

**Scapa Deep Water Quay
Marine Mammal Protection Plan**



July 2024

CONTROL SHEET

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1 MARINE MAMMAL MITIGATION PLAN

The marine mammal mitigation will comprise a standard MMO protocol as per JNCC guidance which will be implemented during vibration and dredging operations in optimal sea states and during times of optimal visibility, and avoidance of works commencing during low hours of visibility and when sea state exceeds 2. This may be supplemented by use of Passive Acoustic Monitoring devices (PAMs).

1.1 Marine Mammal Observations

The Marine Mammal Observation Protocol (MMOP) will be implemented so that the vibration piling and dredging works do not cause injury or unnecessary disturbance to marine mammals. This section has been designed with reference to current JNCC guidance 'Statutory nature conservation agency protocol for minimising the risk of injury to marine mammals from piling noise' (August 2010) ^{1 2}.

1.1.1 Marine Mammal Observer

A suitably qualified Marine Mammal Observer (MMO), competent in the identification of marine mammals at sea, will be present during the vibratory piling and dredging. The MMO will undertake observation for marine mammals within the mitigation zone before and during vibratory piling and dredging and will be dedicated to that one task for the duration of any watch. The MMO will advise the contractors and crews on the implementation of the procedures set out in the agreed protocol, to ensure compliance with those procedures.

The JNCC guidance provides the following definitions of an MMO:

MMO: Individual responsible for conducting visual watches for marine mammals. It may be requested that observers are trained, dedicated and/or experienced.

Trained MMO: Has been on a JNCC recognised course.

Dedicated MMO: Trained observer whose role on board a vessel is to conduct visual watches for marine mammals.

Experienced MMO: Trained observer with three years of field experience observing for marine mammals, and practical experience of implementing the JNCC guidelines.

The MMO will be positioned appropriately to cover the full mitigation zone and will be trained. The identity and credentials of the MMO will be agreed with Marine Directorate.

1.1.2 MMO Equipment

The MMO will be equipped with binoculars (10X42 or similar) and/or a spotting scope (20-60 zoom or equivalent), a copy of the agreed protocol and the Marine Mammal Recording Form (MMRF), which is a Microsoft Excel spreadsheet containing embedded worksheets named Cover Page, Operations, Effort and Sightings. A Microsoft Word document named Deck forms is also available, and the MMO may prefer to use this when observing before transferring the details to the Excel spreadsheets.

¹ <https://data.jncc.gov.uk/data/31662b6a-19ed-4918-9fab-8fbcff752046/JNCC-CNCB-Piling-protocol-August2010-Web.pdf>

² It should be noted that these protocols do not document measures to mitigate disturbance effects but have been developed to reduce to negligible levels of risk of injury or death to marine mammals in close proximity to piling operations.

Although these forms were developed for seismic surveys, they can be used for piling and dredging operations, although many columns will not be applicable. The ability to determine the range of marine mammals is a key skill for MMOs, therefore a hand-held rangefinder will be used to verify the range.

All MMO forms, including a guide to completing the forms; and instructions on how to make a rangefinder are available on the JNCC website: http://jncc.defra.gov.uk/marine/seismic_survey.

1.1.3 Communication

The contractor will be responsible for the communication channels between those providing the mitigation service and the crews working on the piling and dredging. A formal chain of communication from the MMO to the contractor, who will start/stop piling, will be established. In order to confirm the chain of communication and command the MMO will attend any relevant pre-mobilisation meetings.

1.1.4 Mitigation Zone

Following appointment of contractor / Ecological Clerk of Works (ECoW), logistical information will be available/ updated to provide more detailed mitigation zones for the MMO. This may change throughout the construction period due to ground levels changing and depending on the area of works which need to be viewed.

The JNCC guidance defines the mitigation zone as a pre-agreed radius around the piling or dredging site prior to any activity. This is the area where a MMO keeps watch for marine mammals (and delays the start of activity should any marine mammals be detected). The extent of this zone represents the area in which a marine mammal could be exposed to sound that could cause injury and will be determined by factors such as the length of vibratory piling or dredging, the water depth, the nature of the activities (for example whether drilling will also take place) and the effect of the substrate on noise transmission. From underwater noise modelling, minimum recommended mitigation zone of 800 metres from the piling or dredging location should be sufficient to avoid injury. The MMO should be located on the most appropriate viewing platform to ensure effective coverage of the mitigation zone.

