



Generell informasjon

Brønnbane navn	15/9-16
Type	EXPLORATION
Formål	APPRAISAL
Status	P&A
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Felt	SLEIPNER ØST
Funn	15/9-9 Sleipner Øst
Brønn navn	15/9-16
Seismisk lokalisering	8122 - 559 SP 140
Utvinningstillatelse	046
Boreoperatør	Den norske stats oljeselskap a.s
Boretillatelse	335-L
Boreinnretning	DEEPSEA SAGA
Boredager	58
Borestart	28.06.1982
Boreslutt	24.08.1982
Frigitt dato	24.08.1984
Publiseringsdato	09.04.2015
Opprinnelig formål	APPRAISAL
Gjenåpnet	NO
Innhold	GAS/CONDENSATE
Funnbrønnbane	NO
1. nivå med hydrokarboner, alder	PALEOCENE
1. nivå med hydrokarboner, formasjon.	HEIMDAL FM
Avstand, boredekk - midlere havflate [m]	25.0
Vanndybde ved midlere havflate [m]	85.0
Totalt målt dybde (MD) [m RKB]	3120.0
Totalt vertikalt dybde (TVD) [m RKB]	3119.0
Maks inklinasjon [°]	6.1
Temperatur ved bunn av brønnbanen [°C]	77
Eldste penetrerte alder	EARLY PERMIAN
Eldste penetrerte formasjon	ROTLIEGEND GP
Geodetisk datum	ED50
NS grader	58° 22' 9.97" N



ØV grader	1° 52' 43.16" E
NS UTM [m]	6470536.25
ØV UTM [m]	434400.89
UTM sone	31
NPDID for brønnbanen	79

Brønnhistorie

General

Well 15/9-16 was drilled on the Sleipner Øst discovery in the southern Viking Graben of the North Sea. The primary objective was to delineate the hydrocarbon accumulations in the Heimdal Formation on the gamma structure. Sandstones of Jurassic/Triassic age were secondary objectives. It was the fourth well drilled on this structure.

Operations and results

Appraisal well 15/9-16 was spudded with the semi-submersible installation Deepsea Saga on 28 June 1982 and drilled to TD at 3120 m, 52 m into the Permian Rotliegendes Group. The 9 5/8" casing had a leak at 522 m. It was squeezed twice with cement before it held a reduced pressure. Otherwise, no significant problem was encountered in the operations. The well was drilled with gel/seawater spud mud down to 515 m, with gypsum/lignosulphonate mud from 515 m to 2652 m, and with a seawater/lignite/lignosulphonate mud from 2652 m to TD.

Top Heimdal was encountered at 2378 m. It contained gas and condensate, but was thinner than expected. Pressure data indicated a gas/water contact at 2434 m. The logs showed a sharp increase in water saturation at 2428 m. Weak oil shows were recorded on cores between 2418 m and 2427.5 m. The prognosed sandstones of Jurassic/Triassic age were not present at this location. Fair shows were recorded on cuttings in evaporites at 3014 m, at top Zechstein Group level. No shows were recorded on sidewall cores from the same level.

A total of 113.5 m of core (98% recovery) was cut in seven cores in the interval 2382 to 2498 m. Cores were cut and no wire line logs were run in the well. An RFT fluid sample was taken at 2380 m (good recovery), while attempts to sample at 2411m, 2413 m, and 2426 m gave poor recovery.

The well was permanently abandoned on 24 August 1982 on as a gas/condensate appraisal well.

Testing

No drill stem test was performed.

Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
180.00	3120.00

Borekaks tilgjengelig for prøvetaking?	YES
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Borekjerne i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	2382.0	2395.7	[m]
2	2397.0	2414.2	[m]
3	2414.5	2427.5	[m]
4	2427.5	2440.2	[m]
5	2441.0	2460.0	[m]
6	2460.0	2479.5	[m]
7	2479.5	2498.3	[m]

Total kjerneprøve lengde [m]	113.9
Kjerner tilgjengelig for prøvetaking?	YES

Kjernebilder



2382-2387m



2387-2392m



2392-2395m



2397-2402m



2402-2407m



2407-2412m



2412-2414m



2414-2419m



2419-2424m



2424-2427m



2427-2432m



2432-2437m



2437-2440m



2441-2446m



2446-2451m



2451-2456m



2456-2460m



2460-2465m



2465-2470m



2470-2475m



2475-2479m



2479-2484m



2484-2489m



2489-2494m



2494-2498m

Palynologiske preparater i Sokkeldirektoratet

Prøve dybde	Dybde enhet	Prøve type	Laboratorie
2204.0	[m]	SWC	STATOIL
2210.0	[m]	SWC	STATOI
2214.0	[m]	SWC	STATOI
2225.0	[m]	DC	
2237.0	[m]	DC	
2246.0	[m]	DC	
2255.0	[m]	DC	
2268.0	[m]	SWC	STATOIL
2274.0	[m]	SWC	STATOI
2282.0	[m]	SWC	STATOI
2293.0	[m]	SWC	STATOI
2308.0	[m]	SWC	STATOI
2321.0	[m]	DC	
2330.0	[m]	DC	
2342.0	[m]	SWC	STATOIL
2347.5	[m]	SWC	STATOI
2354.5	[m]	SWC	STATOI
2360.5	[m]	SWC	STATOI
2366.5	[m]	SWC	STATOI
2986.7	[m]	SWC	RRI
3054.5	[m]	SWC	RRI
3097.0	[m]	SWC	RRI



Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
110	NORDLAND GP
842	UTSIRA FM
1088	NORDLAND GP
2157	ROGALAND GP
2157	BALDER FM
2210	SELE FM
2275	LISTA FM
2378	HEIMDAL FM
2489	SHETLAND GP
2489	TOR FM
2586	HOD FM
2643	BLODØKS FM
2705	SMITH BANK FM
3011	ZECHSTEIN GP
3065	KUPFERSCHIEFER FM
3068	ROTLIEGEND GP

Dokumenter - eldre Sökkeldirektoratets WDSS rapporter og andre relaterte dokumenter

Dokument navn	Dokument format	Dokument størrelse [KB]
79_01_WDSS_General_Information	pdf	0.17
79_02_WDSS_completion_log	pdf	0.23

Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

Dokument navn	Dokument format	Dokument størrelse [KB]
79_15_9_16_Completion_report_and_log	pdf	20.70

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
CBL VDL GR	108	2635





CST	2128	2381
CST	2659	2999
CST	3005	3111
DLL MSFL	2250	2550
HDT CYBERDIP	1152	3117
ISF SON	110	2651
ISF SON MSFL	2637	3115
LDT CNL GR	1152	3115
LDT GR	500	1167
RFT	2307	2484
RFT	2663	3107
VELOCITY	300	3116

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	169.0	36	170.0	0.00	LOT
SURF.COND.	20	500.0	26	515.0	1.49	LOT
INTERM.	13 3/8	1152.0	17 1/2	1167.0	1.78	LOT
INTERM.	9 5/8	2638.0	12 1/4	2650.0	1.80	LOT
OPEN HOLE		3120.0	8 1/2	3120.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
115	1.14	58.0		water based	
200	1.04	75.0		water based	
830	1.12	60.0		water based	
1115	1.14	58.0		water based	
1780	1.16	69.0		water based	
2265	1.20	50.0		water based	
2350	1.25	51.0		water based	
2770	1.32	52.0		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 brønnspar. Trykkdataene er rapportert inn til Oljedirektoratet og videre prosessert og kvalitetssikret av IHS Markit.

Dokument navn	Dokument format	Dokument størrelse [KB]
79 Formation pressure (Formasjonstrykk)	PDF	0.21

