Marathon Petroleum Company (Norway)

FINAL GEOLOGICAL REPORT

Wells
24/6 – 3,
24/6 – 4,
&
24/6 – 4T2
Boa

Marathon Petroleum Company (Norway)

August, 2003

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1. Summary

General Well Data 24/6-3

Well Name:	**24/6-3 Boa**
License:	PL088BS
Partner Group:	65% Marathon Petroleum Company (Norway) 20% Norsk Conoco 15% DNO
Location:	West of Heimdal, Norwegian CS
Surface Location:	
Latitude:	59º 34' 44.6570" N
Longitude:	001º 54' 46.3137" E
UTM mE:	438607.91
UTM mN:	6605190.49
Source:	Thales GeoSolutions, Final Position Fix – Differential GPS
Bottom Hole Location:	
Latitude:	59º 34' 44.6730" N
Longitude:	001º 54' 47.3143" E
UTM mE:	438607.93
UTM mN:	6605190.99
Source:	Halliburton Sperry-Sun MWD surveys
UTM Coordinates:	Datum = ED50, Projection = Zone 31N, CM = 3° E
Water Depth:	121.3m
RT Elevation:	23.0m
Total Depth	Driller: 253m MD -230m TVDSS
Formation at TD:	Undifferentiated Quaternary/Tertiary.
On location:	06:00, 18th April 2003
Spud:	20:30, 18th April 2003
TD:	23:00, 20th April 2003
Operations Completed:	24:00, 21st April 2003
Moved off location (to revised surface location for respud):	02:00, 22nd April 2003
Status:	Abandoned for mechanical reasons and re-spudded as 24/6-4

General Well Data 24/6-4 and 24/6-4T2

Well Name:	**24/6-4 Boa**
Surface Location:	
Latitude:	59º 34' 44.7020" N
Longitude:	001º 54' 46.0834" E
UTM mE:	438588.63
UTM mN:	6605192.20
Source:	Thales GeoSolutions, Final Position Fix – Differential GPS

Well Name:	**24/6-4 Boa**
Bottom Hole Location:	
Latitude:	59º 34' 44.7139" N
Longitude:	001º 54' 45.9296" E
UTM mE:	438586.22
UTM mN:	6605192.61
Source:	Halliburton Sperry-Sun MWD surveys
Water Depth:	121.0m
RT Elevation:	23.0m
Total Depth	Driller: 1345m MD -1322.0m TVDSS
Formation at TD:	Undifferentiated Hordaland Group Claystones.
On location:	02:00, 22nd April 2003
Spud:	10:00, 22nd April 2003
TD:	1345m
Plugged back:	04:00, 11th May 2003
Sidetracked as 24/6-4T2:	08:30, 12th May 2003
Well Name:	**24/6-4T2 Boa**
Bottom Hole Location:	
Latitude:	59º 34' 46.0796" N
Longitude:	001º 54' 49.9935" E
UTM mE:	438650.67
UTM mN:	6605233.81
Source:	Halliburton Sperry-Sun MWD surveys
UTM Coordinates:	Datum = ED50, Projection = Zone 31N, CM = 3° E
Sidetrack Depth:	Driller: 1010m MD -987.0m TVDSS
Formation at Sidetrack Depth:	Undifferentiated Hordaland Group Claystones.
Total Depth:	Driller: 2325m MD -2295.8m TVDSS
	Logger: 2305m MD -2275.8m TVDSS
Formation at TD:	Upper Paleocene, Heimdal Sandstone.
Reached TD:	21:30, 18th May 2003
Operations Completed:	23:30, 1st June 2003
Moved off location:	20:30, 2nd June 2003
Status:	Plugged and Abandoned Oil and Gas Discovery

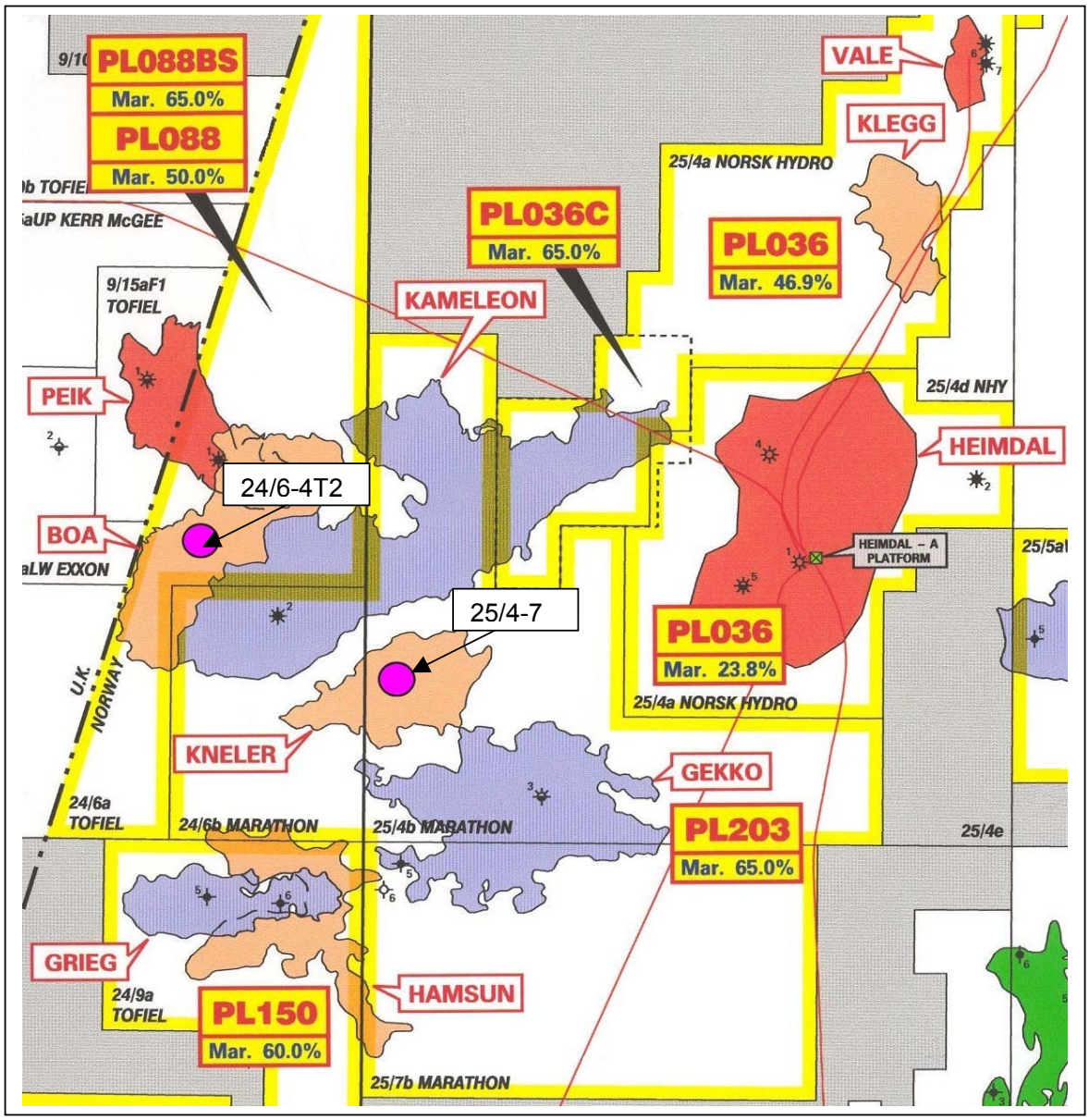
Drilling Data

Drilling Contractor:	Odfjell Drilling
Rig:	Deepsea Bergen
AFE /SAP WBS Number:	DE.02.07911.CAP.DRL

Well Objective

Well 24/6-4T2 Boa (originally spudded as 24/6-3) was designed as a delineation well on the northern side of the greater Kameleon structure, called the Boa culmination (Figure 1). The Kameleon field (discovered by well 24/6-2 in 1998) lies on the greater Kameleon structure which has an irregular 4-way dip closure. The greater Kameleon structure can be subdivided into three regions – Kameleon, Boa and East Kameleon – each with its own structural culmination. Initial field interpretation was that the three culminations are parts of a continuous hydrocarbon reservoir with oil/water and gas/oil contacts common across the field. The Boa delineation well was designed with multiple objectives: to verify the field wide extent of fluid and gas contacts, eliminate geologic risk associated with the Boa structure, provide additional time-depth control, provide the opportunity to obtain gas, oil and water samples and to test local stratigraphic control of the T57 shale horizon.

Figure 1 – Location Map



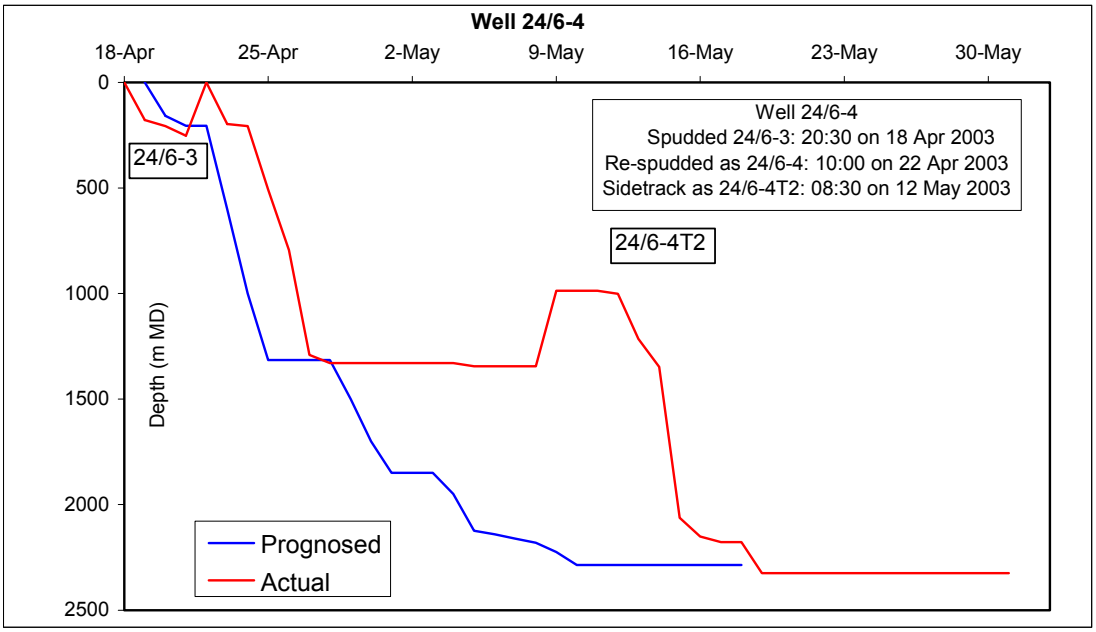
2. Drilling and Engineering Summary

Taken as a whole, wells 24/6-3, 24/6-4 and 24/6-4T2 Boa took a total of 45.73 days to drill, evaluate and temporarily abandon. Well 24/6-3 spudded at 20:30 hrs on 18th April 2003, was abandoned at 253m MD for mechanical reasons and respudded as 24/6-4 approximately 20m west of the original location at 10:00 on 22nd April 2003. For mechanical reasons this wellbore was plugged back to the $9^5/_8$" shoe and sidetracked from 1010m MD at 21:30 on 18th May 2003. This sidetrack was drilled to TD at 2325m MD and upon completion of openhole evaluation logs, the well was plugged and abandoned as a gas and oil discovery. Drilling operations are summarized below or in the drilling End of Well Report. A progress plot is presented below in Figure 2.

