BELCO PETROLEUM
CORPORATION OF PERU
(SUCURSAL DEL PERU)

WELL FILE Mudlog May 20/85

Telf. - Negritos
863 - 864 - 865

Apartado No. 1
Talara - Perú

May 06, 1985.-
DE.-17, 1985.-

To : Drilling Superintendent
From : Drilling Engineering
Ref : Drilling Prognosis for the well
Z2A- - - L06 (L06-2)
Lobitos Offshore

Attached you will find the Drilling Prognosis for the well in reference to be drilled with Rig III.

The proposed TD is 5250' MD with 15 days estimated drilling time. Four (4) days have been programmed for completion.

The proposed drilling program is outlined as follows :

- Spud well with 17'' hole, and drill 700' and run 13 3/8'' csg.
- Drill 12 1/4'' hole to 1500', run & cmt 9 5/8'' csg. as per included program.
- Drill 7 7/8'' hole to the proposed total depth or a depth determined by Geology Department.
- Log and evaluate,
- Casing and completion program will follow evaluation.

Note : - Super Visbestos will be used in this well from surface hole to TD.
- Caution while tripping in the 7 7/8'' hole, swab/surge pressures are significantly higher using reverse rheology and super Visbestos.
- Do not use wyoming Bentonite; only National Bentonite.
- Do not weld the first two (2) joints of 9 5/8'' or 5 1/2'' csg. use Howco weld or Baker Lock.
- Iodine 131 will be used in cement slurry for 5 1/2'' csg if available.
- Logging services to be provided by Go-Well.

Wilder Cotrina C.
Drlg. Eng 3

V°B°: C. Clark
Sen. Drlg. Eng.

G. Villanueva
Drlg. Supt.

Approved by : C. R. Schmalhausen
Eng. Superintendent

WC/rzz
cc: O.M.- Lima Tech.
Drlg. Spt (2)
Geology
PetroPeru-Lima
S,M.D.C.
Finance
Well file

BELCO ENGINEERING

DRILLING PROGNOSIS

WELL	OFFICIAL NUMBER	L06-2 BELCO NUMBER	Lobitos Offsh AREA	Development TYPE OF WELL	02485 AFE No.
OBJETIVE	PRIMARY Rio Bravo		SECONDARY		
RIG : III	National 55-A DRAWWORKS		G. Denver PY-7 PUMP No. 1	G. Denver PY-7 PUMP No. 2	

DIRECTION OF DEVIATED WELL	N 29 E	ESTIMATED DEVIATION (MAX ANGLE)	24°
CONDUCTOR SIZE AND ANGLE	18''/15°	RECOMMENDED K. O. P.	As per Hunting
ESTIMATED TOTAL DEPTH	5250	ESTIMATED TO REACH T. D.	15

ELEVATIONS: K.B 50; ☒ WATER DEPTH 335'; ☐ GROUND LEVEL

SURFACE HOLE PROGRAM

BIT SIZE 17''

CASING POINT 700

CASING

13 3/8'', K-55, 61#/ft ST&C

FLOATING EQUIPMENT

Guide shoe
Insert float valve with wooden ball guide.

CENTRALIZERS

One on each of the bottom four joints.

CEMENT

SLURRY 1: 650 sx neat cement with 2% Cl_2Ca

SLURRY 2:

	SLURRY—1	SLURRY—2
DENSITY (lb/gl)	15.6	
YIELD (ft^3/sx)	1.18	
WAT. REQ (gl/sx)	5.2	
T.T. (hr. min)	2;0	

REMARKS

- Hole average 19''.
- Cement return will be expected.

INTERMEDIATE HOLE PROGRAM

BIT SIZE 12 1/4''

CASING POINT 1500'

CASING

9 5/8'', J-55, 40#/ft LT&C

FLOATING EQUIPMENT

Guide shoe
Insert float valve with wooden ball guide.

CENTRALIZERS

One on each of the bottom six joint.

CEMENT

SLURRY 1: 300 sx 4% Gel.

SLURRY 2: 200 sx neat cement.

		SLURRY—1	SLURRY—2
DENSITY	(lb/gl)	14.1	15.6
YIELD	(ft^3/sx)	1.55	1.18
WAT. REQ.	(gl/sx)	7.8	5.2
T.T.	(hr. min)	2;30	2:0

REMARKS

- Average hole diameter 13 1/2.
- Do not weld casing shoe or the first two joint of casing, Use Baker Lock or Howco weld.
- Cement return will be expected.

