General information

Wellbore name	15/12-4
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Field	VARG
Discovery	15/12-4 Varg
Well name	15/12-4
Seismic location	ST 8315/106 SP. 2105
Production licence	038
Drilling operator	Den norske stats oljeselskap a.s
Drill permit	433-L
Drilling facility	DEEPSEA BERGEN
Drilling days	49
Entered date	13.09.1984
Completed date	31.10.1984
Release date	31.10.1986
Publication date	15.08.2008
Purpose - planned	WILDCAT
Reentry	NO
Content	OIL
Discovery wellbore	YES
1st level with HC, age	MIDDLE JURASSIC
1st level with HC, formation	HUGIN FM
Kelly bushing elevation [m]	23.0
Water depth [m]	87.0
Total depth (MD) [m RKB]	3157.0
Final vertical depth (TVD) [m RKB]	3156.0
Maximum inclination [°]	2.5
Bottom hole temperature [°C]	114
Oldest penetrated age	TRIASSIC
Oldest penetrated formation	NO GROUP DEFINED
Geodetic datum	ED50
NS degrees	58° 3' 9.16'' N
EW degrees	1° 54' 11.61'' E
NS UTM [m]	6435232.25
EW UTM [m]	435264.02

UTM zone	31
NPDID wellbore	438

Wellbore history

Wildcat well 15/12-4 is located on the Maureen Terrace in the South Viking Graben in the North Sea. The primary objectives were the Palaeocene Heimdal Formation and sandstones of Jurassic and Triassic age. Secondary objectives were the Frigg Formation and fractured limestone in the Cretaceous.

Operations and results

Well 15/12-4 was spudded with the semi-submersible installation Deepsea Bergen on 13 September 1984 and drilled to TD at 3157 m, 17 m into the Triassic Group. Operations were completed within the time schedule and with very few problems. The well was drilled with seawater and gel down to 505 m, with gypsum polymer from 505 m to 2680 m, and with lignosulphonate from 2680 m to TD.

No Heimdal or Frigg sands were encountered in the well. From logs and cores hydrocarbons were seen in the uppermost part of the Cretaceous chalk in the interval 2490 ? 2515 m. Core analysis and log analysis indicated very poor reservoir properties in this chalk. The water saturation was high (60 - 80 %) and the permeability was extremely low (0.01 - 0.5 mD). A 1.5 meter oil column was seen in the Jurassic sandstone, from 2911.5 to 2913 m with a transition zone down to 2915.5. Apart from these two intervals there were no shows or other hydrocarbon indications in the well.

Four cores were cut, one in the Palaeocene, two in the Late Cretaceous and one in the Late Jurassic sequence. One FMT run was made in the Cretaceous. Here, no pressure points out of 19 attempts were successful due to seal failure and very low permeability in the formation. One attempt to get sample at 2439.5 m failed due to tight formation. In the Jurassic a segregated FMT sample was taken at 2912 m (5.8 l oil with a density of 0.847 g/cm3 in the 2 3/4 gallon chamber) and a second segregated sample at 2913.5 m (0.5 l oil and 9 l water/mud filtrate in the 2 3/4 gallon chamber).

The well was permanently abandoned on 31 October 1984 as an oil discovery.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
180.00	3157.50

Cuttings available for sampling?	YES

Cores at the Norwegian Offshore Directorate

Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
1	2439.0	2449.0	[m]
2	2494.5	2498.7	[m]
3	2499.0	2513.6	[m]
4	2902.0	2919.7	[m]

Total core sample length [m]	46.5
Cores available for sampling?	YES

Core photos


2439-2444m


2444-2449m


2494-2498m


2499-2504m


2504-2509m


2509-2513m


2902-2907m


2908-2914m


2914-2919m

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
2285.0	[m]	DC	
2297.5	[m]	SWC	
2307.5	[m]	SWC	
2327.5	[m]	SWC	
2347.5	[m]	SWC	
2367.5	[m]	SWC	
2387.5	[m]	SWC	
2407.5	[m]	SWC	
2427.5	[m]	SWC	
2447.5	[m]	SWC	
2467.5	[m]	SWC	

2477.5	[m]	SWC	
2507.5	[m]	SWC	
2537.5	[m]	SWC	
2567.5	[m]	SWC	
2597.5	[m]	SWC	
2627.5	[m]	SWC	
2657.5	[m]	SWC	
2687.5	[m]	SWC	
2717.5	[m]	SWC	
2747.5	[m]	SWC	
2777.5	[m]	SWC	
2797.5	[m]	SWC	

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
110	NORDLAND GP
1098	UTSIRA FM
1278	HORDALAND GP
2320	ROGALAND GP
2320	BALDER FM
2335	SELE FM
2393	LISTA FM
2464	VÅLE FM
2476	SHETLAND GP
2476	EKOFISK FM
2494	TOR FM
2621	HOD FM
2712	CROMER KNOLL GP
2712	RØDBY FM
2735	SOLA FM
2759	ÅSGARD FM
2784	VIKING GP
2784	DRAUPNE FM
2892	HEATHER FM
2912	VESTLAND GP
2912	HUGIN FM
3134	SLEIPNER FM
3140	NO GROUP DEFINED

