



Generell informasjon

Brønnbane navn	34/7-19
Type	EXPLORATION
Formål	APPRAISAL
Status	SUSPENDED
Faktakart i nytt vindu	lenke til kart
Hovedområde	NORTH SEA
Felt	VIGDIS
Funn	34/7-8 Vigdis
Brønn navn	34/7-19
Seismisk lokalisering	GE-83: RAD 237 & KOLONNE 1037
Utvinningstillatelse	089
Boreoperatør	Saga Petroleum ASA
Boretillatelse	698-L
Boreinnretning	WEST ALPHA
Boredager	95
Borestart	24.09.1991
Boreslutt	27.12.1991
Frigitt dato	27.12.1993
Publiseringsdato	28.02.2008
Opprinnelig formål	APPRAISAL
Gjenåpnet	NO
Innhold	OIL
Funnbrønnbane	NO
1. nivå med hydrokarboner, alder	MIDDLE JURASSIC
1. nivå med hydrokarboner, formasjon.	TARBERT FM
Avstand, boredekk - midlere havflate [m]	18.0
Vanndybde ved midlere havflate [m]	285.0
Totalt målt dybde (MD) [m RKB]	2800.0
Totalt vertikalt dybde (TVD) [m RKB]	2800.0
Maks inklinasjon [°]	2.7
Temperatur ved bunn av brønnbanen [°C]	91
Eldste penetrerte alder	EARLY JURASSIC
Eldste penetrerte formasjon	COOK FM
Geodetisk datum	ED50
NS grader	61° 23' 38.96" N



ØV grader	2° 5' 31.46" E
NS UTM [m]	6807191.07
ØV UTM [m]	451502.27
UTM sone	31
NPDID for brønnbanen	1838

Brønnhistorie

General

Well 34/7-19 is an appraisal well on the Vigdis Middle structure, south of the Snorre Field on Tampen Spur in the Northern North Sea. The well was drilled approximately 1.5 km north-west of well 34/7-16, on a north-west dipping, rotated fault block. A wedge of partially eroded Viking Group/Heather Formation was interpreted above the reservoir. The primary objectives of the well were to prove the north-western extension of the 34/7-16 reservoir into Segment M1 of the Vigdis Middle and establish an oil water contact for the upper Brent Group. A secondary objective was to test the possible existence of a Late Jurassic Draupne Formation shale wedge. The well was designed to be used in possible future field development. Shallow gas was expected at a depth of 445 m on the well location. This level represents a sand layer at Top Pliocene where gas had been observed in several previous wells in block 34/7. Shallow gas could also be expected in thin sand layers, below seismic resolution down to Top Utsira Formation. A boulder bed could be expected approximately 60 m below sub seabed. Prognosed TD was estimated to 2803 m, and an OWC was assumed at 2418 m (2400 m MSL).

Operations and results

Well 34/7-19 was spudded with the semi-submersible installation West Alpha on 24 September 1991 and drilled to TD at 2800 m in the Early Jurassic Cook Formation. At core point, 2439 m the weather deteriorated. Due to extreme heave the top drive jumped out of hook. The drill pipe bent and the top drive fell down on the drill floor. The shear ram was activated leaving the drill string with core assembly in the hole. Fishing and WOW caused 4.5 days delay before coring could commence. The well was drilled with spud mud down to 1166 m and with KCl mud from 1166 m to TD. Shallow gas was not encountered in this well, but a zone from 526 to 527.5 m was interpreted as potentially gas bearing. One boulder bed was encountered at 363 m.

Down to the Top Jurassic at 2455.5 the well penetrated mainly claystones. An exception to this was the sandy Utsira Formation from 944 to 1065 m. The Jurassic interval comprised the Late Jurassic Heather Formation, the Middle Jurassic Brent Group and the Early Jurassic Dunlin Group.

Well 34/7-19 encountered oil in the Tarbert Formation of the Brent Group. The resistivity logs indicated oil down to 2477 m and water up to 2483 m. The OWC was from the RFT-pressure measurements estimated at 2478 m (2460 mSS). An RFT sample recovered oil at 2465 m. The oil bearing part of the Tarbert Formation (2455.5 - 2478.0 m) had an estimated average log porosity of 0.26, a net to gross ratio of 0.8 and an average water saturation of 39 %. The total Tarbert Formation (2455.5 - 2499.5 m) had an estimated average porosity of 0.25 and a net to gross ratio of 0.67.