1.1.5 Passive Acoustic Monitoring (PAM)

Following appointment of contractor / Ecological Clerk of Works (ECoW), logistical information will be available/ updated to provide more detail regarding the use of PAMs.

In addition to MMOs, PAMs should be provided throughout the operation to supplement visual checks.

PAM are software systems that utilises hydrophones to detect the vocalisations of marine mammals. This will help aid in the detection of species which are less easily detected at the surface via MMOs or during unfavourable conditions.

Visual observation is an ineffective mitigation measure during periods of darkness or poor visibility (such as fog), or during periods when the sea state is not conducive to visual mitigation, as marine mammals in the vicinity of dredging/ vibration piling will not be detected. JNCC views PAM as the only available mitigation technique that can be used under these conditions, and that it can also be used to enhance the detection of certain marine mammal species³.

³ JNCC Guidelines for minimising the risk of injury to marine mammals from using explosives (2010), available at: <https://data.jncc.gov.uk/data/24cc180d-4030-49dd-8977-a04ebe0d7aca/JNCC-Guidelines-Explosives-Guidelines-201008-Web.pdf>

Specialist PAM operatives are needed to set up and deploy the equipment and interpret the detected sounds. The PAM hydrophones should be situated as close as possible to the site of piling/ dredging, and sacrificial hydrophones may therefore be required.

Hydrophones deployed from standby vessels can be used for acoustic monitoring, but a disadvantage of these systems (in regard to dredging) is that they will move away from the site of dredging when the vessel moves and may then be too far away to detect any marine mammal vocalisations within the mitigation zone. Remotely operated static PAM systems, which can be left at the initial dredging site, may be an option, but they may not always be commercially available, or best suited for operations in shallow coastal environments.

PAM can provide a useful supplement to visual observations undertaken by MMOs. However, in many cases it is not as accurate as visual observation for determining range, and this will mean that the mitigation zone will reflect the range accuracy of the system. Some PAM systems do not have a reliable range determination facility or can only calculate the range for some species. In such cases, the detection of a confirmed cetacean vocalisation should still be used to initiate postponement of the drilling/ dredging soft-start if the PAM operator is able to make a judgement about the range of the marine mammal (dependent on species) from the works, because of experience gained in differentiating between distant and close vocalisations. In the absence of PAM systems capable of range determination, this expert judgement will constitute the basis for deciding whether an area is free from marine mammals prior to the dredging/ piling soft-start.

PAM operators will submit a method statement and details of the equipment to be used to MD-LOT for approval before the equipment is deployed.

1.2 Vibration Piling and Dredging Protocol

Following appointment of contractor / Ecological Clerk of Works (ECoW), logistical information will be available/ updated to provide more detail regarding vibration piling and dredging protocols.

The standard JNCC protocol is outlined below:

1. Piling and dredging will not commence during poor visibility (such as fog) or during periods when the sea state is not conducive to visual searches (above sea state 4 is considered not conducive⁴) as there is a greater risk of failing to detect the presence of marine mammals. Harbour porpoise have small dorsal fins, therefore the MMO shall take additional precautions if the sea state exceeds 2 (eg PAMs). An elevated platform for the MMO to monitor from would be beneficial when the sea state is 2 or above, the piling and dredging works could also be scheduled on a day where the sea is expected to be calm.
2. The MMO(s) should be situated in location that provides the best viewing platform and is likely to be closest to the piling and dredging activities. For example, an elevation area of the coast or a vessels bridge that allows 360 degree cover (depending upon the size of the mitigation zone more than one MMO viewing platform (and therefore more than one vessel) may be required to ensure that the entire mitigation zone can be observed).
3. At least 30 minutes before any type of works, a visual watch and, if required, acoustic monitoring, known as the 'pre-works search', should be carried out in the mitigation zone. The pre-works search

⁴ Detection of marine mammals, particularly porpoises, decreases as sea state increases. According to the JNCC guidance ideally sea states of 2 or less are required for optimal visual detection.

should continue until the MMO advises that the mitigation zone is clear of marine mammals, and the piling/dredging works can start.

