General information

Wellbore name	15/9-8
Type	EXPLORATION
Purpose	APPRAISAL
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Field	SLEIPNER VEST
Discovery	15/6-3 Sleipner Vest
Well name	15/9-8
Seismic location	line nr610 161 SP: 349.
Production licence	046
Drilling operator	Den norske stats oljeselskap a.s
Drill permit	279-L
Drilling facility	NORTRYM
Drilling days	82
Entered date	05.03.1981
Completed date	25.05.1981
Release date	25.05.1983
Publication date	18.05.2015
Purpose - planned	APPRAISAL
Reentry	NO
Content	GAS/CONDENSATE
Discovery wellbore	NO
1st level with HC, age	MIDDLE JURASSIC
1st level with HC, formation	HUGIN FM
2nd level with HC, age	MIDDLE JURASSIC
2nd level with HC, formation	SLEIPNER FM
Kelly bushing elevation [m]	25.0
Water depth [m]	103.0
Total depth (MD) [m RKB]	3730.0
Final vertical depth (TVD) [m RKB]	3729.0
Maximum inclination [°]	2.75
Bottom hole temperature [°C]	128
Oldest penetrated age	TRIASSIC
Oldest penetrated formation	SMITH BANK FM
Geodetic datum	ED50
NS degrees	58° 22' 55.81'' N
EW degrees	1° 46' 28.32'' E

NS UTM [m]	6472060.11
EW UTM [m]	428335.92
UTM zone	31
NPDID wellbore	327

Wellbore history

General

Well 15/9-8 was drilled on the Delta structure in the southeastern part of the Sleipner West Field in the North Sea. The primary objective was to delineate the hydrocarbon accumulation encountered in the 15/9-4 well on the same structure, and to get further information about the sand distribution in the area. The primary target was Callovian sandstones. Paleocene sandstone was the secondary target.

Operations and results

Appraisal well 15/9-8 was spudded with the semi-submersible installation Nortrym on 5 March 1981 and drilled to TD at 3730 m in the Triassic Smith Bank Formation. Operations proceeded without significant problems. The well was drilled with seawater and hi-vis pills down to 495 m, with gypsum/polymer mud from 495 m to 2845 m, and with a gel/lignosulphonate mud from m 2845 m to TD.

The sandstones in Paleocene were water bearing. Top of the Callovian sandstone, Hugin Formation, was encountered at 3446 m, while top Sleipner Formation was encountered at 3493 m. Bothe formations proved to be gas/condensate bearing with a gas-water contact at 3564 m based on pressure gradients and well logs. No shows were recorded outside of the hydrocarbon bearing Hugin and Sleipner Formation.

A total of 46.5 m core was recovered in four cores from the interval 3448 to 3499 m. Segregated RFT fluid samples were taken at 3460 m (gas, condensate and mud filtrate), 3561.5 m (gas, condensate and mud filtrate), and 3566.5 m (mud filtrate and a smaller quantity of gas).

The well was permanently abandoned on 25 May 1981 as a gas/condensate appraisal well.

Testing

One Drill Stem Test was performed from the interval 3450 to 3460.2 m in the Hugin Formation. The test produced 255 Sm3 condensate and 820000 Sm3 gas /day through a 91/64" choke. The gas/condensate ratio was 3200 Sm3/Sm3, the condensate gravity was 0.78 g/cm3, and the gas gravity was 0.74 (air = 1). The CO2 content was 6-7%. The DST temperature was 121 °C.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
180.00	3730.00

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	3448.4	3465.8	[m]
2	3466.0	3477.7	[m]
3	3477.0	3477.5	[m]
4	3478.0	3493.4	[m]

Total core sample length [m]	45.0
Cores available for sampling?	YES

Core photos


3448-3451m


3451-3454m

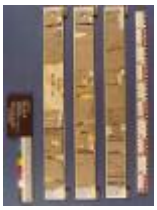

3454-3457m


3457-3460m


3460-3463m


3463-3465m


3465-3469m


3469-3472m


3472-3475m


3475-3477m


3477-3477m


3478-3481m


3481-3484m


3484-3487m


3487-3490m





3490-3493m 3493-3494m

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
2200.0	[m]	DC	
2230.0	[m]	DC	
2259.0	[m]	DC	
2289.0	[m]	DC	
2322.0	[m]	DC	
2334.0	[m]	DC	
2352.0	[m]	DC	
2382.0	[m]	DC	
2412.0	[m]	DC	
2418.0	[m]	DC	
2421.0	[m]	DC	STATOIL
2427.0	[m]	DC	
2436.0	[m]	DC	STATOIL
2442.0	[m]	DC	
2451.0	[m]	DC	
2451.0	[m]	DC	STATOIL
2460.0	[m]	DC	
2466.0	[m]	DC	STATOIL
2472.0	[m]	DC	
2481.0	[m]	DC	
2481.0	[m]	DC	STATOIL
2484.0	[m]	DC	
2493.0	[m]	DC	
2496.0	[m]	DC	STATOIL
2502.0	[m]	DC	
2511.0	[m]	DC	STATOIL
2526.0	[m]	DC	
2526.0	[m]	DC	STATOIL
2532.0	[m]	DC	
2541.0	[m]	DC	STATOIL
2542.0	[m]	DC	
2553.0	[m]	DC	
2556.0	[m]	DC	STATOIL
2571.0	[m]	DC	STATOI

