

Well no : 6407/02-03

Operator : SAGA

Coordinates : 64 56 01.39 N
07 39 53.04 E

UTM coord. : 7201913 N
436877 E

Licence no : 74

Permit no : 531

Rig : TREASURE SAGA

Rig type : SEMI-SUB.

Contractor : WILHELMSSEN OFFSHORE SERVICES

Bottom hole temperature : 0 deg.C

Elev. KB : 26 M

Spud. date : 86.11.07

Water depth : 250 M

Compl. date : 87.01.23

Total depth : 3050 M

Spud. class : WILDCAT

Form. at TD : TRIASSIC

Compl. class : P&A. GAS/COND. DISC.

Prod. form : M. JURASSIC

Seisloca : SG 8571 - 296 SP. 520

LICENSEES

15.000000 NORSK AGIP A/S
15.000000 ARCO NORGE A/S
10.000000 DEMINEX (NORGE) A/S
10.000000 SAGA PETROLEUM A.S.
50.000000 DEN NORSKE STATS OLJESELSKAP A.S

CASING AND LEAK-OFF TESTS

Type	Casing diam.	Depth below KB	Hole diam.	Hole depth below KB	Lot mud eqv. g/cm ³
CONDUCTOR	30	398.0	36	403.0	.
SURF. COND.	20	900.0	26	915.0	1.51
INTERM.	13 3/8	1954.0	17 1/2	2104.0	1.83
INTERM.	9 5/8	2371.0	12 1/4	2645.0	1.69
LINER	7	2625.0	8 1/2	3050.0	.

CONVENTIONAL CORES

Core no.	Intervals cored meters	Recovery		Series
		M	%	
1	2428.0 - 2455.5	27.5	100.0	MIDDLE JURASSIC
2	2455.5 - 2476.5	21.0	100.0	MIDDLE JURASSIC
3	2476.5 - 2502.5	25.7	98.8	MIDDLE JURASSIC
4	2502.5 - 2511.0	8.5	100.0	MIDDLE JURASSIC
5	2511.0 - 2538.5	27.5	100.0	MIDDLE JURASSIC
6	2538.5 - 2557.0	18.0	97.3	LOWER JURASSIC
7	2557.0 - 2558.0	1.0	100.0	LOWER JURASSIC
8	2558.0 - 2571.6	13.6	100.0	LOWER JURASSIC
9		00.0	000.0	
10	2741.0 - 2769.0	28.0	100.0	LOWER JURASSIC

MUD PROPERTIES

Depth below KB meter	Mud weight g/cm ³	Viscosity	Mud type
-----	-----	-----	-----

403.000	1.06	0.0	WATER BASED
531.000	1.13	5.0	WATER BASED
915.000	1.14	6.0	WATER BASED
915.000	1.18	7.0	WATER BASED
915.000	1.10	24.0	WATER BASED
915.000	1.20	8.0	WATER BASED
915.000	1.10	25.0	WATER BASED
925.000	1.18	6.0	WATER BASED
1119.000	1.12	15.0	WATER BASED
1345.000	1.15	13.0	WATER BASED
1770.000	1.30	18.0	WATER BASED
1968.000	1.45	16.0	WATER BASED
2104.000	1.50	28.0	WATER BASED
2115.000	1.58	15.0	WATER BASED
2387.000	1.27	15.0	WATER BASED
2573.000	1.58	13.0	WATER BASED
2645.000	1.48	15.0	WATER BASED
2645.000	1.58	17.0	WATER BASED
2645.000	1.59	15.0	WATER BASED

DRILL STEM TEST

INTERVALS AND PRESSURES

Test no	interval meter	Choke size	Pressure (PSI)		
			WHP	BTHP	FFP
1.0	2518.200 - 2508.700	15.9	2584.4	3608.3	3604.9
	Test temperature: 91 °C				
2.0	2435.800 - 2427.800	19.1	2451.0	3583.7	3583.7
	Test temperature: 89 °C				

