BELCO

M E M O R A N D U M

TEC. 84-858/02 October 13th, 1984

TO : CHIEF RESERVOIR ENGINEER

FROM : R. AHUMADA P.

REF. : STATIC GRADIENT AT LO6-21

Following please find a summary of the results obtained during a pressure survey run to determine the initial reservoir pressure in well of the reference:

Date	: 84-09-08
Perforated intervals, ft	: 4841-5100
Formation opened	: Rio Bravo
Bomb depth, ft VD	: 4617'VD
Middle point of perforating, ft VD	: 4617'VD (4971'MD)
Well head pressure, psig	: 0
Pressure at bomb depth, psig	: 2058 psig
Pressure at MPP, psig	: 2058 psig
Liquid level, ft	: 0
Avg. fluid gradient, psi/ft	: 0.4457
Formation gradient, psi/ft	: 0.4457

As can be observed in the card, pressure was not stabilized during few minutes that bomb remained at the bottom. Since wellhead pressure is zero, reservoir pressure may be slightly lower than here recorded.

In spite of the above, pressure here reported is within the expected range of the original pressure in the Rio Bravo formation in the area.

ROBERTO AHUMADA P.

RAP/rmr.

cc: Techn. Supt.
Prod. Supt.
Well File
GE-2201.89

LOBITOS OFFSHORE
LO6-21

STATIC GRADIENT

84-09-08

WELL FILE

SUBSURFACE PRESSURE MEASUREMENTS

1. BASIC DATA

COMPANY: Belco Petroleum Corp. of Peru Inc.
ADDRESS: Negritos
FIELD and POOL: Lobitos
TYPE OF TEST: Static Gradient
PRODUCING INTERVAL (CF): 4841 - 5100 FT. PERF. [X] OH [ ]
ELEVATION (CF) ..... FT. (KB) ..... FT. (KB) to CF ..... FT.
POOL DATUM ..... FT. (Subsea)
ELEMENT SERIAL NO: 12782N RANGE: 0-3250 PSI
CALIBRATION EQUATION: PC = 1626.15 D + (-2.91)

WELL NAME: Lobitos Offshore
LOCATION: LO6-21
STATUS: OIL [X] GAS [ ] OTHER SPECIFY .....
DATE OF TEST: 84 09 08 TO [ ] [ ] [ ]
PRODUCING THROUGH: ..... IN. TUBING [ ] 5.5 IN. CASING [X]
MID-POINT OF PRODUCING (MPP) INTERVAL (CF) ..... FT.
DATUM DEPTH OF WELL (FROM CF) ..... FT.
CLOCK RANGE: 3 h S [X] D [ ] # 2405 I.H.# 14356
DATE OF LAST CALIBRATION: 84 06 13

COMPANY: Belco Petroleum Corp. of Peru Inc.

2. STATIC TEST

PRESSURE (GAUGE): TUBING ..... PSI. GAUGE [ ] DWG [ ]
CASING: 0 PSI. GAUGE [ ] DWG [X]
RUN DEPTH (FROM CF): 4617.13 (4970.50'MD) FT.
B.H. TEMP ..... °C SURFACE TEMP. ..... F
R.D. PRESSURE (GAUGE): 2058 PSI. GRADIENT: 0.4457 PSI/FT.

SHUT-IN DATE [ ] [ ] [ ] @ New Well h
DATE ON BOTTOM: 84 09 08 @ 06:32 h
DATE OFF BOTTOM: 84 09 08 @ 07:15 h
MPP PRESSURE (GAUGE): 2054 PSI.
DATUM PRESSURE (GAUGE) ..... PSI.

3. ACOUSTIC WELL SOUNDER TEST

DEPTH OF TUBING ..... FT.
• AVERAGE TUBING JOINT LENGTH ..... FT.
NO. OF JOINTS TO LIQUID .....
LENGTH OF GAS COLUMN ..... FT.
LENGTH OF LIQUID COLUMN ..... FT.
GAS GRAVITY ..... GAS GRADIENT ..... PSI/FT.
OIL GRAVITY ..... OIL GRADIENT ..... PSI/FT.

