

WDSS Report

Date: 27/04/98

PB/SKR

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Well no:	Operator:
34/07-21	SAGA

Well

Coordinates :	61° 17' 36.84" N 02° 04' 21.14" E	UTM coord. :	6796001.43 N 450299.76 E
License no :	89	Permit no :	747
Rig :	TREASURE SAGA	Rig type :	SEMI-SUB.
Contractor :	WILRIG A/S		
Bottom hole temp:	92 °C	Elev. KB :	26 M
Spud. date :	92.10.19	Water depth :	192 M
Compl. date :	92.12.11	Total depth :	3015 M
Spud. class :	WILDCAT	Form. at TD :	
Compl. class :	P&A. OIL DISCOVERY	Prod.form. :	
Seisloca :	SG 8431, ROW 211,COLUMN 1241		

Licensees

.700000 DNO OLJE A/S
 5.600000 ELF PETROLEUM NORGE AS
 10.500000 ESSO EXPL. & PROD. NORWAY A/S
 8.400000 NORSK HYDRO PRODUKSJON AS
 9.600000 IDEMITSU PETROLEUM NORGE AS
 7.000000 SAGA PETROLEUM ASA
 55.400000 DEN NORSKE STATS OLJESELSKAP A.S
 2.800000 DEMINEX NORGE 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	316.0	36	330.0	
INTERM.	20	1094.0	26	1113.0	1.67
INTERM.	13 3/8	1795.0	17 1/2	1810.0	1.85
INTERM.	9 5/8	2639.0	12 1/4	3015.0	

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Conventional Cores

Core no.	Intervals cored meters	Recovery m	%
1	1858.0 - 1880.7	22.7	100.0
2	2515.0 - 2522.2	7.2	100.0
3	2530.0 - 2547.0	17.0	100.0
4	2547.0 - 2566.0	19.0	100.0
5	2566.0 - 2592.0	26.0	100.0

Mud

Depth	Mud weight	Visc.	Mud type
326.0	1.04		WATER BASED
330.0	1.05		WATER BASED
675.0	1.17	4.0	WATER BASED
1110.0	1.18	5.0	WATER BASED
1113.0	1.18	6.0	WATER BASED
1122.0	1.25	22.0	WATER BASED
1404.0	1.30	32.0	WATER BASED
1763.0	1.50	41.0	WATER BASED
1810.0	1.50	44.0	WATER BASED
1858.0	1.51	39.0	WATER BASED
2081.0	1.60	49.0	WATER BASED
2196.0	1.65	60.0	WATER BASED
2307.0	1.65	53.0	WATER BASED
2510.0	1.62	41.0	WATER BASED
2515.0	1.65	50.0	WATER BASED
2530.0	1.65	50.0	WATER BASED
2552.0	1.65	43.0	WATER BASED
2566.0	1.65	44.0	WATER BASED
2594.0	1.65	38.0	WATER BASED
2601.0	1.61	40.0	WATER BASED
2635.0	1.65	43.0	WATER BASED
2654.0	1.61	39.0	WATER BASED
2654.0	1.61	39.0	WATER BASED
2971.0	1.55	36.0	WATER BASED
3015.0	1.55	35.0	WATER BASED

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Drill Stem Test (intervals and pressures)

Test no.	Test interval meter	Choke size	Pressure (psi) WHP	BTHP	FFP
1.0	2510.0 - 2537.0	12.7	2146		

Drill Stem Test (recovery)

Test no.	Oil Sm ³ /d	Gas Sm ³ /d	Oil grav. g/cm ³	Gas grav. rel. air	GOR m ³ /m ³
1.0	900	85 500	0.850	0.890	95

Drill Bit Cuttings and Wet Samples

Sample type	Interval below KB	Number of samples
WET SAMPLES	340 - 3014	440
CUTTINGS	340 - 3014	448

