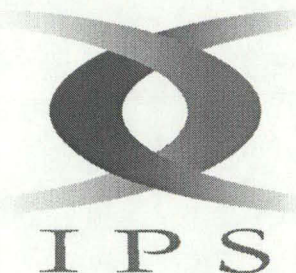


box 149 or 150

INTEGRATED PRODUCTION SERVICES



Project Management & Engineering

ACOUSTIC PRESSURE SURVEY (BUILD-UP)

PARAMOUNT RESOURCES LTD.

PARA ET AL FORT LIARD N-01

N-01

FIELD: LAIRD

FORMATION: FANTASQ

TEST DATES: JUNE - JULY 2003

(Analysis Supplied By: NR-Tec Ltd.)

DISTRIBUTION:

PAT KELLY, Calgary, AB.

IPS PROJECT MANAGER:

Radu Georgescu

PREPARED BY:

Sean Chakowski

DATE:

2003-08-11 (revised)

Project Management & Engineering, A Division of Integrated Production Services
Property Management Production Optimization Exploitation / Engineering Services Pressure Transient Analysis
1000, 840 - 7th Avenue S. W. Calgary, Alberta T2P 3G2 Tel: (403) 266-0909 Fax: (403) 269-4136
Website: www.ipsadvantage.com

PARAMOUNT RESOURCES LTD.
ACOUSTIC PRESSURE SURVEY (BUILD-UP)
PARA ET AL FORT LIARD N-01
N-01
FIELD: LAIRD
POOL: FANTASQ
JUNE - JULY 2003

TEST SUMMARY:

- ♦ An IPS FL-1 was installed into the casing and the tubing on 2003-06-27 at 07:55 hours. The fluid level was at 1432.6 meters (150.8 joints).
- ♦ The well was shut-in on 2003-06-27 at 08:00 hours to start the build-up.
- ♦ The build-up test was concluded on 2003-07-05 at 10:00 hours.
- ♦ A final bottomhole pressure of 11846 kPa (absolute) was calculated at the mid-point of the producing interval (1455.6 - 1469 m) after 194.0 hours of shut-in.
- ♦ The rate of change in pressure during the last 8.0 hours of shut-in (0.1 kPa/hr) is less than 2 kPa/hour.

PRESSURE DATA CALCULATIONS:

- ♦ The bottomhole pressures were calculated using the following information:

Atmospheric Pressure	93.0 kPa
Formation Depth	1462.3 m KB
Water Gravity	0.988
Gas Gravity	0.617
Gas Production	134 e ³ m ³ /d
Bottomhole Temperature	60.0° C

ATTACHMENTS:
ACOUSTIC WELLSOUNDER PRESSURE SURVEY DATA
TYPE CURVE PRE-PLOT
BOTTOMHOLE PRESSURE VERSUS TIME
CASING PRESSURE VERSUS TIME
FLUID LEVEL VERSUS TIME
SURFACE TUBING PRESSURE VERSUS TIME



INTEGRATED PRODUCTION SERVICES

ACOUSTIC WELLSOUNDER PRESSURE SURVEY

COMPANY: **PARAMOUNT RESOURCES LTD.**
 FIELD: **LAIRD**
 POOL NAME: **FANTASQ**

WELL NAME: **PARA ET AL FORT LIARD N-01**
 LOCATION: **N-01**
 STATUS: **PRODUCING GAS**

TUBING

TOTAL JOINTS = **186.609**
 TUBING BOTTOM = **1772.79** m KB
 AVG. JOINT LENGTH = **9.500** m

PRODUCTION

OIL RATE = **0.00** m³/d
 WATER RATE = **0.00** m³/d
 GAS RATE = **134.00** E³m³/d

FLUID PROPERTIES

GAS GRAVITY = **0.617**
 WATER GRAVITY = **0.988**

ELEVATIONS

KELLY BUSHING (K.B.) = **0.00** m
 =
 =

TEMPERATURES

SURFACE TEMP. = **0.00** °C
 RESERVOIR TEMP. = **60.00** °C

PRODUCING INTERVAL

TOP OF INTERVAL = **1455.60** m KB
 BOTTOM OF INTERVAL = **1469.00** m KB
 MID-POINT = **1462.30** m KB

KB and ground level were not known.

