FOREWIND

DOGGER BANK
TEESSIDE A & B

October
2013

Draft Environmental Statement Chapter 12 Appendix F VER Tables

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1.1. Dogger Bank Teesside A & B: VER Groups and Biotope Sensitivity (as defined by MarLIN)

1.1.1. The following table has been produced following consultation responses from JNCC/NE on the draft ES **Chapter 12: Marine and Intertidal Ecology** for Creyke Beck. The table lists all the impact assessment headings presented in the ES chapter and the "factors" from the MarLIN sensitivity assessment tool that relate to these impacts. The nine VER's used as receptors in the impact assessment are also listed, alongside their representative biotopes, with the ecological sensitivity (as defined by MarLIN) of the most sensitive biotope within the VER to the specific factor presented. The ecological sensitivity classifications are taken directly from MarLIN. For further clarity, the two key elements of the final MarLIN ecological sensitivity assessment (intolerance x recoverability) are also shown.

1.1.2. The most sensitive biotope within the VER to the effect in question has been used to ensure that a worst-case assessment is undertaken. For some VERs, MarLIN sensitivity assessments for the component biotopes do not exist (i.e. VER B). In this instance, sensitivity assessments of similar biotopes have been used.

Table 1 CONSTRUCTION phase impacts vs MarLIN "factors" vs ecological sensitivity of most sensitive biotopes within each VER

ES Chapter 12 Impact Heading	Relevant MarLIN "Factor"	VER (Representative Biotopes)								
		VER A - Sandy sediment supporting relatively low diversity benthic communities which form part of the Annex I Sandbank Feature **(within boundary of cSAC)**	**VER B** - Coarse sediments with medium to high diversity benthic communities which form part of the Annex I Sandbank Feature **(within boundary of cSAC)**	**VER C -** Muddy sand sediments with medium diversity benthic communities (including sea pens) which form part of the Annex I Sandbank Feature **(within boundary of cSAC)**	**VER D** - Sandy sediment supporting relatively low diversity benthic communities **outside cSAC boundary)**	**VER E** - Coarse sediments with medium to high diversity benthic communities **outside cSAC boundary**	**VER F** - Muddy sediments with medium diversity benthic communities (including sea pens) **outside cSAC boundary**	**VER G** - Rock-based infralittoral and circalittoral habitats	**VER H** - Intertidal sand-based habitats	**VER I -** Intertidal rock-based habitats
		Representative Biotopes SS.SSa.CFiSa.Apri BatPo SS.Ssa.CFiSa SS.SCS.ICS.SLan	**Representative Biotopes** SS.SMx.CMx SS.SCS.CCS.MedLumVen SS.SMx.CMx.OphMx	**Representative Biotopes** SS.SSa.IMuSa.EcorEns SS.SSa.CMuSa.AbraAirr SS.SMu.CFiMu.SpnMeg	**Representative Biotopes** SS.Ssa.CFiSa SS.SCS.ICS.SLan SS.SSa.CFiSa.ApriBatPo SS.SSa.CFiSa.EpusObor Apri SS.SSa.IFiSa.NcirBat	**Representative Biotopes** SS.SMx.CMx SS.SMx.CMx.OphMx SS.SMx.OMx.PoVen	**Representative Biotopes** SS.SMu.CFiMu.SpnMeg SS.SMu.CSaMu.ThyNten/ AfilNten	**Representative Biotopes** CR.MCR.EcCr.FaAlCr	**Representative Biotopes** LS.LSa.MoSa.AmSco.Pon LS.LSa.MoSa.AmSco.Sco LS.LSa.FiSa.Po.Ncir LS.LSa.MoSa.BarSa LS.LSa.St.tal LS.LSa.MoSa.AmSco.Eur LS.LSa.FiSa.Po.Ncir,	**Representative Biotopes** LR.FLR.Eph.EntPor
