

Well no : 31/ 5-03

Operator : SAGA

Coordinates	: 60 44 37.17 N 03 26 20.44 E	UTM coord.	: 6734474 N UTM zone 31 523936 E
Licence no	: 085	Permit no	: 405
Rig	: TREASURE SAGA	Rig type	: SEMI-SUB.
Contractor	: WILHELMSSEN OFFSHORE SERVICES		
Bottom hole temperature	: 70 deg.C	Elev. KB	: 26 M
Spud date	: 84.04.10	Water depth	: 326 M
Compl. date	: 84.06.09	Total depth	: 2253 M
Spud class.	: APPRAISAL	Age at TD	: JURASSIC
Compl. class.	: P&A. OIL/GAS DISC.		
Seis. loc.	: 8007 - 325 SP. 1189		

LICENSEES

9.000	NORSK HYDRO PRODUKSJON A.S
6.000	SAGA PETROLEUM A.S.
85.000	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/cm3
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CONDUCTOR	30	425.0	36	430.0	
SURF.COND.	20	950.0	26	963.0	1.89
INTERM.	13 3/8	1497.0	17 1/2	1515.0	1.57
INTERM.	9 5/8	1905.0	12 1/4	2236.0	1.73
OPEN HOLE			8 1/2	2253.0	

CONVENTIONAL CORES

Core no.	Intervals cored meters	Recovery		Series
		M	%	
1	1550.0 - 1568.0	18.0	99.9	UPPER JURASSIC
2	1568.0 - 1595.0	27.0	98.0	UPPER JURASSIC
3	1595.0 - 1622.5	27.5	98.0	UPPER JURASSIC
4	1622.5 - 1622.5	0.0	0.0	UPPER JURASSIC

MUD PROPERTIES

Depth below KB meter	Mud weigh g/cm ³	Funnel viscosity s/qt	Mud type
426.0	1.03		WATER BASED
440.0	1.08		WATER BASED
791.0	1.14		WATER BASED
837.0	1.16		WATER BASED
963.0	1.20	47.0	WATER BASED
965.0	1.14		WATER BASED
1080.0	1.30	49.0	WATER BASED
1177.0	1.25	47.0	WATER BASED
1395.0	1.30	49.0	WATER BASED
1518.0	1.18	80.0	WATER BASED
1622.5	1.18	69.0	WATER BASED
1915.0	1.18	78.0	WATER BASED
2236.0	1.20	61.0	WATER BASED

DRILL STEM TEST

INTERVALS AND PRESSURES

Test no.	Interval meter	Choke size	Pressure (PSI)		
			FSIP	BTHP	WHFP
1.0	1610.0 - 1606.0	44.5		2168.2	220.5
2.0	1586.3 - 1582.3	44.5		2175.5	504.7

RECOVERY

Test no.	Oil	Gas	Oil grav.	Gas grav.	GOR
	Sm ³ /d	M Sm ³ /d	g/cm ³	rel. air	m ³ /m ³
1.0					
2.0	1431		0.880	0.650	

DRILL BIT CUTTINGS AND WET SAMPLES

SAMPLE TYPE	INTERVAL BELOW KB	NUMBER OF SAMPLES
CUTTINGS	440 - 2250	300
WET SAMPLES	440 - 2250	240

SHALLOW GAS

INTERVAL BELOW KB	REMARKS
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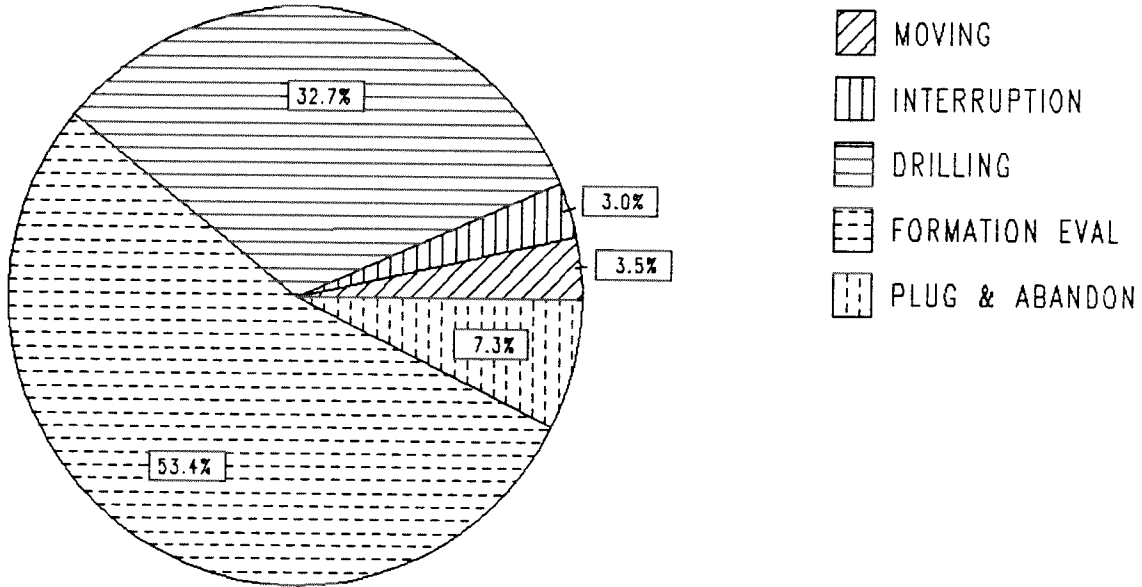
NONE

