

**General information**

Wellbore name	7122/7-4 S
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Press release	<a href="#">link to press release</a>
Factmaps in new window	<a href="#">link to map</a>
Main area	BARENTS SEA
Field	<a href="#">GOLIAT</a>
Discovery	<a href="#">7122/7-4 S (Klappmys)</a>
Well name	7122/7-4
Seismic location	NA01M1-R05 3D-INLINE1480 & TRACE 3359
Production licence	<a href="#">229</a>
Drilling operator	Eni Norge AS
Drill permit	1122-L
Drilling facility	<a href="#">POLAR PIONEER</a>
Drilling days	66
Entered date	21.09.2006
Completed date	25.11.2006
Release date	25.11.2008
Publication date	18.12.2008
Purpose - planned	APPRAISAL
Reentry	NO
Content	OIL/GAS
Discovery wellbore	YES
1st level with HC, age	LATE TRIASSIC
1st level with HC, formation	FRUHOLMEN FM
2nd level with HC, age	MIDDLE TRIASSIC
2nd level with HC, formation	KOBBE FM
3rd level with HC, age	EARLY TRIASSIC
3rd level with HC, formation	KLAPPMYSS FM
Kelly bushing elevation [m]	23.0
Water depth [m]	372.0
Total depth (MD) [m RKB]	2550.0
Final vertical depth (TVD) [m RKB]	2389.0
Maximum inclination [°]	33
Bottom hole temperature [°C]	57
Oldest penetrated age	EARLY TRIASSIC



Oldest penetrated formation	HAVERT FM
Geodetic datum	ED50
NS degrees	71° 15' 13.07" N
EW degrees	22° 19' 5.41" E
NS UTM [m]	7906413.02
EW UTM [m]	547280.98
UTM zone	34
NPDID wellbore	5406

**Wellbore history**



Well 7122/7-4 S was drilled 1.8 km northeast of well 7122/7-3 on the Goliat Discovery. The purpose was to prove the OWC and additional oil reserves down dip in the Kap Toscana Group deeper than the ODT in 7122/7-3 and to confirm the up dip oil and gas reserves (GOC) in the Kobbe Formation. The 7122/7-4 S well is the fourth appraisal well on the Goliat discovery.

### **Operations and results**

Well 7122/7-4 S was spudded with the semi-submersible installation Polar Pioneer on 21 September 2006 and drilled to TD at 2550 m in the Early Triassic (Griesbachian age) Havert Formation. The well was drilled vertical down through the Kap Toscana Group and then deviated to TD. No significant technical problems were encountered during the operations. The well was drilled with sea water and hi-vis sweeps down to 1050 m. Formate mud previously used for drilling the 7122/7-1, -2 and -3 wells was re-used in this well from 1050 m to TD.

Top Kap Toscana reservoir was penetrated at 1177 m, 14 m deeper than the prognosis. The reservoir consisted of very fine to fine sandstone and was water-bearing, but shows were recorded on cores from the upper part of the Kap Toscana Group. Top Snadd Formation was penetrated at 1244 m, 26 m deeper than prognosis. The reservoir consisted of sandstone interbedded with siltstone and claystone and was water bearing, but with weak, scattered shows in the interval 1260 to 1370 m. The third reservoir, in the Kobbe Formation, was found at 1793 m (1737 m TVD RKB), 5 m deeper than prognosis. The Kobbe Formation reservoir had a gas cap with the GOC at 1856 m (1790.5 m TVD RKB). The OWC was not clear-cut, but was estimated at 1957 m (1876 m TVD RKB). The upper part of the Kobbe Formation consisted of clean light grey, very fine to coarse Sandstone bodies. The sandstone bodies varied from 1 to 18 m thick with the thickness of the beds decreasing with depth. The Sandstone porosity was between 20 % and 30 % and permeability up to 4000 mD. The sandstones were interbedded with 1 to 10 m thick siltstone beds in the upper section. Below 1950 m the sandstone layers became less and thinner while the siltstone/claystone beds increased in thickness. Below 1990 m the Kobbe Formation consisted almost entirely of marine claystone. A fourth reservoir in the Klappmyss Formation was encountered at 2040.5 m (1947 m TVD RKB), 11 m shallower than prognosis. The reservoir consisted of interbedded sandstones, siltstones and claystones and was oil bearing with an OWC at 2072.5 m (1973 m TVD RKB).

Six cores were cut. Two were cut from 1182.5 to 1216 m in the Kap Toscana Group, two were cut from 1794 to 1820.64 m in the upper part of the Kobbe Formation, one was cut from 1885 to 1886 m in the oil zone of the Kobbe Formation, and one was cut from 2052 to 2064 m in the Klappmyss Formation. MDT fluid samples were taken at 1177.5 and 1185.6 m in the Kap Toscana Group (water), at 1808.1 m (gas) and 1913 m (oil), and 1989.1 m (water) in the Kobbe Formation and at 2045.1 m (oil) in the Klappmyss Formation.

The well was permanently abandoned on 25 November 2006 as a Klappmyss Formation oil discovery.