Physical disturbance to habitats and species and temporary habitat loss	**Physical disturbance and abrasion**	**LOW** (intermediate x high) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	**LOW** (intermediate x high) Based on **CCS.MedLumVen** biotope sensitivity assessment within MarLIN	**MODERATE** (high x moderate) Based on **EcorEns** biotope sensitivity assessment within MarLIN	**LOW** (intermediate x high) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	**LOW** (intermediate x high) Based on **CCS.MedLumVen** and **SS.SCS.ICS.MoeVen**[1] biotope sensitivity assessment within MarLIN	**LOW** (intermediate x high) Based on **SpnMeg** biotope sensitivity assessment within MarLIN	**LOW** (high x very high) Based on **CR.MCR.EcCr.FaAlCr.Po** biotope sensitivity assessment within MarLIN	**VERY LOW** (low x very high) Based on **LS.LSa.MoSa.AmSco.Eur** biotope sensitivity assessment within MarLIN	**LOW** (high x very high) Based on **LR.FLR.Eph.Ent** biotope sensitivity assessment within MarLIN
Increased suspended sediment concentration and sediment deposition	**Increased SSC**	**NOT SENSITIVE** (tolerant x not relevant) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	**VERY LOW** (low x very high) Based on **CCS.MedLumVen** biotope sensitivity assessment within MarLIN	**LOW** (low x high) Based on **EcorEns** biotope sensitivity assessment within MarLIN	**NOT SENSITIVE** (tolerant x not relevant) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	**VERY LOW** (low x very high) Based on **CCS.MedLumVen** and **SS.SCS.ICS.MoeVen** biotope sensitivity assessment within MarLIN	**NOT SENSITIVE** (low x immediate) Based on **SpnMeg** biotope sensitivity assessment within MarLIN	**VERY LOW** (low x very high) Based on **CR.MCR.EcCr.FaAlCr.Po** biotope sensitivity assessment within MarLIN	**NOT SENSITIVE** (tolerant x not relevant) Based on **LS.LSa.MoSa.AmSco.Eur** biotope sensitivity assessment within MarLIN	**NOT SENSITIVE** (tolerant x not relevant) Based on **LR.FLR.Eph.Ent** biotope sensitivity assessment within MarLIN
	Smothering	**NOT SENSITIVE** (low x immediate) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	**VERY LOW** (low x very high) Based on **CCS.MedLumVen** biotope sensitivity assessment within MarLIN	**NOT SENSITIVE** (tolerant x not relevant) Based on **EcorEns** biotope sensitivity assessment within MarLIN	**NOT SENSITIVE** (tolerant x not relevant) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	**VERY LOW** (low x very high) Based on **CCS.MedLumVen** and	**NOT SENSITIVE** (tolerant x not relevant) Based on **SpnMeg** biotope sensitivity assessment within MarLIN	**LOW** (intermediate x high) Based on **CR.MCR.EcCr.FaAlCr.Po** biotope sensitivity assessment within	**VERY LOW** (low x very high) Based on **LS.LSa.MoSa.AmSco.Eur** biotope sensitivity assessment within MarLIN	**LOW** (high x very high Based on **LR.FLR.Eph.Ent** biotope sensitivity assessment within MarLIN

