

**General information**

Wellbore name	15/9-12
Type	EXPLORATION
Purpose	APPRAISAL
Status	SUSPENDED
Factmaps in new window	link to map
Main area	NORTH SEA
Field	SLEIPNER VEST
Discovery	15/6-3 Sleipner Vest
Well name	15/9-12
Seismic location	8010 - 023 SP 270
Production licence	046
Drilling operator	Den norske stats oljeselskap a.s
Drill permit	309-L
Drilling facility	NORDRAUG
Drilling days	98
Entered date	22.11.1981
Completed date	27.02.1982
Release date	27.02.1984
Publication date	28.03.2014
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
Kelly bushing elevation [m]	25.0
Water depth [m]	110.0
Total depth (MD) [m RKB]	3740.0
Final vertical depth (TVD) [m RKB]	3739.0
Maximum inclination [°]	4.2
Bottom hole temperature [°C]	112
Oldest penetrated age	MIDDLE JURASSIC
Oldest penetrated formation	SLEIPNER FM
Geodetic datum	ED50
NS degrees	58° 27' 23.17" N
EW degrees	1° 43' 4.01" E
NS UTM [m]	6480390.26
EW UTM [m]	425174.97



UTM zone	31
NPDID wellbore	330

Wellbore history

General

Well 15/9-12 was drilled as an appraisal well on the saddle area between the Alpha and Beta structures on the Sleipner Vest field in the North Sea. The main objective was to test the Middle Jurassic sandstones.

Operations and results

After setting anchors on 8 November 1981 the spud was delayed two weeks due to strike by the maritime and drilling crews.

Appraisal well 15/9-12 was spudded with the semi-submersible installation Nordraug on 22 November 1981 and drilled to TD at 3740 m in the Middle Jurassic Sleipner Formation. The 36" hole was drilled to 195 m but due to bad weather the hole was lost and the well was re-spudded on 26 November. Drilling of the 26" and 17 1/2" holes went forth without significant problems other than tight spots in the lower part of the 17 1/2" hole. When setting the 9 the 5/8" casing shoe at 2755 m 64 m³ mud was lost to the formation. The well was drilled with seawater and gel slugs down to 501 m, with gel-lignosulphonate mud from 501 m to 1135 m, with lignosulphonate/gypsum/CMC mud from 1135 m to 2771 m, and with gel-lignosulphonate mud from 2771 to 3740 m.

A 251 m thick Heimdal Formation was penetrated from 2374 m to 2625 m. The Heimdal Formation was water bearing without shows. The primary target reservoir Hugin Formation was penetrated at 3510 m and proved to contain gas-condensate with a gas-water contact at 3654 according to RFT pressure gradients. Weak shows continued on the cores down to 3665 m. The underlying Sleipner Formation was dry without shows.

A total of 168.8 m core was cut from top to base of the Hugin Formation. The depth for cores 1 - 9 should be shifted down ca 7 m to fit with the loggers' depth. Cores 10 - 11 should be shifted 8 and 9 m down, respectively. Seven RFT runs were conducted for pressure points and sampling. Segregated fluid samples were taken at 3653 m, 3592.5 m, 3512 m, and 3647 m.

The well was suspended on 27 February 1982 as a gas-condensate appraisal.

Testing

Testing was planned, but failed due to problems with the test string. For this reason Nordraug was taken to the shipyard and testing would be done in a re-entry.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
220.00	3735.00

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	3504.5	3522.2	[m]
2	3522.3	3540.2	[m]
3	3540.2	3553.3	[m]
4	3554.0	3572.0	[m]
5	3572.2	3589.8	[m]
6	3590.0	3607.7	[m]
7	3608.0	3625.7	[m]
8	3626.0	3642.7	[m]
9	3644.0	3661.6	[m]
10	3662.0	3664.8	[m]
11	3681.0	3692.4	[m]

