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A	25/08/21	lico	rasm	First issue

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Project HT1 Seabed Survey Area

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Parker Paul (WO-DCC) ext

From: Andrew Bendell <ABendell@rsk.co.uk>
Sent: 26 April 2022 13:24
To: marineenergy@nature.scot
Cc: Parker Paul (WO-DCC) ext; Ellie Cooper; Sam Olsen; Kathy Bradshaw
Subject: HT1 pipeline UXO investigation survey marine licence application
Attachments: HT1-0AG-700-003-A_SeabedSurveyArea (2).pdf

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Good afternoon,

RSK are working on behalf of Vattenfall for the offshore consenting of the HT1 project.

We are shortly planning to submit a marine licence application to MS-LOT for a survey of the proposed offshore pipeline route to investigate potential UXO.

I have included below an outline scope of work for the proposed survey and a chart is attached showing the outline route corridor:

At this stage the survey will be an ROV survey of much of the route using a suitable DP support vessel, the primary sensor will be an EM source from the ROV centred on a 10 m x 10 m area at potential UXO target locations. Some localised dredging will take place at target locations using a suction pump to free targets from the seabed sediment for further investigation. The majority of targets are within 50 cm sediment depth and the expectation is that nothing will be buried more than 2 m below the seafloor. The ROV will then undertake a visual survey which will be reviewed on board by an EOD expert. If the targets are confirmed as non-UXO then they will be removed from the route corridor by the ROV, each target location would then be inspected again by EM sensor to ensure that no second targets were hidden beneath the first. This process would be repeated at each target location until the corridor is clear.

In the event that targets are identified as UXO then the authorities would be notified and the target left in situ for later clearance.

The procedure will be as above for nearshore waters, where it is too shallow for an ROV, with the exception that a smaller vessel will be used and divers / drop down camera will be used instead of an ROV. Diver survey will be considered as a contingency measure only in the event that the nearshore works cannot be conducted remotely.

The clearance of any confirmed UXO targets and a subsequent route corridor survey will form a separate application and is not considered here. This application is for the investigation works as described above only.

We will be drafting a brief assessment to support the licence application that will cover offshore environmental impacts as a result of the proposed scope of works, primarily relating to localised sediment disturbance from the dredging and implications for water quality, minor EM disturbance to sensitive fish species, underwater cultural heritage and a brief assessment of the potential for LSEs on designated sites for nature conservation. Where possible mitigation will be suggested that would be implemented during the survey and/or if it has been incorporated into the design of the proposed scope of works. We will also consider the potential for cumulative impacts.

I wanted to take this opportunity to seek any opinions that NatureScot may have on the proposed scope of works and the key sensitivities and likely impacts discussed above and if there were any other things that you would like to see included or if any concerns regarding the proposed application at this stage.

Any inputs much appreciated at this pre-application stage

Thanks very much

Kind Regards

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Appendix 1: UXO Investigations Method Statement:

Following a geophysical survey of the proposed HT1 pipeline route corridor conducted between December 2021 and March 2022, a target list of potential Unexploded Ordnance (pUXO) targets has been identified. Visual identification of these pUXO is required along the route before installation activities take place. Vattenfall therefore propose to carry out an investigation survey, to determine the potential presence of UXO and non-UXO objects along the proposed pipeline route corridor (as shown in attached map and coordinators).

Pipeline installation will require a 30 m wide corridor free from UXO; including safety buffers to pUXO outside that area. The total UXO investigation survey corridor will therefore be c. 50 m wide centred on the final pipeline route of 12.4 km. However, as HDD operations are planned between the 10 m contour and landfall, no UXO identification (or clearance) will be required in shallow waters westward of the HDD exit location.

The geophysical survey included data provided by a towed magnetometer, Multi-beam echo sounder and Sidescan Sonar with the landfall area being surveyed by magnetometer drone. At the time of writing, the survey results have not yet been fully processed and evaluated and the Master Target List has not been finalised. Therefore, the exact number and locations of pUXO targets selected for identification is as yet unknown. For planning purposes, an estimate of 300 targets is assumed. In addition, an estimated 55,000 m² area of the route corridor (figure 2 below) in the landfall approaches will require additional survey effort to mitigate the threat of non-ferrous targets. A full target list will be finalised in May 2022.

Non-ferrous survey:

To mitigate the risk posed by non-ferrous UXO (LMB mines), a c. 1.1 km long and 50 m wide section of the pipeline route (see figure 2 below) will be surveyed with a suitable sensor (e.g. Electromagnetic (EM)). The Contractor will mobilise suitable equipment for detection of the target at a burial depth of 2 m below seafloor.