Shallow Gas

Interval below KB	Remarks

Available Logs

Log type	Intervals logged	1/200	1/500
4-ARM DIPLOG	1794.0 - 2985.0		
CALIBRATED SONIC	1125.0 - 3000.0		
COMPUTED DIPLOG	1794.0 - 2985.0		
CORGUN	1852.0 - 2908.0		
DIGITAL ARRAY AC LOG	1794.0 - 3005.0		
DLL BHC AC GR	1089.0 - 1802.0		

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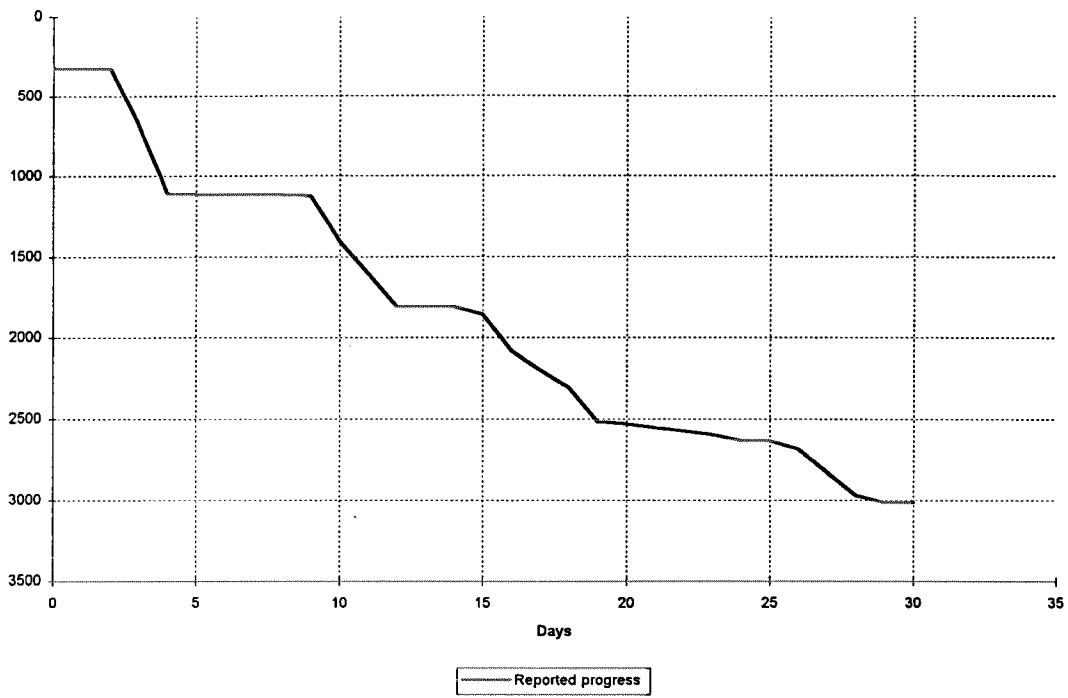
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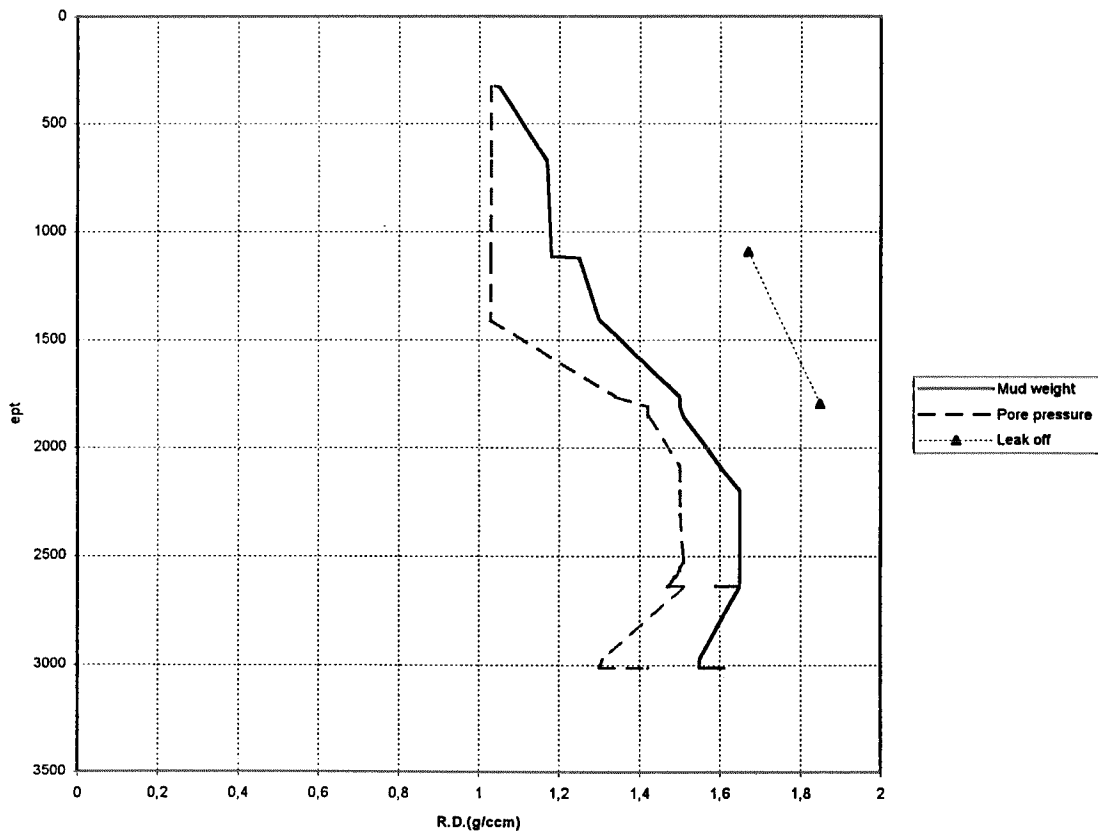
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DLL MLL GR	1794.0 - 2560.0			
DLL MLL GR CALIPER	2485.0 - 2990.0			
DUAL PHASE INDUCTION	1794.0 - 2560.0			
FMT	2510.0 - 2538.0			
FORMATION MULTI	1848.0 - 2949.0			
FORMATION PRESSURE	200.0 - 3015.0			
MWD FAX LOG	212.0 - 2600.0			
MWD LOG	2500.0 - 3015.0			
MWD/CDR	218.0 - 3015.0			
SPECTRALOG	1794.0 - 2984.0			
SYNTHETIC SEISMOGRAM				
TWO WAY TRAVEL TIME				
WELL SITE LITHOLOG	215.0 - 3015.0			
VSP				
Z-DENSILOG CNL GR	1794.0 - 2993.0			

