



Generell informasjon

Brønnbane navn	34/12-1
Type	EXPLORATION
Formål	WILDCAT
Status	P&A
Pressemelding	lenke til pressemelding
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Funn	34/12-1 (Afrodite)
Brønn navn	34/12-1
Seismisk lokalisering	PSDM en 04m01-line 2770 & trace 6120
Utvinningstillatelse	293
Boreoperatør	Eni Norge AS
Boretillatelse	1162-L
Boreinnretning	TRANSOCEAN LEADER
Boredager	180
Borestart	03.11.2007
Boreslutt	30.04.2008
Frigitt dato	30.04.2010
Publiseringsdato	30.04.2010
Opprinnelig formål	WILDCAT
Gjenåpnet	NO
Innhold	GAS/CONDENSATE
Funnbrønnbane	YES
1. nivå med hydrokarboner, alder	MIDDLE JURASSIC
1. nivå med hydrokarboner, formasjon.	BRENT GP
Avstand, boredekk - midlere havflate [m]	23.0
Vanndybde ved midlere havflate [m]	373.0
Totalt målt dybde (MD) [m RKB]	4713.0
Totalt vertikalt dybde (TVD) [m RKB]	4711.0
Maks inklinasjon [°]	5.6
Temperatur ved bunn av brønnbanen [°C]	168
Eldste penetrerte alder	EARLY JURASSIC
Eldste penetrerte formasjon	COOK FM
Geodetisk datum	ED50
NS grader	61° 13' 19.88" N



ØV grader	2° 59' 55.62" E
NS UTM [m]	6787697.57
ØV UTM [m]	499934.65
UTM sone	31
NPDID for brønnbanen	5684

Brønnhistorie

General

The 34/12-1 Afrodite well was drilled in the northern Viking Graben in the North Sea. The Afrodite structure is a horst block of Jurassic age bounded by north-south trending faults. The main purpose was to test the Middle Jurassic Brent Group and Cook sandstone of the Dunlin Group for hydrocarbons. The primary target was the Brent Group sandstones with the Cook sandstone as the secondary target. The well was classified as high temperature/high pressure (HTHP).

Operations and results

Well 34/12-1 was spudded with the semi-submersible installation Transocean Leader on 30 April 2008 and drilled to TD at 4713 m in the Early Jurassic Cook Formation. A pilot hole was drilled prior to drilling the 26" hole to check for shallow gas. No shallow gas was encountered. The well was accidentally sidetracked at 1391m when drilling out a cement plug. The plug had been set as a barrier in the well to allow the BOP to be pulled for repair. The well was drilled with spud mud down to 1261 m, with Ultradril mud from 1261 m to 3210 m, and with Paratherm oil based mud from 3210 m to TD.

The primary target Brent Group was encountered at 4320.8 m. The Brent Group comprised 52 m of net pay gas condensate bearing sandstones of 13% average porosity. No HC water contact was found. The secondary target Cook sandstones encountered at 4740 m were water wet. High background gas and gas peaks were observed when drilling through the Brent Group. Shows on cuttings and side wall cores from the Brent Group and Cook Formation were very weak and indistinguishable from the cut due to oil based mud. The average permeability in the Brent Group reservoir was low with an average below 0.1 mD. The low permeability was mainly caused by the presence of illite.

No cores were cut in the well due to technical problems. MDT Pressure points showed that reservoir pressure is more than 30 bar higher in the Dunlin Group than in the Brent Group reservoir pressure, proving that there is no communication between the Brent Group and the Dunlin Sandstones. No fluid samples were taken on MDT.

The well was permanently abandoned on 30 April 2008 as a gas/condensate discovery.

Testing

The Brent Group was perforated on the intervals 4321- 4330 m and 4346 - 4356 m. The total amount of fluids recovered at surface was 21.5 Sm³ of condensate, and the gas rate was in the range of 210000 - 230000 Sm³/day with a maximum reading of 293000 Sm³/day on a 40/64" choke. The GOR was 6600 Sm³/Sm³ and the oil density was 0.78 g/cm³. The reservoir temperature interpreted from the test was 150 deg C.

