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(Via Email)

22 August 2019

Dear Jacqui

### **Horse Mussel Considerations for Nigg East Quay Supporting Information for Environmental Impact Assessment Report (EIAR)**

In response to your recent email communication dated 14<sup>th</sup> August 2019, this letter formally sets out the required supporting information pertaining to horse mussel beds, as part of the recently submitted EIA for the proposed East Quay at Nigg Energy Park. Given seagrass was not Scoped in as part of the Scoping Opinion, we have not provided assessment, however we believe similar arguments would apply.

Horse mussels (*Modiolus modiolus*) are a Priority Marine Feature as noted within the Highland Council Scoping response (dated 27<sup>th</sup> February 2019). Whilst the mussel beds are geographically located within the Dornoch Firth and Morrich More Special Area of Conservation (SAC), they are not a designated feature of the SAC and were subsequently excluded from the marine ecology assessment due to the 15km distance.

At the request of MS-LOT, potential impacts of the proposed development upon horse mussel beds have been assessed and the results are presented in line with the associated EIAR document specification.

#### **Baseline**

Horse mussels (*Modiolus modiolus*) are bivalve molluscs which grow to be much larger (up to 20cm in length) than blue mussels (*Mytilus edulis*). They can form vast beds and reefs, especially in sheltered sites, usually in soft to coarse sediments below the low water mark from the lower shoreline to approximately 28m deep; but can also attach to rock.

Horse mussel beds are a Priority Marine Feature, a UK BAP habitat and an OSPAR Commission threatened and declining habitat. Horse mussel beds are protected in 12 locations around Scotland by a suite of Marine Protected Areas, one of which is within the same area as the Dornoch Firth and Morrich More SAC<sup>1</sup>.

### ***Horse Mussel Beds***

#### ***Priority Marine Feature located within the Dornoch Firth and Morrich More SAC***

##### *Nature of Impacts*

Dredging and vibratory piling operations are likely to increase turbidity and sedimentation. The increase in turbidity and sedimentation may alter coastal processes and damage or destroy mussel beds. The sediment in the water column as a result of dredging may also be contaminated due to historic development activities in the Cromarty Firth.

The proposed development may lead to contamination of coastal water and sediments from accidental pollution incidents (see Chapter 5: Water Environment, Soils and Coastal Processes). The main risk is posed by refuelling activities. Oil spillages to the water environment would be detrimental to both water and sediment quality, and could affect mussels directly or via their food source.

Dredging and an increase in vessel movement may cause the spread of the INNS wireweed, known to be present in the Cromarty Firth, as well as other species that are becoming widespread in Scotland, which could alter the substrate upon which the mussel beds inhabit.

##### *Duration of Impacts*

The proposed development is scheduled to begin in Q4 2019, with an estimated timetable of approximately 253 days from initial contractor mobilisation to completion, thus a programme of approximately 10 months construction period is anticipated. Impacts arising from construction activities will therefore be temporary.

##### *Importance of IEF*

Horse mussel beds are a Priority Marine Feature and are of National (Scotland) importance.

##### *Magnitude of Impacts*

As stated in Chapter 5: Water Environment and Coastal Processes of the Nigg East Quay EIAR, sand transport modelling results indicate that the majority of sand and silt lost to the water column during dredging will remain within the dredge area, therefore increased sedimentation during the dredging will be very localised and short term and therefore it is assessed turbidity would not impact mussel beds, which are approximately 15m north of the site. The material to be dredged has been assessed as being clean sand and there are very low levels of key contaminants of concern, therefore there should be no chemical pollution risks with the dredged material. **The magnitude of the impact of increased turbidity and sedimentation on horse mussel beds is considered to be negligible.**

During construction, chemical pollutants released into the water (as a result of dredging, spilled material from vessels, spillage from onshore storage of fuel or chemicals) could have impacts on mussel beds either directly, or indirectly. Toxic pollutants could cause bioaccumulation and/or reduced prey availability leading to loss of condition. Overall with mitigation detailed in the CEMP, **the magnitude of the impact of pollution on horse mussel beds is considered to be negligible.**

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<sup>1</sup> SNH: Horse Mussel Beds available at: <https://www.nature.scot/landscapes-and-habitats/habitat-types/coast-and-seas/marine-habitats/horse-mussel-beds> last accessed 08/08/2019

All dredged material will either be brought ashore and stockpiled ahead of use as infill to the new quay, deposited directly within the footprint of the quay or disposed of to The Sutors licensed disposal site; therefore there is a risk of spreading the INNS wireweed or other non-native marine species. The increase in vessels associated with construction works has the potential to increase the risk of the spread of INNS, as INNS can also be spread via hull fouling and transfer in ballast water. Biosecurity measures will be included in the CEMP, post-consent. **The magnitude of the impact of INNS on horse mussel beds is considered to be low.**

Significance of Effects

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Effect	IEF	Significance
Turbidity and sedimentation	Horse mussel beds	Not significant
Pollution	Horse mussel beds	Not significant
Spread of INNS	Horse mussel beds	Significant effect assumed based on the Precautionary Principle

Confidence in Assessments

Standard guidance and recognised sources of information were consulted to make assessments on turbidity and sedimentation and contamination/pollution, therefore these assessments are made with **High Confidence**.

Although it is known that the species considered are widespread in Scotland, the rate and extent is difficult to predict, therefore the assessment of INNS is made with **Intermediate Confidence**.

We trust that this formal letter satisfies the post-submission requirements in respect of Horse Mussel Beds as part of the recently-submitted EIAR. Please contact us should you have any further questions on the content of this letter, or in relation to the applications.

Yours sincerely  
**for EnviroCentre Ltd**

(issued electronically)

**Emma Quinn**  
**Environmental Consultant**