

Well/
File

COPESERPET S.A.

Compañía Peruana de Servicios Petroleros

GEOSCIENCES STUDY:	
Jan 25, 2001	
MAP _____	OF _____
SECT. _____	OF _____
GEOLOGIST	

Static Pressure and Flowing gradient test

Well LO6-24

November 20th, 2000

CPSP 152-00

Talara, November 20th, 2000

ENG° JOHN W. MEYERS
Production Engineering Manager
PETRO-TECH PERUANA S.A.

Dear Mr:

Attached you will find the report of the STATIC AND FLOWING GRADIENT test carried out in well LO6-24. Studied sand was Rio Bravo (4770'-4148') Lobitos Offshore.

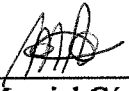
The purpose of this test is to determine Bottom Hole Pressure and fluid levels at static and flowing condition.

Data used in this report was obtained using your Memory Gauge model EMS-710 with range of 15000 psi and 302°F s/n 86913, which is available for you to have a good service.

If you have any question please contact us.

Thanks for your kind attention

Yours sincerely



Eng° Marcial Cáceres M
COPESERPET S.A.

w.c.
Eng° Ricardo Corman
Well File

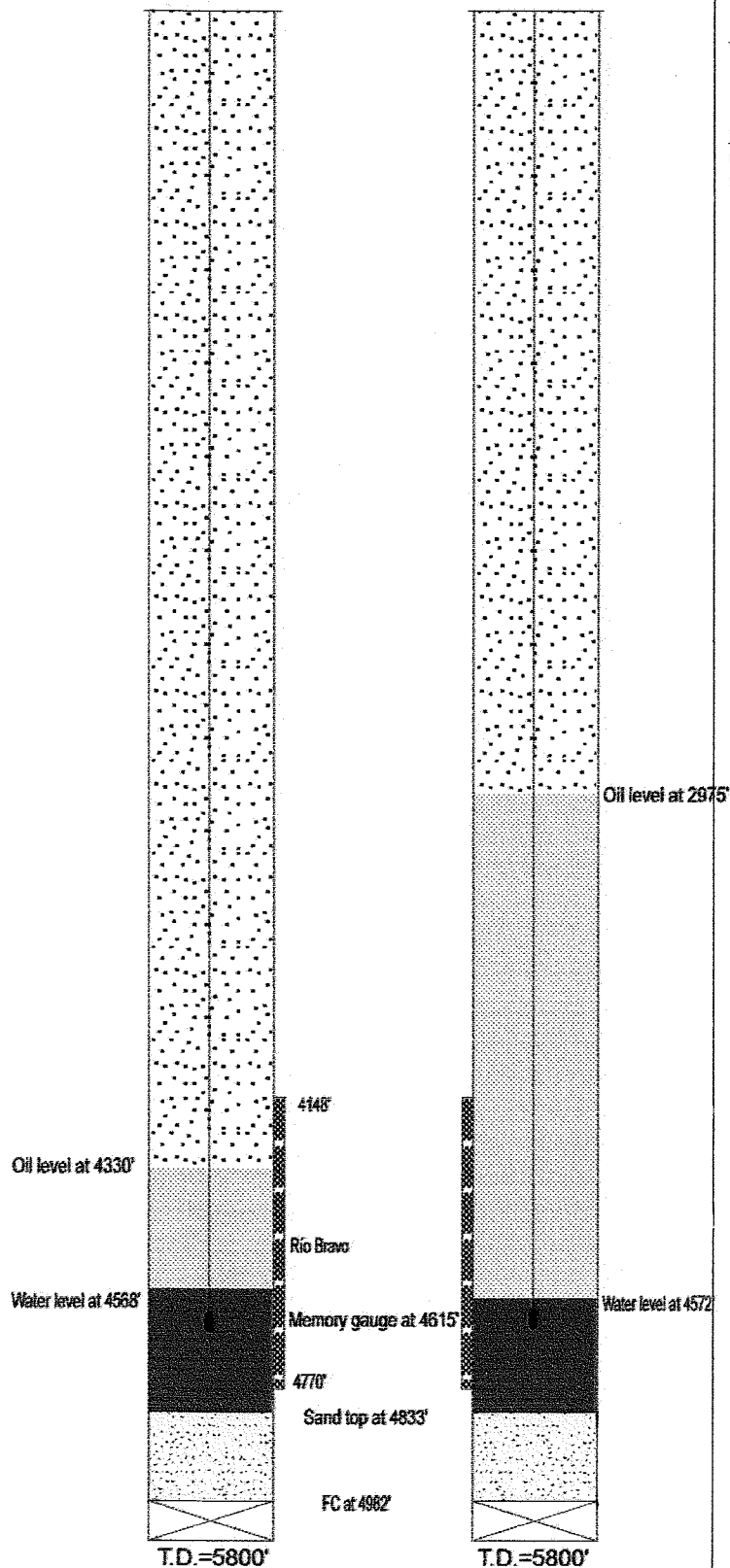
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Type of test: Static & flowing gradient
Well : LO6-24

