

# Conductor analysis creates substantial project cost and emission savings

**Client:**

North Sea operator

**Product:**

Jack-up exploration well conductor analysis

Aquaterra Energy has a long and successful track record in delivering comprehensive riser and conductor analysis for offshore drilling projects all over the world. We were approached by this North Sea Operator to give a second opinion on the suitability of a 30" x 1" conductor versus a 30" x 2" conductor in a water depth of 108 m.



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+44 (0) 1603 788233 | contact@aquaterraenergy.com | www.aquaterraenergy.com



## Background

Our client intended to drill an exploration well in the Norwegian sector of the North Sea using a jack-up rig. Due to the relatively deep water depth of 108 m, the system had a long unrestrained span of conductor which, in combination with onerous environmental loads, led to high loads on the conductor and surface equipment.

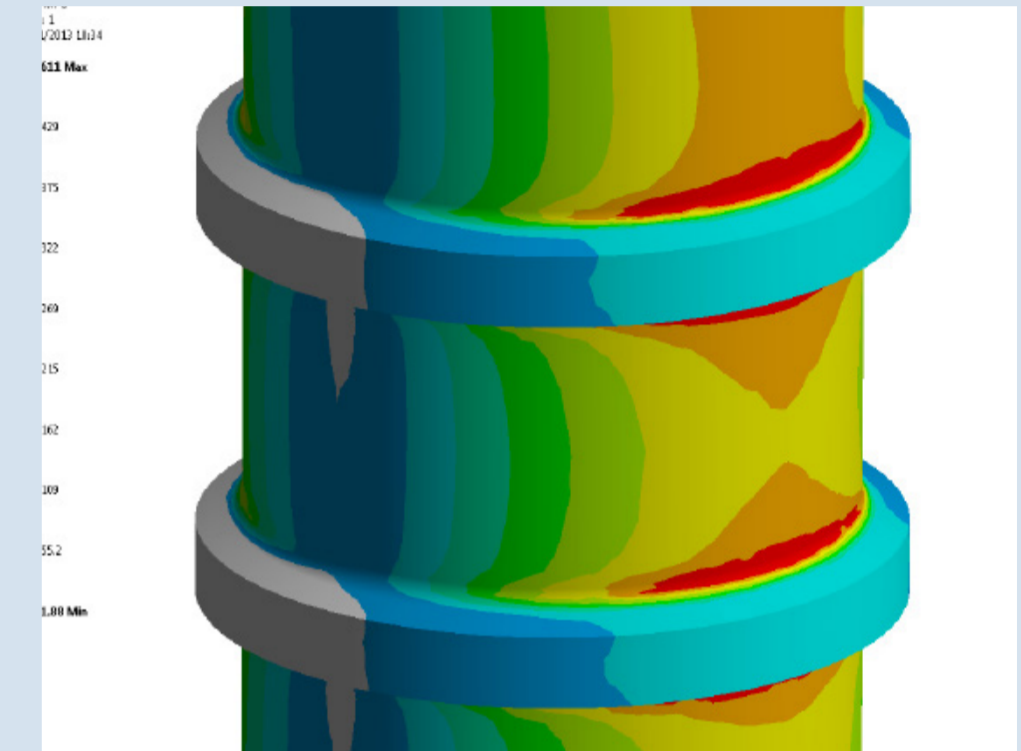
They had a 30" x 1" conductor in stock intended for the operation, but had received conductor analysis from another company predicting that a 30" x 2" conductor would be necessary to meet requirements for the onerous water depth and environmental conditions of their project. As a 30" x 2" conductor is an unusual requirement, we were contracted to provide a second opinion.

## Solution

With our previous experience of similar well designs and locations, we were well equipped to analyse the preferred 30" x 1" conductor. To do this we reviewed the intended drilling programme and built this knowledge into the recommended scope of work.

As drilling was only taking place during the summer months, we were able to reduce the conservatism of the analysis by using only the appropriate monthly environmental conditions. This avoided the more onerous winter conditions that were too conservative for this particular operation.

We performed a successful scope of work which confirmed that the stock 30" x 1" conductor could be used in place of the 30" x 2" conductor, which had previously been recommended.



## Results:

Involving us early in the design phase offered several advantages and opportunities to optimise their design. This enabled us to not only reduce costs but also reduce project-associated emissions.

The unusual 30" x 2" conductor would have needed to be custom-built and cost an additional £25,000 per joint. As approximately 20 conductor joints were used in the well, this resulted in an equipment saving of around £500,000. The steel required would have totaled 115 tonnes, equating to 723 tonnes of CO2e savings.

- Reduced steel requirement by 115 tonnes
- Reduced emissions by 723 tonnes of CO2e
- Saved over £500k in additional equipment
- Prevented operational delays which would increase rig time costs