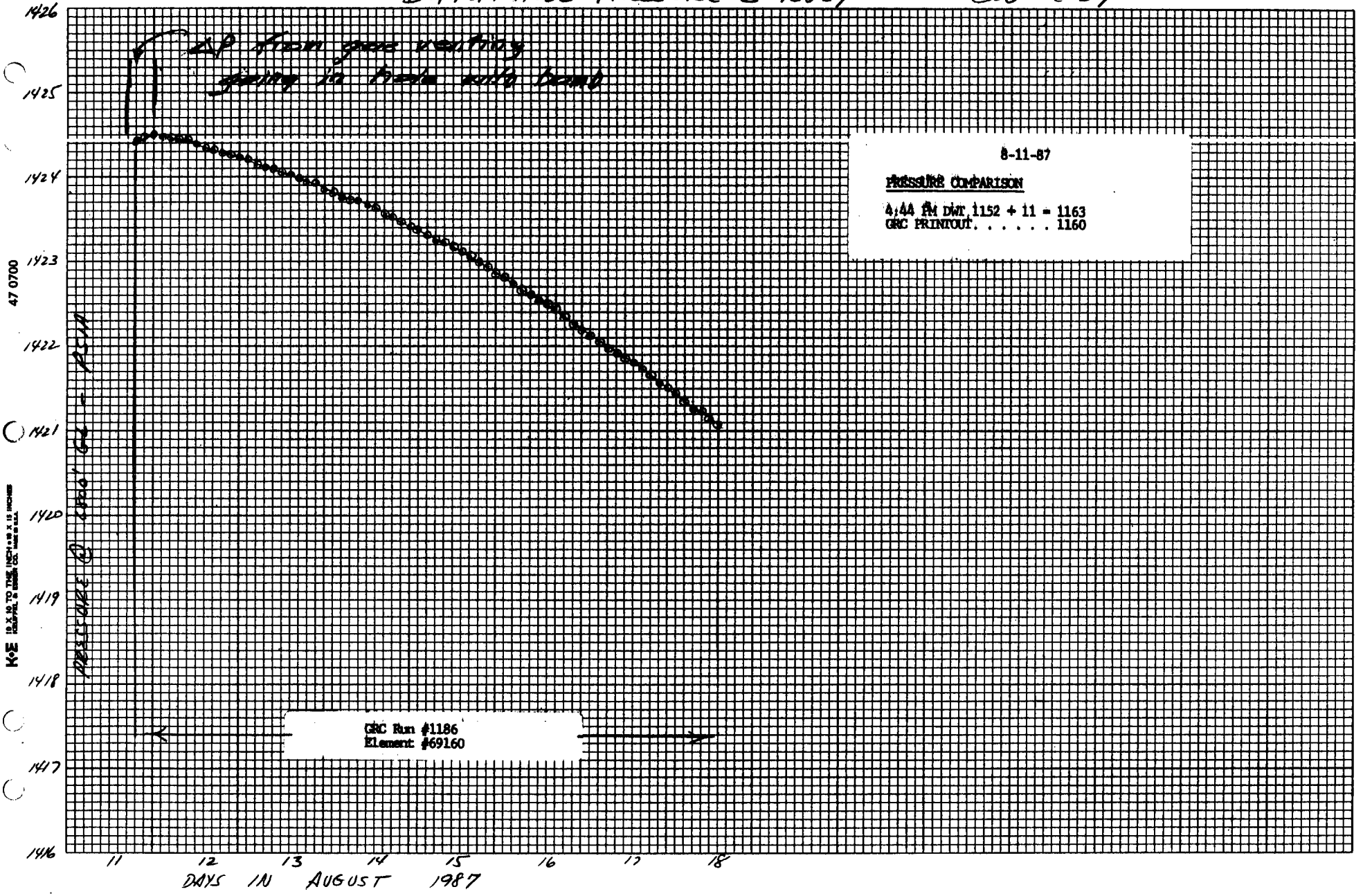
BOTTOM HOLE PRESSURE SURVEY — COU C-34

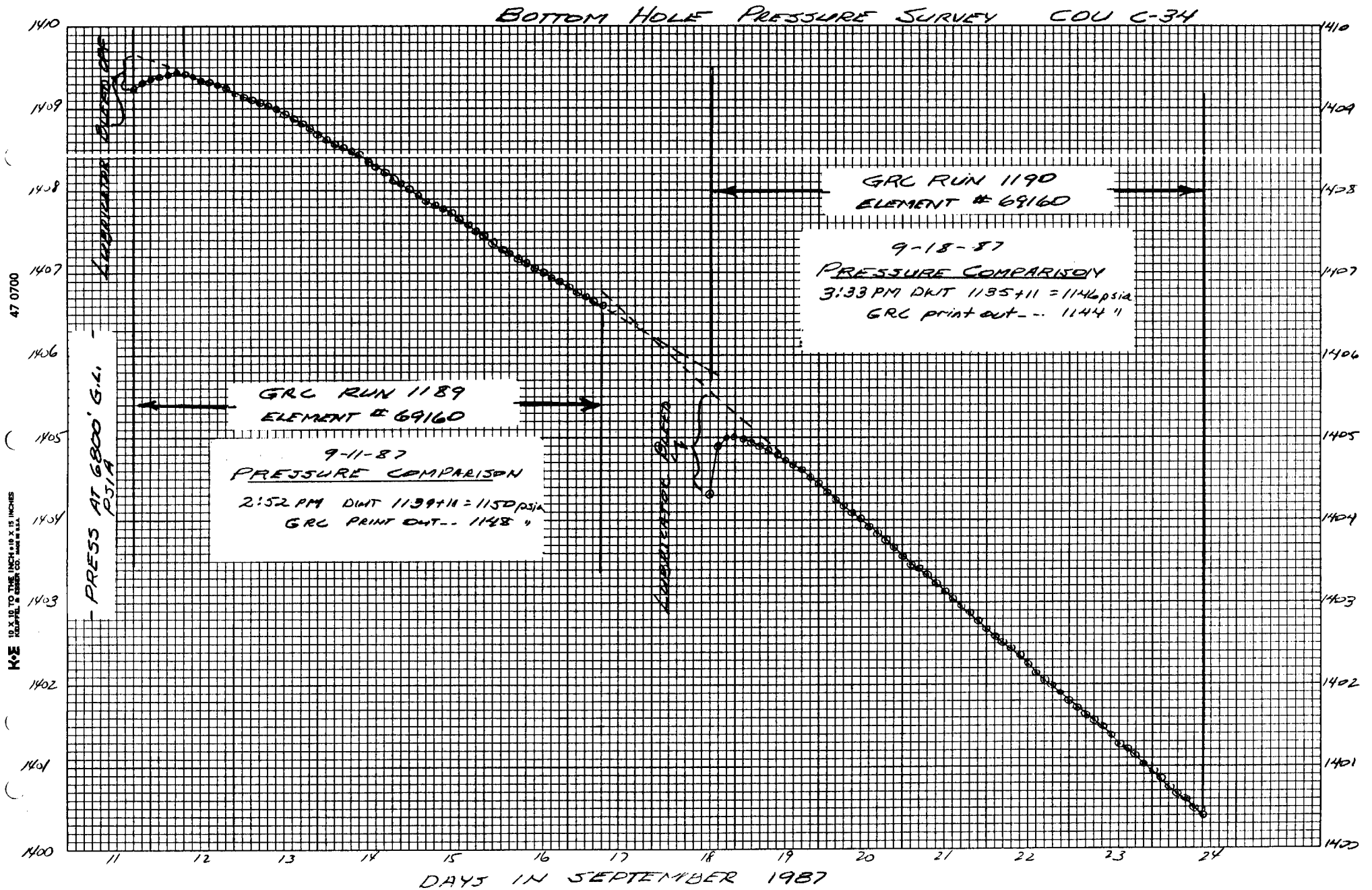


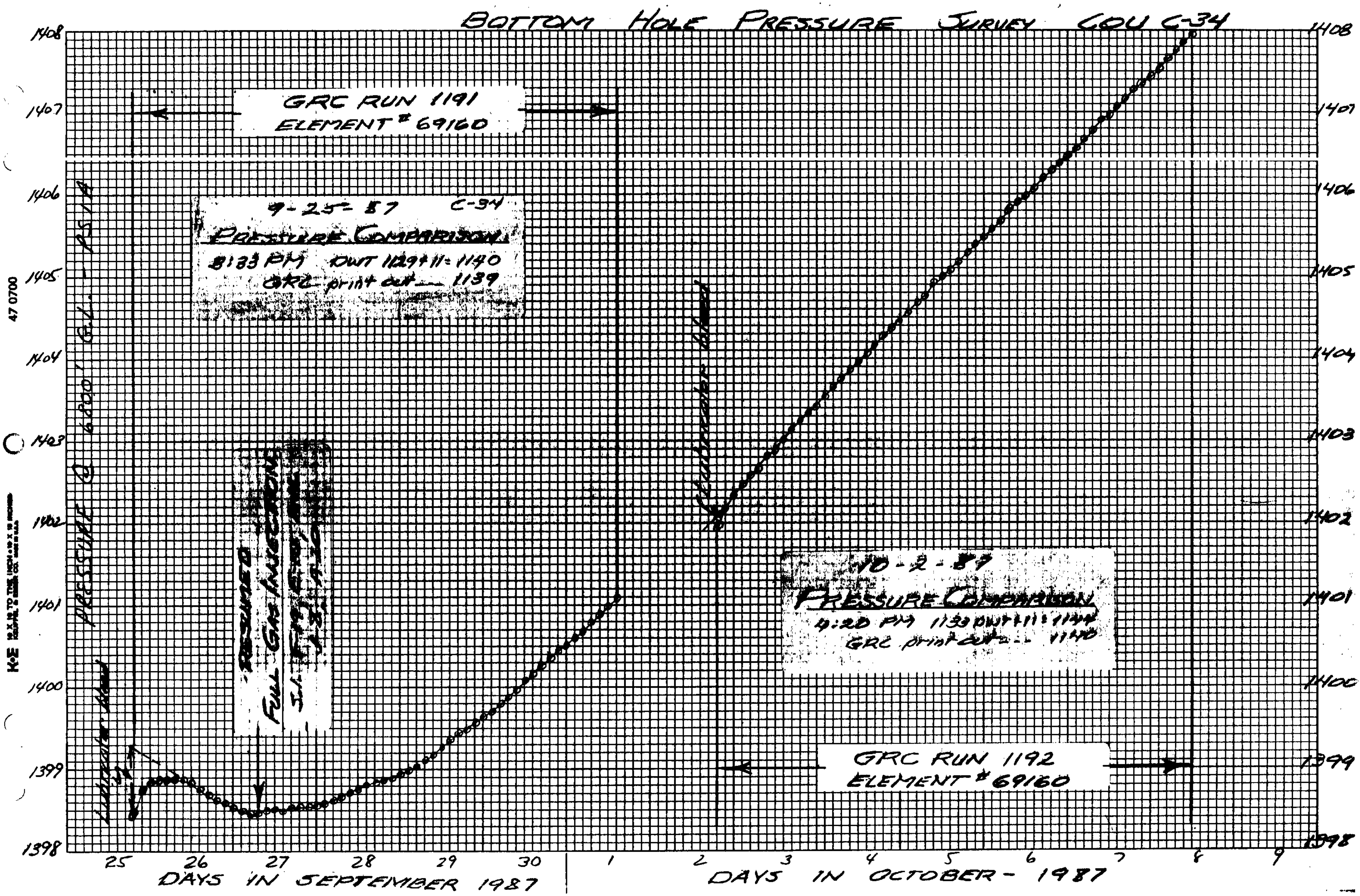
BOTTOM HOLE PRESSURE SURVEY Coil C-34



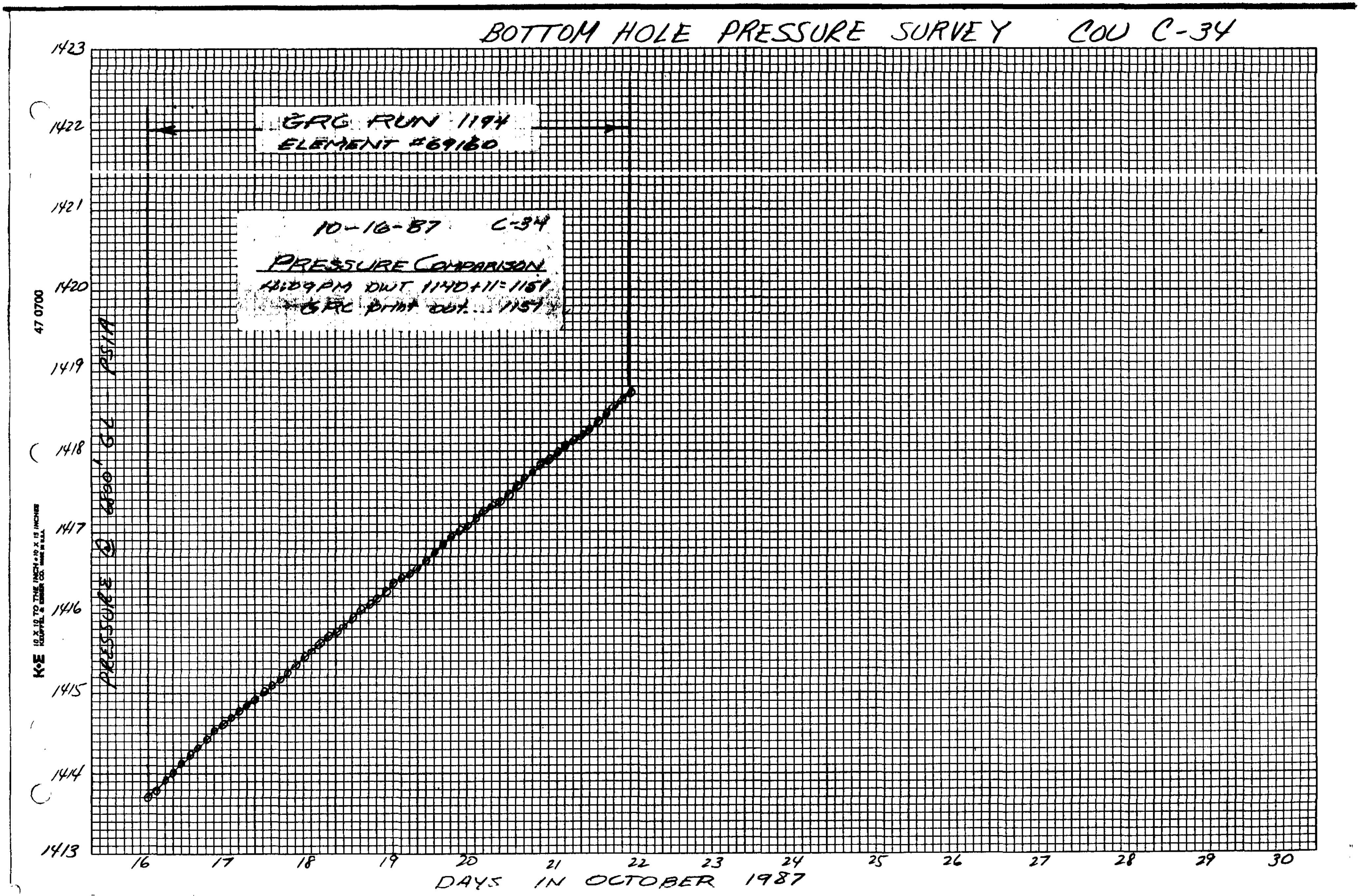
BOTTOM HOLE PRESSURE SURVEY CoU C-34



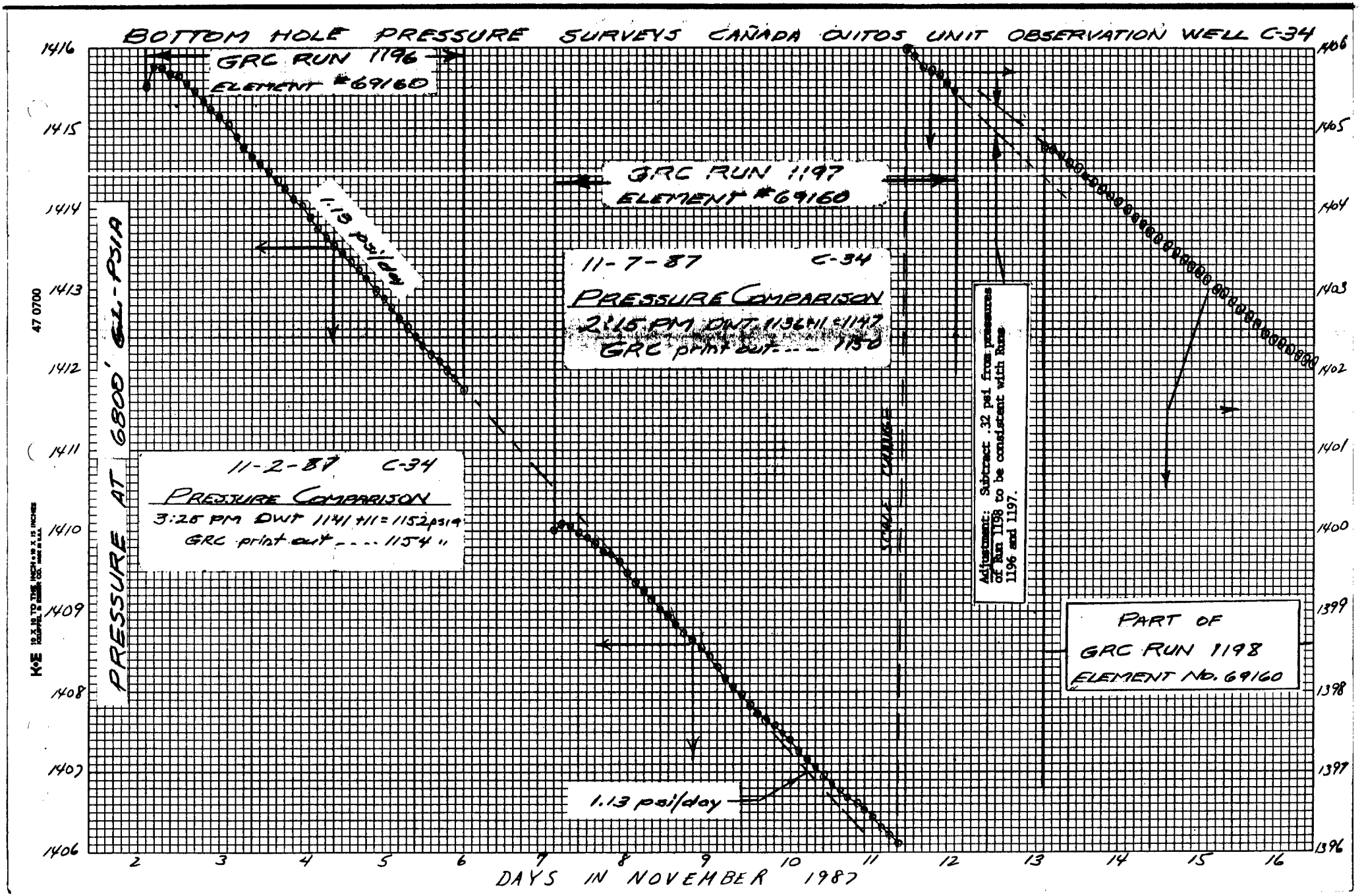

BOTTOM HOLE PRESSURE SURVEY COU C-34
1410
1409
1408
1407
1406
1405
1404
1403
1402
1401
1400
- PRESS AT 6800' G.L. PSIA
ELEVATOR BUMPED OFF
ELEVATOR BUMPED OFF
GRC RUN 1189
ELEMENT # 69160
9-11-87
PRESSURE COMPARISON
2:52 PM DWT 1139+11 = 1150 psia
GRC PRINT OUT-- 1148 "
GRC RUN 1190
ELEMENT # 69160
9-18-87
PRESSURE COMPARISON
3:33 PM DWT 1135+11 = 1146 psia
GRC print out-- 1144 "
11
12
13
14
15
16
17
18
19
20
21
22
23
24
DAYS IN SEPTEMBER 1987



BOTTOM HOLE PRESSURE SURVEY COU C-34
PRESSURE @ 6800' G.L. - PSIA
1398
1399
1400
1401
1402
1403
1404
1405
1406
1407
1408
GRC RUN 1191
ELEMENT # 69160
9-25-87 C-34
PRESSURE COMPARISON
8:33 PM DWT 1129+11=1140
GRC print out — 1139
RESUMED
FULL GAS INJECTION
GRC RUN 1192
ELEMENT # 69160
10-2-87
PRESSURE COMPARISON
4:20 PM 1133 DWT+11=1144
GRC print out — 1140
25
26
27
28
29
30
1
2
3
4
5
6
7
8
9
DAYS IN SEPTEMBER 1987
DAYS IN OCTOBER - 1987



BOTTOM HOLE PRESSURE SURVEY COU C-34
GRC RUN 1194
ELEMENT #69160
10-16-87 C-34
PRESSURE COMPARISON
4:09PM DWT 1140+11=1151
GRC print out... 1151
PRESSURE @ 6800' GL - PSIA
1423
1422
1421
1420
1419
1418
1417
1416
1415
1414
1413
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
DAYS IN OCTOBER 1987
K+E 10 X 10 TO THE INCH • 10 X 15 INCHES
47 0700