Sand: Rio Bravo (4770'- 4148')
Field: Lobitos Offshore

At static condition

At flowing condition



NOVEMBER 15th, 2000

Detected sand top at 4833
Well was shut in to take a well test

NOVEMBER 20th, 2000

09:30 Arriving location
09:40 Rig up. WHP=300 psig.
10:00 Activate Memory gauge s/n 86913 (CPSP)
10:20 RIH gauge with 3 min steps as follows:
0' 4000' 4615'
1000' 4200' 4700'
2000' 4350' 4800'
3000' 4460'
3500' 4550'
11:20 POOH gauge to 4615'
11:51 Bleed off well to separator x 3.5 Hr.
16:28 RIH gauge to 4800' x 3 min
16:33 POOH gauge with 4 min steps as follows:
4700' 4200' 1000'
4615' 4000' 0'
4550' 3500'
4460' 3000'
4650' 2000'
Produced oil= 1.3 Bls
WHP=0 psig.
17:36 Gauge on surface
17:55 Deactivate Memory gauge
18:00 Well closed

WHP = 300 Psig. L
MEMORY DEPTH = 4615' MD (3659' VD)
MEMORY PRESSURE = 415 Psig
MPP = 4454' MD (3536' VD)
MPP, pressure = 372 Psig
 $FG = \frac{372}{3536} = 0.11 \text{ Ksi/ft}$
Oil level = 4330' MD (3437' VD)
Water level = 4568' MD (3021' VD)

BHFP = 386 psig

VP6 (final 25/01)

