



Generell informasjon

Brønnbane navn	34/3-3 S
Type	EXPLORATION
Formål	WILDCAT
Status	P&A
Pressemelding	lenke til pressemelding
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Felt	KNARR
Funn	34/3-3 S
Brønn navn	34/3-3
Seismisk lokalisering	inline 5024 & crossline 2782
Utvinningstillatelse	373 S
Boreoperatør	BG Norge AS
Boretillatelse	1351-L
Boreinnretning	WEST ALPHA
Boredager	71
Borestart	10.09.2011
Boreslutt	19.11.2011
Frigitt dato	19.11.2013
Publiseringsdato	19.11.2013
Opprinnelig formål	APPRAISAL
Gjenåpnet	NO
Innhold	OIL
Funnbrønnbane	YES
1. nivå med hydrokarboner, alder	EARLY JURASSIC
1. nivå med hydrokarboner, formasjon.	COOK FM
Avstand, boredekk - midlere havflate [m]	18.0
Vanndybde ved midlere havflate [m]	400.0
Totalt målt dybde (MD) [m RKB]	4063.0
Totalt vertikalt dybde (TVD) [m RKB]	4012.0
Maks inklinasjon [°]	15
Temperatur ved bunn av brønnbanen [°C]	141
Eldste penetrerte alder	EARLY JURASSIC
Eldste penetrerte formasjon	BURTON FM
Geodetisk datum	ED50



NS grader	61° 47' 42.49" N
ØV grader	2° 43' 4.38" E
NS UTM [m]	6851554.92
ØV UTM [m]	485123.66
UTM sone	31
NPDID for brønnbanen	6588

Brønnhistorie

General

Well 34/3-3 S was drilled on the Jordbær Vest west of the Knarr field (formerly called Jordbær) in the northern part of the North Sea. The objective was to prove hydrocarbons in the Early Jurassic Cook formation.

Operations and results

Wildcat well 34/3-3 S was spudded with the semi-submersible installation West Alpha on 10 September 2011 and drilled to TD at 4063 m (4012 m TVD) in the Early Jurassic Burton Formation. A 9 7/8" pilot hole was drilled to 983 m to check for shallow gas. No shallow gas was encountered. The well was drilled vertical down to 2220 m and deviated with up to 15 dg inclination from there to TD. No significant problem was reported. The well was drilled with sea water and hi-vis sweeps down to 984 m, with Glydril/KCl mud from 984 m to 2240 m, with Versatec oil based mud from 2240 m to 3780 m, and with Versatherm oil based mud from 3780 m to TD.

Cook Formation sandstones were penetrated at 3907.5 m (3859.8 m TVD), which was 42.8 m deeper than prognosed. Light oil was encountered in the upper Cook Formation down to 3932 m (3884 m TVD). A definite OWC was not resolved from the data. Convincing oil shows were recorded on cores from the reservoir down to 3938 m, otherwise no oil shows above the oil based mud were reported from the well.

A total of 80.42 m core was cut in the Cook Formation from 3910.85 m to 3992 m. The upper 9 m of core 1 was fragmented due to problems with the inner core liner. Core depth shifts were from 0.14 to 0.94 m relative to logger's depth. MDT fluid samples were taken at 3915.9 m (oil) and 3946.7 m (water). The temperature at sea bed was measured by ROV and at survey stations in the Jordbær area wells at different times during the year. These measurements gave an average of 6.5 deg C at sea bed.

The well was plugged back for sidetracking on 19 November 2011. It is classified as an oil discovery.

Testing

A successful DST was performed over the interval in 3912.5 to 3928.5 m in the Upper Cook Formation. The reservoir produced at a rate of 1220 Sm³ oil and 75700 Sm³ gas/day through a 32/64" fixed choke during the main flow. The first stage separator GOR was 62 Sm³/Sm³, oil density was 0.778 - 0.805 g/cm³, H₂S = 5 - 10 ppm, CO₂ = 4 - 9%, and gas gravity was 0.832 - 0.864 (air = 1). The maximum bottom hole temperature measured during the main flow was 137.8 deg C.

Borekaks i Sokkeldirektoratet



Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
990.00	4063.00

Borekaks tilgjengelig for prøvetaking?	YES
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Borekjerne i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	3910.9	3938.4	[m]
2	3938.4	3965.8	[m]
3	3965.8	3991.3	[m]

Total kjerneprøve lengde [m]	80.4
Kjerner tilgjengelig for prøvetaking?	YES

Oljeprøver i Sokkeldirektoratet

Test type	Flaske nummer	Topp dyp MD [m]	Bunn dyp MD [m]	Væske type	Test tidspunkt	Prøver tilgjengelig
MDT		3928.50	3912.50	OIL		YES

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
418	NORDLAND GP
418	UNDIFFERENTIATED
1388	UTSIRA FM
1483	HORDALAND GP
1483	UNDIFFERENTIATED
1964	ROGALAND GP
1964	BALDER FM
1988	SELE FM
2005	LISTA FM
2090	SHETLAND GP
2090	JORSALFARE FM



2267	KYRRE FM
3433	TRYGGVASON FM
3739	CROMER KNOLL GP
3739	MIME FM
3748	DUNLIN GP
3748	DRAKE FM
3908	COOK FM
3996	BURTON FM

Borestrengtester (DST)

Test nummer	Fra dybde MD [m]	Til dybde MD [m]	Reduksjonsven til størrelse [mm]
1.0	3912	3928	12.7

Test nummer	Endelig avstengningstrykk [MPa]	Endelig strømningsstrykk [MPa]	Bunnhullstrykk [MPa]	Borehullstemperatur [°C]
1.0				137

Test nummer	Olje produksjon [Sm3/dag]	Gass produksjon [Sm3/dag]	Oljetetthet [g/cm3]	Gasstyngde rel. luft	GOR [m3/m3]
1.0	1200	75700	0.778	0.832	62

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
GR DI	418	498
GR DI	498	984
GR RES DEN NEU DI APWD	3992	4063
GR RES DI APWD SON	418	983
GVR GR RES DI APWD	3781	3911
MDT	3907	3965
MSCT GR	3774	4047
PDGR GR RES DI APWD SON	984	2240
PDGR GR RES DI APWD SON DEN	2240	3781
PEX CMR ECS HNGS	3896	4008
VSI4 GR	2000	4040



ZAIT PPC MSIP PPC GPIT GR	3726	4066
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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	36	496.0	42	498.0	0.00	LOT
SURF.COND.	20	980.0	26	984.0	1.66	LOT
INTERM.	13 3/8	2235.0	17 1/2	2240.0	1.92	LOT
INTERM.	9 5/8	3774.0	12 1/4	3781.0	2.06	LOT
LINER	7	4053.0	8 1/2	4063.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
2570	1.60	37.0		Versamud	
3910	1.80	41.0		Versamud	
3938	1.80	40.0		Versamud	
3992	1.80	41.0		Versamud	
4063	1.78	36.0		Versamud	
4063	0.00	53.0		Versamud	
4063	1.78	36.0		Versamud	
4063	1.03	1.0		Versamud	