2574.0	[m]	DC	
2580.0	[m]	DC	
2586.0	[m]	DC	STATOIL
2592.0	[m]	DC	
2601.0	[m]	DC	
2601.0	[m]	DC	STATOIL
2616.0	[m]	DC	STATOI
2622.0	[m]	DC	
2631.0	[m]	DC	STATOIL
2640.0	[m]	DC	
2646.0	[m]	DC	
2646.0	[m]	DC	STATOIL
2652.0	[m]	DC	
2655.0	[m]	DC	STATOIL
2658.0	[m]	DC	
2667.0	[m]	DC	STATOIL
2676.0	[m]	DC	STATOI
2676.0	[m]	DC	
2682.0	[m]	DC	
2688.0	[m]	DC	
2688.0	[m]	DC	STATOIL
2694.0	[m]	DC	
2697.0	[m]	DC	
2697.0	[m]	DC	STATOIL
2700.0	[m]	DC	
2703.0	[m]	DC	
2709.0	[m]	DC	STATOIL
2712.0	[m]	DC	
2718.0	[m]	DC	STATOIL
2730.0	[m]	DC	STATOI
2730.0	[m]	DC	
2736.0	[m]	DC	
2739.0	[m]	DC	STATOIL
2742.0	[m]	DC	
2751.0	[m]	DC	STATOIL
2760.0	[m]	DC	STATOI
2760.0	[m]	DC	
2772.0	[m]	DC	
2772.0	[m]	DC	STATOIL
2781.0	[m]	DC	STATOI

2790.0	[m]	DC	
2793.0	[m]	DC	STATOIL
2802.0	[m]	DC	
2832.0	[m]	DC	
2862.0	[m]	DC	
2886.0	[m]	DC	
2892.0	[m]	DC	
2922.0	[m]	DC	
2952.0	[m]	DC	
2982.0	[m]	DC	
3000.0	[m]	DC	
3102.0	[m]	DC	
3132.0	[m]	DC	
3162.0	[m]	DC	
3192.0	[m]	DC	
3222.0	[m]	DC	
3252.0	[m]	DC	
3282.0	[m]	DC	
3312.0	[m]	DC	
3342.0	[m]	DC	
3372.0	[m]	DC	
3402.0	[m]	DC	
3420.0	[m]	DC	OD
3432.0	[m]	DC	
3441.0	[m]	DC	OD
3448.8	[m]	C	OD
3453.9	[m]	C	OD
3460.5	[m]	C	OD
3462.0	[m]	C	
3472.5	[m]	C	OD
3479.3	[m]	C	OD
3482.5	[m]	C	OD
3491.7	[m]	C	OD
3492.0	[m]	C	
3493.0	[m]	C	
3493.3	[m]	C	
3493.3	[m]	C	OD
3499.3	[m]	C	OD
3501.0	[m]	DC	OD
3510.0	[m]	DC	OD

3519.0	[m]	DC	OD
3522.0	[m]	DC	
3531.0	[m]	DC	OD
3531.0	[m]	DC	OD
3540.0	[m]	DC	OD
3549.0	[m]	DC	OD
3552.0	[m]	DC	
3561.0	[m]	DC	OD
3570.0	[m]	DC	OD
3582.0	[m]	DC	OD
3582.0	[m]	DC	
3591.0	[m]	DC	OD
3600.0	[m]	DC	OD
3612.0	[m]	DC	
3642.0	[m]	DC	
3672.0	[m]	DC	
3702.0	[m]	DC	
3730.0	[m]	DC	

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	3450.00	3460.00		15.05.1981 - 05:00	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
128	NORDLAND GP
863	UTSIRA FM
1120	UNDIFFERENTIATED
1222	HORDALAND GP
1473	SKADE FM
1509	UNDIFFERENTIATED
2156	FRIGG FM
2174	UNDIFFERENTIATED
2310	ROGALAND GP

2310	BALDER FM
2360	SELE FM
2428	LISTA FM
2476	HEIMDAL FM
2674	LISTA FM
2717	VÅLE FM
2734	TY FM
2788	SHETLAND GP
2788	EKOFISK FM
2800	TOR FM
3000	HOD FM
3115	BLODØKS FM
3166	HIDRA FM
3197	CROMER KNOLL GP
3197	RØDBY FM
3227	SOLA FM
3262	ÅSGARD FM
3290	VIKING GP
3290	DRAUPNE FM
3427	HEATHER FM
3446	VESTLAND GP
3446	HUGIN FM
3493	SLEIPNER FM
3625	HEGRE GP
3625	SKAGERRAK FM
3676	SMITH BANK FM

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

Document name	Document format	Document size [MB]
327_01_WDSS_General_Information	pdf	0.10
327_02_WDSS_completion_log	pdf	0.25

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

Document name	Document format	Document size [MB]
327_15_9_8_COMPLETION_REPORT	pdf	23.96

327_15_9_8_COMPLETIO_LOG	pdf	1.65

Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	3450	3460	36.1

Test number	Final shut-in pressure [MPa]	Final flow pressure [MPa]	Bottom hole pressure [MPa]	Downhole temperature [°C]
1.0				121

Test number	Oil [Sm3/day]	Gas [Sm3/day]	Oil density [g/cm3]	Gas grav. rel.air	GOR [m3/m3]
1.0	255	820000	0.780	0.740	3200

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CBL GR	280	1173
CBL GR	1430	2831
CST	3500	3720
DLL MSFL GR	3390	3730
FDC GR	481	3730
HDT	2821	3730
ISF BHC GR	178	3730
RFT	3390	3730
VELOCITY	800	3725

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	179.0	36	179.0	0.00	LOT
SURF.COND.	20	481.0	26	495.0	1.65	LOT
INTERM.	13 3/8	1174.0	17 1/2	1190.0	1.68	LOT
INTERM.	9 5/8	2831.0	12 1/4	2840.0	1.82	LOT
LINER	7	3724.5	8 1/2	3730.0	0.00	LOT

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]
327_Formation_pressure_(Formasjonstrykk)	pdf	0.22