

**Datashare Table 1. Short Core Description\***

Well Number and Field	Investigated Core Interval (Measured Depth)	Short Description
1 Field A	5750–5850 ft (1753–1783 m) (deviated well)	all Frigg Formation: predominantly injection breccias and injected sandstones interbedded with mudstones; little cement
2 Field A	1505–1565 m (4938–5135 ft) (vertical well)	all Frigg Formation: Injection breccias and injected sandstones hosted by mudstones; thick (depositional?) sandstone at top; moderate carbonate cementation in injection breccias and injected sandstones
3 Field A	1500–1600 m (4921–5249 ft) (vertical well)	2- up to 10-m (6.6- up to 33-ft)-thick, uncemented Balder and Frigg sandstones overlain by Frigg interval containing injection breccias and injected sandstones hosted by mudstones; moderate carbonate cementation in injection breccias and injected sandstones
4 Field A	5795–5920 ft (1766–1804 m) (deviated well)	all Frigg Formation: few thin (up to meter-scale) intervals of injection breccias and injected sandstones in predominant mudstones; pervasive carbonate cementation in injection breccias and injected sandstones
5 Field B	5350–5840 ft (1631–1780 m) (vertical well)	some thick (meter to tens of meter scale) uncemented injected sandstones in the Balder Formation overlain by a Frigg interval containing predominant mudstones and few thin (centimeter-scale), poorly cemented injected sandstones
6 Field C	8408–8775 ft (2563–2675 m) (deviated well)	all Balder Formation: generally poorly, but variably cemented, thin (centimeter- to tens-of-centimeter-scale) injected sandstones hosted by mudstones
7 Field C	1642–1710 m (5387–5610 ft) (vertical well)	all Balder Formation: A 20-m (66-ft)-thick uncemented, depositional sandstone overlain by well-cemented interval of interbedded mudstones, injection breccias, and depositional sandstones
8 Field C	1849–1977 m (6066–6486 ft) (deviated well)	Forties and Sele formations: predominantly mudstones with few levels containing thin, well-cemented injected sandstones
9 Field C	1624–1765 m (5328–5791 ft) (vertical well)	Lista, Forties, and Sele formations: interbedded injection breccias, thin injected sandstones and mudstones
10 Field D	2000–2053 m (6562–6736 ft) (vertical well)	well-cemented, at least 3-m (10-ft)-thick depositional Hermod Member (Sele Formation) sandstone overlain by Sele mudstones containing few, well-cemented injected sandstones; uncemented, 5-m (16-ft)-thick depositional Balder sandstone overlain by mudstones and thin, well-cemented, injected sandstones
11 Field D	2022–2047 m (6634–6716 ft) (vertical well)	all Balder Formation: 10-m (33-ft)-thick, uncemented sandstone overlain by few thick (meter-scale) uncemented injected sandstones and few thin (centimeter-scale), well-cemented, depositional, and injected sandstones hosted by mudstone

\*See Figure 2 for location of wells. Depths are reported in measured depth both in feet and meters for easy comparison. The first convention used is the scale adopted for individual cores (because some companies use feet as the standard, whereas others use meters).