BOTTOM HOLE PRESSURE SURVEYS CAÑADA CUITOS UNIT OBSERVATION WELL C-34
GRC RUN 1196
ELEMENT #69160
GRC RUN 1197
ELEMENT #69160
-.13 psi/day
11-7-87 C-34
PRESSURE COMPARISON
2:15 PM DWT 1136+11=1147
GRC print out - - - 1150
11-2-87 C-34
PRESSURE COMPARISON
3:25 PM DWT 1141+11=1152psig
GRC print out - - - 1154 "
Adjustment: Subtract .32 psi from pressures of Run 1198 to be constant with Runs 1196 and 1197.
PART OF
GRC RUN 1198
ELEMENT No. 69160
1.13 psi/day
PRESSURE AT 6800' SS - PSIA
DAYS IN NOVEMBER 1987
1416
1415
1414
1413
1412
1411
1410
1409
1408
1407
1406
1406
1405
1404
1403
1402
1401
1400
1399
1398
1397
1396
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14
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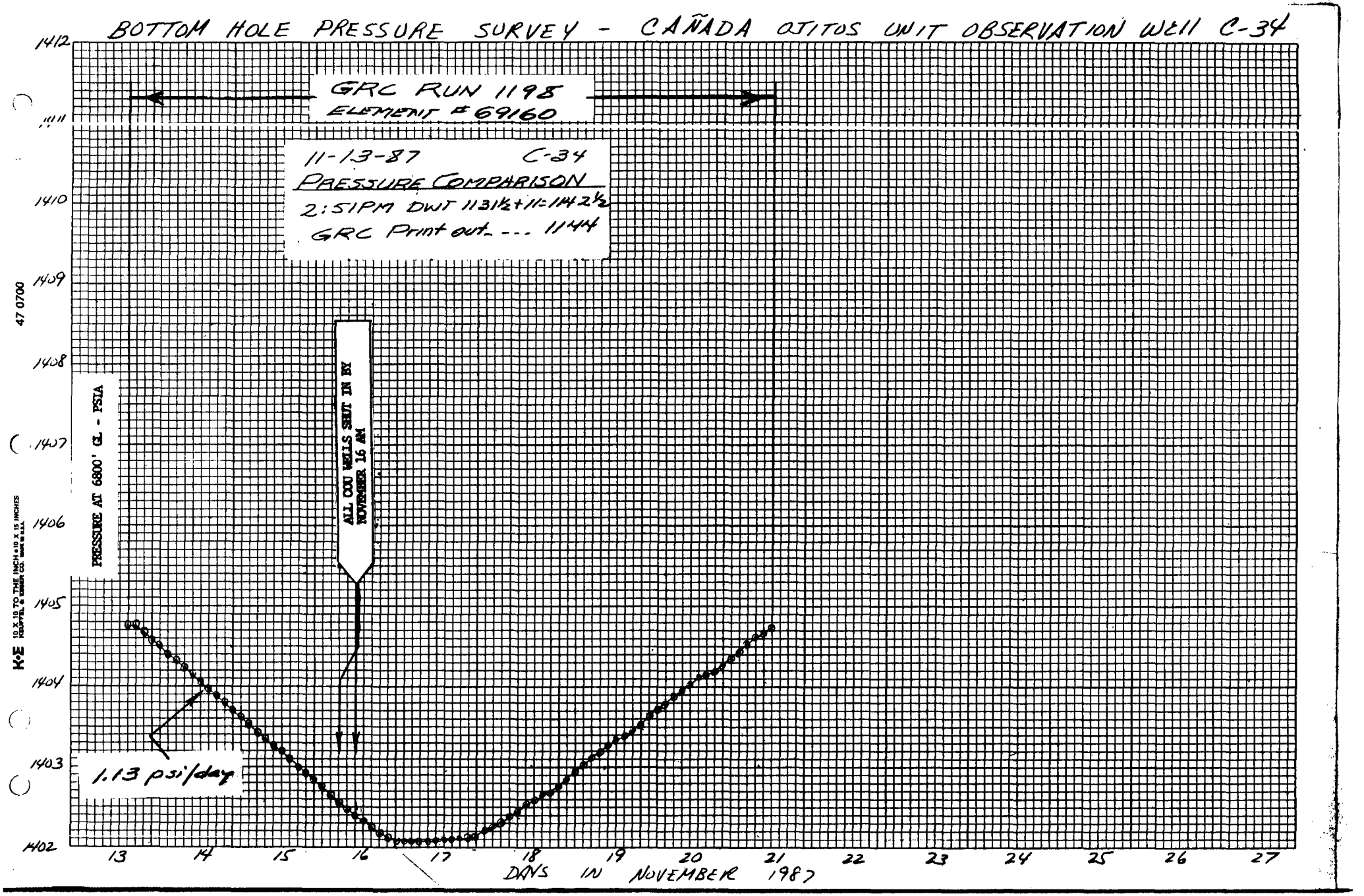
16


BOTTOM HOLE PRESSURE SURVEY - CAÑADA OJITOS UNIT OBSERVATION WELL C-34
GRC RUN 1198
ELEMENT # 69160
11-13-87 C-34
PRESSURE COMPARISON
2:51PM DWT 1131½+11=1142½
GRC Print out --- 11444
ALL CDU WELLS SHUT IN BY NOVEMBER 16 AM
1.13 psi/day
PRESSURE AT 6800' G.L. - PSIA
DAYS IN NOVEMBER 1987
1412
1411
1410
1409
1408
1407
1406
1405
1404
1403
1402
13
14
15
16
17
18
19
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27

DATE: 11/13/87
GAUGE SN #70059
WELL # 0
TEST # 1008

DATA FILE: 1

COMPANY: BMG
CLIENT:
WELL NAME: D-17
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7100' GL
Shut in on 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
1	9:19: 0	0.000	6599.39		72.00
2	9:22: 0	0.050	12035.97	11.78	
3	9:25: 0	0.100	6604.79		72.44
4	9:28: 0	0.150	12035.75	11.52	
5	9:31: 0	0.200	6606.40		72.56
6	9:34: 0	0.250	12035.71	11.48	
7	9:37: 0	0.300	6609.73		72.83
8	9:40: 0	0.350	12035.69	11.45	
9	9:43: 0	10 9:46: 0 0.450	12035.67	11.41	
11	9:49: 0	0.500	6614.66		73.23
12	9:52: 0	0.550	12035.66	11.40	
13	9:55: 0	0.600	6616.57		73.38
14	9:58: 0	0.650	12035.65	11.37	
15	10: 1: 0	0.700	6617.64		73.46
16	10: 4: 0	0.750	12035.66	11.38	
17	10: 7: 0	0.800	6619.77		73.63
18	10:10: 0	0.850	12035.65	11.37	
19	10:13: 0	0.900	6620.99		73.73
20	10:16: 0	0.950	12035.62	11.33	
21	10:19: 0	1.000	6602.63		72.26
22	10:22: 0	1.050	12036.08	11.90	
23	10:25: 0	1.100	6583.93		70.77
24	10:28: 0	1.150	12036.02	11.89	
25	10:31: 0	1.200	6553.46		68.33
26	10:34: 0	1.250	12036.33	12.34	
27	10:37: 0	1.300	6536.74		66.99
28	10:40: 0	1.350	12036.41	12.49	
29	10:43: 0	1.400	6533.18		66.71
30	10:46: 0	1.450	12036.50	12.60	
31	10:49: 0	1.500	6532.14		66.62
32	10:52: 0	1.550	12036.43	12.53	
33	10:55: 0	1.600	6525.94		66.13
34	10:58: 0	1.650	12036.51	12.64	
35	11: 1: 0	1.700	6524.82		66.04
36	11: 4: 0	1.750	12036.53	12.67	
37	11: 7: 0	1.800	6525.79		66.12
38	11:10: 0	1.850	12036.55	12.68	
39	11:13: 0	1.900	6527.23		66.23
40	11:16: 0	1.950	12036.56	12.69	
41	11:19: 0	2.000	6532.75		66.67
42	11:22: 0	2.050	12036.61	12.72	
43	11:25: 0	2.100	6542.61		67.46
44	11:28: 0	2.150	12036.08	12.10	
45	11:31: 0	2.200	6544.94		67.65
46	11:34: 0	2.250	12035.90	11.90	
47	11:37: 0	2.300	6542.86		67.48
48	11:40 0	2.350	12035.88	11.88	
49	11:43 0	2.400	6538.58		67.14
50	11:46 0	2.450	12035.85	11.87	

DATE: 11/13/87
GAUGE SN #70059
WELL # 0
TEST # 1008

DATA FILE: 1

COMPANY: BMG
CLIENT:
WELL NAME: D-17
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7100' GL
Shut in on 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
51	11:49: 0	2.500	6533.02		66.70
52	11:52: 0	2.550	12035.90	11.94	
53	11:55: 0	2.600	6531.94		66.61
54	11:58: 0	2.650	12035.99	12.04	
55	12: 1: 0	2.700	6532.57		66.66
56	12: 4: 0	2.750	12035.99	12.04	
57	12: 7: 0	2.800	6533.98		66.77
58	12:10: 0	2.850	12035.88	11.91	
59	12:13: 0	2.900	6531.86		66.60
60	12:16: 0	2.950	12035.91	11.95	
61	12:19: 0	3.000	6532.81		66.68
62	12:22: 0	3.050	12035.74	11.76	
63	12:25: 0	3.100	6528.25		66.31
64	12:28: 0	3.150	12035.86	11.91	
65	12:31: 0	3.200	6522.18		65.83
66	12:34: 0	3.250	12035.97	12.06	
67	12:37: 0	3.300	6518.53		65.54
68	12:40: 0	3.350	12035.95	12.05	
69	12:43: 0	3.400	6514.36		65.20
70	12:46: 0	3.450	12036.02	12.14	
71	12:49: 0	3.500	6513.96		65.17
72	12:52: 0	3.550	12035.93	12.04	
73	12:55: 0	3.600	6513.30		65.12
74	12:58: 0	3.650	12036.05	12.17	
75	13: 1: 0	3.700	6510.52		64.90
76	13: 4: 0	3.750	12036.08	12.21	
77	13: 7: 0	3.800	6510.48		64.89
78	13:10: 0	3.850	12035.96	12.08	
79	13:13: 0	3.900	6513.16		65.11
80	13:16: 0	3.950	12035.92	12.03	
81	13:19: 0	4.000	6515.76		65.31
82	13:22: 0	4.050	12035.82	11.91	
83	13:25: 0	4.100	6517.63		65.46
84	13:28: 0	4.150	12035.80	11.89	
85	13:31: 0	4.200	6518.37		65.52
86	13:34: 0	4.250	12035.95	12.04	
87	13:37: 0	4.300	6522.43		65.85
88	13:40: 0	4.350	12035.97	12.05	
89	13:43: 0	4.400	6526.04		66.14
90	13:46: 0	4.450	12035.88	11.94	
91	13:49: 0	4.500	6526.53		66.18
92	13:52: 0	4.550	12035.79	11.84	
93	13:55: 0	4.600	6530.40		66.49
94	13:58: 0	4.650	12035.87	11.92	
95	14: 1: 0	4.700	6537.82		67.08
96	14: 4: 0	4.750	12035.84	11.86	
97	14: 7: 0	4.800	6539.22		67.19
98	14:10: 0	4.850	12035.76	11.76	
99	14:13: 0	4.900	6534.75		66.83
100	14:16: 0	4.950	12035.75	11.77	

DATE: 11/13/87
GAUGE SN #'0059
WELL # 0
TEST # 1008

DATA FILE: 2

COMPANY: BMG
CLIENT:
WELL NAME: D-17
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7100' GL
Shut in on 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
1	14:19: 0	5.000	6533.41		66.73
2	14:22: 0	5.050	12035.65	11.67	
3	14:25: 0	5.100	6519.83		65.64
4	14:28: 0	5.150	12035.73	11.80	
5	14:31: 0	5.200	6507.50		64.65
6	14:34: 0	5.250	12035.90	12.03	
7	14:37: 0	5.300	6503.79		64.36
8	14:40: 0	5.350	12035.72	11.84	
9	14:43: 0	5.400	6501.31		64.16
10	14:46: 0	5.450	12035.72	11.85	
11	14:49: 0	5.500	6499.60		64.02
12	14:52: 0	5.550	12035.71	11.84	
13	14:55: 0	5.600	6494.56		63.62
14	14:58: 0	5.650	12035.78	11.94	
15	15: 1: 0	5.700	6485.32		62.88
16	15: 4: 0	5.750	12035.88	12.08	
17	15: 7: 0	5.800	6468.91		61.57
18	15:10: 0	5.850	12036.12	12.40	
19	15:13: 0	5.900	6459.37		60.81
20	15:16: 0	5.950	12036.09	12.40	
21	15:19: 0	6.000	6448.88		59.97
22	15:22: 0	6.050	12035.92	12.25	
23	15:25: 0	6.100	6460.15		60.87
24	15:28: 0	6.150	12693.31	816.86	
25	15:31: 0	6.200	6468.48		61.54
26	15:34: 0	6.250	12693.64	817.26	
27	15:37: 0	6.300	6436.35		58.97
28	15:40: 0	6.350	12693.83	817.69	
29	15:43: 0	6.400	6355.84		52.55
30	15:46: 0	6.450	12715.57	847.35	
31	15:49: 0	6.500	6498.24		63.91
32	15:52: 0	6.550	12731.86	868.55	
33	15:55: 0	6.600	6674.19		77.99
34	15:58: 0	6.650	12757.19	901.94	
35	16: 1: 0	6.700	6937.28		99.10
36	16: 4: 0	6.750	12777.55	928.25	
37	16: 7: 0	6.800	7159.53		116.99
38	16:10: 0	6.850	12798.63	955.51	
39	16:13: 0	6.900	7433.97		139.16
40	16:16: 0	6.950	12823.63	987.84	
41	16:19: 0	7.000	7702.64		160.93
42	16:22 0	7.050	12829.03	993.64	
43	16:25 0	7.100	7712.81		161.75
44	16:28 0	7.150	12829.11	993.71	
45	16:31 0	7.200	7717.18		162.11
46	16:34 0	7.250	12829.20	993.80	
47	16:37 0	7.300	7719.64		162.31
48	16:40 0	7.350	12829.25	993.87	
49	16:43 0	7.400	7721.09		162.43
50	16:46 0	7.450	12829.29	993.91	

DATE: 11/13/87
GAUGE SN #'0059
WELL # 0
TEST # 1008

DATA FILE: 2

COMPANY: BMG
CLIENT:
WELL NAME: D-17
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7100' GL
Shut in on 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
51	16:49: 0	7.500	7722.08		162.51
52	16:52: 0	7.550	12829.32	993.95	
53	16:55: 0	7.600	7722.87		162.57
54	16:58: 0	7.650	12829.34	993.97	
55	17: 1: 0	7.700	7723.50		162.62
56	17: 4: 0	7.750	12829.35	993.98	
57	17: 7: 0	7.800	7724.12		162.67
58	17:10: 0	7.850	12829.36	993.99	
59	17:13: 0	7.900	7724.56		162.71
60	17:16: 0	7.950	12829.36	994.00	
61	17:19: 0	8.000	7724.92		162.74
62	17:22: 0	8.050	12829.37	994.01	
63	17:25: 0	8.100	7725.18		162.76
64	17:28: 0	8.150	12829.37	994.00	
65	17:31: 0	8.200	7725.36		162.77
66	17:34: 0	8.250	12829.37	994.00	
67	17:37: 0	8.300	7725.59		162.79
68	17:40: 0	8.350	12829.38	994.01	
69	17:43: 0	8.400	7725.65		162.80
70	17:46: 0	8.450	12829.38	994.01	
71	17:49: 0	8.500	7725.83		162.81
72	17:52: 0	8.550	12829.37	994.00	
73	17:55: 0	8.600	7725.90		162.82
74	17:58: 0	8.650	12829.37	994.00	
75	18: 1: 0	8.700	7725.99		162.82
76	18: 4: 0	8.750	12829.37	994.00	
77	18: 7: 0	8.800	7726.17		162.84
78	18:10: 0	8.850	12829.36	993.99	
79	18:13: 0	8.900	7726.23		162.84
80	18:16: 0	8.950	12829.36	993.99	
81	18:19: 0	9.000	7726.28		162.85
82	18:22: 0	9.050	12829.36	993.98	
83	18:25: 0	9.100	7726.36		162.85
84	18:28: 0	9.150	12829.36	993.98	
85	18:31: 0	9.200	7726.42		162.86
86	18:34: 0	9.250	12829.36	993.98	
87	18:37: 0	9.300	7726.47		162.86
88	18:40: 0	9.350	12829.35	993.97	
89	18:43: 0	9.400	7726.49		162.87
90	18:46: 0	9.450	12829.34	993.96	
91	18:49: 0	9.500	7726.55		162.87
92	18:52: 0	9.550	12829.34	993.96	
93	18:55: 0	9.600	7726.56		162.87
94	18:58: 0	9.650	12829.34	993.96	
95	19: 1: 0	9.700	7726.60		162.87
96	19: 4: 0	9.750	12829.34	993.95	
97	19: 7: 0	9.800	7726.64		162.88
98	19:10: 0	9.850	12829.33	993.94	
99	19:13: 0	9.900	7726.69		162.88
100	19:16: 0	9.950	12829.33	993.94	

DATE: 11/13/87
GAUGE SN #: 0059
WELL #: 0
TEST #: 1008

DATA FILE: 3

COMPANY: BMG
CLIENT:
WELL NAME: D-17
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7100' GL
Shut in on 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
1	19:31: 0	10.200	7726.64		162.88
2	19:46: 0	10.450	12829.31	993.91	
3	20: 1: 0	10.700	7726.70		162.88
4	20:16: 0	10.950	12829.29	993.88	
5	20:31: 0	11.200	7726.75		162.89
6	20:46: 0	11.450	12829.26	993.84	
7	21: 1: 0	11.700	7726.81		162.89
8	21:16: 0	11.950	12829.22	993.80	
9	21:31: 0	12.200	7726.82		162.89
10	21:46: 0	12.450	12829.21	993.77	
11	22: 1: 0	12.700	7726.90		162.90
12	22:16: 0	12.950	12829.17	993.73	
13	22:31: 0	13.200	7726.90		162.90
14	22:46: 0	13.450	12829.15	993.69	
15	23: 1: 0	13.700	7726.99		162.91
16	23:16: 0	13.950	12829.13	993.66	
17	23:31: 0	14.200	7726.99		162.91
18	23:46: 0	14.450	12829.11	993.64	
19	0: 1: 0	14.700	7727.01		162.91
20	0:16: 0	14.950	12829.10	993.62	
21	0:31: 0	15.200	7727.04		162.91
22	0:46: 0	15.450	12829.08	993.59	
23	1: 1: 0	15.700	7727.06		162.91
24	1:16: 0	15.950	12829.06	993.57	
25	1:31: 0	16.200	7727.14		162.92
26	1:46: 0	16.450	12829.05	993.55	
27	2: 1: 0	16.700	7727.09		162.91
28	2:16: 0	16.950	12829.02	993.52	
29	2:31: 0	17.200	7727.08		162.91
30	2:46: 0	17.450	12829.00	993.49	
31	3: 1: 0	17.700	7727.10		162.92
32	3:16: 0	17.950	12828.98	993.46	
33	3:31: 0	18.200	7727.10		162.91
34	3:46: 0	18.450	12828.96	993.42	
35	4: 1: 0	18.700	7727.10		162.92
36	4:16: 0	18.950	12828.93	993.39	
37	4:31: 0	19.200	7727.13		162.92
38	4:46: 0	19.450	12828.91	993.36	
39	5: 1: 0	19.700	7727.11		162.92
40	5:16: 0	19.950	12828.89	993.33	
41	5:31: 0	20.200	7727.15		162.92
42	5:46: 0	20.450	12828.86	993.29	
43	6: 1: 0	20.700	7727.14		162.92
44	6:16: 0	20.950	12828.83	993.25	
45	6:31: 0	21.200	7727.15		162.92
46	6:46: 0	21.450	12828.82	993.24	
47	7: 1: 0	21.700	7727.14		162.92
48	7:16: 0	21.950	12828.80	993.21	
49	7:31: 0	22.200	7727.18		162.92
50	7:46: 0	22.450	12828.78	993.18	

