



General information

Lithostrat. unit	SVARTE FM
NPDID lithostrat. unit	160
Level	FORMATION
Lithostrat. unit, parent	SHETLAND GP

Level below

Lithostrat. unit

Description

Svarte Formation

Name

Named after Halvdan Svarte, King of Ringerike, Norway about A.D. 850.

Well type section

Norwegian well [25/1-1](#) from 3995 m to 3807 m, coordinates N 59°53'17.40", E 02°04'42.70" ([Fig 5.33](#)). No cores.

Well reference sections

Norwegian well [35/3-2](#) from 3447 m to 3207 m, coordinates N 61°51'05.98", E 03°46'28.22" ([Fig 5.34](#)). No cores. Norwegian well [24/9-1](#) from 3992 m to 3804 m, coordinates N 59°16'09.48", E 01°47'31.18" ([Fig 5.35](#)). No cores.

Thickness

In the Viking Graben, the formation is 188 m thick in the type well [25/1-1](#), 240 m in well [35/3-2](#) and 188 m in well [24/9-1](#).

Lithology

The formation generally consists of mudstones interbedded with limestones. Sandstones occur in the Agat area. The content of limestones relative to mudstones is generally lower in the northern than in the southern part of the Viking Graben. The mudstones are medium to light grey, often calcareous, occasionally micaceous, glauconitic and pyritic. The limestones are mainly white to medium grey, argillaceous or sandy. The sandstones are clear to light grey and often cemented by calcite.

Basal stratotype

The lower boundary shows a general upward decrease in gamma-ray intensity and an increase in velocity from the [Cromer Knoll Group](#) into the Svarte Formation ([Fig 5.34](#)). This is due to a higher content of carbonate in the Svarte Formation.

Characteristics of the tipper boundary

The upper boundary is generally easily located, and is characterised by an increase in gamma-ray intensity and a distinct decrease in velocity from the Svarte Formation up into the [Blodøks Formation](#) ([Fig 5.33](#)). This is caused by a lower carbonate content in the [Blodøks Formation](#).

Distribution



The formation is present in the Viking Graben and north of the Tampen Spur towards the Marulk Basin. It is, however, lacking on structural highs such as the Lomre Terrace (e.g. Norwegian wells [35/8-1](#) and 35/8-2), (Nybakken and Backstrøm, in press).

Age

Cenomanian.

Depositional environment

Open marine.

Remarks

The Svarte Formation is time-equivalent with the [Hidra Formation](#) in the central North Sea and with the informal "formation A" of Deegan & Scull (1977) ([Fig 5.6](#)).

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]
15/3-1 S	06.07.1975	3698	3812
15/3-3	09.08.1979	3628	3743
15/3-4	30.03.1982	3390	3525
15/3-5	13.05.1984	3486	3623
15/3-7	01.09.2001	3668	3752
15/3-8	11.04.2006	3686	3794
15/3-9	13.08.2010	3625	3721
15/6-5	29.11.1977	3302	3337
15/6-6	09.06.1982	3354	3377
15/6-7	08.06.1993	3196	3219
15/6-8 S	05.04.1997	3075	3085
15/6-10	06.04.2009	3330	3404
15/6-12	09.02.2011	3526	3629
15/6-15	02.06.2019	3274	3301
15/6-16 S	28.06.2019	3601	3699
15/8-1	07.01.1982	3335	3436
15/9-1	30.05.1977	3140	3300
15/9-3	03.04.1979	3242	3285
15/9-10	07.11.1981	2924	2955
15/9-13	27.05.1982	2664	2674
15/9-14	27.06.1982	3075	3082
15/9-18	02.03.1984	2993	3013
15/9-19 A	09.11.1997	3651	3655



15/9-19 B	02.02.1998	3701	3713
15/9-19 SR2	25.07.1997	4171	4179
15/9-19 SR	29.04.1993	4168	4176
15/9-21 S	23.05.1998	4208	4272
15/12-1	06.09.1975	2961	2992
15/12-2	27.02.1976	2542	2650
15/12-10 S	04.11.1996	3107	3204
15/12-11 S	19.05.1997	3146	3221
16/2-6	20.09.2010	1777	1805
16/2-7	01.09.2011	1762	1801
16/2-7 A	29.09.2011	1830	1870
16/2-8	19.08.2011	1767	1787
16/2-10	28.10.2011	1780	1809
16/2-11	29.03.2012	1764	1783
16/2-11 A	04.05.2012	2011	2050
16/2-12	06.09.2012	1803	1817
16/2-13 A	29.09.2012	2393	2431
16/2-13 S	30.08.2012	1761	1799
16/2-15	13.01.2013	1769	1797
16/2-16	12.12.2012	1791	1824
16/2-16 A	07.02.2013	2144	2198
16/2-17 B	16.06.2013	2038	2069
16/2-17 S	20.05.2013	1771	1797
16/2-18 S	08.08.2013	1810	1820
16/2-19	03.04.2014	1823	1838
16/2-19 A	03.05.2014	2144	2168
16/2-21	07.06.2013	1769	1806
16/2-U-18	28.11.2016	1817	1852
16/2-U-19	12.12.2016	1821	1836
16/3-2	08.03.1976	1682	1785
16/3-4	28.06.2011	1741	1783
16/3-4 A	18.07.2011	1865	1915
16/3-5	07.03.2013	1729	1769
16/3-6	16.07.2013	1752	1789
16/3-7	08.11.2013	1736	1776
16/3-8 A	01.04.2014	1795	1840
16/3-8 S	16.03.2014	1795	1834
16/3-U-1	24.12.2016	1739	1782
16/3-U-1 A	10.01.2017	1901	1971
16/3-U-1 B	15.01.2017	1901	1971
16/5-1	08.02.1971	1848	1859