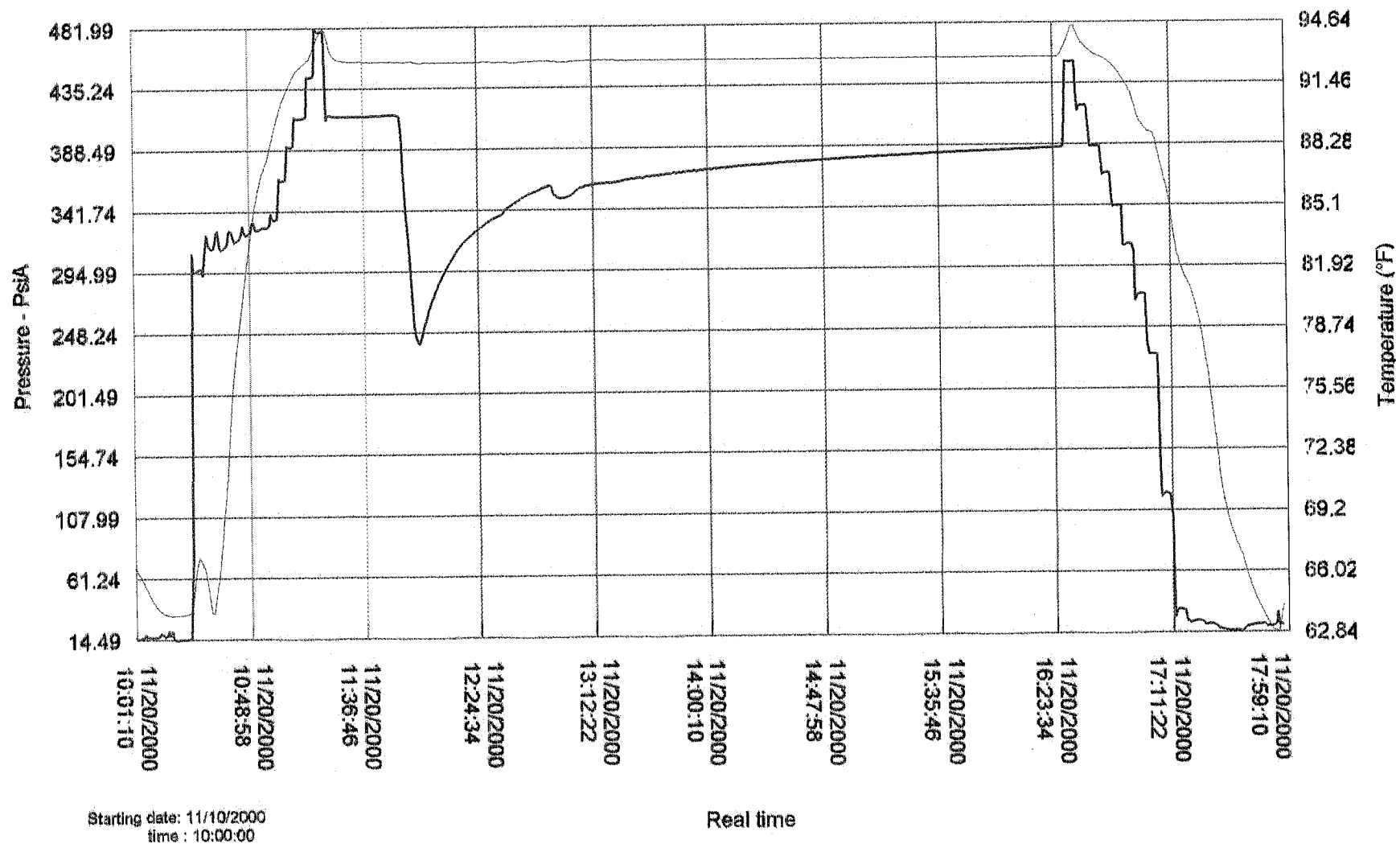
Field Operator: Edgardo Novoa

Field Supervisor: Marcial Cáceres

LOGGED PRESSURE / TEMPERATURE DATA

Company : COPESERPET S.A.
 Client : PETRO-TECH PERUANA S.A.
 Gauge Number : 86913
 Well name : LO6-24
 Type of test : Static and flowing gradient
 Field name : Lobitos Offshore

File name : gtlo624
 Test operator: Marcial Caceres.
 Comments :



Summary of Results

Date of Test	November 20th, 2000	
Formation	Rio Bravo (4470'- 4148')	
Depth of Gauges	4615	ft. MD
	3659	ft. VD

1/2 Hr Static Condition

Well Head Pressure	300	psig (manometer)
Static Pressure at 4615' MD	414.82	psia (Memory)
Static Temperature at 4615' MD	92.85	°F
Gradient at Middle Point 4460'	0.1032	psi/ft
Gradient at 4615' MD	0.1134	psi/ft
Gas Level	0	ft. MD
	0	ft. VD
Oil Level	4330	ft. MD
	3437	ft. VD
Water Level	4568	ft. MD
	3621	ft. VD
Gas gradient	0.0086	psi/ft
Oil gradient	0.3573	psi/ft
Water gradient	0.4410	psi/ft