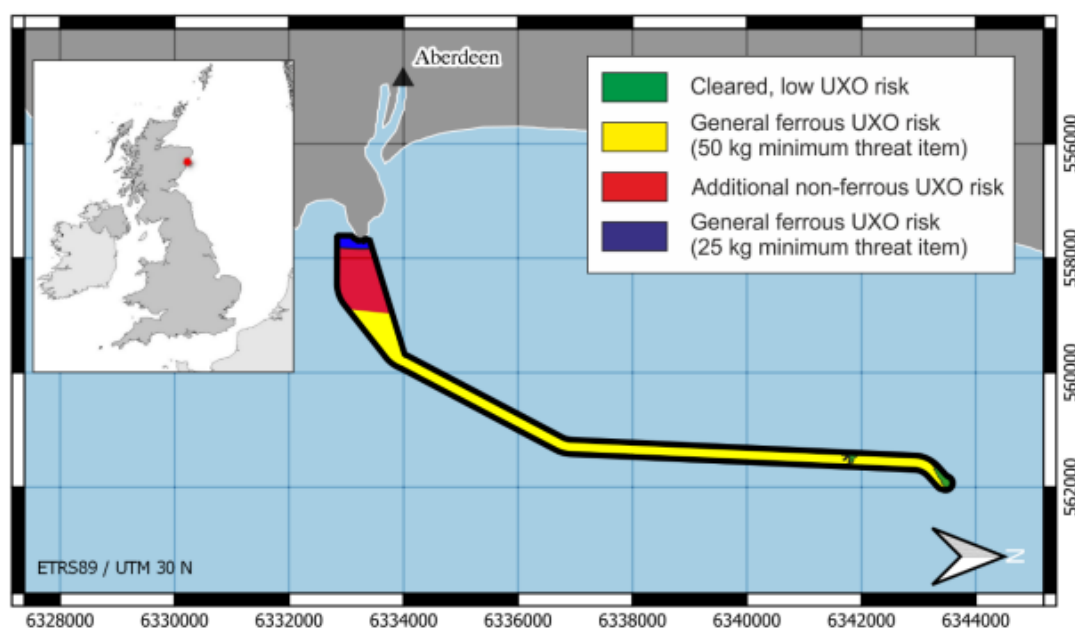


Figure 2 General overview of UXO risk in the project area. Clearance will take place in a narrow corridor centred on the final pipeline route. The 25 kg MTI applies to areas shallower than 10 m LAT; those do not require UXO ID&C.

Target Identification:

The UXO investigation contractor will locate, excavate and identify all pUXO on the Master Target List following the below procedure for each target:

- Deployment of Remotely Operated Vehicle (ROV) from suitable dynamically positioned (DP) ROV support vessel to carry out EM surveys (continuous wave or transient) of a 10 m x 10 m area, centred on the target position, using electromagnetic sensors, at a flying height < 0.5 m above seabed
- Once the target is located a suction pump will be used to dredge the area immediately around the target, until the target is visible; the maximum required depth for identification of targets is 2 m below seafloor
- Target will be visually identified utilising the ROV's HD (or better) resolution, real time camera
- If a target inspection results in a confirmed UXO identification, their position will be recorded for subsequent clearance and appropriate authorities will be notified. Clearance activities and subsequent post-clearance surveys (where required) will be the subject of a separate Marine Licence application and are not covered here. In the first instance Vattenfall will attempt to avoid any identified UXOs by adjusting the pipeline route
- If the target is confirmed as non-UXO, the item will be removed from its original location and transferred to a location free from magnetic anomalies outside of the clearance corridor (wet storage) or to the surface as deemed necessary. To facilitate these work the ROV will be equipped with the following:
 - Suction pump for shock-free excavation of pUXO
 - A basket for recovery of small objects
 - Manipulator arms fitted with cutting and grabbing tools
 - The manipulators will be fitted with one or more tools that can recover or reposition objects outside the inspection area, if necessary
 - The manipulators will also be fitted with one or more tools that can cut larger objects down to a physical size that can be handled by the ROV.
- Once the object believed to be the source of the anomaly is removed, the excavation pit will be checked to ensure the entire target has been removed, e.g., by hovering coils over the excavation pit
- An "Out EM Survey" will then be conducted at the location where the target was found to check that the object removed was the source of the anomaly.

No specific archaeological investigations are planned, however, during target inspections incidental archaeological finds may occur. Objects of archaeological interest will not be touched or moved. Please see section 4.11 of the attached UXO Investigations Supporting Environmental Information report for additional detail.

At the time of writing a schedule of work is not available as a contractor is still being confirmed.