

Well no : 6407/07-02

Operator : HYDRO

Coordinates : 64 15 26.39 N  
07 10 42.65 EUTM coord. : 7127130 N  
411732 E

Licence no : 107

Permit no : 532

Rig : POLAR PIONEER

Rig type : SEMI-SUB.

Contractor : POLAR FRONTIER DRILLING A/S

Bottom hole temperature : deg.C

Elev. KB : 23 M

Spud. date : 86.11.20

Water depth : 338 M

Compl. date : 87.01.21

Total depth : 3320 M

Spud. class : WILDCAT

Form. at TD : TRIASSIC

Compl. class : SUSP. OIL DISCOVERY

Prod. form :

Seisloca : NH 8604 - 235 KOLONNE 960

## LICENSEES

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 10.000000 NORSK AGIP A/S  
 20.000000 NORSK HYDRO PRODUKSJON A.S  
 20.000000 A/S NORSKE SHELL  
 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/cm3
CONDUCTOR	30	445.0	36	446.0	.
INTERM.	13 3/8	757.0	17 1/2	1517.0	1.76
INTERM.	9 5/8	2535.0	12 1/4	2550.0	1.87
LINER	7	3316.0	8 1/2	3320.0	.

## CONVENTIONAL CORES

Core no.	Intervals cored meters	Recovery		Series
		M	%	
1	2673.0 - 2686.9	13.9	100.0	MIDDLE JURASSIC LOWER JURASSIC LOWER JURASSIC LOWER JURASSIC LOWER JURASSIC LOWER JURASSIC LOWER JURASSIC MIDDLE JURASSIC LOWER JURASSIC LOWER JURASSIC LOWER JURASSIC
2	2701.0 - 2718.9	17.9	100.0	
3	2723.0 - 2739.6	16.6	100.0	
4	2775.0 - 2787.1	12.1	100.0	
5	2791.5 - 2803.2	11.7	97.5	
6	2805.0 - 2824.0	19.0	100.0	
7	2824.0 - 2842.0	17.1	95.0	
8	2842.0 - 2869.4	27.4	99.6	
9	2869.5 - 2869.8	0.3	100.0	
10	2879.0 - 2896.0	17.0	100.0	
11	2896.0 - 2913.6	17.6	100.0	

## MUD PROPERTIES

Depth below KB meter	Mud weight g/cm <sup>3</sup>	Viscosity	Mud type
780.000	1.05	0.0	WATER BASED
1000.000	1.47	11.0	WATER BASED
1160.000	1.20	24.0	WATER BASED
1517.000	1.30	20.0	WATER BASED
2310.000	1.60	30.0	WATER BSAED
2372.000	1.48	19.0	WATER BASED
2409.000	1.60	25.0	WATER BASED
2464.000	1.47	19.0	WATER BASED
2513.000	1.60	27.0	WATER BASED
2535.000	1.49	20.0	WATER BASED
2550.000	1.60	25.0	WATER BASED
2819.000	1.48	20.0	WATER BASED
3265.000	1.47	14.0	WATER BASED
3265.000	1.48	12.0	WATER BASED
3265.000	1.47	15.0	WATER BASED
3265.000	1.48	15.0	WATER BASED
3265.000	1.47	15.0	WATER BASED
3265.000	1.48	14.0	WATER BASED
3265.000	1.47	15.0	WATER BASED
3265.000	1.02	1.0	WATER BASED
3265.000	1.47	13.0	WATER BASED
3265.000	1.45	13.0	WATER BASED
3266.000	1.49	25.0	WATER BASED
3320.000	1.48	23.0	WATER BASED

## DRILL STEM TEST

### INTERVALS AND PRESSURES

Test no.	interval meter	Choke size	Pressure (PSI)		
			WHP	BTHP	FFP
1.0	2869.800 - 2878.800	12.7	462.6	5286.2	1686.7
	Test temperature: 109.0 °C				
2.0	2801.500 - 2819.500	12.7	2150.8	5027.3	4480.0
	Test temperature: 111.2 °C				