Table 1 – 24/6-4T2 Boa Chronological Drilling Data

Date	Days Since Spud	06:00 Depth (m)	Daily Progress (m)	Operation
19 Apr	0.4	178	34	Rig on location, run anchors, spud 24/6-3 at 20:30 18th Apr, drill 36" hole to 178m.
20 Apr	1.4	207	29	Drill 36" hole to 207m, wiper trip, POOH, run20"x30" conductor, run CART.
21 Apr	2.4	253	46	Set conductor at 204.8m, RIH 17½" BHA & drill 17½" hole to 253m, pipe stuck.
22 Apr	3.4	253	-	Backed-off string, TOF 186.6m, POOH, skid rig ~20m west, prepare to respud.
23 Apr	0.8	197	53	RIH, tag seabed, spud 24/6-4 at 10:00 22nd Apr, drill 36" hole to 197m.
24 Apr	1.8	207	10	Drill 36" hole to 207m, run/cement 20"x30" conductor at 205m, M/U 17½" BHA.
25 Apr	2.8	507	300	RIH 17½" BHA, drilled cement and formation to 507m.
26 Apr	3.8	494	794	Drilled 17½" hole to 768m, POOH, replaced MWD, drilled to 17½" hole to 794m.
27 Apr	4.8	1291	797	Drilled 17½" hole to 1291m backreaming each stand.
28 Apr	5.8	1329	38	Drilled 17½" hole to 1329m, POOH, performed wiper trip working tight spots.
29 Apr	6.8	1329	-	RIH $13^3/_8$" casing unable to pass 762m, unable to circulate, monitored casing.
30 Apr	7.8	1329	-	Attempted for re-establish circulation and free casing, cut casing 8m below RT.
1 May	8.8	1329	-	Ran casing spear and cutter, cut casing at 199m, pulled casing to deck.
2 May	9.8	1329	-	M/U casing patch, RIH, worked patch over fish, released wellhead running tool.
3 May	10.8	1329	-	Ran and landed BOPs, installed diverter and equipment.
4 May	11.8	1329	-	P/U 12¼" BHA, RIH, tagged shoe at 760m, wash down to 1306m w/ seawater.
5 May	12.8	1345	16	Drilled 12¼" hole to 1345m, displace hole to mud, POOH, R/U $9^5/_8$" casing.
6 May	13.8	1345	-	Run $9^5/_8$" casing, unable to pass 997m, land $9^5/_8$" casing and cement at 987m.
7 May	14.8	1345	-	Tested BOPs and surface equipment, serviced rig, prepared for 8½" BHA.
8 May	15.8	1345	-	RIH, drilled cement in 8½" to 992m, performed LOT to 1.41sg, ream to 1250m.
9 May	16.8	1345	-	Washed to bottom, POOH, RIH 3½" cement stinger, set plug #1: 1137 - 887m.
10 May	17.8	1345	-	RIH w/8½" motor BHA, tagged firm cement at 1041m, POOH, RIH 3½ stinger.
11 May	18.8	1345	-	Set plug #2: 1041 - 887m, POOH, RIH 3½" stinger, set plug #3: 1002 - 787m.
12 May	19.8	1001	14	RIH 8½" motor BHA, drill cement to 984m, displace to OBM, time drill to 1001m.
13 May	20.8	1215	214	Kicked-off 24/6-4T2 at 08:30 12th May 2003 at 1010m, drilled 8½" hole to 1215m.
14 May	21.8	1347	132	Directionally drilled 8½" hole to 1340m, POOH for MWD, drilled to 1347m.
15 May	22.8	2062	715	Directionally drilled 8½" hole to 2062m.
16 May	23.8	2151	89	Directionally drilled to 2124m, POOH, RIH and cut core #1 2124m-2151m.
17 May	24.8	2178	27	POOH and recover core#1, RIH and cut core #2 2151m-2178m, POOH.
18 May	25.8	2178	-	Recovered core #2, M/U quad-combo LWD BHA, RIH logging from 1900m.
19 May	26.8	2325	147	LWD logged to 2178m, drilled to TD 2325m, logged repeat section, POOH.
20 May	27.8	2325	-	R/U wireline MDT string, unable to pass 1005m, RIH 8½" BHA for wiper trip.
21 May	28.8	2325	-	Reamed to bottom, POOH reaming at 1051-987m, tested BOPs.
22 May	29.8	2325	-	Tested BOPs, RIH w/line Pex/HNGS, unable to pass 1022m, RIH 7" casing.
23 May	30.8	2325	-	Set 7" casing at 1129m, unable to log w/line past 1212m, POOH logging.
24 May	31.8	2325	-	P/U 3½" DP, M/U 6" wiper trip BHA, RIH.
25 May	32.8	2325	-	Wash/ream 6" BHA to 2305m, CBU, POOH, RIH w/line MDT-GR, pretest survey.
26 May	33.8	2325	-	Take oil sample w/MDT at 2162m, POOH, RIH for second oil sample at 2162m.
27 May	34.8	2325	-	Log Pex/DSI/HNGS after troubleshooting DSI, Log VSI-GR, RIH&log DSI-GR.
28 May	35.8	2325	-	POOH, R/D Schlumberger, RIH 3½" stinger, abandonment plug#1 2304-2200m.
29 May	36.8	2200	-	POOH &L/D 7" liner, RIH, plug #2 w/problems at cement unit, plug #3.
30 May	37.8	833	-	Set plug#3 999-787m, RIH, tag TOC at 833m, RIH $9^5/_8$" cutting assembly.
31 May	38.8	225	-	Cut $9^5/_8$" casing at 399m, EZSV at 375m, plug at 375-225m, RIH $13^3/_8$" cutter
1 Jun	39.8	183	-	EZSV at 183m, P/U BOPs, pulled riser.
2 Jun	40.7	-	-	Pulled wellhead, skidded rig to 24/6-3 wellhead, pulled PGB, ROV survey.
Deballasted rig at 03:30 on 2nd June 2003, pulled anchors. WOW for anchor handling. Rig departed location at 20:30 2nd June 2003				

Figure 2 – Well Operations Progress Plot



Drilling Operations by Hole Section

36" Hole Section: 24/6-3

Well 24/6-3 Boa was spudded from seabed at 20:30 hrs on 18th April 2003 and was drilled to 207m with cuttings returned to seabed. The 30"/20" casing was run and cemented at 205m without incident.

17½" Hole Section: 24/6-3

Drilling of 17½" hole was abandoned at 253m MD when the BHA became stuck in hole. Despite repeated attempts to free-off the BHA, the drillstring was severed and the well temporarily abandoned for respud as 24/6-4 some 20m to the west of the original location. The well was permanently abandoned after drilling of 24/6-4T2 was completed.

36" Hole Section: 24/6-4

The well was respudded at 10:00 hrs on 22nd April 2003 and was drilled to 207m in one bit run with cuttings returned to seabed. A 30"/20" casing was run and cemented at 205m without incident.

17½" Hole Section: 24/6-4

This section of the well was drilled to 1329m in two bit runs with varying parameters and cuttings returns to seabed. The MWD tools stopped pulsing at 617m MD, despite repeated efforts to restart. Drilling continued to 768m without MWD before the well was displaced to 1.20sg bentonite mud and the BHA tripped. The MWD pulser was changed and the bit/BHA rerun. Tight spots were noted on running in and some reaming was required to return to bottom with approximately 2m of hole fill noted. Drilling continued to 1329m MD with only one incident noted; a sudden pressure drop from 200 to 160bars was recorded at 797m and was investigated. It was suspected a blown nozzle in the bit was the cause of the pressure drop. Upon reaching section TD, the well was displaced to 1.20sg low fluid loss mud and a wiper trip was made with tight areas reamed while running in hole to bottom. The well was again displaced to 1.20sg low fluid loss mud and a 10m3 pill of 1.90sg mud spotted on bottom before tripping for $13^3/_8$" casing. The $13^3/_8$" casing was run but became stuck at 762m while making a casing connection. After all attempts to work the casing free failed, the $13^3/_8$" was

cut at 199m and a patch run to enable it be hung off in the wellhead. The $13^3/_8$" shoe was at 760m MD and the casing was not cemented. A BOP stack and riser were run and tested without incident.

12¼" Hole Section: 24/6-4

The 12¼" section in well 24/6-4 was short and designed to clean-up the 17½" hole still exposed before a $9^5/_8$" casing could be run.. After running in hole with the BHA, the well was displaced to 1.20sg bentonite mud for drilling out the $13^3/_8$" shoe. The well was subsequently displaced to seawater in stages and the drilling assembly washed and reamed to 1329m MD. A short 16m section of 12¼" hole was drilled to 1345m MD, a 10m3 pill of 1.30sg KCl mud spotted in the 12¼" openhole and the assembly pulled. The $9^5/_8$" casing was run in, worked and washed past tight spots with KCl mud but it was not possible to pass 997m MD. The casing was landed with the shoe at 987m and cemented in place. An 8½" BHA was run and tagged cement at 951m, drilled out the shoe at 987m and tagged cement at 992m. An openhole FIT was attempted but the cement/formation broke down at 1.41sg EMW. The bit/BHA was washed down to tag bottom at 1344m with tight spots reamed and a significant volume of cuttings observed at the shakers. After POOH with the drilling assembly, a cement stinger was run and a total of 3 plugs set.

Sidetrack 8½" Hole Section: 24/6-4T2

This section was drilled to TD at 2325m in three bit and two coring runs. A kick-off motor BHA was run in and the well displaced to 1.25sg OBM. Time drilling off the cement plug was undertaken and the well was sidetracked at 1010m MD with over 50% formation returns noted below 1010m MD. An FIT to 1.44sg EMW was performed at 1050m MD. The well was drilled to 1340m, below the Grid Sands, where a trip was made because of difficulty in taking MWD surveys. A new bit and MWD tools were run and the well was directionally drilled to ensure entry of the Heimdal within the original 24/6-3 target. Coring point in the Heimdal target reservoir at 2124m was determined by cuttings and drilling parameter changes. A total of 54.65m of core was cut in the Heimdal formation with recovery of 99.3% and the core head, a Security DBS FC274Li, was graded 2-1-CT-A-D-I-PN-TD. Following operational difficulties with wireline logs passing below $13^3/_8$" casing in the 25/4-7 Kneler well, it was decided to run a quad combo suite of LWD logs to ensure basic data acquisition. The LWD suite – GR/EWR-4/SLD/CTN/BAT – wiper logged the section from 1900m MD to the base of the cored interval before drilling continued to TD at 2325m. The LWD density tool failed at 2197m MD but, as this was below the OWC it was decided to continue to TD without the data. A number of attempts were made to get wireline tools to TD and details of these are found in section 5, Wireline logging.

