



Generell informasjon

Brønnbane navn	2/7-3
Type	EXPLORATION
Formål	WILDCAT
Status	P&A
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Brønn navn	2/7-3
Seismisk lokalisering	LINE PG-031430 S SP.478
Utvinningstillatelse	018
Boreoperatør	Phillips Petroleum Company Norway
Boretillatelse	68-L
Boreinnretning	ORION
Boredager	181
Borestart	14.04.1972
Boreslutt	11.10.1972
Frigitt dato	11.10.1974
Publiseringsdato	12.08.2015
Opprinnelig formål	WILDCAT
Gjenåpnet	NO
Innhold	OIL/GAS
Funnbrønnbane	NO
1. nivå med hydrokarboner, alder	PALEOCENE
1. nivå med hydrokarboner, formasjon.	EKOFISK FM
2. nivå med hydrokarboner, alder	LATE CRETACEOUS
2. nivå med hydrokarboner, formasjon	TOR FM
3. nivå med hydrokarboner, alder	LATE JURASSIC
3. nivå med hydrokarboner, formasjon	ELDFISK FM
Avstand, boredekk - midlere havflate [m]	28.0
Vanndybde ved midlere havflate [m]	69.0
Totalt målt dybde (MD) [m RKB]	4359.0
Maks inklinasjon [°]	4.5
Temperatur ved bunn av brønnbanen [°C]	134
Eldste penetrerte alder	LATE PERMIAN
Eldste penetrerte formasjon	ZECHSTEIN GP



Geodetisk datum	ED50
NS grader	56° 23' 1.7" N
ØV grader	3° 14' 44.6" E
NS UTM [m]	6248963.28
ØV UTM [m]	515173.66
UTM sone	31
NPDID for brønnbanen	262

Brønnhistorie

General

Well 2/7-3, was drilled on the southern compartment of the Eldfisk structure in the North Sea. The Eldfisk structure is a NNW-SSE trending partly salt-related anticlinal structure located between the Valhall and Embla fields to the south and the Ekofisk Field to the north. The primary objectives were to test the Danian Limestone, and the possibility of Jurassic sandstone development on the crest of the Eldfisk structure. Both objectives were expected to be ca 120 m thick. The Late Cretaceous carbonate, lower Cretaceous sandstones and Triassic sandstones were secondary objectives.

Operations and results

Wildcat well 2/7-3 was spudded with the jack-up installation Orion on the 14 April 1972 and drilled to TD at 4359 m in the Permian Zechstein Group. Note that the Daily Report records Decca final fix as 56° 23' 01.7"N, 03° 14' 44.6"E, 60 meters off desired location, while other parts of the Completion Report seems to record the coordinates of the slightly different planned well location. The well was drilled with seawater and hi-vis sweeps down to 482 m, with gypsum-CMC lignosulphonate mud from 482 m to 3195 m, and with salt saturated gypsum-CMC lignosulphonate mud from 3195 m to TD. Between 482 m and TD diesel was added to the mud.

The Danian section was 90 m thick, highly fractured, and yielded commercial quantities of oil. Logs and two drill stem tests (DST 1 and DST 2) in the Late Cretaceous rocks indicated low porosity and permeability. One hundred and fifty gross meter of Jurassic sandstones was penetrated in the well. Log analysis indicated the sands are very shaly and silty. Three of the sidewall cores from this interval were described as hard, black shale and the fourth as a very calcareous sandstone. Although the logs showed high resistivities through this section and oil was present in the; mud pits while drilling this interval, tests indicated low permeability. No Early Cretaceous sandstones or Triassic sandstones were present in the well.

A total of 19 m core was cut in four cores from the interval 2851.1 m to 2901.4 m in the Shetland Group. No fluid samples were taken on wire line.

The well was permanently abandoned on 11 October 1972 as an oil discovery.

Testing

A total of sixteen drill stem tests were attempted in the well; five in the Shetland Group and eleven in the Jurassic Farsund Formation and Haugesund Formation. The Eldfisk Formation was not tested. Ten of the Jurassic tests did not produce fluid to the surface. Representative data for the Shetland Group tests and the one in the Jurassic that produced oil are given here.

DST 1 tested the interval 2971.8 to 3002.3 m. The test produced total of 4.53 m3 of



water and mud with 10% oil.

DST 2 tested the interval 2907.8 to 2938.3 m. The test flowed 64 Sm3 oil and 14800 Sm3 gas /day through a 32/64" choke. The GOR was 231 Sm3/Sm3 and the oil gravity was 29.9 °API.

DST 3 tested the interval 2883.4 to 2895.6 m. The test produced after acidizing 667 Sm3 oil and 135200 Sm3 gas /day through a 32/64" choke. The GOR was 202 Sm3/Sm3 and the oil gravity was 35.96 °API.

DST 4 tested the interval 2868.2 to 2877.3 m. The test produced after acidizing 227 Sm3 oil and 57200 Sm3 gas /day through a 28/64" choke. The GOR was 252 Sm3/Sm3 and the oil gravity was 36.75 °API.

