



General information

Lithostrat. unit	FRUHOLMEN FM
NPDID lithostrat. unit	46
Level	FORMATION
Lithostrat. unit, parent	REALGRUNNEN SUBGP

Level below

Lithostrat. unit
AKKAR MBR
KRABBE MBR
REKE MBR

Description

Fruholmen Formation

Name

From a lighthouse on a skerry north of Ingøy in Finnmark. The present formational concept embraces the two units T2-1 and T2-2 (Helgøy and Ytterøy formations) of earlier informal usage.

Well type section

Well [7121/5-1](#) (Statoil), coordinates 71°35'54.88"N, 21°24'21.78"E, from 2793 m to 2572m ([Fig 4.46](#)).

Well reference section

Well [7120/12-1](#) (Norsk Hydro), coordinates 71°06'48.7"N, 20°45'20.1"E, from 2535 m to 2337 m ([Fig 4.47](#)).

Thickness

From 221 m in the type well to 198 m in [7120/12-1](#).

Lithology

Basal grey to dark grey shales pass gradually upwards into interbedded sandstones, shales and coals. Sand dominates in the middle of the formation in several wells, while the upper part is more shaly, prompting a tripartite subdivision into (ascending order) the [Akkar](#) (Squid) [Reke](#) (Prawn) and [Krabbe](#) (Crab) members. The extent of these members in the type and reference wells are shown in ([Fig 4.46](#) , [4.47](#)).

Basal Stratotype

The base of the formation (and of the Akkar Member) is defined by a marked increase in gamma ray and neutron porosity logs, but often more moderate increases in interval transit time and bulk density readings.

The middle [Reke Member](#) is characterized by a lower gamma ray response, but its base can be best defined by a carbonate bench above which the separation between density and porosity logs decreases markedly. This separation increases again at the base of the uppermost [Krabbe Member](#). A characteristic feature of the [Reke](#) and [Krabbe](#) members are funnel-shaped gamma ray responses.

Lateral extent and variation



No marked trends in lateral variation are suggested by present data, although few wells have yet penetrated the entire formation; the thickest sequence (262 m) is seen in well [7120/9-2](#). The unit may be represented in its entirety further to the north in the Hammerfest Basin by the more shaly marine lithofacies of the [Akkar Member](#) passing up into sands of the overlying [Tubåen Formation](#).

Age

The base of the formation is early Norian. The top corresponds in general to the Triassic/Jurassic transition, but available data indicate that it is somewhat diachronous.

Depositional environment

Open marine shales of the [Akkar Member](#) pass up into coastal and fluvial sandstone dominated sequences of the [Reke Member](#). These represent northward fluviodeltaic progradation with a depocentre to the south. As the main deltaic input shifted laterally, most of the central and southern parts of the basin became the site of flood-plain deposition, with more marine environments to the north.

Subdivision

Present information suggests subdivision into three members as described above.

Source

- Dalland, A., Worsley, D. and Ofstad, K. (eds.) 1988: A lithostratigraphic scheme for the Mesozoic and Cenozoic succession offshore mid- and northern Norway. NPD-Bulletin No. 4, 65 pp.

Wellbores penetrating

Wellbore name	Wellbore completion date	Top depth [m]	Bottom depth [m]
7119/9-1	25.09.1984	3185	3248
7119/12-2	26.06.1981	1855	1902
7119/12-4	17.02.2011	2808	2917
7120/1-1	15.11.1985	692	1106
7120/1-1 R	26.12.1985	692	1106
7120/1-1 R2	21.07.1986	692	1106
7120/1-2	28.03.1989	2506	2630
7120/1-3	07.10.2013	689	1101
7120/2-3 S	09.07.2011	2363	2563
7120/5-1	06.06.1985	2648	2700
7120/6-2 S	22.07.2007	2886	3145
7120/7-2	21.08.1983	2435	2523
7120/8-1	10.09.1981	2462	2610
7120/8-2	29.07.1982	2455	2590
7120/8-4	10.12.2007	2643	2697
7120/9-1	26.09.1982	2077	2173
7120/9-2	20.10.1984	2290	2552
7120/10-1	08.09.1984	1914	2000