### RECOVERY

Test no.	Oil Sm <sup>3</sup> /d	Gas Sm <sup>3</sup> /d	Oil grav. g/cm <sup>3</sup>	Gas grav. rel. air	GOR m <sup>3</sup> /m <sup>3</sup>
1.0	125	23750	0.829	0.744	190
2.0	575	105800	0.825	0.685	184

## DRILL BIT CUTTINGS AND WET SAMPLES

SAMPLE TYPE	INTERVAL BELOW KB	NUMBER OF SAMPLES
Cutting	790-3320	490
Wet Samples	780-3320	360

## SHALLOW GAS

Interval                      REMARKS

below KB

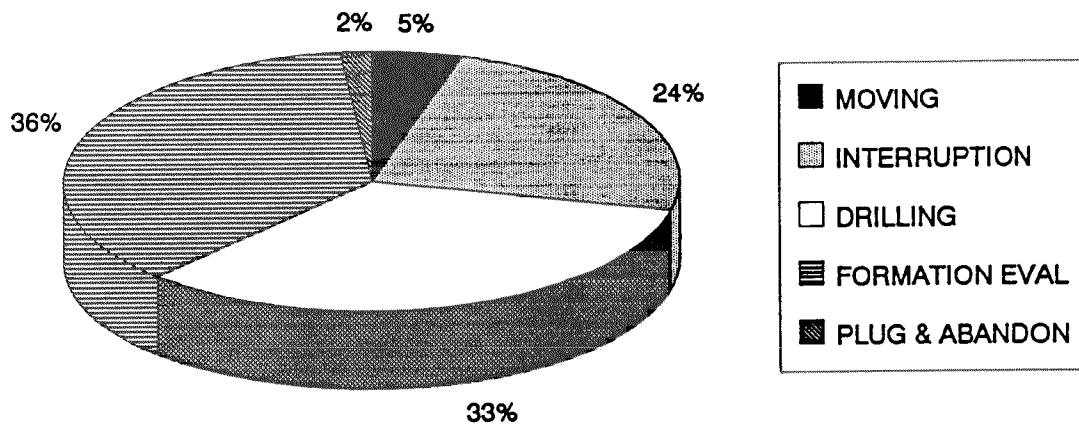
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## AVAILABLE LOGS

LOG TYPE	INTERVALS	1/200	1/500	Div.
DIL LSS GR	1501.000 - 2548.000	X	X	
DIL LSS MSFL	2533.000 - 3320.000	X	X	
DIL LSS GR PLAYBACK	1501.000 - 3520.000		X	
LDL CNL NGS	2533.000 - 3000.000	X	X	
DLL SP	2600.000 - 3000.000	X	X	
SHDT	1501.000 - 2550.000	X		
SHDT	2533.000 - 3320.000	X		
CDM AP/SHDT MSD	1501.000 - 2550.000	X	X	
CDM AP/SHDT MSD	2533.000 - 3320.000	X	X	
RFT CH	2782.000 - 2849.000			
RFT HP GAUGE	2698.000 - 3093.000			
RFT STRAIN GAUGE	2698.000 - 3092.000			
PLT RECORD	2768.000 - 2910.000			
PLT PRESSURE LISTING	2768.000 - 2910.000			
NGS RATIOS	2533.000 - 3321.000	X	X	
CBL VDL 13 3/8"CSG.	435.000 - 1501.000	X		
CBL VDL	2350.000 - 2900.000	X		
CBL VDL	1300.000 - 3248.000	X		
MUD	780.000 - 3320.000			X
VELOCITY	1480.000 - 3285.000	1000	X	
(VSP,Sat, run 2A, 1080-3260m			1 stk.)	
(VSP,rigshot, plot 1-11			11 stk.)	
(Velocity, comp.program,synth.seismogram			14 stk.)	

