APPENDIX 8

REVISED SCREENING AND INTEGRITY MATRICES

Note / Memo

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Industry, Energy and Mining

To:	Examining Authority
From:	Matt Simpson
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Subject: **York Potash Harbour facilities DCO: Response to ExA Question HRA 1.20 (Screening and integrity matrices)**

This note provide a response to Question HRA 1.20 of the ExA first questions (Screening and integrity matrices (overleaf)).

With regard to the additional species proposed for designation within the Teesmouth and Cleveland Coast SPA, it should be noted that the HRA acknowledged and took account of the role that habitats not currently covered by the designation play in the functioning of the SPA. The potential effects of the proposed scheme on the species proposed for designation was, therefore, encompassed within the HRA.

Revised Appendix 8.1 to the HRA (Document 6.3)

Screening matrices (for the Harbour facilities, alone and in combination)

The following provides a key to the letters and symbols included in Tables 1 and 2 below:

✓ = Likely significant effect cannot be excluded.

x = Likely significant effect can be excluded.

C = construction.

O = operation.

D = decommissioning.

Table 1 Potential for LSE on the Teesmouth and Cleveland Coast SPA

Teesmouth and Cleveland Coast SPA															
Distance to Proposed Scheme: 900m from the Harbour facilities															
European site features	**Likely effects of proposed scheme**														
	Coastal processes			***Habitat Loss / change***			***Disturbance***			***Water/sediment quality***			***In-combination***		
	C	***O***	***D*** [c]	***C***	***O***	***D*** [c]	***C***	***O***	***D*** [c]	***C***	***O***	***D*** [c]	***C***	***O***	***D*** [c]
Little tern (breeding)	✓ a	✓ a	✗ f	✓ b	✓ b	✗ f	✓c	✓c	✗ f	✓ d	✓ d	✗ f	✓ e	✓ e	✗ f
Sandwich tern (passage)	✓ a	✓ a	✗ f	✓ b	✓ b	✗ f	✓ c	✓ c	✗ f	✓ d	✓ d	✗ f	✓ e	✓ e	✗ f
Knot	✓ a	✓ a	✗ f	✓ b	✓ b	✗ f	✓ c	✓ c	✗ f	✓ d	✓ d	✗ f	✓ e	✓ e	✗ f
Redshank	✓ a	✓ a	✗ f	✓ b	✓ b	✗ f	✓ c	✓ c	✗ f	✓ d	✓ d	✗ f	✓ e	✓ e	✗ f
Little tern	✓ a	✓ a	✗ f	✓ b	✓ b	✗ f	✓ c	✓ c	✗ f	✓ d	✓ d	✗ f	✓ e	✓ e	✗ f
Common tern	✓ a	✓ a	✗ f	✓ b	✓ b	✗ f	✓ c	✓ c	✗ f	✓ d	✓ d	✗ f	✓ e	✓ e	✗ f
Ringed plover	✓ a	✓ a	✗ f	✓ b	✓ b	✗ f	✓ c	✓ c	✗ f	✓ d	✓ d	✗ f	✓ e	✓ e	✗ f
Waterbird assemblage	✓ a	✓ a	✗ f	✓ b	✓ b	✗ f	✓ c	✓ c	✗ f	✓ d	✓ d	✗ f	✓ e	✓ e	✗ f

[a] see **Table 8.2** (Coastal processes) for evidence supporting conclusions.

[b] see **Table 8.2** (Habitats loss / change) for evidence supporting conclusions.

[c] see **Table 8.2** (Disturbance) for evidence supporting conclusions.

[d] see **Table 8.2** (Water and sediment quality) for evidence supporting conclusions.

[e] see **Table 8.7** for evidence supporting conclusions.

[f] Decommissioning of the Harbour facilities would only involve removal of the overland conveyor and therefore there is no potential for an effect on coastal processes, habitats or water and sediment quality. Given that the decommissioning works would take place in 100 years' time, in combination effects cannot be reasonably foreseen and have been screened out.

