

Bacton Combined Outfall

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ABSTRACT

The North Norfolk, UK coastline has undergone progressive coastal erosion at around the present rate for the last 5,000 years, since the last Ice Age. The cliffs are made of soft deposits, mainly sand and soft clays, which are very vulnerable to erosion. This long-term coastal change puts pressure on communities, infrastructure and business in the coastal zone. The Bacton Gas Terminal is situated on the North Norfolk coast with infrastructure near the cliff edge, within the cliff and under the beach. It is an item of nationally important critical infrastructure, supplying up to one third of the UK's gas demand from the North Sea extraction fields and from the continent.

To provide long-term protection to the coastline and the Bacton gas terminal, a coastline stabilisation project has been implemented that includes a large-scale beach nourishment operation. The scheme will place approximately 1.8 million cubic metres of sand along the coastline to protect the Gas Terminal and local villages and is the UK's first sand scaping project.

The Bacton Gas Terminal infrastructure includes three existing outfalls that currently discharge below the low tide level. Implementing the sand scaping project would have buried the existing outfalls under approximately 6-7m of sand as well as significantly extending the location of low water offshore. Therefore, the extension or replacement to facilitate discharging beyond the extent of the sand scaping, was incorporated into the project scope to maintain the existing outfall discharges for the remaining life of the terminal.

Royal HaskoningDHV completed consenting, investigations, concept design and detailed design of the beach nourishment and outfall replacement. Van Oord UK were appointed as Principal Contractor by North Norfolk District Council to undertake the marine works.

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This paper will discuss the challenges presented for the design and installation team to enable the implementation of the new outfall.