[1] SS.SCS.ICS.MoeVen and SS.SCS.CCS.MedLumVen biotope sensitivity assessments used due to no MarLIN biotope sensitivity assessment for any of the VER E biotopes. The sensitivity of these biotopes to effects likely to arise via construction, operation and decommissioning of Teesside A & B judged to be similar to those of the VER E biotopes

ES Chapter 12 Impact Heading	Relevant MarLIN "Factor"	VER (Representative Biotopes)								
		VER A - Sandy sediment supporting relatively low diversity benthic communities which form part of the Annex I Sandbank Feature **(within boundary of cSAC)**	**VER B** - Coarse sediments with medium to high diversity benthic communities which form part of the Annex I Sandbank Feature **(within boundary of cSAC)**	**VER C -** Muddy sand sediments with medium diversity benthic communities (including sea pens) which form part of the Annex I Sandbank Feature **(within boundary of cSAC)**	**VER D** - Sandy sediment supporting relatively low diversity benthic communities **outside cSAC boundary)**	**VER E** - Coarse sediments with medium to high diversity benthic communities **outside cSAC boundary**	**VER F** - Muddy sediments with medium diversity benthic communities (including sea pens) **outside cSAC boundary**	**VER G** - Rock-based infralittoral and circalittoral habitats	**VER H** - Intertidal sand-based habitats	**VER I -** Intertidal rock-based habitats
		Representative Biotopes SS.SSa.CFiSa.Apri BatPo SS.Ssa.CFiSa SS.SCS.ICS.SLan	**Representative Biotopes** SS.SMx.CMx SS.SCS.CCS.MedLumVen SS.SMx.CMx.OphMx	**Representative Biotopes** SS.SSa.IMuSa.EcorEns SS.SSa.CMuSa.AbraAirr SS.SMu.CFiMu.SpnMeg	**Representative Biotopes** SS.Ssa.CFiSa SS.SCS.ICS.SLan SS.SSa.CFiSa.ApriBatPo SS.SSa.CFiSa.EpusObor Apri SS.SSa.IFiSa.NcirBat	**Representative Biotopes** SS.SMx.CMx SS.SMx.CMx.OphMx SS.SMx.OMx.PoVen	**Representative Biotopes** SS.SMu.CFiMu.SpnMeg SS.SMu.CSaMu.ThyNten/ AfilNten	**Representative Biotopes** CR.MCR.EcCr.FaAlCr	**Representative Biotopes** LS.LSa.MoSa.AmSco.Pon LS.LSa.MoSa.AmSco.Sco LS.LSa.FiSa.Po.Ncir LS.LSa.MoSa.BarSa LS.LSa.St.tal LS.LSa.MoSa.AmSco.Eur LS.LSa.FiSa.Po.Ncir,	**Representative Biotopes** LR.FLR.Eph.EntPor
						SS.SCS.ICS.MoeVen biotope sensitivity assessment within MarLIN		MarLIN		
Release of sediment contaminant sresulting in potential effects on benthic ecology	**Synthetic compound contamination**	**MODERATE** (high x high) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	**MODERATE** (high x high) Based on **CCS.MedLumVen** biotope sensitivity assessment within MarLIN	**MODERATE** (high x moderate) Based on **SpnMeg** biotope sensitivity assessment within MarLIN	**MODERATE** (high x high) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	***MODERATE*** (high x high) *Based on* ***CCS.MedLumVen*** *and* ***SS.SCS.ICS.MoeVen*** biotope sensitivity assessment within MarLIN	**MODERATE** (high x moderate) Based on **SpnMeg** biotope sensitivity assessment within MarLIN	***MODERATE*** (high x high) *Based on* ***CR.MCR.EcCr.FaAlCr.Po*** *biotope sensitivity assessment within MarLIN*	**MODERATE** (high x moderate) Based on **LS.LSa.MoSa.AmSco.Eur** biotope sensitivity assessment within MarLIN	**LOW** (intermediate x very high) Based on **LR.FLR.Eph.Ent** biotope sensitivity assessment within MarLIN
	Heavy metal contamination	**LOW** (intermediate x high) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	**MODERATE** (high x high) Based on **CCS.MedLumVen** biotope sensitivity assessment within MarLIN	**LOW** (intermediate x high) Based on **EcorEns** biotope sensitivity assessment within MarLIN	**LOW** (intermediate x high) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	***MODERATE*** (high x high) *Based on* ***CCS.MedLumVen*** *and* ***SS.SCS.ICS.MoeVen*** *biotope sensitivity assessment within MarLIN*	**LOW** (intermediate x high) Based on **SpnMeg** biotope sensitivity assessment within MarLIN	***MODERATE*** (high x high) *Based on* ***CR.MCR.EcCr.FaAlCr.Po*** *biotope sensitivity assessment within MarLIN*	**MODERATE** (intermediate x moderate) Based on **LS.LSa.MoSa.AmSco.Eur** biotope sensitivity assessment within MarLIN	**VERY LOW** (low x very high) Based on **LR.FLR.Eph.Ent** biotope sensitivity assessment within MarLIN
	Hydrocarbon contamination	**LOW** (intermediate x high Based on **SS.SCS.ICS.SLan**	**MODERATE** (high x high) Based on **CCS.MedLumVen**	**MODERATE** (high x moderate) Based on **EcorEns** biotope sensitivity	**MODERATE** (high x moderate) Based on **NcriBat** biotope sensitivity	***MODERATE*** (high x high) Based on	**MODERATE** (high x moderate) Based on **SpnMeg** biotope sensitivity	***LOW*** (intermediate x high)	**MODERATE** (high x moderate) Based on **LS.LSa.MoSa.AmSco.E**	**LOW** (high x very high) Based on **LR.FLR.Eph.Ent**