4. The MMO will scan the waters using binoculars or a spotting scope and by making visual observations. Sightings of marine mammals will be appropriately recorded in terms of date, time, position, weather conditions, sea state, species, number, adult/juvenile, behavior, range etc. on the JNCC standard forms. Communication between the MMO and the contractor and the start/end times of the activities will also be recorded on the forms.

5. Vibratory piling or dredging should not be undertaken within 20 minutes of a marine mammal being detected within the mitigation zone.

6. If a marine mammal is observed, or acoustically detected, within the mitigation zone, it should be monitored and tracked until it moves out of range. The MMO should notify the relevant chain of command of the detection and advise that the operation should be delayed. If the marine mammal is not detected again within 20 minutes, it can be assumed that it has left the area and the works may commence.

7. If an animal has been detected acoustically, the PAM operative should use a range indication and their judgement to determine whether the marine mammal is within the mitigation zone.

8. If an MMO or PAM operative is uncertain whether marine mammals are present within the mitigation zone, they should advise that the activity should be delayed as a precaution until they are certain that no animals are present.

9. A soft-start will be employed, with the gradual ramping up of vibratory piling/ dredging (where possible). The soft-start duration will be a period of not less than 20 minutes. This will allow for any marine mammals to move away from the noise source.

10. If a marine mammal enters the mitigation zone during the soft-start then, whenever possible, the works will cease until the marine mammal exits the mitigation zone and there is no further detection for 20 minutes.

1.3 Reporting

As per the JNCC guidance, reports detailing the vibration piling and dredging activity and marine mammal mitigation (the MMO reports) will be sent to Marine Scotland at the conclusion of vibratory piling/ dredging activity. Reports will include:

- Completed MMRFs;
- Date and location of the piling/ dredging activities;
- A record of all occasions when piling/ dredging occurred, including details of the duration of the pre-piling/pre-dredging search and soft-start procedures, and any occasions when piling/ dredging activity was delayed or stopped due to presence of marine mammals;
- Details of watches made for marine mammals, including details of any sightings, and details of the piling/ dredging activity during the watches;
- Details of any problems encountered during the piling/ dredging activities including instances of non-compliance with the agreed piling/ dredging protocols; and
- Any recommendations for amendment of the protocols.

1.4 Vessel Movement Mitigation Protocol

The Harbour Authority implement speed restrictions on vessels within Orkney waters, mitigation protocols should be implemented to avoid disturbance to and/or collision with marine mammals including:

- A strict speed limit for both onshore and marine traffic will be implemented to reduce risk of collision with marine mammals (4 knots within the water).
- Implementation of a vessel management plan including agreed routes and speed limits.
- Safe vessel operation to minimise risk of collision with marine mammals to be promoted to users. Training courses such as those provided by the WiSe scheme⁵ could be offered at regular intervals.

Additionally (where possible) leaflets can be created to provide additional advice to quay users to avoid disturbance to and/or collision with marine mammals which should include, but is not limited to the following:

- Keep a safe distance from marine mammals. Never get closer than 100m (200m if another boat is present), but if within 100m, switch the engine to neutral;
- Never drive head on to, or move between, scatter or separate marine mammals. If unsure of their movements, simply stop and put the engine into neutral;
- Spend no longer than 15 minutes near the animals;
- Special care must be taken with mothers and young;
- Maintain a steady direction and a slow 'no wake' speed; and
- Avoid sudden changes in speed.

Wildlife code of conduct methods have been created by NatureScot and are available on their website⁶.

1.5 Additional Good Practice Recommendations

If any dead marine mammals are anecdotally observed during construction or operation, it should be reported to the Scottish Marine Animal Stranding Scheme (SMASS) (www.strandings.org) and live marine mammal strandings will be reported to British Divers Marine Live Rescue (www.bdmlr.org.uk).