WELL WAS SHUT-IN ON 2003-JUN-27 AT 08:00:53

SHOT #	SHOT DATE AND TIME	TEST TIME (hours)	JOINTS TO FLUID	GAS	COL HT. (m) OIL	WATER	GAS GRADIENT (kPa/m) OIL	WATER	CSG. (kPa)	GAS (kPa)	PRESSURE OIL (kPa)	WATER (kPa)	MPP (kPa)
1	03-06-27 08:00:53	0.000	150.80	1432.6	-	29.7	0.203	-	9.559	2592.7	290.4	-	3167.0
2	03-06-27 08:01:58	0.018	150.80	1432.6	-	29.7	0.246	-	9.561	3106.7	352.4	-	3743.0
3	03-06-27 08:03:11	0.038	150.80	1432.6	-	29.7	0.291	-	9.563	3634.4	417.5	-	4335.9
4	03-06-27 08:04:08	0.054	150.80	1432.6	-	29.7	0.326	-	9.565	4022.8	466.6	-	4773.5
5	03-06-27 08:05:06	0.070	150.80	1432.6	-	29.7	0.359	-	9.567	4399.3	514.9	-	5198.3
6	03-06-27 08:06:20	0.091	150.80	1432.6	-	29.7	0.401	-	9.569	4857.9	575.0	-	5717.0
7	03-06-27 08:06:58	0.101	150.80	1432.6	-	29.7	0.422	-	9.570	5079.8	604.5	-	5968.5
8	03-06-27 08:07:34	0.111	150.80	1432.6	-	29.7	0.441	-	9.571	5286.4	632.2	-	6202.8
9	03-06-27 08:08:37	0.129	150.80	1432.6	-	29.7	0.475	-	9.572	5640.9	680.3	-	6605.5
10	03-06-27 08:09:42	0.147	150.80	1432.6	-	29.7	0.507	-	9.574	5973.0	726.1	-	6983.4
11	03-06-27 08:10:18	0.157	150.80	1432.6	-	29.7	0.524	-	9.575	6152.7	751.1	-	7188.2
12	03-06-27 08:11:34	0.178	150.80	1432.6	-	29.7	0.559	-	9.576	6510.5	801.5	-	7596.4
13	03-06-27 08:12:10	0.188	150.80	1432.6	-	29.7	0.575	-	9.577	6670.5	824.3	-	7779.2
14	03-06-27 08:13:06	0.204	150.80	1432.6	-	29.7	0.599	-	9.578	6909.4	858.5	-	8052.3
15	03-06-27 08:13:42	0.214	150.80	1432.6	-	29.7	0.614	-	9.579	7059.5	880.1	-	8224.2
16	03-06-27 08:14:28	0.226	150.80	1432.6	-	29.7	0.632	-	9.580	7237.1	905.9	-	8427.5
17	03-06-27 08:15:17	0.240	150.80	1432.6	-	29.7	0.651	-	9.581	7424.5	933.2	-	8642.3
18	03-06-27 08:16:05	0.253	150.80	1432.6	-	29.7	0.669	-	9.582	7593.8	958.1	-	8836.4
19	03-06-27 08:17:14	0.273	150.80	1432.6	-	29.7	0.692	-	9.583	7820.6	991.6	-	9096.8
20	03-06-27 08:18:14	0.289	150.80	1432.6	-	29.7	0.711	-	9.583	8002.5	1018.6	-	9305.8
21	03-06-27 08:19:02	0.303	150.80	1432.6	-	29.7	0.726	-	9.584	8141.7	1039.4	-	9465.8
22	03-06-27 08:19:52	0.316	150.80	1432.6	-	29.7	0.740	-	9.585	8276.5	1059.6	-	9620.8
23	03-06-27 08:21:08	0.338	150.80	1432.6	-	29.7	0.759	-	9.586	8465.0	1087.9	-	9837.6
24	03-06-27 08:21:58	0.351	150.80	1432.6	-	29.7	0.771	-	9.586	8579.0	1105.1	-	9968.8
25	03-06-27 08:22:34	0.361	150.80	1432.6	-	29.7	0.780	-	9.586	8657.3	1117.0	-	10059.0
26	03-06-27 08:23:11	0.372	150.80	1432.6	-	29.7	0.787	-	9.587	8730.8	1128.1	-	10143.6
27	03-06-27 08:24:11	0.388	150.80	1432.6	-	29.7	0.799	-	9.587	8844.2	1145.3	-	10274.3
28	03-06-27 08:24:47	0.398	150.80	1432.6	-	29.7	0.806	-	9.588	8909.9	1155.3	-	10350.0
29	03-06-27 08:25:35	0.412	150.80	1432.6	-	29.7	0.815	-	9.588	8987.2	1167.1	-	10439.0
30	03-06-27 08:26:10	0.421	150.80	1432.6	-	29.7	0.821	-	9.588	9042.5	1175.5	-	10502.8
31	03-06-27 08:27:09	0.438	150.80	1432.6	-	29.7	0.830	-	9.589	9130.2	1188.9	-	10603.9
32	03-06-27 08:27:57	0.451	150.80	1432.6	-	29.7	0.837	-	9.589	9196.0	1198.9	-	10679.7
33	03-06-27 08:28:53	0.467	150.80	1432.6	-	29.7	0.844	-	9.589	9265.5	1209.6	-	10759.9
34	03-06-27 08:29:48	0.482	150.80	1432.6	-	29.7	0.851	-	9.590	9327.5	1219.1	-	10831.3