Table 2 Potential for LSE on the Teesmouth and Cleveland Coast Ramsar site

Teesmouth and Cleveland Coast Ramsar site															
Distance to Proposed Scheme: 900m from the Harbour facilities															
Ramsar site features	**Likely effects of proposed scheme**														
	Coastal processes			***Habitat Loss / change***			***Disturbance***			***Water/sediment quality***			***In-combination***		
	C	***O***	***D*** [c]	***C***	***O***	***D*** [c]	***C***	***O***	***D*** [c]	***C***	***O***	***D*** [c]	***C***	***O***	***D*** [c]
Common redshank (passage)	✓ [a]	✓ [a]	✗ [f]	✓ [b]	✓ [b]	✗ [f]	✓ [c]	✓ [c]	✗ [f]	✓ [d]	✓ [d]	✗ [f]	✓ [e]	✓ [e]	✗ [f]
Red knot (wintering)	✓ [a]	✓ [a]	✗ [f]	✓ [b]	✓ [b]	✗ [f]	✓ [c]	✓ [c]	✗ [f]	✓ [d]	✓ [d]	✗ [f]	✓ [e]	✓ [e]	✗ [f]
Waterbird assemblage	✓ [a]	✓ [a]	✗ [f]	✓ [b]	✓ [b]	✗ [f]	✓ [c]	✓ [c]	✗ [f]	✓ [d]	✓ [d]	✗ [f]	✓ [e]	✓ [e]	✗ [f]

[a] see **Table 8.2** (Coastal processes) for evidence supporting conclusions.

[b] see **Table 8.2** (Habitats loss / change) for evidence supporting conclusions.

[c] see **Table 8.2** (Disturbance) for evidence supporting conclusions.

[d] see **Table 8.2** (Water and sediment quality) for evidence supporting conclusions.

[e] see **Table 8.7** for evidence supporting conclusions.

[f] Decommissioning of the Harbour facilities would only involve removal of the overland conveyor and therefore there is no potential for an effect on coastal processes, habitats or water and sediment quality. Given that the decommissioning works would take place in 100 years' time, in combination effects cannot be reasonably foreseen and have been screened out.

Revised Appendix 8.2 to the HRA (Document 6.3)

Screening matrices (for YPP, alone and in combination)

[Provided as information relating to the screening exercise undertaken for the YPP]

Introduction

The HRA Screening exercise included all elements of the YPP. The results of this exercise in relation to the North York Moors SAC, North York Moors SPA and Arnecliff and Park Hole Woods SAC (as well as the Teesmouth and Cleveland Coast SPA and Ramsar site) are set out in the tables below.

HRA Screening

Table 1 Summary of the potential effects associated with the YPP that could affect European designated sites

Designation	Potential effects	Presented in screening matrices as
North York Moors SAC	The direct effect of dust generated during construction, for example from the earthworks and use of the haul roads, and operation settling onto the habitats.	Dust
	Indirect effects associated with the emissions on and around the development sites (including vehicle emissions) and deposition of nitrogen from the generator ventilation stacks.	Emissions
	Indirect effects associated with airborne emissions associated with increased vehicular movements (road traffic) which could result in changes in nitrogen deposition (although because the prevailing wind is from the south west this change is not expected to be significant).	Emissions
	Indirect effects associated with lighting requirements for the construction and operation of the development on bird and bat populations using the SAC.	Disturbance
	Alteration to ground and surface water flows effecting water dependent habitats and species within the SAC.	Alteration to ground and surface water
	Disturbance to birds (merlin and golden plover) from noise and visual disturbance.	Disturbance

Designation	Potential effects	Presented in screening matrices as
North York Moors SPA	Indirect effects associated with the emissions on and around the development sites (including vehicle emissions) and deposition of nitrogen from the generator ventilation stacks.	Emissions
	Indirect effects associated with airborne emissions in the form of dust generated from earthworks and haul roads and associated with the increased vehicular movements which could result in changes in nitrogen deposition rates.	Emissions
	Alteration to ground and surface water flows effecting water dependent habitats and species within the SPA.	Alteration to ground and surface water
Arnecliff and Park Hole Woods SAC	The direct effect of dust generated during construction, for example from the earthworks, and operation settling onto the habitats.	Dust
	Indirect effects associated with the emissions on and around the development sites (including vehicle emissions) and deposition of nitrogen from the generator ventilation stacks.	Emissions
	Alteration to groundwater effecting water dependent habitats within the SAC.	Alteration to ground and surface water
Teesmouth and Cleveland SPA and Ramsar site	Changes in coastal processes affecting the extent of feeding habitat. Disruption to the sediment budget (e.g. loss of fluvial sediment to offshore disposal sites due to maintenance dredging and potential impacts to bird feeding and interruption of sediment flow to Coatham Sands due to offshore disposal of maintenance dredged material).	Coastal processes

