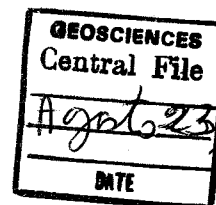


K & C

SERVICES S. A. C.

INITIAL PRESSURE



OK
Well file

PETRO-TECH PERUANA S.A.

**LO16-26
LOBITOS OFFSHORE**

TALARA – PERU

AUGUST 18-19th, 2002

PREPARED BY

CESAR TICERAN / GISELA ARAUJO

SUMMARY OF RESULTS

Date of Test	August 19th, 2002
Well	LO16 - 26
Formation	Rio Bravo
Shot Interval	7963' - 7680'
Depth of gauges	7950.00 MD ft
	4623.07 VD ft

03 hr at Static Condition

Well Head Pressure (Initial)	800 psig (Manometer)
Well Head Pressure (End)	930 psig (Manometer)
Initial Presure at 7950 ft MD	2589.27 psia (Memory)
Initial Temperature at 7950 ft MD	106.88 °F
Formation Gradient at 7950 ft MD	0.56 psi/ft
Fluid gradient	0.342 psi/ft
Increment last hour	13.37 psi/hour ✓

02 hr at Flowing Condition

Well Head Pressure (Initial)	0 psig (Manometer)
Well Head Pressure (End)	30 psig (Manometer)
Flowing Presure at 7950 ft MD	1679.5 psia (Memory)
Flowing Temperature al 7950 ft MD	105.36 °F
Gradient at 7950 ft MD	0.363 psi/ft

Fluid level — AT SURFACE

$$P_{mmp} = 2563 \text{ psig.}$$

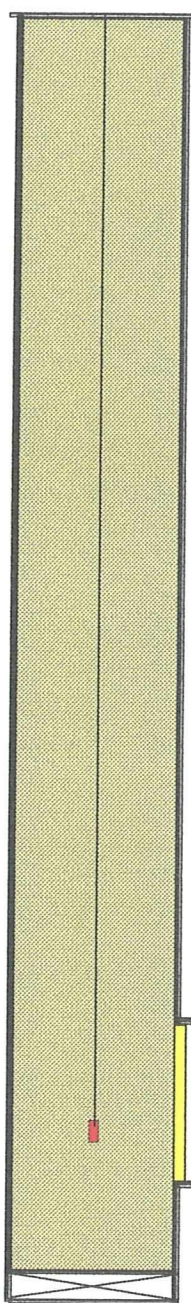
MPP — $7822' \text{ MD } (4546' \text{ VD}) = 2563 \text{ psia}$