		biotope sensitivity assessment within MarLIN	biotope sensitivity assessment within MarLIN	assessment within MarLIN	assessment within MarLIN	**CCS.MedLumVen** and **SS.SCS.ICS.MoeVen** biotope sensitivity assessment within MarLIN	assessment within MarLIN	*Based on **CR.MCR.EcCr.FaAlCr.Po** biotope sensitivity assessment within MarLIN*	**ur** biotope sensitivity assessment within MarLIN	biotope sensitivity assessment within MarLIN
Increased suspended sediment concentration leading to impacts on plankton and primary productivity	**Increased SSC**	**NOT SENSITIVE** (tolerant x not relevant) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	**VERY LOW** (low x very high) Based on **CCS.MedLumVen** biotope sensitivity assessment within MarLIN	**LOW** (low x high) Based on **EcorEns** biotope sensitivity assessment within MarLIN	**NOT SENSITIVE** (tolerant x not relevant) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	***VERY LOW*** (low x very high) *Based on **CCS.MedLumVen** and **SS.SCS.ICS.MoeVen** biotope sensitivity assessment within MarLIN*	**NOT SENSITIVE** (low x immediate) Based on **SpnMeg** biotope sensitivity assessment within MarLIN	***VERY LOW*** (low x very high) *Based on **CR.MCR.EcCr.FaAlCr.Po** biotope sensitivity assessment within MarLIN*	**NOT SENSITIVE** (tolerant x not relevant) Based on **LS.LSa.MoSa.AmSco.Eur** biotope sensitivity assessment within MarLIN	**NOT SENSITIVE** (tolerant x not relevant) Based on **LR.FLR.Eph.Ent** biotope sensitivity assessment within MarLIN
Physical disturbance to intertidal habitats and species during landfall works	**Physical disturbance and abrasion**	**LOW** [2] (intermediate x high) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	**LOW** [2] (intermediate x high) Based on **CCS.MedLumVen** biotope sensitivity assessment within MarLIN	**MODERATE** [2] (high x moderate) Based on **EcorEns** biotope sensitivity assessment within MarLIN	**NOT SENSITIVE** [2] (tolerant x not relevant) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	**LOW** [2] (intermediate x high) *Based on **CCS.MedLumVen** and **SS.SCS.ICS.MoeVen*** biotope sensitivity assessment within MarLIN	**LOW** [2] (intermediate x high) Based on **SpnMeg** biotope sensitivity assessment within MarLIN	***LOW*** [2] *(high x very high* *Based on **CR.MCR.EcCr.FaAlCr.Po** biotope sensitivity assessment within MarLIN*	**VERY LOW** (low x very high) Based on **LS.LSa.MoSa.AmSco.Eur** biotope sensitivity assessment within MarLIN	**LOW** (high x very high) Based on **LR.FLR.Eph.Ent** biotope sensitivity assessment within MarLIN
Potential construction phase impacts on the Dogger Bank cSAC	**Physical disturbance and abrasion** **Increased SSC** **Smothering**	**As above for individual factors**								
Potential construction phase impacts on the Flamborough Head SAC	**Physical disturbance and abrasion** **Increased SSC** **Smothering**	**As above for individual factors**								

[2] Although the sensitivity of the component biotopes of VERs A to G are listed here, this impact relates to effects in the intertidal region, therefore, only VER H and I (intertidal VER's) will be affected by this impact.

Table 2 OPERATIONAL phase impacts vs MarLIN "factors" vs ecological sensitivity of most sensitive biotopes within each VER

