General information

Lithostrat. unit	MELKE FM
NPDID lithostrat. unit	105
Level	FORMATION
Lithostrat. unit, parent	VIKING GP

Level below

Lithostrat. unit

Description

Melke Formation

Name

The Norwegian word for milt or soft roe. This unit corresponds to the informal Engelvær Formation (H2-1).

Well type section

6506/12-4 (Statoil), coordinates 65°12'46.97"N, 06°43'30.37"E, from 3979.5 m to 3863 m (Fig 4.21). One core, 8 m recovery, including formational base.

Well reference section

6407/2-2 (Saga Petroleum), coordinates 64°59'39.64"N, 07°31'53.08"E, from 2461 to 2417 m (Fig 4.23). One core, 2 m recovery, including the base.

Thickness

116.5 m in the type well, 44 m in the reference well.

Lithology

Dominantly claystone, with siltstone and limestone interbeds and stringers of sandstone. The claystone is dark grey to dark brown and slightly calcareous.

Basal Stratotype

The base is defined by a sharply increasing gamma ray response at the contact between the underlying sandstones of the Garn Formation and the claystones of the Melke Formation.

Lateral extent and variation

The formation was deposited throughout the Haltenbanken-Trænabanken area and is locally absent on structural highs. The formation may attain thicknesses of several hundred metres in down-flank basinal situations. The formation also shows lateral variation in lithology, being more silty or having more frequent limestone beds in some areas. Deposition of the unit's mudstones commenced earlier on Trænabanken than elsewhere (Fig 4.6).
The unit subcrops beneath the Quaternary on the eastern part of the Trøndelag Platform as evidenced by several shallow cores (Bugge et al. 1984).

Age

Bajocian to Oxfordian.

Depositional environment

The Melke Formation was deposited in an open marine environment.

Correlation

The Melke Formation is comparable to the Heather Formation of the North Sea. The upper parts of the Melke Formation are time equivalent to the Fuglen Formation in the Hammerfest Basin.

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]
6306/10-1	17.12.1990	2692	2781
6307/1-1 S	28.12.2018	1872	2080
6406/2-1	09.04.1995	4381	4417
6406/2-1 R	07.01.1996	4379	4415
6406/2-2	27.03.1996	4389	4461
6406/2-2 R	03.03.2006	4383	4455
6406/2-4 S	05.04.1997	4406	4546
6406/2-4 SR	15.02.1999	4406	4612
6406/2-5 A	23.02.1998	5238	5305
6406/2-6	07.11.1998	4433	4480
6406/2-6 A	06.07.2000	4749	4826
6406/2-6 R	23.05.2000	4434	4481
6406/2-9 S	15.01.2019	4435	4511
6406/3-1	14.08.1984	3685	3782
6406/3-2	22.11.1986	3867	3930
6406/3-3	26.10.1986	3843	3939
6406/3-4	29.12.1987	3949	4025
6406/3-5	01.06.1988	3765	3817
6406/3-6	15.11.2002	3594	3650
6406/3-7	19.09.2006	3900	3985
6406/3-8	10.08.2010	3795	3841
6406/3-10	05.04.2020	4044	4065
6406/3-10 A	31.08.2021	4360	4399
6406/5-1	30.04.2002	4077	4205
6406/6-1	30.12.1985	4050	4204
6406/6-2	31.01.2007	4068	4164
6406/6-3	09.07.2013	3753	3802
6406/6-4 S	30.10.2015	3980	4006
6406/6-6 A	05.01.2019	4200	4510
6406/6-6 S	16.11.2018	4200	4501
6406/8-1	11.04.1988	4099	4266
6406/9-1	02.06.2005	4269	4415
6406/9-2	01.07.2007	4395	4637
6406/9-3	29.09.2013	4218	4491
6406/11-1 S	18.02.1991	3419	3522
6406/12-1 S	28.02.1991	3727	3965
6406/12-2	17.10.1995	3912	4367