The first two attempts to run wireline tools were unsuccessful after the MDT tools could not be worked down past 1010m, despite reconfiguring the toolstring. A wiper trip was made to clean the hole below the casing shoe and kick-off point and cleaned out the hole to TD. During this wiper trip, the bit encountered tight spots and obstructions, especially at 1025m MD. After conducting BOP tests, a third attempt to run wireline tools – Pex/HNGS – was made but this too failed to pass 1022m. The openhole between this depth and 987m casing shoe was logged and the caliper indicated hole washed out to greater than 23" and ledges down to 10 – 11".

A 7" casing string was then run and landed with a guide base at 1129m MD to allow wireline tools access past the kick-off point. A further attempt to run wireline tools – Pex/HNGS/DSI – was made immediately after running the casing but the tools failed to pass 1212m MD and became temporarily stuck at that depth. After pulling free, the openhole interval was logged which indicated gauge hole to the base of the casing. The DSI/HNGS logged behind casing to seabed for correlation purposes. A wiper trip was made using 3½" drillpipe and 6" bit/BHA to clean out/condition the hole. Following the wiper trip, logs were acquired over the openhole section and upon completion of logging, the 7" casing string was recovered.

The well was plugged and abandoned, the BOPE was recovered and the wellhead covered with an overtrawlable structure. The rig deballasted and moved off location at 20:30 on 2nd June 2003.

Table 2 – Hole Size and Casing:

Hole Size	Depth (m)	Casing Size	Casing Grade, Weight, Thread Type	Shoe depth (m)
36”	207	30”/20”	X56, 309.7lb/ft (24/6-3)	204.8
36”	207	30”/20”	X56, 309.7lb/ft (24/6-4&4T2)	205
17½”	1329	$13^3/_8$”	L80, 72lb/ft (24/6-4&4T2)	760
12¼”	1344 [1]	$9^5/_8$”	L80, 47lb/ft (24/6-4&4T2)	987
8½”	2325 [2]			

1 A short section of 12¼” hole was drilled before attempting to run and set the $9^5/_8$” casing

2 A 7” casing was run to 1129m MD and retrieved after logging to enable wireline tools to pass the kick-off interval between 1010 and 1050m MD.

Deviation Surveys:

Well 24/6-3 Boa was designed as a vertical ‘Finder’ well and this philosophy was continued in the original 24/6-4 respudded well. However difficulties in getting $13^3/_8$” and $9^5/_8$” casing cemented required a sidetrack and directional drilling was undertaken. Surveys were taken using MWD services and the complete list of deviation surveys are presented in Appendix A.

3. Geological Summary

Formation Tops

The following table shows the formation tops and thicknesses as picked from wireline logs in 24/6-4T2 Boa and based on the definitive survey data. The tops are correct as of 20th July 2003.

Table 3 – Formation Tops.

AGE / GROUP FORMATION	DEPTH (m MD)	DEPTH (m TVDSS)	AVT (m)	UTM (mE)	UTM (mN)
Undifferentiated Late Tertiary Nordland Group					
Utsira	883.6	-860.5		438587.9	6605193.7
Lower to Middle Eocene Hordaland Group					
Grid Sands	1147.5	-1122.6	151.4	438595.3	6605208.9
Base Grid Sands	1301.4	-1274.0	-	438608.0	6605229.7
Rogaland Group					
Balder	1923.0	-1893.9	126.4	438639.8	6605238.7
Balder Tuff	1993.0	-1964.4	55.9	438641.1	6605237.8
Sele	2049.0	-2020.3	19.7	438642.3	6605234.6
Upper Paleocene	2067.8	-2038.7		438642.5	6605234.6
Lista	2069.5	-2040.0	54.1	438642.5	6605234.6
Heimdal Sandstone: Z1	2123.3	-2094.1	201.7+ 125.7	438646.1	6605234.3
Z2	2249.0	-2219.8	38.0	438647.8	6605234.2
Z3	2287.0	-2257.8	38.0	438648.0	6605234.2
T.D. (Driller) (Logger)	2325.0 2305.0	-2295.8 -2275.8	-	438650.8 438648.4	6605233.8 6605233.9
- SLM confirmation of drillers depth made before wireline logging. - Formation tops are based on correlation with wireline logs from offset wells, principally 24/6-2 - TVDSS values calculated using the Radius of Curvature method.					

Lithostratigraphy

The lithology encountered in 24/6-4T2 Boa has been defined both biostratigraphically and chronostratigraphically in offset wells (24/6b-2, 24/6a-1, 24/6-2). Drilled cuttings samples were collected in the sidetrack well 24/6-4T2 to determine the correspondence of the exploration well to the regional lithologies.

Well 24/6-4 Boa spudded in seabed sand and clays corresponding to Quaternary deposits. The well was drilled with seawater and returns to seabed in the 26" section, 17½" section to 1329m MD and 12¼" section to 1345m MD and no ditch cuttings could be collected. Ditch cuttings were collected in the sidetrack well 24/6-4T2 and, with the proximity of the sidetrack to the original wellbore, cuttings were used to confirm the interpreted stratigraphy provided by

Fugro Survey AS as part of the site survey. No detailed descriptions for lithologies shallower than 1010m MD (kick-off point for the 24/6-4T2 well) are available for this report.

The interval from 1010m MD to ~2068m MD (~987m to ~2039m TVDSS) comprises Eocene age sediments and is dominated by claystones with minor intercalations of limestone. Tuffaceous claystones are found within the Balder towards the base of the interval. A 151.4m AVT thick occurrence of the Grid Sands (1147.5m to 1301.4m MD / –1122.6m to –1274.0m TVDSS) was the only major non-claystone lithology encountered within this Eocene interval and was composed of sandstone with interbedded siltstone, claystone and minor intercalations of arenaceous limestone/calcareous cemented sandstone. The sandstone was quartzose, medium grey to olive grey and friable with clear to transparent Quartz grains. These were very fine to fine rarely medium grained, subangular to subrounded, spherical, moderately to well sorted and locally coated with pyrite. An argillaceous matrix was present and cementation was commonly poorly siliceous to locally very calcareous and glauconite and micas were common accessories. Visible porosity was good where cuttings permitted assessment and no shows were recorded. Interbedded silty claystone was typically dark greenish grey to olive grey, firm to moderately hard, blocky, micromicaceous, micro carbonaceous, glauconitic and locally grading to argillaceous siltstone. The arenaceous limestone was predominantly light grey, firm, crypto- to microcrystalline, locally chalky, argillaceous, sandy throughout and locally grading to calcareous cemented sandstone. No visible porosity or shows was noted in the limestones.

Claystones in the remainder of the Eocene interval were principally of two types. The first was olive black to dark grey/greenish grey, firm to moderately hard, sub-blocky to blocky, locally silty, rarely microcarbonaceous and micromicaceous and predominantly non calcareous. The second claystone type was noted towards the base of the Eocene and was bluish grey, firm to moderately hard, blocky to platy in part, rarely glauconitic and non calcareous. Intercalated limestones were mudstone, predominantly pale orange to yellowish grey, firm to hard, cryptocrystalline, locally argillaceous and with rare floating quartz sand grains. Loose, very fine grained quartz sand was noted throughout the interval as discrete intercalations. Towards the base of the Eocene interval, the argillaceous limestones became marly and locally very silty. No visible porosity or hydrocarbon shows was noted from this interval.

At 1993m MD (–1960.4m TVDSS) the claystone became tuffaceous, corresponding to the Balder Tuff, down to the top of the underlying Sele at 2049m MD (–2020.3m TVDSS). This claystone was light to medium blue/grey and mottled black and white, firm to moderately hard, slightly calcareous locally grading to argillaceous limestone in part. Wireline logs across the Balder Tuff show a characteristic reduced sonic transit time and increased variability in resistivity responses compared to the overlying Eocene claystones.

The Lower Eocene / Upper Paleocene Sele Formation was very thinly developed at the Boa location (20.5m AVT) and composed of claystone with rare limestone intercalations. The claystone was predominantly olive black to dark olive grey, moderately hard, blocky, micromicaceous and non- to slightly calcareous. Minor traces of tuffaceous claystone were noted in this interval, indistinguishable from those of the overlying Balder Tuff.

Lista Formation claystones were well developed at the Boa location and were predominantly greenish black with alternating dark grey to olive black, firm, blocky, silty, micromicaceous and glauconitic. Dolomite and limestone intercalations were present and towards the base of the interval thin sandstones were also noted. The dolomite was dusky yellowish brown to brownish grey, firm to hard, crypto- to microcrystalline, argillaceous with no visible porosity. Arenaceous limestone was mudstone, light grey, firm to hard, microcrystalline, argillaceous and locally very sandy grading to calcite cemented very fine grained sandstone. The sandstone interbeds at the base of the interval were quartzose, medium to dark grey, friable with clear Quartz, very fine to coarse grained, subangular to subrounded, spherical, moderately sorted, argillaceous, very calcareous, microglauconitic and had poor to nil visible porosity. No shows were noted from this interval.

The Upper Paleocene Heimdal Formation sandstone was penetrated from 2123.3m to TD at 2325m MD. Within this interval a total of 54.65m of core was cut (refer to Table 9 and Appendix F for details). The Heimdal Formation at this location confirmed the original Kameleon discovery lithology and consists of an upper, heterolithic dominated sequence down to 2135m MD with massive sandstone below that depth. In ditch cuttings the sandstone was seen predominantly as disaggregated loose quartz sand, light greyish brown to clear, translucent, variably fine to very coarse grained locally cobble, angular to predominantly subrounded and moderately to locally well sorted. A locally abundant argillaceous / kaolinitic matrix was noted and cementation was both weakly silicic and calcareous with locally inferred calcitic 'hardbands'. Pyrite and carbonaceous material was common as accessories and visible porosity was generally good to excellent. Hydrocarbon shows in the cored interval varied with depth as follows. From 2124m to 2146m MD a faint petroliferous odour was noted with no obvious visible stain, dull to pale yellowish white direct fluorescence with a fast blooming dull bluish white cut, no cut colour and a dull bluish white residue. From 2146m to 2176m MD a strong petroliferous odour was noted with a faint light brown oil stain giving a bright yellowish white direct fluorescence with a bright bluish white streaming cut and a bluish white, locally straw coloured, residue. No shows were recorded below 2177m MD. As the hydrocarbon column was cored, no reliable total gas or chromatographic gas breakdown was achieved over the interval 2124m to 2176m MD.

Below 2249m MD, interbedded claystone within the massive sandstone section was predominantly dark grey to dark greenish grey, firm, blocky, locally silty grading to argillaceous siltstone, micromicaceous, microcarbonaceous, rarely micropyritic and non-calcareous.

Detailed Biostratigraphy and Geochemistry was performed on the samples and core material taken in 24/6-4T2 and the results are presented by the contractors in their reports. Biostratigraphal analysis was performed by Ichron Ltd. and Geochemical analysis by IGI Ltd. The results of these studies were not available for inclusion at the time of writing this report.

Sample Integrity

Drilled cuttings were adversely affected by the use of PDC bits, especially in the sandstone intervals, and hydrocarbon shows were affected by the use of oil-based mud in the 8½" hole section. No problems were noted with drilled cuttings sampling other than some over-representation of sand as a result of caving.

