

**General information**

Wellbore name	9/2-3
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Field	YME
Discovery	9/2-3
Well name	9/2-3
Seismic location	ST 8626 - 410 SP 210
Production licence	114
Drilling operator	Den norske stats oljeselskap a.s
Drill permit	624-L
Drilling facility	VILDKAT EXPLORER
Drilling days	67
Entered date	04.12.1989
Completed date	08.02.1990
Release date	08.02.1992
Publication date	25.04.2005
Purpose - planned	WILDCAT
Reentry	NO
Content	OIL
Discovery wellbore	YES
1st level with HC, age	LATE JURASSIC
1st level with HC, formation	SANDNES FM
Kelly bushing elevation [m]	25.0
Water depth [m]	79.0
Total depth (MD) [m RKB]	3424.0
Final vertical depth (TVD) [m RKB]	3421.0
Maximum inclination [°]	1.6
Bottom hole temperature [°C]	106
Oldest penetrated age	MIDDLE JURASSIC
Oldest penetrated formation	BRYNE FM
Geodetic datum	ED50
NS degrees	57° 45' 20.2" N
EW degrees	4° 22' 13.5" E
NS UTM [m]	6402472.09
EW UTM [m]	581556.09



UTM zone	31
NPDID wellbore	1294

Wellbore history

General

Well 9/2-3 is located ca 11.5 km southwest of the Yme Field in the Egersund Basin. The objectives of the well were to test the sandstones of Late/Middle Jurassic age, the Sandnes- and Bryne formations. Furthermore the 9/2-3 well will test the geophysical and structural interpretation of the area and improve the paleontological, geological and geochemical understanding of this area in the North Sea. A strong reflector was observed at 253 m, but was expected to be a change in lithology rather than shallow gas.

Operations and results

Wildcat well 9/2-3 was spudded with the semi-submersible installation Vildkat Explorer 4 December 1989 on and drilled to TD at 3424 m in the Middle Jurassic Bryne Formation. No shallow gas was encountered in this well. Drilling went on without significant difficulties. The well was drilled with seawater/gel/bentonite down to 376 m, with gypsum/polymer mud from 376 m to 3210, and with a polymer/Resinex mud from 3210 m to TD.

The Sandnes Formation was encountered at 3252 m and proved oil. The OWC was difficult to place from the logs, but was estimated at 3273 m. This gives a 21 m oil column. Gross reservoir interval was found to be 115 m. Core and log analysis indicate a fairly low porosity sandstone with small amounts of silt, shale and limestone (calcite cement). The Bryne Formation proved to be water bearing, and no test was performed in this formation.

Organic geochemical analyses show that the Tau Formation (3098 m to 3188 m) is an excellent source rock with TOC in the range 3 to 13 % and hydrogen index in the range 360 to 700 mg HC/g TOC. The Tau Formation is early oil-window mature (%Ro around 0.6 and Tmax from 430 to 435 deg C) in the well. Analyses of the DST oil show a somewhat higher maturity than the in-well source rock. Furthermore, the oil showed a close resemblance to the 9/2-1 DST 3 oil.

One conventional core was cut in the Sandnes formation in the interval 3264 to 3291 m. Sidewall cores were shot in two rounds with a total of 45 shots whereof 30 were recovered. One run with the FMT tool was made in the interval 3260 to 3329 m in the Sandnes/Bryne formations. Only 9 out of 64 attempts were successful and no fluid gradients could be evaluated from the pressure plot. One segregated sample was taken at 3263.1 m. The 2 3/4-gallon chamber contained mud and the 1-gallon chamber was empty due to plugging in the chamber line.

The well was permanently abandoned on 8 February 1990 as an oil discovery.

Testing

One DST test was performed in the interval 3258 to 3268 m. The Sandnes formation was confirmed oil bearing. The production rate was very low due to low permeability. Gas was not produced during the test, and 4 Sm³/d oil was produced through a 12,7 mm choke. The static bottom hole temperature measured in the test was 102.5 deg C.

