

**General information**

Wellbore name	34/7-23 A
Type	EXPLORATION
Purpose	APPRAISAL
Status	P&A
Factmaps in new window	link to map
Main area	NORTH SEA
Field	VIGDIS
Discovery	34/7-23 S
Well name	34/7-23
Seismic location	GE-83:ROW 357-COLUMN 1109
Production licence	089
Drilling operator	Saga Petroleum ASA
Drill permit	788-L
Drilling facility	VILDKAT EXPLORER
Drilling days	43
Entered date	08.04.1994
Completed date	20.05.1994
Release date	20.05.1996
Publication date	28.02.2008
Purpose - planned	APPRAISAL
Reentry	NO
Content	OIL
Discovery wellbore	NO
1st level with HC, age	LATE JURASSIC
1st level with HC, formation	INTRA DRAUPNE FM SS
Kelly bushing elevation [m]	25.0
Water depth [m]	246.0
Total depth (MD) [m RKB]	3412.0
Final vertical depth (TVD) [m RKB]	2769.0
Maximum inclination [°]	45.7
Bottom hole temperature [°C]	98
Oldest penetrated age	MIDDLE JURASSIC
Oldest penetrated formation	HEATHER FM
Geodetic datum	ED50
NS degrees	61° 20' 24.89" N
EW degrees	2° 4' 31.54" E
NS UTM [m]	6801198.83
EW UTM [m]	450528.18



UTM zone	31
NPDID wellbore	2326

Wellbore history

General

Exploration well 34/7-23 A was drilled in the H-Vest prospect as a sidetrack to well 34/7-23 S, located on the Vigdis Field on Tampen Spur in the Northern North Sea. The main objective was to test for Top Draupne Sandstone reservoir presence within the Top Draupne Sequence of Portlandian and Ryazanian age and to test for an oil water contact. Secondary objective was to test for reservoir presence and hydrocarbons in a seismic wedge in the middle Draupne Sequence. Additional targets were lowermost Late Cretaceous and intra Oxfordian (Intra-Heather Formation) sandstones.

Operations and results

Well 34/7-23 A was kicked off from well 34/7-23 S on April 8, 1994. The kick off point was at 2358 m (1968.5 m TVD) in the upper part of the Shetland Group. The well was drilled westward deviated to TD at 3412 m (2769 m TVD) using the semi-submersible installation Vildkat Explorer. Drilling went without problem. During logging operations the FMT tool got stuck at 3220 m and 60 hrs were spent fishing for it. The well was drilled with KCl mud with a polyalkyleneglycol additive (BP DCP 208) m from kick-off to TD.

In the Shetland Group claystones with limestone beds were penetrated. The condensed Cromer Knoll Group consisted of marls, limestones and minor claystones. The Viking Group was encountered at 3202.9 m (2619 m TVD). The topmost section was oil bearing Intra Draupne Formation sandstone from 3202.9 to 3246 m (2619 - 2649.1 TVD, 30.1 m gross). This sandstone interval, which was the only sandstone interval encountered within the Draupne Formation, proved an ODT at 3246 m (2649.1 m TVD). No OWC was identified on the logs or with the FMT-measurements. The Intra Draupne Formation Sandstone reservoir had an estimated average log porosity of 22.4% and an estimated average water saturation of 11.4%. The net gross ratio was 0.93. Below the reservoir, the Draupne Formation consisted of siltstones and claystones. The Middle to Late Jurassic Heather Formation penetrated by the well consisted of sandy silty claystones with only minor limestone and sandstone beds.

Five cores were cut with a 90 ft core barrel from 3199 to 3291 m in the Intra Draupne Formation Sandstone and into the Draupne Formation. H₂S was present when recovering core No 1 and 2 (200 and 300 ppm H₂S, respectively). No H₂S was measured in the three lowermost cores. Due to the FMT problems no fluid samples were taken.

The well was permanently abandoned on 20 May as an oil appraisal.

