



Lochmaddy Ferry Terminal Upgrades – Dredge Screening Information



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1 Introduction

The majority of the dredge works required to complete the Lochmaddy Ferry Terminal Upgrades were completed under Licence number MS-00009575. Due to unforeseen circumstances with poor weather conditions, the dredge works were unable to be completed prior to the expiration date of the 31st of December 2022. Two separate dredge licence applications requesting approval for a hard dredge and a plough dredge have since been submitted in order to complete the required dredging works. It is understood that these works require screening under The Marine Works (Environmental Impact Assessment) Regulations 2017. Screening is required as the dredging is seen as an extension to the Lochmaddy Ferry Terminal upgrade project the consenting of which was supported by the Lochmaddy Ferry Terminal Upgrade EIA Report. Information was provided within both applications to allow screening to be undertaken. However, Marine Scotland have requested a combined screening document. This document provides information to support the simultaneous screening of both the hard and plough dredge licence applications.

2 Background

As noted in Section 1, two separate applications were made for dredging, one for a hard dredge on bedrock and one for a plough dredge of softer substrate.

It is understood that sample analysis is not feasible in the hard dredge area due to the physical nature of bedrock. This was discussed with the Marine Licensing Operations Team (MS-LOT) and it was agreed that an application for a hard dredge only would be submitted as early as possible, avoiding delays due to waiting for sampling and analysis for the plough dredge. This would allow for MS-LOT to issue the licence for the hard dredge and the contractor to be able to carry out some dredging on site avoiding further delays. The application for the hard dredge was submitted to MS-LOT on the 13th of January 2023.

Sampling was carried out on the soft dredge area in 2018 as part of the original marine licence application. Further sampling was therefore carried out on the softer material within the plough dredge area in January 2023 as per part 5.5 of the OSPAR Guidelines for the Management of Dredged Material at Sea (Agreement 2014-06) which requires sampling of material to be dredged at least every 3 years. Sampling and analysis were undertaken in line with the Pre-disposal Sampling Guidance Version 2 (Marine Scotland, 2017). The plough dredge application was submitted on the 29th of February 2023.

At present, all dredging works have ceased, and relevant plant has been demobilised from site.

3 Planned Dredging

3.1 Hard Dredging

The proposed dredge is in the current berthing area which requires to be deepened in order to facilitate a larger ferry. An estimated total of 500m³ of bedrock will arise from the dredge to -5m below Chart Datum(CD). To be conservative, a specific gravity of 2.7 has been assumed for the dredged bedrock and therefore, the mass sought by the dredge licence is 1350 tonnes. The bedrock will be cut by a breaker attached to a longreach excavator, operating from either the pier or a floating barge. Once the rock has been cut, the resultant rock will be removed by the long reach excavator and bucket. The rock will be stored temporarily in small quantities on



site before being placed inside the concrete caisson or taken to a land for reuse on other developments.

These works are estimated to be completed within 2 months of commencement, taking into consideration the potential for further weather-related delays making unsuitable conditions for marine plant.

3.2 Plough Dredging

High spots of material within the plough dredge area estimated to total 100m³ require levelling to meet the necessary topography and depths in order to allow a larger vessel to manoeuvre adjacent to the berthing area. However, to allow for insitu changes, a dredge licence for 200m³ was sought. To be conservative, a specific gravity of 1.8 has been assumed for the spoil material and therefore the mass sought by the dredge licence will be 360 wet tonnes.

The area will be dredged using a plough, which will be lowered to a depth of -5m CD using winch wires from a workboat. The workboat will then pull the plough over the required dredge area to redistribute high spots of material to lower areas and level out the dredge area to the required depth of -5m CD.

These works are estimated to be completed within two weeks of commencement, taking into consideration the potential for further weather-related delays making unsuitable conditions for marine plant.

Chemical analysis for the material taken from the soft dredge area show that the material is suitable for redistribution using the plough dredging method and that no significant environmental impacts are anticipated.

4 Environmental Considerations

4.1 Hard Dredge

The environmental impacts of rock removal were considered as part of the Environmental Impact Assessment (EIA) process.

Rock breaking will give rise to underwater noise which can cause localised disturbance of marine mammals and basking sharks however, with mitigation measures implemented, impacts were determined non-significant.

The Rock Breaking Marine Mammal and Basking Shark protocol as per Section 11.2.4.2 of the Lochmaddy Ferry Terminal Construction Environmental Management Document (CEMD) Issue 4 (Affric, 2022), has been developed to mitigate underwater noise impacts on marine mammals and basking sharks. The CEMD has been approved by Marine Scotland in line with the construction licence conditions (MS-00009574). The following excerpt is from Section 11.2.4.2 of the CEMD:

'To minimise the amount of disturbance caused by rock breaking, works will be implemented into the programme effectively to minimise their duration. To minimise the risk of injury to all marine mammals and basking shark from rock breaking activities, a 50m mitigation zone will be established around the mechanical breaker. Construction Operators will be briefed to check for marine mammals and basking shark within 50m of the rock breaker prior to works commencing. In instances where individuals are identified within 50m of the works prior to works



commencing, rock breaking activities shall not commence. When individuals have moved further than 50m away from the works, works will be allowed to begin. In addition, Construction Operators will be required to continue to observe for marine mammals and basking shark within 50m of the work during all rock breaking activities. In instances where individuals are identified within 50m of the works during rock breaking activities, the works will be required to cease immediately. Works will not be allowed to recommence until individuals have moved further than 50m away from the works.'