RECOVERY

Test no.	Oil Sm3/d	Gas Sm3/d	Oil grav. g/cm3	Gas grav. rel. air	GOR m3/m3
1.0	108	586	0.766	0.705	186
2.0	91	662	0.768	0.705	137

DRILL BIT CUTTINGS AND WET SAMPLES

SAMPLE TYPE	INTERVAL BELOW KB	NUMBER OF SAMPLES
Cutting	400-3049	400
Wet Samples	400-3059	300

SHALLOW GAS

Interval below KB REMARKS

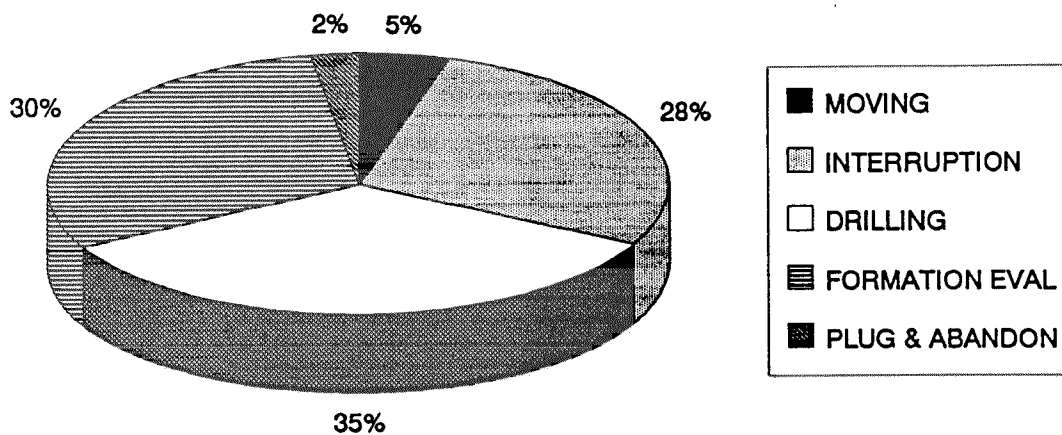
AVAILABLE LOGS

LOG TYPE	INTERVALS	1/200	1/500	Div.
DIFL LS BHC AC GR	399.000 - 913.700	X	X	

DIFL LS BHC ACL GR	900.000 - 1969.300	X	X
DIFL LS BHC AC GR	1953.000 - 2432.000	X	X
DIFL LS BHC AC GR	2369.000 - 3049.000	X	X
CDL GR	900.000 - 1953.000	X	X
CDL CNL GR	1953.000 - 2432.000	X	X
CDL CNL GR	2368.500 - 3051.000	X	X
DLL MLL GR	2368.500 - 3047.500	X	X
CDM AP	1953.000 - 2430.000	X	X
SHDT	1953.000 - 2430.000	X	
CDM AP	2368.000 - 3047.000	X	X
SHDT	2368.000 - 3047.000	X	
FMT	2428.000 - 2741.000		X
FMT	2428.000 - 2741.000		X
AC CBL VDL GR	684.000 - 1953.000	X	X
AC CBL VDL	1690.000 - 2368.000	X	X
AC CBL VDL GR	2287.400 - 2584.800	X	
VDL	2369.000 - 2610.000	X	
MUD	276.000 - 2645.000		X
VELOCITY LOG	384.000 - 3006.250	1:1000	X
(+Velocity, adjusted continuos, 384-3006 m.		2 stk.)	
(+Velocity, time-depth, 239-3006 m.		2 stk.)	
(+Velocity, drift curve, 384-3006 m.		1 stk.)	
(+Two-way travel time, 5-10cm/s		2 stk.)	
(+VSP, zero offset, plot 1-7, 5-10cm/s		7 stk.)	
(+Synthetic seismogram, plot 8a-9b, 10cm/s		4 stk.)	

