



Generell informasjon

Brønnbane navn	35/12-2
Type	EXPLORATION
Formål	WILDCAT
Status	P&A
Pressemelding	lenke til pressemelding
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Funn	35/12-2 (Grosbeak)
Brønn navn	35/12-2
Seismisk lokalisering	SG9603MN9201REV06 IL 3504 XL 2089
Utvinningstillatelse	378
Boreoperatør	Wintershall Norge ASA
Boretillatelse	1241-L
Boreinnretning	SONGA DELTA
Boredager	47
Borestart	30.05.2009
Boreslutt	15.07.2009
Frigitt dato	15.07.2011
Publiseringsdato	15.07.2011
Opprinnelig formål	WILDCAT
Gjenåpnet	NO
Innhold	OIL/GAS
Funnbrønnbane	YES
1. nivå med hydrokarboner, alder	LATE JURASSIC
1. nivå med hydrokarboner, formasjon.	SOGNEFJORD FM
2. nivå med hydrokarboner, alder	MIDDLE JURASSIC
2. nivå med hydrokarboner, formasjon	NESS FM
Avstand, boredekk - midlere havflate [m]	29.0
Vanndybde ved midlere havflate [m]	359.0
Totalt målt dybde (MD) [m RKB]	2541.0
Totalt vertikalt dybde (TVD) [m RKB]	2541.0
Maks inklinasjon [°]	1.6
Temperatur ved bunn av brønnbanen [°C]	91
Eldste penetrerte alder	MIDDLE JURASSIC



Eldste penetrerte formasjon	ETIVE FM
Geodetisk datum	ED50
NS grader	61° 9' 59.72" N
ØV grader	3° 40' 13.35" E
NS UTM [m]	6781688.99
ØV UTM [m]	536069.13
UTM sone	31
NPDID for brønnbanen	6095

Brønnhistorie

**General**

Well 35/12-2 is an exploration well on the Grosbeak prospect. The Grosbeak prospect is located on the Ryggsteinen Ridge on the East flank of the Sogn Graben, with a number of fields and discoveries in the neighbouring blocks (Fram East, Fram West, Gjøa, Troll). The objective was to explore the hydrocarbon potential in sandstones of the Late Jurassic Sognefjord and Fensfjord formations and in the Middle Jurassic Brent Group.

Operations and results

Wildcat well 35/12-2 was spudded with the semi-submersible installation Songa Delta on 30 May 2009 and drilled to TD at 2541 m in the Middle Jurassic Brent Group. The well was drilled without significant operational problems and within pre-drill time schedule. The well was drilled with bentonite mud down to 517 m and with AQUACOL KCl/polymer mud from 517 m to TD.

The Late Jurassic Sognefjord Formation sandstones came in at 1968 m. Clear hydrocarbon shows and increased gas values were seen on penetrating this formation. The sandstones had an average porosity of 11.7 % when using a 10 % cut-off and contained gas to their base. The Heather Formation came in at 2030 m and consisted of very fine sandstones and siltstones with hydrocarbon shows throughout. Approximately 6 m of logs are missing in the top section of the Heather Formation. The Fensfjord Formation came in at 2100 m with oil encountered in a two-metre sandstone at the top of the formation. The Fensfjord Formation then passed into 13 m of shale, then into water-bearing sandstones. The sandstones had an average porosity of 19.4 % when using a 12.5 % cut off. Below the Fensfjord Formation was 291 m of non-hydrocarbon-bearing Heather Formation including 5 m of water-bearing Krossfjord Formation sandstone.

The Middle Jurassic Brent Group, Ness Formation was penetrated at 2450 m. A 35 m gross oil column was encountered in the Ness Formation. Based on pressure measurements and fluid densities two different pressure regimes with two hydrocarbon contacts were identified. The upper contact was placed at 2476.5 m, but it is not known what kind of fluid contact it is. The lower was recognised as an OWC at 2485 m. The reservoir properties in both zones are good. Also the underlying water bearing Etive Formation sands (2509.6 to 2529.1 m) have good reservoir properties.

Three successive cores were cut in the interval 1974.0 to 2106.0 m. Four (4) wire line runs comprised SBT, VSP and two RCI runs. A successful RCI gas sample using straddle packer was collected at 2027 m in the Sognefjord Formation. Further RCI single probe samples were collected in the Fensfjord Formation at 2101.5 m in (oil, gas, water, mud) and 2119 m (water); in the Ness Formation at 2454.4 m, 2459 m, 2459.5 m, 2460 m, 2477 m, 2481 m (all oil, gas, water, and mud) and at 2489 m (water and mud); and in the Etive Formation at 2524 m (water and mud). Low permeabilities in the Sognefjord Formation made the acquisition of accurate formation pressures (RCI) and fluid samples problematic, but otherwise the data collection was without incidents. Pressure measurements were also obtained in the Lista water bearing sands in the 12-1/4" hole section using a LWD formation pressure tool (TesTrak).

The well was permanently abandoned on 15 July 2009 as an oil and gas discovery.

Testing

No drill stem test was performed.



Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
1320.00	2541.00

Borekaks tilgjengelig for prøvetaking?	YES
--	-----

Borekjerne i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	1974.0	2025.7	[m]
2	2028.0	2055.0	[m]
3	2055.0	2101.0	[m]

Total kjerneprøve lengde [m]	124.7
Kjerner tilgjengelig for prøvetaking?	YES

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
389	NORDLAND GP
546	UTSIRA FM
675	HORDALAND GP
1285	ROGALAND GP
1285	BALDER FM
1340	SELE FM
1425	LISTA FM
1742	VÅLE FM
1770	SHETLAND GP
1770	JORSALFARE FM
1829	KYRRE FM
1968	VIKING GP
1968	SOGNEFJORD FM
2030	HEATHER FM
2100	FENSFJORD FM
2159	HEATHER FM
2232	KROSSFJORD FM
2237	HEATHER FM
2450	BRENT GP
2450	NESS FM



2510	ETIVE FM
------	----------

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
LWD - DIR GR RES DEN NUT SON PWD	1310	1975
LWD - DIR GR RES DEN NUT SON PWD	1975	2541
LWD - DIR GR RES PWD	388	517
LWD - DIR GR RES PWD SON	517	1310
RCI GR	1971	2531
RCI GR	1996	2101
SBT GR	800	1972
VSP	840	2451

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	453.0	36	457.0	0.00	LOT
SURF.COND.	20	513.0	26	517.0	0.00	LOT
PILOT HOLE		517.0	9 7/8	517.0	0.00	LOT
INTERM.	13 3/8	1304.0	17 1/2	1310.0	1.39	LOT
LINER	9 5/8	1968.0	12 1/4	1975.0	1.52	LOT
OPEN HOLE		2541.0	8 1/2	2541.0	1.52	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
423	1.05			BENTONITE MUD	
430	1.10	7.0		BENTONITE MUD	
453	1.50	20.0		BENTONITE MUD	
517	1.50			BENTONITE MUD	
1137	1.26	16.0		AQUACOL KCL/POLYMER/GLY COL	



1310	1.30	21.0		AQUACOL KCL/POLYMER/GLY COL	
1975	1.32	21.0		AQUACOL KCL/POLYMER/GLY COL	
2105	1.31	18.0		AQUACOL KCL/POLYMER/GLY COL	
2386	1.32	24.0		AQUACOL KCL/POLYMER/GLY COL	
2541	1.32	18.0		BENTONITE MUD	