DATE: 11/14/87
GAUGE SN #'0059
WELL # 0
TEST # 1008

DATA FILE: 3

COMPANY: BMG
CLIENT:
WELL NAME: D-17
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7100' GL
Shut in on 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
51	8: 1: 0	22.700	7727.17		162.92
52	8:16: 0	22.950	12828.76	993.15	
53	8:31: 0	23.200	7727.18		162.92
54	8:46: 0	23.450	12828.76	993.15	
55	9: 1: 0	23.700	7727.18		162.92
56	9:16: 0	23.950	12828.74	993.12	
57	9:31: 0	24.200	7727.23		162.93
58	9:46: 0	24.450	12828.72	993.10	
59	10: 1: 0	24.700	7727.15		162.92
60	10:16: 0	24.950	12828.71	993.08	
61	10:31: 0	25.200	7727.17		162.92
62	10:46: 0	25.450	12828.68	993.05	
63	11: 1: 0	25.700	7727.20		162.92
64	11:16: 0	25.950	12828.67	993.03	
65	11:31: 0	26.200	7727.17		162.92
66	11:46: 0	26.450	12828.66	993.01	
67	12: 1: 0	26.700	7727.17		162.92
68	12:16: 0	26.950	12828.64	992.99	
69	12:31: 0	27.200	7727.13		162.92
70	12:46: 0	27.450	12828.61	992.95	
71	13: 1: 0	27.700	7727.13		162.92
72	13:16: 0	27.950	12828.59	992.92	
73	13:31: 0	28.200	7727.19		162.92
74	13:46: 0	28.450	12828.58	992.91	
75	14: 1: 0	28.700	7727.17		162.92
76	14:16: 0	28.950	12828.56	992.88	
77	14:31: 0	29.200	7727.17		162.92
78	14:46: 0	29.450	12828.54	992.85	
79	15: 1: 0	29.700	7727.15		162.92
80	15:16: 0	29.950	12828.53	992.83	
81	15:31: 0	30.200	7727.18		162.92
82	15:46: 0	30.450	12828.52	992.82	
83	16: 1: 0	30.700	7727.21		162.92
84	16:16: 0	30.950	12828.49	992.78	
85	16:31: 0	31.200	7727.22		162.92
86	16:46: 0	31.450	12828.47	992.75	
87	17: 1: 0	31.700	7727.24		162.93
88	17:16: 0	31.950	12828.44	992.71	
89	17:31: 0	32.200	7727.24		162.93
90	17:46: 0	32.450	12828.43	992.70	
91	18: 1: 0	32.700	7727.26		162.93
92	18:16: 0	32.950	12829.41	992.67	
93	18:31: 0	33.200	7727.23		162.93
94	18:46: 0	33.450	12828.39	992.65	
95	19: 1: 0	33.700	7727.28		162.93
96	19:16: 0	33.950	12828.38	992.62	
97	19:31: 0	34.200	7727.29		162.93
98	19:46: 0	34.450	12828.37	992.61	
99	20: 1: 0	34.700	7727.33		162.93
100	20:16: 0	34.950	12828.36	992.60	

DATE: 11/14/87
GAUGE SN #: 0059
WELL #: 0
TEST #: 1008

DATA FILE: 4

COMPANY: BMG
CLIENT:
WELL NAME: D-17
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7100' GL
Shut in on 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
1	20:31: 0	35.200	7727.28		162.93
2	20:46: 0	35.450	12828.35	992.59	
3	21: 1: 0	35.700	7727.25		162.93
4	21:16: 0	35.950	12828.35	992.58	
5	21:31: 0	36.200	7727.29		162.93
6	21:46: 0	36.450	12828.34	992.58	
7	22: 1: 0	36.700	7727.23		162.93
8	22:16: 0	36.950	12828.33	992.56	
9	22:31: 0	37.200	7727.24		162.93
10	22:46: 0	37.450	12828.31	992.54	
11	23: 1: 0	37.700	7727.20		162.92
12	23:16: 0	37.950	12828.30	992.52	
13	23:31: 0	38.200	7727.25		162.93
14	23:46: 0	38.450	12828.29	992.51	
15	0: 1: 0	38.700	7727.19		162.92
16	0:16: 0	38.950	12828.28	992.49	
17	0:31: 0	39.200	7727.19		162.92
18	0:46: 0	39.450	12828.26	992.47	
19	1: 1: 0	39.700	7727.18		162.92
20	1:16: 0	39.950	12828.25	992.45	
21	1:31: 0	40.200	7727.24		162.93
22	1:46: 0	40.450	12828.23	992.42	
23	2: 1: 0	40.700	7727.19		162.92
24	2:16: 0	40.950	12828.23	992.41	
25	2:31: 0	41.200	7727.24		162.93
26	2:46: 0	41.450	12828.20	992.38	
27	3: 1: 0	41.700	7727.24		162.93
28	3:16: 0	41.950	12828.18	992.35	
29	3:31: 0	42.200	7727.23		162.93
30	3:46: 0	42.450	12828.17	992.34	
31	4: 1: 0	42.700	7727.25		162.93
32	4:16: 0	42.950	12828.15	992.31	
33	4:31: 0	43.200	7727.24		162.93
34	4:46: 0	43.450	12828.14	992.30	
35	5: 1: 0	43.700	7727.25		162.93
36	5:16: 0	43.950	12828.13	992.28	
37	5:31: 0	44.200	7727.32		162.93
38	5:46: 0	44.450	12828.12	992.27	
39	6: 1: 0	44.700	7727.29		162.93
40	6:16: 0	44.950	12828.11	992.25	
41	6:31: 0	45.200	7727.29		162.93
42	6:46: 0	45.450	12828.10	992.24	
43	7: 1: 0	45.700	7727.30		162.93
44	7:16: 0	45.950	12828.09	992.22	
45	7:31: 0	46.200	7727.28		162.93
46	7:46: 0	46.450	12828.07	992.21	
47	8: 1: 0	46.700	7727.28		162.93
48	8:16: 0	46.950	12828.05	992.18	
49	8:31: 0	47.200	7727.28		162.93
50	8:46: 0	47.450	12828.04	992.16	

DATE: 11/15/87
GAUGE SN #70059
WELL # 0
TEST # 1008

DATA FILE: 4

COMPANY: BMG
CLIENT:
WELL NAME: D-17
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7100' GL
Shut in on 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
51	9: 1: 0	47.700	7727.24		162.93
52	9:16: 0	47.950	12828.02	992.14	
53	9:31: 0	48.200	7727.28		162.93
54	9:46: 0	48.450	12828.01	992.12	
55	10: 1: 0	48.700	7727.31		162.93
56	10:16: 0	48.950	12828.00	992.11	
57	10:31: 0	49.200	7727.27		162.93
58	10:46: 0	49.450	12827.98	992.08	
59	11: 1: 0	49.700	7727.25		162.93
60	11:16: 0	49.950	12827.97	992.07	
61	11:31: 0	50.200	7727.28		162.93
62	11:46: 0	50.450	12827.95	992.04	
63	12: 1: 0	50.700	7727.27		162.93
64	12:16: 0	50.950	12827.95	992.04	
65	12:31: 0	51.200	7727.29		162.93
66	12:46: 0	51.450	12827.94	992.01	
67	13: 1: 0	51.700	7727.24		162.93
68	13:16: 0	51.950	12827.92	991.99	
69	13:31: 0	52.200	7727.26		162.93
70	13:46: 0	52.450	12827.91	991.97	
71	14: 1: 0	52.700	7727.25		162.93
72	14:16: 0	52.950	12827.89	991.94	
73	14:31: 0	53.200	7727.26		162.93
74	14:46: 0	53.450	12827.87	991.92	
75	15: 1: 0	53.700	7727.25		162.93
76	15:16: 0	53.950	12827.85	991.90	
77	15:31: 0	54.200	7727.27		162.93
78	15:46: 0	54.450	12827.84	991.88	
79	16: 1: 0	54.700	7727.32		162.93
80	16:16: 0	54.950	12827.83	991.87	
81	16:31: 0	55.200	7727.25		162.93
82	16:46: 0	55.450	12827.81	991.84	
83	17: 1: 0	55.700	7727.32		162.93
84	17:16: 0	55.950	12827.79	991.81	
85	17:31: 0	56.200	7727.30		162.93
86	17:46: 0	56.450	12827.78	991.80	
87	18: 1: 0	56.700	7727.33		162.93
88	18:16: 0	56.950	12827.76	991.77	
89	18:31: 0	57.200	7727.27		162.93
90	18:46: 0	57.450	12827.75	991.75	
91	19: 1: 0	57.700	7727.27		162.93
92	19:16: 0	57.950	12827.73	991.74	
93	19:31: 0	58.200	7727.31		162.93
94	19:46: 0	58.450	12827.72	991.72	
95	20: 1: 0	58.700	7727.26		162.93
96	20:16: 0	58.950	12827.71	991.71	
97	20:31: 0	59.200	7727.25		162.93
98	20:46: 0	59.450	12827.69	991.67	
99	21: 1: 0	59.700	7727.23		162.93
100	21:16: 0	59.950	12827.68	991.66	

DATE: 11/15/87
GAUGE SN #'0059
WELL # 0
TEST # 1008

DATA FILE: 5

COMPANY: BMG
CLIENT:
WELL NAME: D-17
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7100' GL
Shut in on 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
1	21:31: 0	60.200	7727.25		162.93
2	21:46: 0	60.450	12827.67	991.65	
3	22: 1: 0	60.700	7727.25		162.93
4	22:16: 0	60.950	12827.65	991.62	
5	22:31: 0	61.200	7727.29		162.93
6	22:46: 0	61.450	12827.63	991.60	
7	23: 1: 0	61.700	7727.26		162.93
8	23:16: 0	61.950	12827.63	991.59	
9	23:31: 0	62.200	7727.28		162.93
10	23:46: 0	62.450	12827.62	991.57	
11	0: 1: 0	62.700	7727.31		162.93
12	0:16: 0	62.950	12827.59	991.54	
13	0:31: 0	63.200	7727.25		162.93
14	0:46: 0	63.450	12827.58	991.52	
15	1: 1: 0	63.700	7727.32		162.93
16	1:16: 0	63.950	12827.57	991.50	
17	1:31: 0	64.200	7727.25		162.93
18	1:46: 0	64.450	12827.54	991.47	
19	2: 1: 0	64.700	7727.33		162.93
20	2:16: 0	64.950	12827.54	991.47	
21	2:31: 0	65.200	7727.34		162.93
22	2:46: 0	65.450	12827.52	991.44	
23	3: 1: 0	65.700	7727.32		162.93
24	3:16: 0	65.950	12827.50	991.41	
25	3:31: 0	66.200	7727.30		162.93
26	3:46: 0	66.450	12827.48	991.38	
27	4: 1: 0	66.700	7727.37		162.94
28	4:16: 0	66.950	12827.46	991.35	
29	4:31: 0	67.200	7727.37		162.94
30	4:46: 0	67.450	12827.44	991.33	
31	5: 1: 0	67.700	7727.32		162.93
32	5:16: 0	67.950	12827.43	991.31	
33	5:31: 0	68.200	7727.31		162.93
34	5:46: 0	68.450	12827.41	991.29	
35	6: 1: 0	68.700	7727.32		162.93
36	6:16: 0	68.950	12827.39	991.26	
37	6:31: 0	69.200	7727.36		162.94
38	6:46: 0	69.450	12827.39	991.26	
39	7: 1: 0	69.700	7727.32		162.93
40	7:16: 0	69.950	12827.38	991.24	
41	7:31: 0	70.200	7727.35		162.94
42	7:46: 0	70.450	12827.37	991.23	
43	8: 1: 0	70.700	7727.34		162.93
44	8:16: 0	70.950	12827.36	991.22	
45	8:31: 0	71.200	7727.33		162.93
46	8:46: 0	71.450	12827.34	991.20	
47	9: 1: 0	71.700	7727.32		162.93
48	9:16: 0	71.950	12827.34	991.19	
49	9:31: 0	72.200	7727.35		162.94
50	9:46: 0	72.450	12827.33	991.17	

DATE: 11/16/87
GAUGE SN #70059
WELL # 0
TEST # 1008

DATA FILE: S

COMPANY: BMG
CLIENT:
WELL NAME: D-17
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7100' GL
Shut in on 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
51	10: 1: 0	72.700	7727.36		162.94
52	10:16: 0	72.950	12827.32	991.16	
53	10:31: 0	73.200	7727.35		162.94
54	10:46: 0	73.450	12827.31	991.15	
55	11: 1: 0	73.700	7727.36		162.94
56	11:16: 0	73.950	12827.30	991.13	
57	11:31: 0	74.200	7727.39		162.94
58	11:46: 0	74.450	12827.28	991.10	
59	12: 1: 0	74.700	7727.38		162.94
60	12:16: 0	74.950	12827.27	991.09	
61	12:31: 0	75.200	7727.43		162.94
62	12:46: 0	75.450	12827.26	991.08	
63	13: 1: 0	75.700	7727.40		162.94
64	13:16: 0	75.950	12827.24	991.06	
65	13:31: 0	76.200	7727.41		162.94
66	13:46: 0	76.450	12827.23	991.03	
67	14: 1: 0	76.700	7727.42		162.94
68	14:16: 0	76.950	12827.22	991.03	
69	14:31: 0	77.200	7727.32		162.93
70	14:46: 0	77.450	12827.20	991.00	
71	15: 1: 0	77.700	7727.38		162.94
72	15:16: 0	77.950	12827.19	990.99	
73	15:31: 0	78.200	7727.35		162.94
74	15:46: 0	78.450	12827.17	990.96	
75	16: 1: 0	78.700	7727.43		162.94
76	16:16: 0	78.950	12827.16	990.94	
77	16:31: 0	79.200	7727.35		162.94
78	16:46: 0	79.450	12827.14	990.92	
79	17: 1: 0	79.700	7727.36		162.94
80	17:16: 0	79.950	12827.12	990.89	
81	17:31: 0	80.200	7727.39		162.94
82	17:46: 0	80.450	12827.11	990.87	
83	18: 1: 0	80.700	7727.36		162.94
84	18:16: 0	80.950	12827.09	990.85	
85	18:31: 0	81.200	7727.36		162.94
86	18:46: 0	81.450	12827.08	990.83	
87	19: 1: 0	81.700	7727.41		162.94
88	19:16: 0	81.950	12827.06	990.80	
89	19:31: 0	82.200	7727.44		162.94
90	19:46: 0	82.450	12827.05	990.79	
91	20: 1: 0	82.700	7727.38		162.94
92	20:16: 0	82.950	12827.03	990.76	
93	20:31: 0	83.200	7727.40		162.94
94	20:46: 0	83.450	12827.01	990.74	
95	21: 1: 0	83.700	7727.37		162.94
96	21:16: 0	83.950	12827.00	990.73	
97	21:31: 0	84.200	7727.42		162.94
98	21:46: 0	84.450	12826.99	990.71	
99	22: 1: 0	84.700	7727.35		162.94
100	22:16: 0	84.950	12826.98	990.70	

DATE: 11/16/87
GAUGE SN #'70059
WELL # 0
TEST # 1008

DATA FILE: 6

COMPANY: BMG
CLIENT:
WELL NAME: D-17
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7100' GL
Shut in on 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
1	22:31: 0	85.200	7727.39		162.94
2	22:46: 0	85.450	12826.96	990.67	
3	23: 1: 0	85.700	7727.45		162.94
4	23:16: 0	85.950	12826.95	990.65	
5	23:31: 0	86.200	7727.41		162.94
6	23:46: 0	86.450	12826.94	990.63	
7	0: 1: 0	86.700	7727.41		162.94
8	0:16: 0	86.950	12826.92	990.61	
9	0:31: 0	87.200	7727.42		162.94
10	0:46: 0	87.450	12826.90	990.59	
11	1: 1: 0	87.700	7727.44		162.94
12	1:16: 0	87.950	12826.89	990.57	
13	1:31: 0	88.200	7727.44		162.94
14	1:46: 0	88.450	12826.88	990.55	
15	2: 1: 0	88.700	7727.42		162.94
16	2:16: 0	88.950	12826.86	990.53	
17	2:31: 0	89.200	7727.46		162.94
18	2:46: 0	89.450	12826.84	990.50	
19	3: 1: 0	89.700	7727.40		162.94
20	3:16: 0	89.950	12826.82	990.48	
21	3:31: 0	90.200	7727.40		162.94
22	3:46: 0	90.450	12826.82	990.48	
23	4: 1: 0	90.700	7727.44		162.94
24	4:16: 0	90.950	12826.82	990.48	
25	4:31: 0	91.200	7727.47		162.94
26	4:46: 0	91.450	12826.82	990.47	
27	5: 1: 0	91.700	7727.44		162.94
28	5:16: 0	91.950	12826.81	990.46	
29	5:31: 0	92.200	7727.47		162.94
30	5:46: 0	92.450	12826.80	990.45	
31	6: 1: 0	92.700	7727.47		162.94
32	6:16: 0	92.950	12826.80	990.45	
33	6:31: 0	93.200	7727.43		162.94
34	6:46: 0	93.450	12826.80	990.44	
35	7: 1: 0	93.700	7727.42		162.94
36	7:16: 0	93.950	12826.79	990.43	
37	7:31: 0	94.200	7727.45		162.94
38	7:46: 0	94.450	12826.79	990.43	
39	8: 1: 0	94.700	7727.42		162.94
40	8:16: 0	94.950	12826.79	990.43	
41	8:31: 0	95.200	7727.44		162.94
42	8:46: 0	95.450	12826.80	990.44	
43	9: 1: 0	95.700	7727.48		162.95
44	9:16: 0	95.950	12826.79	990.43	
45	9:31: 0	96.200	7727.42		162.94
46	9:46: 0	96.450	12826.80	990.44	
47	10: 1: 0	96.700	7727.42		162.94
48	10:16: 0	96.950	12826.80	990.44	
49	10:31: 0	97.200	7727.41		162.94
50	10:46: 0	97.450	12826.80	990.44	

DATE: 11/17/87
GAUGE SN #71059
WELL # 0
TEST # 1008

DATA FILE: 6

COMPANY: BMG
CLIENT:
WELL NAME: D-17
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7100' GL
Shut in on 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
51	11: 1: 0	97.700	7727.42		162.94
52	11:16: 0	97.950	12826.79	990.43	
53	11:31: 0	98.200	7727.46		162.94
54	11:46: 0	98.450	12826.79	990.43	
55	12: 1: 0	98.700	7727.44		162.94
56	12:16: 0	98.950	12826.79	990.43	
57	12:31: 0	99.200	7727.41		162.94
58	12:46: 0	99.450	12826.77	990.41	
59	13: 1: 0	99.700	7727.37		162.94
60	13:16: 0	99.950	12826.77	990.41	
61	13:31: 0	100.200	7727.40		162.94
62	13:46: 0	100.450	12826.77	990.41	
63	14: 1: 0	100.700	7727.42		162.94
64	14:16: 0	100.950	12826.77	990.41	
65	14:31: 0	101.200	7727.44		162.94
66	14:46: 0	101.450	12826.77	990.41	
67	15: 1: 0	101.700	7727.42		162.94
68	15:16: 0	101.950	12826.77	990.40	
69	15:31: 0	102.200	7727.47		162.94
70	15:46: 0	102.450	12826.77	990.41	
71	16: 1: 0	102.700	7727.38		162.94
72	16:16: 0	102.950	12826.77	990.40	
73	16:31: 0	103.200	7727.41		162.94
74	16:46: 0	103.450	12826.77	990.40	
75	17: 1: 0	103.700	7727.36		162.94
76	17:16: 0	103.950	12826.76	990.39	
77	17:31: 0	104.200	7727.43		162.94
78	17:46: 0	104.450	12826.76	990.39	
79	18: 1: 0	104.700	7727.42		162.94
80	18:16: 0	104.950	12826.76	990.39	
81	18:31: 0	105.200	7727.37		162.94
82	18:46: 0	105.450	12826.76	990.39	
83	19: 1: 0	105.700	7727.41		162.94
84	19:16: 0	105.950	12826.76	990.39	
85	19:31: 0	106.200	7727.43		162.94
86	19:46: 0	106.450	12826.76	990.39	
87	20: 1: 0	106.700	7727.40		162.94
88	20:16: 0	106.950	12826.76	990.39	
89	20:31: 0	107.200	7727.41		162.94
90	20:46: 0	107.450	12826.75	990.38	
91	21: 1: 0	107.700	7727.46		162.94
92	21:16: 0	107.950	12826.76	990.39	
93	21:31: 0	108.200	7727.46		162.94
94	21:46: 0	108.450	12826.76	990.39	
95	22: 1: 0	108.700	7727.41		162.94
96	22:16: 0	108.950	12826.76	990.39	
97	22:31: 0	109.200	7727.41		162.94
98	22:46: 0	109.450	12826.75	990.38	
99	23: 1: 0	109.700	7727.43		162.94
100	23:16: 0	109.950	12826.76	990.39	

DATE: 11/17/87
GAUGE SN #'0059
WELL # 0
TEST # 1008

DATA FILE: 7

COMPANY: BMG
CLIENT:
WELL NAME: D-17
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7100' GL
Shut in on 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
1	23:31: 0	110.200	7727.46		162.94
2	23:46: 0	110.450	12826.76	990.39	
3	0: 1: 0	110.700	7727.42		162.94
4	0:16: 0	110.950	12826.75	990.37	
5	0:31: 0	111.200	7727.48		162.95
6	0:46: 0	111.450	12826.75	990.38	
7	1: 1: 0	111.700	7727.49		162.95
8	1:16: 0	111.950	12826.76	990.39	
9	1:31: 0	112.200	7727.44		162.94
10	1:46: 0	112.450	12826.76	990.39	
11	2: 1: 0	112.700	7727.47		162.94
12	2:16: 0	112.950	12826.76	990.39	
13	2:31: 0	113.200	7727.48		162.95
14	2:46: 0	113.450	12826.76	990.39	
15	3: 1: 0	113.700	7727.48		162.95
16	3:16: 0	113.950	12826.76	990.39	
17	3:31: 0	114.200	7727.48		162.95
18	3:46: 0	114.450	12826.77	990.40	
19	4: 1: 0	114.700	7727.48		162.95
20	4:16: 0	114.950	12826.77	990.40	
21	4:31: 0	115.200	7727.48		162.95
22	4:46: 0	115.450	12826.79	990.43	
23	5: 1: 0	115.700	7727.51		162.95
24	5:16: 0	115.950	12826.78	990.42	
25	5:31: 0	116.200	7727.53		162.95
26	5:46: 0	116.450	12826.79	990.43	
27	6: 1: 0	116.700	7727.49		162.95
28	6:16: 0	116.950	12826.80	990.44	
29	6:31: 0	117.200	7727.46		162.94
30	6:46: 0	117.450	12826.80	990.45	
31	7: 1: 0	117.700	7727.48		162.95
32	7:16: 0	117.950	12826.81	990.46	
33	7:31: 0	118.200	7727.47		162.94
34	7:46: 0	118.450	12826.82	990.48	
35	8: 1: 0	118.700	7727.47		162.94
36	8:16: 0	118.950	12826.84	990.50	
37	8:31: 0	119.200	7727.49		162.95
38	8:46: 0	119.450	12826.86	990.53	
39	9: 1: 0	119.700	7727.53		162.95
40	9:16: 0	119.950	12826.88	990.55	
41	9:31: 0	120.200	7727.44		162.94
42	9:46: 0	120.450	12826.89	990.56	
43	10: 1: 0	120.700	7727.48		162.95
44	10:16: 0	120.950	12826.89	990.57	
45	10:31: 0	121.200	7727.49		162.95
46	10:46: 0	121.450	12826.90	990.58	
47	11: 1: 0	121.700	7727.47		162.94
48	11:16: 0	121.950	12826.90	990.59	
49	11:31: 0	122.200	7727.49		162.95
50	11:46: 0	122.450	12826.91	990.59	