DAILY DRILLING REPORT SYSTEM

MAIN OPERATIONS FOR WELL: 6407/02-03



Main operation	Minutes	Hrs	% of total
MOVING	5490	91,5	4,77
INTERRUPTION	32580	543,0	28,28
DRILLING	39540	659,0	34,32
FORMATION EVAL	34770	579,5	30,18
PLUG & ABANDON	2820	47,0	2,45
Total	115200	1920,0	100,00

SUB OPERATIONS FOR WELL: 6407/02-03

MAIN OPERATION: MOVING

Sub operation	Minutes	Hrs	% of total
TRANSIT	2820	47,0	51,37
ANCHOR	2670	44,5	48,63
<i>Total</i>	5490	91,5	100,00

MAIN OPERATION: INTERRUPTION

Sub operation	Minutes	Hrs	% of total
WAIT	7950	132,5	24,40
FISH	14640	244,0	44,94
MAINTAIN/REP	1830	30,5	5,62
SIDETRACK	4890	81,5	15,01
OTHER	3270	54,5	10,04
<i>Total</i>	32580	543,0	100,00

MAIN OPERATION: DRILLING

Sub operation	Minutes	Hrs	% of total
BOP/WELLHEAD EQ	3870	64,5	9,79
TRIP	6720	112,0	17,00
DRILL	15510	258,5	39,23
SURVEY	240	4,0	0,61
CIRC/COND	1800	30,0	4,55
CASING	6450	107,5	16,31
OTHER	270	4,5	0,68
BOP ACTIVITIES	2640	44,0	6,68
UNDERREAM	1560	26,0	3,95
PRESS DETECTION	210	3,5	0,53
REAM	270	4,5	0,68
<i>Total</i>	39540	659,0	100,00

