

# **Leask Marine | Hatston Pier Rock Anchors**

## **Decommissioning Programme**

**February 2021**

## Document History

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## Executive Summary

Leask Marine are proposing to install two rock anchors at Hatston pier using their Submersible drill rig (SDR) which offers a low-cost anchoring solution. The SDR anchor installs are proposed to be located at Hatston pier. Rock anchors of up to 800mm diameter will be able to be installed using the SDR. The SDR will be winched from the vessel to the seabed using the vessel's onboard lifting and recovery system. Each drilling operation is expected to take between 2-3 hours before the SDR is recovered to the vessel. The SDR will be controlled using a single electrical line to the vessel; unlike other drilling systems all hydraulics will be mounted on the SDR. The anchoring solutions to be tested include:

- RAPTOR – Grouted Anchor Pile Tricone;
- RAPTOR – Strataloc.

The installation operation will be completed using a single multicat vessel and is expected to last a maximum of 3 weeks, including vessel mooring installation and retrieval.

# 1 Introduction

## 1.1 Developer Background

Leask marine was established in 1985 by Douglas Leask providing marine construction and diving services around the Orkneys and Northern Isles. As a highly qualified commercial diver and vessel master, his talents were increasingly called upon for many marine construction repairs, and over the first 20 years Douglas built up a fleet of small & medium sized workboats and numerous commercial diving teams to satisfy this accumulating demand.

Leask Marine Ltd have developed a submersible drilling rig (SDR) with which the company seeks to offer a new anchoring possibility to the market. A low cost drilled anchoring system will interest wave and tidal developers, floating wind developers, aquaculture and harbour maintenance markets.

# 2 Background Information

## 2.1 Anchor Locations

Two anchors will be installed at Hatston Pier. Table 1 shows the coordinates of the marine licence boundary within the Hatston Pier area.

### 2.1.1 Hatston Pier

Table 1. Boundary of marine licence for anchors installation

Location Description	Latitude and longitude (WGS 84)	UTM Zone 30 (Eastings and Northings)
Point A	59°00.131'N, 2°58.547'W	501392E 6540297N
Point B	59°00.219'N, 2°58.742'W	501204E 6540461N
Point C	59°00.132'N, 2°58.915'W	501039E 6540299N
Point D	59°00.042'N, 2°58.716'W	501229E 6540132N

Figure 1 shows the location of the marine licence boundary within the Hatston Pier area.

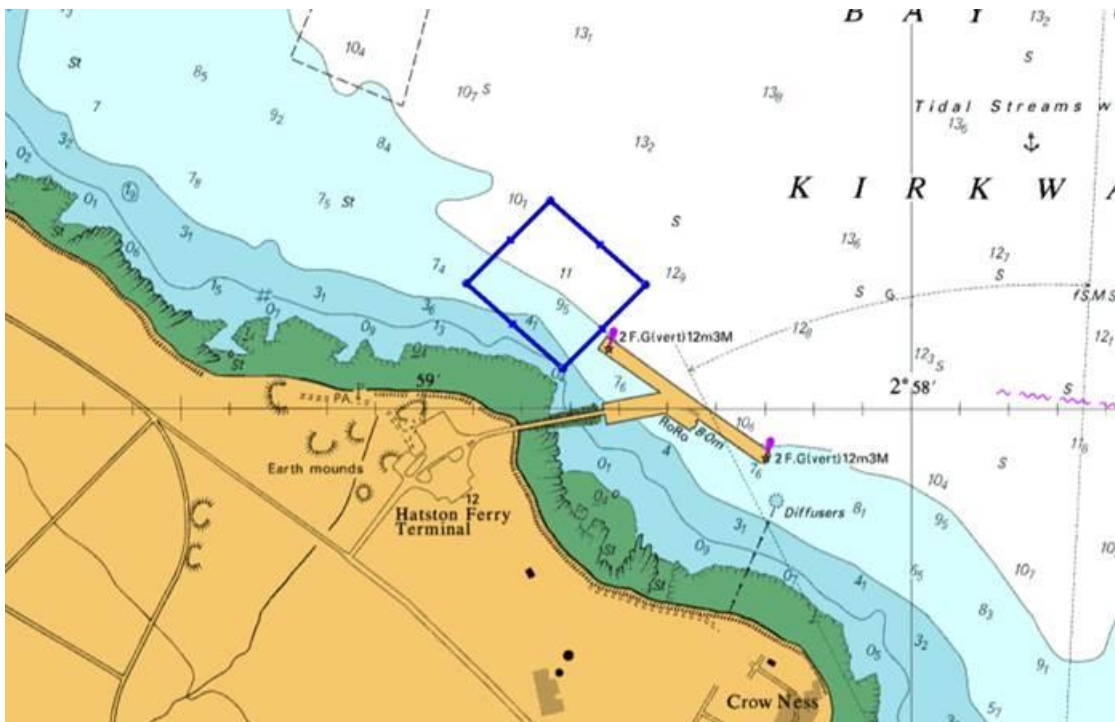


Figure 1. Proposed marine licence boundary (blue outline)