**Datashare Table 2.** Short Description of Thin-Sectioned Samples\*

Sample Name	Well	Measured Depth	Description
A_1_1	1	5794.3 ft (1766 m)	partly cemented sandstone dike with laminations
A_1_2	1	5805 ft (1769 m)	partly cemented injection breccia
A_1_3	1	5810 ft (1770 m)	partly cemented injection breccia
A_1_4	1	5820 ft (1774 m)	partly cemented injection breccia
A_1_5	1	5824 ft (1775.1 m)	partly cemented injection breccia
A_1_6	1	5826 ft (1775.7 m)	partly cemented injection breccia
A_2_1	2	1550 m (5085 ft)	well-cemented injected sandstone
A_2_2	2	1557 m (5108 ft)	partly cemented injected sandstone
A_3_1	3	1518.20 m (4980.9 ft)	well-cemented injected sandstone
A_3_2	3	1523.90 m (4999.6 ft)	well-cemented injected sandstone
A_3_3	3	1526.20 m (5007.2 ft)	well-cemented injected sandstone
A_3_4	3	1580 m (5183 ft)	uncemented depositional (source) sandstone
A_3_5	3	1585 m (5200 ft)	uncemented depositional (source) sandstone
A_4_1	4	?	poorly cemented injected sandstone
A_4_2	4	?	partly cemented injected sandstone
A_4_3	4	?	partly cemented injected sandstone
A_4_4	4	5797 ft (1766 m)	poorly cemented injection breccia
A_4_5	4	5811 ft (1771 m)	partly cemented injection breccia
A_4_6	4	5903.35 ft (1799.3 m)	well-cemented injection breccia
A_4_7	4	5905.50 ft (1800.0 m)	well-cemented injected sandstone
B_1	5	5355 ft (1632 m)	poorly cemented injected sandstone
B_2	5	5465 ft (1665.7 m)	poorly cemented injected sandstone
B_3	5	5579 ft (1700.5 m)	poorly cemented injected sandstone
B_4	5	5604 ft (1708 m)	poorly cemented depositional sandstone
B_5	5	5609 ft (1709.6 m)	poorly cemented depositional sandstone
B_6	5	5610 ft (1709.9 m)	poorly cemented depositional sandstone
B_7	5	5622 ft (1713 m)	poorly cemented depositional sandstone
B_8	5	5738 ft (1748.9 m)	poorly cemented injected sandstone
B_9	5	5740 ft (1749.5 m)	poorly cemented injected sandstone
C_6_1	6	8408 ft (2562.7 m)	poorly cemented injected sandstone
C_6_2	6	8416 ft (2565.1 m)	poorly cemented injected sandstone
C_6_3	6	8773 ft (2674.0 m)	poorly cemented injected sandstone
C_7_1	7	1673.80 m (5491.4 ft)	well-cemented depositional sandstone
C_7_2	7	1673.90 m (5491.7 ft)	well-cemented depositional sandstone
C_8_1	8	1852 m (6076 ft)	well-cemented injected sandstone
C_8_2	8	1912 m (6272 ft)	well-cemented injected sandstone
C_8_3	8	1973.80 m (6475.7 ft)	partly cemented injection breccia
C_8_4	8	1976.20 m (6483.5 ft)	partly cemented injection breccia
C_9_1	9	1630 m (5347.7 ft)	well-cemented injected sandstone
C_9_2	9	1688 m (5538 ft)	partly cemented injected sandstone
C_9_3	9	1694 m (5557 ft)	partly cemented injected sandstone
C_9_4	9	1696 m (5564 ft)	well-cemented sandstone dike
C_9_5	9	1731.30 m (5680.1 ft)	uncemented depositional sandstone
C_9_6	9	1763.70 m (5786.4 ft)	well-cemented sandstone dike
C_9_7	9	1764.50 m (5789.0 ft)	well-cemented sandstone dike
D_10_1	10	2003.70 m (6573.8 ft)	pervasively cemented injected sandstone
D_10_2	10	2015.00 m (6610.8 ft)	uncemented depositional sandstone
D_10_3	10	2019.80 m (6626.6 ft)	partly cemented injected sandstone

D_10_4	10	2028.20 m (6654.1 ft)	pervasively cemented injected sandstone
D_10_5	10	2049.70 m (6724.7 ft)	pervasively cemented depositional sandstone
D_10_6	10	2052.50 m (6733.9 ft)	pervasively cemented depositional sandstone
D_11_1	11	2032.00 m (6666.6 ft)	pervasively cemented injected(?) sandstone
D_11_2	11	2033.50 m (6671.5 ft)	partly cemented injected sandstone

\*Measured depth is reported in the convention used for the cores (to allow easy comparison with the core).