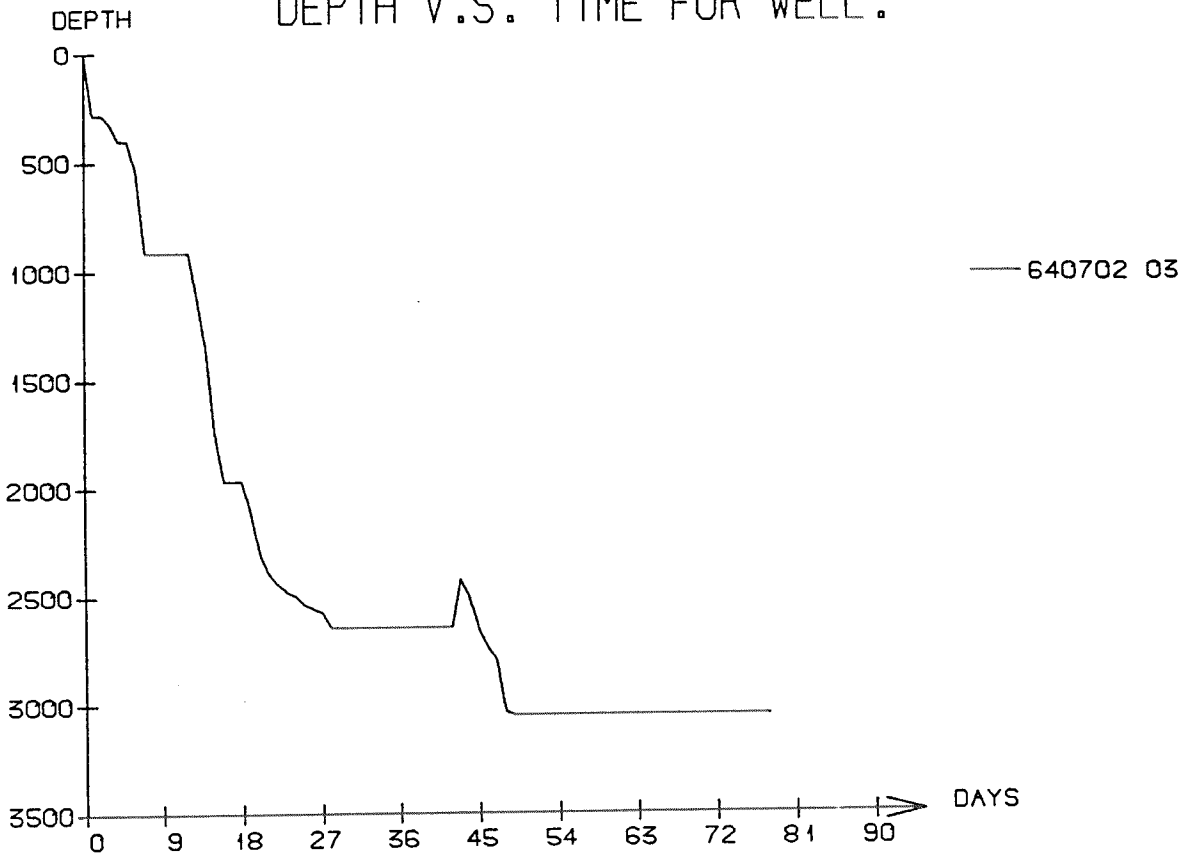
MAIN OPERATION: FORMATION EVAL

Sub operation	Minutes	Hrs	% of total
LOG	6900	115,0	19,84
TRIP	10770	179,5	30,97
CIRC/COND	1350	22,5	3,88
CORE	4620	77,0	13,29
RFT/FIT	1230	20,5	3,54
DST	9900	165,0	28,47
<i>Total</i>	34770	579,5	100,00

MAIN OPERATION: PLUG & ABANDON

Sub operation	Minutes	Hrs	% of total
TRIP	1260	21,0	44,68
CIRC/COND	150	2,5	5,32
CEMENT PLUG	300	5,0	10,64
PERFORATE	240	4,0	8,51
CUT	300	5,0	10,64
EQUIP RECOVERY	570	9,5	20,21
<i>Total</i>	2820	47,0	100,00

DEPTH V.S. TIME FOR WELL :