DATE: 11/13/87
GAUGE SN #70059
WELL # 0
TEST # 1008

DATA FILE: 7

COMPANY: BMG
CLIENT:
WELL NAME: D-17
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7100' GL
Shut in on 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
51	12: 1: 0	122.700	7727.51		162.95
52	12:16: 0	122.950	12826.91	990.59	
53	12:31: 0	123.200	7727.52		162.95
54	12:46: 0	123.450	12826.91	990.59	
55	13: 1: 0	123.700	7727.48		162.95
56	13:16: 0	123.950	12826.91	990.59	
57	13:31: 0	124.200	7727.47		162.94
58	13:46: 0	124.450	12826.91	990.60	
59	14: 1: 0	124.700	7727.48		162.95
60	14:16: 0	124.950	12826.92	990.61	
61	14:31: 0	125.200	7727.46		162.94
62	14:46: 0	125.450	12826.93	990.63	
63	15: 1: 0	125.700	7727.51		162.95
64	15:16: 0	125.950	12826.93	990.62	
65	15:31: 0	126.200	7727.46		162.94
66	15:46: 0	126.450	12826.93	990.63	
67	16: 1: 0	126.700	7727.50		162.95
68	16:16: 0	126.950	12826.94	990.64	
69	16:31: 0	127.200	7727.47		162.94
70	16:46: 0	127.450	12826.93	990.63	
71	17: 1: 0	127.700	7727.51		162.95
72	17:16: 0	127.950	12826.94	990.63	
73	17:31: 0	128.200	7727.48		162.95
74	17:46: 0	128.450	12826.94	990.63	
75	18: 1: 0	128.700	7727.49		162.95
76	18:16: 0	128.950	12826.94	990.64	
77	18:31: 0	129.200	7727.52		162.95
78	18:46: 0	129.450	12826.95	990.65	
79	19: 1: 0	129.700	7727.51		162.95
80	19:16: 0	129.950	12826.96	990.66	
81	19:31: 0	130.200	7727.54		162.95
82	19:46: 0	130.450	12826.96	990.67	
83	20: 1: 0	130.700	7727.52		162.95
84	20:16: 0	130.950	12826.97	990.68	
85	20:31: 0	131.200	7727.50		162.95
86	20:46: 0	131.450	12826.98	990.69	
87	21: 1: 0	131.700	7727.55		162.95
88	21:16: 0	131.950	12826.98	990.69	
89	21:31: 0	132.200	7727.54		162.95
90	21:46: 0	132.450	12826.99	990.71	
91	22: 1: 0	132.700	7727.51		162.95
92	22:16: 0	132.950	12826.99	990.71	
93	22:31: 0	133.200	7727.51		162.95
94	22:46: 0	133.450	12827.00	990.73	
95	23: 1: 0	133.700	7727.56		162.95
96	23:16: 0	133.950	12827.02	990.75	
97	23:31: 0	134.200	7727.52		162.95
98	23:46: 0	134.450	12827.02	990.75	
99	0: 1: 0	134.700	7727.52		162.95
100	0:16: 0	134.950	12827.03	990.76	

DATE: 11/19/87
GAUGE SN #"0059
WELL # 0
TEST # 1008

DATA FILE: 8

COMPANY: BMG
CLIENT:
WELL NAME: D-17
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7100' GL
Shut in on 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
1	0:31: 0	135.200	7727.56		162.95
2	0:46: 0	135.450	12827.03	990.76	
3	1: 1: 0	135.700	7727.54		162.95
4	1:16: 0	135.950	12827.03	990.76	
5	1:31: 0	136.200	7727.57		162.95
6	1:46: 0	136.450	12827.04	990.78	
7	2: 1: 0	136.700	7727.53		162.95
8	2:16: 0	136.950	12827.05	990.79	
9	2:31: 0	137.200	7727.54		162.95
10	2:46: 0	137.450	12827.06	990.80	
11	3: 1: 0	137.700	7727.51		162.95
12	3:16: 0	137.950	12827.07	990.82	
13	3:31: 0	138.200	7727.56		162.95
14	3:46: 0	138.450	12827.08	990.83	
15	4: 1: 0	138.700	7727.51		162.95
16	4:16: 0	138.950	12827.09	990.84	
17	4:31: 0	139.200	7727.53		162.95
18	4:46: 0	139.450	12827.10	990.86	
19	5: 1: 0	139.700	7727.50		162.95
20	5:16: 0	139.950	12827.11	990.87	
21	5:31: 0	140.200	7727.51		162.95
22	5:46: 0	140.450	12827.12	990.89	
23	6: 1: 0	140.700	7727.53		162.95
24	6:16: 0	140.950	12827.13	990.89	
25	6:31: 0	141.200	7727.51		162.95
26	6:46: 0	141.450	12827.14	990.92	
27	7: 1: 0	141.700	7727.53		162.95
28	7:16: 0	141.950	12827.14	990.92	
29	7:31: 0	142.200	7727.53		162.95
30	7:46: 0	142.450	12827.15	990.93	
31	8: 1: 0	142.700	7727.52		162.95
32	8:16: 0	142.950	12827.19	990.98	
33	8:31: 0	143.200	7727.56		162.95
34	8:46: 0	143.450	12827.22	991.02	
35	9: 1: 0	143.700	7727.51		162.95
36	9:16: 0	143.950	12827.24	991.05	
37	9:31: 0	144.200	7727.52		162.95
38	9:46: 0	144.450	12827.27	991.09	
39	10: 1: 0	144.700	7727.53		162.95
40	10:16: 0	144.950	12827.28	991.11	
41	10:31: 0	145.200	7727.54		162.95
42	10:46: 0	145.450	12827.30	991.14	
43	11: 1: 0	145.700	7727.56		162.95
44	11:16: 0	145.950	12827.32	991.16	
45	11:31: 0	146.200	7727.50		162.95
46	11:46: 0	146.450	12827.33	991.18	
47	12: 1: 0	146.700	7727.52		162.95
48	12:16: 0	146.950	12827.35	991.20	
49	12:31: 0	147.200	7727.48		162.95
50	12:46: 0	147.450	12827.37	991.23	

DATE: 11/19/87
GAUGE SN #70059
WELL # 0
TEST # 1008

DATA FILE: 8

COMPANY: BMG
CLIENT:
WELL NAME: D-17
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7100' GL
Shut in on 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
51	13: 1: 0	147.700	7727.47		162.94
52	13:16: 0	147.950	12827.38	991.24	
53	13:31: 0	148.200	7727.51		162.95
54	13:46: 0	148.450	12827.39	991.26	
55	14: 1: 0	148.700	7727.48		162.95
56	14:16: 0	148.950	12827.41	991.28	
57	14:31: 0	149.200	7727.55		162.95
58	14:46: 0	149.450	12827.43	991.31	
59	15: 1: 0	149.700	7727.49		162.95
60	15:16: 0	149.950	12827.44	991.33	
61	15:31: 0	150.200	7727.54		162.95
62	15:46: 0	150.450	12827.46	991.36	
63	16: 1: 0	150.700	7727.49		162.95
64	16:16: 0	150.950	12827.48	991.38	
65	16:31: 0	151.200	7727.53		162.95
66	16:46: 0	151.450	12827.49	991.40	
67	17: 1: 0	151.700	7727.51		162.95
68	17:16: 0	151.950	12827.50	991.41	
69	17:31: 0	152.200	7727.52		162.95
70	17:46: 0	152.450	12827.53	991.45	
71	18: 1: 0	152.700	7727.48		162.95
72	18:16: 0	152.950	12827.54	991.47	
73	18:31: 0	153.200	7727.56		162.95
74	18:46: 0	153.450	12827.56	991.49	
75	19: 1: 0	153.700	7727.57		162.95
76	19:16: 0	153.950	12827.58	991.52	
77	19:31: 0	154.200	7727.53		162.95
78	19:46: 0	154.450	12827.59	991.53	
79	20: 1: 0	154.700	7727.52		162.95
80	20:16: 0	154.950	12827.61	991.56	
81	20:31: 0	155.200	7727.50		162.95
82	20:46: 0	155.450	12827.62	991.58	
83	21: 1: 0	155.700	7727.52		162.95
84	21:16: 0	155.950	12827.64	991.60	
85	21:31: 0	156.200	7727.54		162.95
86	21:46: 0	156.450	12827.66	991.63	
87	22: 1: 0	156.700	7727.54		162.95
88	22:16: 0	156.950	12827.67	991.65	
89	22:31: 0	157.200	7727.54		162.95
90	22:46: 0	157.450	12827.69	991.67	
91	23: 1: 0	157.700	7727.51		162.95
92	23:16: 0	157.950	12827.70	991.69	
93	23:31: 0	158.200	7727.51		162.95
94	23:46: 0	158.450	12827.72	991.71	
95	0: 1: 0	158.700	7727.52		162.95
96	0:16: 0	158.950	12827.74	991.74	
97	0:31: 0	159.200	7727.59		162.95
98	0:46: 0	159.450	12827.76	991.77	
99	1: 1: 0	159.700	7727.58		162.95
100	1:16: 0	159.950	12827.77	991.79	

DATE: 11/20/87
GAUGE SN #70059
WELL # 0
TEST # 1008

DATA FILE: 9

COMPANY: BMG
CLIENT:
WELL NAME: D-17
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7100' GL
Shut in on 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
1	1:31: 0	160.200	7727.56		162.95
2	1:46: 0	160.450	12827.80	991.82	
3	2: 1: 0	160.700	7727.55		162.95
4	2:16: 0	160.950	12827.82	991.85	
5	2:31: 0	161.200	7727.54		162.95
6	2:46: 0	161.450	12827.84	991.88	
7	3: 1: 0	161.700	7727.54		162.95
8	3:16: 0	161.950	12827.86	991.90	
9	3:31: 0	162.200	7727.52		162.95
10	3:46: 0	162.450	12827.88	991.94	
11	4: 1: 0	162.700	7727.51		162.95
12	4:16: 0	162.950	12827.91	991.97	
13	4:31: 0	163.200	7727.53		162.95
14	4:46: 0	163.450	12827.92	991.99	
15	5: 1: 0	163.700	7727.56		162.95
16	5:16: 0	163.950	12827.95	992.03	
17	5:31: 0	164.200	7727.60		162.96
18	5:46: 0	164.450	12827.97	992.06	
19	6: 1: 0	164.700	7727.54		162.95
20	6:16: 0	164.950	12827.99	992.08	
21	6:31: 0	165.200	7727.58		162.95
22	6:46: 0	165.450	12828.01	992.11	
23	7: 1: 0	165.700	7727.53		162.95
24	7:16: 0	165.950	12828.02	992.13	
25	7:31: 0	166.200	7727.52		162.95
26	7:46: 0	166.450	12828.05	992.17	
27	8: 1: 0	166.700	7727.52		162.95
28	8:16: 0	166.950	12828.08	992.21	
29	8:31: 0	167.200	7727.55		162.95
30	8:46: 0	167.450	12828.10	992.24	
31	9: 1: 0	167.700	7727.51		162.95
32	9:16: 0	167.950	12828.12	992.27	
33	9:31: 0	168.200	7727.55		162.95
34	9:46: 0	168.450	12828.15	992.31	
35	10: 1: 0	168.700	7727.53		162.95
36	10:16: 0	168.950	12828.17	992.34	
37	10:31: 0	169.200	7727.52		162.95
38	10:46: 0	169.450	12828.19	992.36	
39	11: 1: 0	169.700	7727.51		162.95
40	11:16: 0	169.950	12828.21	992.39	
41	11:31: 0	170.200	7727.55		162.95
42	11:46: 0	170.450	12828.23	992.41	
43	12: 1: 0	170.700	7727.52		162.95
44	12:16: 0	170.950	12828.25	992.44	
45	12:31: 0	171.200	7727.54		162.95
46	12:46: 0	171.450	12828.26	992.47	
47	13: 1: 0	171.700	7727.53		162.95
48	13:16: 0	171.950	12828.28	992.49	
49	13:31: 0	172.200	7727.58		162.95
50	13:46: 0	172.450	12828.30	992.52	

DATE: 11/20/87
GAUGE SN #70059
WELL # 0
TEST # 1008

DATA FILE: 9

COMPANY: BMG
CLIENT:
WELL NAME: D-17
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7100' GL
Shut in on 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
51	14: 1: 0	172.700	7727.51		162.95
52	14:16: 0	172.950	12828.32	992.54	
53	14:31: 0	173.200	7727.55		162.95
54	14:46: 0	173.450	12828.34	992.57	
55	15: 1: 0	173.700	7727.56		162.95
56	15:16: 0	173.950	12828.36	992.60	
57	15:31: 0	174.200	7727.54		162.95
58	15:46: 0	174.450	12828.38	992.63	
59	16: 1: 0	174.700	7727.55		162.95
60	16:16: 0	174.950	12828.40	992.65	
61	16:31: 0	175.200	7727.56		162.95
62	16:46: 0	175.450	12828.42	992.67	
63	17: 1: 0	175.700	7727.53		162.95
64	17:16: 0	175.950	12828.42	992.68	
65	17:31: 0	176.200	7727.53		162.95
66	17:46: 0	176.450	12828.44	992.71	
67	18: 1: 0	176.700	7727.50		162.95
68	18:16: 0	176.950	12828.46	992.74	
69	18:31: 0	177.200	7727.52		162.95
70	18:46: 0	177.450	12828.48	992.76	
71	19: 1: 0	177.700	7727.51		162.95
72	19:16: 0	177.950	12828.50	992.79	
73	19:31: 0	178.200	7727.52		162.95
74	19:46: 0	178.450	12828.52	992.81	
75	20: 1: 0	178.700	7727.56		162.95
76	20:16: 0	178.950	12828.54	992.85	
77	20:31: 0	179.200	7727.56		162.95
78	20:46: 0	179.450	12828.57	992.88	
79	21: 1: 0	179.700	7727.54		162.95
80	21:16: 0	179.950	12828.58	992.90	
81	21:31: 0	180.200	7727.55		162.95
82	21:46: 0	180.450	12828.60	992.93	
83	22: 1: 0	180.700	7727.56		162.95
84	22:16: 0	180.950	12828.62	992.96	
85	22:31: 0	181.200	7727.56		162.95
86	22:46: 0	181.450	12828.64	992.99	
87	23: 1: 0	181.700	7727.58		162.95
88	23:16: 0	181.950	12828.67	993.02	
89	23:31: 0	182.200	7727.55		162.95
90	23:46: 0	182.450	12828.69	993.06	
91	0: 1: 0	182.700	7727.52		162.95
92	0:16: 0	182.950	12828.72	993.09	
93	0:31: 0	183.200	7727.58		162.95
94	0:46: 0	183.450	12828.73	993.11	
95	1: 1: 0	183.700	7727.56		162.95
96	1:16: 0	183.950	12828.76	993.15	
97	1:31: 0	184.200	7727.53		162.95
98	1:46: 0	184.450	12828.78	993.18	
99	2: 1: 0	184.700	7727.56		162.95
100	2:16: 0	184.950	12828.80	993.21	

DATE: 11/2 /87
GAUGE SN #"0059
WELL # 0
TEST # 1008

DATA FILE: 10

COMPANY: BMG
CLIENT:
WELL NAME: D-17
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 7100' GL
Shut in on 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
1	2:31: 0	185.200	7727.54		162.95
2	2:46: 0	185.450	12828.83	993.25	
3	3: 1: 0	185.700	7727.54		162.95
4	3:16: 0	185.950	12828.85	993.28	
5	3:31: 0	186.200	7727.52		162.95
6	3:46: 0	186.450	12828.88	993.31	
7	4: 1: 0	186.700	7727.56		162.95
8	4:16: 0	186.950	12828.90	993.35	
9	4:31: 0	187.200	7727.56		162.95
10	4:46: 0	187.450	12828.93	993.38	
11	5: 1: 0	187.700	7727.58		162.95
12	5:16: 0	187.950	12828.95	993.41	
13	5:31: 0	188.200	7727.59		162.95
14	5:46: 0	188.450	12828.98	993.45	
15	6: 1: 0	188.700	7727.58		162.95
16	6:16: 0	188.950	12829.00	993.48	
17	6:31: 0	189.200	7727.60		162.96
18	6:46: 0	189.450	12829.02	993.51	
19	7: 1: 0	189.700	7727.57		162.95
20	7:16: 0	189.950	12829.06	993.56	
21	7:31: 0	190.200	7727.57		162.95
22	7:46: 0	190.450	12829.08	993.59	
23	8: 1: 0	190.700	7727.56		162.95
24	8:16: 0	190.950	12829.11	993.64	
25	8:31: 0	191.200	7727.54		162.95
26	8:46: 0	191.450	12829.14	993.67	
27	9: 1 0	191.700	7727.57		162.95
28	9:16 0	191.950	12829.17	993.72	
29	9:31 0	192.200	7727.58		162.95
30	9:46 0	192.450	12829.19	993.74	
31	10: 1 0	192.700	7727.57		162.95
32	10:16 0	192.950	12829.21	993.77	
33	10:31 0	193.200	7727.58		162.95
34	10:46 0	193.450	12829.23	993.80	
35	11: 1: 0	193.700	7727.57		162.95
36	11:16 0	193.950	12829.24	993.82	
37	11:31: 0	194.200	7727.56		162.95
38	11:46: 0	194.450	12829.26	993.85	
39	12: 1: 0	194.700	7727.56		162.95
40	12:16: 0	194.950	12829.28	993.87	
41	12:31: 0	195.200	7727.61		162.96
42	12:46: 0	195.450	12829.30	993.89	
43	13: 1: 0	195.700	7727.58		162.95
44	13:16: 0	195.950	12829.31	993.91	

DATE: 11/13/87
GAUGE SN #59760
WELL # 0
TEST # 1198

DATA FILE: 1

COMPANY: BMG
CLIENT:
WELL NAME: C-34
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 6800' GL
Shut in 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
1	9:34: 0	0.000	6586.76		69.12
2	9:37: 0	0.050	10604.51	15.34	
3	9:40: 0	0.100	6603.93		70.48
4	9:43: 0	0.150	10604.21	15.34	
5	9:46: 0	0.200	6614.11		71.29
6	9:49: 0	0.250	10603.96	15.27	
7	9:52: 0	0.300	6620.94		71.83
8	9:55: 0	0.350	10603.75	15.18	
9	9:58: 0	0.400	6627.29		72.34
10	10: 1: 0	0.450	10603.59	15.13	
11	10: 4: 0	0.500	6630.88		72.62
12	10: 7: 0	0.550	10603.48	15.09	
13	10:10: 0	0.600	6635.39		72.98
14	10:13: 0	0.650	10603.37	15.05	
15	10:16: 0	0.700	6637.43		73.14
16	10:19: 0	0.750	10603.29	15.01	
17	10:22: 0	0.800	6621.51		71.88
18	10:25: 0	0.850	10604.68	16.10	
19	10:28: 0	0.900	6595.98		69.85
20	10:31: 0	0.950	10605.45	16.41	
21	10:34: 0	1.000	6552.53		66.40
22	10:37: 0	1.050	10606.36	16.55	
23	10:40: 0	1.100	6537.73		65.22
24	10:43: 0	1.150	10606.82	16.75	
25	10:46: 0	1.200	6535.85		65.07
26	10:49: 0	1.250	10606.84	16.73	
27	10:52: 0	1.300	6533.71		64.90
28	10:55: 0	1.350	10606.89	16.74	
29	10:58: 0	1.400	6525.65		64.26
30	11: 1: 0	1.450	10607.16	16.87	
31	11: 4: 0	1.500	6527.46		64.40
32	11: 7: 0	1.550	10607.08	16.82	
33	11:10: 0	1.600	6531.56		64.73
34	11:13: 0	1.650	10606.76	16.58	
35	11:16: 0	1.700	6534.91		65.00
36	11:19: 0	1.750	10606.22	16.11	
37	11:22: 0	1.800	6545.69		65.85
38	11:25: 0	1.850	10605.53	15.62	
39	11:28: 0	1.900	6562.40		67.18
40	11:31: 0	1.950	10604.65	15.05	
41	11:34: 0	2.000	6568.77		67.69
42	11:37: 0	2.050	10605.20	15.69	
43	11:40: 0	2.100	6562.46		67.18
44	11:43: 0	2.150	10605.81	16.18	
45	11:46: 0	2.200	6550.54		66.24
46	11:49: 0	2.250	10606.21	16.36	
47	11:52: 0	2.300	6541.37		65.51
48	11:55: 0	2.350	10606.41	16.40	
49	11:58: 0	2.400	6540.77		65.46
50	12: 1: 0	2.450	10606.32	16.30	