TEST DATES: JUNE - JULY 2003

N-01

SHOT #	SHOT DATE AND TIME	TEST TIME (hours)	JOINTS TO FLUID	GAS	COL HT. (m) OIL	WATER	GAS	GRADIENT (kPa/m) OIL	WATER	CSG. (kPa)	GAS (kPa)	PRESSURE OIL (kPa)	WATER (kPa)	MPP (kPa)
35	03-06-27 08:30:25	0.492	150.80	1432.6	-	29.7	0.855	-	9.590	9365.8	1224.9	-	284.8	10875.6
36	03-06-27 08:31:22	0.508	150.80	1432.6	-	29.7	0.861	-	9.590	9421.2	1233.4	-	284.8	10939.4
37	03-06-27 08:32:21	0.524	150.80	1432.6	-	29.7	0.866	-	9.590	9471.0	1241.1	-	284.8	10996.9
38	03-06-27 08:33:18	0.540	150.80	1432.6	-	29.7	0.871	-	9.590	9516.5	1248.1	-	284.8	11049.4
39	03-06-27 08:34:23	0.558	150.80	1432.6	-	29.7	0.876	-	9.591	9558.7	1254.5	-	284.8	11098.1
40	03-06-27 08:35:34	0.578	150.80	1432.6	-	29.7	0.880	-	9.591	9599.8	1260.8	-	284.9	11145.5
41	03-06-27 08:36:47	0.598	150.80	1432.6	-	29.7	0.884	-	9.591	9637.0	1266.6	-	284.9	11188.5
42	03-06-27 08:37:22	0.608	150.80	1432.6	-	29.7	0.888	-	9.591	9651.8	1268.8	-	284.9	11205.5
43	03-06-27 08:38:34	0.628	150.80	1432.6	-	29.7	0.889	-	9.591	9680.9	1273.3	-	284.9	11239.1
44	03-06-27 08:39:10	0.638	150.80	1432.6	-	29.7	0.890	-	9.591	9692.9	1275.2	-	284.9	11253.0
45	03-06-27 08:39:59	0.652	150.80	1432.6	-	29.7	0.892	-	9.591	9710.5	1277.9	-	284.9	11273.2
46	03-06-27 08:41:15	0.673	150.80	1432.6	-	29.7	0.894	-	9.591	9731.3	1281.1	-	284.9	11297.2
47	03-06-27 08:42:10	0.688	150.80	1432.6	-	29.7	0.896	-	9.592	9743.9	1283.0	-	284.9	11311.8
48	03-06-27 08:43:05	0.703	150.80	1432.6	-	29.7	0.897	-	9.592	9756.0	1284.9	-	284.9	11325.7
49	03-06-27 08:43:42	0.714	150.80	1432.6	-	29.7	0.897	-	9.592	9761.4	1285.7	-	284.9	11332.0
50	03-06-27 08:44:51	0.733	150.80	1432.6	-	29.7	0.899	-	9.592	9771.8	1287.3	-	284.9	11344.0
51	03-06-27 08:45:46	0.748	150.80	1432.6	-	29.7	0.899	-	9.592	9779.0	1288.4	-	284.9	11352.2
52	03-06-27 08:47:02	0.769	150.80	1432.6	-	29.7	0.900	-	9.592	9785.5	1289.4	-	284.9	11359.8
53	03-06-27 08:47:52	0.783	150.80	1432.6	-	29.7	0.901	-	9.592	9791.0	1290.3	-	284.9	11366.2
54	03-06-27 08:48:38	0.796	150.80	1432.6	-	29.7	0.901	-	9.592	9792.1	1290.4	-	284.9	11367.4
55	03-06-27 08:49:14	0.806	150.80	1432.6	-	29.7	0.901	-	9.592	9794.8	1290.8	-	284.9	11370.6
56	03-06-27 08:50:11	0.822	150.80	1432.6	-	29.7	0.901	-	9.592	9797.6	1291.3	-	284.9	11373.7
57	03-06-27 08:50:47	0.832	150.80	1432.6	-	29.7	0.902	-	9.592	9800.9	1291.8	-	284.9	11377.5
58	03-06-27 08:51:56	0.851	150.80	1432.6	-	29.7	0.902	-	9.592	9803.1	1292.1	-	284.9	11380.1
59	03-06-27 08:53:05	0.870	150.80	1432.6	-	29.7	0.902	-	9.592	9806.4	1292.6	-	284.9	11383.9
60	03-06-27 08:53:41	0.880	150.80	1432.6	-	29.7	0.902	-	9.592	9806.4	1292.6	-	284.9	11383.9
61	03-06-27 08:54:49	0.899	150.80	1432.6	-	29.7	0.902	-	9.592	9808.0	1292.9	-	284.9	11385.8
62	03-06-27 08:56:00	0.919	150.80	1432.6	-	29.7	0.903	-	9.592	9812.4	1293.6	-	284.9	11390.8
63	03-06-27 08:56:57	0.934	150.80	1432.6	-	29.7	0.903	-	9.592	9813.5	1293.7	-	284.9	11392.1
64	03-06-27 08:57:54	0.950	150.80	1432.6	-	29.7	0.903	-	9.592	9812.9	1293.6	-	284.9	11391.5