SHUT-IN DATE [ ] [ ] [ ] @ ..... h
CURRENT WATER CUT ..... %
CASING PRESSURE (GAUGE) ..... PSI.
GAS COLUMN PRESSURE (GAUGE) ..... PSI.
LIQUID COLUMN PRESSURE (GAUGE) ..... PSI.
MPP PRESSURE (GAUGE) ..... PSI.
DATUM DEPTH PRESSURE (GAUGE) ..... PSI.

4. BUILD UP OR DRAWDOWN TEST (Attach Forms 0-12A)

RESERVOIR/WELL PARAMETERS: POROSITY ..... % WELL RADIUS ..... FT. THICKNESS ..... FT. WATER SATURATION ..... %
B.H. TEMP. ..... °F DATE AND DESCRIPTION OF LAST WELLBORE TREATMENT [ ] [ ] [ ] .....

CASING I.D. ..... IN. TUBING I.D. ..... IN. TUBING WEIGHT/MASS ..... LBS./FT.
COMPRESSIBILITY ..... μZ

OIL WELLS ONLY:
OIL VISCOSITY CC
BUBBLE POINT PRESSURE (GAUGE) ..... PSI.
B_o = VOL. AT RES. COND. / VOL. AT ST. COND. .....
WELL PRODUCING RATE DURING [ ] PRIOR TO [ ] TEST OIL ..... BBL/D GAS ..... MCF/D WATER ..... BBL/D
TOTAL PRODUCTION - DURING [ ] PRIOR TO [ ] TEST OIL ..... BBLS. GAS ..... MCF WATER ..... BBL.

GAS WELLS ONLY:
GAS VISCOSITY ..... μZ
Z at RESERVOIR CONDITIONS .....
RELATIVE DENSITY G .....

WELL NAME & UNIQUE IDENTIFIER: Lobitos Offshore LO6-21

5. CHART READINGS AND CALCULATIONS

DATE YR	DATE MO	DATE DAY	DEPTH BELOW CF FT.	ACC. TIME h	TIME h	DEFLECTION IN	CALCULATED PRESSURE PSIG	CORRECTION DEVIATION PSI	CORRECTED PRESSURE PSIG	GRADIENT PSI/FT
84	09	08	Surface	Surface	05:28	0.0000			0	0.0000
"	"	"	500.00	500.00	05:35	0.1331			216	0.4320
"	"	"	997.28	1000.00	05:42	0.2718			441	0.4526
"	"	"	1474.20	1500.00	05:49	0.4032			653	0.4454
"	"	"	1932.44	2000.00	05:56	0.5300			858	0.4467
"	"	"	2387.13	2500.00	06:02	0.6550			1060	0.4442
"	"	"	2836.40	3000.00	06:09	0.7789			1261	0.4467
"	"	"	3283.01	3500.00	06:16	0.9016			1460	0.4450
"	"	"	3733.27	4000.00	06:23	1.0254			1661	0.4468
84	09	08	4187.18	4500.00	06:30	1.1500			1863	0.4463

REMARKS
T.V.D.Perf.: 4498.49' - 4734.70ft. MPP.: 4616.60 ft.T.V.D.
Well with sea water.

SURVEY COMPANY Go Well Services TEST BY G.Preciado COMPUTED BY ..... CHECKED BY

SUBSURFACE PRESSURE MEASUREMENTS

COMPANY Belco Petroleum Corp.of Peru Inc. WELL NAME Lobitos Offshore

DATE OF TEST 84 09 08 (YR. MO. DAY) TO ___ ___ ___ (YR. MO. DAY) LOCATION LO6-21

CHART READINGS AND CALCULATIONS

DATE			DEPTH BELOW CFFT	ACC. TIME h	TIME h	DEFLECTION IN	CALCULATED PRESSURE PSIG	CORRECTION DEVIATION PSI	CORRECTED PRESSURE PSIG	GRADIENT PSI/FT
YR	MO	DAY								
84	09	08	4617.13	4970.50	06:32	1.2670			2054	0.4434
			4617.13	4970.50	07:15	1.2697			2058	
			MPP.: 4616.60ft.C.F. -0.53ft. x 0.4434psi/ft. = -0.23psi =							2054psig.