Sparse oil shows were observed in sandstone lamina and claystones of the Rogaland Group in parts of the interval 1688 -1750 m. Shows were observed in silty and sandy lithologies in the interval 2180 -2300 in the Kyrre Formation. Over the Brent Group reservoir good oil shows were encountered in cores from 2454 - 2482 m. Below 2482 the amount of shows decreased, and below 2486 hydrocarbon shows were not observed.



Ten cores were cut in the interval 2439 - 2661 m, giving full core coverage of the Brent Group. A total of 16.5 m in the Cromer Knoll Group/Heather Formation, 202.5 m in the Brent Group and 3 m of the Dunlin Group was cored. The total core recovery was 211.8 m (95.4 %). One RFT segregated fluid sample was taken at 2465 m. The 2 3/4 gallon chamber recovered 10.3 l water and filtrate with only small amounts of oil and gas (0.2 l and 7 l, respectively). The content of the 1 gallon chamber had a similar composition.

The well was suspended 27 December 1991 as a possible future development well. It is classified as an oil appraisal.

Testing

Two drill stem tests were performed in this well.

DST 1 perforated and tested the interval 2542 to 2557 m in the water bearing Etive Formation. The maximum stable production rate during main flow was 466 Sm³/day. Initial reservoir pressure and temperature, at sensor depth (2487.7 m), was measured to 369.2 bar and 86 deg C.

DST 2 perforated and tested the interval 2455.3 to 2468.3 m in the oil bearing part of the Tarbert Formation. Maximum stable production rate was 1070 fluid Sm³/day through a 14.3 mm choke. The produced fluid was oil with a GOR of 42 Sm³/Sm³. The oil density was 0.835 g/cm³ and the gas gravity was 0.700 (air = 1). Initial pressure and temperature, at sensor depth (2414.2 m), was measured to 361.8 bar and 83 deg C, respectively.

Borekaks i Sokkeldirektoratet

Borekaksprøve, topp dybde [m]	Borekaksprøve, bunn dybde [m]
1170.00	2800.00

Borekaks tilgjengelig for prøvetaking?	YES
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Borekjerter i Sokkeldirektoratet

Kjerneprøve nummer	Kjerneprøve - topp dybde	Kjerneprøve - bunn dybde	Kjerneprøve dybde - enhet
1	2439.0	2447.7	[m]
2	2451.0	2478.8	[m]
3	2479.0	2503.0	[m]
4	2503.0	2508.7	[m]
5	2509.0	2529.6	[m]
6	2530.0	2557.3	[m]
7	2558.0	2576.3	[m]
8	2577.0	2604.0	[m]
9	2605.0	2632.9	[m]
10	2633.0	2659.4	[m]



Total kjerneprøve lengde [m]	213.7
Kjerner tilgjengelig for prøvetaking?	YES

Kjernebilder



2439-2443m



2443-2447m



2447-2448m



2451-2455m



2455-2459m



2459-2463m



2463-2467m



2467-2471m



2471-2475m



2475-2478m



2479-2483m



2483-2487m



2487-2491m



2491-2495m



2495-2499m



2499-2503m



2503-2507m



2507-2508m



2509-2513m



2513-2517m



2517-2521m



2521-2525m



2525-2529m



2529-2530m



2530-2534m



2534-2538m



2538-2542m



2542-2546m



2546-2550m



2550-2554m



2554-2557m



2558-2562m



2562-2566m



2566-2570m



2570-2574m



2574-2575m



2577-2581m



2581-2585m



2585-2589m



2589-2593m



2593-2597m



2597-2601m



2601-2604m



2605-2609m



2609-2613m



2613-2617m



2617-2621m



2621-2625m



2625-2629m



2629-2632m



2633-2637m



2637-2641m



2641-2645m



2645-2649m



2649-2653m



2653-2657m



2657-2659m

Oljeprøver i Sokkeldirektoratet

Test type	Flaske nummer	Topp dyp MD [m]	Bunn dyp MD [m]	Væske type	Test tidspunkt	Prøver tilgjengelig
DST	TEST2	2455.30	2468.30		10.12.1991 - 00:15	YES