### **Testing**

An unconventional well test was performed (Injection test) in order to test the well with the smallest amount of produced hydrocarbons. This technique was successfully full scale tested on Goliath for the first time by ENI. The Kobbe Formation was perforated in the interval 1911-1927 m. Before the injection test, a 5 hours clean-up period was performed in order to recover a significant volume of dead oil for both flow assurance and separator test analysis. This resulted in a total of 30.5 m3 produced oil.

## **Cuttings at the Norwegian Offshore Directorate**



Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
1055.00	2550.00

Cuttings available for sampling?	YES
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### Cores at the Norwegian Offshore Directorate

Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
1	1182.0	1197.5	[m ]
2	1198.0	1214.9	[m ]
3	1794.0	1818.3	[m ]
4	1820.0	1820.7	[m ]
5	1885.0	1886.0	[m ]
6	2052.0	2063.4	[m ]

Total core sample length [m]	69.8
Cores available for sampling?	YES

### Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
1184.5	[m]	C	ICHRON
1195.9	[m]	C	ICHRON
1196.9	[m]	C	ICHRON
1203.6	[m]	C	ICHRON
1214.0	[m]	C	ICHRON
1795.3	[m]	C	ICHRON
1796.9	[m]	C	ICHRON
1814.9	[m]	C	ICHRON
1818.3	[m]	C	ICHRON
1820.5	[m]	C	ICHRON
1885.9	[m]	C	ICHRON
2055.8	[m]	C	ICHRON
2059.7	[m]	C	ICHRON
2063.5	[m]	C	ICHRON

### Oil samples at the Norwegian Offshore Directorate



Test type	Bottle number	Top depth MD [m]	Bottom depth MD [m]	Fluid type	Test time	Samples available
DST		0.00	0.00			YES

**Lithostratigraphy**

Top depth [mMD RKB]	Lithostrat. unit
395	<a href="#">NORDLAND GP</a>
615	<a href="#">NYGRUNNEN GP</a>
615	<a href="#">KVITING FM</a>
629	<a href="#">ADVENTDALEN GP</a>
629	<a href="#">KOLMULE FM</a>
865	<a href="#">KOLJE FM</a>
976	<a href="#">KNURR FM</a>
1075	<a href="#">HEKKINGEN FM</a>
1162	<a href="#">FUGLEN FM</a>
1177	<a href="#">KAPP TOSCANA GP</a>
1177	<a href="#">FRUHOLMEN FM</a>
1244	<a href="#">SNADD FM</a>
1794	<a href="#">SASSENDALEN GP</a>
1794	<a href="#">KOBBE FM</a>
2042	<a href="#">KLAPPMYSS FM</a>
2217	<a href="#">HAVERT FM</a>

**Composite logs**

Document name	Document format	Document size [MB]
<a href="#">5406</a>	pdf	0.37

**Geochemical information**

Document name	Document format	Document size [MB]
<a href="#">5406_1</a>	pdf	1.22
<a href="#">5406_2</a>	pdf	0.72





## Logs

Log type	Log top depth [m]	Log bottom depth [m]
CMR HRLA TLD CNL ECS HNGS ACTS	1023	1717
FMI GR PPC MSIP	1023	1717
FMI-SINIC SCANNER	1717	2540
HRLA PEX ECS CMR GR LEH	1704	2436
MDT GR	1177	1315
MDT GR	1800	2473
MDT GR MULTI SAMPLE	1808	1949
MDT GR MULTI SAMPLE	1808	2071
MSCT GR	1826	1896
MWD - GR RES DIR PRESSURE	436	2547
MWD - GR RES NEU DEN SON DIR PRE	2344	2546
VSP GR	547	2540

## Casing and leak-off tests

Casing type	Casing diam. [inch]	Casing depth [m]	Hole diam. [inch]	Hole depth [m]	LOT/FIT mud eqv. [g/cm3]	Formation test type
CONDUCTOR	30	442.0	36	444.0	1.65	LOT
SURF.COND.	13 3/8	1023.0	17 1/4	1024.0	0.00	LOT
INTERM.	9 5/8	1704.0	12 1/4	1706.0	1.78	LOT
OPEN HOLE		2550.0	8 1/2	2550.0	0.00	LOT

## Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
447	1.18			NACL	
449	1.10			SPUD MUD	
1050	1.03	14.0		SW/BENTONITE	
1216	1.31	12.0		FORMPRO	
1716	1.30	15.0		FORMPRO	
1795	1.30	12.0		FORMPRO	
2550	1.25	12.0		FORMPRO	
2550	1.25	12.0		FORMPRO	

**Thin sections at the Norwegian Offshore Directorate**

Depth	Unit
1186.80	[m ]
1209.52	[m ]
1211.00	[m ]
1795.05	[m ]
1797.95	[m ]
1798.40	[m ]
1804.50	[m ]
1808.25	[m ]
1812.80	[m ]
1814.05	[m ]
1818.05	[m ]
1885.09	[m ]
2053.10	[m ]
2054.25	[m ]
2057.80	[m ]
2059.05	[m ]
2053.85	[m ]
2055.05	[m ]

**Pressure plots**

The pore pressure data is sourced from well logs if no other source is specified. In some wells where pore pressure logs do not exist, information from Drill stem tests and kicks have been used. The data has been reported to the NPD, and further processed and quality controlled by IHS Markit.

Document name	Document format	Document size [MB]
<a href="#">5406 Formation pressure (Formasjonstrykk)</a>	pdf	0.30