Depth v.s. time plot for well: 34/7-21



Composite plot for well: 34/7-21



Main operation: DRILLING

Sub operation:	Minutes:	Hours:	% of total:
BOP ACTIVITIES	1290	21,5	3,61
BOP/WELLHEAD EQ	2370	39,5	6,63
CASING	5430	90,5	15,18
CIRC/COND	2190	36,5	6,12
DRILL	11850	197,5	33,14
HOLE OPEN	540	9,0	1,51
OTHER	120	2,0	0,34
PRESS DETECTION	60	1,0	0,17
REAM	150	2,5	0,42
SURVEY	210	3,5	0,59
TRIP	9300	155,0	26,01
UNDERREAM	1860	31,0	5,20
WAIT	390	6,5	1,09
Total	35760	596,0	100,00

Main operation: FORMATION EVAL

Sub operation:	Minutes:	Hours:	% of total:
CIRC SAMPLES	120	2,0	0,45
CIRC/COND	180	3,0	0,68
CORE	3960	66,0	14,86
DST	7380	123,0	27,70
LOG	6330	105,5	23,76
PROD TEST	6150	102,5	23,09
RFT/FIT	300	5,0	1,13
TRIP	2220	37,0	8,33
Total	26640	444,0	100,00

Main operation: INTERRUPTION

Sub operation:	Minutes:	Hours:	% of total:
FISH	1620	27,0	11,56
MAINTAIN/REP	7530	125,5	53,75
OTHER	1500	25,0	10,71
WAIT	3360	56,0	23,98
Total	14010	233,5	100,00

Main operation: MOVING

Sub operation:	Minutes:	Hours:	% of total:
ANCHOR	690	11,5	47,92
POSITION	60	1,0	4,17
TRANSIT	690	11,5	47,92
Total	1440	24,0	100,00

Main operation: PLUG & ABANDON

Sub operation:	Minutes:	Hours:	% of total:
CEMENT PLUG	180	3,0	13,33
CIRC/COND	60	1,0	4,44
MECHANICAL PLUG	330	5,5	24,44
SQUEEZE	60	1,0	4,44
TRIP	720	12,0	53,33
Total	1350	22,5	100,00

Total time used: Hours

WELL HISTORY 34/7-21

GENERAL:

Exploration well 34/7-21 is located in the south-western part of block 34/7. The well was drilled through an Upper Jurassic truncation trap, defining the prospect prior to drilling.

The location of the well is in a central compartment of the former H-Prospect, now called H-Central. The H-Central compartment is fault bounded towards north and south by east-west trending faults. These faults were probably active during the deposition of the Upper Jurassic as these are observed thickening on the hanging wall side. The well is positioned in an updip position on a west-dipping structure, including an Upper Jurassic sand wedge. The location of the well is approx. 1.5 km west of the truncation of base reservoir, Top Heather. The primary objective of the well was to test the presence and hydrocarbon potential of a prognosed Upper Jurassic sandstone. The secondary objective was to test the Paleocene in which an oil discovery has been made in well 34/7-18.

OPERATION:

The well 34/7-21 was spudded October 19, 1992 by the semi submersible rig "Treasure Saga" and completed November 17, 1992 in rocks of Lower/Middle Jurassic age (Dunlin Group). In the Nordland, Hordaland, and Upper Rogaland Groups, the well penetrated mainly clay/claystone with minor sand, except for the sandy Utsira Formation between 929-1040m RKB. At the base of Rogaland Group, the Lista Formation sandstone was encountered and proven dry. In the Shetland and the condensed Cromer Knoll Group, claystone with limestone beds and massive marls/limestones were penetrated, respectively. A hydrocarbon-bearing interval was proven in the base of the Shetland Group at 2498-2501m RKB, directly overlying the Cromer Knoll Group. The top of the Upper Jurassic reservoir was reached at 2508m RKB, which were 29m shallower than prognosed. Within the Draupne Formation, two separate oil bearing sandstone intervals were proven between 2508-2545m RKB and between 2565.5-2569m RKB. The latter contained H₂S. All three hydrocarbon bearing intervals have separate formation pressure regimes, and do not communicate.

The well was plugged and abandoned as an oil discovery.

TESTING:

One DST tests was carried out in the Top Draupne sand.

Geological Tops.

Well: 34/7-21.

	Depth m (RKB).
Nordland Group	218.0
Utsira Fm	929.0
Hordaland Group	1040.0
Rogaland Group	1711.0
Balder Fm	1711.0
Sele Fm	1754.0
Shetland Group	1900.0
Cromer Knoll Group	2501.0
Mime Fm	2501.0
Viking Group	2508.0
Draupne Fm	2508.0
Heather Fm	2588.0
Brent Group	2692.0
Tarbert Fm	2692.0
Ness Fm	2763.0
Etive Fm	2864.0
Rannoch Fm	2902.0
Broom Fm	2965.0
Dunlin Group	2972.0
Drake Fm	2972.0
T.D.	3015.0