



Generell informasjon

Brønnbane navn	2/5-10 A
Type	EXPLORATION
Formål	WILDCAT
Status	P&A
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Brønn navn	2/5-10
Seismisk lokalisering	SH 8903-103 SP. 370/SH 82-411 SP. 484
Utvinningstillatelse	067
Boreoperatør	Norsk Agip AS
Boretillatelse	769-L
Boreinnretning	POLAR PIONEER
Boredager	30
Borestart	27.08.1993
Boreslutt	25.09.1993
Frigitt dato	25.09.1995
Publiseringsdato	24.09.2003
Opprinnelig formål	WILDCAT
Gjenåpnet	NO
Innhold	OIL SHOWS
Funnbrønnbane	NO
Avstand, boredekk - midlere havflate [m]	23.0
Vanndybde ved midlere havflate [m]	65.0
Totalt målt dybde (MD) [m RKB]	4715.0
Totalt vertikalt dybde (TVD) [m RKB]	4676.0
Maks inklinasjon [°]	34.1
Temperatur ved bunn av brønnbanen [°C]	162
Eldste penetrerte alder	TRIASSIC
Eldste penetrerte formasjon	SKAGERRAK FM
Geodetisk datum	ED50
NS grader	56° 41' 21.66" N
ØV grader	3° 29' 27.32" E
NS UTM [m]	6283054.46
ØV UTM [m]	530071.86
UTM sone	31
NPDID for brønnbanen	2194



Brønnhistorie

General

Exploration well 2/5-10 is located in the Central Graben on the Steinbit Terrace. The well was drilled with Late Jurassic sandstone of Oxfordian age, in a combination trap with structural and dip closing elements, as the primary target. Secondary targets were the Middle Jurassic Bryne Formation in the same combination trapping configuration, while the Late Cretaceous Chalk and the Lower Cretaceous Cromer Knoll Group were stratigraphic trap targets. After reaching TD evaluation of the cores and electric logs concluded that a fault had been intercepted within the main Jurassic target, justifying a sidetrack in search of a better pay zone. Well 2/5-10 was therefore plugged back in and well 2/5-10 A sidetracked.

Operations and results

Well 2/5-10 was spudded with the semi-submersible installation "Polar Pioneer" on 23 May 1993 and drilled to TD at 4701 m in rocks of the Triassic Smith Bank Formation. The well was drilled with sea water and hi-vis sweeps down to 865 m, with KCl/Polymer mud from 865 m to 4235 m, and with HPHT/Polymer mud from 4235 m to TD. Shallow gas was encountered after drilling the 8 1/2" pilot hole, prior to opening up the hole to 26" and running 20" casing. In order to ensure a good 20" casing cement job without compromising rig safety it was decided to plug back the gas bearing zone and set 20" casing at 509m, 291m shallower than originally planned 800m. To avoid gas migration the cement slurries for the 20" and 13 3/8" were redesigned with gas tight cement (microblock added).

Top reservoir was encountered at 4582 m, 174 m deeper than prognosis due to complex geology and higher than expected shale interval velocities in the Late Jurassic. The main part of the Late Jurassic sandstone target was removed by faulting, and Triassic strata were encountered 5 m below top reservoir through a fault plane. The Late Jurassic sandstone was highly affected by the faulting, and the reservoir quality was poor. The secondary target Middle Jurassic Bryne Formation was not present. The Smith Bank Formation was encountered 5 m below top reservoir through a fault plane. A small hydrocarbon accumulation was found in the main target Late Jurassic Oxfordian age sandstone. Weak shows were encountered also in the Chalk and in the Vestland Group.

Two conventional cores were cut from 4575 m in the Late Jurassic sandstone and down to 4591 m in the Smith Bank Formation. Two samples collected at 4594.3 m and 4583.1 m in the Vestland Group during the MDT run contained weak hydrocarbon shows, a discontinuous film of oil in sample #1 and gas traces in sample #2. Because of a failure of the MDT tool's equalization valve, a leakage between the two chambers was considered likely and therefore the location of these hydrocarbon shows is doubtful. However they should more likely be attributed to the top part of the Late Jurassic SST as confirmed by the sample #3 collected in the following RFT run which contained at 4594.3 m (same depth as sample #1) formation water. Only mud filtrate was finally recovered in the sample #4 taken at 4614 m. Well bore 2/5-10 was subsequently plugged back and permanently abandoned on 26 August 1993 as a well with shows.