PRODUCTION HOLE PROGRAM

BIT SIZE 7 7/8''

CASING POINT 5250'

CASING

5 1/2'', J-55, 17#/ft ST&C

FLOATING EQUIPMENT

Guide shoe
Insert float valve

CENTRALIZERS

On pay zone

CEMENT

SLURRY 1: 4%

SLURRY 2:

		SLURRY—1	SLURRY—2
DENSITY	(lb/gl)		
YIELD	(ft^3/sx)		
WAT. REQ.	(gl/sx)		
T.T.	(hr. min)		

REMARKS

- Cement program for 5 1/2'' casing will be submitted according open hole log result.
- Don't weld casing shoe or the first two joint of casing. Use B ker Lock or Howco weld.

WELLHEAD

SIZE : 13 3/8'' x 9 5/8'' x 5 1/2'' x 2 7/8''

WORKING PRESSURE : 3000 psi - 5000 psi.

ASSEMBLY :

MUD PROGRAM

MUD TYPE: High Salinity - Low line

DEPTH (ft)	MUD WEIGHT (lb/ft³)	FUNNEL VISCOSITY (sec)	PLAST VISC. (CP)	YIELD POINT (lb/100ft²)	FLUID LOSS (cc)	SOLIDS (%)	OIL (%)
Surf-700	Spud mud	55	N o	C o n t r o l			
700 - 1500	9.0-0.3	45-50	10	12	below 8	below 8	0
at 3400	10	40	12	16 .	below 6	below 8	0
at 4500	10.5	42	16	20	below 5	below 12	0
4500-5250	10.5	45	16	20	below 4	below 12	0

REMARKS - Use super visbestos from surface hole to TD to control Rheology.

- Use 4 lb/bbl of graphite. Do not use diesel.
- A static gradient of 0.50 psi/ft (1900 psi at 3813 VD) and 0.4369 psi/ft (2266 psi at 5137' TVD).

BIT PROGRAM

DEPTH (ft)	BIT SIZE (in)	BIT Nº	BIT TYPE	WEIGHT ON BIT (1000lbs)	ROTARY SPEED (RPM)	REMARKS
0 - 700	17	1	DSJ	15-20	100-120	
700-1500	12 1/4	1	R1	15-25	100	Drill collar and cmt shoe.
		1	X3A	20-25	100	
1500-2200	7 7/8	1	X3A	5-15	D - D	Drill collar cmt shoe.
2200-3450	7 7/8	3	X3A	35-40	90-100	
3450-4000	7 7/8	1	X3A	35-40	90-100	
4000-5050	7 7/8	2	J-11	40	90-100	
5050-5250	7 7/8	1	J-3	35-40	80-90	

TOTAL BITS TO BE USED: 11

REMARKS

HYDRAULIC PROGRAM

Z2A

L06(L06-2)

DEPTH (Ft)	BIT SIZE (in)	JETS (1/32")	PUMPS N°1 LINER	PUMPS N°1 SPM	PUMPS N°2 LINER	PUMPS N°2 SPM	PUMP RATE (GPM)	ΔP BIT (Psi)	ΔP SYST (Psi)	ANN VEL. Dp (fpm)	ANN VEL. Dc (fpm)	CRITICAL Vel (fpm)	HHP BIT (hhp)	%HHP BIT (%)	HHP per BIT AREA hhp/in²	MUD MW lb/gl	MUD PV (CP)	MUD YP (lb/100ft²)
Surf-700	17	16-16-16	6	120	6	120	561	752	988	51	60	118	246	76	1.08	9.0	6	3
700-1500	12 1/4	14-14-14	6	100	6	100	468	922	1233	88	127	312	252	75	2.13	9.3	10	12
1500-2000	7 7/8	11-10-[illegible]	6	80	6	-	188	1133	1213	110	233	312	124	93	2.53	10	12	16
2000-2500	7 7/8	11-10-[illegible]	6	80	6	-	188	1133	1220	110	233	312	124	93	2.53	10	12	16
2500-3000	7 7/8	11-10-[illegible]	6	80	6	-	188	1133	1230	110	233	312	124	93	2.53	10	12	16
3000-3500	7 7/8	10-10-[illegible]	6	80	6	-	188	1385	1425	110	233	312	152	93	3.10	10	12	16
3500-4000	7 7/8	10-10-[illegible]	6	80	6	-	188	1452	1568	110	233	353	159	93	3.25	10.5	16	20
4500-5250	7 7/8	10-10-[illegible]	6	80	6	-	188	1452	1587	110	233	353	159	91	3.25	10.5	16	20

