

FLOPETROL

DIVISION : LAR|PCD

BASE : TALARA

REPORT N°: 001

Stopcocking no problem.

L06-16

WGR

*RAP
JHC*

well file

Well Testing Report Annexes

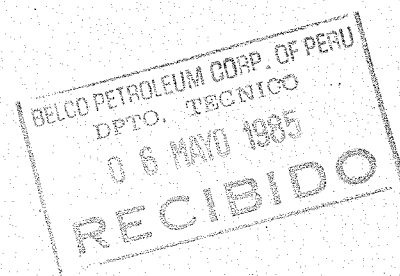
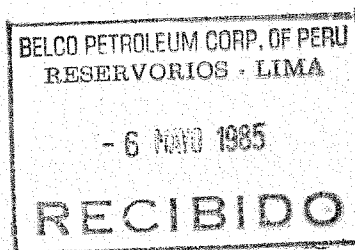
Client : BELCO PETROLEUM CO. OF PERU

Field :

Well : NO. 16 - PLAT. L06

Zone : LOBITOS

Date : 17.04.85



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Base : TALARA

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Well : LO6 - 16

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BOTTOM HOLE PRESSURE AND TEMPERATURE MEASUREMENTSA PRESSUREa) READING USING CALIBRATED CHART :

Chart is read using as reference line the base line drawn at atmospheric pressure.

$$P = KY + a + C$$

Y is the deflection for pressure P.

K, a and C (non linearity correction) are obtained from calibration by least square calculation.

b) READING USING REFERENCE LINE METHOD :

Chart is read using as reference line a line drawn at pressure P_R .

$$P = KY + P_{RC} + C$$

Y is the deflection for pressure P read from the reference line.

$P_{RC} = KY_R + a$: calculated pressure for reference line.

P_{RC} , K and C are obtained from calibration data.

B TEMPERATURE

Chart is read from zero at base line.

Bottom hole temperature is read from constructor's calibration tables at the point corresponding to the deflection

☐ Base line is drawn with adjusting knob held against the stop
Therefore $Y_0 = 0$

☐ Base line is drawn at temperature $T_0 =$ _____
From calibration tables the corresponding deflection $Y_0 =$ _____

C GENERAL INFORMATION

Reference depth : _____

Difference level between the two pressure elements : _____

SEQUENCE OF EVENTS

[illegible]

FLOPETROL

Client: BELCO PETROLEUM CO.

Section: ANNEX 1

Field: LOBITOS

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Base : TALARA

Well: LO6 - 16

Report N°: 0252

-BOTTOM HOLE PRESSURE AND TEMPERATURE MEASUREMENTS-

1. Basic Data

Company BELCO PETROLEUM CO. OF PERU
Address NEGRITOS
Field LOBITOS
Type of test STATIC GRADIENT
Producing interval (CF) 4980 - 6370 FT. Perf. ☐ OH ☐
Elevation (CF) 33 FT. (KB) FT. (KB) to CF FT.
Pool Datum FT. (subsea)
Element serial N° 45296 Range 2084 Psi.
Calibration equation $+1044.5528 \text{ PSI INCH} - 2.4573 \text{ PSI}$

Well name LO6 - 16
Location LOBITOS
Status oil ☐ gas ☐ other specify
Date of test 17 04 85 to 17 04 85
Producing through 2.7/8. in tubing in casing ☐
Mid-point of producing (MPP) interval (CF) 5675 FT.
Datum depth of well (from CF) 6508 FT.
Clock range 3 h.s. ☒ d ☐ I.H.
Date of last calibration

2. Static Test

Pressure (gauge) tubing 741 Psi. gauge ☐ DWG ☐
casing Psi. gauge ☐ DWG ☐
Run depth (from CF) 6434 MD FT.
B.M. temp °C surface temp AMBT F
R.D. pressure (gauge) 1524 Psi. gradient 2765 Psi/FT.

No Time Production
Shut-in date at h
Date on bottom 17 04 85 at 10:05 h
Date off bottom 17 04 85 at 1524 Psi.
MPP pressure (gauge) Psi.
Datum pressure (gauge) Psi.

3. Build up or drawdown test

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 viass LBS/FT.

Compressibility UZ

Oil wells only

Gas wells only

Oil viscosity CC

Gas viscosity UZ

Bubble point pressure (gauge) Psi. Z at reservoir conditions

Vol. at Res. Cond.

