



Generell informasjon

Brønnbane navn	16/1-11 A
Type	EXPLORATION
Formål	APPRAISAL
Status	P&A
Pressemelding	lenke til pressemelding
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Felt	IVAR AASEN
Funn	16/1-9 Ivar Aasen
Brønn navn	16/1-11
Seismisk lokalisering	inline 886 & crossline 1149
Utvinningstillatelse	001 B
Boreoperatør	Det norske oljeselskap ASA
Boretillatelse	1308-L
Boreinnretning	SONGA DELTA
Boredager	14
Borestart	26.04.2010
Boreslutt	09.05.2010
Frigitt dato	09.05.2012
Publiseringsdato	09.05.2012
Opprinnelig formål	APPRAISAL
Gjenåpnet	NO
Innhold	OIL
Funnbrønnbane	NO
1. nivå med hydrokarboner, alder	MIDDLE JURASSIC
1. nivå med hydrokarboner, formasjon.	SLEIPNER FM
2. nivå med hydrokarboner, alder	LATE TRIASSIC
2. nivå med hydrokarboner, formasjon	SKAGERRAK FM
Avstand, boredekk - midlere havflate [m]	29.0
Vanndybde ved midlere havflate [m]	112.0
Totalt målt dybde (MD) [m RKB]	2595.0
Totalt vertikalt dybde (TVD) [m RKB]	2528.0
Maks inklinasjon [°]	27.7
Eldste penetrerte alder	LATE TRIASSIC
Eldste penetrerte formasjon	SKAGERRAK FM



Geodetisk datum	ED50
NS grader	58° 55' 36.15" N
ØV grader	2° 11' 7.48" E
NS UTM [m]	6532327.00
ØV UTM [m]	453098.97
UTM sone	31
NPDID for brønnbanen	6364

Brønnhistorie

**General**

Well 16/1-11 and the subsequent 16/1-11 A sidetrack was drilled to appraise the 16/1-9 discovery on the Gudrun Terrace just west of the Utsira High in the North Sea. The discovery well 16/1-9 was completed in April 2008 and revealed oil shows in the Middle Jurassic Vestland Group, but neither coring or logging was completed according to programme due to hole problems. In well 16/1-11, the Sleipner Formation proved to be hydrocarbon bearing with a gas cap of approximately 25 m thickness and a gas-oil contact interpreted at approximately 2407 m in the Skagerrak Formation. However, acquisition of pressure data and sampling in the water zone in the Skagerrak Formation proved to be difficult due to very low porosity and permeability. Thus, no reliable water gradient could be established from the RCI sampling programme.

The 16/1-11 A geological sidetrack was drilled down flank on the structure. The main objectives were to obtain pressure samples in order to delineate the oil/water contact and to obtain water samples from the Skagerrak Formation in order to establish reservoir properties. A sidetrack would also give useful facies and thickness variation input. Another objective was to acquire sidewall cores to pin down the expected hiatus on top of the Sleipner Formation.

Operations and results

Well 16/1-11 A was drilled with the semi-submersible installation Songa Delta. It was kicked off on 26 April 2010, with kick-off point at 1744 m in the parent well. It was drilled to TD at 2595 m (2528 m TVD), 94 m MD into the Late Triassic Skagerrak Formation. The well was drilled with Carbotech oil based mud from kick-off to TD.

The reservoir of the Sleipner Formation was penetrated at 2476 m (2393.2 TVD MSL) approximately 300 m down flank westward relative to the parent well, with an inclination of 27.6 degrees. Pressure data proved an oil gradient throughout. Top Skagerrak formation was penetrated at 2500.5 m (2414.9 m TVD MSL). Gas and oil shows were present through the reservoir interval and a possible OWC at 2526.1 m (2433.6 m TVD MSL) in the Skagerrak Formation was defined by pressure points and fluid samples. Oil shows above the OBM was recorded down to 2533 m.

The planned wire line logging program including pressure points, fluid samples, mini-DST and sidewall cores was performed. No conventional cores were cut. RCI oil samples were collected at 2478.02 m and 2510.52 m. Contamination from oil base in these samples was estimated to be between 2.5% and 8.5% by weight. Draw-down was 1.6 to 4.0 bar. RCI samples with both oil and water was collected at 2521.13 m. In these samples the mud contamination was estimated to be ca 76% by weight and the draw-down was 66 - 70 bar. Water samples were collected at 2522.1 m during a mini-DST with the MRCH-JAR-TTRm-GR-Straddle packer-Observation probe.

The well was permanently abandoned on 9 May 2010 as an oil and gas appraisal well.

Testing

No drill stem test was performed.



Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
1760.00	2595.00

Borekaks tilgjengelig for prøvetaking?	YES
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Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
141	NORDLAND GP
754	UTSIRA FM
811	NO FORMAL NAME
825	HORDALAND GP
825	SKADE FM
837	NO FORMAL NAME
939	SKADE FM
1226	NO FORMAL NAME
1609	GRID FM
1738	NO FORMAL NAME
1994	ROGALAND GP
1994	BALDER FM
2031	SELE FM
2095	LISTA FM
2152	HEIMDAL FM
2207	LISTA FM
2262	SHETLAND GP
2262	EKOFISK FM
2283	CROMER KNOLL GP
2283	ÅSGARD FM
2320	VIKING GP
2320	DRAUPNE FM
2396	HEATHER FM
2476	VESTLAND GP
2476	SLEIPNER FM
2501	NO GROUP DEFINED
2501	SKAGERRAK FM

Geokjemisk informasjon





Dokument navn	Dokument format	Dokument størrelse [KB]
6364 01 16 1 11A gch transfer 1	txt	0.00
6364 02 16 1 11A gch results 1	txt	0.01

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
MRCH JAR TTRM GR RCI SW	2478	2544
MRCH JAR TTRM GR RCOR	2595	2425
MRCH JAR TTRM GR SP OP	2520	2562
MWD LWD - GR REMP BHPR MECH DEN	1756	2596

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
OPEN HOLE		2595.0	8 1/2	2595.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
1565	1.21	13.0		AQUACOL KCL/POLYMER/GLY COL	
2026	1.30	32.0		CARBO TECH	
2477	1.30	31.0		CARBO TECH	
2595	1.32	30.0		CARBO TECH	
2595	1.30	33.0		CARBO TECH	

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]
6364 Formation pressure (Formasjonstrykk)	pdf	0.23