6406/12-3 A	22.07.2014	4180	4356
6406/12-3 B	11.06.2014	4264	4315
6406/12-3 S	26.04.2014	3912	4001
6406/12-4 S	17.08.2015	3946	3951
6406/12-5 S	12.11.2015	3921	3963
6406/12-5 S	12.11.2015	4189	4297
6406/12-G-1 H	24.10.2020	3861	4235
6407/1-2	15.05.1983	3575	3659
6407/1-3	16.01.1984	3545	3600
6407/1-4	23.08.1996	3595	3675
6407/1-5 S	21.05.2012	3758	3811
6407/1-6 S	24.01.2013	3792	3914
6407/1-8 S	28.10.2020	3329	3437
6407/2-1	06.08.1982	2908	2939
6407/2-2	31.07.1983	2417	2461
6407/2-3	23.01.1987	2399	2427
6407/2-4	31.08.2009	2858	2892
6407/2-5 S	02.09.2009	2745	2750
6407/4-1	15.11.1985	3772	3890
6407/4-2	13.04.2011	3874	4008
6407/5-1	04.03.1988	4120	4205
6407/5-2 S	04.09.2011	3116	3141
6407/6-1	26.10.1984	1843	1856
6407/6-3	16.02.1987	2451	2461
6407/6-4	13.12.1990	2630	2651
6407/6-5	27.12.1999	2377	2381
6407/7-1 S	07.04.1986	2721	2759
6407/7-2	21.01.1987	2652	2668
6407/7-2 R	30.04.1990	2654	2670
6407/7-4	28.03.1989	2855	2860
6407/7-6	16.12.2000	3351	3407
6407/7-7 S	20.09.2007	3334	3346
6407/7-8	14.09.2008	4184	4330
6407/7-8 A	05.11.2008	4188	4372
6407/7-9 A	16.10.2016	3884	3960
6407/7-9 A	16.10.2016	4124	4148
6407/7-9 S	20.09.2016	3458	3537
6407/8-1	07.06.1992	4306	4650
6407/8-4 S	21.05.2008	2198	2212
6407/8-5 A	13.06.2009	2180	2253
6407/8-5 S	26.05.2009	2180	2253

6407/8-6	20.10.2013	2760	2789
6407/8-6 A	09.12.2013	2828	2884
6407/9-8	22.09.1992	1699	1730
6407/9-12	08.11.2019	1704	1725
6407/9-13	14.02.2022	2087	2136
6407/10-2	23.06.1990	2904	3327
6407/10-5	18.09.2015	2647	2660
6407/12-1	15.07.1999	1731	1763
6407/12-3	02.06.2010	1727	1781
6407/12-3	02.06.2010	1816	1828
6408/4-1	18.10.1988	1797	1825
6506/6-1	07.12.2000	4458	4961
6506/9-1	15.09.2009	4650	5212
6506/9-2 S	28.04.2010	4158	4332
6506/9-3	27.08.2013	4032	4237
6506/9-4 A	13.07.2018	4153	4290
6506/9-4 S	27.04.2018	4389	4520
6506/11-1	31.03.1988	3862	4136
6506/11-2	26.10.1991	4165	4229
6506/11-4 S	06.06.1996	4434	4512
6506/11-5 S	10.11.1996	4144	4213
6506/11-6	22.08.1998	4634	4651
6506/11-8	16.07.2006	4600	4623
6506/11-9 S	03.09.2012	4560	4716
6506/12-1	06.02.1985	3852	3974
6506/12-3	17.07.1985	3721	3822
6506/12-4	13.08.1985	3863	3980
6506/12-5	27.03.1986	3827	3948
6506/12-6	02.08.1986	4050	4234
6506/12-7	12.08.1987	4114	4396
6506/12-8	30.08.1988	3787	3875
6506/12-9 S	10.09.1993	4197	4379
6506/12-10	26.06.1995	4293	4545
6506/12-10 A	11.12.1995	4966	5246
6506/12-11 S	07.09.1996	4590	4731
6506/12-11 SR	01.02.1997	4590	4731
6506/12-12 A	01.09.2009	4457	4769
6506/12-12 S	06.08.2009	4457	4769
6507/2-1	29.09.1986	3615	3858
6507/2-2	16.03.1992	3380	3673
6507/2-5 S	14.09.2019	3725	4099

6507/3-1	26.10.1990	3122	3608
6507/3-3	25.03.1999	3093	3364
6507/3-3 A	06.05.1999	3158	3789
6507/3-3 A	06.05.1999	4147	4528
6507/3-3 B	16.06.1999	3158	3792
6507/3-4	30.04.2004	3185	3725
6507/3-5 S	08.05.2008	3570	3960
6507/3-7	22.07.2009	3363	3545
6507/3-8	15.12.2009	2585	2693
6507/3-10	16.08.2013	3002	3272
6507/3-11 S	15.08.2015	2124	2167
6507/3-12	28.02.2017	3004	3295
6507/4-2 S	19.05.2021	3823	4262
6507/5-1	03.05.1998	3194	3380
6507/5-2	23.09.1999	3250	3614
6507/5-4	15.04.2001	3371	3513
6507/5-4 A	03.06.2001	3491	3720
6507/5-5	14.02.2002	3372	3648
6507/5-7	24.06.2014	1307	1322
6507/5-9 A	15.10.2019	2068	2108
6507/5-9 S	27.09.2019	1977	2033
6507/6-2	16.07.1991	3276	3727
6507/6-3	24.11.2008	1371	1430
6507/7-1	01.12.1984	3785	4338
6507/7-4	13.01.1986	2399	2449
6507/7-5	06.03.1986	2316	2353
6507/7-8	02.08.1987	2384	2436
6507/7-10	29.10.1993	2471	2507
6507/7-11 S	14.08.1997	3348	3458
6507/7-14 S	26.09.2010	3790	4219
6507/7-15 S	02.05.2012	3866	4267
6507/8-1	09.12.1986	2233	2248
6507/8-3	20.09.1988	1353	1358
6507/8-5	16.03.1991	1790	1827
6507/8-6	09.10.1993	2033	2047
6507/8-6	09.10.1993	2075	2096
6507/8-7	31.01.2004	2750	2820
6507/8-10 S	23.04.2020	1988	2002
6507/10-1	31.10.1982	2835	2881
6507/10-2 S	10.02.2014	2617	2655
6507/11-1	10.12.1981	2351	2358