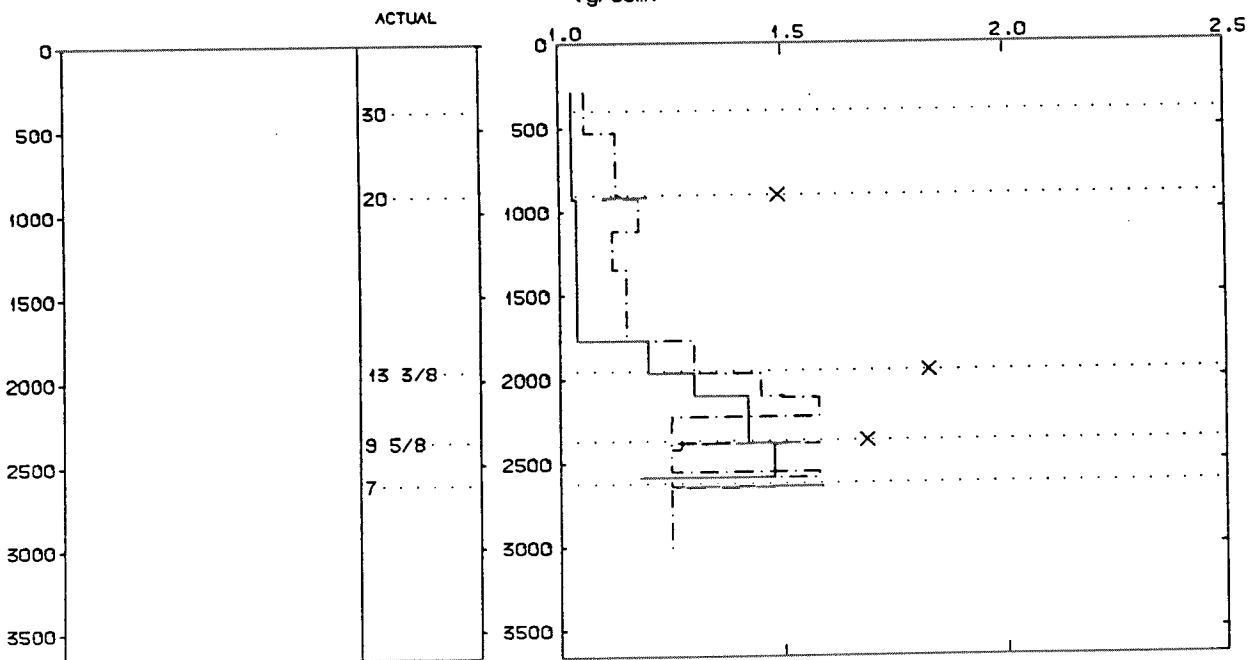
WELL: 640702 03 PRESSURE COMPOSITE PLOT

DEPTH
(RKB)
(METERS MD)

CASING

PRESSURE GRADIENTS
(g/ccm)

— PORE PRESSURE (REPORT)
 - - - - - MUDWEIGHT (REPORT)
 X LEAK-OFF (REPORT)



Well History 6407-2-3.

GENERAL:

Well 6407/2-3 was designed to drill down dip the Delta structure on the southern fault compartment of the Midgard Field. Primary objectives were to test for hydrocarbons in the Fangst Group of Middle Jurassic age, and establish the oil/water contact. Secondary objectives were testing the thickness and facies development of reservoir units in response to growth faulting.

Shallow gas was expected at several levels due to experience from nearby wells.

Fangst Group was prognosed to come in at 2417 m RKB, gas/oil contact at 2514 m RKB, and the oil/water contact at 2525 m RKB. TD was expected to be 3050 m RKB.

OPERATIONS:

Wildcat well 6407/2-3 was spudded by Wilh. Wilhelmsen semi-submersibel rig Treasure Saga 7 November 1986, and completed 23 January 1987 at a depth of 3050 m RKB in rocks of Triassic age.

A total of 9 cores were cut, 8 in the Fangst Group, and one in the Båt Group. While tripping out at 2645 m RKB prior to logging, the string got stuck. After nine days of fishing it was decided to sidetrack. The well was kicked off at 2387 m RKB.

Fangst Group came in at 2427 m RKB, ten meters below prognosis. Oil/water contact was, due to drilling results, set to 2525 m RKB, which corresponds with the other wells on the Midgard Field.

Plugged and abandoned as a gas/condensate discovery.

TESTING:

Two DST-tests were performed in this well.

GEOLOGICAL TOPS
WELL: 6407/2-3

	Depth m (RKB)
<i>Nordland Group</i>	276,0
<i>Naust Fm</i>	276,0
<i>Kai Fm</i>	1311,0
<i>Hordaland Group</i>	1449,0
<i>Brygge Fm</i>	1449,0
<i>Rogaland Group</i>	1966,0
<i>Tare Fm</i>	1966,0
<i>Tang Fm</i>	2025,0
<i>Shetland Group</i>	2072,0
<i>Springar Fm</i>	2072,0
<i>Nise Fm</i>	2182,0
<i>Kvitnos Fm</i>	2258,0
<i>Cromer Knoll Group</i>	2330,0
<i>Lysing Fm</i>	2330,0
<i>Lange Fm</i>	2334,5
<i>Lyr Fm</i>	2382,0
<i>Viking Group</i>	2393,0
<i>Spekk Fm</i>	2393,0
<i>Melke Fm</i>	2399,0
<i>Fangst Group</i>	2426,5
<i>Garn Fm</i>	2426,5
<i>Not Fm</i>	2480,0
<i>Ile Fm</i>	2508,5
<i>Båt Group</i>	2581,0
<i>Ror Fm</i>	2581,0
<i>Tofte Fm</i>	2600,0
<i>Ror Fm</i>	2649,0
<i>Tilje Fm</i>	2738,0
<i>Åre Fm</i>	2910,0
TD=	3050,0