

WDSS Report

Date: 17/04/98

PB/SKR

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Well no:	Operator:
2/02-05	SAGA

Well

Coordinates :	56° 50' 05.80" N 03° 27' 22.90" E	UTM coord. :	6299246.57 N 527846.84 E
License no :	66	Permit no :	705
Rig :	TREASURE SAGA	Rig type :	SEMI-SUB.
Contractor :	WILRIG A/S		
Bottom hole temp:	142 °C	Elev. KB :	26 M
Spud. date :	91.11.07	Water depth :	63 M
Compl. date :	92.02.19	Total depth :	4082 M
Spud. class :	WILDCAT	Form. at TD :	PERMIAN
Compl. class :	P&A. OIL DISCOVERY	Prod.form. :	
Seisloca :	SG - 8752 - 315 SP 310		

Licenseses

28.600000 MOBIL DEVELOPMENT NORWAY AS
 11.400000 SAGA PETROLEUM ASA
 50.000000 DEN NORSKE STATS OLJESELSKAP A.S
 10.000000 NORSK HYDRO PRODUKSJON AS

Casing and Leak-off Tests

Type	Casing diam	Depth below KB	Hole diam.	Hole depth below KB	Lot mud eqv. g/cm3
CONDUCTOR	30	188.0	36	190.0	
INTERM.	20	903.0	26	905.0	1.70
INTERM.	13 3/8	2362.0	17 1/2	2364.0	1.75
INTERM.	9 5/8	3349.0	12 1/4	3350.0	2.02
LINER	7	3758.0	8 1/2	4082.0	

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Conventional Cores

Core no.	Intervals cored meters	Recovery m	%
1	3592.0 - 3609.0	17.0	100.0
2	3678.0 - 3706.0	28.0	100.0

Mud

Depth	Mud weight	Visc.	Mud type
162.0	1.05		WATER BASED
190.0	1.10		WATER BASED
245.0	1.10		WATER BASED
502.0	1.10		WATER BASED
918.0	1.20	21.0	WATER BASED
1029.0	1.20	27.0	WATER BASED
1333.0	1.40	31.0	WATER BASED
1680.0	1.40	36.0	WATER BASED
1937.0	1.42	41.0	WATER BASED
2044.0	1.45	42.0	WATER BASED
2377.0	1.45	42.0	WATER BASED
2523.0	1.45	33.0	WATER BASED
2704.0	1.45	37.0	WATER BASED
2790.0	1.48	43.0	WATER BASED
2906.0	1.48	39.0	WATER BASED
3034.0	1.48	32.0	WATER BASED
3140.0	1.48	31.0	WATER BASED
3148.0	1.48	28.0	WATER BASED
3283.0	1.50	35.0	WATER BASED
3334.0	1.52	37.0	WATER BASED
3349.0	1.51	16.0	WATER BASED
3365.0	1.52	34.0	WATER BASED
3381.0	1.52	27.0	WATER BASED
3414.0	1.50	14.0	WATER BASED
3418.0	1.50	25.0	WATER BASED
3475.0	1.50	24.0	WATER BASED
3484.0	1.50	12.0	WATER BASED
3660.0	1.54	20.0	WATER BASED
3666.0	1.54	20.0	WATER BASED
3760.0	1.54	21.0	WATER BASED
3865.0	1.51	20.0	WATER BASED
3951.0	1.51	19.0	WATER BASED
3972.0	1.51	22.0	WATER BASED
3981.0	1.51	20.0	WATER BASED

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3985.0	1.51	19.0	WATER BASED
4059.0	1.51	18.0	WATER BASED
4082.0	1.51	20.0	WATER BASED

Drill Stem Test (intervals and pressures)

Test no.	Test interval meter	Choke size	Pressure (psi) WHP	BTHP	FFP
1.0	3666.0 - 3670.0	7.9	2771.5	7585.0	