GAUGE — $7950' \text{ MD } (4623' \text{ VD}) = 2589 \text{ psia}$

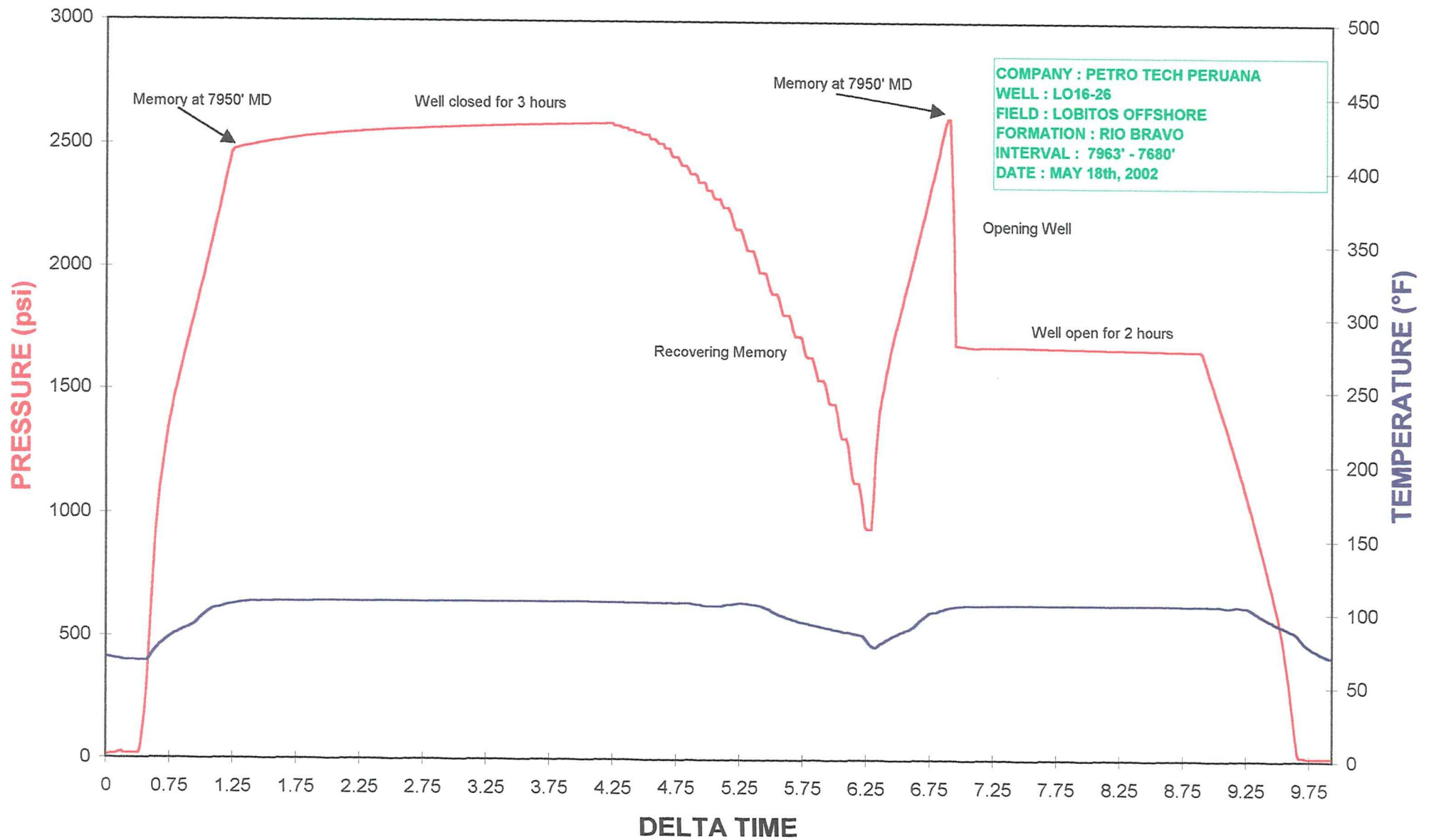
Fluid Grad = 0.342 psi/ft

$$Fm \text{ Grad} = \frac{2563 \text{ psia}}{4546 \text{ VD}} = 0.564 \text{ psi/ft}$$

INFORMACION GENERAL

WELL : LO16-26		FIELD : LOBITOS OFF SHORE	
TEST : INITIAL PRESSURE			
FORMATION : RIO BRAVO (7963' - 7680')			
LO16 - 26 CASING 5 1/2"  F.C. F.S. T.D. 8095' <td>DATE</td> <td>WELL DATA</td>		DATE	WELL DATA
		08/19/2002	Current Installation : Casing 5 1/2" Production: Formation : Rio Bravo Intervale : 7963' - 7680' F.C. : 8006' F.S. : 8095'
		WELL TEST PROCEDURE	
		08/18/2002	Nipple up wire line unit. 21:24:00 Connected battery to the gauges N°20602 - N ° 20600 WHP = 800 psi Memory inside lubricator 22:39:00 Gauges at 7950 ft. Closed for 03 hours Recording initial pressure 08/19/2002 01:39:00 Pull out gauges with the following steps. From 7950 ft.to 7700 ft, 50 ft each From 7700 ft.to 7400 ft, 100 ft each From 7400 ft.to 7600 ft, 200 ft each From 6000 ft.to surface, 500 ft each WHP = 930 psi 03:41:00 Run in hole at 7950 ft. Bleed off the well to tank probe 04:17:00 Record flowing behavior for 02 hours. WHP = 0 psi 06:17:00 Pull out gauges at surface 07:05:00 Gauges in surface WHP = 30 psi Bleed off lubricator Finished the test
REMARKS			
Data used from gauge N° 20600. Initial Pressure @ 7950 ft MD (4623.07 ft VD) : 2589.27 psi. Formation Gradient at 7950 ft MD : $2589.27 / 4623.07 = 0.56$ psi/ft. Static Temperature @ 7950 ft MD (4623.07 ft VD) : 106.88 °F. Flowing Pressure @ 7950 ft MD (4623.07 ft VD) : 1679.5 psi. Flowing Temperature @ 7950 ft MD (4623.07 ft VD) : 105.36 °F. Flowing Gradient at 7950 ft MD : $1679.5 / 4623.07 = 0.363$ psi/ft.			