Borekaks i Sökkeldirektoratet



Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
1270.00	4713.00

Borekaks tilgjengelig for prøvetaking?	YES
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Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
396	NORDLAND GP
943	UTSIRA FM
973	HORDALAND GP
1815	ROGALAND GP
1815	BALDER FM
1876	SELE FM
1885	LISTA FM
1995	VÅLE FM
2007	SHETLAND GP
2007	JORSALFARE FM
2280	KYRRE FM
3497	TRYGGVASON FM
3705	BLODØKS FM
3748	SVARTE FM
3922	CROMER KNOLL GP
3922	RØDBY FM
4070	SOLA FM
4100	ÅSGARD FM
4172	VIKING GP
4172	DRAUPNE FM
4218	HEATHER FM
4321	BRENT GP
4321	TARBERT FM
4331	NESS FM
4447	ETIVE FM
4457	RANNOCH FM
4499	DUNLIN GP
4499	DRAKE FM
4607	COOK FM



Geokjemisk informasjon

Dokument navn	Dokument format	Dokument størrelse [KB]
5684_1	pdf	0.67
5684_2	pdf	1.14

Borestrengtester (DST)

Test nummer	Fra dybde MD [m]	Til dybde MD [m]	Reduksjonsven til størrelse [mm]
1.0	4321	4356	15.9

Test nummer	Endelig avstengningstrykk [MPa]	Endelig strømningsstrykk [MPa]	Bunnhullstrykk [MPa]	Borehullstemperatur [°C]
1.0				

Test nummer	Olje produksjon [Sm3/dag]	Gass produksjon [Sm3/dag]	Oljetetthet [g/cm3]	Gasstygde rel. luft	GOR [m3/m3]
1.0	33	216000	0.780		6600

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
AIT MSIP	4125	4529
AIT MSIP HNGS	3663	4524
AIT PEX IS PPC MSIP GR ACTS ECRD	2040	4110
APS LDS AIT	4519	4708
CMR XPT	4321	4456
IPLT OBMI ECS GR	4100	4529
LWD - GR APWD	396	1260
LWD - GR RES SONIC	396	1260
LWD - GR RES SONIC APWD	1260	4110
MDT GR	4321	4453
MDT GR	4572	4684
MSCT GR	3250	4050
MSCT GR	4422	4459





MSCT GR	4535	4678
MWD - GR RES APWD	4110	4520
VSP GR	1815	4713

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	445.0	36	448.0	1.80	LOT
SURF.COND.	20	1246.0	26	1260.0	1.79	LOT
INTERM.	13 3/8	3185.0	17 1/2	3210.0	2.08	LOT
INTERM.	9 5/8	4098.0	12 1/4	4110.0	2.02	LOT
LINER	7	4519.0	8 3/8	4520.0	0.00	LOT
OPEN HOLE		4713.0	6 1/2	4713.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
400	1.03			Seawater	
450	1.05			SPUD MUD	
1101	1.54	21.0		WBM (Sildril)	
1147	1.05			SPUD MUD	
1205	1.54	21.0		WBM (Sildril)	
1260	1.38	23.0		ULTRADRIL DW	
1390	1.37	24.0		ULTRADRIL DW	
1394	1.89	47.0		OBM (Paratherm)	
1396	1.89	47.0		OBM (Paratherm)	
1841	1.37	25.0		ULTRADRIL DW	
2050	1.50	31.0		ULTRADRIL DW	
2210	1.50	32.0		ULTRADRIL DW	
2452	1.52	31.0		ULTRADRIL DW	
2452	1.52	34.0		ULTRADRIL DW	
2500	1.52	33.0		ULTRADRIL DW	
2672	1.52	32.0		ULTRADRIL DW	
2781	1.52	29.0		ULTRADRIL DW	
3075	1.52	38.0		ULTRADRIL DW	
3200	1.37	23.0		ULTRADRIL DW	
3210	1.37	23.0		ULTRADRIL DW	



3656	1.59	38.0		OBM (PARATHERM)	
4110	1.74	44.0		OBM (PARATHERM)	
4115	1.95	47.0		OBM (PARATHERM)	
4180	1.95	43.0		OBM (PARATHERM)	
4300	1.95	43.0		OBM (PARATHERM)	
4489	1.45	26.0		OBM (Paratherm)	
4520	1.89	42.0		OBM (Paratherm)	
4524	1.89	42.0		OBM (Paratherm)	
4588	1.89	43.0		OBM (Paratherm)	
4610	1.89	43.0		OBM (Paratherm)	
4671	1.89	43.0		OBM (Paratherm)	
4713	1.89	42.0		OBM (Paratherm)	