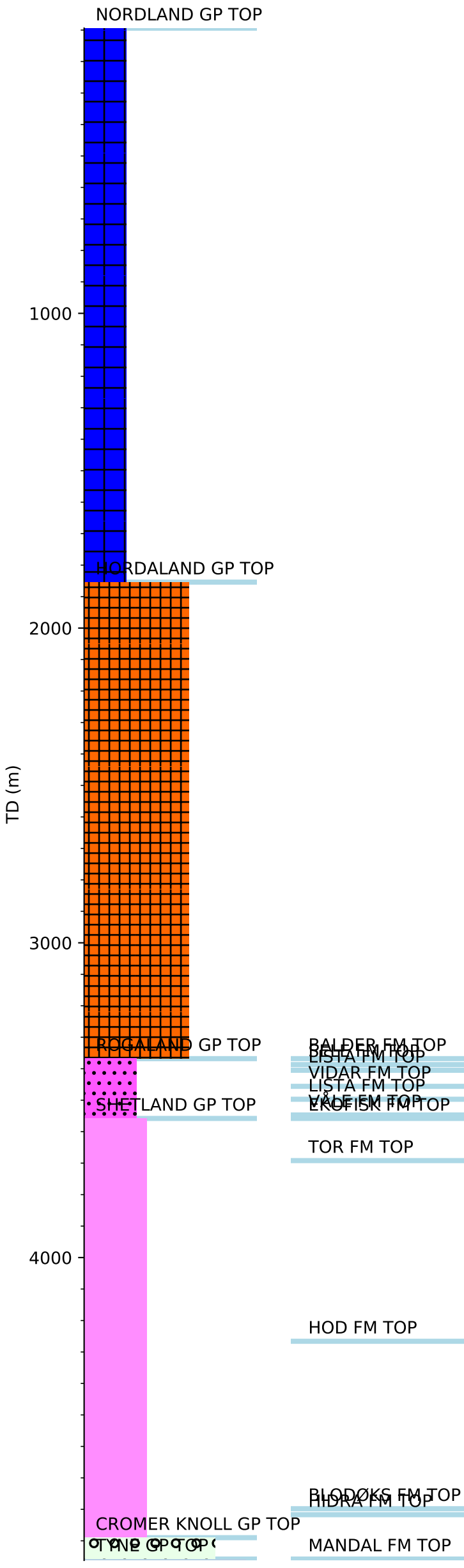
Groups

Formation Tops



Wellbore History

GENERAL

The primary purpose of well 2/4-15 S was to control and kill the underground blow out in well 2/4-14. Well 2/4-15 S was planned deviated from a location ca 1 km south of the 2/4-14 location to intersect with the 2/4-14 well bore below the bottom hole assembly that had been left in this hole. The well would serve several possible uses:

- Assist in killing 2/4-14 below the BHA.

- To check and verify the extent of underground pressure charging, zone isolation and underground blowouts, and to cure and verify possible cross flows.

- To serve as an emergency relief well to dynamically kill an uncontrolled blow out in well 2/4-14.

- To be used as an exploration well if the top intervention was successful.

Shallow gas was predicted at 611 m where a seismic anomaly corresponds to a gas bearing sand layer in well 2/4-14

OPERATIONS AND RESULTS

Wildcat Relief well 2/4-15 S was spudded 31 January 1989 by the semi-submersible installation Treasure Saga. The well was spudded 1182 m south of the 2/4-14 spud location and drilled to 4962 m where it intersected with the 2/4-14 well bore. This point is recognized as TD of the well. The well was drilled with sea water/gel mud down to 920 m, with KCl mud from 920 m to 3867 m, and with Hi-Temp polymer mud from 3867 m to TD. Shallow gas was encountered at 611 m as prognosed. Thin gas-bearing sands were seen on the resistivity MWD log also at 525 m and at 627 m. Drilling proceeded with significant problems due to rich smectite content between 1800 and 2300 m. The drill string got stuck twice, backed off, and after unsuccessful fishing, technical sidetracks were performed. On 1 May 1989, when drilling the 12 1/4" section in well 2/4-15 S, well 2/4-14 was re-entered with the jack up rig Neddrill Trigon. Both wells were now involved in the killing operations (see well history for 2/4-14 R). When drilling 2/4-15 S at around 4962 m, just prior to pulling above bottom and start circulating samples, the weight was suddenly lost and the string dropped clearly. At the same time mud losses were experienced. Immediately after, changes in the Production Logging Tool (PLT) readings were observed in the 2/4-14 re-entry, indicating clearly communication between wells. Pumping kill-mud and barite into well 2/4-15 S then killed the underground blow out.

No FMT measurements were performed and no open hole wire line logs were run in well 2/4-15 S. Because of the special purpose of the well 2/4-15 S two special logs were run in this well. The Wellspot log was used to determine the distance and direction to the 2/4-14 well. The tool proved to be very reliable with an uncertainty in the determination of distance to the 2/4-14 well of less than one meter. A Sonan (noise) log was run to try to detect the flow path in the 2/4-14 well. The log showed a noise maximum at 4100 m indicating a hole in the drill pipe at this point. After the 2/4-14 well was killed, the Sonan log run over the same interval showed no peaks at this point, confirming that the flow at this time had been stopped. The Sonan log was also run in February and March 1990 to verify a killed well. No sidewall cores were attempted, and only one conventional core, for rock mechanical analyses, was cut in the Tor Formation from 3867 m to 3876.5 m with 26 % recovery

The well kill operations were terminated 19 December 1989, and a cement plug was set with top at 4726 m. The well was now observed until 3 March 1990. After installing corrosion cap the well was suspended on 16 March 1990, 13 months and two days after spud.

TESTING

No drill stem test was performed.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 2/4-15 S