The MMO should keep a record of all marine mammal sightings, whether in the mitigation zone or not, to be issued to NatureScot. An understanding of the location of species is essential to appropriately assess the impacts of a proposed development and plan and target effective mitigation, therefore this data could be used to inform future projects. Biodiversity data are extremely important as, aside from use in planning and decision making, they are key to delivering state of environment reporting, education, modelling trends in species and habitat distribution, and research and policy making.

⁵ Information available at: <https://www.wisescheme.org/> (accessed 02/06/2023)

⁶ <https://www.nature.scot/sites/default/files/2017-06/Publication%202017%20-%20The%20Scottish%20Marine%20Wildlife%20Watching%20Code%20SMWWC%20-%20Part%201%20-%20April%202017%20%28A2263518%29.pdf>

2 MARINE MAMMAL LICENSING

European Protected Species (EPS) are animals and plants (species listed in Annex IV of the Habitats Directive) that are afforded protection under The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) and the Conservation of Offshore Marine Habitats and Species Regulations 2017. All cetacean species (whales, dolphins and porpoise) are European Protected Species. If any activity is likely to cause disturbance or injury to a European Protected Species a licence is required to undertake the activity legally.

The licensing of Marine European Protected Species in Scotland is shared between several regulators depending on the purpose and location of the activity in question. For activities taking place within 12 nautical miles of the coast (the Scottish Territorial Sea), EPS are protected under the 1994 Regulations. For commercial activities, including geophysical or seismic surveys (including those related to oil and gas), port and harbour developments and the installation of renewable energy devices Marine Scotland (on behalf of the Scottish Ministers) is the licensing authority under the 1994 Regulations: Regulation 39 (1) (a). For activities relating to scientific research or conservation, Scottish Natural Heritage is the licensing authority.

A licence may be granted to undertake such activities if certain strict criteria are met:

- There is a licensable purpose.
- There are no satisfactory alternatives.
- The actions authorised will not be detrimental to the maintenance of the population of the species concerned at favourable conservation status⁷ in their natural range.

The flowchart in Figure 2-1 below shows the decision-making process for licensing, taken from the Marine Scotland guidance⁸.

⁷ The ultimate objective of the Habitats Directive is to ensure that the species covered reach what is called a 'Favourable Conservation Status' and that their long-term survival is deemed secure across their entire natural range within Europe. Article 1(i) of the Habitats Directive defines Favourable Conservation Status (FCS) of a species as follows:

"Conservation status of a species means the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within its natural range.

The conservation status will be taken as 'favourable' when:

- population dynamics data on the species concerned indicates that it is maintaining itself on a long-term basis as a viable component of its natural habitats; and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future; and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis."

⁸ Guidance for Scottish Inshore Waters: The Protection of Marine European Protected Species from injury and disturbance. Marine Scotland 2014.

