

## BOSKALIS WESTMINSTER: SKILLS, RESOURCES, EXPERIENCE

Boskalis provides clients with tailored, project-specific solutions for above dredge related offshore services, as illustrated by the following project summary.

## PROJECT DESCRIPTION

Our ongoing work in Barrow provides maintenance dredging of the Barrow approach channel ensuring the safe navigation and exit of 3 Astute Class Nuclear Submarines from the Shipyard between 2011 and 2016. The contract requirements include strict dredging parameters together with a fixed deadline for the exit. It includes 5 non-critical and 3 critical dredging campaigns.

Whilst payment is primarily based on a cubic metre, as a result of slippages to the submarine construction programme, periods of the last three submarine exits have been carried out on a charter basis. These have generally been over two to four months requiring us to provide continuous and exclusive access to our dredging and auxiliary craft, whilst simultaneously providing the flexibility of temporary redeployment to suit the clients programme and budget.

## CHALLENGES

This contract generates unique challenges driven by the upstream programme of the submarine construction process. These are detailed below with steps adopted to mitigate these challenges detailed thereafter:

- Unpredictable start dates
- To ensure we have resources available when required we have developed an informal (but non contractual) early warning system with our Client(s) meaning programme updates are regularly communicated. This is highly sensitive information but the client has realised that this is necessary in order to de-risk project completion dates.
- Unpredictable work scope: Total volume to be removed to achieve required design level is only known upon carrying out the in-survey. Volumes can range from 3-600,000m<sup>3</sup> or in extreme cases, 750,000m<sup>3</sup>.
- The client has agreed to forward any available survey data on a regular basis allowing us to judge the rate of accretion and forecast the volumes to be dredged in order to achieve the exit date.
- Delays to the exit date during the execution of the works.
- We have experienced some client-driven delays to

# PROJECT SHEET

## MAINTENANCE DREDGING FOR THE EXIT OF THE ASTUTE CLASS NUCLEAR SUBMARINES

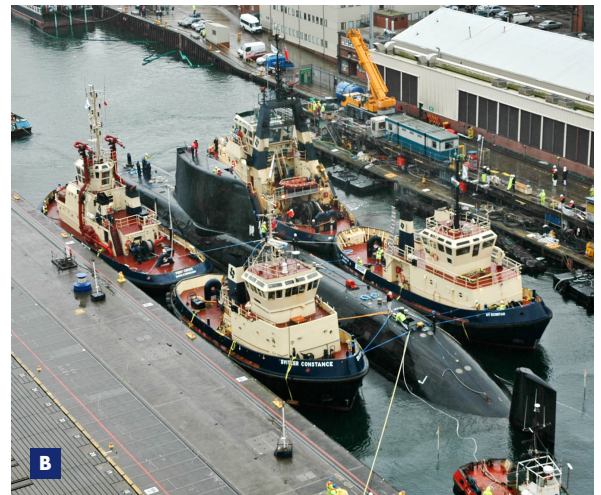
BARROW-IN-FURNESS, CUMBRIA, UNITED KINGDOM

## FEATURES

Project Name	Maintenance Dredging for the Exit of the Astute Class Nuclear Submarines
Client	ABP Barrow
Contractor	Westminster Dredging Company Ltd
Location	Barrow-In-Furness, United Kingdom



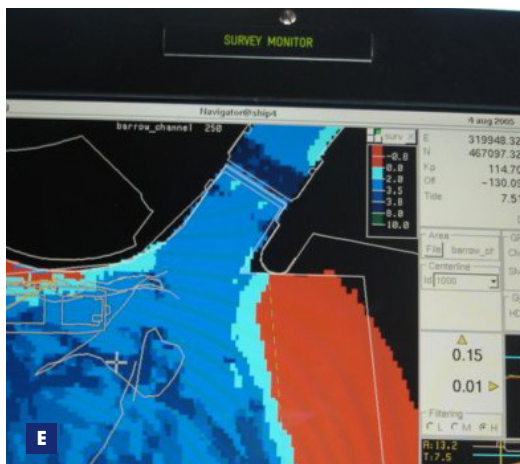
- A Location Map
- B Navigating out
- C Waterway at Barrow



the planned exit dates . In these cases we have sought to mitigate costs of these delays by relocating our resources where possible. This involves having detailed discussions on programme with the client in Barrow, along with 'alternative' clients who may receive relatively short notice requests to start projects on modified dates.

#### VALUE

Barrow is all about risk. Due to programme, budget and safety reasons the nuclear submarine needs to exit as soon as possible . Combine this with a complex 'client' structure (ABP Barrow /BAe / MOD) then an in-depth understanding of the process and empathy with the client position is essential. Boskalis Westminster has carried out submarine exit dredging works in Barrow since the late 80's, giving us in-depth knowledge when in delivery of submarines. This has been recognised by the client(s) who continues to award the work to our company. As a UK operating company we have resources available locally giving us the ability and flexibility to redeploy resources to aid the client and this has been cited by the client as providing significant reassurance and added value in de-risking their submarine delivery programme.



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## MAINTENANCE DREDGING FOR THE EXIT OF THE ASTUTE CLASS NUCLEAR SUBMARINES

BARROW-IN-FURNESS, CUMBRIA, UNITED KINGDOM



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D Dredging close to the key

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F Aerial View of Successful Launch



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