General information

Wellbore name	35/4-1
Type	EXPLORATION
Purpose	WILDCAT
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Well name	35/4-1
Seismic location	NH 9402-crossline 4643 & inline 2487
Production licence	194
Drilling operator	Norsk Hydro Produksjon AS
Drill permit	870-L
Drilling facility	TREASURE SAGA
Drilling days	153
Entered date	23.12.1996
Completed date	24.05.1997
Release date	24.05.1999
Publication date	29.05.2002
Purpose - planned	WILDCAT
Reentry	NO
Content	SHOWS
Discovery wellbore	NO
Kelly bushing elevation [m]	26.0
Water depth [m]	378.0
Total depth (MD) [m RKB]	4936.0
Final vertical depth (TVD) [m RKB]	4924.0
Maximum inclination [°]	15.4
Bottom hole temperature [°C]	164
Oldest penetrated age	TRIASSIC
Oldest penetrated formation	HEGRE GP
Geodetic datum	ED50
NS degrees	61° 32' 0.55'' N
EW degrees	3° 18' 8.26'' E
NS UTM [m]	6822412.01
EW UTM [m]	516075.70
UTM zone	31
NPDID wellbore	2993

Wellbore history

General

Well 35/4-1 was committed to test the hydrocarbon potential of Jurassic sandstones. The main target was the Brent Group. The Cook and Statfjord Formations were secondary targets. In addition the well should establish a good seismic tie.

Operations and results

Well 35/4-1 was spudded with the semi-submersible rig "Treasure Saga"on 24 December 1996 and reached TD on 30 April 1997 at a depth of 4936 m in the Triassic Hegre Group, fulfilling the objectives of the target depth. Including an expanded coring programme the activities lasted for 155 days, some 63 days behind the original budget. The main contribution for the budget overrun were bad weather conditions, technical problems in the well, technical problems for the drilling contractor, slow penetration rate in the lower sections section and a comprehensive plug and abandonment programme. The well was drilled water based to 3138 m (bentonite to 1362 m and ANCO 2000 mud from 1362 m to 3138 m) and oil based (ANCOVERT) from 3138 m to TD.

The well was found to be dry with weak hydrocarbon shows from the Eocene throughout the entire underlying section and into the Statfjord Formation. The well encountered sands within the Eocene, Dunlin Group and Statfjord Formation. The Brent Group, which was the primary target, contained mostly silts and very little sands of reservoir quality. High formation pressure was detected from the upper part of the Cretaceous to TD with a maximum of 1.84 rd recorded in the Brent Group.

Seven cores were cut in the interval 4084 m to 4266 m in the Brent Group and two cores in the Lower Jurassic (4447 m to 4475 m and 4709 m to 4737 m). The well was plugged and abandoned as a well with shows.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
1365.00	4937.00

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	4084.0	4093.4	[m]
2	4093.5	4107.5	[m]
3	4108.5	4113.7	[m]

4	4113.5	4140.8	[m]
5	4141.0	4177.1	[m]
6	4178.0	4222.4	[m]
7	4222.1	4266.0	[m]
8	4447.0	4474.9	[m]
9	4708.0	4737.3	[m]