7120/12-1	12.10.1980	2337	2535
7120/12-2	11.09.1981	2234	2354
7120/12-3	05.05.1983	2395	2523
7120/12-5	03.01.2011	2407	2582
7121/1-1	13.11.1985	698	792
7121/1-1 R	23.08.1986	698	792
7121/4-1	27.10.1984	2532	2609
7121/4-2	14.04.1985	2737	2800
7121/5-1	28.09.1985	2572	2793
7121/5-2	06.07.1986	2503	2543
7121/5-3	09.03.2001	2034	2223
7121/7-1	05.08.1984	2045	2160
7121/7-2	12.08.1986	2073	2156
7121/8-1	15.07.2017	2039	2080
7122/4-1	13.01.1992	2464	2635
7122/6-1	11.11.1987	2063	2191
7122/6-2	19.09.2006	2113	2202
7122/6-3 S	10.10.2021	1921	2015
7122/7-1	05.10.2000	1125	1202
7122/7-2	19.10.2001	1196	1303
7122/7-4 S	25.11.2006	1177	1244
7122/7-5	23.12.2006	1181	1281
7122/7-5 A	13.01.2007	1218	1286
7122/7-6	04.01.2013	1122	1208
7122/7-7 S	26.12.2018	1274	1306
7122/10-1 S	28.09.2017	620	697
7123/4-1 A	14.05.2008	2141	2259
7123/4-1 S	21.04.2008	2139	2266
7124/3-1	20.10.1987	1305	1438
7124/4-1 S	12.10.2011	1312	1330
7125/1-1	30.12.1988	1521	1612
7125/4-1	07.03.2007	882	1002
7125/4-2	01.12.2008	930	1026
7130/4-1	08.01.2016	612	626
7131/4-1	13.05.2005	883	960
7132/2-1	09.02.2019	720	779
7132/2-2	07.04.2019	779	878
7219/8-2	30.09.2013	3283	3425
7219/9-1	25.02.1988	2305	2877
7219/9-3	29.07.2020	1069	1338
7219/12-1	19.01.2017	1653	2169



7219/12-1 A	28.02.2017	1907	2026
7219/12-2 S	07.11.2017	2000	2100
7219/12-3 S	17.01.2018	2651	2750
7220/2-1	10.10.2014	1113	1538
7220/4-1	25.02.2014	2513	2990
7220/5-1	24.03.2012	1695	1740
7220/5-3	26.10.2018	1692	1782
7220/7-1	24.01.2012	2130	2230
7220/7-2 S	16.12.2013	1190	1769
7220/7-3 S	05.05.2014	1858	2097
7220/8-1	02.05.2011	1628	2122
7220/10-1	16.10.2012	1931	2303
7221/12-1	25.05.2018	525	570
7222/11-1	04.11.2008	589	636
7222/11-2	27.02.2014	628	672
7223/5-1	14.01.2009	540	585
7224/2-1	04.03.2016	705	783
7224/6-1	21.08.2008	1064	1166
7224/7-1	19.06.1988	931	1028
7225/3-1	25.09.2011	770	804
7225/3-2	07.08.2013	790	807
7226/2-1	19.07.2008	950	1052
7226/11-1	11.04.1988	1234	1296
7227/10-1	10.11.2014	1675	1909
7228/1-1	26.04.2012	1034	1137
7228/2-1 S	20.12.1989	1404	1523
7228/7-1 A	02.02.2001	1494	1642
7228/7-1 B	10.02.2001	1494	1642
7228/7-1 S	08.01.2001	1480	1598
7228/9-1 S	07.05.1990	1140	1232
7229/11-1	15.12.1993	1323	1453
7317/9-1	07.10.2017	1079	1219
7321/4-1	01.10.2018	1369	1506
7321/7-1	22.10.1988	2039	2207
7321/8-1	03.09.1987	1467	1626
7321/8-2 S	01.07.2020	1665	1728
7321/9-1	28.11.1988	1424	1572
7322/6-1 S	28.05.2021	719	776
7324/2-1	18.06.2014	871	894
7324/3-1	21.11.2018	909	938
7324/6-1	31.07.2019	811	854



7324/7-1 S	03.11.2013	799	896
7324/7-2	06.07.2014	736	839
7324/7-3 S	14.04.2016	1144	1373
7324/8-1	17.09.2013	730	772
7324/8-2	16.05.2015	683	780
7324/8-3	17.09.2017	688	805
7324/9-1	07.08.2014	712	763
7324/10-1	19.08.1989	577	606
7325/1-1	21.07.2014	905	952
7325/4-1	03.08.2017	792	840
7335/3-1	15.06.2019	665	801
7435/12-1	01.09.2017	682	780

Wellbores with cores

Wellbore name	Wellbore completion date	Core length [m]
7120/1-2	28.03.1989	5
7122/6-1	11.11.1987	35
7122/6-3 S	10.10.2021	6
7122/7-1	05.10.2000	43
7122/7-4 S	25.11.2006	32
7122/7-6	04.01.2013	37
7122/10-1 S	28.09.2017	24
7124/3-1	20.10.1987	104
7125/4-1	07.03.2007	24
7131/4-1	13.05.2005	29
7219/9-1	25.02.1988	26
7219/12-1	19.01.2017	19
7220/7-2 S	16.12.2013	147
7226/2-1	19.07.2008	2
7226/11-1	11.04.1988	14
7321/8-1	03.09.1987	77
7324/6-1	31.07.2019	11
7324/7-2	06.07.2014	46
7324/8-3	17.09.2017	74
7324/9-1	07.08.2014	11
7325/4-1	03.08.2017	26