Generell informasjon

Brønnbane navn	6407/7-8
Type	EXPLORATION
Formål	WILDCAT
Status	P&A
Pressemelding	lenke til pressemelding
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORWEGIAN SEA
Funn	6407/7-8 (Noatun)
Brønn navn	6407/7-8
Seismisk lokalisering	NH9806M-line 1366 & trace 2881-Seismic 3D survey
Utvinningstillatelse	107
Boreoperatør	StatoilHydro Petroleum AS
Boretillatelse	1188-L
Boreinnretning	WEST ALPHA
Boredager	89
Borestart	18.06.2008
Boreslutt	14.09.2008
Frigitt dato	14.09.2010
Publiseringsdato	14.09.2010
Opprinnelig formål	WILDCAT
Gjenåpnet	NO
Innhold	GAS/CONDENSATE
Funnbrønnbane	YES
1. nivå med hydrokarboner, alder	MIDDLE JURASSIC
1. nivå med hydrokarboner, formasjon.	FANGST GP
2. nivå med hydrokarboner, alder	EARLY JURASSIC
2. nivå med hydrokarboner, formasjon	BÅT GP
Avstand, boredekk - midlere havflate [m]	18.0
Vanndybde ved midlere havflate [m]	293.0
Totalt målt dybde (MD) [m RKB]	5138.0
Totalt vertikalt dybde (TVD) [m RKB]	5105.0
Maks inklinasjon [°]	8.9
Temperatur ved bunn av brønnbanen [°C]	185
Eldste penetrerte alder	EARLY JURASSIC

Eldste penetrerte formasjon	ÅRE FM
Geodetisk datum	ED50
NS grader	64° 25' 49.3'' N
ØV grader	7° 7' 38.5'' E
NS UTM [m]	7146478.78
ØV UTM [m]	409822.02
UTM sone	32
NPDID for brønnbanen	5844

Brønnhistorie

General

The 6407/7-8 Noatun well is located in the Gimsan Basin, ca 15 km north of the Njord Field in the Norwegian Sea. The main objective of the well was to prove hydrocarbons in the Ile and Tilje Formations (Noatun C prospect). The structure was expected to contain gas and condensate.

Operations and results

An 8 1/2" pilot hole (6407/7-U-1) was drilled to 810 m due to a shallow gas warning.

Wildcat well 6407/7-8 was spudded with the semi-submersible installation West Alpha on 18 June 2008 and drilled to TD at 5138 m (5105 m TVD) in the Early Jurassic Åre Formation. No overpressured shallow gas was observed by the ROV at the wellhead or by the MWD while drilling the 8 1/2" pilot hole, the 36" hole or the 26" hole. From ca 800 m to ca 3600 m the well was drilled with a ca 8.5 degree deviation, leading to measured depth at TD being 33 m more than true vertical depth. Due to high temperatures in the reservoir section the MDT wire line operations proved difficult and several runs and Mini-DST's failed or did not give valid data. The well was drilled with Spud mud down to 1109 m, with Glydril mud from 1109 m to 2452 m, and with Versatherm oil based mud from 2452 m to TD.

The well penetrated rocks of Quaternary, Tertiary, Cretaceous, and Jurassic age. A 50 m thick sandstone section was penetrated in the upper Springar Formation and some thin sandstone stringers were penetrated in the Lange Formation, otherwise lithology was mudstone. All sands above BCU were dry. The well proved gas/condensate in both the Fangst and Båt Groups. Gas readings were considered relatively high in the Tertiary with a maximum of 5.3% at 2084 m in the Rogaland Group. The gas levels also increased abruptly when entering the Spekk Formation (maximum 13.1%), and in the reservoirs of the Fangst and Båt Groups. Oil shows were recorded in the intervals 4972 - 5085 m and 5118 - 5127 m in the base Tilje and Åre Formations; else no oil shows were recorded in the well.

Seven cores were cut in the well. Core no 1 was cut in the Ile Formation, the remaining were cut in the Båt Group. MDT runs were run under very good conditions in calm sea, but it proved difficult to hit the sandstone intervals. The results showed that the different reservoir sections belong to separate pressure regimes. The Garn Formation, the Upper Ror and the Tofte Formations did not have any reservoir quality sands present, while the top part of the Ile Formation was too cemented to get any pressure measurements made. In the Tilje and Åre Formations several good quality pressure measurements were made. Gas samples were taken in the Ile Formation at 4525.8 m, 4525.9 m and 4555.2 m, in the Tilje Formation at 4916.0 m, 4958.25 m and 4958.7 m, and in the Åre Formation at 5016.2 m. A successful MDT mini-DST was performed at 5019.1 - 5020.1 m.