Note that EPS licences for cetaceans (EPS/BS-00009852) and basking sharks (EPS/BS-00009853) were awarded on the 6th of August 2021 and expired on the 31st of March 2023. However, an application to extend these licences for 6 months was made on the 17th of January 2023. No rock cutting below MWHS will take place until the relevant consents have been issued.

Otter often frequent the Lochmaddy worksite and if they approach within 50m of the works, marine works are ceased until they leave the area to avoid potential injury or disturbance.

4.2 Plough Dredge

It is recognised that plough dredging was not considered within the EIA however, this method is not anticipated to give rise to any significant effects. The plough dredge area is within the original dredging boundary assessed within the EIA.

Plough dredging does not give rise to significant underwater noise that would constitute the requirement for an EPS or Basking Shark Licence. As noted in Section 3.2, plough dredging will be carried out from the workboat which will be working alongside the pier and close to shore and therefore will be unlikely to interact with marine mammals.

The area has been previously dredged under licence number MS-00009575 within the past 6 months during the winter months, it can therefore be assumed that there is not an established important benthic community on the seabed.

Plough dredging will give rise to less sedimentation than the previously assessed method of backhoe dredging as the material is not lifted through the water column. Plough dredging is therefore anticipated to have a lower impact than the methods assessed within the EIA. In addition to this, the material will remain in-situ as opposed to being disposed of to a disposal site. This will result in less sedimentation overall and sedimentation will remain localised.

As discussed in Section 4.1, otter often frequent the Lochmaddy worksite. If they approach within 50m of the works, marine works will be ceased until they leave the area to avoid potential injury or disturbance. This is implemented via the Otter Protection Plan detailed within the CEMD and as agreed with Marine Scotland.

4.3 Screening Considerations

The hard dredge and plough dredge are considered against the topics assessed within the EIA and are detailed in Table 4.1.



Table 4.1: EIA Topics and Potential Effects

EIA Chapter	Topic	Potential Effects of Changes	
		Effects	Construction Phase Comments
Chapter 6	Marine Mammals	No Change	There will be no change in the significance of effects from those identified within the EIA with regards to impacts on marine mammals as a result of the plough dredge. There will only be one vessel working alongside the pier and close to shore, hence highly unlikely to interact with marine mammals. Underwater noise associated with the hard dredge was considered within the EIA. The methodology has not changed and therefore there is no change to predicted effects.
Chapter 7	Benthic Ecology	No Change	The plough and hard dredges are taking place within the original dredge licence boundary and therefore the impacts have already been assessed within the EIA. Furthermore, the area has recently been dredged under MS-00009575 and it can be assumed that there is no established benthic community on the seabed.
Chapter 8	Fish Ecology	No Change	The proposed plough dredge will not impact the conclusions of the EIA regarding Fish Ecology, therefore there is no change. Hard dredging has already been assessed within the EIA, therefore there is no change.
Chapter 9	Otters	No Change	There will be no new effects on otter due to vessel movements associated with the plough dredge. The Otter Protection Plan in the CEMD will be implemented as required. The protection of otter during hard dredging was already considered within the EIA and, again, will be implemented via the Otter Protection Plan.
Chapter 10	Noise & Vibration (In-Air)	No Change	The noise associated with the plough dredge is limited to vessel movements, which were assessed within the EIA and will not be significant nor give rise to any new noise impacts, hence, there is no change. Rock cutting below MHWS has already been assessed within the EIA. The methodology has not changed and therefore there is no change.
Chapter 11	Noise & Vibration (Underwater)	No Change	The plough dredge does not give rise to significant underwater noise and therefore will not give rise to any further effects. Rock cutting below MHWS will give rise to underwater noise and was assessed within the EIA. This resulted in a Marine Mammal and Basking Shark Protocol, which will be implemented to mitigate against disturbance and injury to cetaceans and basking shark during rock cutting below MHWS. Thus, there is no change.
Chapter 12	Traffic, Access and Navigation	No Change	There will be no additional vehicle movements on land as a result of the plough dredge. As the plough dredge does not result in a deposit to HE035 and will be completed around the ferry operations, there will also be no navigational effects. Dredge vessel movements within the harbour area have already been assessed within the EIA. Hard dredging was considered within the EIA and the methodology has not changed, therefore there is no change.
Chapter 13	Water Quality & Coastal Processes.	Minimal Change (Reduction)	The plough dredge will give rise to less sedimentation than backhoe dredging as the material is not being lifted through the water column. Hence it will have a lower impact than the methods assessed in the EIA. Hard dredging will not result in sedimentation due to its physical nature, furthermore, this was assessed within the EIA, and no changes are expected.



5 Conclusion

Two dredge licence applications have been submitted to MS-LOT to allow the Lochmaddy Ferry Terminal works to be completed. The hard dredge is to be completed as per the original plans which were fully assessed in the Lochmaddy Ferry Terminal Upgrade EIA Report, as such there are no new effects arising. Plough dredging although not previously considered, is not anticipated to result in any significant environmental effects and will have less of an impact with regards to sedimentation than backhoe dredging, which was assessed within the EIA Report.

Relevant mitigation detailed within the CEMD will be implemented during all dredging activities to minimise any environmental effects.



6 References

Marine Scotland. 2017. Pre-disposal Sampling Guidance Version 2

Affric Limited. 2022. Lochmaddy Ferry Terminal Construction Environmental Management Document Issue 4

7 Glossary

Acronym	Definition
CD	Chart Datum
m ³	Meters cubes
EPS	European Protected Species
EIA	Environmental Impact Assessment
CEMD	Construction Environmental Management Document
MS-LOT	Marine Scotland Licencing Operations Team