4. Hydrocarbon Shows

Gas and Shows Record

Table 4 – Significant Gas Peaks

MD (mRKB	Total Gas	Bckgd.	Net Gas	Type	C1	C2	C3	iC4	nC4	iC5	nC5
from- to	%	%	%		ppm	ppm	ppm	ppm	ppm	ppm	ppm
Background Gas											
1010-1350		0.01-0.05									
1350-2000		0.05-0.1									
Formation Gas											
1971	0.4	0.1	0.3	D	3038	96	5	2	2	-	50
Gas data from interval 1980 – 2012m of questionable validity due to gas trap repairs/replacement.											
2006	0.74	0.12	0.62	D	7030	161	8	1	1		
2031	0.83	0.14	0.68	D	9231	106	10				
2055	0.81	0.14	0.67	D	No chromatograph breakdown available						
2151	6.4	0.10	6.3	TG	1529	183	26	12			
2178	7.1	0.1	7.0	TG	9016	10435	8761	2287	2404		

Types: S=Show, D=Drilled Gas, TG=Trip Gas, STG=Short Trip Gas, CG=Conn. Gas, BG= BG Chrom. Gas, P=Gas Peak

Refer to section 5, Mudlogging Performance Evaluation comments for caveats concerning drilled gas data quality.

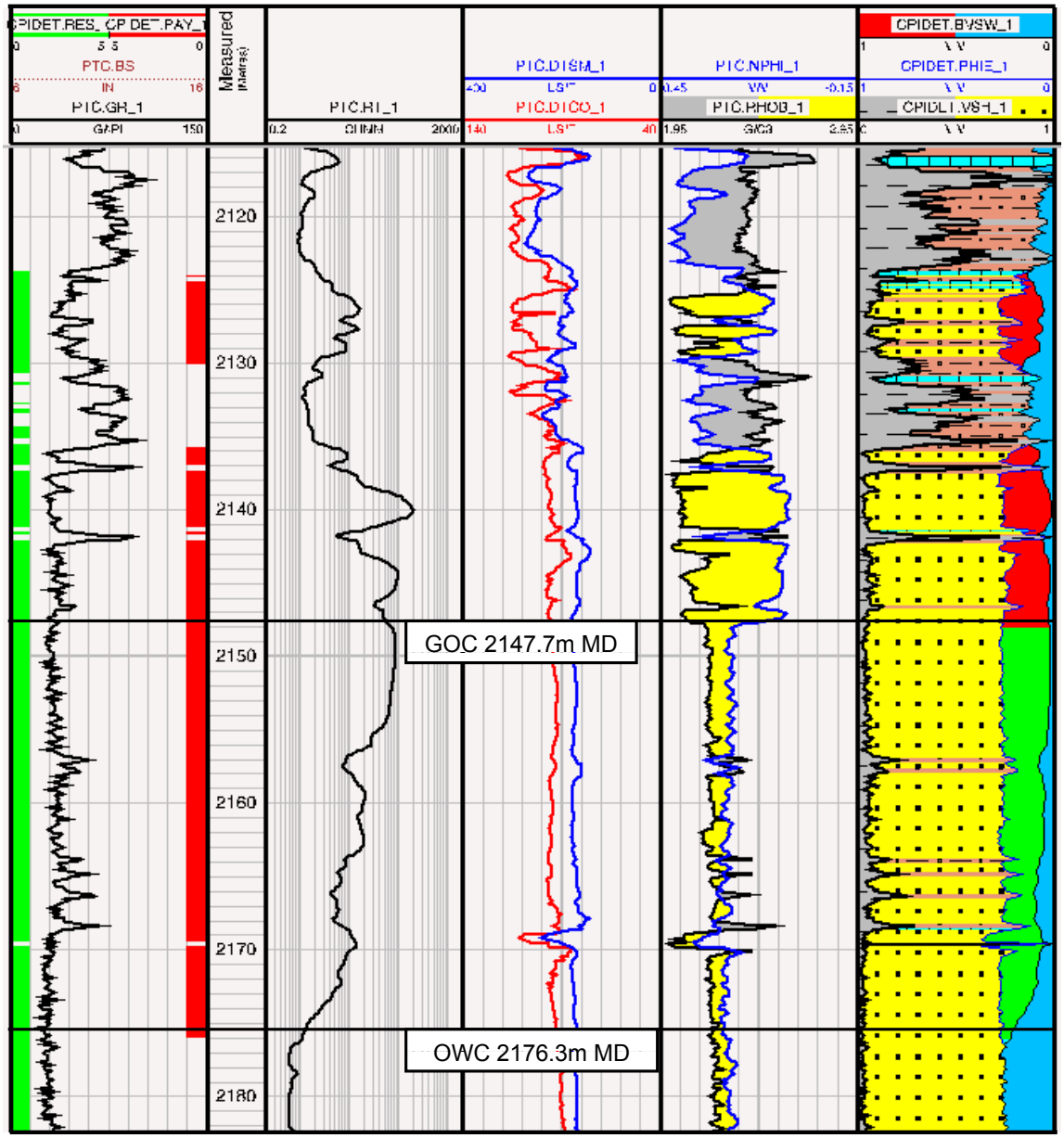
Table 5 – Shows Table

Depth (m) from - to	Formation / Lithology	Show description
2123 - 2124	Sandstone	Dull yel dir fluo, v slow blmg bl-wh cut, no vis cut col, dull grn-yel fluor res, no vis res.
2124 - 2146	Sandstone	Fnt pet odor, no stn, dull-pl yel-wh dir fluo, fast blmg-shooting cut, dull bl-wh cut, no vis cut col, dull bl-wh res fluo, no vis res.
2146 - 2174	Sandstone	Strng pet odor, lt brn O stn, pl-bri uni yel-wh dir fluo, inst-loc fast blmg yel-wh – bl-wh cut, no vis cut col, bri bl-wh fluo res, lt straw vis res.
2174 - 2177	Sandstone	Fnt pet odor, lt brn O stn, dul – pl yel dir fluo, mod fast blmg yel-wh – bl-wh cut, no vis cut col, bri bl-wh fluo res, lt straw vis res.
2315	Sandstone	Lt brn ?O coating on Qtz, nil – v wk dul yel dir fluo, v wk slow strmg v dul yel-grn cut. Trace residual Oil?

Preliminary Petrophysical Interpretation

Preliminary petrophysical evaluation of wireline logs acquired demonstrates the Heimdal Sandstone to be both gas and oil-bearing at this location with a gas-oil contact (GOC) at 2147.7m MD / –2118.5m TVDSS and an oil-water contact (OWC) at 2176.3m MD / –2147.1m TVDSS. This is consistent with shows described from core and cuttings within the Heimdal. Figure 3 below shows a preliminary interpretation and this is included for guidance only as the definitive interpretation will be incorporated in the Discovery Report, issued under separate cover.

Figure 3 – 24/6-4T2 Boa Preliminary Petrophysical Interpretation



5. Formation Evaluation

Formation evaluation was provided on wells 24/6-3, 24/6-4 and 4T2 Boa by Halliburton SDL (using a standard computerized mudlogging unit), Halliburton Sperry-Sun provided LWD services and wireline logs were run by Schlumberger at TD.

Mudlogging and Sampling

Halliburton SDL provided reports, paper log copies and digital log data files as required and at the request of the wellsite geologist. The mudlogging unit provided 24 hour monitoring of the drilling operation and recorded all drilling parameters on a real time basis. Drilling support using standard computer packages was provided as requested. Formation and mud samples were collected as per the Geological Program and samples were shipped from location at the end of the well (Appendix B).

Performance Evaluation

Halliburton SDL gas equipment was problematical throughout the well with the main cause of problems related to the design of the flowline on the rig Deepsea Bergen. It proved difficult to position a traditional gas trap type system within the closed flowline set-up and the 'work-around' installation frequently caused problems through plugging with cuttings/mud products. It proved impossible to use the gas readings for correlation purposes or accurate early identification of the top of the reservoir. In addition, the cycle time for the chromatograph was 3 minutes, an unacceptably slow time when the ROP was fast with the result that the chromatograph was giving a point value approximately every 2-3m. This was unfortunate and limited the utility of the data provided especially as the reservoir contained gas and oil.

Support of the drilling operations was otherwise adequate.

LWD (Logging While Drilling)

Halliburton Sperry-Sun LWD services on 24/6-4T2 comprised a quad-combo toolstring with the basic petrophysical suite of logs available real-time and in memory modes. The BAT (Bi-modal Accoustic Tool) data was available memory only (Table 7). Detailed treatment of LWD operations is presented in Appendix C.

Table 6 – Summary of LWD Runs

Log Run	Driller's TD (m)	Logged Interval (m)	Bit - sensor offset (m)
1.1 GR/EWR-4/SLD/CTN/BAT	2325		
GR		1896 – 2321	4.32
EWR-4		1894 – 2319	6.14
SLD		1890 – 2197	9.55
CTN		1887 – 2308	12.85
BAT		1873 – 2294	26.92

LWD operations commenced by wiping an interval from immediately above the Balder (1900m MD) to the base of the cored section and followed by drilling to TD at 2325m. The wipe logging speed was restricted to ~30m/hour from 2100m MD to ensure a data density corresponding to 6 samples/m and drilling rates of penetration were similarly restricted. The LWD density tool failed at 2197m MD during drilling, possibly due to excessive shocks generated when drilling through harder 'shale' sections in the Heimdal. Quality logs were obtained over the entire interval (except density data where the SLD tool failed).

Performance Evaluation

The following incidents were noted during LWD operations. A missing O-ring and snap ring for RA source retainer resulted in 4.5 hours lost time. During wiper logging operations, depth control was poor with a discrepancy between the rig and Sperry-Sun pipe tallies. Although resolved the resultant depth shift to be applied to data prevented logs becoming available in a

timely manner. The software for the CTN tool at the wellsite was a new version for which the engineers had not been trained and this resulted in delays in getting LAS data files. LWD operations were otherwise performed in a safe manner.

Wireline Logging

Schlumberger provided the wireline logging service on 24/6-4T2 Boa. Four suites of logs were run with formation sampling at two separate depths within the reservoir. A detailed breakdown of wireline operations is presented in Appendix D.

Table 7 – Summary of Wireline Logging Runs

Log Run	Logger's TD (m)	Logged Interval (m)	Max. BHT(°C)	Therm. Depth(m)
Run 1A: MDT/GR	-		N/a	
Run 2A: Pex/HNGS/CAL	-		N/a	
Run 2B: Pex/HNGS/DSI	-	1198m – 1129m	N/a	
Run 1B: MDT/GR	2283	2125m – 2276m	N/a	
Run 1C: MDT/GR	-	Sampling	N/a	
Run 2C: Pex/HNGS/DSI	2305	2300m – 1129m		2270
Run 3A: VSI/GR	2305	2295m – 1130m		2274
Run 4A: DSI/GR	2305	2300m – 1129m		2281

Logging operations commenced on the 19th May 2003, lasted 79.58 hours, excluding wiper trip and casing running time, and were completed on 27th May 2003. The MDT was configured for pretest pressures, gas and oil sampling and with the GR module on the bottom for reservoir correlation. A total of thirty two pretest pressures were requested and a total of 32 formation pressures were obtained in 39 attempts from 2125.0m to 2276.0m MD following Marathon standard pretest pressure procedures. The MDT sampling program was also completed satisfactorily and a total of 23 samples, 10 gas samples and 13 oil samples were obtained, detailed below in Table 8.