The well bore was plugged back to 4000 m and permanently abandoned on 14 September 2008 as a gas/condensate discovery. A sidetrack was prepared to define the hydrocarbon/water contact.

Testing

No drill stem test was performed.

Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
1120.00	5138.00

Borekaks tilgjengelig for prøvetaking?	YES

Borekjerner i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	4472.0	4483.5	[m]
2	4563.0	4590.0	[m]
3	4757.0	4772.2	[m]
4	4806.0	4822.4	[m]
5	4822.4	4836.0	[m]
6	4872.0	4910.9	[m]
7	4937.0	4970.5	[m]

Total kjerneprøve lengde [m]	156.0
Kjerner tilgjengelig for prøvetaking?	YES

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
311	NORDLAND GP
311	NAUST FM
1212	KAI FM
1368	HORDALAND GP
1368	BRYGGE FM
1997	ROGALAND GP
1997	TARE FM
2132	TANG FM
2210	SHETLAND GP
2210	SPRINGAR FM
2362	NISE FM
2566	KVITNOS FM
2840	CROMER KNOLL GP
2840	LYSING FM
3119	LANGE FM
4005	LYR FM
4120	VIKING GP
4120	SPEKK FM

4184	MELKE FM
4330	FANGST GP
4330	GARN FM
4418	NOT FM
4457	ILE FM
4563	BÅT GP
4563	ROR FM
4606	TOFTE FM
4616	ROR FM
4752	TILJE FM
4981	ÅRE FM

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
AIT LDT APS ECS HNGS HILT GR	2439	4245
CMR GR	4301	5075
EMS OBMI2 GPIT MSIP GR	4253	5123
GPIT PPC MSIP GR	2000	4244
HIT HLDS HAPS ECS HNGS GR	4254	5128
MDT GR	4459	5134
MDT GR	4461	5134
MDT GR	4525	4555
MDT GR	4525	4958
MDT GR	4528	4528
MDT GR	4915	5016
MDT GR	4916	4916
MDT GR	4958	4958
MDT GR	4962	5002
MDT GR	5015	5015
MDT GR	5019	5019
MDT GR	5019	5019
MDT GR	5032	5032
MSCT GR	4460	5071
MWD - GR RES ECD DIR	4747	5122
MWD - RAB FORM PRESS GR RES ECD	4254	4458
MWD - RAB GR RES ECD DIR	4448	4752
MWD- GR RES ECD DIR	349	4244

VSP GR	353	5040

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	359.0	36	363.0	0.00	LOT
PILOT HOLE		810.0	8 1/2	810.0	0.00	LOT
SURF.COND.	20	1095.0	26	1109.0	1.71	LOT
INTERM.	16	2442.0	17 1/2	2452.0	1.81	LOT
INTERM.	9 5/8	4253.0	12 1/4	4254.0	1.90	LOT
OPEN HOLE		5138.0	8 1/2	5138.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
1109	1.45	17.0		Glydril	
1304	1.50	18.0		Glydril	
1908	1.62	21.0		Glydril	
2106	1.64	22.0		Glydril	
2290	1.64	27.0		Glydril	
2452	1.64	19.0		Glydril	
2452	1.64	20.0		Glydril	
3355	1.64	40.0		Versatherm	
3917	1.58	50.0		Versatherm	
4254	1.67	36.0		Versatherm	
4365	1.55	48.0		Versatherm	
4485	1.58	48.0		Versatherm	
4563	1.58	47.0		Versatherm	
4757	1.58	48.0		Versatherm	
4758	1.58	50.0		Versatherm	
4771	1.58	48.0		Versatherm	
4822	1.58	48.0		Versatherm	
4900	1.58	47.0		Versatherm	
4911	1.58	47.0		Versatherm	
4969	1.58	47.0		Versatherm	
5047	1.58	48.0		Versatherm	
5138	1.58	52.0		Versatherm	

5138	1.58	54.0		Versatherm	
5227	1.72	66.0		Versatherm	

Tynnslip i Sokkeldirektoratet

Dybde	Enhet
4481.75	[m]
4573.50	[m]
4770.25	[m]
4829.48	[m]
4879.25	[m]
4941.00	[m]
4949.00	[m]
4958.75	[m]
4966.25	[m]
4969.00	[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 brønnspark. Trykkdataene er rapportert inn til Oljedirektoratet og videre prosessert og kvalitetssikret av IHS Markit.

Dokument navn	Dokument format	Dokument størrelse [KB]
5844_Formation_pressure_(Formasjonstrykk)	pdf	0.30