

Viridor

## Tees Valley ERF

Response to additional information request raised on 14 November 2024

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### 1 Introduction

The following technical note has been produced to respond to the additional information request raised on 14 November 2024. The question from the permitting officer is italicised and in **bold font**. Further advice provided by Natural England (NE) regarding bryophytes was forwarded by the Environment Agency on 20 November 2024 along with an additional request for information. This has been included as the final paragraph in the quoted additional information request.

### 2 Additional Information Request

*Please provide proposals for further mitigation/reduction of pollutants that contribute to Nutrient Nitrogen Deposition (NND). Emissions shall be reduced to a level that results in a process contribution (PC) of <1% of the relevant lower NND critical load\* at the coastal sand dunes habitat of the Teesmouth and Cleveland SSSI. Also provide an updated air quality modelling assessment that demonstrates the reduced impact.*

*Reason: Based on the predicted PCs and supporting information provided in the air quality assessment submitted with the application we consider that based on recent advice from Natural England the proposed emissions are likely to damage the interest features of the coastal sand dunes habitat of the Teesmouth and Cleveland SSSI due to NND. Natural England have advised that PCs above 1% of the lower critical load are likely to damage the interest features of the coastal sand dunes habitat.*

*\*Note that your existing air quality assessment has used a lower critical load of 10 kgN/ha/yr. The current lower critical load on APIS (Site Relevant Critical Loads and Source Attribution | Air Pollution Information System) for NND is now 5kgN/ha/yr and this should be used for your assessment. The Environment Agency is aware of the changes operated in APIS in July 2023 in respect to critical loads and levels. The EA's approach was to assesses those permit applications submitted before the APIS change at the levels applicable at the time of submitting the application. In addition, there was a 12 months grace period, which ended in July 2024, where the applications could still be assessed against the critical loads and levels pre July 2023. As of July 2024, all new permit applications including this application must use the updated values shown in the APIS.*

*Contrary to information on APIS and following recent advice from Natural England for Teesmouth and Cleveland SPA/Ramsar/SSSI the critical level (CL) for ammonia of 3 µg/m³ you have used in*

*the AQ modelling is incorrect. NE have recently indicated that there are Bryophytes present at the habitat site and therefore a CL of  $1 \mu\text{g}/\text{m}^3$  should be used for the assessment. This means that based on your current proposals the PC is likely to be  $>1\%$  and the PEC for ammonia is likely to be above 100% of the CL and is likely to be significant. Therefore, in addition to the information requested below could you also confirm if ammonia emissions can be reduced to  $<1\%$  of the CL and provide an updated assessment of impacts from ammonia on the Teesmouth and Cleveland SPA/Ramsar/SSSI based on a CL of  $1 \mu\text{g}/\text{m}^3$ .*

**Response:**

**Sensitivity of the habitat to NND**

The maximum NND PC to the sand dune habitat as predicted in the Dispersion Modelling Assessment submitted with the EP application is  $0.112 \text{ kgN}/\text{ha}/\text{yr}$ , which is  $1.12\%$  of the applied Critical Load of  $10 \text{ kgN}/\text{ha}/\text{yr}$ . As noted in the Additional Information Request above, the lower end of the Critical Load range for sand dune habitats has been updated to  $5 \text{ kgN}/\text{ha}/\text{yr}$  on APIS (taken from Bobbink et al., Review and revision of empirical critical loads of nitrogen for Europe, 2022, herein referred to as Bobbink (2022)). Viridor acknowledges that the lower end of the Critical Load range should be used for screening assessments, but for detailed assessments consideration can also be given to the sensitivity of the habitat to NND to determine where in the Critical Load range the designated habitat lies.

As part of the planning application works for the Tees Valley ERF, a Statement of Conformity (SoC) was agreed between Terrence O'Rourke Ltd (now tor&Co), acting as the ecological consultant for the project, and NE. The SoC and NE's response are included for reference as Appendix A and B respectively. The SoC concludes that the dune grassland habitats are calcareous and as such a Critical Load of  $10 \text{ kgN}/\text{ha}/\text{yr}$  is applicable, a position that was not challenged by NE. It is notable that NE's consultation response was made well after the publication of Bobbink (2022) and would have considered the evidence therein, including the evidence that calcareous dune sites can be less sensitive to NND than acid or decalcified dune sites (Bobbink (2022), section 4.2.2).

As such, given that NE previously accepted that the dune habitat at the Teesmouth and Cleveland Coast SSSI is calcareous, the Applicant considers that a Critical Load of  $10 \text{ kgN}/\text{ha}/\text{yr}$  remains appropriate based on the evidence regarding the sensitivity of the habitat. We request that NE confirm that their position is unchanged from that previously set out in the SoC and accepted in its consultation response.

**Further mitigation/reduction of pollutants**

Viridor would propose that the EA consider the average rather than the maximum of the five years of modelled weather data when calculating the impact of NND on the sand dune habitats, which is considered appropriate as NND effects occur on a multi-year timescale. The average PC across the five years of weather data has been calculated as  $0.107 \text{ kgN}/\text{ha}/\text{yr}$  (compared to the maximum of  $0.112 \text{ kg}/\text{ha}/\text{yr}$ ), so equates to  $1.07\%$  of the Critical Load of  $10 \text{ kgN}/\text{ha}/\text{yr}$ . In addition, Viridor would propose that an additional emission limit for ammonia as a monthly average of  $8 \text{ mg}/\text{Nm}^3$  is applied to the determination of the application. This will further reduce the predicted NND impact to  $0.089 \text{ kgN}/\text{ha}/\text{yr}$ , which is  $0.89\%$  of the Critical Load of  $10 \text{ kgN}/\text{ha}/\text{yr}$  and can be screened out as 'insignificant'.

**Presence of byrophytes**

Viridor notes that APIS states that the Critical Level for ammonia is “1 or 3”  $\mu\text{g}/\text{m}^3$ , but also states that neither lichens nor bryophytes are integral for this habitat. tor&co has advised that, of the moss species typically found in the sand dune communities listed for the SSSI on APIS (SD7, SD8 and SD9), virtually all of them are widespread in lowland England and many are very common which would suggest that they are not particularly sensitive to high levels of ammonia. There are three species with a more restricted range, but this is linked to habitat requirements rather than air quality (two occur largely in north and western Britain and are unlikely to be found in NE England and the third occurs mainly on chalk in southern England). Lichens are not a major component of any of these three sand dune communities which would suggest that application of the lower critical level of ammonia is not appropriate to this habitat feature. The SSSI citation notes the presence of one species of moss: fertile feather moss as an interest feature. This occurs in dune slacks. However, the Atlas of British and Irish Bryophytes only has pre-1950 records of this species on the Tees Coast.

On the basis that lichens and byrophytes are not integral to the habitat and those bryophytes present are not particularly sensitive to high levels of ammonia, Viridor considers that the higher Critical Level of 3  $\mu\text{g}/\text{m}^3$  is applicable to the determination of impacts on the Teesmouth and Cleveland Coast SSSI.

# Appendices

## A Statement of Conformity

Appended separately in email response.

## B Natural England Consultation Response

Appended separately in email response.