# DAILY DRILLING REPORT SYSTEM

MAIN OPERATIONS FOR WELL: 6407/07-02



Main operation	Minutes	Hrs	% of total
MOVING	8130	135,5	4,73
INTERRUPTION	41490	691,5	24,16
DRILLING	57345	955,8	33,39
FORMATION EVAL	62175	1036,3	36,21
PLUG & ABANDON	2580	43,0	1,50
<b>Total</b>	<b>171720</b>	<b>2862,0</b>	<b>100,00</b>

## SUB OPERATIONS FOR WELL: 6407/07-02

### MAIN OPERATION: MOVING

Sub operation	Minutes	Hrs	% of total
TRANSIT	1410	23,5	17,34
ANCHOR	6720	112,0	82,66
<i>Total</i>	8130	135,5	100,00

### MAIN OPERATION: INTERRUPTION

Sub operation	Minutes	Hrs	% of total
OTHER	1380	23,0	3,33
MAINTAIN/REP	27510	458,5	66,31
FISH	480	8,0	1,16
WAIT	12120	202,0	29,21
<i>Total</i>	41490	691,5	100,00

### MAIN OPERATION: DRILLING

Sub operation	Minutes	Hrs	% of total
TRIP	11505	191,8	20,06
DRILL	23205	386,8	40,47
SURVEY	150	2,5	0,26
REAM	1410	23,5	2,46
CIRC/COND	1515	25,3	2,64
CASING	12960	216,0	22,60
BOP/WELLHEAD EQ	3465	57,8	6,04
HOLE OPEN	630	10,5	1,10
BOP ACTIVITIES	2055	34,3	3,58
WAIT	120	2,0	0,21
PRESS DETECTION	240	4,0	0,42
OTHER	90	1,5	0,16
<i>Total</i>	57345	955,8	100,00