**Cuttings at the Norwegian Offshore Directorate**

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
380.00	3420.00

Cuttings available for sampling?	YES
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Cores at the Norwegian Offshore Directorate

Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
1	3264.0	3292.3	[m]

Total core sample length [m]	28.3
Cores available for sampling?	YES

Core photos

3264-3269m



3269-3274m



3274-3279m



3279-3284m



3284-3289m



3289-3292m

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
400.0	[m]	DC	HALIB
420.0	[m]	DC	HALIB
440.0	[m]	DC	HALIB
460.0	[m]	DC	HALIB



480.0 [m]	DC	HALIB
500.0 [m]	DC	HALIB
520.0 [m]	DC	HALIB
540.0 [m]	DC	HALIB
560.0 [m]	DC	HALIB
580.0 [m]	DC	HALIB
600.0 [m]	DC	HALIB
620.0 [m]	DC	HALIB
640.0 [m]	DC	HALIB
660.0 [m]	DC	HALIB
680.0 [m]	DC	HALIB
700.0 [m]	DC	HALIB
720.0 [m]	DC	HALIB
760.0 [m]	DC	HALIB
780.0 [m]	DC	HALIB
800.0 [m]	DC	HALIB
840.0 [m]	DC	HALIB
860.0 [m]	DC	HALIB
880.0 [m]	DC	HALIB
900.0 [m]	DC	HALIB
920.0 [m]	DC	HALIB
940.0 [m]	DC	HALIB
950.0 [m]	DC	HALIB
960.0 [m]	DC	HALIB
970.0 [m]	DC	HALIB
980.0 [m]	DC	HALIB
990.0 [m]	DC	HALIB
1000.0 [m]	DC	HALIB
1020.0 [m]	DC	HALIB
1030.0 [m]	DC	HALIB
1040.0 [m]	DC	HALIB
1050.0 [m]	DC	HALIB
1900.0 [m]	DC	HALIB
1920.0 [m]	DC	HALIB
1930.0 [m]	DC	HALIB
1940.0 [m]	DC	HALIB
1950.0 [m]	DC	HALIB
1960.0 [m]	DC	HALIB
1970.0 [m]	DC	HALIB
1985.0 [m]	DC	HALIB



2000.0	[m]	DC	HALIB
2015.0	[m]	DC	HALIB
2030.0	[m]	DC	HALIB
2045.0	[m]	DC	HALIB
2060.0	[m]	DC	HALIB
2075.0	[m]	DC	HALIB
2105.0	[m]	DC	HALIB
2120.0	[m]	DC	HALIB
2135.0	[m]	DC	HALIB
2150.0	[m]	DC	HALIB
2195.0	[m]	DC	HALIB
2240.0	[m]	DC	HALIB
2255.0	[m]	DC	HALIB
2270.0	[m]	DC	HALIB
2285.0	[m]	DC	HALIB
2300.0	[m]	DC	HALIB
2315.0	[m]	DC	HALIB
2330.0	[m]	DC	HALIB
2345.0	[m]	DC	HALIB
2360.0	[m]	DC	HALIB
2375.0	[m]	DC	HALIB
2390.0	[m]	DC	HALIB
2405.0	[m]	DC	HALIB
2420.0	[m]	DC	HALIB
2430.0	[m]	DC	HALIB
2440.0	[m]	SWC	STATO
2455.0	[m]	DC	HALIB
2470.0	[m]	SWC	STATO
2485.0	[m]	DC	HALIB
2495.0	[m]	SWC	STATO
2505.0	[m]	SWC	STATO
2525.0	[m]	SWC	STATO
2535.0	[m]	SWC	STATO
2555.0	[m]	DC	HALIB
2570.0	[m]	DC	HALIB
2585.0	[m]	DC	HALIB
2600.0	[m]	DC	HALIB
2615.0	[m]	DC	HALIB
2630.0	[m]	DC	HALIB
2645.0	[m]	DC	HALIB