PRESSURE VS DELTA TIME



STATIC GRADIENTE SURVEY

Company : PETRO-TECH PERUANA S.A.

Well : LO16-26

Area : LOBITOS OFFSHORE

Formation : Rio Bravo

Interval : 7963' - 7680'

Date : August 18th-19th, 2002

Measured depth (ft)	Vertical depth (ft)	Pressure (psi)	Gradient (psi/ft)
0	0.00	941.00	
500	499.89	1127.00	0.372
1000	992.86	1306.00	0.363
1500	1388.52	1445.00	0.351
2000	1659.92	1541.00	0.354
2500	1913.21	1634.00	0.367
3000	2153.36	1721.00	0.362
3500	2386.60	1808.00	0.373
4000	2623.71	1895.00	0.367
4500	2862.39	1983.00	0.369
5000	3103.54	2072.00	0.369
5500	3342.35	2160.00	0.368
6000	3584.46	2248.20	0.364
6200	3684.83	2284.00	0.357
6400	3784.90	2318.00	0.340
6600	3884.10	2351.00	0.333
6800	3983.25	2385.00	0.343
7000	4086.19	2419.00	0.330
7200	4192.40	2453.20	0.322
7400	4301.96	2488.00	0.318
7500	4358.23	2506.00	0.320
7600	4416.58	2524.00	0.308
7700	4473.99	2543.00	0.331
7750	4503.59	2552.40	0.318
7800	4533.24	2561.60	0.310
7850	4563.75	2570.80	0.302
7900	4594.26	2580.17	0.307
7950	4623.07	2589.27	0.316

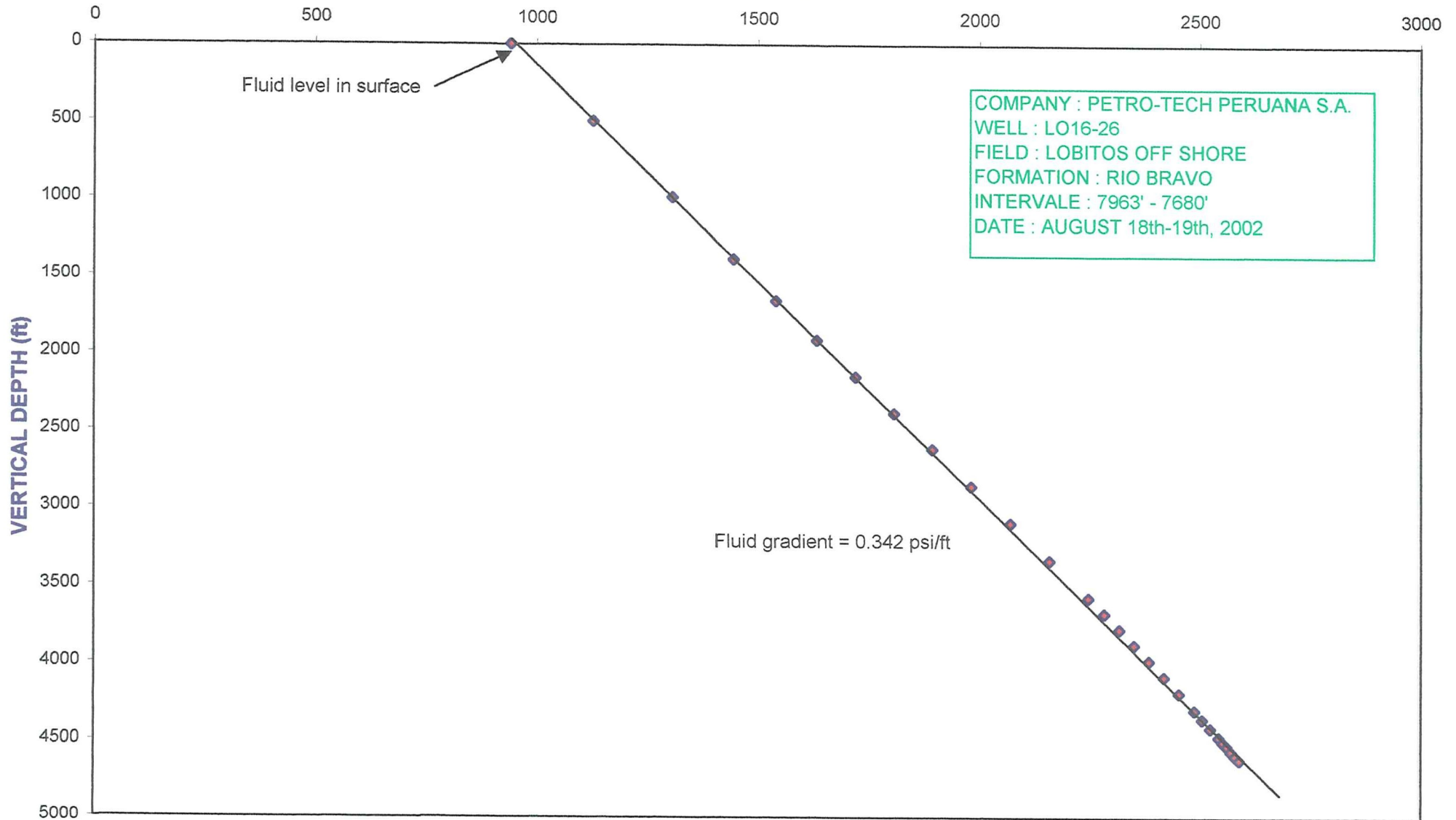
Formation Gradient at 7950' MD : 0.56 psi/ft

