

Siltbuster's Olympic size silt removal challenge

Siltbuster Ltd, the UK's leading provider of mobile silt management equipment, has helped to de-silt over 400,000 cubic metres of surface water discharged at the Liquefied Natural Gas (LNG) import terminal at South Hook, near Milford Haven, West Wales.

Thanks to the installation of a specialist water treatment system, the amount of clean water discharged back into the natural environment is equivalent to nearly 150 Olympic size swimming pools and highlights the huge success of the award-winning Siltbuster units.

Onshore gas distribution

In November 2004, CB&I Ltd were awarded the contract to build a new LNG regasification terminal at South Hook, which once complete, will be the largest such facility in Europe. It will see around 300,000 tonnes of LNG arriving at the terminal each week and supply around 20 per cent of the UK's current gas consumption.

The site will import LNG from Qatar, in the Middle East, using a fleet of 14 specially-designed and purpose-built tankers. On arrival, the LNG will be transferred ashore and stored in five large tanks, each capable of storing 155,000 cubic metres.

The low-temperature liquefied natural gas will be heated up to convert it back into gas suitable for supply to UK consumers through the UK national gas transmission system. This will be via the new 120 km gas pipeline being constructed to connect west Wales to the national grid, which is another project in which Siltbuster is heavily involved.

Environmental standards

With over 1,600 workers employed at the huge South Hook site and construction activities ongoing to 2008, surface water containing silty sediments is potentially a major issue for environmental staff with responsibility for keeping water quality within the strict regulatory limits.

In the early stages of the project, research was carried out to find a suitable solution to the requirement to meet strict limits for the quality of water discharged into the sea, so that it would not adversely affect the nearby Maerl beds, located just offshore of the construction works and subject to SSSI status.

Maerl beds rely on water movement to disperse fine sediment particles, which would otherwise accumulate between the maerl fragments and smother the bed. Any obstruction to the water flow, such as silty site run off, could have adverse effects on the maerl and its associated fauna and flora.

Peter Nicholas, CB&I UK Limited's, Project Engineer at South Hook, said: "The consent with the Environment Agency means we have to meet the limits set by the regulators, wherever this water is discharged into the Haven.



“As it’s quite an exposed site here at South Hook, we get an awful lot of rain. The combination of rainwater with all the construction work means we get a muddy run off across the site which needs to be treated prior to discharge.”

Siltbuster provides a simple and speedy solution

To help meet the strict standards set by the Environment Agency, CB&I contacted Siltbuster Ltd to help them ensure compliance with permitted limits for suspended solids.

Four Siltbuster HB50, hopper-bottomed units were provided and connected in parallel, with a fully automated three stage chemical pre-treatment and proportional dosing with automatic control system. The HB50 units are ideal for



continuous operation and heavy solids loading, making them ideal for the task.

The water treatment process involves pumping water from an attenuation

pond, through an inline flow meter, to a containerised agitated reaction tank, where a coagulant is dosed. An anionic polymer is then added to the containerised wastewater to flocculate the particles together, and the solids are removed by the Siltbuster units.

Mr Nicholas continued, “The Siltbuster units have really made a huge difference. Thanks to their design, and ease of operation, the units can be relied upon to remove the particles from the water, allowing the treated water to be discharged off-site without causing pollution downstream or affecting the Maerl beds.”

Over 400,000 cubic metres of treated surface water, equivalent to nearly 150 Olympic size swimming pools, has now been discharged into the nearby estuary which flows into the Atlantic Ocean.

The perfect solution

Siltbuster Managing Director, Richard Coulton, said, “Our work at South Hook highlights how effective our Siltbuster units are. We have successfully demonstrated how our tried and tested technology can help protect the environment especially in such a sensitive area.

“In the past, other less environmentally aware contractors either discharged wastewater directly into the environment or used

ineffective means of treatment, such as settlement tanks, lagoons or even skips filled with straw. Due to tighter regulations, such an approach is no longer



acceptable and environmental protection agencies around the world are demanding simple, compact solutions.

“Siltbuster units are the perfect cost effective treatment solution and the only reliable way of protecting the aquatic environment from the uncontrolled release of silt and/or free phase oil.”

Construction of Phase I of the South Hook project is due to finish in early 2008 with completion of Phase II to follow some six months later.

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