16/5-2 S	28.01.2012	1785	1816
16/5-3	20.03.2013	1776	1807
16/5-4	28.09.2013	1784	1822
16/5-7	12.07.2019	1826	1841
16/6-1	19.01.1968	1734	1771
16/7-8 S	19.01.2003	2778	2787
16/10-1	14.07.1986	2691	2750
16/10-2	01.08.1991	2716	2778
16/10-3	01.12.1996	2350	2361
17/8-1	23.10.2021	1485	1540
24/6-1	25.08.1985	3932	4152
24/9-1	03.07.1976	3804	3992
24/12-1	09.04.1978	3681	3848
24/12-1 R	14.08.1978	3681	3848
24/12-2	21.01.1982	3654	3840
24/12-6 S	20.12.2010	3917	4148
25/1-1	22.07.1971	3807	3995
25/2-5	04.08.1976	3259	3292
25/2-12	12.11.1988	3572	3606
25/2-12 A	06.04.1989	3630	3708
25/2-13	25.01.1990	3286	3318
25/2-15	13.01.1993	3365	3465
25/2-15 R	01.03.1993	3369	3469
25/2-15 R2	11.04.1993	3369	3469
25/2-16 S	13.09.2001	3640	3693
25/2-18 A	19.10.2016	3490	3524
25/2-18 B	30.10.2016	3665	3700
25/2-18 C	17.11.2016	3517	3559
25/2-18 S	11.09.2016	3201	3225
25/2-19 A	08.10.2017	3363	3432
25/2-23 S	01.04.2022	4050	4253
25/4-5	26.03.1981	3379	3479
25/4-6 S	24.08.1991	3485	3532
25/4-6 SR	14.09.2003	3494	3541
25/7-2	18.07.1990	3295	3399
25/7-2	18.07.1990	3447	3714
25/7-7	09.11.2019	3556	3787
25/8-7	12.08.1995	2209	2267
25/8-9	28.01.1997	2323	2355
25/9-1	22.04.1995	2050	2118
25/9-2 S	03.08.2003	2067	2110



25/9-3	20.09.2009	2027	2062
25/9-4	27.02.2014	2137	2197
25/10-6 S	22.03.1996	3639	3885
25/10-11	10.08.2011	3470	3627
25/10-17 S	10.02.2023	3285	3335
25/11-17	22.03.1993	1882	1921
29/3-1	15.09.1986	3440	3462
29/6-1	09.05.1982	3777	3807
29/9-1	24.02.1984	3785	3906
30/3-7 A	29.01.1998	5864	5895
30/3-9	01.07.2000	3469	3619
30/3-10 S	29.04.2009	3467	3602
30/3-11 S	09.09.2022	3691	3851
30/4-1	14.05.1979	3770	3926
30/4-3 S	09.10.2016	3994	4079
30/5-1	29.07.1972	3323	3576
30/5-2	21.12.1996	3292	3468
30/5-3 A	30.05.2009	4404	4560
30/5-3 S	12.04.2009	3380	3396
30/7-3	25.10.1976	3665	3838
30/7-7	01.07.1979	3655	3870
30/8-1 S	01.03.1995	3243	3361
30/8-1 SR	01.03.1996	3243	3361
30/8-3	05.01.1998	3141	3189
30/9-8 R	25.09.1989	2723	2725
30/9-20 S	11.02.2002	2629	2703
30/9-25	20.09.2013	2688	2768
30/9-28 S	26.02.2016	2807	2870
30/10-5	01.05.1975	3805	3972
30/10-6	09.11.1992	3803	3931
30/11-4	24.07.1984	3193	3225
30/11-8 A	03.07.2011	3557	3671
30/11-8 S	20.05.2011	3433	3474
30/11-10	26.12.2014	3304	3378
30/11-10 A	13.02.2015	3539	3610
30/12-1	07.03.1994	2610	2622
31/1-2 A	29.01.2021	2901	2929
31/1-2 S	12.01.2021	2680	2692
31/3-4	05.01.2014	1592	1617
31/5-7	06.03.2020	1741	1778
31/8-1	24.07.2011	1540	1599