Drill Stem Test (recovery)

Test no.	Oil Sm3/d	Gas Sm3/d	Oil grav. g/cm3	Gas grav. rel. air	GOR m3/m3
1.0	600	26 400	0.86	0.91	44

Drill Bit Cuttings and Wet Samples

Sample type	Interval below KB	Number of samples
WET SAMPLES	920 - 4080	390
CUTTINGS	920 - 3600	90

Shallow Gas

Interval below KB	Remarks

Available Logs

Log type	Intervals logged	1/200	1/500
AMS	903.0 - 2340.0		
CBL VDL CCL GR	2227.0 - 3336.0		
CST	1200.0 - 2320.0		

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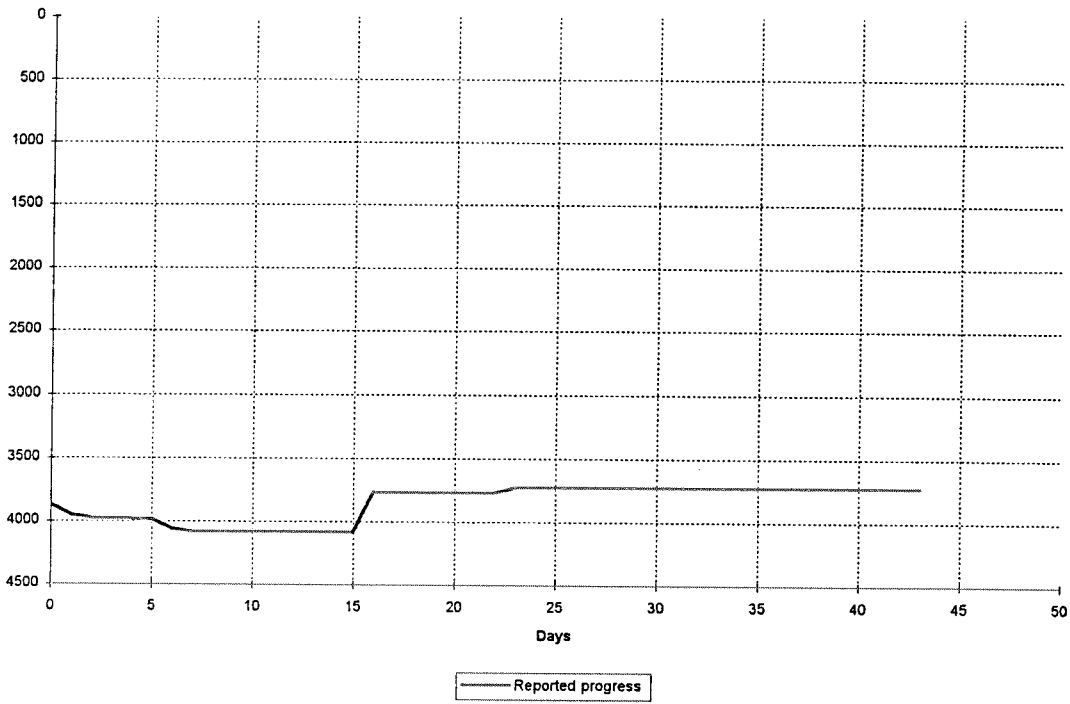