AVAILABLE LOGS

LOG TYPE	INTERVAL	1/200	1/500
DIFL BHC AC GR	425 - 965	X	X
DIFL BHC AC	951 - 1512	X	X
DIFL BHC AC	1498 - 1914	X	X
DIFL BHC AC	1885 - 2246	X	X
CDL	425 - 965	X	X
CDL	951 - 1506	X	X
CDL CNL	1498 - 1912	X	X
CDL CNL	1905 - 2244	X	X
DLL MLL	1498 - 1913	X	X
CALIPER	425 - 925	X	X
CDM	1498 - 1900	X	
CDM	1905 - 2243	X	
CDM AP	1498 - 1900	X	X
CDM AP	1905 - 2243	X	X
SPECTRALOG	1498 - 1906	X	X
DLWD	440 - 2250		X
PLUG AND ABANDON RECORD	350 - 1542	X	
FMT	1498 - 1915		X
FMT	1905 - 2244		X
TEMPERATURE LOG	380 - 1470	1:1000	X
CBL VDL AC	875 - 1505	X	
CBL VDL AC	1250 - 1908	X	
VELOCITY	425 - 2246	1:1000	X
(+ Synthetic Seismogram, Marine, 10 cm/s,			1 stk)
(+ Synthetic Seismogram, 10 cm/s,			2 stk)
(+ Airgun Well Velocity Survey and Calibr. log data,			1 stk)
(+ V.S.P.,			9 stk)

DAILY DRILLING REPORT SYSTEM

Main operation : 31/05-03



Total : 1512.00 HRS

Main operation	Minutes	Hours	% of total
MOVING	3150	52.50	3.4
INTERRUPTION	2760	46.00	3.0
DRILLING	29700	495.00	32.7
FORMATION EVAL	48480	808.00	53.4
PLUG & ABANDON	6630	110.50	7.3

MAIN OPERATION: MOVING

Sub operations	Min	% of total
ANCHOR	1830	58.10
TRANSIT	660	20.95
POSITION	660	20.95
TOTAL	3150	100.00

MAIN OPERATION: INTERRUPTION

Sub operations	Min	% of total
WAIT	210	7.61
MAINTAIN/REP	420	15.22
OTHER	2070	75.00
LOST CIRC	60	2.17
TOTAL	2760	100.00

MAIN OPERATION: DRILLING

Sub operations	Min	% of total
TRIP	6480	21.82
SURVEY	627	2.11
DRILL	11670	39.29
CIRC/COND	2253	7.59
REAM	150	0.51
CASING	2580	8.69
BOP/WELLHEAD EQ	3210	10.81
OTHER	720	2.42
WAIT	30	0.10
UNDERREAM	1800	6.06
BOP ACTIVITIES	180	0.61
TOTAL	29700	100.00

