

**General information**

Wellbore name	1/9-2
Type	EXPLORATION
Purpose	APPRAISAL
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Field	TOMMELITEN A
Discovery	1/9-1 Tommeliten Alpha
Well name	1/9-2
Seismic location	line 404-404.SP 572
Production licence	044
Drilling operator	Den norske stats oljeselskap a.s
Drill permit	175-L
Drilling facility	ROSS RIG (1)
Drilling days	73
Entered date	01.06.1977
Completed date	12.08.1977
Release date	12.08.1979
Publication date	01.04.2012
Purpose - planned	APPRAISAL
Reentry	NO
Content	OIL SHOWS
Discovery wellbore	NO
1st level with HC, age	PALEOCENE
1st level with HC, formation	EKOFISK FM
2nd level with HC, age	LATE CRETACEOUS
2nd level with HC, formation	TOR FM
Kelly bushing elevation [m]	25.0
Water depth [m]	75.0
Total depth (MD) [m RKB]	3459.0
Maximum inclination [°]	2.25
Bottom hole temperature [°C]	121
Oldest penetrated age	LATE CRETACEOUS
Oldest penetrated formation	HOD FM
Geodetic datum	ED50
NS degrees	56° 23' 52.77" N
EW degrees	2° 55' 34.63" E
NS UTM [m]	6250517.66



EW UTM [m]	495449.76
UTM zone	31
NPDID wellbore	244

Wellbore history

General

Well 1/9-2 was drilled on a salt diapir structure located in the Feda Graben in the southern North Sea. It was drilled to confirm and further evaluate the proven hydrocarbons found on this seismic structure by the 1/9-1 well.

Operations and results

Appraisal well 1/9-2 was spudded with the semi-submersible installation Ross Rig on 1 June 1977 and drilled to TD at 3459 m in the Late Cretaceous Hod Formation. No significant problems were encountered in the operations. The well was drilled with spud mud down to 439 m and water based with lime/Drispac/lignosulphonate mud systems from 438 m to TD.

Good oil show was observed in a thin sandstone stringer at 1632 m in the Hordaland Group. Oil in cuttings was recorded also at 1710 m and 2858 m in claystones. The Ekofisk Formation was encountered at 3120 m with shows and tested small amounts of oil. The Tor Formation came in at 3195 m with shows and tested small amounts of oil. Below 3213.5 m only rare and weak fluorescence was observed on limestone.

The interval 3135-3215 in the Ekofisk and Tor formations was cored with nearly 100% recovery. RFT pressure readings were attempted in the Tor and Ekofisk formations, but all were unsuccessful due to tight formation. No fluid samples were taken.

The well was permanently abandoned on 12 August 1977. The poor results from DST are classified as shows.

Testing

Two drill stem tests were carried out.

DST 1 tested the Maastrichtian Tor Formation (3197 - 3209 m) and flowed approximately 6 - 10 m³/day of acidwater after stimulation, slugging badly. 2-10% of oil was measured in samples. The oil gravity was 34.0 deg API.

DST 2 & 2A tested the Danian Ekofisk Formation (3130 - 3154 m). The flow stabilized at approximately 13 - 15 m³/day of acidwater after the retest effort. Clean samples of formation fluids were not obtained, but this interval produced long enough to approach clean-up. 2-17% of oil was measured on samples taken during flow and reversing sequences with the smaller value probably being more representative. Oil gravity was 35.2 - 35.7 deg API.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
152.50	3460.00



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	3130.9	3148.8	[m]
2	3149.1	3167.1	[m]
3	3167.4	3185.7	[m]
4	3185.7	3201.1	[m]
5	3201.1	3219.6	[m]

Total core sample length [m]	88.0
Cores available for sampling?	YES

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	DST 1	3197.00	3209.00		27.07.1977 - 00:00	YES
DST	TEST2	3130.00	3154.00		02.08.1977 - 05:00	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
100	NORDLAND GP
1054	HORDALAND GP
2928	ROGALAND GP
2928	BALDER FM
2953	SELE FM
3026	LISTA FM
3030	ANDREW FM
3033	LISTA FM
3096	VÅLE FM
3120	SHETLAND GP
3120	EKOFISK FM



3195	TOR FM
3308	HOD FM

Composite logs

Document name	Document format	Document size [MB]
244_1_9_2	pdf	0.59

Geochemical information

Document name	Document format	Document size [MB]
244_1	pdf	0.66
244_2	pdf	2.37
244_3	pdf	0.86

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

Document name	Document format	Document size [MB]
244_01_WDSS_General_Information	pdf	0.26

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

Document name	Document format	Document size [MB]
244_1_9_2_Completion_log	pdf	2.43
244_1_9_2_Completion_report	pdf	50.84

Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	3197	3209	0.0
2.0	3130	3154	0.0





Test number	Final shut-in pressure [MPa]	Final flow pressure [MPa]	Bottom hole pressure [MPa]	Downhole temperature [°C]
1.0				
2.0				

Test number	Oil [Sm3/day]	Gas [Sm3/day]	Oil density [g/cm3]	Gas grav. rel.air	GOR [m3/m3]
1.0					
2.0					

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CBL	125	1377
CBL VDL GR	800	2829
CBL VDL GR	2750	3397
DLL MSFL CAL SP GR	2856	3459
FDC CAL GR	432	2865
FDC CAL GR CNL	2856	3459
FIL	2856	3459
HDT	2856	3459
IES SP	2856	3459
ISF SONIC GR SP	153	2864
SONIC GR	2856	3434
VDL OH	2856	3440

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	153.0	36	153.0	0.00	LOT
SURF.COND.	20	433.0	26	493.0	0.00	LOT
INTERM.	13 3/8	1375.0	17 1/2	1390.0	0.00	LOT
INTERM.	9 5/8	2856.0	12 1/4	2866.0	0.00	LOT
LINER	7	3458.0	8 1/2	3459.0	0.00	LOT

Drilling mud



Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
250	1.03	45.0		spud mud	
1155	1.29	47.0		waterbased	
1772	1.70	62.0		waterbased	
2658	1.85	63.0		waterbased	
2867	1.67	54.0		waterbased	
3218	1.67	50.0		waterbased	
3459	1.66	47.0		waterbased	