Geochemical information

Document name	Document format	Document size [MB]
438_1	pdf	0.33
438_2	pdf	15.83
438_3	pdf	0.73

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

Document name	Document format	Document size [MB]
438_01_WDSS_General_Information	pdf	0.21
438_02_WDSS_completion_log	pdf	0.27

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

Document name	Document format	Document size [MB]
438_01_15_12_4_CompletionReport_and_Completionlog	pdf	21.19
438_02_15_12_4_Final_well_report	pdf	12.35
438_03_15_12_4_Geological_progn.press.pred.	pdf	2.32
438_03_15_12_4_Geological_progn.press.pred._encl_1	pdf	0.16
438_03_15_12_4_Geological_progn.press.pred._encl_2	pdf	1.44
438_04_15_12_4_PVT_Analysis	pdf	0.26
438_05_15_12_4_Routine_core_analysis	pdf	0.95
438_06_15_12_4_Sampling_report	pdf	0.41
438_07_15_12_4_Shallow_gas_study	pdf	0.63
438_07_15_12_4_Shallow_gas_study_encl_1	pdf	1.45
438_07_15_12_4_Shallow_gas_study_encl_10	pdf	1.25
438_07_15_12_4_Shallow_gas_study_encl_11	pdf	2.88
438_07_15_12_4_Shallow_gas_study_encl_2	pdf	1.40
438_07_15_12_4_Shallow_gas_study_encl_3	pdf	1.88
438_07_15_12_4_Shallow_gas_study_encl_4	pdf	1.87

438_07_15_12_4_Shallow_gas_study_encl_5	pdf	1.49
438_07_15_12_4_Shallow_gas_study_encl_6	pdf	2.01
438_07_15_12_4_Shallow_gas_study_encl_7	pdf	1.18
438_07_15_12_4_Shallow_gas_study_encl_8	pdf	3.04
438_07_15_12_4_Shallow_gas_study_encl_9	pdf	2.12

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CDL CNL GR CAL	1599	3157
CDL GR CAL	504	1622
DIFL BHC AC GR SP CAL	170	3157
DLL MLL GR	1599	3157
FMT	2438	2482
FMT	2901	3146
FMT	2911	2913
HR DIP	1599	3157
VELOCITY	660	3150

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	171.0	36	173.0	0.00	LOT
SURF.COND.	20	505.0	26	520.0	1.44	LOT
INTERM.	13 3/8	1601.0	17 1/2	1620.0	1.84	LOT
INTERM.	9 5/8	2666.0	12 1/4	2680.0	1.86	LOT
OPEN HOLE		3179.0	8 1/2	3179.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
110	1.03	55.0	5.3	WATER BASED	17.09.1984
171	1.07	49.0	4.5	WATER BASED	17.09.1984
240	1.07	49.0	4.5	WATER BASED	17.09.1984
520	1.08	46.0	20.0	WATER BASED	17.09.1984
523	1.11	40.0	9.6	WATER BASED	19.09.1984

772	1.14	42.0	10.0	WATER BASED	20.09.1984
945	1.14	47.0	12.0	WATER BASED	21.09.1984
1213	1.14	45.0	12.0	WATER BASED	24.09.1984
1491	1.14	49.0	13.0	WATER BASED	24.09.1984
1620	1.14	44.0	12.0	WATER BASED	24.09.1984
1877	1.14	45.0	9.0	WATER BASED	28.09.1984
2272	1.14	46.0	9.0	WATER BASED	01.10.1984
2374	1.20	44.0	8.6	WATER BASED	01.10.1984
2439	1.25	45.0	9.1	WATER BASED	01.10.1984
2450	1.25	42.0	8.6	WATER BASED	02.10.1984
2495	1.25	45.0	10.0	WATER BASED	03.10.1984
2511	1.25	43.0	9.1	WATER BASED	04.10.1984
2516	1.25	46.0	9.6	WATER BASED	05.10.1984
2584	1.30	42.0	9.0	WATER BASED	08.10.1984
2626	1.30	45.0	10.0	WATER BASED	08.10.1984
2680	1.30	47.0	10.0	WATER BASED	08.10.1984
2680	1.30	44.0	5.8	WATER BASED	15.10.1984
2717	1.30	54.0	5.8	WATER BASED	15.10.1984
2758	1.30	55.0	5.8	WATER BASED	15.10.1984
2803	1.35	55.0	6.0	WATER BASED	16.10.1984
2861	1.35	52.0	6.0	WATER BASED	17.10.1984
2902	1.35	59.0	5.6	WATER BASED	18.10.1984
2920	1.35	60.0	5.6	WATER BASED	19.10.1984
3034	1.35	56.0	7.0	WATER BASED	22.10.1984
3146	1.35	62.0	6.7	WATER BASED	22.10.1984
3157	1.35	76.0	6.7	WATER BASED	23.10.1984
3157	1.35	76.0	6.7	WATER BASED	24.10.1984
3157	1.35	61.0	6.2	WATER BASED	22.10.1984

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]
438_Formation_pressure_(Formasjonstrykk)	pdf	0.23