B. = Relative density G

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 BBL/D GAS MCF Water BBL/D

REMARKS PROFUNDIDAD S.V. : 4910'

TVD PERFORACION : 4353' - 6359'

MPP = 5356'

TVD

DONE BY : N. LOPEZ

CHECKED BY : R. CASTILLO

Base : TALARALOBITOS
L06 - 16

0006

Report N: 0252

- BOTTOM HOLE PRESSURE GAUGE CALIBRATION SHEET -DATE : 08-02-85CALIBRATION No. : 01- EQUIPMENT DATA -

Calibration cell No. : 2318 Manufacturer : CHANDLER
 Dead weight tester No. : 18185 Manufacturer : CHANDLER Range : 0 - 10000 PSI
 Recording element No. : 54936 Manufacturer : GRC
 Pressure element No. : 45296 Manufacturer : GRC Range : 0 - 2084 PSI

- MISCELLANEOUS INFORMATION -

Base line drawing temperature : AMBT
 Reference line data - temperature : AMBT pressure P_R : - reading Y_R : -
 Calibration data - temperature : AMBT step drawing : ☐ with crank
☐ with clock
 Equivalent pressure p of level difference between Dwt and bellows
 Level difference : - ☐ + in case of Dwt above
 Oil specific gravity : - $p =$ - ☐ - in case of Dwt beneath bellows

- CALIBRATION READING AND CALCULATIONS

P (Dwt)	Y	ΔY	Y^2	Y P	$P_c = KY + a$	$C = P - P_c$
Units on this line -						
200	.1904	-	.0362522	38.08	196.43	+ 3.57
400	.3840	.1936	.1474560	153.60	398.65	+ 1.35
600	.5776	.1936	.3336218	346.56	600.88	- .88
800	.7705	.1929	.5936703	616.40	802.37	- 2.37
1000	.9631	.1926	.9275616	963.10	1003.55	- 3.55
1200	1.1535	.1904	1.3305623	1384.20	1202.43	- 2.43
1400	1.3420	.1885	1.8009640	1878.80	1399.33	+ .67
1600	1.5328	.1908	2.3494758	2452.48	1598.63	+ 1.37
1800	1.7232	.1904	2.9694182	3101.76	1797.52	+ 2.48
9000	8.6371	Σ	10.4889822	10934.98	$\Sigma + = 9.44$ $\Sigma - = 9.23$	

$$A = \frac{\Sigma P}{n} = \frac{1000}{10} = 100 \quad B = \frac{\Sigma Y}{n} = \frac{.9597}{10} = .09597$$

$$D = \frac{\Sigma (YP)}{\Sigma Y} = \frac{1266.0476}{.9597} = 1319.33 \quad C = \frac{\Sigma (Y^2)}{\Sigma Y} = \frac{1.2144}{.9597} = 1.2655$$

$$K = \frac{A - D}{C - B} = \frac{100 - 1319.33}{1.2655 - .09597} = 1044.5528$$

$$a' = A - BK = 100 - 1044.5528 \times .09597 = -2.4573 \quad a' = D - CK = 1319.33 - 1044.5528 \times 1.2655 = -2.4573$$

- FINAL RESULTS -

$$K = \frac{+ 1044.5528 \text{ PSI/INCH}}{+ 1044.5528 \text{ PSI/INCH}} \quad P_{RC} = K Y_R + a =$$

$$a = a' + p = -2.4573 \text{ PSI}$$

Base : TALARA

Field : LOBITOS

Well : L06 - 16

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BOTTOM HOLE PRESSURE CALCULATIONS

Well producing through : casing / tubing / drill pipe
 Bottom hole temperature : _____ at depth _____ with _____

INSTRUMENT DATA

Instrument type :
 Press. element No. and range:
 Recording element No.:
 Clock No. and capacity:

CALIBRATION DATA

Calibration No. and date :
 Calibration temperature :
 Calibration range :
 K :
 a, (calibrated chart) :
 P_{RC}, (non calibrated chart) :