Table 8 – MDT Sampling

Depth (m MD)	Sample	SPMC	MPSR	Large Volume Chambers
2162.0	Oil	8	4	1 x 18 gal.
2138.0	Gas	5	3	2 x 2¾ gal

Table 9 – Logging Efficiency Analysis

Log Run	Log Speed (ft/hr)	Logged Interval (m)	Total Time Hrs:mins	Lost Time Hrs:mins	Efficiency %
1A: MDT/GR	N/a		10:20	-	100.0
2A: Pex/HNGS	N/a		2:45	-	100.0
2B: Pex/HNGS/DSI	N/a	1198m – 1129m	7:00	-	100.0
1B: MDT/GR	N/a	2125m – 2276m	21:05	0:30	97.6
1C: MDT/GR	N/a	Sampling	14:30	-	100.0
2C: Pex/HNGS/DSI	1800	2300m – 1129m	10:30	3:50	57.5
3A: VSI/GR	N/a	2295m – 1130m	7:30	-	100.0
4A: DSI/GR	1800	2300m – 1129m	6:00	-	100.0

Performance Evaluation

Schlumberger carried out all operations in a safe manner and without incident. The second attempt to log Pex/HNGS/DSI logged the cased hole section with a GR and DSI to seabed. All time associated with the final separate DSI log run should be considered lost time as a result of tool failure of the DSI to work in combination with the Pex run in openhole across the reservoir (run 2C).

Coring Operations

Halliburton provided the coring services on 24/6-4T2 Boa and ResLab in Stavanger provided surface core handling operators prior to transport and core analysis in Stavanger.

Table 10 – Summary of Core Information

Core N°.	From (m)	To (m)	Cut (m)	Rec. (m)	%	Core-Log shift	Corehead
1	2124.0	2151.65	27.65	27.65	100	+0.52	DBS FC274Li / 1.55
2	2151.65	2178.65	27.0	26.64	98.67	+0.52	DBS FC274Li / 1.55

Performance Evaluation

Coring operations were carried out in a safe and efficient manner and core recovery was excellent (54.29 recovered from 54.65m cut, 99.3%) in the soft sandstone of the Heimdal formation. Surface handling by the Halliburton personnel using the cradle recovery system was performed well and core damage was minimal during surface operations. The core was stabilized before transport using Reslab's Gypsum Stabilisation techniques. Before opening and examination, the core was CT scanned and the results indicated good stabilization with minmal movement during transport.

Appendix A – Directional Surveys for 24/6-4T2

The following directional parameters were used by Sperry-Sun for the well.

Grid Coordinate System: UTM Zone 31N on ED50 Datum, Meters
Location Lat / Long: 59º 34' 44.7020" N, 001º 54' 46.0834" E
Location Grid Y/X: 6605192.20m N, 438588.63m E
Grid Convergence Angle: -0.938°
Final Coordination data from: Thales GeoSolutions, Final Position Fix – Differential GPS
Date of Survey: 22 April 2003
Survey / DLS Computation Method: Minimum Curvature
Vertical Section Azimuth: 56.154º (Grid)
Vertical Section Origin: N 0.000 m, E 0.000 m
TVD Reference Datum: RTE
TVD Reference Elevation: 23.0 m relative to MSL
Sea Bed / Ground Level Elevation: -144.0m relative to MSL
Magnetic Declination: -2.276°
Declination Date: 26 June 2003
Magnetic Declination Model: BGGM 2003
North Reference: Grid North
Total Corr Mag North -> Grid North: -2.276°
Local Coordinates Referenced To: Well Head

								Grid Coordinates		Geographic Coordinates	
MD (m)	Incl (°)	Azim (°)	TVD (m)	VSec (m)	N/-S (m)	E/-W (m)	DLS (°/30m)	Northing (m)	Easting (m)	Latitude	Longitude
0.0	0.00	0.00	0.00	0.0	0.00	0.00	0.00	6605192.20	438588.63	59º34'44.70"	001º54'46.08"
144.0	0.00	0.00	144.00	0.0	0.00	0.00	0.00	6605192.20	438588.63	59º34'44.70"	001º54'46.08"
150.0	0.30	247.98	150.00	0.0	-0.01	-0.01	1.52	6605192.19	438588.62	59º34'44.70"	001º54'46.08"
160.0	0.30	294.34	160.00	0.0	0.00	-0.06	0.72	6605192.20	438588.57	59º34'44.70"	001º54'46.08"
173.0	0.59	298.02	173.00	-0.1	0.04	-0.15	0.68	6605192.24	438588.48	59º34'44.70"	001º54'46.07"
189.0	0.72	333.85	189.00	0.0	0.17	-0.27	0.80	6605192.37	438588.36	59º34'44.71"	001º54'46.07"
200.0	0.50	233.66	200.00	-0.1	0.20	-0.34	2.62	6605192.40	438588.29	59º34'44.71"	001º54'46.06"
265.3	0.79	57.26	265.29	0.1	0.28	-0.19	0.60	6605192.48	438588.44	59º34'44.71"	001º54'46.07"
294.6	0.79	255.54	294.59	0.1	0.34	-0.22	1.62	6605192.54	438588.41	59º34'44.71"	001º54'46.07"
323.9	0.61	290.77	323.89	-0.1	0.34	-0.56	0.48	6605192.54	438588.07	59º34'44.71"	001º54'46.05"
353.1	0.87	263.42	353.09	-0.3	0.37	-0.92	0.45	6605192.57	438587.71	59º34'44.71"	001º54'46.02"
382.3	0.37	146.07	382.28	-0.5	0.27	-1.09	1.14	6605192.47	438587.54	59º34'44.71"	001º54'46.01"
411.0	0.37	345.21	410.98	-0.5	0.28	-1.06	0.77	6605192.48	438587.57	59º34'44.71"	001º54'46.01"
447.5	0.77	237.58	447.48	-0.6	0.26	-1.30	0.79	6605192.46	438587.33	59º34'44.71"	001º54'46.00"
468.9	0.14	41.18	468.88	-0.8	0.21	-1.40	1.29	6605192.41	438587.23	59º34'44.71"	001º54'45.99"
497.8	0.59	9.37	497.78	-0.6	0.38	-1.36	0.50	6605192.58	438587.27	59º34'44.71"	001º54'46.00"
526.7	0.77	335.25	526.68	-0.4	0.70	-1.41	0.46	6605192.90	438587.22	59º34'44.72"	001º54'45.99"
555.9	0.52	29.11	555.88	-0.2	1.00	-1.43	0.65	6605193.20	438587.20	59º34'44.73"	001º54'45.99"
584.9	0.48	63.01	584.88	0.1	1.17	-1.26	0.31	6605193.37	438587.37	59º34'44.74'	001º54'46.00"
613.9	0.19	164.18	613.87	0.2	1.17	-1.14	0.58	6605193.37	438587.49	59º34'44.74'	001º54'46.01"
704.6	0.28	98.60	704.57	0.2	1.00	-0.88	0.09	6605193.20	438587.75	59º34'44.73"	001º54'46.03"
733.3	0.17	44.03	733.27	0.3	1.02	-0.78	0.24	6605193.22	438587.85	59º34'44.73"	001º54'46.03"
817.2	0.29	359.62	817.17	0.6	1.32	-0.69	0.07	6605193.52	438587.94	59º34'44.74"	001º54'46.03"
846.2	0.31	299.28	846.17	0.6	1.43	-0.76	0.32	6605193.63	438587.87	59º34'44.75"	001º54'46.03"
875.2	0.33	72.56	875.17	0.6	1.49	-0.75	0.62	6605193.69	438587.88	59º34'44.75"	001º54'46.03"

904.2	0.34	170.88	904.17	0.7	1.43	-0.66	0.53	6605193.63	438587.97	59°34'44.75"	001°54'46.04"
933.2	0.51	215.80	933.17	0.5	1.24	-0.72	0.38	6605193.44	438587.91	59°34'44.74"	001°54'46.03"
991.2	0.09	197.20	991.17	0.2	0.99	-0.88	0.22	6605193.19	438587.75	59°34'44.74"	001°54'46.03"
1001.0	0.50	23.20	1000.97	0.2	1.02	-0.87	1.83	6605193.22	438587.76	59°34'44.742	001°54'46.03"
1030.7	3.80	38.31	1030.64	1.3	1.91	-0.21	3.41	6605194.11	438588.42	59°34'44.76"	001°54'46.07"
1060.2	9.51	41.64	1059.90	4.7	4.50	2.02	5.91	6605196.70	438590.65	59°34'44.85"	001°54'46.21"
1089.1	11.56	41.75	1088.31	10.0	8.45	5.53	2.16	6605200.65	438594.16	59°34'44.98"	001°54'46.43"
1118.7	11.01	41.96	1117.34	15.8	12.76	9.40	0.57	6605204.96	438598.03	59°34'45.12"	001°54'46.67"
1146.5	10.80	40.64	1144.64	21.1	16.71	12.87	0.36	6605208.91	438601.50	59°34'45.25"	001°54'46.89"
1175.2	10.34	39.21	1172.85	26.3	20.75	16.25	0.56	6605212.95	438604.88	59°34'45.38"	001°54'47.10"
1204.0	10.41	37.78	1201.18	31.5	24.81	19.48	0.28	6605217.01	438608.11	59°34'45.51"	001°54'47.30"
1292.2	10.19	35.22	1287.96	47.2	37.48	28.86	0.18	6605229.68	438617.49	59°34'45.93"	001°54'47.88"
1320.5	11.31	36.30	1315.76	52.5	41.76	31.94	1.23	6605233.96	438620.57	59°34'46.07"	001°54'48.08"
1347.5	10.26	35.85	1342.28	57.5	45.84	34.92	1.19	6605238.04	438623.55	59°34'46.20"	001°54'48.26"
1378.5	6.98	36.12	1372.92	62.2	49.60	37.65	3.23	6605241.80	438626.28	59°34'46.33"	001°54'48.43"
1407.2	3.73	42.04	1401.48	64.8	51.71	39.30	3.50	6605243.91	438627.93	59°34'46.39"	001°54'48.53"
1436.3	3.00	47.66	1430.53	66.5	52.92	40.50	0.84	6605245.12	438629.13	59°34'46.43"	001°54'48.61"
1465.3	1.84	53.04	1459.51	67.7	53.71	41.43	1.24	6605245.91	438630.06	59°34'46.46"	001°54'48.67"
1494.7	1.83	58.27	1488.89	68.7	54.24	42.21	0.17	6605246.44	438630.84	59°34'46.48"	001°54'48.72"
1523.8	1.26	107.45	1517.98	69.2	54.39	42.91	1.45	6605246.59	438631.54	59°34'46.48"	001°54'48.76"
1552.2	1.69	131.83	1546.37	69.3	54.02	43.52	0.81	6605246.22	438632.15	59°34'46.47"	001°54'48.80"
1610.2	0.66	120.09	1604.36	69.4	53.28	44.44	0.55	6605245.48	438633.07	59°34'46.45"	001°54'48.86"
1639.8	1.98	127.88	1633.95	69.4	52.88	44.99	1.37	6605245.08	438633.62	59°34'46.44"	001°54'48.90"
1669.2	1.81	127.38	1663.33	69.5	52.29	45.76	0.18	6605244.49	438634.39	59°34'46.42"	001°54'48.95"
1696.8	1.81	129.37	1690.92	69.5	51.75	46.45	0.07	6605243.95	438635.08	59°34'46.40"	001°54'48.99"
1725.9	2.14	129.14	1720.00	69.5	51.11	47.22	0.35	6605243.31	438635.85	59°34'46.38"	001°54'49.04"
1782.8	2.15	127.40	1776.86	69.6	49.79	48.90	0.04	6605241.99	438637.53	59°34'46.34"	001°54'49.15"
1840.3	2.36	136.15	1834.32	69.6	48.28	50.57	0.21	6605240.48	438639.20	59°34'46.29"	001°54'49.26"
1869.3	2.81	130.94	1863.29	69.5	47.39	51.52	0.53	6605239.59	438640.15	59°34'46.26"	001°54'49.32"
1898.0	2.39	134.79	1891.96	69.4	46.51	52.48	0.48	6605238.71	438641.11	59°34'46.23"	001°54'49.38"
1927.2	2.66	138.13	1921.13	69.3	45.57	53.36	0.32	6605237.77	438641.99	59°34'46.20"	001°54'49.44"
2016.7	2.44	127.16	2010.54	69.1	42.87	56.27	0.18	6605235.07	438644.90	59°34'46.12"	001°54'49.62"
2043.7	1.80	110.57	2037.52	69.3	42.38	57.12	0.99	6605234.58	438645.75	59°34'46.10"	001°54'49.68"
2072.9	1.34	100.75	2066.71	69.7	42.15	57.89	0.55	6605234.35	438646.52	59°34'46.10"	001°54'49.73"
2102.7	1.31	91.26	2096.50	70.0	42.08	58.57	0.23	6605234.28	438647.20	59°34'46.09"	001°54'49.77"
2142.4	1.22	91.27	2136.19	70.6	42.06	59.45	0.07	6605234.26	438648.08	59°34'46.09"	001°54'49.83"
2226.8	0.79	98.37	2220.58	71.5	41.96	60.92	0.16	6605234.16	438649.55	59°34'46.09"	001°54'49.92"
2303.0	0.63	114.93	2296.77	71.9	41.70	61.82	0.10	6605233.90	438650.45	59°34'46.08"	001°54'49.98"
2325.0	0.63	114.93	2318.77	71.9	41.60	62.04	0.00	6605233.80	438650.67	59°34'46.08"	001°54'49.99"