Total core sample length [m]	237.3
Cores available for sampling?	YES

Core photos


4084-4089m


4089-4093m


4093-4098m


4098-4103m


4103-4107m


4108-4113m


4113-4113m


4113-4118m


4118-4123m


4123-4128m


4128-4133m


4133-4138m


4138-4141m


4141-4146m


4146-4151m


4151-4156m


4156-4161m


4161-4166m


4166-4171m


4171-4176m


4176-4177m


4178-4183m


4183-4188m


4188-4193m


4193-4198m


4198-4203m


4203-4208m


4208-4213m


4213-4218m


4218-4222m


4222-4227m


4227-4232m


4232-4237m


4237-4242m


4242-4247m


4247-4252m


4252-4257m

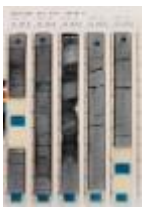

4257-4262m


4262-4266m


4447-4452m


4452-4457m


4457-4462m


4462-4467m


4467-4472m


4472-4474m


4709-4714m


4714-4719m


4719-4724m


4724-4729m


4729-4734m

4734-4737m

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
1370.0	[m]	DC	RRI
1380.0	[m]	DC	RRI
1390.0	[m]	DC	RRI
1400.0	[m]	DC	RRI
1410.0	[m]	DC	RRI
1420.0	[m]	DC	RRI
1430.0	[m]	DC	RRI
1440.0	[m]	DC	RRI
1450.0	[m]	DC	RRI
1460.0	[m]	DC	RRI
1470.0	[m]	DC	RRI
1480.0	[m]	DC	RRI
1487.0	[m]	DC	RRI
1490.0	[m]	DC	RRI
1500.0	[m]	DC	RRI
1642.0	[m]	DC	RRI
1655.0	[m]	DC	RRI
1700.0	[m]	DC	RRI
1720.0	[m]	DC	RRI
1760.0	[m]	DC	RRI
1770.0	[m]	DC	RRI
1780.0	[m]	DC	RRI
1788.0	[m]	DC	RRI
1790.0	[m]	DC	RRI
1800.0	[m]	DC	RRI
1825.0	[m]	SWC	RRI
1847.0	[m]	SWC	RRI
1871.0	[m]	SWC	RRI
1885.0	[m]	DC	RRI

1900.0	[m]	DC	RRI
1905.0	[m]	DC	RRI
1910.0	[m]	DC	RRI
1922.0	[m]	SWC	RRI
1925.0	[m]	DC	RRI
1930.0	[m]	DC	RRI
1935.0	[m]	DC	RRI
1940.0	[m]	DC	RRI
1945.0	[m]	DC	RRI
2346.0	[m]	SWC	RRI
3140.0	[m]	DC	RRI
3160.0	[m]	DC	RRI
3180.0	[m]	DC	RRI
3200.0	[m]	DC	RRI
3220.0	[m]	DC	RRI
3240.0	[m]	DC	RRI
3260.0	[m]	DC	RRI
3280.0	[m]	DC	RRI
3300.0	[m]	DC	RRI
3320.0	[m]	DC	RRI
3330.0	[m]	DC	RRI
3340.0	[m]	DC	RRI
3360.0	[m]	DC	RRI
3380.0	[m]	DC	RRI
3400.0	[m]	DC	RRI
3420.0	[m]	DC	RRI
3440.0	[m]	DC	RRI
3460.0	[m]	DC	RRI
3480.0	[m]	DC	RRI
3500.0	[m]	DC	RRI
3520.0	[m]	DC	RRI
3526.0	[m]	SWC	RRI
3560.0	[m]	DC	RRI
3570.0	[m]	DC	RRI
3580.0	[m]	DC	RRI
3590.0	[m]	DC	RRI
3600.0	[m]	DC	RRI
3610.0	[m]	DC	RRI
3620.0	[m]	DC	RRI
3635.0	[m]	DC	RRI

3640.0	[m]	DC	RRI
3660.0	[m]	DC	RRI
3670.0	[m]	DC	RRI
3680.0	[m]	DC	RRI
3690.0	[m]	DC	RRI
3730.0	[m]	DC	RRI
3740.0	[m]	DC	RRI
3750.0	[m]	DC	RRI
3760.0	[m]	DC	RRI
3770.0	[m]	DC	RRI
3780.0	[m]	DC	RRI
3790.0	[m]	DC	RRI
3800.0	[m]	DC	RRI
3810.0	[m]	DC	RRI
3820.0	[m]	DC	RRI
3830.0	[m]	DC	RRI
3840.0	[m]	DC	RRI
3850.0	[m]	DC	RRI
3860.0	[m]	DC	RRI
3870.0	[m]	DC	RRI
3880.0	[m]	DC	RRI
3890.0	[m]	DC	RRI
3900.0	[m]	DC	RRI
3910.0	[m]	DC	RRI
3920.0	[m]	DC	RRI
3930.0	[m]	DC	RRI
3940.0	[m]	DC	RRI
3950.0	[m]	DC	RRI
3960.0	[m]	DC	RRI
3970.0	[m]	DC	RRI
3985.0	[m]	DC	RRI
3990.0	[m]	DC	RRI
4000.0	[m]	DC	RRI
4010.0	[m]	DC	RRI
4020.0	[m]	DC	RRI
4030.0	[m]	DC	RRI
4040.0	[m]	DC	RRI
4050.0	[m]	DC	RRI
4060.0	[m]	DC	RRI
4070.0	[m]	DC	RRI