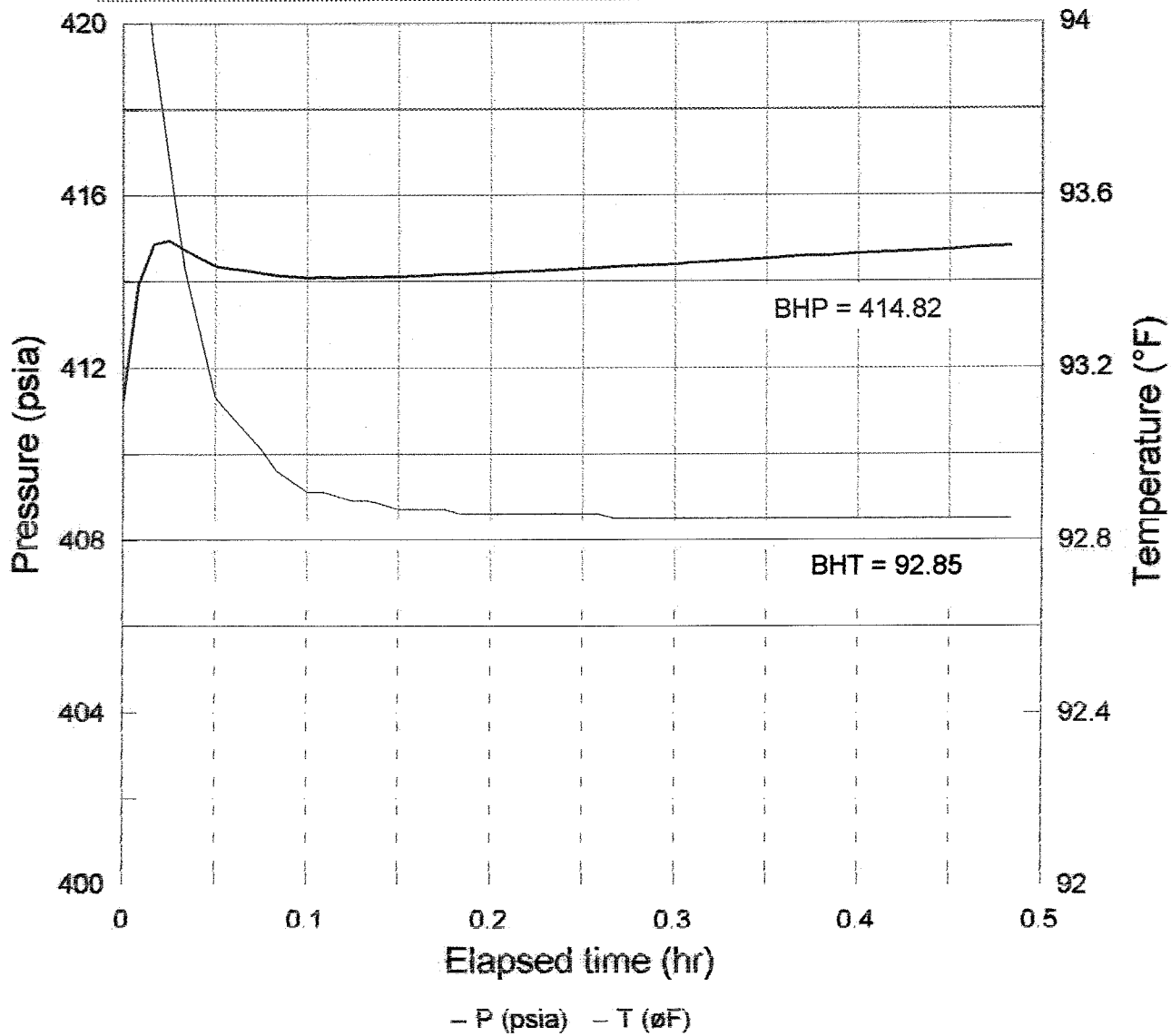
4.5 hr flowing condition

Flowing Pressure at 4615' MD	386.44	psia
Flowing Temperature at 4615' MD	93.07	°F
Gradient at 4615 MD	0.1056	psi/ft
Gradient at Middle Point (4460 MD)	0.0965	psi/ft
Gas Level	0	ft. MD
	0	ft. VD
Oil level	2975	ft. MD
	2534	ft. VD
Water Level	4572	ft. MD
	3625	ft. VD
Gas Gradient	0.0064	psi/ft
Oil Gradient	0.3154	psi/ft
Water Gradient	0.4379	psi/ft