DATE: 11/13/87
GAUGE SN #59160
WELL # 0
TEST # 1198

DATA FILE: 1

COMPANY: BMG
CLIENT:
WELL NAME: C-34
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 6800' GL
Shut in 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
51	12: 4: 0	2.500	6545.84		65.86
52	12: 7: 0	2.550	10605.63	15.72	
53	12:10: 0	2.600	6549.68		66.17
54	12:13: 0	2.650	10605.59	15.75	
55	12:16: 0	2.700	6549.09		66.12
56	12:19: 0	2.750	10605.45	15.60	
57	12:22: 0	2.800	6547.61		66.00
58	12:25: 0	2.850	10605.70	15.82	
59	12:28: 0	2.900	6538.74		65.30
60	12:31: 0	2.950	10606.18	16.14	
61	12:34: 0	3.000	6531.12		64.69
62	12:37: 0	3.050	10606.38	16.20	
63	12:40: 0	3.100	6526.96		64.36
64	12:43: 0	3.150	10606.31	16.06	
65	12:46: 0	3.200	6523.22		64.07
66	12:49: 0	3.250	10606.32	16.00	
67	12:52: 0	3.300	6523.48		64.09
68	12:55: 0	3.350	10606.00	15.70	
69	12:58: 0	3.400	6524.22		64.15
70	13: 1: 0	3.450	10606.12	15.83	
71	13: 4: 0	3.500	6522.69		64.03
72	13: 7: 0	3.550	10606.16	15.84	
73	13:10: 0	3.600	6524.64		64.18
74	13:13: 0	3.650	10605.76	15.49	
75	13:16: 0	3.700	6529.10		64.53
76	13:19: 0	3.750	10605.56	15.36	
77	13:22: 0	3.800	6533.21		64.86
78	13:25: 0	3.850	10605.26	15.14	
79	13:28: 0	3.900	6536.93		65.16
80	13:31: 0	3.950	10605.05	15.00	
81	13:34: 0	4.000	6540.50		65.44
82	13:37: 0	4.050	10605.03	15.04	
83	13:40: 0	4.100	6546.09		65.88
84	13:43: 0	4.150	10604.94	15.05	
85	13:46: 0	4.200	6549.80		66.18
86	13:49: 0	4.250	10604.78	14.96	
87	13:52: 0	4.300	6551.56		66.32
88	13:55: 0	4.350	10604.60	14.81	
89	13:58: 0	4.400	6557.39		66.78
90	14: 1: 0	4.450	10604.49	14.80	
91	14: 4: 0	4.500	6564.60		67.35
92	14: 7: 0	4.550	10604.34	14.79	
93	14:10: 0	4.600	6564.89		67.38
94	14:13: 0	4.650	10604.27	14.73	
95	14:16: 0	4.700	6560.52		67.03
96	14:19: 0	4.750	10604.35	14.73	
97	14:22: 0	4.800	6557.23		66.77
98	14:25: 0	4.850	10604.39	14.70	
99	14:28: 0	4.900	6542.48		65.60
100	14:31: 0	4.950	10604.94	14.99	

DATE: 11/13/87
GAUGE SN #69160
WELL # 0
TEST # 1198

DATA FILE: 2

COMPANY: BMG
CLIENT:
WELL NAME: C-34
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 6800' GL
Shut in 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
1	14:34: 0	5.000	6534.22		64.94
2	14:37: 0	5.050	10605.22	15.12	
3	14:40: 0	5.100	6530.44		64.64
4	14:43: 0	5.150	10605.68	15.51	
5	14:46: 0	5.200	6553.00		66.43
6	14:49: 0	5.250	10605.39	15.60	
7	14:52: 0	5.300	6482.43		60.83
8	14:55: 0	5.350	11631.16	1144.11	
9	14:58: 0	5.400	6550.60		66.24
10	15: 1: 0	5.450	11630.14	1143.65	
11	15: 4: 0	5.500	6557.94		66.82
12	15: 7: 0	5.550	11637.81	1153.19	
13	15:10: 0	5.600	6438.20		57.32
14	15:13: 0	5.650	11673.08	1195.52	
15	15:16: 0	5.700	6638.73		73.25
16	15:19: 0	5.750	11709.64	1243.42	
17	15:22: 0	5.800	6952.14		98.25
18	15:25: 0	5.850	11755.76	1304.91	
19	15:28: 0	5.900	7295.54		125.78
20	15:31: 0	5.950	11803.69	1369.73	
21	15:34: 0	6.000	7686.04		157.28
22	15:37: 0	6.050	11826.42	1403.85	
23	15:40: 0	6.100	7727.61		160.64
24	15:43: 0	6.150	11826.25	1404.41	
25	15:46: 0	6.200	7730.59		160.88
26	15:49: 0	6.250	11826.29	1404.53	
27	15:52: 0	6.300	7731.94		160.99
28	15:55: 0	6.350	11826.32	1404.59	
29	15:58: 0	6.400	7733.00		161.08
30	16: 1: 0	6.450	11826.34	1404.63	
31	16: 4: 0	6.500	7733.58		161.12
32	16: 7: 0	6.550	11826.36	1404.66	
33	16:10: 0	6.600	7734.19		161.17
34	16:13: 0	6.650	11826.37	1404.69	
35	16:16: 0	6.700	7734.63		161.21
36	16:19: 0	6.750	11826.37	1404.70	
37	16:22: 0	6.800	7735.06		161.24
38	16:25: 0	6.850	11826.38	1404.72	
39	16:28: 0	6.900	7735.35		161.27
40	16:31: 0	6.950	11826.38	1404.73	
41	16:34: 0	7.000	7735.57		161.29
42	16:37: 0	7.050	11826.39	1404.74	
43	16:40: 0	7.100	7735.81		161.30
44	16:43: 0	7.150	11826.39	1404.74	
45	16:46: 0	7.200	7736.04		161.32
46	16:49: 0	7.250	11826.39	1404.75	
47	16:52: 0	7.300	7736.12		161.33
48	16:55: 0	7.350	11826.39	1404.75	
49	16:58: 0	7.400	7736.31		161.34
50	17: 1: 0	7.450	11826.39	1404.75	

DATE: 11/13/87
GAUGE SN #59160
WELL # 0
TEST # 1198

DATA FILE: 2

COMPANY: BMG
CLIENT:
WELL NAME: C-34
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 6800' GL
Shut in 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
51	17: 4: 0	7.500	7736.45		161.36
52	17: 7: 0	7.550	11826.39	1404.76	
53	17:10: 0	7.600	7736.56		161.37
54	17:13: 0	7.650	11826.39	1404.76	
55	17:16: 0	7.700	7736.70		161.38
56	17:19: 0	7.750	11826.39	1404.76	
57	17:22: 0	7.800	7736.82		161.39
58	17:25: 0	7.850	11826.38	1404.76	
59	17:28: 0	7.900	7736.93		161.39
60	17:31: 0	7.950	11826.38	1404.76	
61	17:34: 0	8.000	7737.05		161.41
62	17:37: 0	8.050	11826.38	1404.75	
63	17:40: 0	8.100	7737.09		161.41
64	17:43: 0	8.150	11826.38	1404.76	
65	17:46: 0	8.200	7737.15		161.41
66	17:49: 0	8.250	11826.38	1404.76	
67	17:52: 0	8.300	7737.27		161.42
68	17:55: 0	8.350	11826.38	1404.76	
69	17:58: 0	8.400	7737.30		161.43
70	18: 1: 0	8.450	11826.38	1404.76	
71	18: 4: 0	8.500	7737.36		161.43
72	18: 7: 0	8.550	11826.37	1404.75	
73	18:10: 0	8.600	7737.41		161.43
74	18:13: 0	8.650	11826.37	1404.75	
75	18:16: 0	8.700	7737.47		161.44
76	18:19: 0	8.750	11826.37	1404.75	
77	18:22: 0	8.800	7737.52		161.44
78	18:25: 0	8.850	11826.36	1404.74	
79	18:28: 0	8.900	7737.56		161.45
80	18:31: 0	8.950	11826.36	1404.74	
81	18:34: 0	9.000	7737.59		161.45
82	18:37: 0	9.050	11826.36	1404.74	
83	18:40: 0	9.100	7737.63		161.45
84	18:43: 0	9.150	11826.36	1404.74	
85	18:46: 0	9.200	7737.67		161.46
86	18:49: 0	9.250	11826.36	1404.74	
87	18:52: 0	9.300	7737.68		161.46
88	18:55: 0	9.350	11826.36	1404.74	
89	18:58: 0	9.400	7737.71		161.46
90	19: 1: 0	9.450	11826.35	1404.73	
91	19: 4: 0	9.500	7737.75		161.46
92	19: 7: 0	9.550	11826.36	1404.74	
93	19:10: 0	9.600	7737.72		161.46
94	19:13: 0	9.650	11826.35	1404.73	
95	19:16: 0	9.700	7737.75		161.46
96	19:19: 0	9.750	11826.35	1404.73	
97	19:22: 0	9.800	7737.76		161.46
98	19:25: 0	9.850	11826.34	1404.72	
99	19:28: 0	9.900	7737.82		161.47
100	19:31: 0	9.950	11826.34	1404.72	

DATE: 11/13/87
GAUGE SN #39160
WELL # 0
TEST # 1198

DATA FILE: 3

COMPANY: BMG
CLIENT:
WELL NAME: C-34
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 6800' GL
Shut in 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
1	19:46: 0	10.200	7737.78		161.46
2	20: 1: 0	10.450	11826.33	1404.71	
3	20:16: 0	10.700	7737.80		161.47
4	20:31: 0	10.950	11826.32	1404.70	
5	20:46: 0	11.200	7737.80		161.47
6	21: 1: 0	11.450	11826.31	1404.68	
7	21:16: 0	11.700	7737.87		161.47
8	21:31: 0	11.950	11826.30	1404.67	
9	21:46: 0	12.200	7737.86		161.47
10	22: 1: 0	12.450	11826.28	1404.65	
11	22:16: 0	12.700	7737.88		161.47
12	22:31: 0	12.950	11826.27	1404.63	
13	22:46: 0	13.200	7737.90		161.47
14	23: 1: 0	13.450	11826.26	1404.62	
15	23:16: 0	13.700	7737.90		161.47
16	23:31: 0	13.950	11826.24	1404.60	
17	23:46: 0	14.200	7737.93		161.48
18	0: 1: 0	14.450	11826.23	1404.58	
19	0:16: 0	14.700	7737.94		161.48
20	0:31: 0	14.950	11826.22	1404.57	
21	0:46: 0	15.200	7737.93		161.48
22	1: 1: 0	15.450	11826.21	1404.55	
23	1:16: 0	15.700	7737.96		161.48
24	1:31: 0	15.950	11826.19	1404.53	
25	1:46: 0	16.200	7737.99		161.48
26	2: 1: 0	16.450	11826.18	1404.51	
27	2:16: 0	16.700	7738.07		161.49
28	2:31: 0	16.950	11826.17	1404.50	
29	2:46: 0	17.200	7738.07		161.49
30	3: 1: 0	17.450	11826.15	1404.48	
31	3:16: 0	17.700	7738.11		161.49
32	3:31: 0	17.950	11826.13	1404.46	
33	3:46: 0	18.200	7738.12		161.49
34	4: 1: 0	18.450	11826.12	1404.44	
35	4:16: 0	18.700	7738.13		161.49
36	4:31: 0	18.950	11826.11	1404.42	
37	4:46: 0	19.200	7738.14		161.49
38	5: 1: 0	19.450	11826.09	1404.40	
39	5:16: 0	19.700	7738.15		161.49
40	5:31: 0	19.950	11826.07	1404.38	
41	5:46: 0	20:200	7738.07		161.49
42	6: 1: 0	20.450	11826.06	1404.37	
43	6:16: 0	20.700	7738.02		161.48
44	6:31: 0	20.950	11826.04	1404.34	
45	6:46 0	21.200	7737.99		161.48
46	7: 1: 0	21.450	11826.03	1404.33	
47	7:16 0	21.700	7738.02		161.48
48	7:31: 0	21.950	11826.02	1404.31	
49	7:46 0	22.200	7738.08		161.49
50	8: 1 0	22.450	11826.00	1404.29	

DATE: 11/14/87
GAUGE SN #69160
WELL # 0
TEST # 1198

DATA FILE: 3

COMPANY: BMG
CLIENT:
WELL NAME: C-34
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 6800' GL
Shut in 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
51	8:16: 0	22.700	7738.06		161.49
52	8:31: 0	22.950	11825.99	1404.27	
53	8:46: 0	23.200	7738.08		161.49
54	9: 1: 0	23.450	11825.98	1404.27	
55	9:16: 0	23.700	7738.08		161.49
56	9:31: 0	23.950	11825.97	1404.24	
57	9:46: 0	24.200	7738.07		161.49
58	10: 1: 0	24.450	11825.95	1404.23	
59	10:16: 0	24.700	7738.04		161.48
60	10:31: 0	24.950	11825.94	1404.21	
61	10:46: 0	25.200	7738.07		161.49
62	11: 1: 0	25.450	11825.93	1404.20	
63	11:16: 0	25.700	7738.08		161.49
64	11:31: 0	25.950	11825.92	1404.18	
65	11:46: 0	26.200	7738.10		161.49
66	12: 1: 0	26.450	11825.90	1404.17	
67	12:16: 0	26.700	7738.08		161.49
68	12:31: 0	26.950	11825.89	1404.14	
69	12:46: 0	27.200	7738.11		161.49
70	13: 1: 0	27.450	11825.88	1404.13	
71	13:16: 0	27.700	7738.09		161.49
72	13:31: 0	27.950	11825.87	1404.12	
73	13:46: 0	28.200	7738.07		161.49
74	14: 1: 0	28.450	11825.85	1404.09	
75	14:16: 0	28.700	7738.09		161.49
76	14:31: 0	28.950	11825.83	1404.07	
77	14:46: 0	29.200	7738.07		161.49
78	15: 1: 0	29.450	11825.81	1404.05	
79	15:16: 0	29.700	7738.10		161.49
80	15:31: 0	29.950	11825.80	1404.03	
81	15:46: 0	30.200	7738.05		161.49
82	16: 1: 0	30.450	11825.79	1404.02	
83	16:16: 0	30.700	7738.07		161.49
84	16:31: 0	30.950	11825.77	1403.99	
85	16:46: 0	31.200	7738.07		161.49
86	17: 1: 0	31.450	11825.75	1403.97	
87	17:16: 0	31.700	7738.09		161.49
88	17:31: 0	31.950	11825.73	1403.94	
89	17:46: 0	32.200	7738.07		161.49
90	18: 1: 0	32.450	11825.71	1403.92	
91	18:16: 0	32.700	7738.10		161.49
92	18:31: 0	32.950	11825.70	1403.91	
93	18:46: 0	33.200	7738.09		161.49
94	19: 1: 0	33.450	11825.69	1403.89	
95	19:16: 0	33.700	7738.12		161.49
96	19:31: 0	33.950	11825.68	1403.87	
97	19:46: 0	34.200	7738.11		161.49
98	20: 1: 0	34.450	11825.66	1403.85	
99	20:16: 0	34.700	7738.16		161.49
100	20:31: 0	34.950	11825.64	1403.83	

DATE: 11/14/87
GAUGE SN #39160
WELL # 0
TEST # 1198

DATA FILE: 4

COMPANY: BMG
CLIENT:
WELL NAME: C-34
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 6800' GL
Shut in 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
1	20:46: 0	35.200	7738.14		161.49
2	21: 1: 0	35.450	11825.63	1403.81	
3	21:16: 0	35.700	7738.18		161.50
4	21:31: 0	35.950	11825.61	1403.80	
5	21:46: 0	36.200	7738.18		161.50
6	22: 1: 0	36.450	11825.60	1403.77	
7	22:16: 0	36.700	7738.20		161.50
8	22:31: 0	36.950	11825.59	1403.76	
9	22:46: 0	37.200	7738.14		161.49
10	23: 1: 0	37.450	11825.57	1403.74	
11	23:16: 0	37.700	7738.18		161.50
12	23:31: 0	37.950	11825.55	1403.72	
13	23:46: 0	38.200	7738.16		161.49
14	0: 1: 0	38.450	11825.54	1403.70	
15	0:16: 0	38.700	7738.18		161.50
16	0:31: 0	38.950	11825.53	1403.69	
17	0:46: 0	39.200	7738.15		161.49
18	1: 1: 0	39.450	11825.51	1403.67	
19	1:16: 0	39.700	7738.14		161.49
20	1:31: 0	39.950	11825.50	1403.65	
21	1:46: 0	40.200	7738.16		161.50
22	2: 1: 0	40.450	11825.49	1403.63	
23	2:16: 0	40.700	7738.14		161.49
24	2:31: 0	40.950	11825.47	1403.61	
25	2:46: 0	41.200	7738.14		161.49
26	3: 1: 0	41.450	11825.46	1403.60	
27	3:16: 0	41.700	7738.18		161.50
28	3:31: 0	41.950	11825.44	1403.57	
29	3:46: 0	42.200	7738.14		161.49
30	4: 1: 0	42.450	11825.43	1403.56	
31	4:16: 0	42.700	7738.16		161.50
32	4:31: 0	42.950	11825.41	1403.54	
33	4:46: 0	43.200	7738.19		161.50
34	5: 1: 0	43.450	11825.40	1403.53	
35	5:16: 0	43.700	7738.17		161.50
36	5:31: 0	43.950	11825.39	1403.50	
37	5:46: 0	44.200	7738.13		161.49
38	6: 1: 0	44.450	11825.37	1403.49	
39	6:16: 0	44.700	7738.14		161.49
40	6:31: 0	44.950	11825.36	1403.47	
41	6:46: 0	45.200	7738.12		161.49
42	7: 1: 0	45.450	11825.34	1403.45	
43	7:16: 0	45.700	7738.13		161.49
44	7:31: 0	45.950	11825.33	1403.43	
45	7:46: 0	46.200	7738.15		161.49
46	8: 1: 0	46.450	11825.31	1403.41	
47	8:16: 0	46.700	7738.15		161.49
48	8:31: 0	46.950	11825.30	1403.40	
49	8:46: 0	47.200	7738.13		161.49
50	9: 1: 0	47.450	11825.28	1403.37	

DATE: 11/15/87
GAUGE SN #69160
WELL # 0
TEST # 1198

DATA FILE: 4

COMPANY: BMG
CLIENT:
WELL NAME: C-34
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 6800' GL
Shut in 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
51	9:16: 0	47.700	7738.14		161.49
52	9:31: 0	47.950	11825.27	1403.36	
53	9:46: 0	48.200	7738.10		161.49
54	10: 1: 0	48.450	11825.26	1403.35	
55	10:16: 0	48.700	7738.11		161.49
56	10:31: 0	48.950	11825.25	1403.32	
57	10:46: 0	49.200	7738.13		161.49
58	11: 1: 0	49.450	11825.23	1403.31	
59	11:16: 0	49.700	7738.12		161.49
60	11:31: 0	49.950	11825.22	1403.30	
61	11:46: 0	50.200	7738.10		161.49
62	12: 1: 0	50.450	11825.21	1403.28	
63	12:16: 0	50.700	7738.11		161.49
64	12:31: 0	50.950	11825.20	1403.26	
65	12:46: 0	51.200	7738.07		161.49
66	13: 1: 0	51.450	11825.18	1403.24	
67	13:16: 0	51.700	7738.05		161.49
68	13:31: 0	51.950	11825.17	1403.22	
69	13:46: 0	52.200	7738.09		161.49
70	14: 1: 0	52.450	11825.16	1403.21	
71	14:16: 0	52.700	7738.10		161.49
72	14:31: 0	52.950	11825.15	1403.20	
73	14:46: 0	53.200	7738.09		161.49
74	15: 1: 0	53.450	11825.13	1403.17	
75	15:16: 0	53.700	7738.10		161.49
76	15:31: 0	53.950	11825.12	1403.16	
77	15:46: 0	54.200	7738.09		161.49
78	16: 1: 0	54.450	11825.10	1403.14	
79	16:16: 0	54.700	7738.09		161.49
80	16:31: 0	54.950	11825.08	1403.12	
81	16:46: 0	55.200	7738.11		161.49
82	17: 1: 0	55.450	11825.07	1403.10	
83	17:16: 0	55.700	7738.07		161.49
84	17:31: 0	55.950	11825.05	1403.07	
85	17:46: 0	56.200	7738.07		161.49
86	18: 1: 0	56.450	11825.03	1403.05	
87	18:16: 0	56.700	7738.09		161.49
88	18:31: 0	56.950	11825.02	1403.04	
89	18:46: 0	57.200	7738.07		161.49
90	19: 1: 0	57.450	11825.01	1403.02	
91	19:16: 0	57.700	7738.05		161.49
92	19:31: 0	57.950	11824.99	1402.99	
93	19:46: 0	58.200	7738.07		161.49
94	20: 1: 0	58.450	11824.98	1402.98	
95	20:16: 0	58.700	7738.07		161.49
96	20:31: 0	58.950	11824.96	1402.95	
97	20:46: 0	59.200	7738.07		161.49
98	21: 1: 0	59.450	11824.94	1402.94	
99	21:16: 0	59.700	7738.09		161.49
100	21:31: 0	59.950	11824.93	1402.92	