Flowing Gradient at 7950' MD : 0.363 psi/ft

Fluid level in surface

FLOWING GRADIENT

PRESSURE (psi)



Company: PETRO-TECH PERUANA S.A.

Well : LO16 - 26

Field : Lobitos Off-shore

Date : 08/18-19/2002

HORAS	DTIME	Pressure (psi)	Temp (°F)
Instalting Memory Gauge Batery			
21:24:38	0	14.5	68.61
21:32:38	0.1333	14.55	67.36
21:34:38	0.1667	18.12	67.26
21:36:38	0.2	21.37	67.07
21:40:38	0.2667	15.44	66.47
21:42:38	0.3	15.29	66.24
21:54:38	0.5	15.48	65.97
21:55:38	0.5167	43.8	65.97
21:57:38	0.55	187.94	65.96
21:58:38	0.5667	305.34	66.15
21:59:38	0.5833	450.12	67.39
22:00:38	0.6	618.37	69.87
22:01:38	0.6167	781.32	72.23
22:02:38	0.6333	907.16	73.82
22:04:38	0.6667	1088.65	77.02
22:05:38	0.6833	1154.37	78.2
22:07:38	0.7167	1276.24	80.63
22:09:38	0.75	1381.2	82.65
22:11:38	0.7833	1465.17	84.73
22:14:38	0.8333	1575.98	86.99
22:17:38	0.8833	1684.04	88.73
22:20:38	0.9333	1785.73	90.9
22:23:38	0.9833	1893.9	94.73
22:25:38	1.0167	1965.88	97.43
22:28:38	1.0667	2079.08	100.57
22:31:38	1.1167	2192.5	102.29
22:33:38	1.15	2267.03	102.82
22:36:38	1.2	2388.12	104.33
22:39:38	1.25	2477.54	105.17

Memory at 7950 PM

Well closed for 3 hours

22:40:38	1.2667	2480.29	105.26
22:50:38	1.4333	2499.52	106.69
23:00:38	1.6	2514.65	106.79
23:10:38	1.7667	2526.97	106.94
23:20:38	1.9333	2537.01	107.02
23:30:38	2.1	2545.22	107.04
23:40:38	2.2667	2551.86	107.05
23:50:38	2.4333	2557	107.06
00:00:38	2.6	2561.85	107.06
00:10:38	2.7667	2566.06	107.05
00:20:38	2.9333	2569.83	107.04
00:30:38	3.1	2573.2	107.03
00:40:38	3.2667	2576.2	107.03
00:50:38	3.4333	2578.93	107.03
01:00:38	3.6	2581.45	107.03
01:10:38	3.7667	2583.74	107.02
01:20:38	3.9333	2585.83	107.02
01:30:38	4.1	2587.73	106.98
01:31:38	4.1167	2588.06	106.97
01:32:38	4.1333	2588.19	106.96

Company: PETRO-TECH PERUANA S.A.

