## General information

| | |
|---|---|
| Wellbore name | 6407/10-5 |
| Type | EXPLORATION |
| Purpose | WILDCAT |
| Status | P&A |
| Press release | link to press release |
| Factmaps in new window | link to map |
| Main area | NORWEGIAN SEA |
| Well name | 6407/10-5 |
| Seismic location | DN0902 inline 2115 & xline 3333 |
| Production licence | 793 |
| Drilling operator | A/S Norske Shell |
| Drill permit | 1592-L |
| Drilling facility | TRANSOCEAN BARENTS |
| Drilling days | 25 |
| Entered date | 25.08.2015 |
| Completed date | 18.09.2015 |
| Release date | 18.09.2017 |
| Publication date | 18.09.2017 |
| Purpose - planned | WILDCAT |
| Reentry | NO |
| Content | DRY |
| Discovery wellbore | NO |
| Kelly bushing elevation [m] | 40.0 |
| Water depth [m] | 336.0 |
| Total depth (MD) [m RKB] | 2890.0 |
| Final vertical depth (TVD) [m RKB] | 2889.0 |
| Maximum inclination [°] | 3.9 |
| Oldest penetrated age | LATE JURASSIC |
| Oldest penetrated formation | INTRA MELKE FM SS |
| Geodetic datum | ED50 |
| NS degrees | 64° 12' 41.65'' N |
| EW degrees | 7° 16' 34.29'' E |
| NS UTM [m] | 7121899.98 |
| EW UTM [m] | 416326.48 |
| UTM zone | 32 |
| NPDID wellbore | 7763 |

## Wellbore history

### General

Well 6407/10-5 was drilled to test the Portrush prospect, southeast of the Njord Field, in the southern part of the Halten Terrace in the Norwegian Sea. The primary objective was to prove oil in the Late Jurassic sequence (Rogn Formation) in a hanging wall trap downthrown of the Vingleia Fault Complex. The secondary objective was to evaluate potential intra-Melke Formation reservoirs.

### Operations and results

Wildcat well 6407/10-5 was spudded with the semi-submersible installation Transocean Barents on 25 August 2015 and drilled to TD at 2890 m in the Late Jurassic Intra Melke Formation Sandstone. A 9 7/8" shallow gas pilot hole was drilled to 452 m. No shallow gas was seen. No significant problem was encountered in the operations. The well was drilled with Seawater and bentonite spud mud down to 452 m, with Seawater/KCl mud from 452 m to 1104 m and with Innovert NS Oil based mud from 1104 m to TD.

A water bearing intra-Lange Formation was penetrated at 2460 m. Top Spekk Formation was encountered at 2518 m. Geochemical analyses show that Spekk Formation is immature and comparatively lean in well position with TOC not more than 2.5 %wt. Top Melke Formation was penetrated at 2646. The Melke Formation contain two sandstones in the intervals 2660 to 2694 m and 2789 m to TD. The two are separated by red-brown coloured claystone. MWD logs and MDT pressure points confirm that all Jurassic reservoirs are water bearing. No definitive hydrocarbon fluorescence was noted throughout the entire well that was distinguishable from oil based mud and mineral fluorescence.

No cores were cut. The MDT was run on wireline for pressure points, but no fluid sample was taken. The aquifer pressure trend in the Rogn and upper part of the Melke shows 56 bar overpressure to the hydrostatic. Pressure points in the lower part of the Melke are approximately two bar above the Rogn/upper Melke water gradient

The well was permanently abandoned on 18 September 2015 as a dry well.

### Testing

No drill stem test was performed.