DATE: 11/15/87
GAUGE SN #69160
WELL # 0
TEST # 1198

DATA FILE: 5

COMPANY: BMG
CLIENT:
WELL NAME: C-34
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 6800' GL
Shut in 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
1	21:46: 0	60.200	7738.11		161.49
2	22: 1: 0	60.450	11824.92	1402.90	
3	22:16: 0	60.700	7738.08		161.49
4	22:31: 0	60.950	11824.89	1402.87	
5	22:46: 0	61.200	7738.08		161.49
6	23: 1: 0	61.450	11824.88	1402.86	
7	23:16: 0	61.700	7738.08		161.49
8	23:31: 0	61.950	11824.87	1402.85	
9	23:46: 0	62.200	7738.06		161.49
10	0: 1: 0	62.450	11824.86	1402.83	
11	0:16: 0	62.700	7738.09		161.49
12	0:31: 0	62.950	11824.84	1402.81	
13	0:46: 0	63.200	7738.09		161.49
14	1: 1: 0	63.450	11824.83	1402.79	
15	1:16: 0	63.700	7738.09		161.49
16	1:31: 0	63.950	11824.82	1402.77	
17	1:46: 0	64.200	7738.13		161.49
18	2: 1: 0	64.450	11824.80	1402.75	
19	2:16: 0	64.700	7738.11		161.49
20	2:31: 0	64.950	11824.79	1402.74	
21	2:46: 0	65.200	7738.10		161.49
22	3: 1: 0	65.450	11824.78	1402.72	
23	3:16: 0	65.700	7738.05		161.49
24	3:31: 0	65.950	11824.76	1402.70	
25	3:46: 0	66.200	7738.07		161.49
26	4: 1: 0	66.450	11824.75	1402.69	
27	4:16: 0	66.700	7738.07		161.49
28	4:31: 0	66.950	11824.73	1402.67	
29	4:46: 0	67.200	7738.04		161.49
30	5: 1: 0	67.450	11824.72	1402.65	
31	5:16: 0	67.700	7738.04		161.48
32	5:31: 0	67.950	11824.70	1402.63	
33	5:46: 0	68.200	7738.06		161.49
34	6: 1: 0	68.450	11824.69	1402.61	
35	6:16: 0	68.700	7738.02		161.48
36	6:31: 0	68.950	11824.68	1402.59	
37	6:46: 0	69.200	7738.01		161.48
38	7: 1: 0	69.450	11824.65	1402.57	
39	7:16: 0	69.700	7737.99		161.48
40	7:31: 0	69.950	11824.64	1402.55	
41	7:46: 0	70.200	7738.00		161.48
42	8: 1: 0	70.450	11824.63	1402.54	
43	8:16: 0	70.700	7738.00		161.48
44	8:31: 0	70.950	11824.62	1402.52	
45	8:46: 0	71.200	7738.01		161.48
46	9: 1: 0	71.450	11824.60	1402.49	
47	9:16: 0	71.700	7738.02		161.48
48	9:31: 0	71.950	11824.58	1402.47	
49	9:46: 0	72.200	7738.04		161.48
50	10: 1: 0	72.450	11824.57	1402.46	

DATE: 11/15/87
GAUGE SN #69160
WELL # 0
TEST # 1198

DATA FILE: 5

COMPANY: BMG
CLIENT:
WELL NAME: C-34
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 6800' GL
Shut in 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE °F
51	10:16: 0	72.700	7738.00		161.48
52	10:31: 0	72.950	11824.56	1402.44	
53	10:46: 0	73.200	7738.02		161.48
54	11: 1: 0	73.450	11824.55	1402.43	
55	11:16: 0	73.700	7737.99		161.48
56	11:31: 0	73.950	11824.53	1402.41	
57	11:46: 0	74.200	7737.97		161.48
58	12: 1: 0	74.450	11824.51	1402.39	
59	12:16: 0	74.700	7738.01		161.48
60	12:31: 0	74.950	11824.50	1402.37	
61	12:46: 0	75.200	7737.98		161.48
62	13: 1: 0	75.450	11824.49	1402.36	
63	13:16: 0	75.700	7737.98		161.48
64	13:31: 0	75.950	11824.49	1402.35	
65	13:46: 0	76.200	7738.02		161.48
66	14: 1: 0	76.450	11824.47	1402.33	
67	14:16: 0	76.700	7737.97		161.48
68	14:31: 0	76.950	11824.46	1402.32	
69	14:46: 0	77.200	7737.99		161.48
70	15: 1: 0	77.450	11824.45	1402.30	
71	15:16: 0	77.700	7737.98		161.48
72	15:31: 0	77.950	11824.43	1402.28	
73	15:46: 0	78.200	7737.99		161.48
74	16: 1: 0	78.450	11824.43	1402.27	
75	16:16: 0	78.700	7737.94		161.48
76	16:31: 0	78.950	11824.41	1402.25	
77	16:46: 0	79.200	7737.99		161.48
78	17: 1: 0	79.450	11824.40	1402.24	
79	17:16: 0	79.700	7737.97		161.48
80	17:31: 0	79.950	11824.39	1402.22	
81	17:46: 0	80.200	7738.00		161.48
82	18: 1: 0	80.450	11824.38	1402.22	
83	18:16: 0	80.700	7738.01		161.48
84	18:31: 0	80.950	11824.36	1402.19	
85	18:46: 0	81.200	7737.98		161.48
86	19: 1: 0	81.450	11824.35	1402.18	
87	19:16: 0	81.700	7737.99		161.48
88	19:31: 0	81.950	11824.34	1402.17	
89	19:46: 0	82.200	7738.00		161.48
90	20: 1: 0	82.450	11824.34	1402.16	
91	20:16: 0	82.700	7737.98		161.48
92	20:31: 0	82.950	11824.32	1402.14	
93	20:46: 0	83.200	7737.98		161.48
94	21: 1: 0	83.450	11824.32	1402.14	
95	21:16: 0	83.700	7737.97		161.48
96	21:31: 0	83.950	11824.31	1402.12	
97	21:46: 0	84.200	7737.99		161.48
98	22: 1: 0	84.450	11824.30	1402.12	
99	22:16: 0	84.700	7738.00		161.48
100	22:31: 0	84.950	11824.30	1402.11	

DATE: 11/16/87
GAUGE SN #69160
WELL # 0
TEST # 1198

DATA FILE: 6

COMPANY: BMG
CLIENT:
WELL NAME: C-34
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 6800' GL
Shut in 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
1	22:46: 0	85.200	7738.01		161.48
2	23: 1: 0	85.450	11824.29	1402.10	
3	23:16: 0	85.700	7738.00		161.48
4	23:31: 0	85.950	11824.29	1402.09	
5	23:46: 0	86.200	7738.00		161.48
6	0: 1: 0	86.450	11824.29	1402.09	
7	0:16: 0	86.700	7737.97		161.48
8	0:31: 0	86.950	11824.29	1402.09	
9	0:46: 0	87.200	7737.99		161.48
10	1: 1: 0	87.450	11824.28	1402.09	
11	1:16: 0	87.700	7738.05		161.49
12	1:31: 0	87.950	11824.28	1402.09	
13	1:46: 0	88.200	7737.99		161.48
14	2: 1: 0	88.450	11824.28	1402.09	
15	2:16: 0	88.700	7737.99		161.48
16	2:31: 0	88.950	11824.28	1402.09	
17	2:46: 0	89.200	7737.97		161.48
18	3: 1: 0	89.450	11824.28	1402.09	
19	3:16: 0	89.700	7738.02		161.48
20	3:31: 0	89.950	11824.27	1402.08	
21	3:46: 0	90.200	7738.04		161.48
22	4: 1: 0	90.450	11824.28	1402.09	
23	4:16: 0	90.700	7738.04		161.48
24	4:31: 0	90.950	11824.28	1402.09	
25	4:46: 0	91.200	7738.03		161.48
26	5: 1: 0	91.450	11824.27	1402.08	
27	5:16: 0	91.700	7738.02		161.48
28	5:31: 0	91.950	11824.27	1402.08	
29	5:46: 0	92.200	7738.02		161.48
30	6: 1: 0	92.450	11824.27	1402.07	
31	6:16: 0	92.700	7738.00		161.48
32	6:31: 0	92.950	11824.27	1402.08	
33	6:46: 0	93.200	7737.97		161.48
34	7: 1: 0	93.450	11824.27	1402.07	
35	7:16: 0	93.700	7737.97		161.48
36	7:31: 0	93.950	11824.27	1402.08	
37	7:46: 0	94.200	7737.96		161.48
38	8: 1: 0	94.450	11824.28	1402.09	
39	8:16: 0	94.700	7737.95		161.48
40	8:31: 0	94.950	11824.27	1402.08	
41	8:46: 0	95.200	7737.99		161.48
42	9: 1: 0	95.450	11824.28	1402.09	
43	9:16: 0	95.700	7737.99		161.48
44	9:31: 0	95.950	11824.28	1402.09	
45	9:46: 0	96.200	7737.96		161.48
46	10: 1: 0	96.450	11824.28	1402.09	
47	10:16: 0	96.700	7737.98		161.48
48	10:31: 0	96.950	11824.28	1402.09	
49	10:46: 0	97.200	7737.97		161.48
50	11: 1: 0	97.450	11824.28	1402.09	

DATE: 11/ 7/87
GAUGE SN #69160
WELL # 0
TEST # 1198

DATA FILE: 6

COMPANY: BMG
CLIENT:
WELL NAME: C-34
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 6800' GL
Shut in 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
51	11:16 0	97.700	7737.97		161.48
52	11:31 0	97.950	11824.28	1402.09	
53	11:46 0	98.200	7737.94		161.48
54	12: 1 0	98.450	11824.29	1402.09	
55	12:16 0	98.700	7737.99		161.48
56	12:31 0	98.950	11824.28	1402.09	
57	12:46 0	99.200	7737.94		161.48
58	13: 1 0	99.450	11824.29	1402.09	
59	13:16 0	99.700	7737.94		161.48
60	13:31 0	99.950	11824.29	1402.10	
61	13:46 0	100.200	7737.96		161.48
62	14: 1 0	100.450	11824.30	1402.11	
63	14:16 0	100.700	7737.92		161.48
64	14:31 0	100.950	11824.30	1402.11	
65	14:46 0	101.200	7737.94		161.48
66	15: 1 0	101.450	11824.30	1402.11	
67	15:16 0	101.700	7737.95		161.48
68	15:31 0	101.950	11824.30	1402.11	
69	15:46 0	102.200	7737.94		161.48
70	16: 1 0	102.450	11824.30	1402.11	
71	16:16 0	102.700	7737.97		161.48
72	16:31 0	102.950	11824.30	1402.11	
73	16:46 0	103.200	7737.98		161.48
74	17: 1 0	103.450	11824.30	1402.11	
75	17:16 0	103.700	7738.13		161.49
76	17:31 0	103.950	11824.30	1402.11	
77	17:46 0	104.200	7738.11		161.49
78	18: 1 0	104.450	11824.30	1402.11	
79	18:16 0	104.700	7738.01		161.48
80	18:31 0	104.950	11824.30	1402.12	
81	18:46 0	105.200	7737.97		161.48
82	19: 1 0	105.450	11824.30	1402.12	
83	19:16 0	105.700	7738.00		161.48
84	19:31 0	105.950	11824.30	1402.12	
85	19:46 0	106.200	7737.96		161.48
86	20: 1 0	106.450	11824.30	1402.12	
87	20:16 0	106.700	7737.94		161.48
88	20:31 0	106.950	11824.31	1402.12	
89	20:46 0	107.200	7737.90		161.47
90	21: 1 0	107.450	11824.31	1402.12	
91	21:16 0	107.700	7737.95		161.48
92	21:31 0	107.950	11824.31	1402.12	
93	21:46 0	108.200	7737.95		161.48
94	22: 1 0	108.450	11824.31	1402.13	
95	22:16 0	108.700	7737.95		161.48
96	22:31 0	108.950	11824.32	1402.14	
97	22:46 0	109.200	7737.91		161.47
98	23: 1 0	109.450	11824.32	1402.14	
99	23:16 0	109.700	7737.90		161.47
100	23:31 0	109.950	11824.33	1402.15	

DATE: 11/17/87
GAUGE SN #39160
WELL # 0
TEST # 1198

DATA FILE: 7

COMPANY: BMG
CLIENT:
WELL NAME: C-34
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 6800' GL
Shut in 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
1	23:46: 0	110.200	7737.91		161.47
2	0: 1: 0	110.450	11824.34	1402.16	
3	0:16: 0	110.700	7737.95		161.48
4	0:31: 0	110.950	11824.35	1402.17	
5	0:46: 0	111.200	7737.94		161.48
6	1: 1: 0	111.450	11824.35	1402.18	
7	1:16: 0	111.700	7737.96		161.48
8	1:31: 0	111.950	11824.36	1402.19	
9	1:46: 0	112.200	7737.93		161.48
10	2: 1: 0	112.450	11824.37	1402.20	
11	2:16: 0	112.700	7737.89		161.47
12	2:31: 0	112.950	11824.38	1402.21	
13	2:46: 0	113.200	7737.94		161.48
14	3: 1: 0	113.450	11824.39	1402.22	
15	3:16: 0	113.700	7737.93		161.48
16	3:31: 0	113.950	11824.40	1402.24	
17	3:46: 0	114.200	7737.95		161.48
18	4: 1: 0	114.450	11824.40	1402.24	
19	4:16: 0	114.700	7737.85		161.47
20	4:31: 0	114.950	11824.41	1402.26	
21	4:46: 0	115.200	7737.91		161.47
22	5: 1: 0	115.450	11824.42	1402.26	
23	5:16: 0	115.700	7737.91		161.47
24	5:31: 0	115.950	11824.43	1402.28	
25	5:46: 0	116.200	7737.85		161.47
26	6: 1: 0	116.450	11824.44	1402.29	
27	6:16: 0	116.700	7737.88		161.47
28	6:31: 0	116.950	11824.44	1402.29	
29	6:46: 0	117.200	7737.86		161.47
30	7: 1: 0	117.450	11824.45	1402.31	
31	7:16: 0	117.700	7737.85		161.47
32	7:31: 0	117.950	11824.47	1402.33	
33	7:46: 0	118.200	7737.86		161.47
34	8: 1: 0	118.450	11824.48	1402.34	
35	8:16: 0	118.700	7737.91		161.47
36	8:31: 0	118.950	11824.49	1402.36	
37	8:46: 0	119.200	7737.92		161.48
38	9: 1: 0	119.450	11824.50	1402.36	
39	9:16: 0	119.700	7737.95		161.48
40	9:31: 0	119.950	11824.51	1402.39	
41	9:46: 0	120.200	7737.99		161.48
42	10: 1: 0	120.450	11824.53	1402.40	
43	10:16: 0	120.700	7738.06		161.49
44	10:31: 0	120.950	11824.53	1402.41	
45	10:46: 0	121.200	7738.08		161.49
46	11: 1: 0	121.450	11824.54	1402.42	
47	11:16: 0	121.700	7737.99		161.48
48	11:31: 0	121.950	11824.55	1402.44	
49	11:46: 0	122.200	7737.95		161.48
50	12: 1: 0	122.450	11824.56	1402.45	

DATE: 11/18/87
GAUGE SN #69160
WELL # 0
TEST # 1198

DATA FILE: 7

COMPANY: BMG
CLIENT:
WELL NAME: C-34
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 6800' GL
Shut in 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
51	12:16: 0	122.700	7737.92		161.48
52	12:31: 0	122.950	11824.58	1402.46	
53	12:46: 0	123.200	7737.94		161.48
54	13: 1: 0	123.450	11824.59	1402.49	
55	13:16: 0	123.700	7737.91		161.47
56	13:31: 0	123.950	11824.60	1402.49	
57	13:46: 0	124.200	7737.92		161.48
58	14: 1: 0	124.450	11824.62	1402.51	
59	14:16: 0	124.700	7737.92		161.48
60	14:31: 0	124.950	11824.63	1402.53	
61	14:46: 0	125.200	7737.91		161.47
62	15: 1: 0	125.450	11824.63	1402.54	
63	15:16: 0	125.700	7737.94		161.48
64	15:31: 0	125.950	11824.64	1402.55	
65	15:46: 0	126.200	7738.01		161.48
66	16: 1: 0	126.450	11824.65	1402.57	
67	16:16: 0	126.700	7738.04		161.48
68	16:31: 0	126.950	11824.66	1402.57	
69	16:46: 0	127.200	7737.97		161.48
70	17: 1: 0	127.450	11824.67	1402.59	
71	17:16: 0	127.700	7737.91		161.47
72	17:31: 0	127.950	11824.68	1402.59	
73	17:46: 0	128.200	7737.94		161.48
74	18: 1: 0	128.450	11824.69	1402.61	
75	18:16: 0	128.700	7737.93		161.48
76	18:31: 0	128.950	11824.69	1402.61	
77	18:46: 0	129.200	7737.95		161.48
78	19: 1: 0	129.450	11824.70	1402.63	
79	19:16: 0	129.700	7737.98		161.48
80	19:31: 0	129.950	11824.71	1402.64	
81	19:46: 0	130.200	7738.07		161.49
82	20: 1: 0	130.450	11824.72	1402.65	
83	20:16: 0	130.700	7738.11		161.49
84	20:31: 0	130.950	11824.73	1402.66	
85	20:46: 0	131.200	7737.98		161.48
86	21: 1: 0	131.450	11824.74	1402.67	
87	21:16: 0	131.700	7737.96		161.48
88	21:31: 0	131.950	11824.74	1402.68	
89	21:46: 0	132.200	7737.96		161.48
90	22: 1: 0	132.450	11824.75	1402.69	
91	22:16: 0	132.700	7738.00		161.48
92	22:31: 0	132.950	11824.77	1402.71	
93	22:46: 0	133.200	7737.95		161.48
94	23: 1: 0	133.450	11824.78	1402.73	
95	23:16: 0	133.700	7737.96		161.48
96	23:31: 0	133.950	11824.79	1402.74	
97	23:46: 0	134.200	7737.97		161.48
98	0: 1: 0	134.450	11824.81	1402.76	
99	0:16: 0	134.700	7737.93		161.48
100	0:31: 0	134.950	11824.82	1402.78	

DATE: 11/19/87
GAUGE SN #69160
WELL # 0
TEST # 1198

DATA FILE: 8

COMPANY: BMG
CLIENT:
WELL NAME: C-34
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 6800' GL
Shut in 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
1	0:46: 0	135.200	7737.91		161.47
2	1: 1: 0	135.450	11824.84	1402.80	
3	1:16: 0	135.700	7737.92		161.48
4	1:31: 0	135.950	11824.86	1402.82	
5	1:46: 0	136.200	7737.93		161.48
6	2: 1: 0	136.450	11824.86	1402.83	
7	2:16: 0	136.700	7737.95		161.48
8	2:31: 0	136.950	11824.88	1402.85	
9	2:46: 0	137.200	7737.95		161.48
10	3: 1: 0	137.450	11824.90	1402.88	
11	3:16: 0	137.700	7737.91		161.47
12	3:31: 0	137.950	11824.92	1402.90	
13	3:46: 0	138.200	7737.96		161.48
14	4: 1: 0	138.450	11824.93	1402.91	
15	4:16: 0	138.700	7737.95		161.48
16	4:31: 0	138.950	11824.94	1402.94	
17	4:46: 0	139.200	7737.94		161.48
18	5: 1: 0	139.450	11824.96	1402.95	
19	5:16: 0	139.700	7737.95		161.48
20	5:31: 0	139.950	11824.97	1402.97	
21	5:46: 0	140.200	7737.91		161.47
22	6: 1: 0	140.450	11824.99	1402.99	
23	6:16: 0	140.700	7737.95		161.48
24	6:31: 0	140.950	11824.99	1403.00	
25	6:46: 0	141.200	7737.94		161.48
26	7: 1: 0	141.450	11825.01	1403.02	
27	7:16: 0	141.700	7737.94		161.48
28	7:31: 0	141.950	11825.02	1403.04	
29	7:46: 0	142.200	7737.91		161.47
30	8: 1: 0	142.450	11825.04	1403.06	
31	8:16: 0	142.700	7737.89		161.47
32	8:31: 0	142.950	11825.06	1403.08	
33	8:46: 0	143.200	7737.90		161.47
34	9: 1: 0	143.450	11825.07	1403.10	
35	9:16: 0	143.700	7737.94		161.48
36	9:31: 0	143.950	11825.08	1403.11	
37	9:46: 0	144.200	7737.92		161.48
38	10: 1: 0	144.450	11825.09	1403.13	
39	10:16: 0	144.700	7737.91		161.47
40	10:31: 0	144.950	11825.11	1403.15	
41	10:46: 0	145.200	7737.96		161.48
42	11: 1: 0	145.450	11825.12	1403.16	
43	11:16: 0	145.700	7737.97		161.48
44	11:31: 0	145.950	11825.13	1403.18	
45	11:46: 0	146.200	7737.97		161.48
46	12: 1: 0	146.450	11825.15	1403.19	
47	12:16: 0	146.700	7738.04		161.48
48	12:31: 0	146.950	11825.16	1403.21	
49	12:46: 0	147.200	7738.09		161.49
50	13: 1: 0	147.450	11825.17	1403.22	