Well : LO16 - 26

Field : Lobitos Off-shore

Date : 08/18-19/2002

HORAS	DTIME	Pressure (psi)	Temp (°F)
01:33:38	4.15	2588.46	106.95
01:34:38	4.1667	2588.54	106.94
01:35:38	4.1833	2588.83	106.93
01:36:38	4.2	2588.83	106.91
01:37:38	4.2167	2589	106.9
01:38:38	4.2333	2589.27	106.88

Depth at 7900'

01:39:38	4.25	2580.27	106.86
01:40:38	4.2667	2580.16	106.84
01:41:38	4.2833	2580.17	106.82

Depth at 7850'

01:42:38	4.3	2574.9	106.8
01:43:38	4.3167	2570.79	106.79
01:44:38	4.3333	2570.79	106.76

Depth at 7800'

01:46:38	4.3667	2561.49	106.72
01:47:38	4.3833	2561.66	106.69
01:48:38	4.4	2562.1	106.67

Depth at 7750'

01:49:38	4.4167	2552.42	106.65
01:50:38	4.4333	2552.43	106.61
01:51:38	4.45	2552.76	106.58

Depth at 7700'

01:53:38	4.4833	2543.24	106.55
01:54:38	4.5	2543.54	106.53
01:55:38	4.5167	2543.7	106.51

Depth at 7600'

01:56:38	4.5333	2524.1	106.48
01:57:38	4.55	2524.66	106.46
01:58:38	4.5667	2524.91	106.44

Depth at 7500'

02:00:38	4.6	2506.12	106.41
02:01:38	4.6167	2506.37	106.4
02:02:38	4.6333	2506.63	106.39

Depth at 7400'

02:03:38	4.65	2489	106.13
02:04:38	4.6667	2488.24	106.37
02:05:38	4.6833	2488.57	106.35

Depth at 7200'

02:07:38	4.7167	2452.43	106.26
02:08:38	4.7333	2453.19	106.21
02:09:38	4.75	2453.32	106.14

Depth at 7000'

02:11:38	4.7833	2418.5	106.35
02:12:38	4.8	2419.1	106.38
02:13:38	4.8167	2419.18	106.4

Depth at 6800'

02:15:38	4.85	2385.43	106.37
02:16:38	4.8667	2385.41	106.16
02:17:38	4.8833	2385.71	105.88

Company: PETRO-TECH PERUANA S.A.

Well : LO16 - 26

Field : Lobitos Off-shore

Date : 08/18-19/2002

HORAS	DTIME	Pressure (psi)	Temp (°F)
Depth at 6600'			
02:19:38	4.9167	2351.37	105.38
02:20:38	4.9333	2351.47	105.33
02:21:38	4.95	2351.96	104.92
Depth at 6400'			
02:23:38	4.9833	2320.96	104.41
02:24:38	5	2317.96	104.37
02:25:38	5.0167	2318.29	104.37
Depth at 6200'			
02:27:38	5.05	2283.53	104.35
02:28:38	5.0667	2284.04	104.36
02:29:38	5.0833	2284.23	104.38
Depth at 6000'			
02:31:38	5.1167	2247.83	104.75
02:32:38	5.1333	2248.26	105.21
02:33:38	5.15	2248.74	105.21
Depth at 5500'			
02:37:38	5.2167	2159.53	106.13
02:38:38	5.2333	2160.15	106.23
02:39:38	5.25	2160.56	106.25
Depth at 5000'			
02:43:38	5.3167	2072.24	105.77
02:44:38	5.3333	2072.79	105.48
02:45:38	5.35	2073.08	105.35
Depth at 4500'			
02:48:38	5.4	1983.04	104.94
02:49:38	5.4167	1983.23	104.33
02:50:38	5.4333	1983.76	103.78
Depth at 4000'			
02:54:38	5.5	1895.18	100.68
02:55:38	5.5167	1895.47	100.2
02:56:38	5.5333	1895.96	99.46
Depth at 3500'			
03:00:38	5.6	1807.55	97.14
03:01:38	5.6167	1808.13	96.36
03:02:38	5.6333	1808.41	96.07
Depth at 3000'			
03:05:38	5.6833	1721.24	94.83
03:06:38	5.7	1721.96	94.15
03:07:38	5.7167	1722.4	93.8
Depth at 2500'			
03:11:38	5.7833	1634.11	92.84
03:12:38	5.8	1634.84	92.23
03:13:38	5.8167	1635.07	92.13
Depth at 2000'			
03:16:38	5.8667	1540.8	91.13
03:17:38	5.8833	1541.2	90.81
03:18:38	5.9	1541.53	90.49
Depth at 1500'			
03:22:38	5.9667	1444.94	89.33
03:23:38	5.9833	1445.42	88.79
03:24:38	6	1445.64	88.73

Company: PETRO-TECH PERUANA S.A.