LOWER GAUGE

AMERADA RPG-3

45296 0 - 2084 PSI

54936

3 HORAS 5762

UPPER GAUGE

08.02.85

AMBT

200 - 1800 PSI

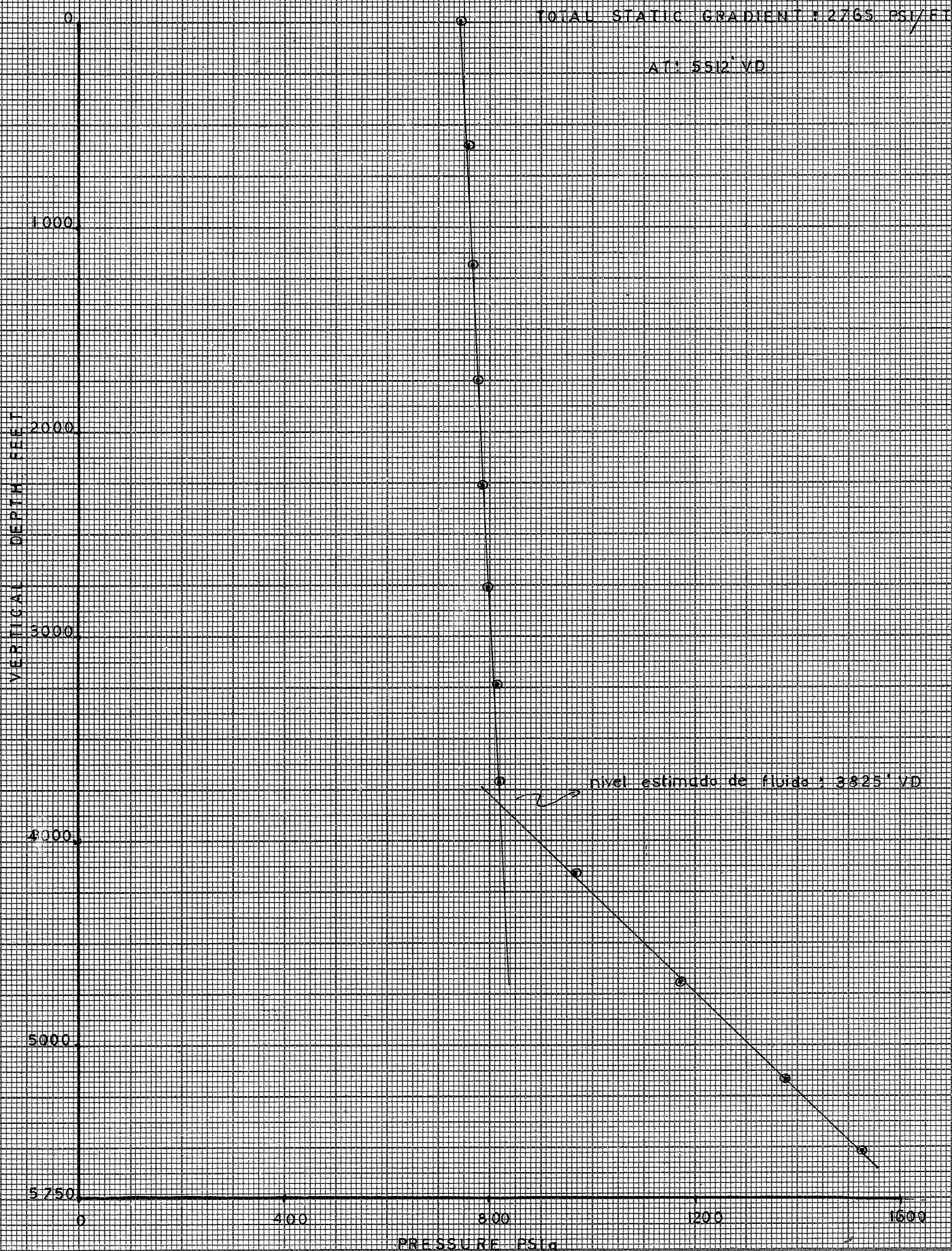
+ 1044.5528 PSI / INCH

- 2.4573 PSI

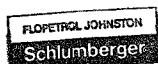
DATE - TIME		Choke size	W.H. pressure	Depth	Y	C *	P	Y	C *	P
Time	Cumul									
			VD	MD	DEFLEC	P	AP	GRADIENT		
			FEET	FEET	INCH	PSI	PSI	PSI / FEET		
			0	0	.7122	741	14			
			600	600	.7252	755	14	.0233		
			1196	1200	.7359	766	11	.0185		
			1758	1800	.7472	778	12	.0214		
			2268	2400	.7538	785	7	.0137		
			2758	3000	.7666	798	13	.0265		
			3242	3600	.7785	811	13	.0269		
			3723	4200	.7866	819	8	.0166		
			4208	4800	.9250	964	145	.2990		
			4692	5400	1.1221	1170	206	.4256		
			5169	6000	1.3192	1376	206	.4319		
			5512	6434	1.4609	1524	148	.4315		
			LECTURA	EN EL PUNTO	MEDIO C	10 MINUTOS				
				10	1.4609	1524				
				20	1.4609	1524				
				30	1.4609	1524				

REMARKS :

* Only used if its value is significant compared to the accuracy of the gauge.



Division LAR/PCD



Center: TALARA

Service order:

AMERADA CHART

Customer: BELCO PETROLEUM CO. OF PERU
Field: LOBITOS
Well: NO. 16 - PLAT. L06
Date: 17.04.85

Remarks: STATIC GRADIENT

Pressure element/Temp. El. 45296 Of/psi N° 2084
Clock 3 hours N° 5762