Litostratigrafi

Topp Dyb [mMD RKB]	Litostrat. enhet
303	NORDLAND GP
1076	UTSIRA FM
1094	HORDALAND GP
1296	NO FORMAL NAME
1334	NO FORMAL NAME
1448	NO FORMAL NAME
1486	NO FORMAL NAME
1678	ROGALAND GP
1678	BALDER FM
1727	LISTA FM
1870	SHETLAND GP
1870	JORSALFARE FM
2130	KYRRE FM
2433	CROMER KNOLL GP
2433	RØDBY FM
2437	MIME FM
2442	VIKING GP
2442	HEATHER FM
2456	BRENT GP
2456	TARBERT FM



2500	NESS FM
2528	ETIVE FM
2582	RANNOCH FM
2658	DUNLIN GP
2658	DRAKE FM
2740	COOK FM

Geokjemisk informasjon

Dokument navn	Dokument format	Dokument størrelse [KB]
1838_1	pdf	0.44
1838_2	pdf	1.07

Dokumenter - eldre Sokkeldirektoratets WDSS rapporter og andre relaterte dokumenter

Dokument navn	Dokument format	Dokument størrelse [KB]
1838_01_WDSS_General_Information	pdf	0.53
1838_02_WDSS_completion_log	pdf	0.18

Dokumenter - rapportert av utvinningstillatelsen (frigitt ihht til regelverk)

Dokument navn	Dokument format	Dokument størrelse [KB]
1838_34_7_19_COMPLETION_REPORT_AND_LOG	pdf	20.46

Borestrengtester (DST)

Test nummer	Fra dybde MD [m]	Til dybde MD [m]	Reduksjonsven til størrelse [mm]
1.0	2455	2468	14.3
2.0	2542	2557	6.4

Test nummer	Endelig avstengningstrykk [MPa]	Endelig strømningstrykk [MPa]	Bunnhullstrykk [MPa]	Borehullstemperatur [°C]
1.0	13.000		36.000	83





2.0	13.000		37.000	86
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Test nummer	Olje produksjon [Sm3/dag]	Gass produksjon [Sm3/dag]	Oljetetthet [g/cm3]	Gasstygnde rel. luft	GOR [m3/m3]
1.0	1070		0.835		40
2.0	290				

Logger

Type logg	Topp dyp for logg [m]	Bunn dyp for logg [m]
DLL LSS MSFL LDL GR AMS SP	1152	1940
DSI DLL MSFL GR AMS SP	1935	2793
DSI GR	2400	2715
FMS LDL CNL NGL AMS	1935	2793
MWD - CDN GR RES DIR TEMP	2431	2535
MWD - GR RES DIR TEMP	303	2800
RFT GR AMS	2456	2614
VSP	1090	1970
VSP	1780	2670

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	401.0	36	401.0	0.00	LOT
INTERM.	20	1151.0	26	1166.0	1.70	LOT
INTERM.	13 3/8	1935.0	17 1/2	1960.0	1.77	LOT
INTERM.	9 5/8	2784.0	12 1/4	2800.0	0.00	LOT

Boreslam

Dybde MD [m]	Egenvekt, slam [g/cm3]	Viskositet, slam [mPa.s]	Flytegrense [Pa]	Type slam	Dato, måling
402	1.05			WATER BASED	25.09.1991
402	1.05			WATER BASED	26.09.1991
420	1.05			WATER BASED	30.09.1991
686	1.05			WATER BASED	01.10.1991