Designation	Potential effects	Presented in screening matrices as
	Potential for direct take or physical disturbance of contributory habitat (e.g. the intertidal foreshore, Bran Sands lagoon and Dabholm Gut). Potential implications for water levels in Bran Sands lagoon due to changes in permeability of the existing embankment between the lagoon and the Tees estuary due to construction of the proposed port terminal.	Habitat loss / change
	Disturbance to feeding and roosting areas for overwintering and passage birds (e.g. visual disturbance arising from personnel movements and lighting).	Disturbance
	Effects on food resources due to reduced water quality following dredging and deposition of sediment disrobed during dredging in intertidal areas. Effect on water quality in Bran Sands lagoon.	Water and sediment quality

Table 2 Potential for LSE on the North York Moors SAC

Distance to Proposed Scheme: Adjacent to the Mine surface site and Lockwood Beck Intermediate Shaft Site													
European site features	**Project Element**	**Likely Effects of Proposed Scheme**											
		Dust			***Alteration to (surface water) [g] and groundwater***			***Emissions***			***In-combination***		
		C	***O***	***D [i]***	***C***	***O***	***D [i]***	***C***	***O***	***D [i]***	***C***	***O***	***D [i]***
Northern Atlantic wet heaths with Erica tetralix *European dry heaths* *Blanket bogs*	Mine	✗[a]	✗[a]	✗[a]	✓[b]	✓[b]	✓[b]	✓[c]	✓[c]	✓[c]	✓[h]	✓[h]	✓[h]
	Lady Cross Plantation												
	Lockwood Beck	✗[d]	✗[d]	✗[d]	✗[e]	✗[e]	✗[e]	✓[f]	✓[f]	✗[f]	✓[h]	✓[h]	✓[h]
	Tocketts Lythe												
	MHF												
	Harbour facility												

NOTE: The cross references to Tables and supporting evidence below relate to the HRA that was submitted with the planning applications for the Mine and MTS and MHF which accompanies this DCO application (as Appendix 3 to Document 7.3 – Project Position Statement).

[a] see Table 8.2 ('Dust' for the Mine project element) for evidence supporting the conclusions.

[b] see Table 8.2 ('Groundwater and surface water' for the Mine project element) for evidence supporting the conclusions.

[c] see Table 8.2 ('Emissions – road traffic movements' and 'Emissions – vehicle movements on and around the mine surface development site and ventilation stacks' for the Mine project element) for evidence supporting the conclusions.

[d] see Table 8.2 ('Dust' for the Lockwood Beck Intermediate Shaft Site project element) for evidence supporting the conclusions.

[e] see Table 8.2 ('Groundwater' for the Lockwood Beck Intermediate Shaft Site project element) for evidence supporting the conclusions.

[f] see Table 8.2 ('Emissions – road traffic movements' and 'Emissions – vehicle movements on and around the mine surface development site and ventilation stacks' for the Lockwood Beck Intermediate Shaft Site project element) for evidence supporting the conclusions.

[g] no effects are predicted with respect to surface water.

[h] see Table 8.6 for evidence supporting the conclusions.

[i] for the purposes of this exercise, effects during the decommissioning phase at the Mine are taken to be as for the construction phase; at the Intermediate Shaft Sites effects during decommissioning are predicted to be very limited (as the works would be limited) and hence LSE has been 'screened out'.

Table 3 Potential for LSE on the North York Moors SPA

Distance to Proposed Scheme: Adjacent to the Mine and Lockwood Beck Intermediate Shaft Site													
European site features	**Project Element**	**Likely Effects of Proposed Scheme**											
		Disturbance			***Emissions***			***Alteration to (surface water)[g] and groundwater***			***In-combination***		
		C	***O***	***D*** [i]	***C***	***O***	***D*** [i]	***C***	***O***	***D*** [i]	***C***	***O***	***D*** [i]
Golden Plover *Merlin*	Mine	✓[a]	✓[a]	✓[a]	✗[b]	✗[b]	✗[b]	✗[c]	✗[c]	✗[c]	✓[h]	✓[h]	✗[h]
	Lady Cross Plantation												
	Lockwood Beck	✓[d]	✓[d]	✗[d]	✗[e]	✗[e]	✗[e]	✗[f]	✗[f]	✗[f]	✓[h]	✓[h]	✗[h]
	Tocketts Lythe												
	MHF												
	Harbour facility												

NOTE: The cross reference to Table 8.3 relates to the HRA that was submitted with the planning applications for the Mine and MTS and MHF which accompanies this DCO application (as Appendix 3 to Document 7.3 – Project Position Statement).