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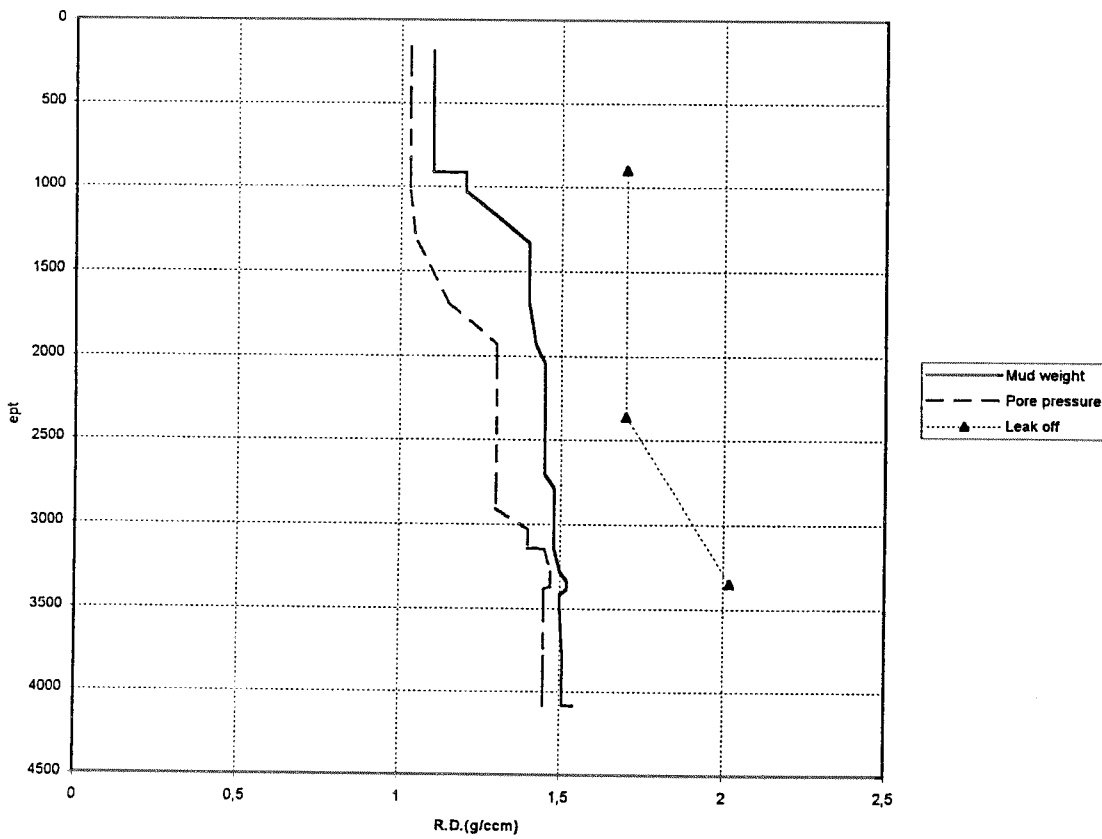
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DIL MSFL SLS GR	3352.0 - 3627.0			
DLL LSS GR	2363.0 - 3353.0			
DLL LSS SP GR	903.0 - 2365.0			
LDL CALI GR	903.0 - 2353.0			
LDL CALI GR	2363.0 - 3353.0			
LDL CNL GR	3352.0 - 3627.0			
MWD	200.0 - 3360.0			
RFT (TLC)	3605.0 - 3673.0			
RWD	89.0 - 4082.0			
SHDT GR	3352.0 - 3627.0			
SYNTHETIC SEISMOGRAM				
VERTICAL SEISMIC				
WSC	1100.0 - 4000.0			
ZERO PHASE COMPOSITE				