Gauges at 4615 ' MD for 1/2 hr at static condition (Well LO6-24)

Date	Time	Elapsed Time (hr)	Pressure (psia)	Temperature (°F)
11/20/00	11:22:10	0.00000	411.23	94.44
11/20/00	11:22:40	0.00833	413.94	94.19
11/20/00	11:23:10	0.01667	414.87	93.94
11/20/00	11:23:40	0.02500	414.96	93.68
11/20/00	11:24:10	0.03333	414.74	93.43
11/20/00	11:25:10	0.05000	414.36	93.13
11/20/00	11:25:40	0.05833	414.31	93.09
11/20/00	11:26:10	0.06667	414.27	93.05
11/20/00	11:26:40	0.07500	414.20	93.01
11/20/00	11:27:10	0.08333	414.15	92.96
11/20/00	11:28:10	0.10000	414.09	92.91
11/20/00	11:28:40	0.10833	414.10	92.91
11/20/00	11:29:10	0.11667	414.09	92.90
11/20/00	11:29:40	0.12500	414.11	92.89
11/20/00	11:30:10	0.13333	414.10	92.89
11/20/00	11:31:10	0.15000	414.12	92.87
11/20/00	11:31:40	0.15833	414.13	92.87
11/20/00	11:32:10	0.16667	414.15	92.87
11/20/00	11:32:40	0.17500	414.17	92.87
11/20/00	11:33:10	0.18333	414.17	92.86
11/20/00	11:34:10	0.20000	414.20	92.86
11/20/00	11:34:40	0.20833	414.22	92.86
11/20/00	11:35:10	0.21667	414.24	92.86
11/20/00	11:35:40	0.22500	414.25	92.86
11/20/00	11:36:10	0.23333	414.26	92.86
11/20/00	11:37:10	0.25000	414.30	92.86
11/20/00	11:37:40	0.25833	414.32	92.86
11/20/00	11:38:10	0.26667	414.35	92.85
11/20/00	11:38:40	0.27500	414.36	92.85
11/20/00	11:39:10	0.28333	414.38	92.85
11/20/00	11:40:10	0.30000	414.41	92.85
11/20/00	11:40:40	0.30833	414.44	92.85
11/20/00	11:41:10	0.31667	414.45	92.85
11/20/00	11:41:40	0.32500	414.48	92.85
11/20/00	11:42:10	0.33333	414.49	92.85
11/20/00	11:43:10	0.35000	414.54	92.85
11/20/00	11:43:40	0.35833	414.56	92.85
11/20/00	11:44:10	0.36667	414.59	92.85
11/20/00	11:44:40	0.37500	414.60	92.85
11/20/00	11:45:10	0.38333	414.61	92.85
11/20/00	11:46:10	0.40000	414.65	92.85
11/20/00	11:46:40	0.40833	414.67	92.85
11/20/00	11:47:10	0.41667	414.68	92.85
11/20/00	11:47:40	0.42500	414.70	92.85
11/20/00	11:48:10	0.43333	414.71	92.85
11/20/00	11:49:10	0.45000	414.74	92.85
11/20/00	11:49:40	0.45833	414.77	92.85
11/20/00	11:50:10	0.46667	414.79	92.85
11/20/00	11:50:40	0.47500	414.81	92.85
11/20/00	11:51:10	0.48333	414.82	92.85

Gauges at 4615 ' MD for 1/2 hr at static condition (Well LO6-24)

