General information

Wellbore name	7122/7-3
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	BARENTS SEA
Field	GOLIAT
Discovery	7122/7-3
Well name	7122/7-3
Seismic location	NA01M1 3D inline:1399 & crossline 3119
Production licence	229
Drilling operator	Eni Norge AS
Drill permit	1105-L
Drilling facility	EIRIK RAUDE
Drilling days	77
Entered date	24.10.2005
Completed date	08.01.2006
Release date	08.01.2008
Publication date	09.01.2008
Purpose - planned	APPRAISAL
Reentry	NO
Content	OIL/GAS
Discovery wellbore	YES
1st level with HC, age	LATE TRIASSIC
1st level with HC, formation	TUBÅEN FM
2nd level with HC, age	TRIASSIC
2nd level with HC, formation	SNADD FM
3rd level with HC, age	MIDDLE TRIASSIC
3rd level with HC, formation	KOBBE FM
Kelly bushing elevation [m]	25.0
Water depth [m]	343.0
Total depth (MD) [m RKB]	2726.0
Final vertical depth (TVD) [m RKB]	2725.0
Maximum inclination [°]	4.7
Bottom hole temperature [°C]	73
Oldest penetrated age	PERMIAN
Oldest penetrated formation	TEMPELFJORDEN GP

Geodetic datum	ED50
NS degrees	71° 15' 17.53'' N
EW degrees	22° 16' 4.6'' E
NS UTM [m]	7906512.67
EW UTM [m]	545476.82
UTM zone	34
NPDID wellbore	5214

Wellbore history

General

Well 7122/7-3 was drilled on the Goliat Field, which is located approximately 55 km to the south-east of the Snøhvit Field. The Goliat structure is located on the crestal part of a major northeast-southwest trending roll-over anticline situated in the southeastern part of the Hammerfest Basin, along the Troms-Finmark Fault. The primary purpose of the well was to appraise the hydrocarbon potential of the Early Jurassic / Late Triassic (the 7122/7-1 Goliat Discovery). The secondary purpose was to test the potential throughout the Triassic and Late Permian. Permian was the drilling commitment for the licence.

Operations and results

Well 7122/7-3 was spudded with the semi-submersible installation Eirik Raude on 24 October 2005 and drilled to TD at 2726 m in limestone/claystone of the Late Permian Røye Formation. No serious problem was encountered in the operations. The well was drilled with seawater/high viscous sweeps with pre-hydrated bentonite mud down to 538 m and with K/Na Format Polymer mud from 538 m to TD.

The top of the Tubåen reservoir was found at 1087 m, 5 m deeper than prognosis. The reservoir had a gas cap with a GOC at 1145.6 m and oil below. No OWC was found. Top Snadd Formation reservoir was encountered at 1180 m, 23 m shallower than prognosis. The reservoir was oil bearing with a true OWC at 1199.5 m and was in a pressure regime different from the Tubåen reservoir pressure. The third reservoir was found in the Kobbe Formation at 1808 m, 29 m shallower than the prognosis. The reservoir was oil bearing. Oil was confirmed down to 1875.3 m by MDT fluid scanning, and the oil water contact was interpreted to be at 1878 m based on intersection between oil and water gradients.

The Kobbe Formation oil differs from the upper Tubåen and Snadd oils, which are geochemically very similar. The Kobbe oil is not biodegraded while the upper oil reservoirs are slightly biodegraded (removal of C8 ? C15 n-alkanes, but intact C15+ n-alkanes). Other geochemical differences, such as a very light stable carbon isotope composition in the Kobbe oil compared to the upper oils, indicate that the Kobbe oil and the upper oils have different source rocks.

Seven cores were cored in the well. Cores 1 and 2 were cut from 1082 to 1104 from the Late Jurassic Fuglen Formation and into the Late Triassic Kap Toscana Group, core 3 was cut from 1146.5 to 1156 m in the Kap Toscana Group, core 4 was cut from 1187 to 1192 m in the Late Triassic Snadd Formation, cores 5 and 6 were cut from 1812 to 1836 m in the Middle Triassic Kobbe Formation, and core 7 was cut from 2519 to 2521 m in the Early Triassic Havert Formation. MDT fluid samples were taken at 1095.3 m (Tubåen Formation ; gas), 1148.5 m (Tubåen Formation; oil), 1195.6 m (Snadd Formation; oil), 1202.1 m (Snadd Formation; water), 1812 m (Kobbe Formation; oil), 1874.5 m (Kobbe Formation; oil), and at 1931.2 m (Kobbe Formation; water).