Appendix B – Mudlogging Details

For complete details of the equipment and service provided please refer to the Mudlogging Contractors Contract.

Mudlogging Company	Halliburton SDL	
Personnel		
INSITE Data Engineers	Terje Fjeldheim, Sven Erik Foyn, John Carmichael, Paula Kelly	
Mudloggers	Øyvind Kindem, heine Helland	
Base Manager	Svein Magna Osnes	
Sampling		
Unwashed	1 set (1kg): MPC(N) for split to partners and NPD	
Washed and Dried	1 set (envelope)	
Intervals of collection	10 meter intervals from 1010 to 2100m	
	3 meter intervals from 2100 to 2180m	
	5 meter intervals from 2180 to 2325m	
Logs produced		
(for 24/6-4T2 only)	Formation Evaluation Log (mud log)	Scale 1: 500
	Engineering Log	Scale 1: 1000
	Pressure Evaluation Log	Scale 1: 2000
	Gas Ratio Log	Scale 1: 1000

Appendix C – LWD and Directional Details

For complete details of the equipment and service provided please refer to the LWD Service Company Contract. An MWD/GR service was provided in the 17½" hole on 24/6-4 and a full quad combo LWD service, GR/EWR-4/SLD/CTN/BAT, was provided 24/6-4T2 after coring operations. This logging was performed as drilling resumed to TD and as insurance against wireline tools not being able to reach TD.

LWD Company	Halliburton Sperry-Sun
Personnel	
L/MWD Engineers	Jim Davin Tilley, Stian Haugland
Base Manager	Svein Magna Osnes
Logs produced	
24/6-4	1:200 & 1:500 GR (MD), 205m – 1329m MD
24/6-4T2	1:200 & 1:500 GR (MD), 1010m – 2000m MD
	1:200 & 1:500 GR/EWR-4 (MD and TVD), 1870mMD – TD.
	1:200 & 1:500 GR/SLD/CTN/ACAL (MD and TVD), 1870mMD – TD.
	1:200 & 1:500 GR/EWR-4/SLD/CTN/ACAL (MD and TVD), 1870mMD – TD.

Log Run	Driller's TD (m)	Logged Interval (m)	Bit - sensor offset (m)
1.1 GR/EWR-4/SLD/CTN/BAT	2325		
GR		1896 – 2321	4.32
EWR-4		1894 – 2319	6.14
SLD		1890 – 2187	9.55
CTN		1887 – 2308	12.85
BAT		1873 – 2294	26.92

Appendix D – Wireline Logging Time Breakdown

For complete details of the equipment and service provided please refer to the Wireline Service Company Contract.

Wireline Company	Schlumberger
Personnel	
Wireline Engineers	Brett Mitchell, Steve Allan
MDT specialist	Steve Allan
VSI specialist	D. MacKay
Base Manager	Dave Cameron

Date	Time	Lost Time	Operation
			Run 1A: MDT-GR
19/5-03	11:00		Carry out pre-job safety meeting. Commence rig up
	13:10		RIH
	13:45		Hung up when trying to pass 1000m, made it to 1010m. No go. Pulled up with 2000lb OP, free. Tried several times, no go.
	14:45		POOH.
	15:30		OOH, Reconfigured the tool, took out 18Cal, put on knuckle joint arrangement.
	16:45		Start RIH
	17:20		Tried to pass 1005m, no go.
	17:45		POOH
	18:50		OOH, took out sample chambers as a means to come down.
	19:40		RIH
	20:14		Tried to pass 1002m, no go.
	20:28		POOH
	21:05		OOH, rig down Schlumberger and prepare for wiper trip.
	21:20		Finished rig down
			Total operating time: 10 hrs 20 min
			Lost time: nil
			Run 2A: PEX/HNGS/CAL
21/05/03	07:30		Start rig up.
	08:45		RIH running speed ~10,000 ft/hrs. At 830m, took pick up weight 1900 lb @ 3000 ft/hrs. Continued to RIH. Took weight at 1005m, slide through. Took weight again at 1022m. Stand up. Made several attempt to pass 1022m without success.
	09:30		Open calliper, slight over pull at 1014m. Logged inside casing (CAL reads approx 0.5” to wide).
	09:40		RIH. Again not able to pass 1022m. Open calliper and log repeat. Inside casing, close calliper.
	09:50		POOH
	10:40		At surface start rig down wireline.
	10:15		Completed rig down. Oddfjell start P.U wear bushing retrieving tool.
			Total operating time: 2 hrs 45 min
			Lost time: nil
			Run 2B: PEX/HNGS/DSI/CAL
22/5/03	14:30		Conduct pre-job safety meeting. Commence rig up.
	16:30		RIH running speed ~10,000 ft/hr, took weight between 1134m and 1200m, worked tools down at 5-7000ft/hr. Took weight at 1212m, unable to pull tools

			free. Pulled 9400lbs and held tension for 20min, tools free. Pull string to 1150m.
	17:30		RIH to 1198m. POOH logging caliper to casing guide base at 1129m. Made uplog pass with HNGD/DSI in cased hole to sea bed. POOH.
	20:30		Tools at surface. Rig down. Bow spring, stop collars and rubber bullnose lost in hole.
	21:30		Rig floor cleared to drilling contractor.
			Total operating time: 7 hrs 0 min
			Lost time: nil
			Run 1B: MDT-GR, pretest and oil sample
24/5-03	21:55		Commence rig up
	23:20		RIH
25/5-03	00:07		Stopped @ 1213m due to the discover of wrong depth setting by engineer. Reset depth.
	00:18		Start tie in at shoe
	00:28		Finished tie in. Started logging GR down for depth reference.
	00:30	15 min	Back on 1213m where the wrong depth settings were discovered
	00:56		Stopped at 1881m. Worked tool string gradually down, stepwise.
	01:15		Ran freely down, below 1955m.
	01:30		@ 2275m, start logging GR up to 2100m. Down log matched well with LWD log.
	01:49		Started first pressure point at 2125m
	04:22		Stopped @ 2151m due to computer black-out. Had to reboot computer.
	04:37	15 min	Computer OK, continued logging.
	05:13		Depth adjustment @ 2157m. We were 0.5m shallow compared to down log.
	07:50		Continued taking pressure points from 2156m – 2256m.
	8000		Depth correlation –2m shallow at 2155m, -0.5m shallow at 2125m
	0820		Set probe for oil sampling at 2162m pre-test gave 728.9 md/cp
	1200		- Pumping for clean up, increasing pump rate gradually up to 1200 rpm, less than 1.5 bars draw down. - Pumped to contamination below 5 %.
	1215		- Start filling 18-gallon chamber. Sudden draw down to less than 20 bar. -Stop pumping. - Close 18-gallon chamber. Pump most likely plugged with sand from formation. - Re-start pump and dumping to flow line, while verifying clean up. No damage to clean up (still below 5%). Open 18 gallon for sampling. No go. Valve to 18-gallon probably clogged up with sand. Postpone trouble shooting on 18-gallon valve. Go for multi sampling
	1330		Finished with multi-sampling (SPMS & MPSR).
	1515		Commence with attempt to fill 18-gallon sample chamber. Try to clean valve by reverse circulation on pump. OK. Probe (PS1) plugged when start pumping from formation. Flush PS1 by open PS2 to hydrostatic. OK. Start pumping from formation to clean up flow line. Mud check valve on pump, lost seal on one stroke. Made several attempts to fill 18-gallon sample chamber. No go. Intermittent problems with seal on mud check valve. Abandon sampling of 18-gallon sample chamber. Took 2:nd pre-test, draw down mobility 297.8md/cp, i.e. less than initial draw down mobility. Probably due to sand clogging the probe. Retract probe, tool free.
	1545		RIH to 2277m. took pre-test.
	1800		-POOH while depth correlating with DL. Constantly –2m shallow up to the interval were string had to be worked down 1955m to 1881m. UL –3m shallow compared with DL above 1881m. -Hang up at 7” casing shoe, probably with stand off. Found stand-off deformed and moved approx 2-3m down the string when at surface.
	1900		Rigged down
			Total operating time: 21 hrs 5 min
			Lost time: 30mins
			Run 1C: MDT-GR, oil and gas sample
25/5-03	19:00		Start rig up
	20:50		RIH
	21:35		In open hole, only minor resistance in interval 1908 – 1930m
	22:12		Stopped @ 2178m and tied in with downlog from first MDT run