6507/11-2	30.05.1982	1908	1948
6507/11-3	15.08.1985	2373	2412
6507/11-4	22.06.1987	2535	2677
6507/11-5 S	28.10.1997	2445	2484
6507/11-6	08.07.2001	2983	3030
6507/11-8	03.07.2007	2391	2416
6507/11-9	18.04.2008	2543	2597
6507/11-10	16.02.2010	2051	2086
6507/11-11	01.07.2015	2713	2845
6507/12-1	26.10.1980	2052	2094
6507/12-2	24.11.1981	1878	1922
6507/12-3	13.09.1985	1939	1972
6508/1-1 A	13.09.1999	2738	2861
6508/1-1 S	29.08.1999	2147	2351
6508/5-1	24.05.1987	1650	1710
6510/2-1	10.10.1997	1319	1543
6510/2-1 R	21.12.1997	1319	1543
6607/12-2 S	25.10.2011	3272	3610
6607/12-3	26.12.2012	3855	3946
6607/12-4	13.10.2020	3416	3698
6608/10-1	29.05.1989	2937	3061
6608/10-2	29.01.1992	2365	2578
6608/10-3	11.03.1993	2413	2574
6608/10-3 R	17.08.1995	2413	2574
6608/10-4	06.03.1994	2372	2484
6608/10-4	06.03.1994	2533	2567
6608/10-5	06.08.1995	2598	2735
6608/10-6	14.05.2000	1794	1814
6608/10-6	14.05.2000	1850	1859
6608/10-6 R	02.12.2000	1794	1814
6608/10-6 R	02.12.2000	1850	1859
6608/10-6 R2	29.08.2001	1789	1809
6608/10-6 R2	29.08.2001	1845	1854
6608/10-7	23.05.2001	1902	1948
6608/10-8	12.04.2002	2224	2294
6608/10-8	12.04.2002	2341	2348
6608/10-8 A	26.04.2002	2345	2434
6608/10-8 A	26.04.2002	2520	2531
6608/10-9	18.02.2003	2055	2133
6608/10-10	07.08.2003	2376	2405
6608/10-11 S	15.08.2006	3153	3480

6608/10-12	21.12.2008	2677	2688
6608/10-12 A	25.01.2009	2777	2798
6608/10-14 S	01.04.2010	2381	2433
6608/10-15	12.09.2013	1830	1860
6608/10-16	13.06.2014	3534	3653
6608/10-18	17.08.2018	3446	3469
6608/11-2	24.11.2000	1614	1705
6608/11-3	15.12.2002	1444	1477
6608/11-6	06.08.2008	1500	1551
6608/11-8	21.06.2013	1655	1780
6608/11-9	05.08.2019	1545	1599
6609/10-2	03.10.2009	1869	1969
6609/11-1	07.07.1983	2226	2467
6610/3-1 R	11.12.1993	3614	3705
6610/3-1 R2	07.10.1996	3616	3707
6610/7-1	19.06.1983	2315	2606
6610/10-1	03.02.2013	2292	2360

Wellbores with cores

Wellbore name	Wellbore completion date	Core length [m]
6306/10-1	17.12.1990	11
6406/3-3	26.10.1986	1
6406/3-4	29.12.1987	5
6406/3-5	01.06.1988	2
6406/3-10 A	31.08.2021	5
6406/12-1 S	28.02.1991	2
6406/12-2	17.10.1995	7
6406/12-4 S	17.08.2015	5
6407/1-5 S	21.05.2012	26
6407/4-1	15.11.1985	1
6407/7-1 S	07.04.1986	5
6407/9-8	22.09.1992	7
6506/9-4 A	13.07.2018	1
6506/9-4 S	27.04.2018	0
6506/12-4	13.08.1985	8
6506/12-5	27.03.1986	37
6506/12-6	02.08.1986	50
6507/3-5 S	08.05.2008	1
6507/5-4	15.04.2001	1

6507/6-2	16.07.1991	0
6507/7-4	13.01.1986	14
6507/7-5	06.03.1986	34
6507/7-8	02.08.1987	31
6507/7-10	29.10.1993	4
6507/7-15 S	02.05.2012	2
6507/10-1	31.10.1982	1
6507/11-4	22.06.1987	28
6608/10-3	11.03.1993	14
6608/10-4	06.03.1994	7
6608/10-6	14.05.2000	9