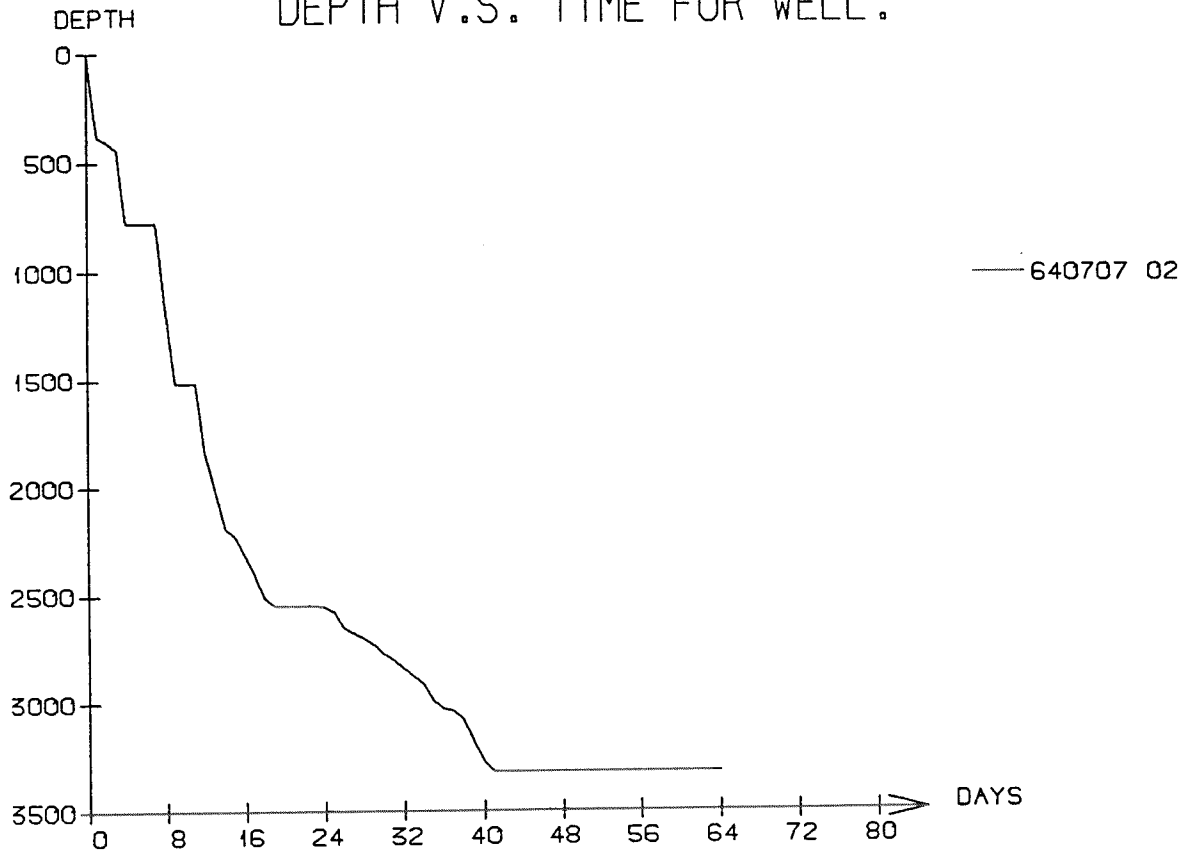
### MAIN OPERATION: FORMATION EVAL

Sub operation	Minutes	Hrs	% of total
LOG	4410	73,5	7,09
CORE	3630	60,5	5,84
CIRC SAMPLES	375	6,3	0,60
TRIP	5100	85,0	8,20
CIRC/COND	90	1,5	0,14
RFT/FIT	600	10,0	0,97
DST	47850	797,5	76,96
WAIT	120	2,0	0,19
<i>Total</i>	62175	1036,3	100,00