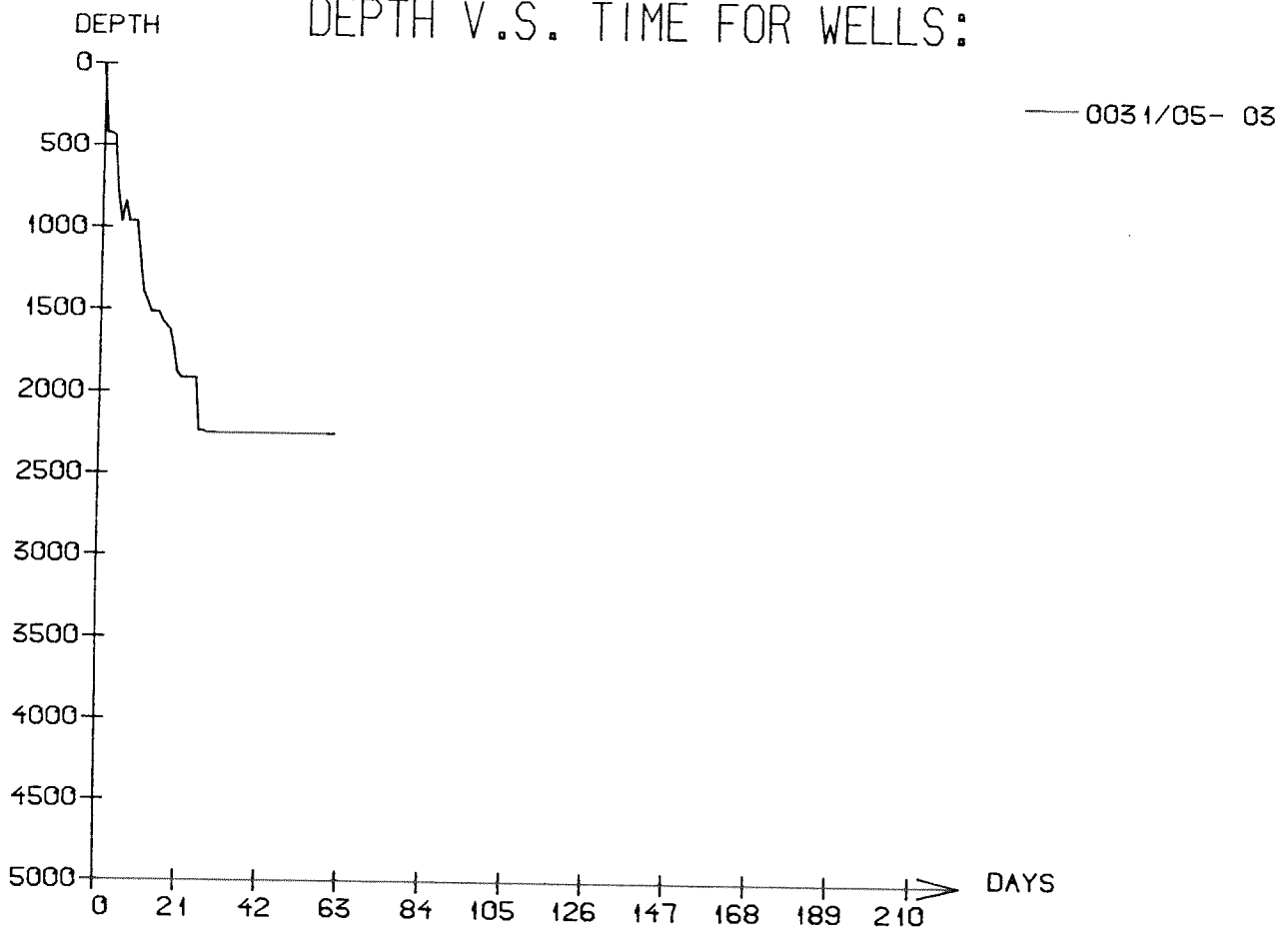
MAIN OPERATION: FORMATION EVAL

Sub operations	Min	% of total
LOG	9330	19.25
OTHER	7080	14.60
TRIP	7620	15.72
CIRC/COND	6270	12.93
CORE	180	0.37
DST	17880	36.88
WAIT	120	0.25
TOTAL	48480	100.00

