



Generell informasjon

Brønnbane navn	15/9-4
Type	EXPLORATION
Formål	APPRAISAL
Status	P&A
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Felt	SLEIPNER VEST
Funn	15/6-3 Sleipner Vest
Brønn navn	15/9-4
Seismisk lokalisering	Line 610-163 .SP 355
Utvinningstillatelse	046
Boreoperatør	Den norske stats oljeselskap a.s
Boretillatelse	213-L
Boreinnretning	ROSS RIG (1)
Boredager	72
Borestart	04.04.1979
Boreslutt	14.06.1979
Frigitt dato	14.06.1981
Publiseringsdato	08.04.2015
Opprinnelig formål	WILDCAT
Gjenåpnet	NO
Innhold	GAS/CONDENSATE
Funnbrønnbane	NO
1. nivå med hydrokarboner, alder	MIDDLE JURASSIC
1. nivå med hydrokarboner, formasjon.	HUGIN FM
Avstand, boredekk - midlere havflate [m]	25.0
Vanndybde ved midlere havflate [m]	102.0
Totalt målt dybde (MD) [m RKB]	3716.0
Totalt vertikalt dybde (TVD) [m RKB]	3716.0
Maks inklinasjon [°]	1.9
Temperatur ved bunn av brønnbanen [°C]	112
Eldste penetrerte alder	TRIASSIC
Eldste penetrerte formasjon	SKAGERRAK FM
Geodetisk datum	ED50
NS grader	58° 24' 0.26" N



ØV grader	1° 47' 6.93" E
NS UTM [m]	6474041.91
ØV UTM [m]	428999.05
UTM sone	31
NPDID for brønnbanen	325

Brønnhistorie

General

Well 15/9-4 was drilled on in the southeastern part of the Sleipner Vest area in the Viking Graben of the North Sea. Previously four wells had been drilled on the Sleipner Alpha structure in the north. Two of these showed significant gas-condensate accumulations (15/6-3 and 15/9-1) in the middle Jurassic while in the western part of the Alpha structure the sand had shaled out (15/9-3). In the northeast, the sand was penetrated below the hydrocarbon/water contact (15/6-5). The first well drilled on the Beta prospect (15/9-2) showed a significant gas-condensate column in the middle Jurassic sand. The primary objective for well 15/9-4 was to test possible hydrocarbons in Middle Jurassic sandstones in the southeast extending Delta structure.

Operations and results

Well 15/9-4 was spudded with the semi-submersible installation Ross Rig on 4 April 1979 and drilled to TD at 3716 m in the Triassic Skagerrak Formation. Very few problems were encountered during drilling of this well, with the exception of lost circulation in the 26" interval. This problem was solved by pumping cement into the formation. The main problem arose only after drilling the 8 1/2" interval. The 7" liner was run and cemented successfully. When pressure was applied in order to test the liner lap, the 9 5/8" casing burst. The well was drilled with spud mud down to 415 m and with gel/lignosulphonate mud from 402 m to TD.

Top of the Middle Jurassic Vestland Group, Hugin Formation was penetrated at 3441 m. The section contained sandstones with good reservoir properties interbedded with some thin shale beds. The sandstones were hydrocarbon bearing with a gas-water contact at ca 3570 m, 7 m into the Sleipner Formation. Weak oil shows were described throughout the hydrocarbon-bearing reservoir down to 3582 m. Shows were not described in any other section of the well. The Triassic Skagerrak Formation was encountered at 3629 m with some small water bearing sand intervals.

Nine cores were cut in the interval 3457 to 3594.8 m in the Hugin and Sleipner formations. The core-log depth shift is reported as -2.5 m for all cores. Overall recovery was 132.1 m core (98.2%). An RFT fluid sample was taken at 3481 m. It contained gas, condensate, mud and water.

The well was permanently abandoned on 14 June 1979 as a gas/condensate appraisal well.

Testing

The well was not production tested, due to technical problems.

Borekaks i Sokkeldirektoratet



Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
180.00	3704.00

Borekaks tilgjengelig for prøvetaking?	YES
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Borekjerne i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	3457.0	3475.2	[m]
2	3457.3	3493.1	[m]
3	3493.1	3510.9	[m]
4	3510.9	3528.8	[m]
5	3528.9	3544.2	[m]
6	3544.2	3556.0	[m]
7	3557.0	3566.7	[m]
8	3569.0	3584.8	[m]
9	3587.0	3594.8	[m]