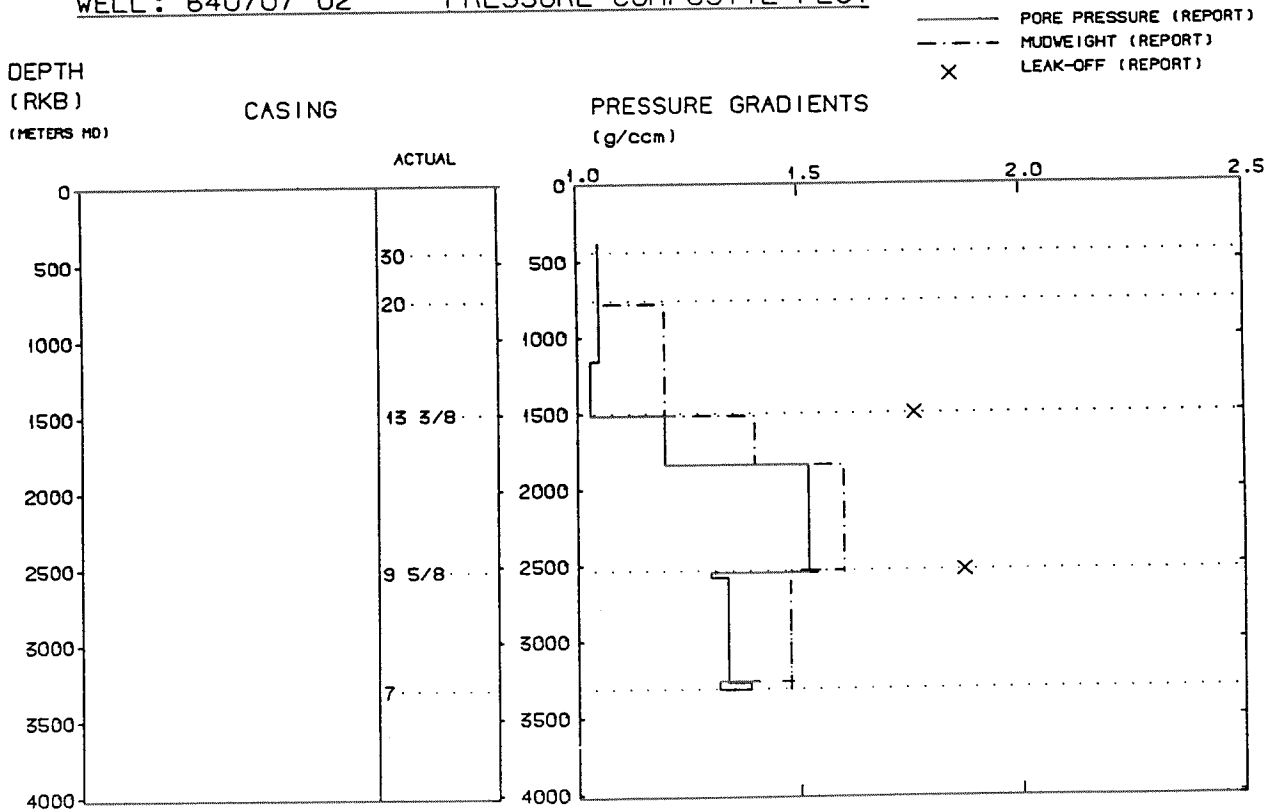
### MAIN OPERATION: PLUG & ABANDON

Sub operation	Minutes	Hrs	% of total
CEMENT PLUG	210	3,5	8,14
CIRC/COND	90	1,5	3,49
TRIP	570	9,5	22,09
MECHANICAL PLUG	150	2,5	5,81
OTHER	720	12,0	27,91
EQUIP RECOVERY	840	14,0	32,56
<i>Total</i>	2580	43,0	100,00

# DEPTH V.S. TIME FOR WELL :



## WELL: 640707 02      PRESSURE COMPOSITE PLOT



# Well History 6407/7-2

## GENERAL:

Well 6407/7-2 was drilled on the A-structure of the Njord field.

The main objectives of the well were to:

- Test volumetric potential and depth of the oil-water contact on the central part of the A-structure.
- Test reservoir properties of the pre-Tilje sequence above the oil-water contact. Estimated top Rogn Fm. at 2598 +/- 65 m.
- Test the reservoir properties and the geological model of the sedimentary package above pre-Tilje in the central part of the A-structure.
- Penetrate the flat seismic event at approximately 2570 ms TWT in the central part of the A-structure.
- Test the truncation patterns of the main reservoir in well 6407/7-1.
- Obtain good seismic calibration to
  - base Cretaceous unconformity
  - strong Intra Jurassic events
  - intra Triassic seismic event.

## OPERATIONS:

Wildcat well 6407/7-2 was spudded 20 November 1986 by Polar Frontier Drilling semi-submersible rig Polar Pioneer and completed 21 January 1987 at a depth of 3320 m in Triassic rocks. Drilling proceeded without any significant problems.

The first core was cut in the interval 2673 - 2742 m, 2 cores between 2701 - 2742 m and 8 cores between 2775 - 2915 m. There were hydrocarbons down to 2877.5, which gives a possible column of approx. 100 m.

The well was suspended as an oil discovery.

## TESTING:

2 DST tests were performed in this well. They were performed in the intervals 2869 - 2878 m and 2801.5 - 2819.5 m respectively.

# GEOLOGICAL TOPS

WELL: 6407/7-2

	Depth m (RKB)
Nordland Group	361.0
Naust Fm.	361.0
Hordaland Group	1078.0
Brygge Fm.	1078.0
Rogaland Group	1723.0
Tare Fm.	1723.0
Tang Fm.	1788.0
Shetland Group	1958.5
Springar Fm.	1958.5
Nise Fm.	2009.0
Kvitnos Fm.	2155.5
Cromer Knoll Group	2465.5
Lange Fm.	2465.5
Lyr Fm.	2610.5
Viking Group	2637.0
Spekk Fm.	2637.0
Melke Fm.	2651.5
Fangst Group	2667.5
Garn Fm.	2667.5
Not Fm.	2680.5
Ile Fm.	2697.0
Båt Group	2714.5
Ror Fm.	2714.5
Tilje Fm.	2771.0
Åre Fm.	2877.5
Triassic Group	2934.0
Grey Beds	2934.0
Red Beds	2980.0
T.D.	3320.0