Testing

The interval 3205.0-3225.0 m (2622-2635 m TVD) in the Intra-Draupne Formation sand was perforated and tested. The oil rate at the end of the multi-rate flow was measured to 1085 Sm³/day through a 19.1 mm choke, with a corresponding wellhead pressure of 97.5 bar and a GOR of 106 Sm³/Sm³ at separator conditions of 42.9 bar and 58.9 deg C. The dead oil density was 0.848 g/cm³ and the gas gravity was 0.71 (air = 1). A maximum H₂S concentration of 0.8 ppm was measured. Maximum bottom hole temperature measured



Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
2360.00	3412.00

Cuttings available for sampling?	YES
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Cores at the Norwegian Offshore Directorate

Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
1	3199.0	3222.7	[m]
2	3223.0	3251.0	[m]
3	3251.0	3267.0	[m]
4	3267.0	3278.2	[m]
5	3279.0	3291.1	[m]

Total core sample length [m]	91.0
Cores available for sampling?	YES

Core photos



3199-3204m



3204-3209m



3209-3214m



3214-3219m



3219-3222m



3223-3228m



3228-3233m



3233-3238m



3238-3243m



3243-3248m





3248-3251m

3251-3258m

3256-3261m

3261-3266m

3266-3267m



3267-3272m



3272-3277m



3277-3278m



3279-3284m



3284-3289m



3289-3291m

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
3203.8	[m]	C	BIOSTRAT
3205.8	[m]	C	BIOSTR
3208.1	[m]	C	BIOSTR
3209.6	[m]	C	BIOSTR
3212.5	[m]	C	BIOSTR
3216.6	[m]	C	BIOSTR
3219.5	[m]	C	BIOSTR
3221.6	[m]	C	BIOSTR
3224.5	[m]	C	BIOSTR
3226.8	[m]	C	BIOSTR
3228.5	[m]	C	BIOSTR
3230.4	[m]	C	BIOSTR
3231.6	[m]	C	BIOSTR
3232.5	[m]	C	BIOSTR
3234.6	[m]	C	BIOSTR
3235.3	[m]	C	BIOSTR
3237.9	[m]	C	BIOSTR
3238.6	[m]	C	BIOSTR
3240.7	[m]	C	BIOSTR
3241.1	[m]	C	BIOSTR
3242.8	[m]	C	BIOSTR



3243.9	[m]	C	BIOSTR
3244.9	[m]	C	BIOSTR
3245.3	[m]	C	BIOSTR
3246.6	[m]	C	BIOSTR
3247.3	[m]	C	BIOSTR
3248.5	[m]	C	BIOSTR
3249.7	[m]	C	BIOSTR
3250.6	[m]	C	BIOSTR
3251.8	[m]	C	BIOSTR
3252.5	[m]	C	BIOSTR
3254.2	[m]	C	BIOSTR
3255.6	[m]	C	BIOSTR
3257.5	[m]	C	BIOSTR
3259.3	[m]	C	BIOSTR
3261.0	[m]	C	BIOSTR
3284.7	[m]	C	BIOSTR

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
271	NORDLAND GP
1058	UTSIRA FM
1074	UNDIFFERENTIATED
1144	HORDALAND GP
1369	NO FORMAL NAME
1400	NO FORMAL NAME
1460	NO FORMAL NAME
1602	NO FORMAL NAME
1995	ROGALAND GP
1995	BALDER FM
2042	LISTA FM
2283	SHETLAND GP
2283	JORSALFARE FM
2623	KYRRE FM
3186	CROMER KNOLL GP
3186	RØDBY FM
3196	MIME FM
3203	VIKING GP
3203	INTRA DRAUPNE FM SS



3246	DRAUPNE FM
3360	HEATHER FM

Geochemical information

Document name	Document format	Document size [MB]
2326_1	pdf	0.20
2326_2	pdf	3.02
2326_3	pdf	0.86

Documents - reported by the production licence (period for duty of secrecy expired)

Document name	Document format	Document size [MB]
2326_34_7_23_A_COMPLETION_REPORT_AND_LOG	pdf	157.42

Logs

Log type	Log top depth [m]	Log bottom depth [m]
DLL MLL GR	3180	3297
DPIL MAC ZDL CN DSL	2319	3409
FMT GR	3204	3258
HDIP CBIL GR	2319	3409
MWD EWR - GR RES DIR	2358	3412
SWC OFC	3179	3389
VELOCITY	2100	3295