Depth v.s. time plot for well: 2/2-5



Composite plot for well: 2/2-5



Main operations for well: 2/2-5**Main operation: DRILLING**

Sub operation:	Minutes:	Hours:	% of total:
BOP ACTIVITIES	2580	43,0	3,63
BOP/WELLHEAD EQ	2910	48,5	4,09
CASING	11730	195,5	16,48
CIRC/COND	4178	69,6	5,87
DRILL	31102	518,4	43,71
HOLE OPEN	1950	32,5	2,74
OTHER	150	2,5	0,21
PRESS DETECTION	150	2,5	0,21
REAM	2340	39,0	3,29
SURVEY	150	2,5	0,21
TRIP	13560	226,0	19,06
WAIT	360	6,0	0,51
Total	71160	1186,0	100,00

Main operation: FORMATION EVAL

Sub operation:	Minutes:	Hours:	% of total:
CIRC SAMPLES	870	14,5	3,94
CIRC/COND	270	4,5	1,22
CORE	1050	17,5	4,76
DST	8430	140,5	38,18
LOG	9090	151,5	41,17
OTHER	30	0,5	0,14
RFT/FIT	360	6,0	1,63
TRIP	1980	33,0	8,97
Total	22080	368,0	100,00

Main operation: INTERRUPTION

Sub operation:	Minutes:	Hours:	% of total:
FISH	4890	81,5	10,68
LOST CIRC	60	1,0	0,13
MAINTAIN/REP	22500	375,0	49,15
OTHER	4260	71,0	9,31
SIDETRACK	5670	94,5	12,39
WAIT	8400	140,0	18,35
Total	45780	763,0	100,00

Main operation: MOVING

Sub operation:	Minutes:	Hours:	% of total:
ANCHOR	2940	49,0	70,50
TRANSIT	1230	20,5	29,50
Total	4170	69,5	100,00

Main operation: PLUG & ABANDON

Sub operation:	Minutes:	Hours:	% of total:
CEMENT PLUG	630	10,5	9,59
CIRC/COND	480	8,0	7,31
CUT	420	7,0	6,39
EQUIP RECOVERY	420	7,0	6,39
MECHANICAL PLUG	180	3,0	2,74
OTHER	510	8,5	7,76
TRIP	3780	63,0	57,53
WAIT	150	2,5	2,28
Total	6570	109,5	100,00

Total time used: Hours

WELL HISTORY 2/2-5

GENERAL:

The main objective of the exploration well 2/2-5 was to test the hydrocarbon potential of the Upper Jurassic Ula Formation situated in the Epsilon structure is salt induced anticline situated on a rotated, downthrown fault block to the Ula-Gyda Fault zone. The Oligocene Vade Formation was the secondary target. A seismic anomaly indicated a potential gas accumulation at this zone.

OPERATION:

Well 2/2-5 was spudded by the semi submersible rig "Treasure Saga" on November 7 1991 and completed February 20 1992 in Permian Zechstein Group. The well penetrated mainly claystone with minor sandstone in Nordland, Hordaland, and Rogaland Group. The Vade Formation (within Hordaland Group) proved to be water bearing. After drilling throughout a typical sequence of the Shetland and Cromer Knoll groups, the top of the Tyne Group was encountered at 3418m RKB. The Ula Formation, which was reached at 3538m RKB MD, consisted of an interbedded sequence of sandstone, siltstone, and shale.

A 5-meter thick oil bearing zone within the Ula Formation was encountered at 3671m RKB MD. An attempt made to obtain an oil sample using RFT failed as the fluid chambers contained mud filtrate only.

Sediments interpreted to be Triassic age were penetrated at 3989m RKB MD and may represent either a fault gouge above salt or the upthrown fault block.

TESTING:

1 DST test was performed.

Geological Tops.

Well: 2/2-5.

	Depth m (RKB).
Nordland Group	89.0
Hordaland Group	1608.0
TopVade Fm	2184.0
Base Vade Fm	2248.0
Rogaland Group	2746.0
Balder Fm	2746.0
Sele Fm	2778.0
Lista Fm	2836.0
Våle Fm	2898.0
Shetland Group	2947.0
Ekofisk Fm	2947.0
Tor Fm.	3009.0
Hod Fm	3204.0
Cromer Knoll Group	3262.0
Rødby Fm	3262.0
Tuxen Fm	3281.0
Åsgard Fm	3285.0
Tyne Group	3418.0
Mandal Fm	3418.0
Farsund Fm	3426.0
Top Intra Farsund Sst	3538.0
Base Intra Farsund Sst	3681.0
Hegre Group	3989.0
Zechstein	4079.0
T.D.	4082.0