

CASE HISTORY

MAGNETIC RANGING – OFFSET WELL POSITION CONFIRMATION

APPLICATION

Fish Bypass

TECHNOLOGY

MagTraC MWD Ranging

LOCATION

North Sea

CUSTOMER CHALLENGE

Having set a Whipstock to kick off above a LIH Fish, the MWD tool continued to receive surveys which failed field acceptance criteria (FAC). Deeper in the wellbore, there was a close approach scenario to another well. To achieve this close approach, it was important for the wellbore's position to be known as accurately as possible.

Scientific Drilling was challenged to determine the position of the fish and reduce the risk of any collision.

SCIENTIFIC SOLUTION

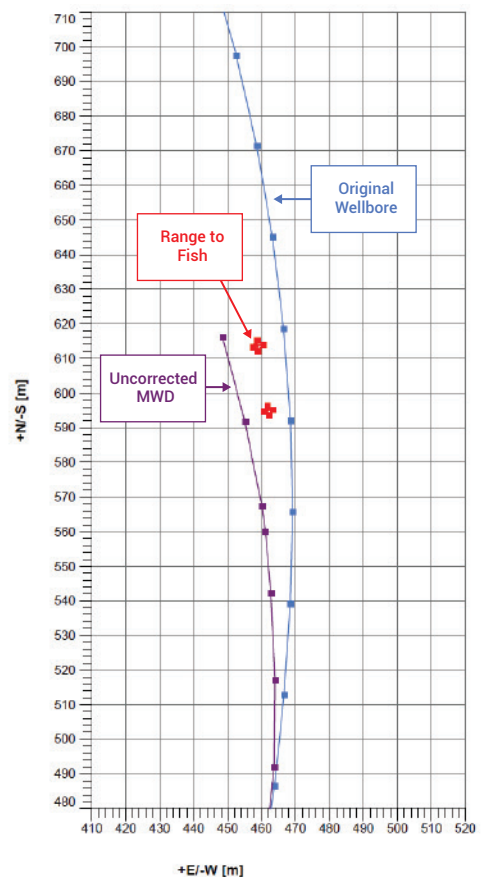
The Scientific Drilling MagTraC service was provided remotely by Houston and Aberdeen Technical Service Centers on a 24-hour basis. The ranging service was utilized in the 12- $\frac{1}{4}$ in section from 1614m to 1700m.

An initial range between 1623m and 1650m was performed. The raw data from each sensor package was sent to SDI MagTraC for the ranging analysis. MWD surveys failed quality tests due to magnetic interference from the nearby fish.

At a measured depth of 1644m, the fish was found to be 16.32m away (14.5m above and 7.5m right).

After discussing this with the client and Directional provider, it was decided to drill ahead and acquire further ranging data. Drilling continued to 1700m, at which point ranging data between 1660m and 1680m was acquired. At a measured depth of 1665m, the fish was found to be 18.51m away (16m above and 9.3m right).

The ranging results showed that there was not as much deviation to the left of the fish as the assumed MWD position had reported. The total separation (coupled with a decreasing intensity of the magnetic interference) resulted in the customer having confidence to safely drill ahead towards their target whilst avoiding the offset fish.



CUSTOMER VALUE

The customer called Scientific Drilling at short notice as the anticipated interference from the nearby fish continued to affect the MWD survey quality for longer than was expected. Unable to continue drilling, time was of the essence. Within a few hours of receiving all of the required data for analysis, the Data Center had a workable solution using MagTraC passive ranging. This confirmed the location of the fish and allowed drilling to continue.

Due to the positional uncertainty, the customer would not have been able to drill ahead safely without MagTraC. The alternative was to mobilize gyro equipment and personnel to obtain a valid survey. Logistically, this would have taken days; incurring huge cost and potentially compromising the wellbore. By employing the MagTraC service, the customer was able to immediately know the position of the sidetrack and assess that the wellbore uncertainty was sufficient to allow them to drill ahead safely.