



Generell informasjon

Brønnbane navn	15/6-8 S
Type	EXPLORATION
Formål	WILDCAT
Status	P&A
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Brønn navn	15/6-8
Seismisk lokalisering	MC3D-Q15 LINE 1659 & CDP 4332
Utvinningstillatelse	166
Boreoperatør	Deminex Norge AS
Boretillatelse	878-L
Boreinnretning	BYFORD DOLPHIN
Boredager	46
Borestart	18.02.1997
Boreslutt	05.04.1997
Frigitt dato	05.04.1999
Publiseringsdato	31.10.2003
Opprinnelig formål	WILDCAT
Gjenåpnet	NO
Innhold	DRY
Funnbrønnbane	NO
Avstand, boredekk - midlere havflate [m]	25.0
Vanndybde ved midlere havflate [m]	102.0
Totalt målt dybde (MD) [m RKB]	3225.0
Totalt vertikalt dybde (TVD) [m RKB]	3147.0
Maks inklinasjon [°]	21.6
Temperatur ved bunn av brønnbanen [°C]	104
Eldste penetrerte alder	TRIASSIC
Eldste penetrerte formasjon	SKAGERRAK FM
Geodetisk datum	ED50
NS grader	58° 32' 57.58" N
ØV grader	1° 52' 55.9" E
NS UTM [m]	6490561.26
ØV UTM [m]	434940.96
UTM sone	31
NPDID for brønnbanen	3014

**Brønnhistorie****General**

Block 15/6 is situated on the eastern flank of the southern part of the South Viking Graben, lying in a transition zone on a system of faulted terraces between the main Viking Graben to the west and the Utsira High to the east. The primary objective of the 15/6-8 S well was to test the hydrocarbon potential of the Middle Jurassic Hugin Formation within a seismically defined structural trap. A secondary objective was the Heimdal Formation sandstone ("C-Prospect") which was prognosed to be penetrated in a down dip flank location, but within structural spill.

The sidetrack 15/6-8 A was designed to test the "C-prospect" in a more optimal crestal location, some 1000 m to the west of the well position.

Other potential reservoir horizons existed in the Early Tertiary Skade and Grid Formations. These were not within mapped structural closure in any of the well trajectories. The well programmes were designed to maximise the evaluation of these sections.

Operations and results

Exploration well 15/6-8S was spudded with the semi-submersible installation "Byford Dolphin" on 18 February 1997 and drilled as a vertical hole to a depth of 1538 m, before kicking off in a NNW direction towards the Middle Jurassic primary objective. The final TD was reached at 3225 m MD (3122.5 m TVD SS) in the Triassic Skagerrak Formation. The well was drilled with Seawater and bentonite down to 512 m, with KCl / polymer mud from 512 to 1650 m, and with KCl / polymer / glycol from 1650 m to TD.

The Quaternary and Tertiary sequence of 2550 m thickness (2493 m True Vertical Thickness, TVT) was represented by the Nordland, Hordaland and Rogaland Groups. Mudstone lithologies dominated, but significant thick sandstone development was present in the Utsira, Skade, Grid, and Heimdal Formations.

The Shetland Group comprised the Early Palaeocene Ekofisk and the Late Cretaceous, Tor, Hod, Blodøks and Svarte Formations. This 408 m sequence (389 m TVT) was dominated by carbonate lithologies. There were no intervals of reservoir potential. The Early Cretaceous was primarily recognised from well site micropalaeontological analysis of ditch cuttings as a very thin but condensed lithological sequence (4.5 m). It is interpreted as the Åsgard Formation. The Draupne Formation was penetrated at 3089.5 m (2988.6 m TVD SS), and the Heather Formation at 3117.5 m (3016.2 m TVD SS). The primary objective Hugin Formation was penetrated at 3164.5 m, (3062.6 m TVD SS). It consisted of 9 m of sandstone with some minor claystone intercalations, passing into the Triassic Skagerrak Formation at 3173.5 m (3071.4 m TVD SS). Sandstone lithology continued to 3191 m, below which claystone with thin sandstone interbeds became the dominant lithology.

No hydrocarbon shows were recorded or noted within any of the potential reservoir sections in the well. FMT and petrophysical evaluation confirmed all zones to be water bearing with a complete absence of hydrocarbons.