Well : LO16 - 26

Field : Lobitos Off-shore

Date : 08/18-19/2002

HORAS	DTIME	Pressure (psi)	Temp (°F)
Depth at 1000'			
03:27:38	6.05	1305.46	87.66
03:28:38	6.0667	1306.16	87.17
03:29:38	6.0833	1306.58	87.1
Depth at 500'			
03:33:38	6.15	1126.36	86.18
03:34:38	6.1667	1126.85	85.9
03:35:38	6.1833	1127.26	85.56
Depth at 0'			
03:39:38	6.25	940.99	81.17
03:40:38	6.2667	941.32	79.32
03:41:38	6.2833	941.73	78.03
Memory Run in hole up to 7950'			
03:42:38	6.3	1069.86	76.76
03:43:38	6.3167	1227.41	76.5
03:44:38	6.3333	1336.01	77.96
03:46:38	6.3667	1473.8	79.9
03:48:38	6.4	1560.49	81.76
03:51:38	6.45	1687.91	84.23
03:54:38	6.5	1793.43	86.24
03:57:38	6.55	1897.69	88.17
03:59:38	6.5833	1968.28	89.3
04:02:38	6.6333	2075.84	92.34
04:05:38	6.6833	2181.78	96.13
04:08:38	6.7333	2289.67	99.57
04:11:38	6.7833	2397.6	100.71
04:13:38	6.8167	2472.96	101.74
04:16:38	6.8667	2588.24	102.9
04:17:38	6.8833	2612.42	103.47
Memory at 7950'			
Opening Well			
04:18:38	6.9	2611.92	103.83
04:19:38	6.9167	2410.06	104.1
04:20:38	6.9333	2123.14	104.35
04:21:38	6.95	1688.79	104.44
04:28:38	7.0667	1679.3	105.17
04:29:38	7.0833	1678.57	105.2
04:42:38	7.3	1679.82	105.27
04:43:38	7.3167	1680.03	105.29
04:44:38	7.3333	1679.9	105.3
04:45:38	7.35	1679.87	105.32
04:46:38	7.3667	1679.63	105.33
04:47:38	7.3833	1679.21	105.34
04:48:38	7.4	1679.16	105.35
04:49:38	7.4167	1679.1	105.35
04:50:38	7.4333	1679	105.36
04:51:38	7.45	1678.91	105.37
05:01:38	7.6167	1677.93	105.41
05:05:38	7.6833	1676.84	105.41
05:10:38	7.7667	1675.98	105.41
05:16:38	7.8667	1674.89	105.4
05:22:38	7.9667	1673.88	105.38
05:28:38	8.0667	1672.89	105.36

Company: PETRO-TECH PERUANA S.A.

Well : LO16 - 26

Field : Lobitos Off-shore

Date : 08/18-19/2002

HORAS	DTIME	Pressure (psi)	Temp (°F)
05:34:38	8.1667	1671.91	105.34
05:40:38	8.2667	1670.94	105.32
05:46:38	8.3667	1669.96	105.3
05:53:38	8.4833	1668.84	105.27
05:59:38	8.5833	1667.85	105.26
06:05:38	8.6833	1666.86	105.24
06:11:38	8.7833	1665.98	105.17
06:17:38	8.8833	1664.83	105.03
06:18:38	8.9	1656.03	105
06:19:38	8.9167	1629.52	104.96
06:20:38	8.9333	1602.8	105.24
06:21:38	8.95	1574.72	104.9
06:24:38	9	1492.83	104.86
06:28:38	9.0667	1389.29	104.42
06:32:38	9.1333	1279.47	104.39
06:35:38	9.1833	1195.01	105.02
06:39:38	9.25	1077.91	104.25
06:42:38	9.3	986.45	102.1
06:45:38	9.35	890.47	99.25
06:48:38	9.4	793.4	96.85
06:51:38	9.45	689.87	95.05
06:54:38	9.5	580.33	92.5
06:56:38	9.5333	490.18	91.47
06:58:38	9.5667	372.99	90.09
07:00:38	9.6	241.41	88.73
07:01:38	9.6167	168.23	88.21
07:02:38	9.6333	99.18	87.32
07:03:38	9.65	36.85	86.09
07:04:38	9.6667	17.86	84.19
07:07:38	9.7167	14.5	79.45
07:08:38	9.7333	14.5	78.15
07:09:38	9.75	14.5	77.27
07:10:38	9.7667	14.5	76.11
07:11:38	9.7833	14.5	75.32
07:12:38	9.8	14.5	74.73
07:13:38	9.8167	14.5	73.71
07:15:38	9.85	14.5	72.45
07:16:38	9.8667	14.5	71.89