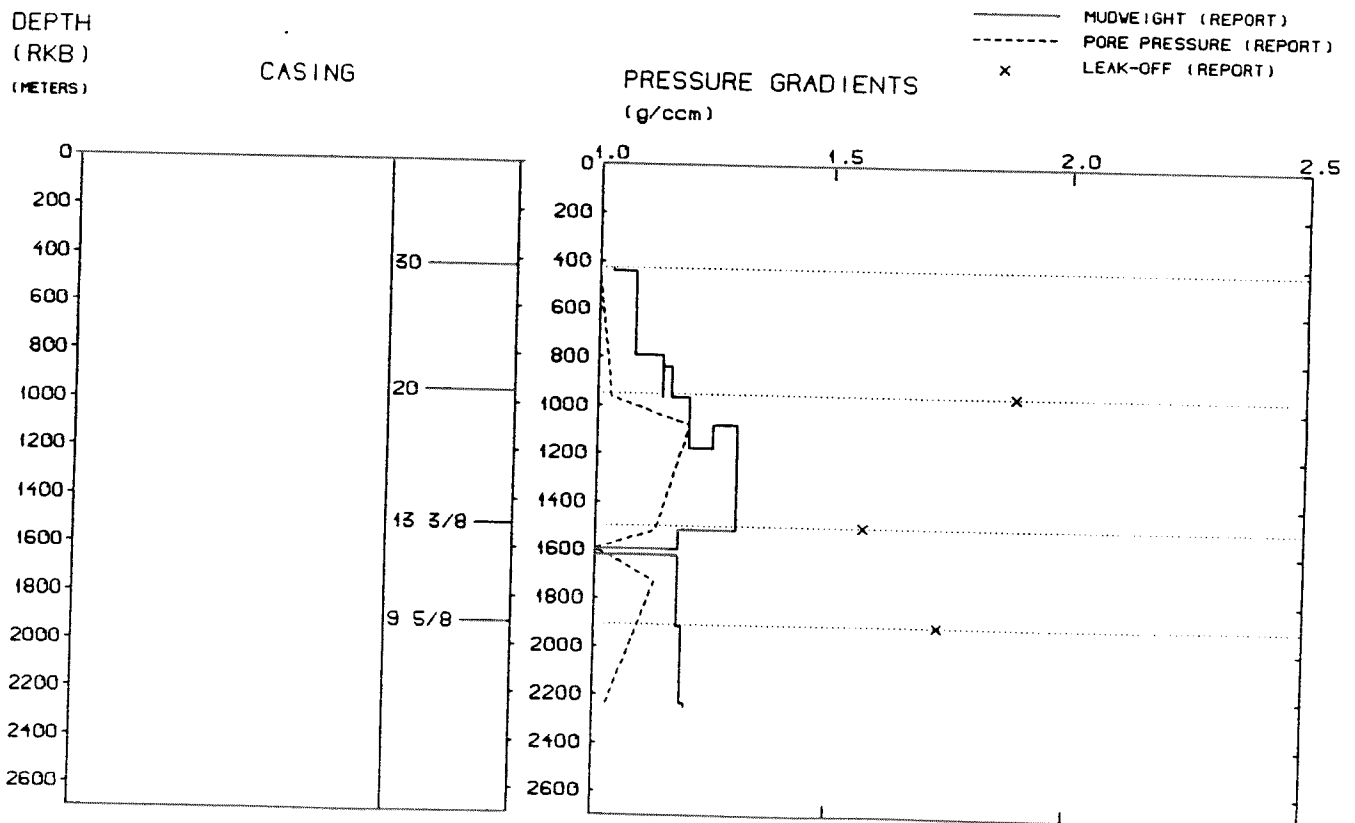
MAIN OPERATION: PLUG & ABANDON

Sub operations	Min	% of total
TRIP	1710	25.79
CEMENT PLUG	240	3.62
CIRC/COND	150	2.26
MECHANICAL PLUG	120	1.81
OTHER	2280	34.39
SQUEEZE	210	3.17
PERFORATE	450	6.79
CUT	300	4.52
EQUIP RECOVERY	210	3.17
WAIT	960	14.48
TOTAL	6630	100.00

DEPTH V.S. TIME FOR WELLS:



WELL: 003105 03 PRESSURE COMPOSITE PLOT



WELL HISTORY - 31/5-3

GENERAL:

The main objectives of the appraisal well 31/5-3 were to test the reservoir qualities and the lithology of the Upper Jurassic Sognefjord Formation at the southern part of the Troll West area. Hydrocarbons were encountered in the Sognefjord Formation.

OPERATIONS:

The well was spudded 10.04.84 by the semi-submersible rig Treasure Saga. Three cores were successfully cut in the Upper Jurassic sequence.

At 1426 m circulation was lost, and 450 bbls mud was lost to formation before the well was stabilized.

The well was drilled using water based mud.

TESTING:

Two drill stem tests were performed in the Sognefjord Formation. One produced formation water, the other produced oil.

NOTE:

The three licensees in licence 085 are equal, they do all three operate boreholes in the licence.

GEOLOGICAL TOPS

WELL: 31/ 5-03

	<i>Depth m (RKB)</i>
<i>Nordland Group</i>	<i>353.000</i>
<i>Hordaland Group</i>	<i>508.000</i>
<i>Rogaland Group</i>	<i>1340.000</i>
<i>Balder Fm</i>	<i>1340.000</i>
<i>Sele Fm</i>	<i>1402.000</i>
<i>Lista Fm</i>	<i>1477.000</i>
<i>Viking Group</i>	<i>1547.000</i>
<i>Draupne Fm</i>	<i>1547.000</i>
<i>Sognefjord Fm</i>	<i>1555.000</i>
<i>Upper Heather Fm</i>	<i>1666.000</i>
<i>Fensfjord Fm</i>	<i>1718.000</i>
<i>Krossfjord Fm</i>	<i>1848.000</i>
<i>Lower Heather Fm</i>	<i>1905.000</i>
<i>Brent Group</i>	<i>1992.000</i>
<i>Drake Fm</i>	<i>2103.000</i>
<i>TD =</i>	<i>2253.000</i>