Total core sample length [m]	168.1
Cores available for sampling?	YES

Core photos

3504-3509m



3509-3514m



3514-3519m



3519-3522m



3522-3527m



3527-3532m



3532-3537m



3537-3540m



3540-3545m



3545-3550m





3550-3553m

3554-3559m

3559-3564m

3564-3569m

3569-3572m



3572-3577m

3577-3582m

3582-3587m

3587-3589m

3590-3595m



3595-3600m

3600-3605m

3605-3607m

3608-3613m

3613-3618m



3618-3623m

3623-3625m

3626-3631m

3631-3636m

3636-3641m



3641-3642m

3644-3649m

3649-3654m

3654-3659m

3659-3661m



3662-3664m

3681-3686m

3686-3691m

3691-3692m

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
2305.0	[m]	SWC	STATOIL



2372.0	[m]	SWC	STATOI
2377.0	[m]	SWC	STATOI
2383.0	[m]	SWC	STATOI
2417.0	[m]	SWC	STATOI
2443.0	[m]	SWC	STATOI
2473.0	[m]	SWC	STATOI
2560.0	[m]	SWC	STATOI
2588.0	[m]	SWC	STATOI
2613.0	[m]	SWC	STATOI
2660.0	[m]	SWC	STATOI
2705.0	[m]	SWC	STATOI
2758.0	[m]	SWC	STATOI
3300.0	[m]	DC	
3330.0	[m]	DC	
3360.0	[m]	DC	
3390.0	[m]	DC	
3420.0	[m]	DC	
3450.0	[m]	DC	
3480.0	[m]	DC	
3505.0	[m]	DC	
3520.1	[m]	C	
3563.9	[m]	C	
3651.8	[m]	C	
3653.5	[m]	C	
3682.9	[m]	C	
3685.9	[m]	C	
3700.0	[m]	DC	
3720.0	[m]	DC	
3735.0	[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	TEST1B	3585.00	3595.00		14.04.1982 - 00:00	YES
DST	TEST2	3512.00	3522.00		20.04.1982 - 00:00	YES

**Lithostratigraphy**

Top depth [mMD RKB]	Lithostrat. unit
135	NORDLAND GP
822	UTSIRA FM
1066	HORDALAND GP
1394	SKADE FM
1823	FRIGG FM
2220	ROGALAND GP
2220	BALDER FM
2269	SELE FM
2328	LISTA FM
2374	HEIMDAL FM
2625	MAUREEN FM
2723	SHETLAND GP
2764	TOR FM
2979	HOD FM
3233	BLODØKS FM
3246	HIDRA FM
3295	CROMER KNOLL GP
3295	RØDBY FM
3348	SOLA FM
3360	ÅSGARD FM
3400	VIKING GP
3400	DRAUPNE FM
3498	HEATHER FM
3510	VESTLAND GP
3510	HUGIN FM
3694	SLEIPNER FM

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

Document name	Document format	Document size [MB]
330_01_WDSS_General_Information	pdf	0.20
330_02_WDSS_completion_log	pdf	0.05

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





Document name	Document format	Document size [MB]
330 15 9 12 COMPLETION LOG	pdf	2.33
330 15 9 12 COMPLETION REPORT	pdf	22.87

Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	3585	3595	25.4
2.0	3512	3522	25.4

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	253	762000	0.790	0.770	3011
2.0	234	807000	0.790	0.760	3448

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CBL VDL GR	130	1115
CBL VDL GR	800	2756
CBL VDL GR	2614	3704
CST	2240	2771
CST	2830	3740
DLL MSFL	3360	3745
FDC CNL GR	1120	3746
FDC GR	501	1133
HDT	2756	3746
ISF SON GR	195	3745
RFT	2380	2705
RFT	3511	3529
RFT	3511	3529





RFT	3512	3541
RFT	3541	3638
RFT	3544	3671
RFT	3604	3737

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	195.0	36	195.0	0.00	LOT
SURF.COND.	20	501.0	26	515.0	1.77	LOT
INTERM.	13 3/8	1120.0	17 1/2	1135.0	1.79	LOT
INTERM.	9 5/8	2755.0	12 1/4	2771.0	1.73	LOT
LINER	7	3740.0	8 1/2	3740.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
195	1.05			waterbased	
815	1.11			waterbased	
1420	1.12			waterbased	
2575	1.18			waterbased	
3025	1.18			waterbased	
3190	1.29			waterbased	
3740	1.50			waterbased	