31/11-1 S	28.06.2021	1628	1673
32/4-1	04.12.1996	956	1081
32/4-2	21.09.2019	702	735
32/4-3 S	26.10.2019	720	744
33/5-2	18.11.1981	3359	3750
33/6-3 S	24.07.2012	3949	3975
33/9-16	20.01.1993	2649	2654
33/9-16	20.01.1993	2662	2665
34/2-2 R	08.05.1981	3147	3203
34/2-3	13.08.1981	2834	3105
34/2-4	11.06.1985	3287	3300
34/4-11	10.01.2010	3685	3819
34/4-13 S	02.01.2011	4171	4352
34/4-14 S	19.05.2015	4072	4157
34/6-3 A	01.11.2014	3501	3534
34/6-3 S	24.09.2014	3643	3759
34/6-4	02.03.2016	3759	3786
34/7-15 S	03.09.1990	2957	3165
34/8-7	16.07.1992	3826	4034
34/8-7 R	10.02.1993	3826	4034
34/8-10 S	09.12.1993	2850	2871
34/9-1 S	19.06.2022	3975	4225
34/10-20	23.04.1984	3477	3650
34/10-23	13.10.1985	3565	3690
34/10-42 S	19.09.1999	3656	3790
34/10-54 A	18.04.2014	3563	3825
34/10-54 S	11.02.2014	3459	3678
34/11-1	25.10.1994	3503	3750
34/11-2 S	17.05.1996	3342	3559
34/11-4	14.04.1999	3512	3697
34/11-5 S	03.07.2006	5613	6115
34/11-6 S	26.01.2017	5978	6208
34/12-1	30.04.2008	3748	3922
35/3-1	26.10.1976	3387	3725
35/3-2	26.10.1980	3207	3447
35/3-4	06.06.1981	3088	3345
35/3-5	31.03.1982	2912	3181
35/3-6	02.04.2002	2786	2955
35/3-7 S	01.10.2009	3237	3305
35/4-1	24.05.1997	3510	3675
35/4-3	17.05.2022	3760	3998



35/6-2 S	04.04.2009	2657	2946
35/7-1 S	15.08.2011	3651	3726
35/8-1	24.01.1981	3172	3180
35/8-3	15.10.1988	3127	3140
35/8-4	10.08.1999	3206	3213
35/8-5 S	20.07.2003	3087	3104
35/8-6 A	14.05.2016	3391	3412
35/8-6 S	22.04.2016	3500	3521
35/9-1	07.05.1989	1940	1967
35/9-1 R	27.07.1989	1940	1967
35/9-3	11.11.1997	2380	2598
35/9-5	07.02.2010	2598	2713
35/9-6 S	07.12.2010	2991	3030
35/9-8	11.04.2013	2633	2705
35/9-9	18.11.2013	2366	2478
35/9-10 S	26.11.2013	2991	3040
35/9-11 A	21.05.2014	2970	2981
35/9-11 S	15.04.2014	2970	2981
35/9-12 S	26.12.2014	2610	2794
35/9-13	20.01.2018	2776	3168
35/9-14	02.03.2018	2774	3189
35/9-14 A	29.03.2018	2968	3384
35/9-16 A	25.04.2022	2581	2794
35/9-16 S	06.04.2022	2435	2573
35/10-1	16.01.1992	3058	3066
35/10-4 A	12.11.2018	3404	3456
35/10-4 S	10.10.2018	3135	3163
35/10-7 A	27.12.2021	2862	2916
35/10-7 S	11.12.2021	2763	2830
35/11-8 S	11.05.1996	2598	2678
35/11-9	01.05.1997	2303	2381
35/11-11	22.05.1998	2343	2420
35/11-12	14.05.2000	2719	2745
35/11-13	28.05.2005	2646	2671
35/11-14 S	07.12.2006	2646	2675
35/11-15 S	28.06.2007	2506	2558
35/11-16 S	18.03.2014	2916	2923
35/11-20 A	07.08.2016	3295	3323
35/11-20 B	15.09.2016	3720	3745
35/11-20 S	19.06.2016	2898	2914
35/11-22 S	02.02.2019	2663	2704



35/11-24 A	28.08.2020	2845	2890
35/11-24 B	16.09.2020	2876	2903
35/11-24 S	09.08.2020	2661	2680
35/11-25 A	04.06.2021	2557	2633
35/11-25 S	14.05.2021	2482	2556
35/12-1	24.04.1992	1924	2180
35/12-3 S	16.02.2011	1930	1980
35/12-5 S	19.06.2015	2618	2653
35/12-6 A	30.06.2018	2680	2760
35/12-6 S	14.06.2018	2617	2719
36/1-2	27.10.1975	2597	2815
36/1-3	25.03.2019	2295	2508
36/1-4 S	30.01.2022	2583	2766
36/4-1	01.10.1996	2271	2305
36/7-1	07.05.1996	1976	2020
36/7-3	06.01.2002	2290	2515
36/7-4	26.09.2016	2220	2376
6204/10-1	23.11.1995	2335	2465
6204/11-1	14.11.1994	2422	2602
6204/11-2	28.12.1997	2402	2659
6205/3-1	11.02.1990	2891	3133
6205/3-1 R	30.11.1990	2891	3133

Wellbores with cores

Wellbore name	Wellbore completion date	Core length [m]
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