**Datashare Table 3.** Results of Carbon and Oxygen Stable Isotope Analyses

Source	Sample	Well	Type of sand	Host	$\delta^{13}\text{C}$ (‰ V-PDB)	$\delta^{18}\text{O}$ (‰ V-PDB)
Watson et al., 1995	field C	unknown	depositional	calcite	-29.78	-8.89
Watson et al., 1995	field C	unknown	depositional	calcite	-31.01	-8.92
Watson et al., 1995	field C	unknown	depositional	calcite	-29.35	-8.25
Watson et al., 1995	field C	unknown	depositional	calcite	-26.9	-9.56
Watson et al., 1995	field C	unknown	depositional	calcite	-25.1	-10.66
Watson et al., 1995	field C	unknown	depositional	calcite	-27.48	-10.04
Watson et al., 1995	field C	unknown	depositional	calcite	-26.67	-10.69
Watson et al., 1995	field C	unknown	depositional	calcite	-21.76	-10.52
Watson et al., 1995	field C	unknown	depositional	Fe-calcite	3.14	-8.92
Watson et al., 1995	field C	unknown	depositional	Fe-calcite	4.42	-10.19
Watson et al., 1995	field C	unknown	injected	Fe-calcite	-6.08	-10.47
Watson et al., 1995	field C	unknown	injected	Fe-calcite	1.99	-10.34
Watson et al., 1995	field C	unknown	depositional	Fe-calcite	11.42	-10.35
Watson et al., 1995	field C	unknown	depositional	calcite	-26.32	-11.55
Watson et al., 1995	field C	unknown	depositional	calcite	-24.82	-10.22
Watson et al., 1995	field C	unknown	depositional	calcite	-17.61	-10.62
Watson et al., 1995	field C	unknown	depositional	ankerite	9.62	-9.42
Watson et al., 1995	field C	unknown	depositional	Fe-calcite	12.37	-10.53
Watson et al., 1995	field C	unknown	depositional	Fe-calcite	11.51	-10.47
Watson et al., 1995	field C	unknown	depositional	Fe-calcite	12.18	-10.52
Watson et al., 1995	field C	unknown	depositional	Fe-calcite	-4.9	-11.66
Watson et al., 1995	field C	unknown	depositional	Fe-calcite	-4.18	-10.33
Watson et al., 1995	field C	unknown	depositional	calcite	-28.05	-10.78
Watson et al., 1995	field C	unknown	depositional	calcite	-25.21	-11.19
Watson et al., 1995	field C	unknown	depositional	Fe-calcite	12.42	-9.73
Watson et al., 1995	field C	unknown	depositional	Fe-calcite	12.97	-10.56
Watson et al., 1995	field C	unknown	depositional	calcite	-23.49	-10.87
Watson et al., 1995	field C	unknown	depositional	ankerite	9.62	-11.02
Watson et al., 1995	field C	unknown	depositional	calcite	-26.41	-11.38
Watson et al., 1995	field C	unknown	depositional	ankerite	10.63	-11.55
Watson et al., 1995	field C	unknown	depositional	Fe-calcite	-2.83	-10.3
Watson et al., 1995	field C	unknown	depositional	ankerite	11.98	-10.21
Watson et al., 1995	field C	unknown	depositional	ankerite	12.14	-9.73
Watson et al., 1995	field C	unknown	depositional	calcite	-5.84	-11.95
Watson et al., 1995	field C	unknown	depositional	ankerite	12.36	-9.73
Watson et al., 1995	field C	unknown	depositional	ankerite	11.54	-10.03
Watson et al., 1995	field C	unknown	depositional	ankerite	10.21	-9.95
Watson et al., 1995	field C	unknown	depositional	ankerite	6.09	-12.62
Jonk, 2003	C_9_7	9	injected	calcite	-5.36	-10.09

