



General information

Lithostrat. unit	RAN SANDSTONE UNITS
NPDID lithostrat. unit	125
Level	FORMATION
Lithostrat. unit, parent	CROMER KNOLL GP

Level below

Lithostrat. unit

Description

Ran sandstone units

Name

Ran was the wife of the sea god Gir in Norse mythology. She liked to drag sailors down to the depths with her net.

Well reference sections

Norwegian well [2/7-15](#) from 3498 m to 3450 m, coordinates N 56°23'46.82", E 03°18'54.63" ([Fig 5.22](#)). 16 m of cores in the lowermost part of the formation. Norwegian well [7/3-1](#) from 2412 m to 2396 m, coordinates N 57°50'35.25", E 02°44'55.61" ([Fig 5.23](#)). No cores. Norwegian well [17/11-2](#) from 1802 m to 1767 m, coordinates N 58°06'54.91", E 03°22'09.81" ([Fig 5.13](#)). No cores.

Thickness

The gross sandstone thicknesses vary from a few metres up to approximately 100 m. The gross thicknesses in the reference wells are 48 m ([2/7-15](#)), 16 m ([7/3-1](#)) and 35 m ([17/11-2](#)). Up to 130 m (gross) of Aptian-Albian sandstone sequences are penetrated in block 16/27 in the UK sector (see Distribution).

Lithology

The colour of the sandstones ranges from white to light grey, green and brown to reddish-brown. The sandstones are generally argillaceous, sometimes calcareous and glauconitic, and usually do not represent potential reservoir rocks in these wells.

Basal stratotype

The various sandstone units may appear in contact with the [Asgard](#), [Tuxen](#), [Sola](#) and [Rødby](#) formations ([Fig 5.4](#), [5.7](#), [5.8](#), [5.9](#)). Their lower boundaries are generally defined as the base of an upward decrease in the gamma-ray response when passing into the sandstone units ([Fig 5.22](#), [5.23](#)). The gamma-ray readings in the calcareous marlstones and chalks of the [Tuxen Formation](#), especially its upper part, and the [Mime Formation](#) may be similar to those in the sandstones. The velocity curve is often less suitable for defining the lower boundary.

Characteristics of the upper boundary

The upper boundary can usually be identified as an upward increase in the gamma-ray readings ([Fig 5.22](#)), and generally by a slight decrease in the sonic velocity.

Distribution

The Ran sandstone units are encountered in only a few wells in the Norwegian sector



([Fig 5.21](#)), and Remarks).

Age

Ryazanian-Albian.

Depositional environment

The sandstones that have been penetrated are described as shallow (Norwegian sector) and deep water (UK sector) submarine fans.

Remarks

Hesjedal & Hamar (1983) recognised several scattered sandstone sequences which they described as the Kopervik and Klepp Formations in the Central Trough and Norwegian-Danish Basin, and the Florø Formation in the [Agat Discovery](#) in blocks 35/3 and 36/1. The Kopervik and Klepp Formations are here described as the Ran sandstone units. Since they consisted of several isolated sandstone bodies they should not have been given formation status, and the names did not conform with the existing recommendations. The Florø Formation is formally defined as the [Agat Formation](#) in this paper (see also General lithostratigraphic notes for Cretaceous).

In the UK sector (the Andrew Field), just south of the Andrew Ridge and Fladen Ground Spur, Aptian-Albian sandstone sequences (the Bosun Member) are encountered in many wells, among others UK wells 16/27-1 and 16/27a-2 (100-130 m gross), 16/28-1 (50 m gross) and 16/28-6 (90 m gross). The palaeogeographical position of these sandstones, i.e. basinal areas close to the subaerially exposed major structural highs mentioned above, may be quite similar to the palaeogeographical situation along the western margin of the Maløy Fault Blocks. Here, up to 400 m (gross) thick sandstone sequences of Aptian-Early Cenomanian age were deposited in Norwegian blocks 35/3 and 36/1, and are defined as the [Agat Formation](#) in this paper.

The Devil's Hole Formation (UK well 29/25-1) and the "Unnamed Formation" (UK well 14/20-5) in the UK sector are comparable to the Ran sandstone units.

Source

- Isaksen, D. and Tonstad, K. (eds.) 1989: A revised Cretaceous and Tertiary lithostratigraphic nomenclature for the Norwegian North Sea. NPD-Bulletin No. 5, 59 pp.

Wellbores penetrating

Wellbore name	Wellbore completion date	Top depth [m]	Bottom depth [m]
2/1-8	23.11.1985	3713	3717
2/7-15	02.06.1980	3450	3498
3/7-3	31.08.1981	3325	3432
7/3-1	10.06.1969	2396	2412
17/10-1	24.03.1969	1880	1902
17/11-1	30.06.1968	1447	1510
17/11-2	17.05.1976	1787	1802

Wellbores with cores

Wellbore name	Wellbore completion date	Core length [m]
2/7-15	02.06.1980	16



3/7-3	31.08.1981	10
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