## 2.2 Site conditions

### 2.2.1 Prevailing weather

Strong winds and gales are very common in Orkney, predominately from the west to the southeast. In the spring and early summer there is a marked increase in the frequency of easterly winds, and in May south-easterly winds are more frequent than winds from any other direction.

### 2.2.2 Sea water temperatures

Pursuant to sea surface temperatures collected by EMEC from various sources around Orkney and other sources of sea temperature data available from Marine Scotland, satellite, modelled data and The Crown Estate, among others, it can be concluded that temperature ranges from 6.5 °C to 13.5 °C in an annual cycle, with maximum temperatures recorded around August and September and minimum temperatures around February.

### 2.2.3 Seascape

Most of the Orkney Islands are composed of sedimentary rocks of Devonian age (410 - 360 million before present) and are predominantly Middle and Upper Old Red Sandstone. There are older metamorphic rocks and younger dykes in some places. The nature of the rock and the glacial features help to determine the present-day landscape of the coast.

Whilst the west coast of Orkney is particularly renowned for cliffs, arches, stacks and geos, the lower lying coastal features likely to be found in the vicinity of Scapa Flow (such as tilted flags, sand dunes and sandy bays) are considered important for recreation and accessibility. The coastlines also contain sites of built and natural heritage interest; prehistoric remains are characteristic features and the cliffs and adjacent heaths are key seabird nesting sites.

Hatston Pier is located towards the western boundary of Kirkwall, alongside the Hatston Industrial Estate and is the largest commercial pier in Orkney.

## 3 Description of proposed decommissioning measures

### 3.1 Introduction

This section aims at describing the proposed measures to be taken for decommissioning the installation. It has to be considered that the level of detail provided may be improved upon over time, although it is understood that the programme is detailed enough to demonstrate that the decommissioning has been fully considered and factored into design decisions.

### 3.2 Proposed method of removal

#### 3.2.1 Anchor decommissioning

Removal of the Tricone anchor involves using a cutting tool to cut the anchors as close to the seabed as possible.

The Strataloc anchor is mechanical and can be fully removed from the seabed. The methodology for removal consists of deploying a specialised tool over the anchor and 'unscrewing' it by rotating anti-clockwise to tension back the anchor and retract the fingers back to the original position, this allows it to be pulled easily from the seabed.

## 4 Environmental Impact Assessment

A project-specific Environmental Monitoring Plan has been developed which encompasses the decommissioning phase of the project. Appropriate mitigation measures have been identified as part of the plan and will be reported to the regulator when required. During installation and decommissioning of the anchors, there is the possibility of disturbance to marine species due to vessel traffic. For that reason, special effort will be made so that those operational activities will be accomplished in the shortest time possible. In addition, all vessel activities onsite and to and from site will be conducted as far as possible in line with the Scottish Marine Wildlife Watching Code (SMWWC).

The materials used for installation of the anchors have been chosen for their suitability for use at sea, both in terms of durability and their impact on the environment. The materials are all non-toxic.

## 5 Schedule

Table 2. Project schedule Gantt

Project Stage	W1	W2	W3	W4	W5
Vessel and Equipment Mobilisation	■				
Vessel Mooring Installation	■				
Drilling Operation		■	■	■	
Post Installation Survey				■	
Demobilisation					■



## **6 Seabed clearance**

Upon the completion of decommissioning, it will be confirmed that the site has been cleared.

## **7 Post-decommissioning monitoring, maintenance and management of the site**

Assuming the small potential area of impact on the seabed, the lack of generation of debris forecasted and the removal of the anchors, no post-decommissioning monitoring, maintenance or management of the site is considered to be necessary.

Following the decommissioning of the facilities a seabed survey will be undertaken to confirm that the decommissioning and removal has been done correctly. The survey will be carried out as per Leask procedure.



The European Marine Energy Centre Limited

The Charles Clouston Building, ORIC, Back Road, Stromness, ORKNEY, KW16 3AW

**Tel:** 01856 852060

**Email:** [info@emec.org.uk](mailto:info@emec.org.uk)

**Web:** [www.emec.org.uk](http://www.emec.org.uk)

Registered in Scotland no.SC249331

VAT Registration Number: GB 828 8550 90

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