Casing and leak-off tests

Casing type	Casing diam. [inch]	Casing depth [m]	Hole diam. [inch]	Hole depth [m]	LOT/FIT mud eqv. [g/cm3]	Formation test type
INTERM.	9 5/8	2320.0	12 1/4	2323.0	0.00	LOT
LINER	7	3358.0	8 1/2	3409.0	0.00	LOT

Drilling mud





Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
2320	1.60	26.0	19.0	DUMMY	05.04.1994
2320	1.60	25.0	19.0	DUMMY	06.04.1994
2320	1.60	25.0	19.0	DUMMY	07.04.1994
2320	1.60	25.0	20.0	DUMMY	08.04.1994
2370	1.60	17.0	13.0	DUMMY	11.04.1994
2510	1.60	34.0	19.0	DUMMY	11.04.1994
2545	1.60	29.0	17.0	DUMMY	11.04.1994
2728	1.60	37.0	29.0	DUMMY	12.04.1994
2792	1.60	90.0	25.0	DUMMY	13.04.1994
2792	1.60	90.0	25.0	DUMMY	14.04.1994
2960	1.60	31.0	29.0	DUMMY	14.04.1994
3040	1.60	30.0	28.0	DUMMY	18.04.1994
3105	1.60	28.0	24.0	DUMMY	18.04.1994
3190	1.60	30.0	30.0	DUMMY	18.04.1994
3223	1.60	30.0	30.0	DUMMY	18.04.1994
3251	1.60	32.0	28.0	DUMMY	19.04.1994
3267	1.60	32.0	24.0	DUMMY	21.04.1994
3291	1.60	25.0	23.0	DUMMY	21.04.1994
3318	1.60	27.0	24.0	DUMMY	22.04.1994
3343	1.60	28.0	26.0	DUMMY	25.04.1994
3383	1.60	24.0	20.0	DUMMY	25.04.1994
3412	1.60	28.0	20.0	DUMMY	25.04.1994
3412	1.60	25.0	22.0	DUMMY	26.04.1994
3412	1.60	25.0	15.0	DUMMY	27.04.1994
3412	1.60	29.0	18.0	DUMMY	28.04.1994
3412	1.60	27.0	18.0	DUMMY	29.04.1994
3412	1.60	27.0	18.0	DUMMY	02.05.1994
3412	1.60	26.0	19.0	DUMMY	02.05.1994
3412	1.60	26.0	19.0	DUMMY	02.05.1994
3412	1.60	26.0	18.0	DUMMY	03.05.1994
3412	1.60	26.0	26.0	DUMMY	04.05.1994
3412	1.60	26.0	26.0	DUMMY	05.05.1994
3412	1.60	26.0	26.0	DUMMY	09.05.1994
3412	1.60	27.0	17.0	DUMMY	09.05.1994
3412	1.60	27.0	17.0	DUMMY	09.05.1994
3412	1.60	26.0	26.0	DUMMY	09.05.1994
3412	1.60	27.0	17.0	DUMMY	10.05.1994



3412	1.60	27.0	17.0	DUMMY	16.05.1994
3412	1.60	27.0	17.0	DUMMY	16.05.1994
3412	1.60	25.0	20.0	DUMMY	18.05.1994
3412	1.60	25.0	20.0	DUMMY	18.05.1994
3412	1.60	30.0	17.0	DUMMY	19.05.1994
3412	1.60	28.0	18.0	DUMMY	19.05.1994
3412	1.20	15.0	15.0	DUMMY	19.05.1994
3412	1.20	15.0	15.0	DUMMY	24.05.1994
3412	1.20			DUMMY	24.05.1994
3412	1.60	28.0	18.0	DUMMY	18.05.1994

Thin sections at the Norwegian Offshore Directorate

Depth	Unit
3203.20	[m]
3203.60	[m]
3221.50	[m]
3220.25	[m]

Pressure plots

The pore pressure data is sourced from well logs if no other source is specified. In some wells where pore pressure logs do not exist, information from Drill stem tests and kicks have been used. The data has been reported to the NPD, and further processed and quality controlled by IHS Markit.

Document name	Document format	Document size [MB]
2326 Formation pressure (Formasjonstrykk)	pdf	0.22