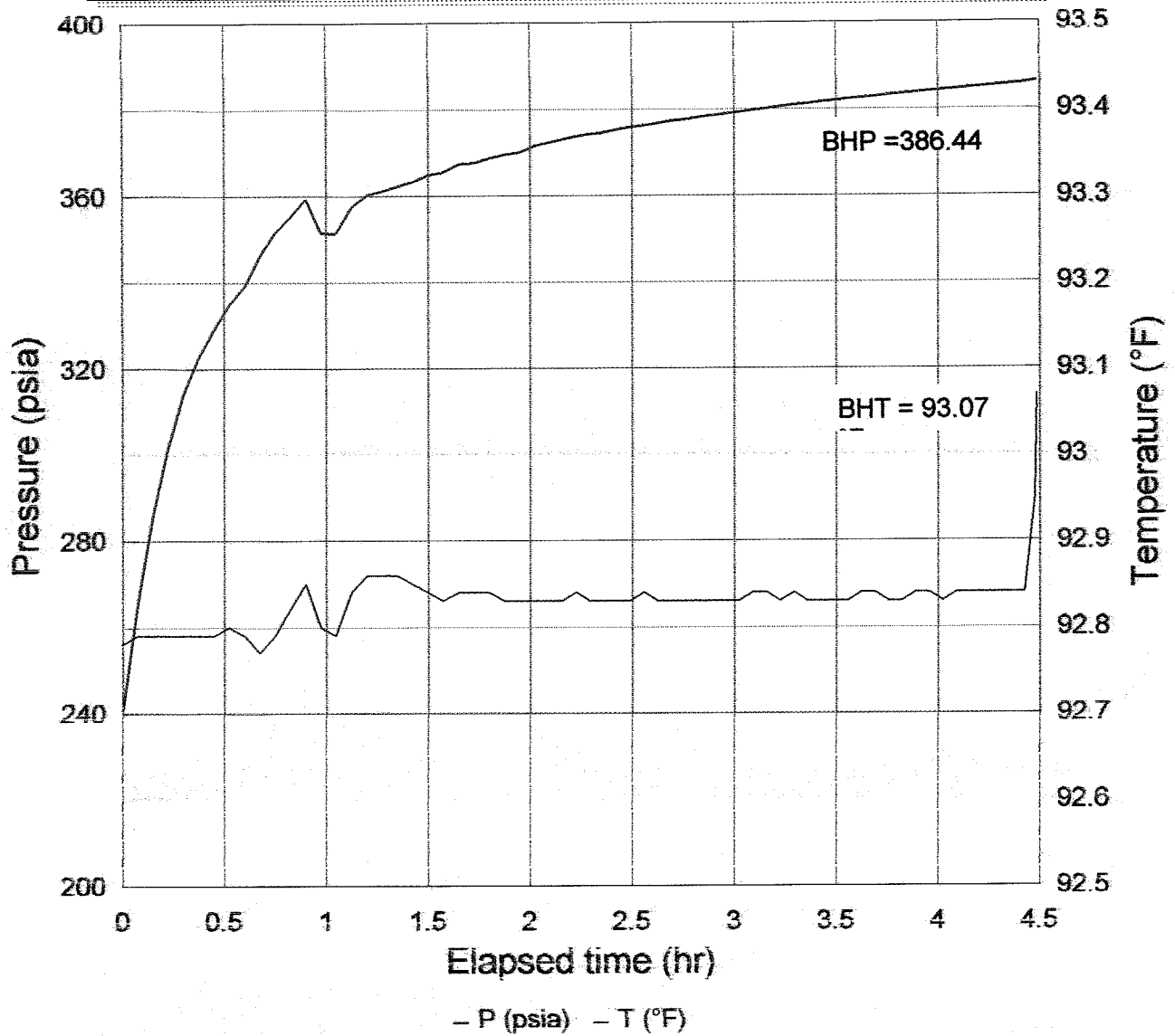


Gauges at 4615' MD for 4.5 hr at flowing condition (Wel LO6-24)