65	03-06-27 09:10:08	1.154	150.80	1432.6	-	29.7	0.007	-	9.547	93.0	9.8	-	283.6	386.4
66	03-06-27 14:00:13	5.989	150.80	1432.6	-	29.7	0.907	-	9.592	9854.6	1300.0	-	284.9	11439.5
67	03-06-27 18:00:13	9.989	150.80	1432.6	-	29.7	0.912	-	9.592	9895.7	1306.4	-	284.9	11487.0
68	03-06-27 22:00:13	13.989	150.80	1432.6	-	29.7	0.916	-	9.592	9934.6	1312.4	-	284.9	11531.9
69	03-06-28 02:00:13	17.989	150.80	1432.6	-	29.7	0.921	-	9.593	9977.3	1319.0	-	284.9	11581.2
70	03-06-28 06:00:13	21.989	150.80	1432.6	-	29.7	0.925	-	9.593	10017.9	1325.2	-	284.9	11628.0
71	03-06-28 10:00:13	25.989	150.80	1432.6	-	29.7	0.930	-	9.593	10065.5	1332.6	-	284.9	11683.0
72	03-06-28 14:00:13	29.989	150.80	1432.6	-	29.7	0.935	-	9.593	10112.7	1339.8	-	284.9	11737.4
73	03-06-28 18:00:13	33.989	150.80	1432.6	-	29.7	0.940	-	9.593	10152.7	1346.0	-	284.9	11783.6
74	03-06-28 22:00:13	37.989	150.80	1432.6	-	29.7	0.943	-	9.594	10180.1	1350.2	-	284.9	11815.2
75	03-06-29 02:00:13	41.989	150.80	1432.6	-	29.7	0.943	-	9.594	10182.8	1350.7	-	284.9	11818.4
76	03-06-29 06:00:13	45.989	150.80	1432.6	-	29.7	0.943	-	9.594	10182.8	1350.7	-	284.9	11818.4
77	03-06-29 10:00:13	49.989	150.80	1432.6	-	29.7	0.943	-	9.594	10185.5	1351.1	-	284.9	11821.6
78	03-06-29 14:00:13	53.989	150.80	1432.6	-	29.7	0.943	-	9.594	10186.1	1351.2	-	284.9	11822.2
79	03-06-29 18:00:13	57.989	150.80	1432.6	-	29.7	0.943	-	9.594	10187.7	1351.4	-	284.9	11824.1
80	03-06-29 22:00:13	61.989	150.80	1432.6	-	29.7	0.943	-	9.594	10188.3	1351.5	-	284.9	11824.7
81	03-06-30 02:00:13	65.989	150.80	1432.6	-	29.7	0.944	-	9.594	10189.9	1351.8	-	284.9	11826.6
82	03-06-30 06:00:13	69.989	150.80	1432.6	-	29.7	0.944	-	9.594	10189.4	1351.7	-	284.9	11826.0
83	03-06-30 10:00:13	73.989	150.80	1432.6	-	29.7	0.944	-	9.594	10190.5	1351.8	-	284.9	11827.2
84	03-06-30 14:00:13	77.989	150.80	1432.6	-	29.7	0.944	-	9.594	10189.9	1351.8	-	284.9	11826.6
85	03-06-30 18:00:13	81.989	150.80	1432.6	-	29.7	0.944	-	9.594	10193.8	1352.3	-	284.9	11831.0
86	03-06-30 22:00:13	85.989	150.80	1432.6	-	29.7	0.944	-	9.594	10196.5	1352.8	-	284.9	11834.2
87	03-07-01 02:00:13	89.989	150.80	1432.6	-	29.7	0.944	-	9.594	10194.8	1352.5	-	284.9	11832.3
88	03-07-01 06:00:13	93.989	150.80	1432.6	-	29.7	0.944	-	9.594	10194.3	1352.4	-	284.9	11831.7
89	03-07-01 10:00:13	97.989	150.80	1432.6	-	29.7	0.944	-	9.594	10195.4	1352.6	-	284.9	11832.9
90	03-07-01 14:00:13	101.989	150.80	1432.6	-	29.7	0.944	-	9.594	10196.0	1352.7	-	284.9	11833.6
91	03-07-01 18:00:13	105.989	150.80	1432.6	-	29.7	0.944	-	9.594	10198.1	1353.0	-	284.9	11836.1
92	03-07-01 22:00:13	109.989	150.80	1432.6	-	29.7	0.944	-	9.594	10198.1	1353.0	-	284.9	11836.1
93	03-07-02 02:00:13	113.989	150.80	1432.6	-	29.7	0.944	-	9.594	10198.1	1353.0	-	284.9	11836.1
94	03-07-02 06:00:13	117.989	150.80	1432.6	-	29.7	0.944	-	9.594	10197.0	1352.9	-	284.9	11834.8
95	03-07-02 10:00:13	121.989	150.80	1432.6	-	29.7	0.944	-	9.594	10197.6	1352.9	-	284.9	11835.5
96	03-07-02 14:00:13	125.989	150.80	1432.6	-	29.7	0.945	-	9.594	10200.9	1353.4	-	284.9	11839.3

