



Generell informasjon

Brønnbane navn	16/1-27
Type	EXPLORATION
Formål	APPRAISAL
Status	P&A
Pressemelding	lenke til pressemelding
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Felt	EDVARD GRIEG
Funn	16/1-8 Edvard Grieg
Brønn navn	16/1-27
Seismisk lokalisering	LN16201. Inline 1853 crossline 1379
Utvinningstillatelse	338
Boreoperatør	Lundin Norway AS
Boretillatelse	1652-L
Boreinnretning	ISLAND INNOVATOR
Boredager	42
Borestart	01.03.2017
Boreslutt	11.04.2017
Plugget og forlatt dato	11.04.2017
Frigitt dato	11.04.2019
Publiseringsdato	11.04.2019
Opprinnelig formål	APPRAISAL
Gjenåpnet	NO
Innhold	OIL
Funnbrønnbane	NO
1. nivå med hydrokarboner, alder	CRETACEOUS
1. nivå med hydrokarboner, formasjon.	ÅSGARD FM
2. nivå med hydrokarboner, alder	TRIASSIC
2. nivå med hydrokarboner, formasjon	SKAGERRAK FM
Avstand, boredekk - midlere havflate [m]	30.0
Vanndybde ved midlere havflate [m]	108.0
Totalt målt dybde (MD) [m RKB]	2258.0
Totalt vertikalt dybde (TVD) [m RKB]	2258.0
Maks inklinasjon [°]	1.3



Temperatur ved bunn av brønnbanen [°C]	95
Eldste penetrerte formasjon	BASEMENT
Geodetisk datum	ED50
NS grader	58° 50' 18.11" N
ØV grader	2° 11' 56.79" E
NS UTM [m]	6522480.48
ØV UTM [m]	453769.86
UTM sone	31
NPDID for brønnbanen	8124

Brønnhistorie

**General**

Well 16/1-27 was drilled on the Edvard Greg Field on the Utsira High in the North Sea. It was drilled as an appraisal well to verify top reservoir and sand content in the western part of the field.

Operations and results

Appraisal well 16/1-27 was spudded with the semi-submersible installation Island Innovator on 1 March 2017 and drilled to TD at 2258 m in Basement rock. Operations proceeded without significant problems. The well was drilled with seawater and hi-vis pills down to 611 m and with Aquadril mud with 4% glycol from 611 m to TD.

Top reservoir, Åsgard Formation sandstone, was encountered at 1962 m, directly overlying Triassic Skagerrak Formation sandstone at 1968.35 m. The reservoir contained oil from top down to the OWC at 1978 m (1948 m TVD MSL), 9 meters deeper than the established FWL at 1939 m TVD MSL in the central Edvard Grieg area. Pressure data showed one oil gradient through the Cretaceous to Triassic sandstones, and two water gradients below the oil: one in communication with the oil gradient and one with 6 bar higher pressure in the lower conglomerates of the Skagerrak Formation, below a shaly layer around 2150 m.

Apart from shows in the reservoir section significant oil shows were recorded above reservoir level. First oil show in the well was described in thin Oligocene sandstones at 1309 to 1322.5 m as fair patchy straw yellow direct fluorescence, fast blooming to streaming bluish white cut fluorescence, medium straw to bluish white fluorescent residue, no visible residue.

At 1506 to 1543 m, in thin Eocene Hordaland Group sandstones, there were oil shows described as no to weak hydrocarbon odour, no to medium brown oil stain, patchy to even weak to dull straw yellow to orange direct fluorescence, slow blooming to streaming bluish white cut fluorescence, weak bluish white fluorescent residue, no visible residue.

At 1811 to 1858 m, in Early Eocene Balder Formation and base Hordaland group Tuff and limestone, there were oil shows described as medium brown to dark brown oil stain, weak spotty to patchy bluish white to light yellowish brown direct fluorescence, slowly bleeding to blooming light yellowish brown cut fluorescence, no fluorescent or visible residue. Below the OWC only poor shows were recorded down to 2023 m.

Three cores were cut. Core 1 was cut from 1967 to 1993.1 m with 95.8% recovery. The core-log shift is +0.7 m. Core 2 was cut from 1993.1 to 2002.2 m with 78.8% recovery. The core-log shift is +0.5 m, Core 3 was cut from 2002.2 to 2023 m with 98.7% recovery. The core-log shift is -0.25 m. MDT fluid samples were taken at 1972.3 m (oil), 1976 m (oil), and 2025 m (water). The two oil sampling stations gave similar oils according to PVT analysis, with GOR ranging from 120.3 to 123.2 Sm³/Sm³ and stock tank oil density ranging from 0.8545 to 0.8565 g/cm³.

The well was permanently abandoned on 11 April 2017 as an oil appraisal

Testing

No drill stem test was performed.

Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
620.00	2257.00



Borekaks tilgjengelig for prøvetaking?	YES
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Borekjerne i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	1967.0	1992.1	[m]
2	1993.1	2000.1	[m]
3	2002.0	2022.7	[m]

Total kjerneprøve lengde [m]	52.8
Kjerner tilgjengelig for prøvetaking?	YES

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
139	NORDLAND GP
766	UTSIRA FM
970	HORDALAND GP
980	SKADE FM
1562	GRID FM
1836	ROGALAND GP
1836	BALDER FM
1858	SELE FM
1865	LISTA FM
1942	VÅLE FM
1947	SHETLAND GP
1947	EKOFISK FM
1955	TOR FM
1961	HOD FM
1962	CROMER KNOLL GP
1962	ÅSGARD FM
1968	SKAGERRAK FM
2240	BASEMENT

Logger



Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
FMI MSIP	612	1922
FMI MSIP	1875	2260
HNGS XPT PEX HRLA	612	1928
MDT	1963	2239
MSCT	1952	2114
MSCT	2098	2249
MWD - DIR PWD GR RES ECD	183	619
MWD - GR PWD RES DIR DEN NEU MAG	1912	2258
MWD - GR RES PWD DIR	608	1967
USIT	1300	1940

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	204.0	36	204.0	0.00	
SURF.COND.	20	611.6	26	618.0	0.00	
PILOT HOLE		620.0	9 7/8	620.0	0.00	
		623.0		0.0	1.55	FIT
INTERM.	9 5/8	1941.1	12 1/4	1948.0	1.71	LOT
OPEN HOLE		2258.0	8 1/2	2258.0	0.00	

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
215	1.04			SPUD-MUD	
514	1.03	1.0		Sea water	
618	1.30	10.0		AQUA-DRILL WBM	
618	1.04			SPUD-MUD	
859	1.30	12.0		AQUA-DRILL WBM	
1345	1.35	17.0		AQUA-DRILL WBM	
1664	1.35	18.0		AQUA-DRILL WBM	
1951	1.14	14.0		AQUA-DRILL WBM	
2258	1.14	16.0		AQUA-DRILL WBM	