A total of four log runs, were successfully completed at well TD, the first 2 on wire line, the second 2 were pipe conveyed. A 5th run (walk away VSP) was abandoned after 2 1/2 x 6 km lines due to loss of air pressure at the offset source. On rigging up the wire line logging tools the logging contractor Western Atlas was unable to detect marks on the cable and unable to determine the fault. The cable was changed out, but the second cable was again found to be faulty. As a result of the problems, depth matching between



log runs had an error factor of at least +/-2m. The first log in the hole, DLL/MLL/DAC/GR/CHT run 1/1, was therefore used as the reference log giving a consistent error for all further runs. Depth mismatching was further exacerbated by the need to run wire line pipe conveyed, and open hole sticking with accelerometer correction required in certain instances. No fluid sample was taken in the well. One core was cut in the Hugin and Skagerrak Formations in the interval 3172 m to 3181.5 m (8.85m recovered).

Well 15/6-8 S was permanently plugged back to the 9 5/8" casing shoe and abandoned as a dry well on 5 April 1997. Well 15/6-8 A was kicked off from below the 9 5/8" casing at 1525 m and drilled to TD at 2480 m (2397 m TVD SS) in the Heimdal Formation, below the mapped structural spill point. The sidetrack was drilled with KCI / Polymer / Glycol mud from kick-off to TD.

The Quaternary and Tertiary sequence of at least 2353 m thickness (2295 m TVT) was represented by the Nordland, Hordaland and Rogaland Groups. Mudstone lithologies dominated, but significant thick sandstone development was present in the Utsira, Skade, Grid and Heimdal Formations. No hydrocarbon shows were recorded within any of the potential reservoir horizons. The logging operations suffered similar problems as in the primary well bore leading to similar uncertainty in depth correlation of the logs. No fluid samples were taken. One conventional core was cut over the interval 2438 m to 2449 m (10.2m recovered) in the Heimdal Formation.

Well 15/6-8 A was permanently abandoned as a dry well on 18 April 1997.

Testing

No drill stem test was performed.

Borekjerner i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	3172.0	3180.9	[m]

Total kjerneprøve lengde [m]	8.9
Kjerner tilgjengelig for prøvetaking?	YES

Kjernebilder

3172-3177m



3177-3180m



Palynologiske preparater i Sakkeldirektoratet

Prøve dybde	Dybde enhet	Prøve type	Laboratorie
1810.0	[m]	DC	RRI
1825.0	[m]	DC	RRI
1840.0	[m]	DC	RRI
1855.0	[m]	DC	RRI
1870.0	[m]	DC	RRI
1885.0	[m]	DC	RRI
1900.0	[m]	DC	RRI
1915.0	[m]	DC	RRI
1930.0	[m]	DC	RRI
1945.0	[m]	DC	RRI
1960.0	[m]	DC	RRI
1975.0	[m]	DC	RRI
1990.0	[m]	DC	RRI
2005.0	[m]	DC	RRI
2020.0	[m]	DC	RRI
2035.0	[m]	DC	RRI
2050.0	[m]	DC	RRI
2065.0	[m]	DC	RRI
2080.0	[m]	DC	RRI
2095.0	[m]	DC	RRI
2110.0	[m]	DC	RRI
2125.0	[m]	DC	RRI
2140.0	[m]	DC	RRI
2155.0	[m]	DC	RRI
2175.0	[m]	DC	RRI
2185.0	[m]	DC	RRI
2200.0	[m]	DC	RRI
2220.0	[m]	DC	RRI
2230.0	[m]	DC	RRI
2245.0	[m]	DC	RRI
2255.0	[m]	DC	RRI
2260.0	[m]	DC	RRI
2275.0	[m]	DC	RRI
2290.0	[m]	DC	RRI
2305.0	[m]	DC	RRI
2320.0	[m]	DC	RRI
2335.0	[m]	DC	RRI