TEST DATES: JUNE - JULY 2003

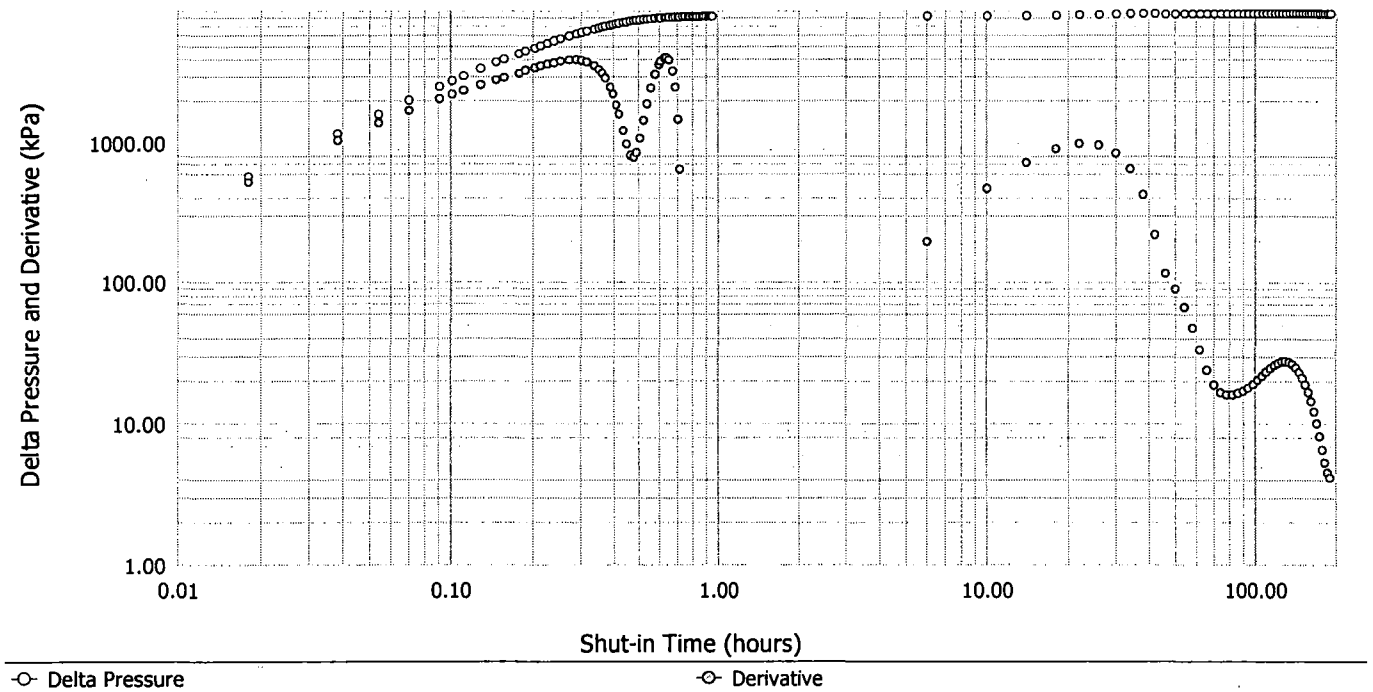
N-01

SHOT #	SHOT DATE AND TIME	TEST TIME (hours)	JOINTS TO FLUID	COL HT. (m)			GRADIENT (kPa/m)			CSG. (kPa)	GAS (kPa)	PRESSURE OIL (kPa)	WATER (kPa)	MPP (kPa)
				GAS	OIL	WATER	GAS	OIL	WATER					
97	03-07-02 18:00:13	129.989	150.80	1432.6	-	29.7	0.945	-	9.594	10200.3	1353.4	-	284.9	11838.6
98	03-07-02 22:00:13	133.989	150.80	1432.6	-	29.7	0.945	-	9.594	10204.7	1354.0	-	284.9	11843.7
99	03-07-03 02:00:13	137.989	150.80	1432.6	-	29.7	0.945	-	9.594	10201.4	1353.5	-	284.9	11839.9
100	03-07-03 06:00:13	141.989	150.80	1432.6	-	29.7	0.945	-	9.594	10202.0	1353.6	-	284.9	11840.5
101	03-07-03 10:00:13	145.989	150.80	1432.6	-	29.7	0.945	-	9.594	10202.5	1353.7	-	284.9	11841.2
102	03-07-03 14:00:13	149.989	150.80	1432.6	-	29.7	0.945	-	9.594	10203.1	1353.8	-	284.9	11841.8
103	03-07-03 18:00:13	153.989	150.80	1432.6	-	29.7	0.945	-	9.594	10205.8	1354.2	-	284.9	11845.0
104	03-07-03 22:00:13	157.989	150.80	1432.6	-	29.7	0.946	-	9.594	10209.1	1354.7	-	284.9	11848.8
105	03-07-04 02:00:13	161.989	150.80	1432.6	-	29.7	0.945	-	9.594	10204.7	1354.0	-	284.9	11843.7
106	03-07-04 06:00:13	165.989	150.80	1432.6	-	29.7	0.945	-	9.594	10204.7	1354.0	-	284.9	11843.7
107	03-07-04 10:00:13	169.989	150.80	1432.6	-	29.7	0.945	-	9.594	10204.2	1354.0	-	284.9	11843.1
108	03-07-04 14:00:13	173.989	150.80	1432.6	-	29.7	0.945	-	9.594	10204.7	1354.0	-	284.9	11843.7
109	03-07-04 18:00:13	177.989	150.80	1432.6	-	29.7	0.946	-	9.594	10208.5	1354.6	-	284.9	11848.1
110	03-07-04 22:00:13	181.989	150.80	1432.6	-	29.7	0.945	-	9.594	10207.5	1354.5	-	284.9	11846.9
111	03-07-05 02:00:13	185.989	150.80	1432.6	-	29.7	0.945	-	9.594	10206.9	1354.4	-	284.9	11846.2
112	03-07-05 06:00:13	189.989	150.80	1432.6	-	29.7	0.945	-	9.594	10206.4	1354.3	-	284.9	11845.6
113	03-07-05 10:00:13	193.989	150.80	1432.6	-	29.7	0.945	-	9.594	10206.4	1354.3	-	284.9	11845.6