	22:14		Start PU towards 2100m
	22:20		@ 2100m, run down to adjust depth. 0.2m shallow still, adjusted. PU to 2100m.
	22:24		@2100m, run down to confirm depth. OK. Run down to first sample depth, 2162m
	22:29		@2162m, start pretest before sampling 18 gallon chamber. Formation pressure 207.1214 bar, Mobility: 1080 , which confirmed pretest compared with first MDT pretest run
	22:45		Prepare for clean up
	22:46		Start pumping for clean up
26/5-03	00:56		Start filling 18 gallon chamber after 2 hrs 10 minutes clean up
	02:38		Start pressure increase for full chamber.
	02:45		18 gallon chamber full
	02:50		Start pretest as check after sampling, formation pressure 207.059bar, mobility: 813.1
	02:58		PU to 2138m, gas sampling depth
	03:04		@2138m, prepare for pretest
	03:07		Performed pretest: formation pressure 205.88 bar, mobility 8706, which confirmed pretest from first MDT run
	03:19		Start pumping for clean up
	04:05		Finished clean up, prepare for sampling
	04:07		Start sampling 2 ¾ gallon chamber, MRSC # 03
	04:24		Start pressure increase for full chamber
	04:26		Chamber full, start clean up before filling next chamber
	04:35		Short intermittent pump problems. Had to run longer clean up due to this.
	04:55		Start sampling 2 ¾ gallon chamber, MRSC # 04
	05:07		Pressure started to increase for full chamber
	05:10		Chamber full, started short clean up before next sample
	05:15		Started filling chamber MRMS #2 in filling order 4/5/1/6/2/3, with short clean up between filling of each bottle. Bottle # 3 had software failure, so bottle 3 & 5 from chamber MRMS #1 should be filled instead
	05:43		Start filling bottles 3& 5 in chamber MRMS #1
	05:48		Finished filling bottles, retracted tool and POOH
			OOH, start rigging down MDT-GR tools
	09:30		Finished rigging down
			Total operating time: 14:30 hrs
			Lost time: nil
			Run 2C: PEX/HNGS/DSI/CAL
26/5/03	09:30		Rig up Schlumberger PEX-DSI-HNGS-ACTS
	10:10		Start run in hole. At 1081m, transmitters on DSI will not fire. Start trouble shooting while coming slowly out of hole for overlap.
	11:30		POOH due to tool failure on DSI
	12:40		Trouble shooting DSI on surface. Rack back PEX in rat hole. Plug into DSI, power up OK. Put PEX back on tool string. Check tool OK. Fire off transmitters on DSI OK.
	13:00	2:50	RIH to 1090 m with DSI transmitters firing. Over speed in software meaning DSI not updating. Tool failure on DSI, again.
	13:45		POOH to 980m for over lap, while trouble shooting on DSI and re-starting the software.
	14:00	1:00	At 1109m over speed on software, pull up to 980m for overlap while re-booting system.
	14:10		RIH with 3600 ft/hrs while logging downlog with PEX/HNGS (DSI not working)
	18:00		Complete PEX log, log to 7” liner base with GR, POOH
	19:00		Rig down tool string
	20:00		Complete rig down.
			Total operating time: 10:30 hrs
			Lost time: 3:50
			Run 3A: VSI/GR
26/5/03	20:00		Rig up VSI, 4 receivers, 10m spacing
	20:40		RIH

	21:00		Correlate depth and commence VSI survey log
27/5/03	02:00		Complete VSI survey log (36 levels shot) 2295 – 1130m, POOH
	03:30		Complete rig down VSI
			Total operating time: 7:30 hrs
			Lost time: nil
			Run 4A: DSI/GR
27/5/03	03:30		Rig up DSI/GR
	04:00		RIH
	04:30		Commence logging DSI, repeat section 2305m – 2175m, RIH, log main pass to 1129m
	08:30		POOH, rig down DSI/GR
	09:00		Rig down wireline equipment.
	09:30		Rig floor cleared to drilling contractor.
			Total operating time: 6:00 hrs
			Lost time: 6:00
			SUM OPERATIONS TIME: **79.58hrs**
			SUM LOST TIME: **10.33hrs**
			OPERATING TIME – LOST TIME (Logging time): **69.25hrs**
			EFFICIENCY = 1-[LT/(TT-LT)]: **85.1%**

Comments, Problems and Evaluation of Wireline Logging Runs

Run 1B: MDT-GR, pretest and oil sample
- Depth control, UL 2-3m shallow compared with DL, HNGS (from aborted PEX run) and LWD
- Unable to fill 18-gallon bottle (valve clogged)
- Pump lost seal on mud check valve.
- Computer crash required reboot during RIH.
- Stopped down logging at 1213m due to wrong depth setting by the engineer to computer black-out. Had to reboot computer.
Run 2C: PEX/HNGS/DSI/CAL
- Over speed in software meaning DSI not updating. Tool failure on DSI
Run 4A: DSI/GR
- All logging time associated with separate DSI/GR run is assessed as lost time as tool failed twice to work in combination with remainder of Pex string (run 2C)

Log Header Information

Company	Marathon
Well	24/6-4T2
Field	Boa
Country	Norway
Location	North Sea
State	
Latitude	59° 34' 44.70" N
Longitude	001° 54' 46.08" E
Rig	Deep Sea Bergen
Permanent Datum	Lowest Astronomical Tide LAT
Log Measured From	Rig floor
Drilling Measured From	Rig floor
Elevation: RT	23m
: GL	23m
: DF	23m
Logging Date	19th – 26th May, 2003
Drillers Depth	2325m
Casing 30”	205m
Casing 13 3/8”	760m
Casing 9 5/8”	987m
Hole Size	8½”
Max Well Deviation	11.56º at 1089 m
Type Fluid in Hole	OBM
Source of Sample	flow line
Density (ppg)	10.68
Viscosity	67
Fluid Loss (HTHP)	3.6
Oil/Water ratio	73:27
pH	
Barite (%, ppb)	
KCl	
Cl/Ca	131,003
Lost Circulation Material	
Drilling Stopped	21:30, 18th May 2003
Circulation Time	5 hrs
Time Circulation Stopped	21:00, 24th May 2003
RM @ measured temp	N/a
RMF @ measured temp	N/a
RMC @ measured temp	N/a
Witness	Anders Knape / Sigvart Bjerkenes
Logging Engineers	Brett Mitchell
MDT Specialist	Steve Allen

Appendix E – MDT Details

MDT Pre-test Survey

MDT PRESSURE WORK SHEET								
PreTest Chamber Size: 20 cc, variable					Geologists: Sigvart Bjerkenes / Anders Knape			
Probe Type: Large					Engineer: Brett Mitchell / Steve Allan (MDTech)			
Guartz Pressure Gauge serial no: 1434					Ref Log(s): LWD GR/MDTGR			
#	Depth BRT	Depth TVDSS	Hydro-static before	Hydro-static after	Final shut-in press		Draw-down Perm	Comments 1) Drawdown: 20cc
	(m)	(m)	(bara)	(bara)	(psia)	(bara)	(md/cp)	
1	2125.0	2095.9	269.286	269.295	2982.6	205.693	25549.7	
2	2126.5	2097.4	269.493	269.498	2983.0	205.731	2835.4	
3	2129.0	2099.9	269.820	269.809				Dry test
4	2129.3	2100.2	269.906	269.902				Dry test
5	2129.5	2100.5	269.932	269.938				Dry test
6	2128.0	2098.9	269.791	269.791				Dry test
7	2133.0	2103.9	270.428	270.437				Dry test
8	2136.0	2106.9	270.826	270.850	2985.1	205.863	2028.7	
9	2138.0	2108.9	271.144	271.156	2985.4	205.887	11554.5	
10	2140.0	2111.9	271.441	271.465	2985.8	205.917	4047.6	
11	2143.0	2113.9	271.870	271.886	2986.6	205.971	3361.9	
12	2144.0	2114.9	272.038	272.050	2986.8	205.986	7475.4	
13	2145.0	2115.9	272.202	272.228	2987.0	205.999	4564.6	
14	2146.0	2116.9	272.387	272.402	2987.2	206.012	10063.2	
15	2147.0	2117.9	272.538	272.559	2987.5	206.033	2005.3	
16	2148.0	2118.9	272.710	272.721	2988.6	206.111	1325.2	
17	2149.0	2119.9	272.870	272.882	2989.6	206.182	1068.4	
18	2150.0	2120.9	273.010	273.017	2990.6	206.250	929.1	
19	2151.0	2121.9	273.187	273.199	2991.7	206.327	983.4	
20	2153.0	2123.9	273.457	273.464	2993.8	206.472	650.6	
21	2154.5	2125.4	273.661	273.671	2995.4	206.580	190.9	
22	2157.0	2127.9	273.985	273.973				Dry test
23	2156.5	2127.4	273.983	273.983				Dry test
24	2156.0	2126.9	273.773	273.796	2996.5	206.658	694.6	
25	2159.0	2129.9	274.182	274.191	2999.6	206.871	452.6	
26	2162.0	2132.9	274.580	274.591	3002.7	207.084	494.2	
27	2167.0	2137.9	275.221	275.236	3007.6	207.423	395.7	
28	2171.0	2141.9	275.723	275.729	3011.3	207.679	571.9	
29	2173.0	2143.9	275.995	275.997	3013.4	207.821	536.1	
30	2175.0	2145.9	276.250	276.251	3016.0	207.997	495.9	
31	2176.0	2146.9	276.372	276.336	3017.4	208.094	58.1	
32	2177.0	2147.9	276.498	276.493	3018.8	208.190	102.4	
33	2180.0	2150.9	276.875	276.882	3023.2	208.498	14.1	
34	2185.0	2155.8	277.501	277.497	3030.6	209.005	39.4	
35	2192.0	2162.8	278.356	278.368	3040.5	209.691	196.5	
36	2217.0	2187.8	281.463	281.469	3077.4	212.236	299.8	
37	2238.0	2208.8	284.080	284.084	3108.0	214.345	985.0	
38	2256.0	2226.8	286.330	286.330	3134.5	216.169	726.6	
39	2162.0	2132.9	274.479	274.427	3002.5	207.067	297.8	
40	2276.0	2246.8	288.467	288.494	3162.5	218.101	996.8	
41	2162.0	2132.9	274.307	274.382	3002.4	207.059	813.1	

Appendix F – Enclosure 1 - Completion Log

Appendix G – Enclosure 2 – Prognosis and Results Table (NPD Format)