## Cuttings at the Norwegian Offshore Directorate

| Cutting sample, top depth [m] | Cutting samples, bottom depth [m] |
|---|---|
| 1110.00 | 2890.90 |

| Cuttings available for sampling? | YES |
|---|---|

## Palynological slides at the Norwegian Offshore Directorate

| Sample depth | Depth unit | Sample type | Laboratory |
|---|---|---|---|
| 1110.0 | [m] | DC | PETROSTR |
| 1130.0 | [m] | DC | PETROS |
| 1150.0 | [m] | DC | PETROS |
| 1170.0 | [m] | DC | PETROS |
| 1190.0 | [m] | DC | PETROS |
| 1210.0 | [m] | DC | PETROS |
| 1230.0 | [m] | DC | PETROS |
| 1250.0 | [m] | DC | PETROS |
| 1270.0 | [m] | DC | PETROS |
| 1290.0 | [m] | DC | PETROS |
| 1310.0 | [m] | DC | PETROS |
| 1330.0 | [m] | DC | PETROS |
| 1350.0 | [m] | DC | PETROS |
| 1370.0 | [m] | DC | PETROS |
| 1390.0 | [m] | DC | PETROS |
| 1410.0 | [m] | DC | PETROS |
| 1430.0 | [m] | DC | PETROS |
| 1460.0 | [m] | DC | PETROS |
| 1480.0 | [m] | DC | PETROS |
| 1500.0 | [m] | DC | PETROS |
| 1520.0 | [m] | DC | PETROS |
| 1530.0 | [m] | DC | PETROS |
| 1540.0 | [m] | DC | PETROS |
| 1550.0 | [m] | DC | PETROS |
| 1560.0 | [m] | DC | PETROS |
| 1570.0 | [m] | DC | PETROS |
| 1590.0 | [m] | DC | PETROS |
| 1610.0 | [m] | DC | PETROS |
| 1630.0 | [m] | DC | PETROS |
| 1650.0 | [m] | DC | PETROS |
| 1670.0 | [m] | DC | PETROS |
| 1690.0 | [m] | DC | PETROS |
| 1700.0 | [m] | DC | PETROS |
| 1710.0 | [m] | DC | PETROS |
| 1720.0 | [m] | DC | PETROS |
| 1730.0 | [m] | DC | PETROS |
| 1740.0 | [m] | DC | PETROS |
| 1750.0 | [m] | DC | PETROS |
| 1760.0 | [m] | DC | PETROS |

| | | | |
|---|---|---|---|
| 1770.0 | [m] | DC | PETROS |
| 1780.0 | [m] | DC | PETROS |
| 1790.0 | [m] | DC | PETROS |
| 1800.0 | [m] | DC | PETROS |
| 1810.0 | [m] | DC | PETROS |
| 1820.0 | [m] | DC | PETROS |
| 1830.0 | [m] | DC | PETROS |
| 1840.0 | [m] | DC | PETROS |
| 1850.0 | [m] | DC | PETROS |
| 1870.0 | [m] | DC | PETROS |
| 1890.0 | [m] | DC | PETROS |
| 1910.0 | [m] | DC | PETROS |
| 1930.0 | [m] | DC | PETROS |
| 1950.0 | [m] | DC | PETROS |
| 1970.0 | [m] | DC | PETROS |
| 1990.0 | [m] | DC | PETROS |
| 2010.0 | [m] | DC | PETROS |
| 2030.0 | [m] | DC | PETROS |
| 2050.0 | [m] | DC | PETROS |
| 2070.0 | [m] | DC | PETROS |
| 2080.0 | [m] | DC | PETROS |
| 2090.0 | [m] | DC | PETROS |
| 2100.0 | [m] | DC | PETROS |
| 2110.0 | [m] | DC | PETROS |
| 2120.0 | [m] | DC | PETROS |
| 2130.0 | [m] | DC | PETROS |
| 2140.0 | [m] | DC | PETROS |
| 2150.0 | [m] | DC | PETROS |
| 2154.0 | [m] | DC | PETROS |
| 2160.0 | [m] | DC | PETROS |
| 2180.0 | [m] | DC | PETROS |
| 2190.0 | [m] | DC | PETROS |
| 2210.0 | [m] | DC | PETROS |
| 2230.0 | [m] | DC | PETROS |
| 2240.0 | [m] | DC | PETROS |
| 2250.0 | [m] | DC | PETROS |
| 2260.0 | [m] | DC | PETROS |
| 2270.0 | [m] | DC | PETROS |
| 2280.0 | [m] | DC | PETROS |
| 2290.0 | [m] | DC | PETROS |