[a] see Table 8.3 ('Disturbance' for the Mine project element) for evidence supporting the conclusions.

[b] see Table 8.3 for evidence supporting the conclusions.

[c] see Table 8.3 ('Groundwater' for the Mine project element) for evidence supporting the conclusions.

[d] see Table 8.3 ('Disturbance' for the Lockwood Beck Intermediate Shaft Site project element) for evidence supporting the conclusions.

[e] see Table 8.3 for evidence supporting the conclusions.

[f] see Table 8.3 ('Groundwater' for the Lockwood Beck Intermediate Shaft Site project element) for evidence supporting the conclusions.

[g] no effects are predicted with respect to surface water.

[h] see Table 8.6 for evidence supporting the conclusions.

[i] for the purposes of this exercise, effects during the decommissioning phase at the Mine are taken to be as for the construction phase; at the Intermediate Shaft Sites effects during decommissioning are predicted to be very limited (as the works would be limited) and hence LSE has been 'screened out'.

Table 4 Potential for LSE on the Arnecliff and Park Hole Woods SAC

Distance to Proposed Scheme: 3km from Lady Cross Plantation Intermediate Shaft Site										
European site features	**Project Element**	**Likely Effects of Proposed Scheme**								
		Dust [a]			***Alteration to (surface water) and groundwater*** [a]			***In-combination*** [a]		
		C	***O***	***D***	***C***	***O***	***D***	***C***	***O***	***D***
Old Sessile Oak woods with Ilex and Belchnum *Trichonmanes speciosum, Killarney Fern*	Mine									
	Lady Cross Plantation									
	Lockwood Beck									
	Tocketts Lythe									
	MHF									
	Harbour facility									

NOTE: The cross reference to Table 8.4 below relates to the HRA that was submitted with the planning applications for the Mine and MTS and MHF which accompanies this DCO application (as Appendix 3 to Document 7.3 – Project Position Statement).

[a] see Table 8.4 for evidence supporting conclusions.

Revised Appendix 10.1 to the HRA (Document 6.3)

Integrity matrices for the Harbour facilities

For the Harbour facilities likely significant effects have been identified for the following sites:

- Teesmouth and Cleveland Coast SPA.
- Teesmouth and Cleveland Coast Ramsar site.

These sites have been subject to further assessment in order to establish if the Harbour facilities NSIP could have an adverse effect on their integrity. Evidence for the conclusions reached on integrity is detailed within the footnotes to the matrices below.

Matrix Key:

✓ = Adverse effect on integrity cannot be excluded

✕ = Adverse effect on integrity can be excluded

C = construction

O = operation

D = decommissioning

Stage 2 Matrix 1: Teesmouth and Cleveland Coast SPA

Teesmouth and Cleveland Coast SPA															
Distance to Proposed Scheme: 900m from the Harbour facilities															
European site features	**Adverse effect on integrity**														
	Coastal processes			***Habitat Loss / change***			***Disturbance***			***Water/sediment quality***			***In-combination***		
	C	***O***	***D*** [f]	***C***	***O***	***D*** [f]	***C***	***O***	***D*** [f]	***C***	***O***	***D*** [f]	***C***	***O***	***D*** [f]
Little tern (breeding)	× [a]	× [a]	× [a]	× [b]	× [b]	× [b]	× [c]	× [c]	× [c]	× [d]	× [d]	× [d]	× [e]	× [e]	× [e]
Sandwich tern (passage)	× [a]	× [a]	× [a]	× [b]	× [b]	× [b]	× [c]	× [c]	× [c]	× [d]	× [d]	× [d]	× [e]	× [e]	× [e]
Knot	× [a]	× [a]	× [a]	× [b]	× [b]	× [b]	× [c]	× [c]	× [c]	× [d]	× [d]	× [d]	× [e]	× [e]	× [e]
Redshank	× [a]	× [a]	× [a]	× [b]	× [b]	× [b]	× [c]	× [c]	× [c]	× [d]	× [d]	× [d]	× [e]	× [e]	× [e]
Little tern	× [a]	× [a]	× [a]	× [b]	× [b]	× [b]	× [c]	× [c]	× [c]	× [d]	× [d]	× [d]	× [e]	× [e]	× [e]
Common tern	× [a]	× [a]	× [a]	× [b]	× [b]	× [b]	× [c]	× [c]	× [c]	× [d]	× [d]	× [d]	× [e]	× [e]	× [e]
Ringed plover	× [a]	× [a]	× [a]	× [b]	× [b]	× [b]	× [c]	× [c]	× [c]	× [d]	× [d]	× [d]	× [e]	× [e]	× [e]
Waterbird assemblage	× [a]	× [a]	× [a]	× [b]	× [b]	× [b]	× [c]	× [c]	× [c]	× [d]	× [d]	× [d]	× [e]	× [e]	× [e]

[a] Paragraphs 10.3.6 to 10.3.14 and Paragraph 10.4.3 of the HRA (Document 6.3)

[b] Paragraphs 10.3.15 to 10.3.34 and Paragraphs 10.4.4 to 10.4.6 of the HRA (Document 6.3)

[c] Paragraphs 10.3.55 to 10.3.79; 10.3.83 to 10.3.86 and Paragraph 10.4.7 to 10.4.8 of the HRA (Document 6.3)

[d] Paragraphs 10.3.35 to 10.3.54 and Paragraph 10.4.9 to 10.4.11 of the HRA (Document 6.3)

[e] Section 11.3 of the HRA (Document 6.3)

[f] Decommissioning of the Harbour facilities would only involve removal of the overland conveyor and therefore there is no potential for an effect on coastal processes, habitats or water and sediment quality. Given that the decommissioning works would take place in 100 years' time, in combination effects cannot be reasonably foreseen and have been screened out.

Stage 2 Matrix 2: Teesmouth and Cleveland Coast Ramsar site

Teesmouth and Cleveland Coast Ramsar site															
Distance to Proposed Scheme: 900m from the Harbour facilities															
Ramsar site features	**Adverse effect on integrity**														
	Coastal processes			***Habitat Loss / change***			***Disturbance***			***Water/sediment quality***			***In-combination***		
	C	***O***	***D*** [f]	***C***	***O***	***D*** [f]	***C***	***O***	***D*** [f]	***C***	***O***	***D*** [f]	***C***	***O***	***D*** [f]
Common redshank (passage)	× [a]	× [a]	× [a]	× [b]	× [b]	× [b]	× [c]	× [c]	× [c]	× [d]	× [d]	× [d]	× [e]	× [e]	× [e]
Red knot (wintering)	× [a]	× [a]	× [a]	× [b]	× [b]	× [b]	× [c]	× [c]	× [c]	× [d]	× [d]	× [d]	× [e]	× [e]	× [e]
Waterbird assemblage	× [a]	× [a]	× [a]	× [b]	× [b]	× [b]	× [c]	× [c]	× [c]	× [d]	× [d]	× [d]	× [e]	× [e]	× [e]

[a] Paragraphs 10.3.6 to 10.3.14 and Paragraph 10.4.3 of the HRA (Document 6.3)

[b] Paragraphs 10.3.15 to 10.3.34 and Paragraphs 10.4.4 to 10.4.6 of the HRA (Document 6.3)

[c] Paragraphs 10.3.55 to 10.3.79; 10.3.83 to 10.3.86 and Paragraph 10.4.7 to 10.4.8 of the HRA (Document 6.3)

[d] Paragraphs 10.3.35 to 10.3.54 and Paragraph 10.4.9 to 10.4.11 of the HRA (Document 6.3)

[e] Section 11.3 of the HRA (Document 6.3)

[f] Decommissioning of the Harbour facilities would only involve removal of the overland conveyor and therefore there is no potential for an effect on coastal processes, habitats or water and sediment quality. Given that the decommissioning works would take place in 100 years' time, in combination effects cannot be reasonably foreseen and have been screened out.