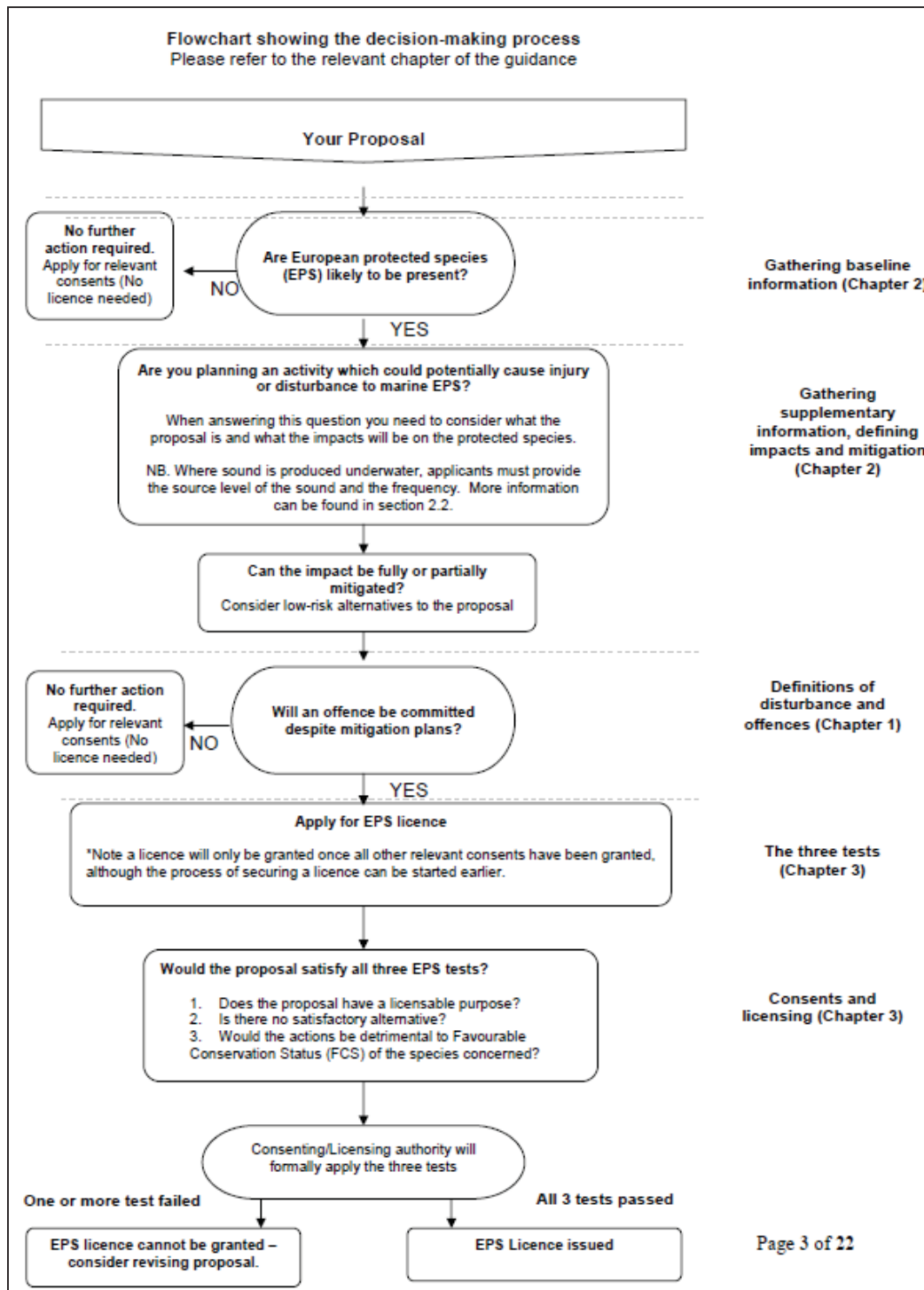


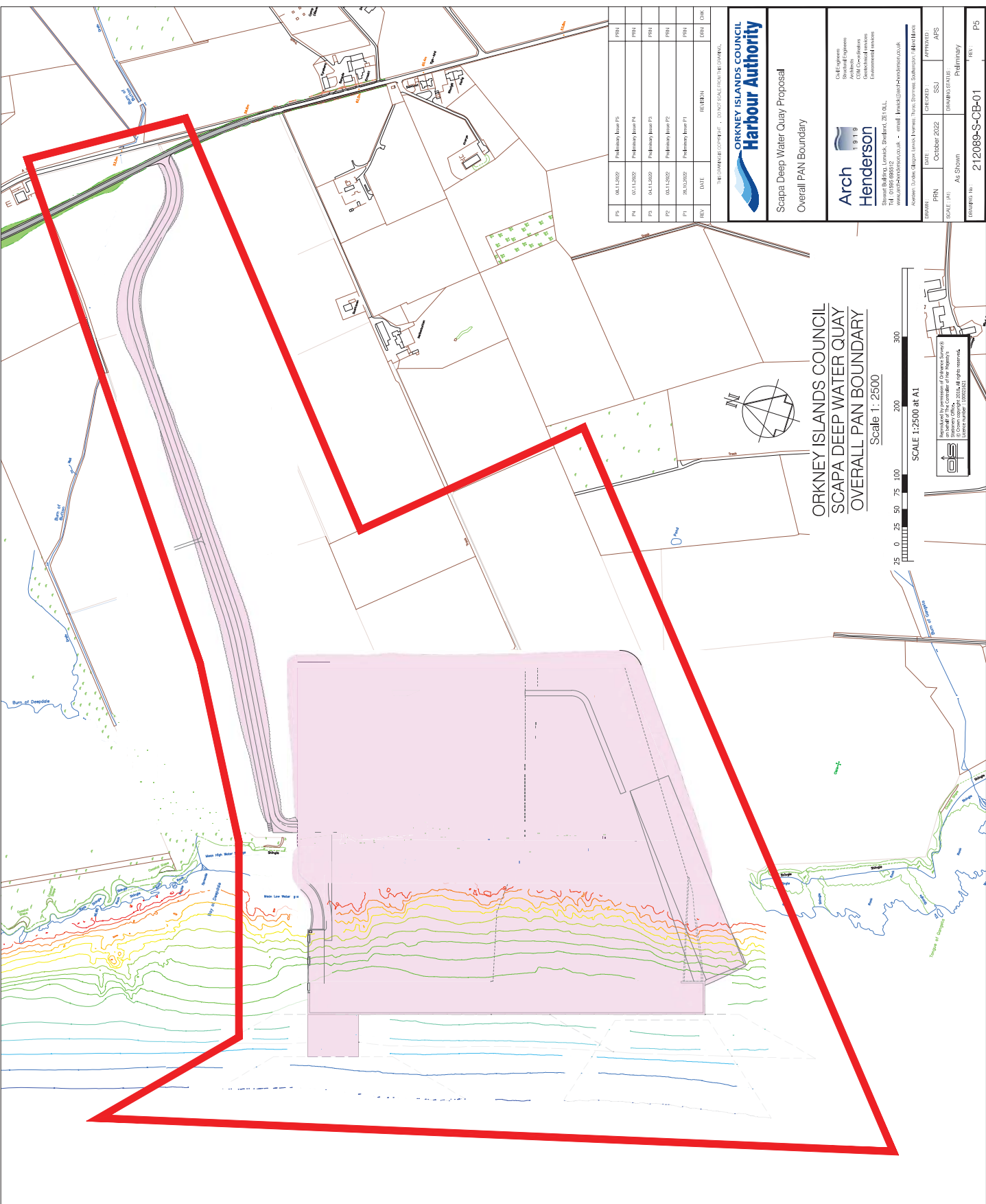
Figure 2-1: EPS Licencing Procedure

Vibration piling and dredging have the potential to produce underwater noise at levels which could cause injury and disturbance to cetaceans. If the mitigation in section 1 is employed effectively, it is predicted that there will be no risk of injury, however, the mitigation measures cannot fully protect against disturbance from vibration piling and dredging noise. The risk of disturbance is greater than that of injury, with TTS (disturbance) occurring over a much wider area than PTS (injury). **Therefore an EPS licence will be required for potential disturbance from vibration piling and dredging.**

APPENDICES

A PROPOSED SITE LOCATION AND LAYOUT

Quarry Datum (Height)	Quarry Edge Level
+7.20m	+5.21m
+2.60m	+1.10m
+0.70m	+0.10m
-0.70m	-0.50m
-2.00m	-1.40m
-3.00m	-2.40m
-4.00m	-3.40m
-5.00m	-4.40m
-6.00m	-5.40m
-7.00m	-6.40m
-8.00m	-7.40m
-9.00m	-8.40m
-10.00m	-9.40m
-11.00m	-10.40m
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REV	DATE	DESCRIPTION	BY	CHK
P5	06/11/2022	Preliminary Issue P5	PSH	PSH
P4	02/11/2022	Preliminary Issue P4	PSH	PSH
P3	04/11/2022	Preliminary Issue P3	PSH	PSH
P2	04/11/2022	Preliminary Issue P2	PSH	PSH
P1	26/10/2022	Preliminary Issue P1	PSH	PSH



Scapa Deep Water Quay Proposal
Overall PAN Boundary

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ORKNEY ISLANDS COUNCIL
SCAPA DEEP WATER QUAY
OVERALL PAN BOUNDARY
Scale 1:2500