4080.0	[m]	DC	RRI
4119.4	[m]	C	RRI
4124.3	[m]	C	RRI
4129.9	[m]	C	RRI
4134.6	[m]	C	RRI
4137.6	[m]	C	RRI
4142.8	[m]	C	RRI
4147.7	[m]	C	RRI
4151.1	[m]	C	RRI
4154.8	[m]	C	RRI
4158.5	[m]	C	RRI
4161.6	[m]	C	RRI
4166.5	[m]	C	RRI
4171.6	[m]	C	RRI
4176.0	[m]	DC	RRI
4177.0	[m]	C	RRI
4182.0	[m]	C	RRI
4186.0	[m]	C	RRI
4191.0	[m]	C	RRI
4196.0	[m]	C	RRI
4202.0	[m]	C	RRI
4206.0	[m]	C	RRI
4210.0	[m]	C	RRI
4215.0	[m]	C	RRI
4223.0	[m]	C	RRI
4227.0	[m]	C	RRI
4232.0	[m]	C	RRI
4237.0	[m]	C	RRI
4241.0	[m]	C	RRI
4245.0	[m]	C	RRI
4250.0	[m]	C	RRI
4255.0	[m]	C	RRI
4257.0	[m]	DC	RRI
4261.0	[m]	C	RRI
4265.0	[m]	C	RRI
4266.0	[m]	DC	RRI
4382.0	[m]	DC	RRI
4392.0	[m]	DC	RRI
4405.0	[m]	DC	GEOLAB
4409.9	[m]	C	RRI

4410.0	[m]	DC	GEOLAB
4415.0	[m]	DC	GEOLAB
4420.0	[m]	DC	GEOLAB
4425.0	[m]	DC	GEOLAB
4430.0	[m]	DC	GEOLAB
4435.0	[m]	DC	GEOLAB
4437.0	[m]	DC	GEOLAB
4440.0	[m]	DC	GEOLAB
4442.0	[m]	DC	GEOLAB
4445.0	[m]	DC	GEOLAB
4447.0	[m]	DC	GEOLAB
4453.7	[m]	C	RRI
4453.9	[m]	C	RRI
4460.0	[m]	DC	GEOLAB
4461.0	[m]	C	RRI
4461.7	[m]	C	RRI
4462.0	[m]	DC	GEOLAB
4465.0	[m]	DC	GEOLAB
4467.0	[m]	DC	GEOLAB
4467.2	[m]	C	RRI
4470.0	[m]	DC	GEOLAB
4471.4	[m]	C	RRI
4472.0	[m]	DC	GEOLAB
4474.9	[m]	C	RRI
4475.0	[m]	DC	GEOLAB
4480.0	[m]	DC	GEOLAB
4715.8	[m]	C	RRI
4731.6	[m]	C	RRI
4735.5	[m]	C	RRI
4842.0	[m]	DC	RRI
4845.0	[m]	DC	RRI

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
404	NORDLAND GP
1116	HORDALAND GP
1665	NO FORMAL NAME
1695	NO FORMAL NAME

1720	ROGALAND GP
1720	BALDER FM
1768	SELE FM
1807	LISTA FM
1883	VÅLE FM
1912	SHETLAND GP
1912	JORSALFARE FM
2033	KYRRE FM
3326	TRYGGVASON FM
3500	BLODØKS FM
3510	SVARTE FM
3675	CROMER KNOLL GP
3675	RØDBY FM
3695	VIKING GP
3695	HEATHER FM
4079	BRENT GP
4287	DUNLIN GP
4287	DRAKE FM
4434	COOK FM
4515	AMUNDSEN FM
4704	STATFJORD GP
4918	HEGRE GP

Composite logs

Document name	Document format	Document size [MB]
2993	pdf	0.78

Geochemical information

Document name	Document format	Document size [MB]
2993_1	pdf	1.56
2993_2	pdf	1.74
2993_3	pdf	1.77