Faktasider

Brønnbane / Leting

Utskriftstidspunkt: 15.5.2024 - 02:45

1166	1.05			WATER BASED	01.10.1991
1166	1.05			WATER BASED	01.10.1991
1166	1.20			WATER BASED	01.10.1991
1166	1.20			WATER BASED	03.10.1991
1166	1.25	18.0	16.0	WATER BASED	03.10.1991
1166	1.25	19.0	16.0	WATER BASED	08.10.1991
1166	1.35	20.0	17.0	WATER BASED	08.10.1991
1166	1.35	20.0	17.0	WATER BASED	08.10.1991
1166	1.35	20.0	17.0	WATER BASED	09.10.1991
1166	1.35	20.0	17.0	WATER BASED	09.10.1991
1166	1.25	19.0	16.0	WATER BASED	09.10.1991
1166	1.35	20.0	17.0	WATER BASED	09.10.1991
1166	1.25	19.0	16.0	WATER BASED	09.10.1991
1166	1.35	20.0	17.0	WATER BASED	09.10.1991
1166	1.25	19.0	16.0	WATER BASED	10.10.1991
1166	1.35	20.0	17.0	WATER BASED	10.10.1991
1166	1.35	20.0	17.0	WATER BASED	10.10.1991
1402	1.40	32.0	23.0	WATER BASED	10.10.1991
1402	1.40	32.0	23.0	WATER BASED	09.10.1991
1402	1.40	32.0	23.0	WATER BASED	09.10.1991
1402	1.40	32.0	23.0	WATER BASED	08.10.1991
1554	1.40	33.0	24.0	WATER BASED	09.10.1991
1554	1.40	33.0	24.0	WATER BASED	09.10.1991
1554	1.40	33.0	24.0	WATER BASED	10.10.1991
1767	1.45	34.0	22.0	WATER BASED	10.10.1991
1767	1.45	34.0	22.0	WATER BASED	09.10.1991
1960	1.52	25.0	15.0	WATER BASED	11.10.1991
1960	1.50	30.0	15.0	WATER BASED	11.10.1991
1960	1.52	20.0	13.0	WATER BASED	14.10.1991
1960	1.52	21.0	14.0	WATER BASED	14.10.1991
1960	1.52	23.0	15.0	WATER BASED	14.10.1991
2160	1.60	36.0	24.0	WATER BASED	15.10.1991
2303	1.62	34.0	25.0	WATER BASED	17.10.1991
2439	1.64	35.0	24.0	WATER BASED	17.10.1991
2439	1.64	38.0	25.0	WATER BASED	21.10.1991
2439	1.64	38.0	25.0	WATER BASED	21.10.1991
2439	1.64	46.0	24.0	WATER BASED	24.10.1991
2439	1.64	46.0	25.0	WATER BASED	28.10.1991
2439	1.64	38.0	25.0	WATER BASED	18.10.1991
2439	1.64	38.0	25.0	WATER BASED	21.10.1991



Faktasider

Brønnbane / Leting

Utskriftstidspunkt: 15.5.2024 - 02:45

2439	1.64	38.0	25.0	WATER BASED	22.10.1991
2439	1.64	38.0	25.0	WATER BASED	23.10.1991
2449	1.64	31.0	14.0	WATER BASED	28.10.1991
2451	1.64	30.0	15.0	WATER BASED	28.10.1991
2485	1.64	29.0	15.0	WATER BASED	28.10.1991
2508	1.64	30.0	16.0	WATER BASED	29.10.1991
2558	1.64	33.0	20.0	WATER BASED	31.10.1991
2558	1.64	30.0	16.0	WATER BASED	04.11.1991
2558	1.64	30.0	15.0	WATER BASED	05.11.1991
2558	1.64	30.0	15.0	WATER BASED	05.11.1991
2558	1.64	32.0	18.0	WATER BASED	05.11.1991
2577	1.64	32.0	19.0	WATER BASED	05.11.1991
2605	1.64	28.0	16.0	WATER BASED	06.11.1991
2633	1.64	28.0	14.0	WATER BASED	07.11.1991
2661	1.64	33.0	15.0	WATER BASED	08.11.1991
2724	1.64	29.0	15.0	WATER BASED	11.11.1991
2794	1.64	28.0	15.0	WATER BASED	11.11.1991
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2800	1.64	28.0	30.0	WATER BASED	09.12.1991



2800	1.64	29.0	26.0	WATER BASED	11.12.1991
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2800	1.64	29.0	26.0	WATER BASED	16.12.1991
2800	1.64	29.0	26.0	WATER BASED	16.12.1991
2800	1.64	29.0	26.0	WATER BASED	16.12.1991
2800	1.64	24.0	26.0	WATER BASED	17.12.1991
2800	1.64	29.0	26.0	WATER BASED	17.12.1991
2800	1.64	29.0	26.0	WATER BASED	17.12.1991
2800	1.64	19.0	16.0	WATER BASED	14.11.1991
2800	1.64	33.0	24.0	WATER BASED	19.11.1991
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2800	1.64	34.0	20.0	WATER BASED	25.11.1991
2800	1.64	29.0	19.0	WATER BASED	03.12.1991
2800	1.64	27.0	20.0	WATER BASED	06.12.1991
2800	1.64	29.0	26.0	WATER BASED	17.12.1991

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]
1838 Formation pressure (Formasjonstrykk)	pdf	0.22