| | | | |
|---|---|---|---|
| 2310.0 | [m] | DC | PETROS |
| 2330.0 | [m] | DC | PETROS |
| 2350.0 | [m] | DC | PETROS |
| 2370.0 | [m] | DC | PETROS |
| 2390.0 | [m] | DC | PETROS |
| 2410.0 | [m] | DC | PETROS |
| 2435.0 | [m] | DC | PETROS |
| 2440.0 | [m] | DC | PETROS |
| 2445.0 | [m] | DC | PETROS |
| 2450.0 | [m] | DC | PETROS |
| 2455.0 | [m] | DC | PETROS |
| 2460.0 | [m] | DC | PETROS |
| 2465.0 | [m] | DC | PETROS |
| 2470.0 | [m] | DC | PETROS |
| 2475.0 | [m] | DC | PETROS |
| 2480.0 | [m] | DC | PETROS |
| 2485.0 | [m] | DC | PETROS |
| 2490.0 | [m] | DC | PETROS |
| 2495.0 | [m] | DC | PETROS |
| 2500.0 | [m] | DC | PETROS |
| 2505.0 | [m] | DC | PETROS |
| 2510.0 | [m] | DC | PETROS |
| 2515.0 | [m] | DC | PETROS |
| 2518.0 | [m] | DC | PETROS |
| 2524.0 | [m] | DC | PETROS |
| 2530.0 | [m] | DC | PETROS |
| 2536.0 | [m] | DC | PETROS |
| 2542.0 | [m] | DC | PETROS |
| 2548.0 | [m] | DC | PETROS |
| 2554.0 | [m] | DC | PETROS |
| 2560.0 | [m] | DC | PETROS |
| 2566.0 | [m] | DC | PETROS |
| 2572.0 | [m] | DC | PETROS |
| 2578.0 | [m] | DC | PETROS |
| 2584.0 | [m] | DC | PETROS |
| 2590.0 | [m] | DC | PETROS |
| 2596.0 | [m] | DC | PETROS |
| 2602.0 | [m] | DC | PETROS |
| 2608.0 | [m] | DC | PETROS |
| 2614.0 | [m] | DC | PETROS |

| | | | |
|---|---|---|---|
| 2620.0 | [m] | DC | PETROS |
| 2626.0 | [m] | DC | PETROS |
| 2632.0 | [m] | DC | PETROS |
| 2638.0 | [m] | DC | PETROS |
| 2644.0 | [m] | DC | PETROS |
| 2650.0 | [m] | DC | PETROS |
| 2656.0 | [m] | DC | PETROS |
| 2662.0 | [m] | DC | PETROS |
| 2668.0 | [m] | DC | PETROS |
| 2677.0 | [m] | DC | PETROS |
| 2683.0 | [m] | DC | PETROS |
| 2689.0 | [m] | DC | PETROS |
| 2695.0 | [m] | DC | PETROS |
| 2701.0 | [m] | DC | PETROS |
| 2707.0 | [m] | DC | PETROS |
| 2713.0 | [m] | DC | PETROS |
| 2719.0 | [m] | DC | PETROS |
| 2725.0 | [m] | DC | PETROS |
| 2731.0 | [m] | DC | PETROS |
| 2737.0 | [m] | DC | PETROS |
| 2743.0 | [m] | DC | PETROS |
| 2749.0 | [m] | DC | PETROS |
| 2755.0 | [m] | DC | PETROS |
| 2761.0 | [m] | DC | PETROS |
| 2767.0 | [m] | DC | PETROS |
| 2776.0 | [m] | DC | PETROS |
| 2782.0 | [m] | DC | PETROS |
| 2794.0 | [m] | DC | PETROS |
| 2800.0 | [m] | DC | PETROS |
| 2806.0 | [m] | DC | PETROS |
| 2812.0 | [m] | DC | PETROS |
| 2818.0 | [m] | DC | PETROS |
| 2824.0 | [m] | DC | PETROS |
| 2830.0 | [m] | DC | PETROS |
| 2836.0 | [m] | DC | PETROS |
| 2842.0 | [m] | DC | PETROS |
| 2848.0 | [m] | DC | PETROS |
| 2854.0 | [m] | DC | PETROS |
| 2860.0 | [m] | DC | PETROS |
| 2866.0 | [m] | DC | PETROS |