The well was permanently abandoned on 8 January 2006 as a discovery well.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
540.00	2725.00

Cuttings available for sampling?	YES

Cores at the Norwegian Offshore Directorate

Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
1	1082.0	1085.3	[m]
2	1086.0	1105.0	[m]
3	1146.0	1156.8	[m]
4	1187.0	1189.5	[m]
5	1812.0	1823.2	[m]
6	1824.0	1834.3	[m]
7	2519.0	2520.9	[m]

Total core sample length [m]	58.9
Cores available for sampling?	YES

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
1082.3	[m]	C	ICHRON
1083.3	[m]	C	ICHRON
1086.5	[m]	C	ICHRON
1087.0	[m]	C	ICHRON
1149.5	[m]	C	ICHRON
1151.5	[m]	C	ICHRON
1154.7	[m]	C	ICHRON
1156.6	[m]	C	ICHRON
1187.1	[m]	C	ICHRON
1189.5	[m]	C	ICHRON
1814.7	[m]	C	ICHRON
1816.2	[m]	C	ICHRON
1822.6	[m]	C	ICHRON
1824.4	[m]	C	ICHRON
1831.6	[m]	C	ICHRON
1832.9	[m]	C	ICHRON
1833.3	[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
MDT		0.00	1195.60		30.11.2005 - 00:00	YES
MDT		1812.00	0.00		17.12.2005 - 00:00	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
368	NORDLAND GP
634	NYGRUNNEN GP
634	KVITING FM
650	ADVENTDALEN GP
650	KOLMULE FM
865	KOLJE FM
960	KNURR FM
1018	HEKKINGEN FM
1073	FUGLEN FM
1087	KAPP TOSCANA GP
1087	TUBÅEN FM
1180	SNADD FM
1808	SASSENDALEN GP
1808	KOBBE FM
2044	KLAPPMYSS FM
2212	HAVERT FM
2595	TEMPELFJORDEN GP

Composite logs

Document name	Document format	Document size [MB]
5214	pdf	0.40

Geochemical information

Document name	Document format	Document size [MB]
5214_1	pdf	1.75
5214_2	pdf	5.05

Logs

Log type	Log top depth [m]	Log bottom depth [m]
- LEHQT ECRD	1693	2409
- LEHQT ECRO	995	1714
CMR HLRA TLO HGNS ECS HWGS ACTS	995	1714
CMR HRLA TLD HGNS ECS HNGS ACTS	1693	2409
CMR PPC GR ACTS	995	1712
DSI HRLA TLD HGNS ACTS ECRD	2350	2727
FMI PPC GR ACTS	995	1714
LWD - GR RES DIR	524	989
LWD - GR RES DIR ECD	1000	2415
MDT GR ACTS ACRD	1808	2206
MDT GR ACTS ECRD	1000	1700
MDT GR ACTS ECRD	2350	2727
MDT GR ACTS ECRD DUAL PACKER	1148	1195
MSCT GR	1105	1653
MSCT GR	1719	2381
MSIP DENS GR CAL	477	1001
MSIP FMI PPPC GR ACTS	1693	2410
VSP GR	850	2721

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	416.0	36	421.0	0.00	LOT
SURF.COND.	20	529.0	26	530.0	1.35	LOT
SURF.COND.	13 3/8	995.0	16	1000.0	2.62	LOT
INTERM.	9 5/8	1694.0	12 1/4	1712.0	1.19	LOT
LINER	7	2405.0	8 1/2	2420.0	0.00	LOT

OPEN HOLE		2726.0	6	2726.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
372	1.03			SPUD MUD	
400	1.25	19.0		FORMATE POLYMER	
538	1.20	12.0		FORMPRO	
900	1.20	12.0		FORMATE POLYMER	
1056	1.30	12.0		FORMATE POLYMER	
1230	1.30	15.0		FORMATE POLYMER	
1712	1.34	15.0		FORMATE POLYMER	
1816	1.36	14.0		FORMATE POLYMER	
2420	1.54	21.0		FORMATE POLYMER	
2540	1.55	17.0		FORMATE POLYMER	
2726	1.54	19.0		FORMATE POLYMER	

Thin sections at the Norwegian Offshore Directorate

Depth	Unit
1087.80	[m]
1813.25	[m]
1818.25	[m]
1828.75	[m]
1819.02	[m]
1826.45	[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]
5214_Formation_pressure_(Formasjonstrykk)	pdf	0.29