Jonk, 2003	C_8_1	8	injected	calcite	-24.64	-9.00
Jonk, 2003	C_8_1	8	injected	calcite	-25.59	-9.56
Jonk, 2003	C_8_1	8	injected	calcite	-25.76	-9.76
Jonk, 2003	C_9_6	9	injected	calcite	-6.29	-11.15
Jonk, 2003	C_9_4	9	injected	calcite	-25.05	-8.93
Jonk, 2003	C_9_4	9	injected	calcite	-25.35	-9.19
Jonk, 2003	C_8_3	8	injected	ankerite	-0.42	-10.20
Jonk, 2003	C_8_3	8	injected	ankerite	0.81	-10.00
Jonk, 2003	C_9_3	9	injected	ankerite	1.09	-10.34
Jonk, 2003	C_9_3	9	injected	ankerite	0.56	-9.98
Jonk, 2003	C_8_2	8	injected	calcite	-22.02	-10.21
Jonk, 2003	C_8_2	8	injected	calcite	-26.91	-10.34
Jonk, 2003	A_3_2	3	injected	calcite	-10.46	-5.32
Jonk, 2003	A_3_2	3	injected	calcite	-9.84	-5.67
Jonk, 2003	A_4_7	4	injected	calcite	-5.20	-4.35
Jonk, 2003	A_4_6	4	injected	ankerite	7.58	-1.49
Jonk, 2003	A_4_6	4	injected	ankerite	5.66	-0.73
Jonk, 2003	A_4_5	4	injected	ankerite	10.69	-2.03
Jonk, 2003	A_4_5	4	injected	ankerite	10.61	-2.70
Jonk, 2003	A_4_5	4	injected	ankerite	11.65	-3.98
Jonk, 2003	A_2_2	2	injected	calcite	-31.37	-7.98
Jonk, 2003	A_2_2	2	injected	calcite	-30.66	-7.10
Jonk, 2003	A_4_7	4	injected	calcite	-19.02	-4.72
Jonk, 2003	A_4_7	4	injected	calcite	-19.66	-3.36
Jonk, 2003	A_4_1	4	injected	ankerite	13.07	-1.92
Jonk, 2003	A_4_1	4	injected	ankerite	12.71	-2.26
Jonk, 2003	A_3_2	3	injected	calcite	-10.22	-5.04
Jonk, 2003	A_3_1	3	injected	calcite	-31.06	-6.66
Jonk, 2003	A_3_1	3	injected	calcite	-30.73	-6.33
Jonk, 2003	A_3_3	3	injected	calcite	-19.46	-5.09
Jonk, 2003	A_1_1	1	injected	calcite	-28.04	-6.09
Jonk, 2003	A_1_1	1	injected	calcite	-38.32	-7.06
Jonk, 2003	A_4_2	4	injected	calcite	-30.83	-5.82
Jonk, 2003	A_4_3	4	injected	calcite	-13.92	-6.70
Jonk, 2003	A_4_3	4	injected	calcite	-17.54	-6.68
Jonk, 2003	D_10_6	10	depositional	Fe-calcite	-2.57	-11.10
Jonk, 2003	D_10_3	10	injected	calcite	-30.13	-9.20
Jonk, 2003	D_10_1	10	injected	calcite	-35.31	-7.90
Jonk, 2003	D_10_1	10	injected	calcite	-35.71	-7.77
Jonk, 2003	D_10_3	10	injected	calcite	-29.56	-8.27
Jonk, 2003	D_10_5	10	depositional	Fe-calcite	2.17	-9.08
Jonk, 2003	D_10_5	10	depositional	Fe-calcite	2.85	-9.33
Jonk, 2003	D_10_6	10	depositional	Fe-calcite	-2.00	-9.89
Mazzini et al., 2003	B_1	5	injected	calcite	-22.16	-2.03
Mazzini et al., 2003	B_1	5	injected	calcite	-22.74	-2.45
Mazzini et al., 2003	B_2	5	injected	calcite	-24.99	-1.16
Mazzini et al., 2003	B_2	5	injected	calcite	-25.21	-1.78
Mazzini et al., 2003	B_3	5	injected	calcite	-26.80	-1.34
Mazzini et al., 2003	B_3	5	injected	calcite	-26.67	-1.42
Mazzini et al., 2003	B_5	5	depositional	calcite	-3.34	-2.39

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