Generell informasjon

Brønnbane navn	25/1-3
Type	EXPLORATION
Formål	APPRAISAL
Status	P&A
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Felt	FRIGG
Funn	25/1-1 Frigg
Brønn navn	25/1-3
Seismisk lokalisering	line 65.5954.SP 96
Utvinningstillatelse	024
Boreoperatør	Elf Petroleum Norge AS
Boretillatelse	65-L
Boreinnretning	PENTAGONE 81
Boredager	75
Borestart	14.11.1971
Boreslutt	27.01.1972
Frigitt dato	27.01.1974
Publiseringsdato	24.09.2015
Opprinnelig formål	APPRAISAL
Gjenåpnet	NO
Innhold	OIL/GAS
Funnbrønnbane	NO
1. nivå med hydrokarboner, alder	EOCENE
1. nivå med hydrokarboner, formasjon.	FRIGG FM
Avstand, boredekk - midlere havflate [m]	24.0
Vanndybde ved midlere havflate [m]	105.0
Totalt målt dybde (MD) [m RKB]	2872.0
Temperatur ved bunn av brønnbanen [°C]	67
Eldste penetrerte alder	LATE CRETACEOUS
Eldste penetrerte formasjon	SHETLAND GP
Geodetisk datum	ED50
NS grader	59° 54' 5'' N
ØV grader	2° 10' 5'' E
NS UTM [m]	6640876.58
ØV UTM [m]	453456.52

UTM sone	31
NPDID for brønnbanen	349

Brønnhistorie

General

Well 25/1-3 was drilled to appraise the eastward extension of the 25/1-1 Frigg Discovery on the Frigg Ridge in the North Sea. The primary objective was to test the Eocene sandstones that were gas bearing in well 25/1-1.

Operations and results

Appraisal well 25/1-3 was spudded with the semi-submersible installation Pentagone 81 on 14 November 1971 and drilled to TD at 2872 m in the Late Cretaceous Shetland Group. The well was drilled with seawater down to 405 m and with a seawater/LFC mud from 405 m to TD.

The target Eocene sandstones (Frigg Formation) was penetrated at 1952 m. The gross thickness was 217 m and the N/G was 0.82 with porosities ranging from 28 to 33%. It was gas bearing down to the GOC at 1973 m and oil bearing down to the OWC at 1982.5 m. Good oil shows on cores were recorded throughout the hydrocarbon-bearing reservoir. Weaker oil shows on cores were described ("fluo but salty taste") below the OWC.

Three cores were cut from 1951 to 2005 m in the Frigg reservoir. Total recovery for these three cores was 42.25 m (78.2% recovery). A fourth core was cut from 2563 to 2568 m with 50% recovery. FIT fluid samples were attempted at 2550.5 m and 2576.3 m but only mud and filtrate was recovered.

The well was permanently abandoned on 27 January 1972 as an oil and gas appraisal well

Testing

Six drill stem tests were conducted.

DST 1, 2 and 3 tested the interval 1985 to 1987 m. All three tests produced water.

DST 4 and 5 tested the interval 1978 to 1980 m. DST 4 produced 21.5 Sm3 oil/day and DST 5 produced 70 Sm3 oil/day. The maximum temperature in these tests was reported to be 63 °C.

DST 6 tested the interval 1976 to 1980 m and produced in the final flow; through a 24/64" choke an average of 14400 Sm3 gas and 136 Sm3 oil /day. The corresponding GOR is 106 Sm3/Sm3.

Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
420.00	2870.00

Borekaks tilgjengelig for prøvetaking?	YES

Borekjerner i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	1951.0	1965.3	[m]
2	1969.0	1982.9	[m]
3	1991.1	2005.0	[m]
4	2563.0	2565.5	[m]

Total kjerneprøve lengde [m]	44.6
Kjerner tilgjengelig for prøvetaking?	YES

Palynologiske preparater i Sokkeldirektoratet

Prøve dybde	Dybde enhet	Prøve type	Laboratorie
1775.0	[m]	DC	
1795.0	[m]	DC	
1815.0	[m]	DC	
1835.0	[m]	DC	
1855.0	[m]	DC	
1875.0	[m]	DC	
1895.0	[m]	DC	
1925.0	[m]	DC	
1930.0	[m]	DC	
1935.0	[m]	DC	
1945.0	[m]	DC	
2025.0	[m]	DC	
2045.0	[m]	DC	
2065.0	[m]	DC	
2085.0	[m]	DC	
2105.0	[m]	DC	
2125.0	[m]	DC	
2145.0	[m]	DC	
2160.0	[m]	DC	
2180.0	[m]	DC	
2200.0	[m]	DC	
2220.0	[m]	DC	
2245.0	[m]	DC	

2265.0	[m]	DC	
2285.0	[m]	DC	
2305.0	[m]	DC	
2325.0	[m]	DC	
2345.0	[m]	DC	
2365.0	[m]	DC	
2385.0	[m]	DC	
2405.0	[m]	DC	
2425.0	[m]	DC	
2448.0	[m]	DC	
2476.0	[m]	DC	
2496.0	[m]	DC	
2516.0	[m]	DC	
2536.0	[m]	DC	
2552.0	[m]	DC	
2564.0	[m]	C	IGS

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
129	NORDLAND GP
835	HORDALAND GP
1952	FRIGG FM
2244	ROGALAND GP
2244	BALDER FM
2272	SELE FM
2289	HERMOD FM
2492	LISTA FM
2711	TY FM
2734	SHETLAND GP

Geokjemisk informasjon

Dokument navn	Dokument format	Dokument størrelse [KB]
349_GCH_1	pdf	0.21
349_GCH_2	pdf	0.23

Dokumenter - eldre Sokkeldirektoratets WDSS rapporter og andre relaterte dokumenter

Dokument navn	Dokument format	Dokument størrelse [KB]
349_01_WDSS_General_Information	pdf	0.24

Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

Dokument navn	Dokument format	Dokument størrelse [KB]
349_25_1_3_COMPLETION_LOG	pdf	1.43
349_25_1_3_COMPLETION_REPORT	pdf	0.51

Borestrengtester (DST)

Test nummer	Fra dybde MD [m]	Til dybde MD [m]	Reduksjonsventil størrelse [mm]
1.0	1985	1987	0.0
2.0	1985	1987	0.0
3.0	1985	1987	0.0
4.0	1978	1980	0.0
5.0	1978	1980	0.0
6.0	1976	1980	0.0

Test nummer	Endelig avstengningstrykk [MPa]	Endelig strømningstrykk [MPa]	Bunnhullstrykk [MPa]	Borehullstemperatur [°C]
1.0				
2.0				
3.0				
4.0				
5.0				
6.0				

Test nummer	Olje produksjon [Sm3/dag]	Gass produksjon [Sm3/dag]	Oljetetthet [g/cm3]	Gasstyngde rel. luft	GOR [m3/m3]
1.0					
2.0					

3.0					
4.0	21				
5.0	70				
6.0	84	110			

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
BHC	150	2869
CBL	1500	2011
CDM AP	1883	2873
DL	1882	2869
FDC	1882	2874
IES	407	2869
ML MLL	1883	2872
SNP	1882	2874
SRS	407	2873

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	165.0	0.00	
INTERM.	13 3/8	405.0	17 1/2	415.0	0.00	
SURF.COND.	9 5/8	1880.0	12 1/4	1886.0	0.00	
LINER	7	2036.0	8 1/2	2872.0	0.00	

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]
349_Formation_pressure_(Formasjonstrykk)	pdf	0.21