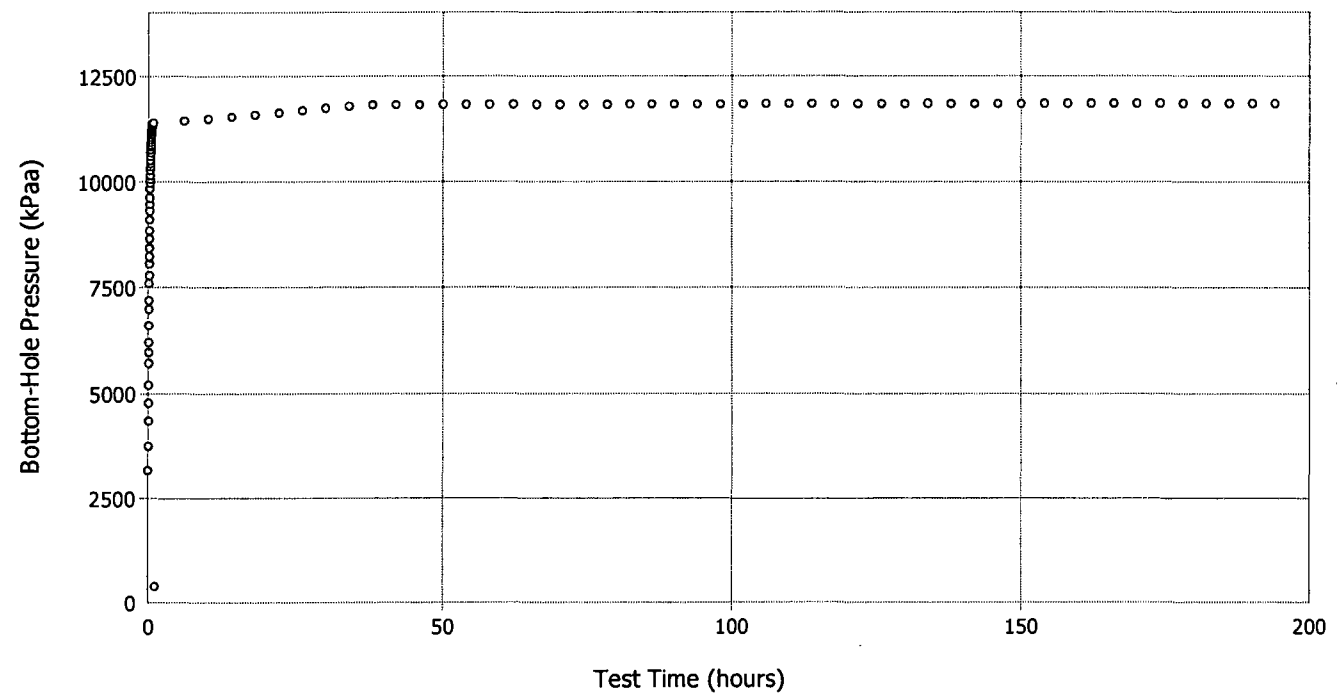


PARA ET AL FORT LIARD N-01

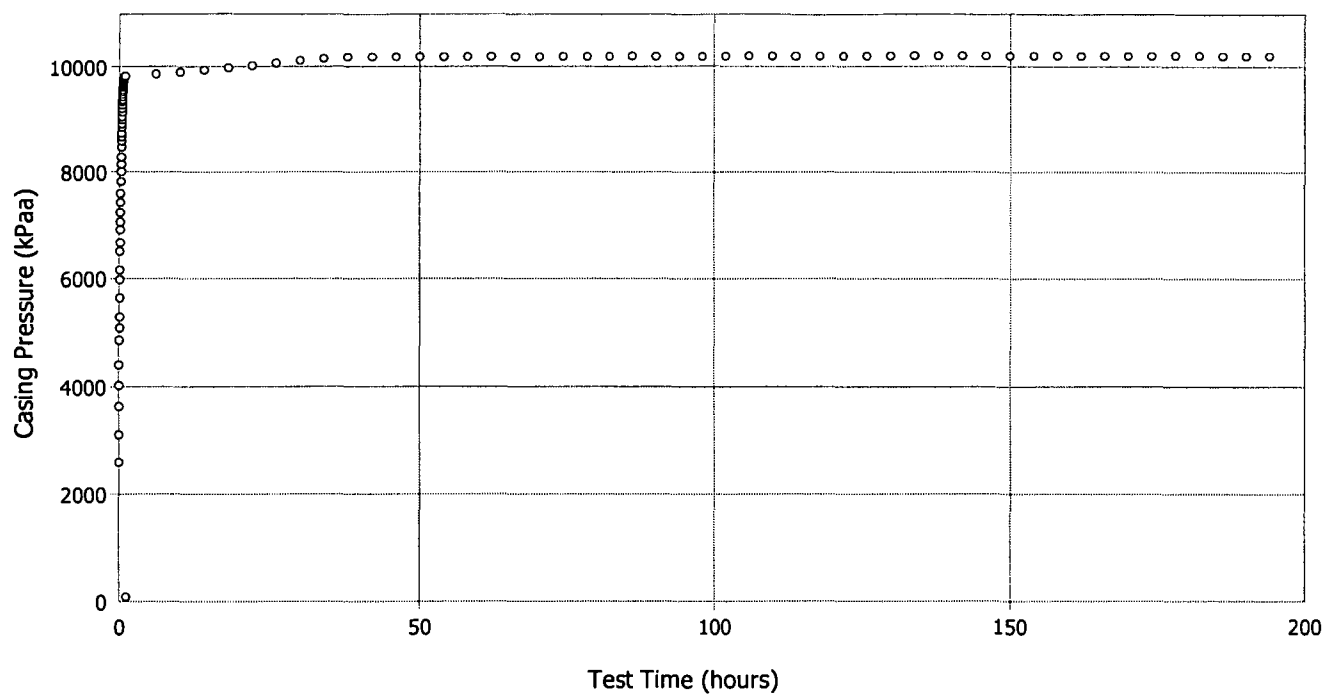
Diagnostic Log-Log Plot