Sidestep 2/5-10 A was kicked off from 4306 m in 2/5-10 on 27 August 1993 and was drilled to a total depth of 4715 m in the Triassic Smith Bank Formation. The well was drilled with HPHT/polymer mud from kick-off to TD. The expected reservoir was encountered at 4616 m with a thickness of 57 m and with poor to medium reservoir characteristics. The shows encountered were poor, and no hydrocarbons could be extracted using downhole testing tools. Three conventional cores were cut in the Late



Jurassic sandstone from 4612 m to 4640.1 m. Four RFT samples collected at 4619 m, 4624.1 m, 4630 m and 4657 m contained formation water and mud filtrate with only traces of oil. Sidetrack 2/5-10 A was permanently plugged and abandoned on 25 September 1993 as a well with shows.

Testing

No drill stem test was performed.

Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
4295.00	4715.00

Borekaks tilgjengelig for prøvetaking?	YES
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Borekjerne i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	4612.0	4620.8	[m]
2	4621.5	4631.4	[m]
3	4631.4	4640.2	[m]

Total kjerneprøve lengde [m]	27.5
Kjerner tilgjengelig for prøvetaking?	YES

Kjernebilder



4612-4617m



4612-4620m



4621-4626m



4626-4631m



4631-4631m



4631-4636m



Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
88	NORDLAND GP
1733	HORDALAND GP
3052	ROGALAND GP
3052	BALDER FM
3062	SELE FM
3072	LISTA FM
3181	VÅLE FM
3214	SHETLAND GP
3214	EKOFISK FM
3342	TOR FM
3735	HOD FM
4295	CROMER KNOLL GP
4298	TYNE GP
4298	FARSUND FM
4616	VESTLAND GP
4673	NO GROUP DEFINED
4673	SKAGERRAK FM

Spleisede logger

Dokument navn	Dokument format	Dokument størrelse [KB]
2194	pdf	0.09

Geokjemisk informasjon

Dokument navn	Dokument format	Dokument størrelse [KB]
2194 1	pdf	1.95
2194 2	pdf	1.44
2194 3	pdf	0.93





Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

Dokument navn	Dokument format	Dokument størrelse [KB]
2194 2 5 10 A COMPLETION LOG	pdf	1.05
2194 2 5 10 A COMPLETION REPORT	pdf	50.05

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
AIT BHC MSFL GR AMS	4219	4715
CBL VDL GR	2100	4219
CST GR	4230	4704
LDL CNL NGS FMS AMS	4219	4711
MDT-PO GR	4617	4688
MWD - DIR	4292	4318
MWD - GR DIR	4318	4631
MWD - GR RAR RPD DIR	4640	4715
VSP	3000	4715

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
INTERM.	9 5/8	4217.0	12 1/4	4217.0	0.00	LOT
OPEN HOLE		4715.0	8 3/8	4715.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
4215	2.06	39.0		WATER BASED	
4301	2.02	33.0		WATER BASED	
4312	2.02	36.0		WATER BASED	
4318	2.04	36.0		WATER BASED	
4394	2.02	35.0		WATER BASED	
4430	2.02	37.0		WATER BASED	
4460	2.02	37.0		WATER BASED	
4500	2.02	39.0		WATER BASED	





4598	2.02	40.0		WATER BASED	
4612	2.02	39.0		WATER BASED	
4631	2.04	38.0		WATER BASED	
4640	2.02	36.0		WATER BASED	
4679	2.06	35.0		WATER BASED	
4715	2.06	35.0		WATER BASED	

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 brønnspark. Trykkdataene er rapportert inn til Oljedirektoratet og videre prosessert og kvalitetssikret av IHS Markit.

Dokument navn	Dokument format	Dokument størrelse [KB]
2194 Formation pressure (Formasjonstrykk)	pdf	0.22