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

Document name	Document format	Document size [MB]
2993_35_4_1_COMPLETION_REPORT	pdf	27.86

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CBL VDL GR	2950	3720
CST GR	1460	2353
CST GR	3250	4928
DIL DSI LDL CNL AMS SP GR	1350	3720
DIL DSI LDL CNL NGT AMS	3671	4294
MDT GR	4081	4877
OBDT DSI ACTS GR	3720	4942
PI LDL CNL NGS AMS	4225	4940
VSP GR	470	3700
VSP GR AMS	3280	4922

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	464.5	36	464.5	0.00	LOT
INTERM.	20	1350.0	26	1362.0	0.00	LOT
INTERM.	13 3/8	3118.0	17 1/2	3133.0	0.00	LOT
INTERM.	9 5/8	3720.0	12 1/4	3720.0	0.00	LOT
OPEN HOLE		4936.0	8 1/2	4936.0	0.00	LOT

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
1128	1.39	14.0		WATER BASED	
1300	1.39	17.0		WATER BASED	
1362	1.30	20.0		WATER BASED	
1920	1.30	23.0		WATER BASED	
2181	1.30	24.0		WATER BASED	
2496	1.30	24.0		WATER BASED	

2706	1.30	21.0		WATER BASED	
2845	1.30	21.0		WATER BASED	
3040	1.30	25.0		WATER BASED	
3133	1.39	28.0		WATER BASED	
3138	1.39	26.0		WATER BASED	
3147	1.39	32.0		OIL BASED	
3159	1.39	30.0		OIL BASED	
3178	1.39	38.0		OIL BASED	
3252	1.39	32.0		OIL BASED	
3324	1.39	30.0		OIL BASED	
3343	1.39	28.0		OIL BASED	
3428	1.39	30.0		OIL BASED	
3480	1.39	30.0		OIL BASED	
3526	1.39	32.0		OIL BASED	
3564	1.45	33.0		OIL BASED	
3625	1.45	33.0		OIL BASED	
3658	1.58	33.0		OIL BASED	
3697	1.70	39.0		OIL BASED	
3711	1.75	34.0		OIL BASED	
3715	1.75	34.0		OIL BASED	
3802	1.75	35.0		OIL BASED	
3837	1.75	32.0		OIL BASED	
3868	1.76	30.0		OIL BASED	
3954	1.83	36.0		OIL BASED	
3992	1.83	35.0		OIL BASED	
3992	1.83	35.0		OIL BASED	
4108	1.89	38.0		OIL BASED	
4113	1.89	37.0		OIL BASED	
4139	1.89	37.0		OIL BASED	
4141	1.89	38.0		OIL BASED	
4174	1.89	38.0		OIL BASED	
4178	1.89	38.0		OIL BASED	
4190	1.95	50.0		OIL BASED	
4219	1.89	37.0		OIL BASED	
4245	1.89	38.0		OIL BASED	
4263	1.89	37.0		OIL BASED	
4267	1.89	37.0		OIL BASED	
4294	1.89	38.0		OIL BASED	
4324	1.95	42.0		OIL BASED	
4464	1.95	45.0		OIL BASED	

4669	1.95	46.0		OIL BASED	
4709	1.95	46.0		OIL BASED	
4737	1.95	44.0		OIL BASED	
4826	1.95	47.0		OIL BASED	
4877	1.95	48.0		OIL BASED	
4934	1.95	48.0		OIL BASED	
4936	1.95	50.0		OIL BASED	

Thin sections at the Norwegian Offshore Directorate

Depth	Unit
4451.70	[m]
4452.00	[m]
4454.80	[m]
4461.70	[m]
4469.77	[m]
4710.00	[m]
4711.20	[m]
4719.26	[m]
4724.00	[m]
4733.00	[m]
4479.00	[m]
4482.00	[m]
4485.00	[m]
4487.00	[m]
4490.00	[m]
4492.00	[m]
4495.00	[m]
4497.00	[m]
4500.00	[m]
4505.00	[m]
4507.00	[m]
4510.00	[m]
4512.00	[m]

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]
2993_Formation_pressure_(Formasjonstrykk)	pdf	0.22