Date	Time	Elapsed Time (hr)	Pressure (psia)	Temperature (°F)
11/20/00	11:59:40	0.00000	240.77	92.78
11/20/00	12:04:10	0.07500	264.81	92.79
11/20/00	12:08:40	0.15000	285.89	92.79
11/20/00	12:13:10	0.22500	301.28	92.79
11/20/00	12:17:40	0.30000	314.15	92.79
11/20/00	12:22:10	0.37500	322.46	92.79
11/20/00	12:26:40	0.45000	329.04	92.79
11/20/00	12:31:10	0.52500	334.87	92.80
11/20/00	12:35:40	0.60000	338.84	92.79
11/20/00	12:40:10	0.67500	346.22	92.77
11/20/00	12:44:40	0.75000	351.55	92.79
11/20/00	12:49:10	0.82500	355.24	92.82
11/20/00	12:53:40	0.90000	359.33	92.85
11/20/00	12:58:10	0.97500	351.58	92.80
11/20/00	13:02:40	1.05000	351.41	92.79
11/20/00	13:07:10	1.12500	357.50	92.84
11/20/00	13:11:40	1.20000	360.23	92.86
11/20/00	13:16:10	1.27500	361.26	92.86
11/20/00	13:20:40	1.35000	362.24	92.86
11/20/00	13:25:10	1.42500	363.28	92.85
11/20/00	13:29:40	1.50000	364.93	92.84
11/20/00	13:34:10	1.57500	365.46	92.83
11/20/00	13:38:40	1.65000	367.36	92.84
11/20/00	13:43:10	1.72500	367.59	92.84
11/20/00	13:47:40	1.80000	368.72	92.84
11/20/00	13:52:10	1.87500	369.58	92.83
11/20/00	13:56:40	1.95000	370.14	92.83
11/20/00	14:01:10	2.02500	371.55	92.83
11/20/00	14:05:10	2.09167	372.44	92.83
11/20/00	14:09:10	2.15833	373.04	92.83
11/20/00	14:13:10	2.22500	373.65	92.84
11/20/00	14:17:10	2.29167	374.21	92.83
11/20/00	14:21:10	2.35833	374.55	92.83
11/20/00	14:25:10	2.42500	375.34	92.83
11/20/00	14:29:10	2.49167	375.83	92.83
11/20/00	14:33:10	2.55833	376.33	92.84
11/20/00	14:37:10	2.62500	376.72	92.83
11/20/00	14:41:10	2.69167	377.26	92.83
11/20/00	14:45:10	2.75833	377.64	92.83
11/20/00	14:49:10	2.82500	378.10	92.83
11/20/00	14:53:10	2.89167	378.54	92.83
11/20/00	14:57:10	2.95833	378.96	92.83
11/20/00	15:01:10	3.02500	379.37	92.83
11/20/00	15:05:10	3.09167	379.74	92.84
11/20/00	15:09:10	3.15833	380.12	92.84
11/20/00	15:13:10	3.22500	380.51	92.83
11/20/00	15:17:10	3.29167	380.88	92.84

11/20/00	15:21:10	3.35833	381.20	92.83
11/20/00	15:25:10	3.42500	381.58	92.83
11/20/00	15:29:10	3.49167	381.92	92.83
11/20/00	15:33:10	3.55833	382.21	92.83
11/20/00	15:37:10	3.62500	382.55	92.84
11/20/00	15:41:10	3.69167	382.85	92.84
11/20/00	15:45:10	3.75833	383.17	92.83
11/20/00	15:49:10	3.82500	383.46	92.83
11/20/00	15:53:10	3.89167	383.74	92.84
11/20/00	15:57:10	3.95833	384.02	92.84
11/20/00	16:01:10	4.02500	384.30	92.83
11/20/00	16:05:10	4.09167	384.56	92.84
11/20/00	16:09:10	4.15833	384.86	92.84
11/20/00	16:13:10	4.22500	385.11	92.84
11/20/00	16:17:10	4.29167	385.37	92.84
11/20/00	16:21:10	4.35833	385.61	92.84
11/20/00	16:25:10	4.42500	385.86	92.84
11/20/00	16:28:10	4.47500	386.23	92.95
11/20/00	16:28:40	4.48333	386.44	93.07