2660.0	[m]	DC	HALIB
2675.0	[m]	DC	HALIB
2690.0	[m]	DC	HALIB
2705.0	[m]	DC	HALIB
2720.0	[m]	DC	HALIB
2735.0	[m]	DC	HALIB
2750.0	[m]	DC	HALIB
2765.0	[m]	DC	HALIB
2780.0	[m]	DC	HALIB
2795.0	[m]	DC	HALIB
2810.0	[m]	DC	HALIB
2825.0	[m]	DC	HALIB
2840.0	[m]	DC	HALIB
2855.0	[m]	DC	HALIB
2870.0	[m]	DC	HALIB
2885.0	[m]	DC	HALIB
2900.0	[m]	DC	HALIB
2915.0	[m]	DC	HALIB
2930.0	[m]	DC	HALIB
2945.0	[m]	DC	HALIB
2960.0	[m]	DC	HALIB
2975.0	[m]	DC	HALIB
2990.0	[m]	DC	HALIB
3005.0	[m]	DC	HALIB
3020.0	[m]	DC	HALIB
3035.0	[m]	DC	HALIB
3050.0	[m]	DC	HALIB
3065.0	[m]	DC	HALIB
3080.0	[m]	DC	HALIB
3090.0	[m]	DC	HALIB
3094.0	[m]	SWC	STATO
3100.0	[m]	DC	HALIB
3108.0	[m]	SWC	STATO
3122.0	[m]	SWC	STATO
3131.0	[m]	SWC	STATO
3143.0	[m]	SWC	STATO
3155.0	[m]	DC	HALIB
3170.0	[m]	DC	HALIB
3185.0	[m]	DC	HALIB
3200.0	[m]	DC	HALIB



3251.0	[m]	SWC	STATO
3255.5	[m]	C	STATO
3264.2	[m]	C	STATO
3265.9	[m]	C	STATO
3270.8	[m]	C	STATO
3274.0	[m]	C	STATO
3278.5	[m]	C	STATO
3281.3	[m]	C	STATO
3290.0	[m]	C	STATO
3290.9	[m]	C	STATO
3305.0	[m]	SWC	STATO
3330.0	[m]	DC	HALIB
3341.0	[m]	SWC	STATO
3345.0	[m]	SWC	STATO
3360.0	[m]	DC	HALIB
3375.0	[m]	DC	HALIB
3390.0	[m]	DC	HALIB

Oil samples at the Norwegian Offshore Directorate

Test type	Bottle number	Top depth MD [m]	Bottom depth MD [m]	Fluid type	Test time	Samples available
DST	TEST1	3258.00	3268.00		29.01.1990 - 05:55	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
104	NORDLAND GP
410	HORDALAND GP
938	ROGALAND GP
938	BALDER FM
963	SELE FM
986	LISTA FM
1025	VÅLE FM
1031	SHETLAND GP
1031	EKOFISK FM
1139	TOR FM



1423	HOD FM
1867	BLODØKS FM
1911	CROMER KNOLL GP
1911	RØDBY FM
1932	SOLA FM
2027	ÅSGARD FM
2625	BOKNEFJORD GP
2625	FLEKKEFJORD FM
2799	SAUDA FM
3098	TAU FM
3188	EGERSUND FM
3252	VESTLAND GP
3252	SANDNES FM
3373	BRYNE FM

Composite logs

Document name	Document format	Document size [MB]
1294	pdf	0.40

Geochemical information

Document name	Document format	Document size [MB]
1294_1	pdf	0.82
1294_2	pdf	2.50
1294_3	pdf	0.58

Documents - older Norwegian Offshore Directorate WDSS reports and other related documents

Document name	Document format	Document size [MB]
1294_01_WDSS_General_Information	pdf	0.21
1294_02_WDSS_completion_log	pdf	0.22

Documents - reported by the production licence (period for duty of secrecy expired)





Document name	Document format	Document size [MB]
1294 9 2 3 COMPLETION REPORT AND LOG	pdf	20.47

Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	3258	3268	12.7

Test number	Final shut-in pressure [MPa]	Final flow pressure [MPa]	Bottom hole pressure [MPa]	Downhole temperature [°C]
1.0				