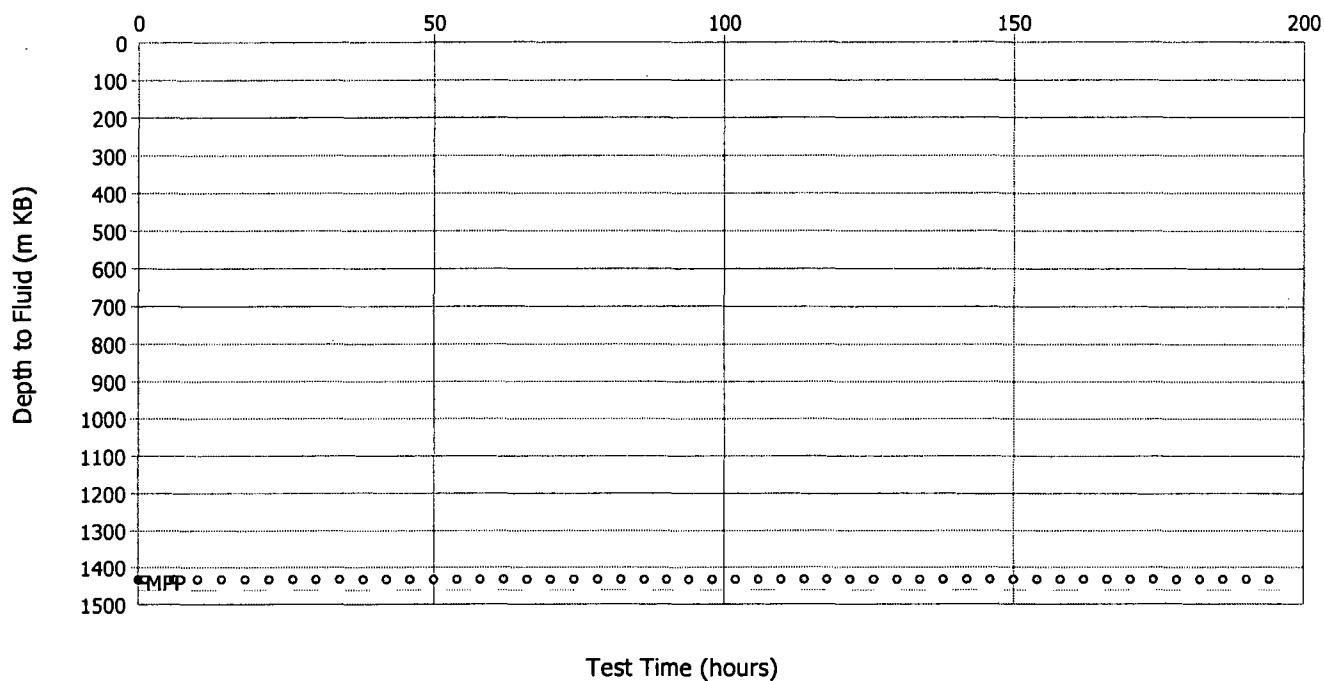
Bottom-Hole Pressures vs. Time



Casing Pressure vs. Time



Fluid Level vs. Time



PARAMOUNT RESOURCES LTD.

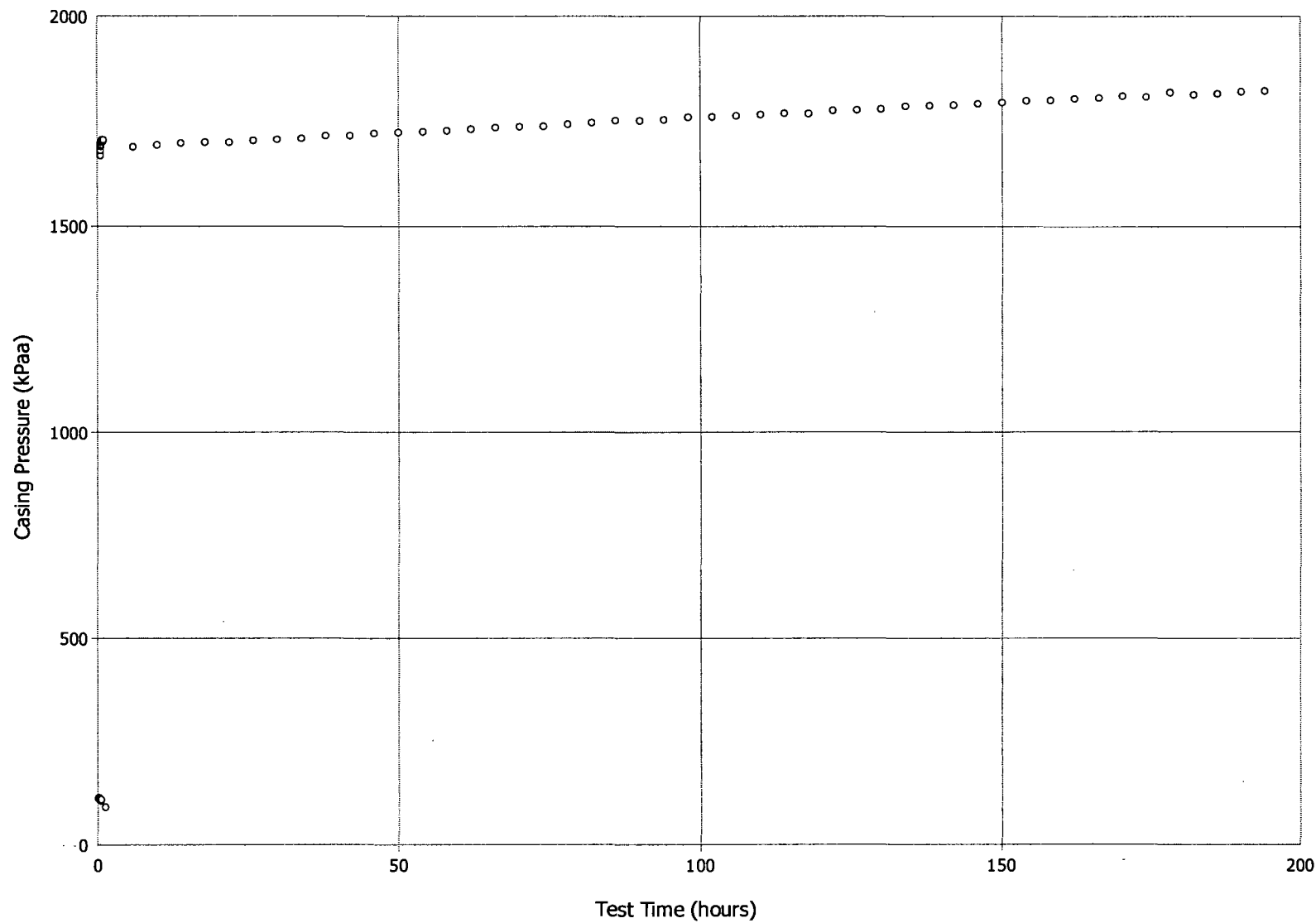
N-01

LAIRD

FANTASQ

TEST DATES: JUNE - JULY 2003

Surface Tubing Pressure vs. Time



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