Gauges at 4615' MD for 4.5 hr at flowing condition (Wel LO6-24)



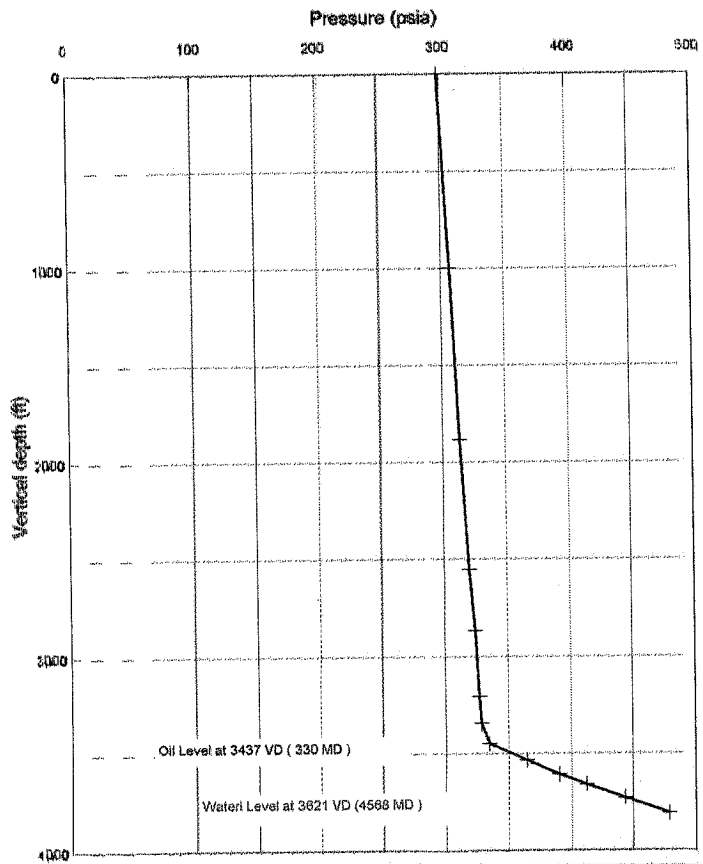
Fluid Level at Static and flowing condition. (Well LO6-24)

Measured depth (ft)	Vertical depth (ft)	Static condition (while RIH gauges)		Flowing condition (while POOH gauges)	
		Pressure (psia)	Gradient (psi/ft)	Pressure (psia)	Gradient (psi/ft)
0	0.00	298.39		16.18	-
1000	999.49	307.06	0.0087	21.10	0.0049
2000	1883.12	313.99	0.0078	23.49	0.0027
3000	2549.39	320.32	0.0095	32.58	0.0136
3500	2867.63	324.48	0.0131	121.35	0.2789
4000	3205.26	327.57	0.0092	227.69	0.3150
4200	3343.90	329.27	0.0123	273.73	0.3321
4350	3451.35	335.21	0.0553	311.92	0.3554
4460	3536.72 ✓	364.99	0.3488	341.14	0.3423
4550	3607.20	390.89	0.3675	366.20	0.3556
4615	3659.44	412.74	0.4182	386.87	0.3956
4700	3727.77	443.90	0.4561	418.14	0.4577
4800	3807.13	479.06	0.4430	451.54	0.4208

Levels & Gradients

	Static Levels		Flowing Levels		Gradients (psi/ft)	
	Measured (ft)	Vertical (ft)	Measured (ft)	Vertical (ft)	Static	Flowing
Gas =	0	0	0	0	0.0086	0.0064
Oil =	4330	3437	2975	2534	0.3573	0.3154
Water =	4568	3621	4572	3625	0.4410	0.4379
Gauges =	4460	3537	4460	3537	0.1032	0.0965
Gauges =	4615	3659	4615	3659	0.1134	0.1056

Fluid Level at Static Condition (Well LO6-24)



Fluid Level at Flowing Condition (Well LO6-24)