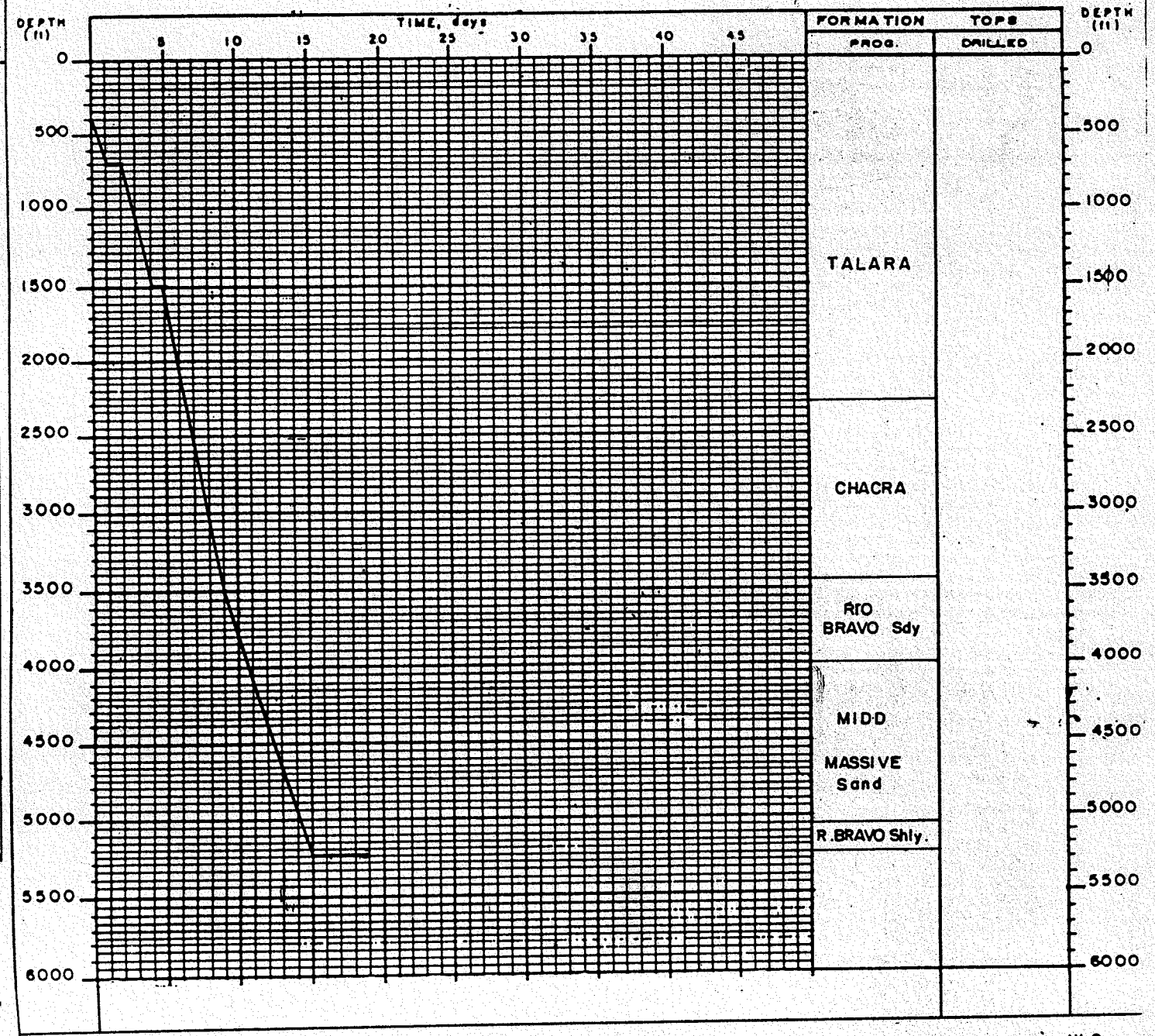
Note :-Maximum annular velocity around drill pipe permitted is 110/FPM. In 7 7/8'' hole

- Maintain annular velocity around drill collars in Laminar flow at all times.

DRILLING TIME PROGNOSIS

BELCO ENGINEERING

WELL	OFFICIAL NUMBER	L06-2 BELCO NUMBER	LOBITOS-OFFSH AREA	DEVELOPMENT TYPE OF WELL	02484 AFE Nº
OBJETIVE	PRIMARY RIO BRAVO		SECONDARY ——		
RIG III	NATIONAL 55-A DRAWWORKS	G. DENVER PY-7 PUMP Nº 1.	G. DENVER PY-7 PUMP Nº 2		



DATE MAY. /04/85.

PREPARED BY W.C.