Section: "Well data"	Comments	Keyword name	Comments	If there is more than one prognosis per prospect, please duplicate the prognosis column	
				Prognosis	Result
Well Name	Always fill in	WellName:=	NPD approved name	24/6-3	24/6-4T2
Production Licence Number	NPD input	ProdLicenseID1=	NPD approved name		
	NPD input	ProdLicenseID2=	NPD approved name		
Operator		Operator=		Marathon Petroleum Company (Norway)	
Well type: required/committed as a part of the licence award?		WellCommitment=	Yes/No	No	
Well classification			Wildcat / appraisal	Wildcat	
License round	NPD input	LicenseRound1=			
	NPD input	LicenseRound2=			
Seismic database (2D/3D)		SeismicDB=	2D/3D	3D	
Frontier area?	NPD input	Frontier=	Yes/No		
Structural element/Province		StrucElement=		NORDSJOEN	
Spud date	NPD input	SpudDate=			
Completion date	NPD input	CompletionDate=			
Water depth		WaterDepth=	meter		121
Stratigraphic age at TD		TDChron=			Upper Paleocene
Paragraph: prospect					
Prospect name	Always fill in	ProspectName:=	Operators name	Boa	Boa
Prospect ID	NPD input	ProspectID=	NPD code		
Distance to nearest relevant well		NearestWellDist=	km	3.2	
Nearest well Name		NearestWellName=	NPD approved name	24/6-2	
Prospect Priority if several in well		ProspectPriority=	number 1,2,…	1	
SubParagraph: prognosis // result					
Prognosis ID (if several)		PrognosisID:=	Operators name	Boa	
Prognosis priority in prospect	(1/2/3…)	PrognosisPriority=	number 1,2,…	1	
Reference(s) to mapping & evaluation		Reference=	Report name etc.	Delineation Well 24/6-3 Data Package (PL088BS), drilling program	Final Geological Report 24/6-4T2, Discovery Report 24/6-4T2
Evaluation year		EvaluationYear=		2002/3	2003
Reference(s) to NPD evaluation	NPD input	NPDReference=			
NPD evaluation year	NPD input	NPDEvaluationYear=			
	Date (DD.MM.YY)	DataCompileDate=		01/11/2002	31/08/2003

Data compilation	Department, Institution	DataCompileDept=		Norway Subsurface	Norway Subsurface
	Name	DataCompileResp=		Jeff Brehm	Jeff Brehm
Data Quality control	Date (DD.MM.YY)	DataQCDate=			
	Department, Institution	DataQCDept=		Norway Subsurface	Norway Subsurface
	Name	DataQCResp=		Jeff Brehm	Jeff Brehm
Comments	Variation from standard methodology	Comments=		No variation from standard methodology	No variation from standard methodology
Geo					
Trap type		TrapType=	Defined numeric code	1.2 Anticlinal traps	1.2 Anticlinal traps
Reservoir stratigraphic level(s)	Chronostratigraphic	ReservoirChron=		Upper Paleocene	Upper Paleocene
Reservoir stratigraphic level(s)	Lithostratigraphic	ReservoirLithos=		Heimdal Fm	Heimdal Fm
NPD play	NPD input	NPDPlay=			
New play	NPD input	NewPlay=			
Inferred source rock 1	Chronostratigraphic	Source1Chron=		UPPER JURASSIC	UPPER JURASSIC
Inferred source rock 1	Lithostratigraphic	Source1Lithos=		HEATHER	DRAUPNE FM
Inferred source rock 2	Chronostratigraphic	Source2Chron=			
Inferred source rock 2	Lithostratigraphic	Source2Lithos=			
Seal	Chronostratigraphic	SealChron=		Lower Tertiary	Lower Tertiary
Seal	Lithostratigraphic	SealLithos=		Undiff'd Hordaland Gp	Undiff'd Hordaland Gp
Probability					
Probability of discovery, technical	Total	ProbTecTotal=	Fraction	0.85	
Probability of discovery, technical	Charge	ProbTecSource=		1.00	
Probability of discovery, technical	Trap	ProbTecTrap=		0.85	
Probability of discovery, technical	Reservoir	ProbTecReservoir=		1.00	
Comments	Comments relevant to risking (DHI, AVO analysis, etc.)	CommentsProbability=		AVO analysis	
Resources					
Main hydrocarbon phase		MainPhase=	OIL, OIL/GAS, GAS	GAS/OIL	GAS/OIL
Fractiles, resource parameter ranges	Low/Minimum	FractileResourceLow=	Fraction		
Fractiles, resource parameter ranges	Preferably Mean (or Most likely or Median)	FractileResourceCentral=	Mean/ML/Med	Most Likely	Most Likely
Fractiles, resource parameter ranges	High/Maximum	FractileResourceHigh=	Fraction		
Gas in place (as main phase)	Low/Minimum	GasMainLow=	10^9Sm3	1.60	0.06
Gas in place (as main phase)	Central/Most likely	GasMainCentral=		3.10	0.20
Gas in place (as main phase)	High/Maximum	GasMainHigh=		5.90	0.51
Oil as associated phase in place	Low/Minimum	OilAssocLow=	10^6Sm3		
Oil as associated phase in place	Central/Most likely	OilAssocCentral=			
Oil as associated phase in place	High/Maximum	OilAssocHigh=			
Oil in place (as main phase)	Low/Minimum	OilMainLow=		6.40	7.20

Oil in place (as main phase)	Central/Most likely	OilMainCentral=	10^6Sm3	12.70	13.50
Oil in place (as main phase)	High/Maximum	OilMainHigh=		24.80	23.90
Gas as associated phase in place	Low/Minimum	GasAssocLow=			
Gas as associated phase in place	Central/Most likely	GasAssocCentral=	10^9Sm3		
Gas as associated phase in place	High/Maximum	GasAssocHigh=			
Gas recoverable (as main phase)	Low/Minimum	RecoverGasMainLow=		1.10	
Gas recoverable (as main phase)	Central/Most likely	RecoverGasMainCentral=	10^9Sm^3	2.30	0.34
Gas recoverable (as main phase)	High/Maximum	RecoverGasMainHigh=		4.10	
Oil as associated phase recoverable	Low/Minimum	RecoverOilAssocLow=			
Oil as associated phase recoverable	Central/Most likely	RecoverOilAssocCentral=	10^6Sm3		
Oil as associated phase recoverable	High/Maximum	RecoverOilAssocHigh=			
Oil recoverable (as main phase)	Low/Minimum	RecoverOilMainLow=		1.30	1.91
Oil recoverable (as main phase)	Central/Most likely	RecoverOilMainCentral=	10^6Sm3	2.70	3.98
Oil recoverable (as main phase)	High/Maximum	RecoverOilMainHigh=		4.80	7.63
Gas as associated phase recoverable	Low/Minimum	RecoverGasAssocLow=			
Gas as associated phase recoverable	Central/Most likely	RecoverGasAssocCentral=	10^9Sm3		
Gas as associated phase recoverable	High/Maximum	RecoverGasAssocHigh=			
Part of prospect in Production Licence		PartInProdLicense=	Fraction	1.00	1.00
Reservoir parameters					
Pressure, top reservoir		PressureReservoir=	bar	203	205.69
Temperature, top reservoir		TempReservoir=	degrees C	68	69
Fractiles, reservoir parameter ranges	Low/Minimum	FractileReservoirLow=	Fraction		
Fractiles, reservoir parameter ranges	Preferably Mean (or Most likely or Median)	FractileReservoirCentral=	Mean/ML/Med	Most Likely	Most Likely
Fractiles, reservoir parameter ranges	High/Maximum	FractileReservoirHigh=	Fraction		
Depth to top of prospect	Low/Minimum	TopProspectDepthLow=		2088	
Depth to top of prospect	Central/Most likely	TopProspectDepthCentral=	meters, MSL	2098	2094.1
Depth to top of prospect	High/Maximum	TopProspectDepthHigh=		2108	
Depth to top reservoir in well	Low/Minimum	TopReservoirDepthLow=		2088	
Depth to top reservoir in well	Central/Most likely	TopReservoirDepthCentral=	meters, MSL, TVD	2098	2094.1
Depth to top reservoir in well	High/Maximum	TopReservoirDepthHigh=		2108	
Gross rock volume	Low/Minimum	RockVolLow=		0.12	
Gross rock volume	Central/Most likely	RockVolCentral=	10^9m^3	0.24	
Gross rock volume	High/Maximum	RockVolHigh=		0.47	
Hydrocarbon column height in prospect/ segment	Low/Minimum	HCColProspLow=		34	
Hydrocarbon column height in prospect/ segment	Central/Most likely	HCColProspCentral=	meters	44	53

Hydrocarbon column height in prospect/ segment	High/Maximum	HCColProspHigh=		54	
Hydrocarbon column height in well	Low/Minimum	HCColWellLow=	meters	34	
Hydrocarbon column height in well	Central/Most likely	HCColWellCentral=		44	53
Hydrocarbon column height in well	High/Maximum	HCColWellHigh=		54	
Area of prospect/segment	Low/Minimum	AreaLow=	Km^2		
Area of prospect/segment	Central/Most likely	AreaCentral=		18.00	7.81
Area of prospect/segment	High/Maximum	AreaHigh=			
Reservoir thickness	Low/Minimum	ThicknessLow=	meters vertical at well position	153	
Reservoir thickness	Central/Most likely	ThicknessCentral=		163	201.7
Reservoir thickness	High/Maximum	ThicknessHigh=		173	
Net/gross	Low/Minimum	NetGrossLow=	Fraction		
Net/gross	Central/Most likely	NetGrossCentral=		0.77	0.74
Net/gross	High/Maximum	NetGrossHigh=			
Porosity	Low/Minimum	PorosityLow=	Fraction		
Porosity	Central/Most likely	PorosityCentral=		0.25	0.23
Porosity	High/Maximum	PorosityHigh=			
Water saturation	Low/Minimum	WaterSatLow=	Fraction		
Water saturation	Central/Most likely	WaterSatCentral=		0.20	0.27
Water saturation	High/Maximum	WaterSatHigh=			
Bg	Low/Minimum	BgLow=	decimal number		
Bg	Central/Most likely	BgCentral=			0.0021
Bg	High/Maximum	BgHigh=			
1/Bo	Low/Minimum	BoInvLow=	decimal number		
1/Bo	Central/Most likely	BoInvCentral=			1.29
1/Bo	High/Maximum	BoInvHigh=			
GOR, free Gas	Low/Minimum	GORGasLow=	Sm3/Sm3		
GOR, free Gas	Central/Most likely	GORGasCentral=			Not determined
GOR, free Gas	High/Maximum	GORGasHigh=			
GOR, Oil	Low/Minimum	GOROilLow=	Sm3/Sm3		
GOR, Oil	Central/Most likely	GOROilCentral=			106
GOR, Oil	High/Maximum	GOROilHigh=			
Evaluation - discovery					
Discovery?		Discovery=	Yes/No		YES
Surprise discovery ?		SurpriseDiscovery=	Yes/No		NO
Resource class	NPD input	ResourceClass=	NPD codes		
Evaluation - dry well					
If Dry, Oil shows?		ShowsOil=	Yes/No		
If Dry, Gas shows?		ShowsGas=	Yes/No		
CHARGE	Charge	Charge=			
	Presence of source	ChargePresence=	OK / Fail / Not relevant		

	Maturity of source	ChargeMaturity=			
	Migration of HC	ChargeMigration=			
TRAP	Trap	Trap=	OK / Fail / Not relevant		
	Presence of closure	TrapClosure=			
	Presence of top seal	TrapTopSeal=			
	Presence of lateral seal	TrapLateralSeal=			
RESERVOIR	Reservoir	Reservoir=	OK / Fail / Not relevant		
	Presence of reservoir	ReservoirPresence=			
	Quality of reservoir	ReservoirQuality=			
COMMENT	Dry well comments	DryWellComments=			
:::END:::					