DATE: 11/19/87
GAUGE SN #69160
WELL # 0
TEST # 1198

DATA FILE: 8

COMPANY: BMG
CLIENT:
WELL NAME: C-34
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 6800' GL
Shut in 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
51	13:16: 0	147.700	7738.10		161.49
52	13:31: 0	147.950	11825.18	1403.25	
53	13:46: 0	148.200	7737.97		161.48
54	14: 1: 0	148.450	11825.20	1403.26	
55	14:16: 0	148.700	7737.92		161.48
56	14:31: 0	148.950	11825.21	1403.28	
57	14:46: 0	149.200	7737.98		161.48
58	15: 1: 0	149.450	11825.22	1403.29	
59	15:16: 0	149.700	7737.97		161.48
60	15:31: 0	149.950	11825.23	1403.30	
61	15:46: 0	150.200	7737.97		161.48
62	16: 1: 0	150.450	11825.25	1403.32	
63	16:16: 0	150.700	7737.98		161.48
64	16:31: 0	150.950	11825.26	1403.34	
65	16:46: 0	151.200	7737.98		161.48
66	17: 1: 0	151.450	11825.26	1403.34	
67	17:16: 0	151.700	7737.97		161.48
68	17:31: 0	151.950	11825.27	1403.36	
69	17:46: 0	152.200	7737.97		161.48
70	18: 1: 0	152.450	11825.28	1403.37	
71	18:16: 0	152.700	7737.99		161.48
72	18:31: 0	152.950	11825.29	1403.38	
73	18:46: 0	153.200	7737.95		161.48
74	19: 1: 0	153.450	11825.30	1403.39	
75	19:16: 0	153.700	7737.95		161.48
76	19:31: 0	153.950	11825.31	1403.40	
77	19:46: 0	154.200	7737.96		161.48
78	20: 1: 0	154.450	11825.32	1403.41	
79	20:16: 0	154.700	7737.99		161.48
80	20:31: 0	154.950	11825.32	1403.42	
81	20:46: 0	155.200	7738.00		161.48
82	21: 1: 0	155.450	11825.33	1403.44	
83	21:16: 0	155.700	7738.07		161.49
84	21:31: 0	155.950	11825.35	1403.45	
85	21:46: 0	156.200	7738.13		161.49
86	22: 1: 0	156.450	11825.35	1403.46	
87	22:16: 0	156.700	7738.04		161.49
88	22:31: 0	156.950	11825.37	1403.48	
89	22:46: 0	157.200	7738.01		161.48
90	23: 1: 0	157.450	11825.37	1403.49	
91	23:16: 0	157.700	7738.00		161.48
92	23:31: 0	157.950	11825.39	1403.51	
93	23:46: 0	158.200	7738.00		161.48
94	0: 1: 0	158.450	11825.41	1403.53	
95	0:16: 0	158.700	7738.00		161.48
96	0:31: 0	158.950	11825.42	1403.54	
97	0:46: 0	159.200	7738.01		161.48
98	1: 1: 0	159.450	11825.43	1403.56	
99	1:16: 0	159.700	7737.99		161.48
100	1:31: 0	159.950	11825.45	1403.58	

DATE: 11/20/87
GAUGE SN #69150
WELL # 0
TEST # 1198

DATA FILE: 9

COMPANY: BMG
CLIENT:
WELL NAME: C-34
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 6800' GL
Shut in 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
1	1:46: 0	160.200	7737.98		161.48
2	2: 1: 0	160.450	11825.46	1403.59	
3	2:16: 0	160.700	7737.95		161.48
4	2:31: 0	160.950	11825.48	1403.62	
5	2:46: 0	161.200	7737.95		161.48
6	3: 1: 0	161.450	11825.49	1403.63	
7	3:16: 0	161.700	7737.98		161.48
8	3:31: 0	161.950	11825.51	1403.66	
9	3:46: 0	162.200	7737.98		161.48
10	4: 1: 0	162.450	11825.52	1403.68	
11	4:16: 0	162.700	7737.91		161.47
12	4:31: 0	162.950	11825.54	1403.70	
13	4:46: 0	163.200	7737.94		161.48
14	5: 1: 0	163.450	11825.55	1403.71	
15	5:16: 0	163.700	7737.95		161.48
16	5:31: 0	163.950	11825.57	1403.73	
17	5:46: 0	164.200	7737.94		161.48
18	6: 1: 0	164.450	11825.59	1403.76	
19	6:16: 0	164.700	7737.96		161.48
20	6:31: 0	164.950	11825.60	1403.78	
21	6:46: 0	165.200	7737.94		161.48
22	7: 1: 0	165.450	11825.61	1403.79	
23	7:16: 0	165.700	7737.94		161.48
24	7:31: 0	165.950	11825.63	1403.81	
25	7:46: 0	166.200	7737.92		161.48
26	8: 1: 0	166.450	11825.65	1403.83	
27	8:16: 0	166.700	7737.91		161.47
28	8:31: 0	166.950	11825.66	1403.86	
29	8:46: 0	167.200	7737.96		161.48
30	9: 1: 0	167.450	11825.68	1403.87	
31	9:16: 0	167.700	7737.96		161.48
32	9:31: 0	167.950	11825.69	1403.89	
33	9:46: 0	168.200	7737.95		161.48
34	10: 1: 0	168.450	11825.70	1403.90	
35	10:16: 0	168.700	7737.94		161.48
36	10:31: 0	168.950	11825.71	1403.92	
37	10:46: 0	169.200	7737.92		161.48
38	11: 1: 0	169.450	11825.73	1403.93	
39	11:16: 0	169.700	7737.91		161.47
40	11:31: 0	169.950	11825.74	1403.95	
41	11:46: 0	170.200	7737.92		161.48
42	12: 1: 0	170.450	11825.75	1403.96	
43	12:16: 0	170.700	7737.95		161.48
44	12:31: 0	170.950	11825.76	1403.98	
45	12:46: 0	171.200	7737.95		161.48
46	13: 1: 0	171.450	11825.77	1403.99	
47	13:16: 0	171.700	7737.96		161.48
48	13:31: 0	171.950	11825.78	1404.01	
49	13:46: 0	172.200	7737.93		161.48
50	14: 1: 0	172.450	11825.79	1404.02	

DATE: 11/20/87
GAUGE SN #69160
WELL # 0
TEST # 1198

DATA FILE: 9

COMPANY: BMG
CLIENT:
WELL NAME: C-34
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 6800' GL
Shut in 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
51	14:16: 0	172.700	7737.95		161.48
52	14:31: 0	172.950	11825.81	1404.04	
53	14:46: 0	173.200	7737.98		161.48
54	15: 1: 0	173.450	11825.82	1404.06	
55	15:16: 0	173.700	7737.93		161.48
56	15:31: 0	173.950	11825.83	1404.06	
57	15:46: 0	174.200	7737.94		161.48
58	16: 1: 0	174.450	11825.84	1404.08	
59	16:16: 0	174.700	7737.93		161.48
60	16:31: 0	174.950	11825.84	1404.08	
61	16:46: 0	175.200	7737.94		161.48
62	17: 1: 0	175.450	11825.86	1404.11	
63	17:16: 0	175.700	7737.94		161.48
64	17:31: 0	175.950	11825.87	1404.11	
65	17:46: 0	176.200	7737.96		161.48
66	18: 1: 0	176.450	11825.88	1404.13	
67	18:16: 0	176.700	7737.97		161.48
68	18:31: 0	176.950	11825.88	1404.13	
69	18:46: 0	177.200	7737.93		161.48
70	19: 1: 0	177.450	11825.89	1404.15	
71	19:16: 0	177.700	7737.94		161.48
72	19:31: 0	177.950	11825.90	1404.16	
73	19:46: 0	178.200	7737.99		161.48
74	20: 1: 0	178.450	11825.90	1404.16	
75	20:16: 0	178.700	7738.00		161.48
76	20:31: 0	178.950	11825.92	1404.18	
77	20:46: 0	179.200	7738.00		161.48
78	21: 1: 0	179.450	11825.93	1404.19	
79	21:16: 0	179.700	7738.00		161.48
80	21:31: 0	179.950	11825.93	1404.19	
81	21:46: 0	180.200	7737.97		161.48
82	22: 1: 0	180.450	11825.94	1404.21	
83	22:16: 0	180.700	7738.00		161.48
84	22:31: 0	180.950	11825.95	1404.22	
85	22:46: 0	181.200	7737.99		161.48
86	23: 1: 0	181.450	11825.96	1404.24	
87	23:16: 0	181.700	7737.95		161.48
88	23:31: 0	181.950	11825.97	1404.25	
89	23:46: 0	182.200	7737.95		161.48
90	0: 1: 0	182.450	11825.99	1404.27	
91	0:16: 0	182.700	7737.99		161.48
92	0:31: 0	182.950	11826.00	1404.29	
93	0:46: 0	183.200	7737.96		161.48
94	1: 1: 0	183.450	11826.01	1404.30	
95	1:16: 0	183.700	7737.96		161.48
96	1:31: 0	183.950	11826.03	1404.32	
97	1:46: 0	184.200	7737.96		161.48
98	2: 1: 0	184.450	11826.04	1404.33	
99	2:16: 0	184.700	7737.96		161.48
100	2:31: 0	184.950	11826.05	1404.36	

DATE: 11/2 /87
GAUGE SN #69160
WELL # 0
TEST # 1198

DATA FILE: 10

COMPANY: BMG
CLIENT:
WELL NAME: C-34
TEST OPERATOR: MD
LOCATION: COU
COMMENTS: BHP @ 6800' GL
Shut in 11-16-87

DATA PT	TIME	DELTA T (HRS)	FREQUENCY	PRESSURE PSIA	TEMPERATURE 'F
1	2:46: 0	185.200	7737.93		161.48
2	3: 1: 0	185.450	11826.07	1404.37	
3	3:16: 0	185.700	7737.93		161.48
4	3:31: 0	185.950	11826.08	1404.39	
5	3:46: 0	186.200	7737.91		161.47
6	4: 1: 0	186.450	11826.11	1404.42	
7	4:16: 0	186.700	7737.93		161.48
8	4:31: 0	186.950	11826.12	1404.43	
9	4:46: 0	187.200	7737.91		161.47
10	5: 1: 0	187.450	11826.13	1404.45	
11	5:16: 0	187.700	7737.92		161.48
12	5:31: 0	187.950	11826.14	1404.47	
13	5:46: 0	188.200	7737.92		161.48
14	6: 1: 0	188.450	11826.16	1404.49	
15	6:16: 0	188.700	7737.91		161.47
16	6:31: 0	188.950	11826.17	1404.50	
17	6:46: 0	189.200	7737.98		161.48
18	7: 1: 0	189.450	11826.18	1404.52	
19	7:16: 0	189.700	7737.92		161.48
20	7:31: 0	189.950	11826.21	1404.55	
21	7:46: 0	190.200	7737.92		161.48
22	8: 1: 0	190.450	11826.22	1404.56	
23	8:16: 0	190.700	7737.87		161.47
24	8:31: 0	190.950	11826.23	1404.58	
25	8:46: 0	191.200	7737.91		161.47
26	9: 1: 0	191.450	11826.25	1404.61	
27	9:16: 0	191.700	7737.91		161.47
28	9:31: 0	191.950	11826.26	1404.62	
29	9:46: 0	192.200	7737.92		161.48
30	10: 1: 0	192.450	11826.27	1404.63	
31	10:16: 0	192.700	7737.95		161.48
32	10:31: 0	192.950	11826.28	1404.65	
33	10:46: 0	193.200	7737.95		161.48
34	11: 1: 0	193.450	11826.29	1404.66	
35	11:16: 0	193.700	7737.95		161.48
36	11:31: 0	193.950	11826.30	1404.67	
37	11:46: 0	194.200	7737.92		161.48
38	12: 1: 0	194.450	11826.31	1404.68	
39	12:16: 0	194.700	7737.95		161.48
40	12:31: 0	194.950	11826.32	1404.69	
41	12:46: 0	195.200	7737.96		161.48
42	13: 1: 0	195.450	11826.33	1404.71	
43	13:16: 0	195.700	7737.94		161.48
44	13:31: 0	195.950	11826.34	1404.73	
45	13:46: 0	196.200	7737.96		161.48
46	14: 1: 0	196.450	11826.35	1404.73	
47	14:16: 0	196.700	7737.95		161.48
48	14:31: 0	196.950	11826.36	1404.75	
49	14:46: 0	197.200	7737.95		161.48
50	15: 1: 0	197.450	11826.37	1404.76	

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EVIDENCE OF COMMUNICATION OF WELLS IN PROPOSED PRESSURE MAINTENANCE PROJECT EXPANSION LANDS WITH EXISTING PROJECT AREA AS EVIDENCED BY RESERVOIR PRESSURE DECLINE OF PROPOSED EXPANSION AREA

That the pressure maintenance project does in fact maintain pressure in the proposed expansion area is evidenced by pressures in this area when the reservoir withdrawals in Gavilan are not so excessive as to disrupt the effect of the gas injection.

This is demonstrated by the current (February 1988) rate of pressure decline in the proposed expansion area as shown by the pressure decline graphs on the following pages.

Also a comparison is made with the pressure decline during the high rate of reservoir withdrawals during the last half of 1987.

In terms of barrels per psi, the current (February 1988) unit recovery from wells in the proposed pressure maintenance area is about four times that which occurred during Gavilan's high rate of reservoir withdrawal.

DAILY AVERAGE PRODUCTION RATES
PROPOSED PRESSURE MAINTENANCE EXPANSION AREA
CANADA OJITOS UNIT

OCTOBER, 1987

WELL	MONTH'S TOTAL PRODUCTION (Bbls)	DAILY AVERAGE RATE (BOPD)
B-32	23884	770
B-29	30767	992
E-6	9714	314
F-30	10332	334
N-31	4935	159
J-6	128	4
F-18	11100	358
F-19	136	4
A-20	155	5
G-5	3058	99
	94209	3039

Rate of reservoir pressure decline (see graph D-17) for this period: 1.21 psi/day.

$$\frac{3039 \text{ BOPD}}{1.21 \text{ psi/day}} = 2510 \text{ barrels per psi.}$$

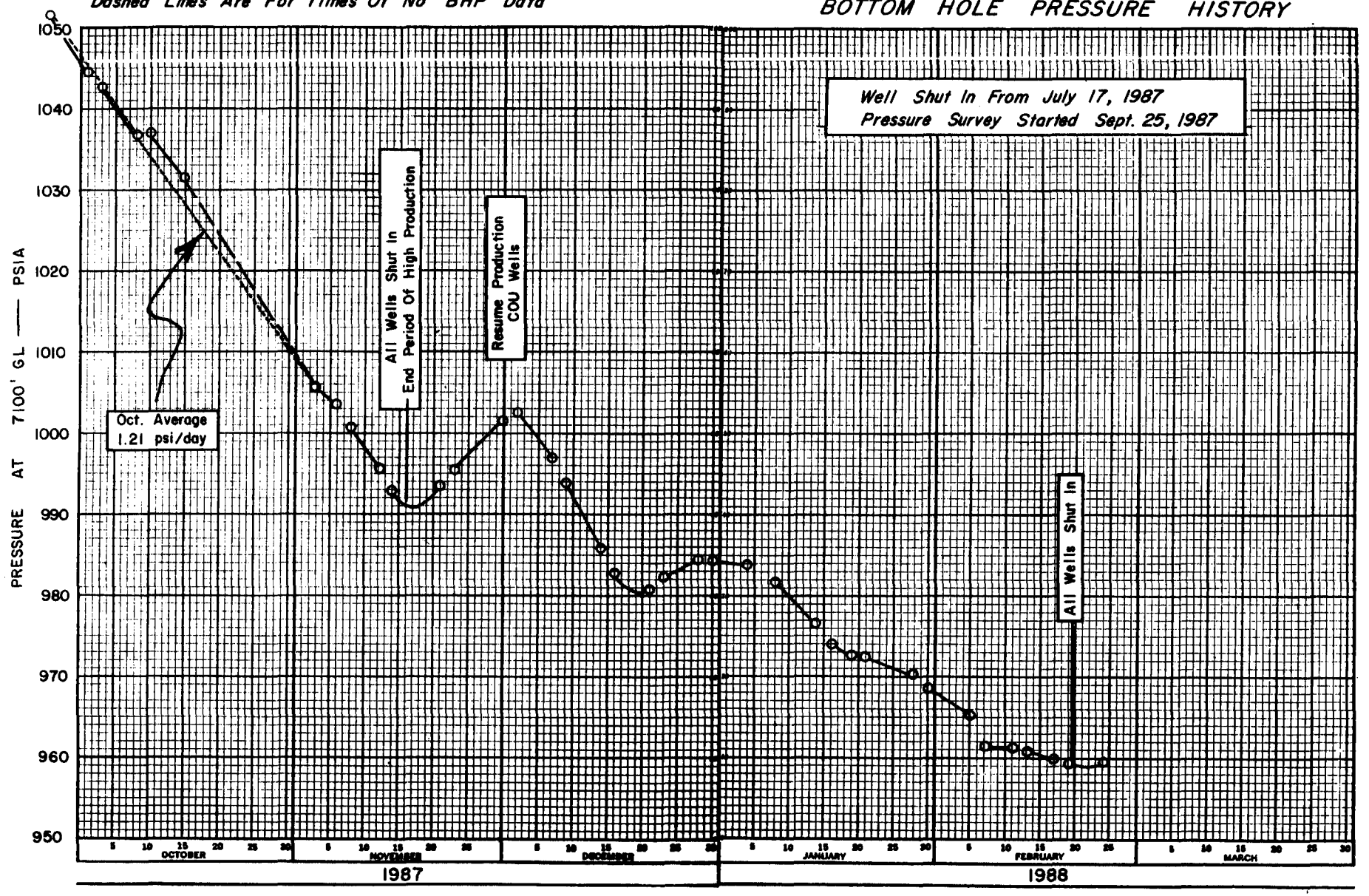
DAILY AVERAGE PRODUCTION RATES
PROPOSED PRESSURE MAINTENANCE EXPANSION AREA
CANADA OJITOS UNIT

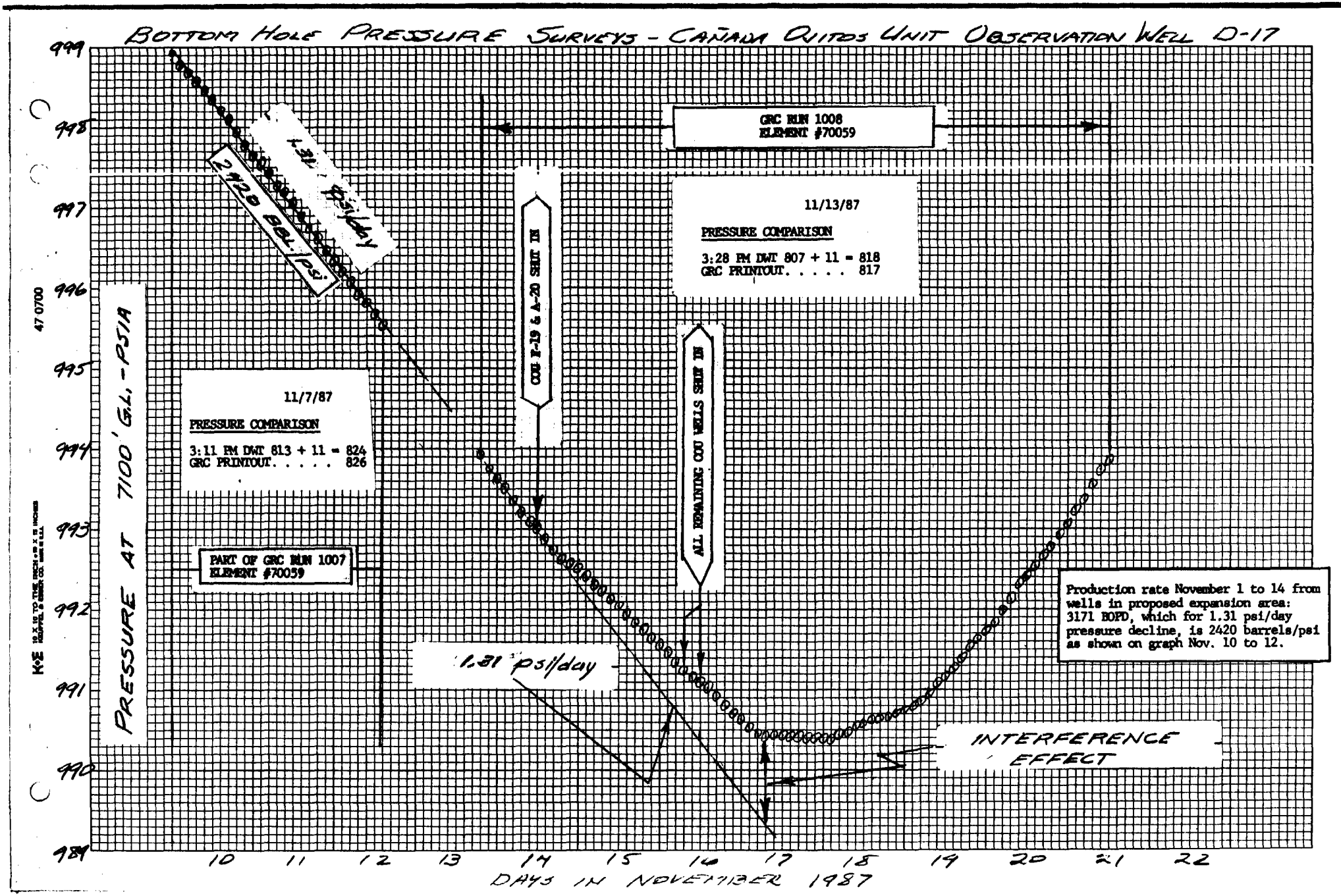
NOVEMBER 1 THROUGH 14, 1987

WELL	BY DAILY ESTIMATE		CORRECTED TOTALS		DAILY RATE
	Nov. 1-14 (Bbls)	Month Total (Bbls)	Month (Bbls)	Nov. 1-14 (Bbls)	(BOPD)
B-32	10583	12160	11881	10464	747
B-29	15104	17116	16981	14934	1066
E-6	3515	3806	3949	3475	248
F-30	4983	5764	5698	4927	352
N-31	1805	1929	1870	1785	128
J-6	135	135	257	133	10
F-18	4952	5343	5004	4896	350
F-19	722	722	730	714	51
A-20	543	543	526	537	38
G-5	2630	3260	3310	2600	186
	44972	50778	50206	44465	3176