Total kjerneprøve lengde [m]	150.1
Kjerner tilgjengelig for prøvetaking?	YES

Kjernebilder



3457-3459m



3459-3462m



3462-3465m



3465-3467m



3467-3470m



3470-3473m



3473-3475m



3475-3478m



3478-3480m



3480-3483m



3483-3486m



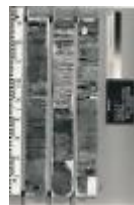
3486-3488m



3488-3491m



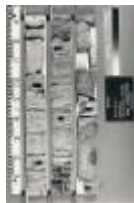
3491-3493m



3493-3495m



3495-3498m



3498-3501m



3501-3503m



3503-3506m



3506-3509m



3510-3513m



3513-3516m



3516-3519m



3519-3521m



3521-3524m



3524-3527m



3528-3531m



3531-3534m



3534-3537m



3539-3542m



3542-3544m



3537-3539m



3544-3546m



3546-3549m



3549-3552m



3552-3555m



3555-3556m



3557-3559m



3559-3561m



3561-3564m



3564-3566m



3566-3567m



3569-3571m



3573-3576m



3576-3578m



3578-3581m



3581-3583m



3583-3584m



3587-3589m



3589-3591m



3591-3594m



3594-3595m

Palynologiske preparater i Sjøkeldirektoratet

Prøve dybde	Dybde enhet	Prøve type	Laboratorie
2420.0	[m]	DC	RRI
2435.0	[m]	DC	RRI
2450.0	[m]	DC	RRI
2465.0	[m]	DC	RRI
2480.0	[m]	DC	RRI
2498.0	[m]	DC	RRI
2510.0	[m]	DC	RRI
2522.0	[m]	DC	RRI
2540.0	[m]	DC	RRI
2555.0	[m]	DC	RRI
2573.0	[m]	DC	RRI
2588.0	[m]	DC	RRI
2600.0	[m]	DC	RRI
2615.0	[m]	DC	RRI
2624.0	[m]	DC	RRI
2645.0	[m]	DC	RRI



2654.0 [m]	DC	RRI
2663.0 [m]	DC	RRI
2675.0 [m]	DC	RRI
2684.0 [m]	DC	RRI
2693.0 [m]	DC	RRI
2726.0 [m]	DC	RRI
2750.0 [m]	DC	RRI
2768.0 [m]	DC	RRI
2771.0 [m]	DC	RRI
3248.0 [m]	DC	
3278.0 [m]	DC	
3308.0 [m]	DC	
3338.0 [m]	DC	
3368.0 [m]	DC	
3398.0 [m]	DC	
3428.0 [m]	DC	
3430.0 [m]	SWC	
3433.0 [m]	SWC	
3440.0 [m]	SWC	
3458.0 [m]	DC	
3472.0 [m]	C	
3477.0 [m]	C	
3480.0 [m]	C	
3481.0 [m]	C	
3491.5 [m]	C	
3493.0 [m]	C	
3494.0 [m]	DC	
3495.0 [m]	C	
3506.0 [m]	C	
3524.0 [m]	DC	
3531.0 [m]	C	
3531.6 [m]	C	
3532.0 [m]	C	
3545.6 [m]	C	
3547.0 [m]	C	
3555.0 [m]	C	
3562.5 [m]	C	
3566.6 [m]	C	
3570.0 [m]	C	
3583.0 [m]	C	



3584.0	[m]	C	
3584.0	[m]	DC	
3588.0	[m]	C	
3591.0	[m]	C	
3593.0	[m]	C	
3594.0	[m]	C	
3599.0	[m]	SWC	
3599.0	[m]	SWC	
3603.0	[m]	SWC	
3606.0	[m]	SWC	
3614.0	[m]	DC	
3644.0	[m]	DC	
3653.0	[m]	SWC	
3674.0	[m]	DC	
3685.0	[m]	SWC	
3698.0	[m]	SWC	
3701.0	[m]	DC	
3703.0	[m]	SWC	

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
127	NORDLAND GP
847	UTSIRA FM
1350	HORDALAND GP
2172	FRIGG FM
2307	ROGALAND GP
2307	BALDER FM
2372	SELE FM
2431	LISTA FM
2486	HEIMDAL FM
2768	VÅLE FM
2778	SHETLAND GP
2778	EKOFISK FM
2792	TOR FM
2887	HOD FM
3112	BLODØKS FM
3162	HIDRA FM
3192	CROMER KNOLL GP



3192	RØDBY FM
3274	VIKING GP
3274	DRAUPNE FM
3421	HEATHER FM
3441	VESTLAND GP
3441	HUGIN FM
3563	SLEIPNER FM
3629	SKAGERRAK FM

Dokumenter - eldre Sokkeldirektoratets WDSS rapporter og andre relaterte dokumenter

Dokument navn	Dokument format	Dokument størrelse [KB]
325_01_WDSS_General_Information	pdf	0.11
325_02_WDSS_completion_log	pdf	0.25

Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

Dokument navn	Dokument format	Dokument størrelse [KB]
325_15_9_4_Completion_report_and_log	pdf	26.48

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
CBL	150	1399
CBL VDL	1359	3664
DLL MSFL	3202	3711
FDC CNL CAL GR	400	3711
HDT	3202	3711
ISF SON GR SP	411	3709
RFT	3203	0
VELOCITY	620	3705

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	165.0	36	166.0	0.00	LOT
SURF.COND.	20	402.0	26	415.0	1.63	LOT
INTERM.	13 3/8	1403.0	17 1/2	1420.0	1.79	LOT
INTERM.	9 5/8	3206.0	12 1/4	3220.0	0.00	LOT
LINER	7	3710.0	8 1/2	3726.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
832	1.12	42.0		waterbased	
1376	1.20	41.0		waterbased	
1420	1.30	37.0		waterbased	
1867	1.35	47.0		waterbased	
3473	1.40	53.0		waterbased	
3691	1.38	44.0		waterbased	