2350.0	[m]	DC	RRI
2361.0	[m]	DC	RRI
2367.0	[m]	DC	RRI
2373.0	[m]	DC	RRI
2379.0	[m]	DC	RRI
2385.0	[m]	DC	RRI
2391.0	[m]	DC	RRI
2397.0	[m]	DC	RRI
2403.0	[m]	DC	RRI
2409.0	[m]	DC	RRI
2415.0	[m]	DC	RRI
2421.0	[m]	DC	RRI
2427.0	[m]	DC	RRI
2433.0	[m]	DC	RRI
2439.0	[m]	DC	RRI
2445.0	[m]	DC	RRI
2455.0	[m]	DC	RRI
2460.0	[m]	DC	RRI
2465.0	[m]	DC	RRI
2470.0	[m]	DC	RRI
2475.0	[m]	DC	RRI
2480.0	[m]	DC	RRI
2490.0	[m]	DC	RRI
2495.0	[m]	DC	RRI
2500.0	[m]	DC	RRI
2515.0	[m]	DC	RRI
2530.0	[m]	DC	RRI
2545.0	[m]	DC	RRI
2560.0	[m]	DC	RRI
2575.0	[m]	DC	RRI
2590.0	[m]	DC	RRI
2605.0	[m]	DC	RRI
2620.0	[m]	DC	RRI
2635.0	[m]	DC	RRI
2650.0	[m]	DC	RRI
2665.0	[m]	DC	RRI
2675.0	[m]	DC	RRI
3090.0	[m]	DC	RRI
3105.0	[m]	DC	RRI
3120.0	[m]	DC	RRI



3135.0	[m]	DC	RRI
3150.0	[m]	DC	RRI
3165.0	[m]	DC	RRI
3183.0	[m]	DC	RRI
3195.0	[m]	DC	RRI
3210.0	[m]	DC	RRI
3225.0	[m]	DC	RRI

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
127	NORDLAND GP
773	UTSIRA FM
1080	HORDALAND GP
1178	SKADE FM
1243	NO FORMAL NAME
1270	SKADE FM
1280	NO FORMAL NAME
1362	SKADE FM
1390	NO FORMAL NAME
1811	GRID FM
2037	NO FORMAL NAME
2259	ROGALAND GP
2259	BALDER FM
2322	SELE FM
2385	LISTA FM
2433	HEIMDAL FM
2650	VÅLE FM
2677	SHETLAND GP
2677	EKOFISK FM
2723	TOR FM
2838	HOD FM
3069	BLODØKS FM
3075	SVARTE FM
3085	CROMER KNOLL GP
3085	ÅSGARD FM
3090	VIKING GP
3090	DRAUPNE FM
3118	HEATHER FM



3165	VESTLAND GP
3165	HUGIN FM
3174	NO GROUP DEFINED
3174	SKAGERRAK FM

Spleisede logger

Dokument navn	Dokument format	Dokument størrelse [KB]
3014	pdf	0.52

Geokjemisk informasjon

Dokument navn	Dokument format	Dokument størrelse [KB]
3014_1	pdf	1.96
3014_2	pdf	0.58

Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

Dokument navn	Dokument format	Dokument størrelse [KB]
3014_15_6_8_S_COMPLETION_REPORT	pdf	67.08
3014_16_6_8_S_COMPLETION_LOG	pdf	1.96

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
HP FMT GR	2440	3169
MLL DLL DAC GR CHT	1490	3215
MWD - DIR GR	127	512
MWD LWD - DIR GR RES	512	1505
MWD LWD - DIR GR RES PWD	1505	3172
VSP	1190	1480
VSP	1811	3195
ZDL CN SL CHT	1490	3219





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	175.5	36	177.5	0.00	LOT
SURF.COND.	13 3/8	499.0	17 1/2	512.0	0.00	LOT
INTERM.	9 5/8	1492.0	12 1/4	1510.0	1.41	LOT
OPEN HOLE		3225.0	8 1/2	3225.0	1.65	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
148	1.03			SEAWATER	
178	1.20			BENTONITE	
512	1.04			SEAWATER	
801	1.27	73.0		KCL POLYMER	
1495	1.43	33.0		KCL/POLYMER	
1505	1.27	71.0		KCL POLYMER	
1650	1.45	37.0		KCL POLYMER	
1881	1.39	37.0		KCL POLYMER	
2330	1.40	31.0		KCL POLYMER	
2554	1.39	41.0		KCL POLYMER	
2707	1.42	33.0		KCL/POLYMER	
3015	1.39	34.0		KCL/POLYMER	
3018	1.39	35.0		KCL/POLYMER	
3172	1.39	37.0		KCL/POLYMER	
3183	1.39	36.0		KCL/POLYMER	
3225	1.39	31.0		KCL/POLYMER	

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]
3014 Formation pressure (Formasjonstrykk)	pdf	0.23