| | | | |
|---|---|---|---|
| 2872.0 | [m] | DC | PETROS |
| 2878.0 | [m] | DC | PETROS |
| 2884.0 | [m] | DC | PETROS |
| 2890.0 | [m] | DC | PETROS |

## Lithostratigraphy

| Top depth [mMD RKB] | Lithostrat. unit |
|---|---|
| 376 | NORDLAND GP |
| 376 | NAUST FM |
| 836 | KAI FM |
| 1001 | HORDALAND GP |
| 1001 | BRYGGE FM |
| 1540 | ROGALAND GP |
| 1540 | TARE FM |
| 1606 | TANG FM |
| 1792 | SHETLAND GP |
| 1792 | NISE FM |
| 2011 | KVITNOS FM |
| 2236 | CROMER KNOLL GP |
| 2236 | LYSING FM |
| 2257 | LANGE FM |
| 2513 | LYR FM |
| 2518 | VIKING GP |
| 2518 | SPEKK FM |
| 2588 | ROGN FM |
| 2647 | MELKE FM |
| 2660 | INTRA MELKE FM SS |

## Logs

| Log type | Log top depth [m] | Log bottom depth [m] |
|---|---|---|
| MDT GR | 2245 | 2891 |
| MWD - GR RES APWD | 376 | 1104 |
| MWD - GR RES DEN NEU APWD | 2155 | 2890 |
| MWD - GR RES DEN NEU DT APWD | 1104 | 2890 |
| VSI4 | 446 | 2870 |

## Casing and leak-off tests

| Casing type | Casing diam. [inch] | Casing depth [m] | Hole diam. [inch] | Hole depth [m] | LOT/FIT mud eqv. [g/cm3] | Formation test type |
|---|---|---|---|---|---|---|
| CONDUCTOR | 20 | 449.6 | 36 | 452.0 | 0.00 | |
| PILOT HOLE | | 452.0 | 9 7/8 | 452.0 | 0.00 | |
| INTERM. | 13 5/8 | 1097.3 | 17 1/2 | 1104.0 | 1.73 | LOT |
| INTERM. | 9 5/8 | 2150.3 | 12 1/4 | 2155.0 | 1.76 | LOT |
| OPEN HOLE | | 2890.0 | 8 1/2 | 2890.0 | 0.00 | |

## Drilling mud

| Depth MD [m] | Mud weight [g/cm3] | Visc. [mPa.s] | Yield point [Pa] | Mud type | Date measured |
|---|---|---|---|---|---|
| 452 | 1.30 | | | Fresh Water Bentonite | |
| 1104 | 1.45 | | | INNOVERT | |
| 1104 | 1.36 | | | KCl / NaCl /Glycol polymer mud | |
| 1430 | 1.50 | | | INNOVERT | |
| 2050 | 1.51 | | | INNOVERT | |
| 2155 | 1.45 | | | INNOVERT | |
| 2155 | 1.52 | | | INNOVERT | |
| 2200 | 1.45 | | | INNOVERT | |
| 2344 | 1.47 | | | INNOVERT | |
| 2402 | 1.45 | | | INNOVERT | |
| 2550 | 1.52 | | | INNOVERT | |
| 2600 | 1.45 | | | INNOVERT | |
| 2890 | 1.46 | | | INNOVERT | |