Test number	Oil [Sm3/day]	Gas [Sm3/day]	Oil density [g/cm3]	Gas grav. rel.air	GOR [m3/m3]
1.0	4				

Logs

Log type	Log top depth [m]	Log bottom depth [m]
ACBL VDL GR	275	1106
ACBL VDL GR	3194	3396
CDL CNL GR	3192	3404
DIFL ACL GR	1106	3182
DIFL ACL GR	3192	3397
DIPLOG	3195	3358
FMT	3260	3329
MWD - GR RES DIR	166	3422
SWC GR	2440	3143
SWC GR	3234	3349
VELOCITY	490	3190

Casing and leak-off tests





Casing type	Casing diam. [inch]	Casing depth [m]	Hole diam. [inch]	Hole depth [m]	LOT/FIT mud eqv. [g/cm3]	Formation test type
CONDUCTOR	30	163.0	36	169.0	0.00	LOT
INTERM.	20	350.0	26	375.0	1.39	LOT
INTERM.	13 3/8	1106.0	17 1/2	1121.0	2.04	LOT
INTERM.	9 5/8	3195.0	12 1/4	3210.0	1.87	LOT
LINER	7	3424.0	8 1/2	3424.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
1121	1.10	20.0	6.0	WATER BASED	11.12.1989
1121	1.14	17.0	3.5	WATER BASED	12.12.1989
1272	1.15	27.0	4.5	WATER BASED	14.12.1989
1481	1.16	17.0	3.5	WATER BASED	14.12.1989
1618	1.13	20.0	4.5	WATER BASED	19.12.1989
1618	1.13	19.0	4.0	WATER BASED	19.12.1989
1618	1.13	16.0	3.5	WATER BASED	19.12.1989
1618	1.13	20.0	5.0	WATER BASED	19.12.1989
1696	1.13	20.0	5.0	WATER BASED	21.12.1989
1792	1.13	20.0	4.5	WATER BASED	21.12.1989
1941	1.14	19.0	4.5	WATER BASED	22.12.1989
2170	1.14	17.0	4.5	WATER BASED	28.12.1989
2511	1.14	18.0	4.5	WATER BASED	28.12.1989
2720	1.14	14.0	3.5	WATER BASED	28.12.1989
2753	1.20	17.0	3.5	WATER BASED	28.12.1989
3145	1.33	29.0	5.0	WATER BASED	28.12.1989
3145	1.33	31.0	5.0	WATER BASED	29.12.1989
3145	1.35	32.0	5.0	WATER BASED	03.01.1990
3145	1.35	28.0	5.5	WATER BASED	03.01.1990
3210	1.48	29.0	5.5	WATER BASED	03.01.1990
3210	1.26	20.0	4.0	WATER BASED	05.01.1990
3210	1.26	23.0	5.0	WATER BASED	05.01.1990
3210	1.26	22.0	3.5	WATER BASED	08.01.1990
3210	1.26	22.0	5.0	WATER BASED	08.01.1990
3210	1.26	25.0	5.5	WATER BASED	09.01.1990
3210	1.26	24.0	5.5	WATER BASED	09.01.1990
3210	1.26	30.0	7.0	WATER BASED	10.01.1990



3210	1.63	36.0	6.5	WATER BASED	16.01.1990
3258	1.63	36.0	5.0	WATER BASED	19.01.1990
3258	1.63	42.0	5.0	WATER BASED	23.01.1990
3258	1.63	26.0	3.5	WATER BASED	25.01.1990
3258	1.63	31.0	4.0	WATER BASED	23.01.1990
3258	1.63	33.0	4.5	WATER BASED	23.01.1990
3258	1.63	28.0	4.0	WATER BASED	23.01.1990
3258	1.63	27.0	4.0	WATER BASED	24.01.1990

Pressure plots

The pore pressure data is sourced from well logs if no other source is specified. In some wells where pore pressure logs do not exist, information from Drill stem tests and kicks have been used. The data has been reported to the NPD, and further processed and quality controlled by IHS Markit.

Document name	Document format	Document size [MB]
1294 Formation pressure (Formasjonstrykk)	pdf	0.22

