



Generell informasjon

Brønnbane navn	7122/7-4 S
Type	EXPLORATION
Formål	WILDCAT
Status	P&A
Pressemelding	lenke til pressemelding
Faktakart i nytt vindu	lenke til kart
Hovedområde	BARENTS SEA
Felt	GOLIAT
Funn	7122/7-4 S (Klappmys)
Brønn navn	7122/7-4
Seismisk lokalisering	NA01M1-R05 3D-INLINE1480 & TRACE 3359
Utvinningstillatelse	229
Boreoperatør	Eni Norge AS
Boretillatelse	1122-L
Boreinnretning	POLAR PIONEER
Boredager	66
Borestart	21.09.2006
Boreslutt	25.11.2006
Frigitt dato	25.11.2008
Publiseringsdato	18.12.2008
Opprinnelig formål	APPRAISAL
Gjenåpnet	NO
Innhold	OIL/GAS
Funnbrønnbane	YES
1. nivå med hydrokarboner, alder	LATE TRIASSIC
1. nivå med hydrokarboner, formasjon.	FRUHOLMEN FM
2. nivå med hydrokarboner, alder	MIDDLE TRIASSIC
2. nivå med hydrokarboner, formasjon	KOBBE FM
3. nivå med hydrokarboner, alder	EARLY TRIASSIC
3. nivå med hydrokarboner, formasjon	KLAPPMYSS FM
Avstand, boredekk - midlere havflate [m]	23.0
Vanndybde ved midlere havflate [m]	372.0
Totalt målt dybde (MD) [m RKB]	2550.0
Totalt vertikalt dybde (TVD) [m RKB]	2389.0



Maks inklinasjon [°]	33
Temperatur ved bunn av brønnbanen [°C]	57
Eldste penetrerte alder	EARLY TRIASSIC
Eldste penetrerte formasjon	HAVERT FM
Geodetisk datum	ED50
NS grader	71° 15' 13.07" N
ØV grader	22° 19' 5.41" E
NS UTM [m]	7906413.02
ØV UTM [m]	547280.98
UTM sone	34
NPDID for brønnbanen	5406

Brønnhistorie



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.



Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
1055.00	2550.00

Borekaks tilgjengelig for prøvetaking?	YES
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Borekjerne i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
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 kjerneprøve lengde [m]	69.8
Kjerner tilgjengelig for prøvetaking?	YES

Palynologiske preparater i Sokkeldirektoratet

Prøve dybde	Dybde enhet	Prøve type	Laboratorie
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

Oljeprøver i Sokkeldirektoratet



Test type	Flaske nummer	Topp dyp MD [m]	Bunn dyp MD [m]	Væske type	Test tidspunkt	Prøver tilgjengelig
DST		0.00	0.00			YES

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
395	NORDLAND GP
615	NYGRUNNEN GP
615	KVITING FM
629	ADVENTDALEN GP
629	KOLMULE FM
865	KOLJE FM
976	KNURR FM
1075	HEKKINGEN FM
1162	FUGLEN FM
1177	KAPP TOSCANA GP
1177	FRUHOLMEN FM
1244	SNADD FM
1794	SASSENDALEN GP
1794	KOBBE FM
2042	KLAPPMYSS FM
2217	HAVERT FM

Spleisede logger

Dokument navn	Dokument format	Dokument størrelse [KB]
5406	pdf	0.37

Geokjemisk informasjon

Dokument navn	Dokument format	Dokument størrelse [KB]
5406_1	pdf	1.22
5406_2	pdf	0.72





Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [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

Foringsrør og formasjonsstyrketester

Type utforing	Utforing diam. [tommer]	Utforing dybde [m]	Brønnbane diam. [tommer]	Brønnbane dyp [m]	LOT/FIT slam eqv. [g/cm3]	Type formasjonstest
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

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	flytegrense [Pa]	Type slam	Dato, måling
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	



Tynnslip i Søkeldirektoratet

Dybde	Enhet
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]

Trykkplott

Porertrykksdataene kommer fra logging i brønnen hvis ingen annen kilde er oppgitt. I noen brønner der trykk ikke er logget, er det brukt informasjon fra formasjonstester eller brønnspar. Trykkdataene er rapportert inn til Oljedirektoratet og videre prosessert og kvalitetssikret av IHS Markit.

Dokument navn	Dokument format	Dokument størrelse [KB]
5406 Formation pressure (Formasjonstrykk)	pdf	0.30