Rate of reservoir pressure decline (see graph D-17) for this period: 1.31 psi/day.

$$\frac{3176 \text{ BOPD}}{1.31 \text{ psi/day}} = 2420 \text{ barrels per psi.}$$


COU D-17 OBSERVATION WELL
Sec. 17 - T.25N - R.1W
BOTTOM HOLE PRESSURE HISTORY
Solid Lines Show Pressures For Times Of Continuous BHP Surveys
Dashed Lines Are For Times Of No BHP Data
Well Shut In From July 17, 1987
Pressure Survey Started Sept. 25, 1987
PRESSURE AT 7100' GL — PSIA
1050
1040
1030
1020
1010
1000
990
980
970
960
950
Oct. Average 1.21 psi/day
All Wells Shut In End Period Of High Production
Resume Production COU Wells
All Wells Shut In
OCTOBER
NOVEMBER
DECEMBER
JANUARY
FEBRUARY
MARCH
1987
1988
2-88


BOTTOM HOLE PRESSURE SURVEYS - CAÑADA QUITOS UNIT OBSERVATION WELL D-17
PRESSURE AT 7100' G.L. - PSIA
999
998
997
996
995
994
993
992
991
990
989
10
11
12
13
14
15
16
17
18
19
20
21
22
DAYS IN NOVEMBER 1987
1.31 psi/day
2420 BBL/psi
GRC RUN 1008
ELEMENT #70059
11/13/87
PRESSURE COMPARISON
3:28 PM DWT 807 + 11 = 818
GRC PRINTOUT. 817
COU F-19 & A-20 SHUT IN
ALL REMAINING COU WELLS SHUT IN
11/7/87
PRESSURE COMPARISON
3:11 PM DWT 813 + 11 = 824
GRC PRINTOUT. 826
PART OF GRC RUN 1007
ELEMENT #70059
1.31 psi/day
INTERFERENCE EFFECT
Production rate November 1 to 14 from wells in proposed expansion area: 3171 BOPD, which for 1.31 psi/day pressure decline, is 2420 barrels/psi as shown on graph Nov. 10 to 12.

DAILY AVERAGE PRODUCTION RATES
PROPOSED PRESSURE MAINTENANCE EXPANSION AREA
CANADA OJITOS UNIT

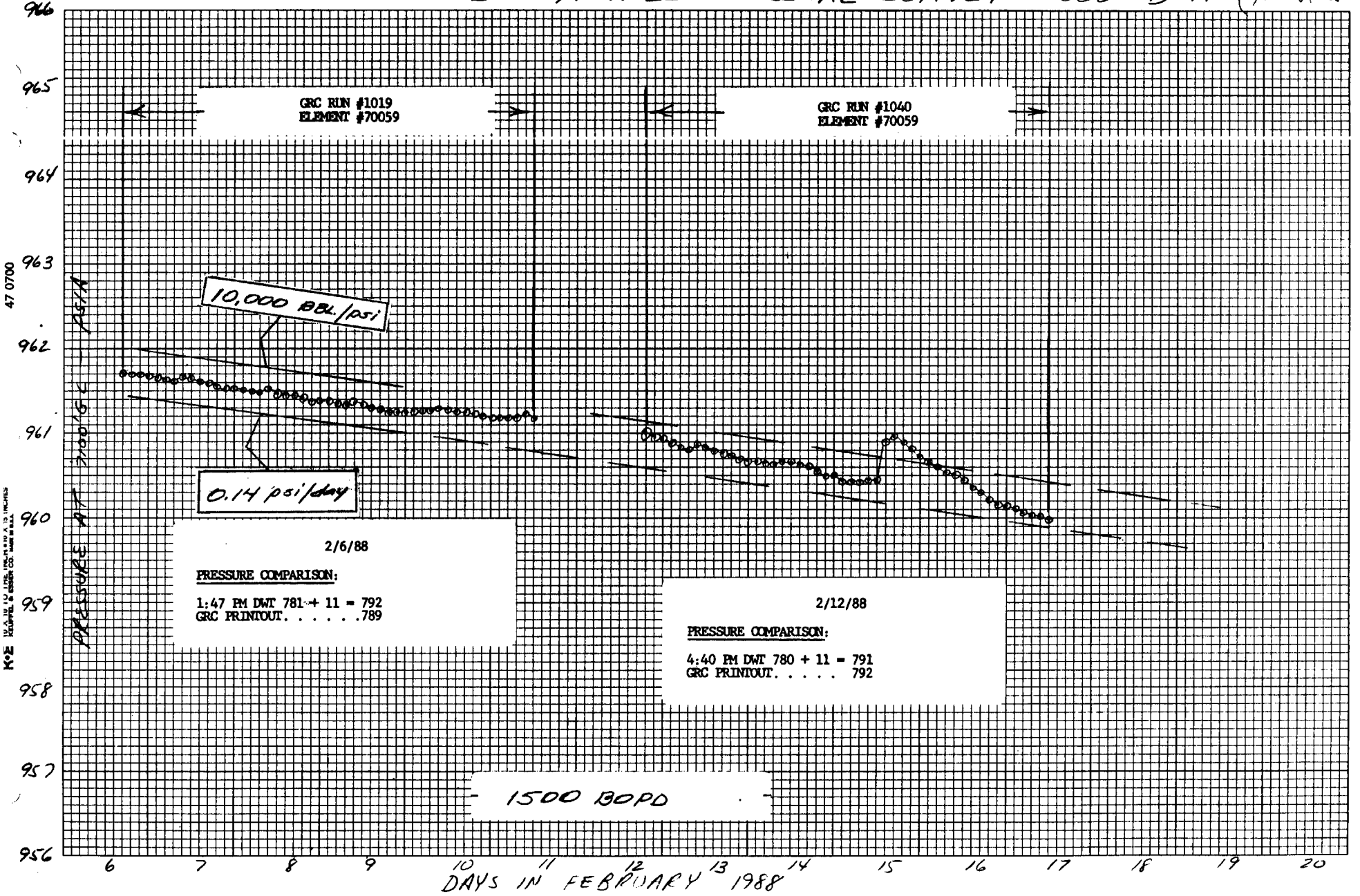
FEBRUARY 1 THROUGH 20, 1988

WELL	BY DAILY ESTIMATE		CORRECTED TOTALS		DAILY RATE
	Feb. 1-20 (Bbls)	Month Total (Bbls)	Month (Bbls)	Feb. 1-20 (Bbls)	(BOPD)
B-32	13499	17497	16729	12848	643
B-29	3114	9435	8454	2964	148
E-6	-	-	-	-	-
F-30	6540	8701	8583	6224	311
N-31	-	-	-	-	-
J-6	-	-	-	-	-
F-18	5535	7323	7061	5268	263
F-19	120	120	112	114	6
A-20	133	133	116	127	6
G-5	3005	3383	3289	2860	143
	31946	46592	44344	30405	1520

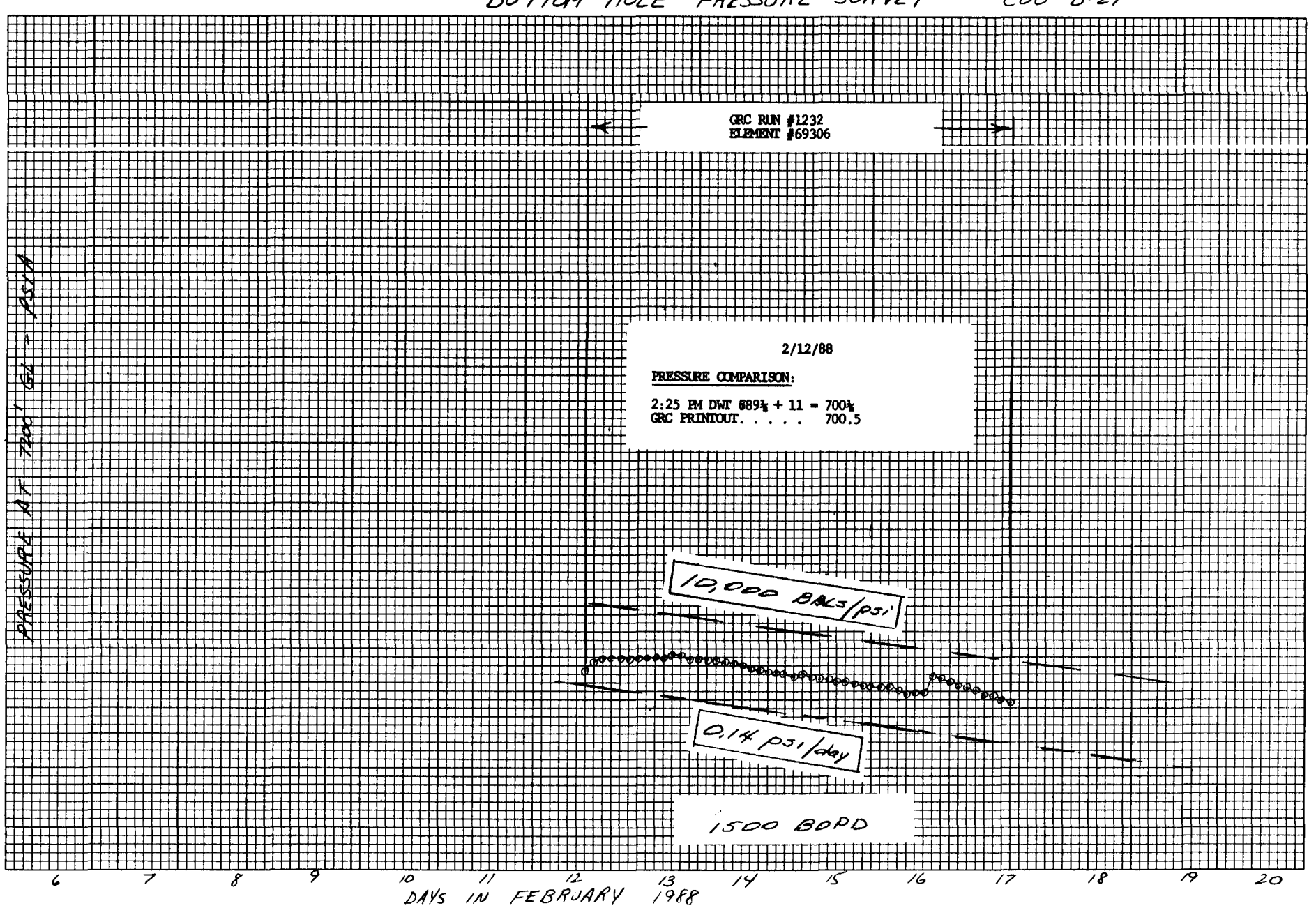
Rate of reservoir pressure decline (see graph D-17) for this period: 0.14 psi/day.

$$\frac{1520 \text{ BOPD}}{.14 \text{ psi/day}} = 10{,}860 \text{ barrels per psi.}$$

BOTTOM HOLE PRESSURE SURVEY COU D-17 (small well)



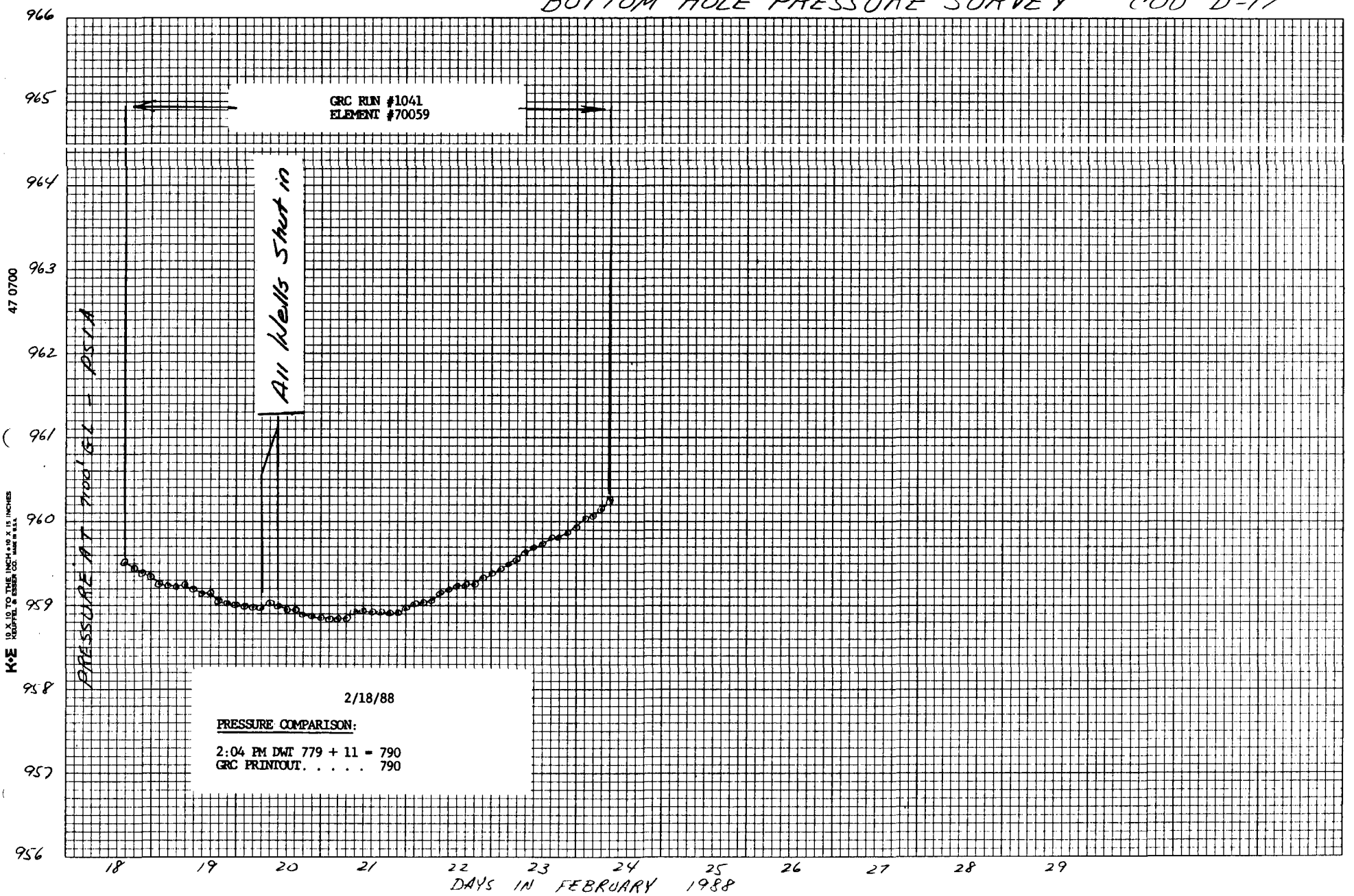
BOTTOM HOLE PRESSURE SURVEY COU B-29



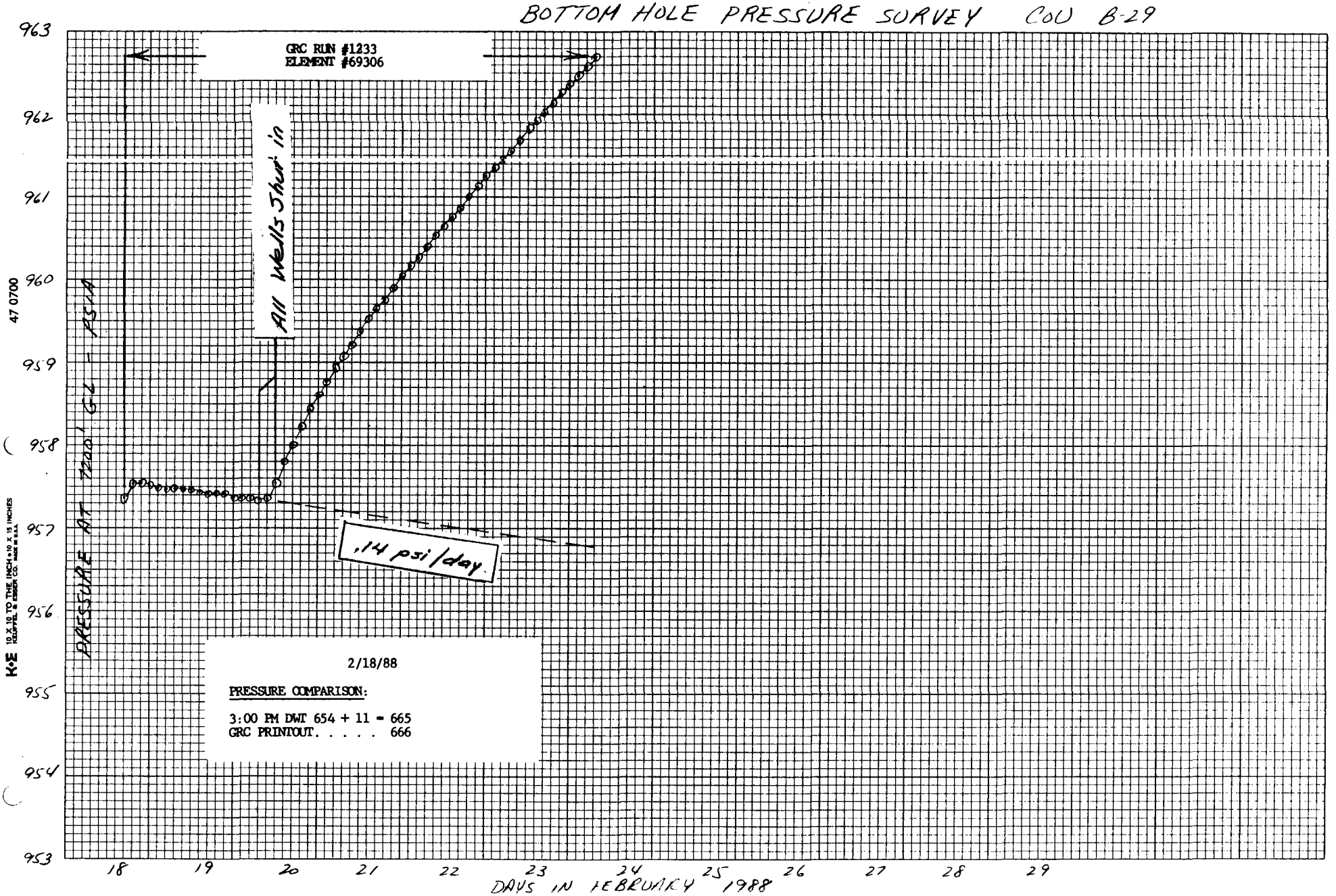
47 0700

K&E 10 X 10 TO THE INCH • 9 X 15 INCHES KEUFFEL & ESSER CO. MADE IN U.S.A.

BOTTOM HOLE PRESSURE SURVEY COU D-17



BOTTOM HOLE PRESSURE SURVEY COU B-29



2/18/88

PRESSURE COMPARISON:

3:00 PM DWT 654 + 11 = 665
GRC PRINTOUT. 666

EVIDENCE OF COMMUNICATION OF WELLS IN PROPOSED PRESSURE MAINTENANCE PROJECT EXPANSION LANDS WITH EXISTING PROJECT AREA AS EVIDENCED BY RESERVOIR PRESSURE DECLINE OF PROPOSED EXPANSION AREA

CONCLUSIONS

Some conclusions which can be drawn from the foregoing pressure data, along with the other information presented herein, are:

1. The reservoir mechanism of the majority of the production from the proposed pressure maintenance expansion area is by gravity drainage. (Otherwise the GOR's would be higher at the current low - 950 to 1000 psig - reservoir pressure.)

2. This production is receiving support from the pressure maintenance project. (Otherwise its current rate of pressure decline would be higher than the 10,000 barrels per psi now being experienced.)

3. The reservoir is rate-sensitive - high reservoir withdrawal rates in Gavilan cause an alarming reduction in the reservoir's efficiency.