DST 5 tested the interval 2805.7 to 2856 m. The test produced after acidizing 712 Sm3 oil and 173200 Sm3 gas /day through a 28/64" choke. The GOR was 243 Sm3/Sm3 and the oil gravity was 37.96 °API.

The interval 3502.2 to 3517.4 m (named Jurassic DST 11 in some well reports and DST 18 in other well reports) was the only interval in the Jurassic that produced oil. The flow rates declined through the flows. After acidizing and at the end of the second flow the well produced 58 Sm3 oil and 5300 Sm3 gas /day through a 24/64" choke. The GOR was 91 Sm3/Sm3 and the oil gravity was 27.4 °API.

Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
487.68	4358.64

Borekaks tilgjengelig for prøvetaking?	NO
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Borekjerter i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	9354.0	9370.0	[ft]
2	9388.0	9392.0	[ft]
3	9431.0	9472.0	[ft]
4	9480.0	9484.0	[ft]

Total kjerneprøve lengde [m]	19.8
Kjerner tilgjengelig for prøvetaking?	YES

Palynologiske preparater i Sokkeldirektoratet

Prøve dybde	Dybde enhet	Prøve type	Laboratorie
10900.0	[ft]	DC	OU



10900.0	[ft]	DC	
10960.0	[ft]	DC	OU
10990.0	[ft]	DC	
11000.0	[ft]	DC	OU
11050.0	[ft]	DC	OU
11220.0	[ft]	DC	OU
11260.0	[ft]	DC	OU
11330.0	[ft]	DC	OU
11390.0	[ft]	DC	OU
11670.0	[ft]	DC	
12190.0	[ft]	DC	
12900.0	[ft]	DC	
13590.0	[ft]	DC	

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
100	NORDLAND GP
2701	ROGALAND GP
2805	SHETLAND GP
3240	CROMER KNOLL GP
3342	TYNE GP
3342	MANDAL FM
3414	FARSUND FM
3626	ELDFISK FM
3695	HAUGESUND FM
4192	ZECHSTEIN GP

Geokjemisk informasjon

Dokument navn	Dokument format	Dokument størrelse [KB]
262_GCH_1	pdf	1.27
262_GCH_2	pdf	1.86
262_GCH_3	pdf	0.60
262_GCH_4	pdf	0.17
262_GCH_5	pdf	3.05
262_GCH_6	pdf	1.71





Dokumenter - eldre Sökkeldirektoratets WDSS rapporter og andre relaterte dokumenter

Dokument navn	Dokument format	Dokument størrelse [KB]
262_01_WDSS_General_Information	pdf	0.24

Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

Dokument navn	Dokument format	Dokument størrelse [KB]
262_2_7_3_COMPLETION_LOG	pdf	2.27
262_2_7_3_COMPLETION_REPORT	pdf	20.99

Dokumenter - Sökkeldirektoratets publikasjoner

Dokument navn	Dokument format	Dokument størrelse [KB]
262_01_NPD_Paper_No.30_Geology_of_the_Eldfisk_Area_Well_2_7_3	pdf	72.88
262_02_NPD_Paper_No.32_Late_Jurassic-early_Tertiary_Correlation_chart_Profile_3_Well_2_7_3	pdf	0.74
262_03_NPD_Paper_No.30_Interpreted_Lithology_log_Well_2_7_3	pdf	61.83
262_04_NPD_Paper_No.30_Early_Tertiary-Late_Jurassic_Correlation_chart_Eldfisk_Well_2_7_3	pdf	0.82

Borestrengtester (DST)

Test nummer	Fra dybde MD [m]	Til dybde MD [m]	Reduksjonsven til størrelse [mm]
1.0	2908	2938	0.0
2.0	2908	2938	0.0
3.0	2883	2896	0.0
4.0	2868	2877	0.0
5.0	2806	2856	0.0





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

Test nummer	Olje produksjon [Sm3/dag]	Gass produksjon [Sm3/dag]	Oljetetthet [g/cm3]	Gasstygde rel. luft	GOR [m3/m3]
1.0	123	31148			
2.0					
3.0	667	133089			
4.0	792	167069			
5.0	712	172732			

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
BHC	436	4318
CBL	27	1570
CBL	2438	3048
CBL	2438	2958
CDM	2682	4191
DLL	2682	4191
FDC	2682	4191
GR	99	1591
IES	480	4315
MLL	2682	4197
SNP	2682	4176
VELOCITY	488	4359

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	133.0	36	133.0	0.00	LOT



SURF.COND.	20	482.0	26	487.0	0.00	LOT
INTERM.	13 3/8	1585.0	17 1/2	1591.0	0.00	LOT
INTERM.	9 5/8	3184.0	12 1/4	3195.0	0.00	LOT
LINER	7	4194.0	8 1/2	4359.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
132	1.10			seawater	
487	1.31			seawater	
1585	1.31			seawater	
3200	1.71			barite	