ES Chapter 12 Impact Heading	Relevant MarLIN "Factor"	VER (Representative Biotopes)								
		VER A - Sandy sediment supporting relatively low diversity benthic communities which form part of the Annex I Sandbank Feature **(within boundary of cSAC)**	**VER B** - Coarse sediments with medium to high diversity benthic communities which form part of the Annex I Sandbank Feature **(within boundary of cSAC)**	**VER C -** Muddy sand sediments with medium diversity benthic communities (including sea pens) which form part of the Annex I Sandbank Feature **(within boundary of cSAC)**	**VER D** - Sandy sediment supporting relatively low diversity benthic communities **outside cSAC boundary)**	**VER E** - Coarse sediments with medium to high diversity benthic communities **outside cSAC boundary**	**VER F** - Muddy sediments with medium diversity benthic communities (including sea pens) **outside cSAC boundary**	**VER G** - Rock-based infralittoral and circalittoral habitats	**VER H** - Intertidal sand-based habitats	**VER I -** Intertidal rock-based habitats
		Representative Biotopes SS.SSa.CFiSa.Apri BatPo SS.Ssa.CFiSa SS.SCS.ICS.SLan	**Representative Biotopes** SS.SMx.CMx SS.SCS.CCS.MedLumVen SS.SMx.CMx.OphMx	**Representative Biotopes** SS.SSa.IMuSa.EcorEns SS.SSa.CMuSa.AbraAirr SS.SMu.CFiMu.SpnMeg	**Representative Biotopes** SS.Ssa.CFiSa SS.SCS.ICS.SLan SS.SSa.CFiSa.ApriBatPo SS.SSa.CFiSa.EpusObor Apri SS.SSa.IFiSa.NcirBat	**Representative Biotopes** SS.SMx.CMx SS.SMx.CMx.OphMx SS.SMx.OMx.PoVen	**Representative Biotopes** SS.SMu.CFiMu.SpnMeg SS.SMu.CSaMu.ThyNten/ AfilNten	**Representative Biotopes** CR.MCR.EcCr.FaAlCr	**Representative Biotopes** LS.LSa.MoSa.AmSco.Pon LS.LSa.MoSa.AmSco.Sco LS.LSa.FiSa.Po.Ncir LS.LSa.MoSa.BarSa LS.LSa.St.tal LS.LSa.MoSa.AmSco.Eur	**Representative Biotopes** LR.FLR.Eph.EntPor
Permanent loss of habitat via placement of project infrastructure (foundations, cable protection)	**Substratum Loss**	**MODERATE** (high x high) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	**MODERATE** (high x high) Based on **CCS.MedLumVen** biotope sensitivity assessment within MarLIN	**MODERATE** (high x moderate) Based on **EcorEns** biotope sensitivity assessment within MarLIN	**MODERATE** (high x high) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	***MODERATE*** (high x high) *Based on* ***CCS.MedLumVen*** *and* ***SS.SCS.ICS.MoeVen*** *biotope sensitivity assessment within MarLIN*	**MODERATE** (high x moderate) Based on **SpnMeg** biotope sensitivity assessment within MarLIN	**MODERATE** (high x high) Based on **CR.MCR.EcCr.FaAlCr.Po**biotope sensitivity assessment within MarLIN	**MODERATE** (high x high) Based on **LS.LSa.MoSa.AmSco.Eur** biotope sensitivity assessment within MarLIN	**LOW** (high x very high) Based on **LR.FLR.Eph.Ent** biotope sensitivity assessment within MarLIN
Temporary impact on benthos due to physical disturbance caused by maintenance activities	**Increased SSC**	**NOT SENSITIVE** (tolerant x not relevant) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	**VERY LOW** (low x very high) Based on **CCS.MedLumVen** biotope sensitivity assessment within MarLIN	**LOW** (low x high) Based on **EcorEns** biotope sensitivity assessment within MarLIN	**NOT SENSITIVE** (tolerant x not relevant) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	**VERY LOW** (low x very high) Based on **CCS.MedLumVen** and **SS.SCS.ICS.MoeVen** biotope sensitivity assessment within MarLIN	**NOT SENSITIVE** (low x immediate) Based on **SpnMeg** biotope sensitivity assessment within MarLIN	***VERY LOW*** (low x very high) Based on **CR.MCR.EcCr.FaAlCr.Po**biotope sensitivity assessment within MarLIN	**NOT SENSITIVE** (tolerant x not relevant) Based on **LS.LSa.MoSa.AmSco.Eur** biotope sensitivity assessment within MarLIN	**NOT SENSITIVE** (tolerant x not relevant) Based on **LR.FLR.Eph.Ent** biotope sensitivity assessment within MarLIN
	Smothering	**NOT SENSITIVE** (low x immediate) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	**VERY LOW** (low x very high) Based on **CCS.MedLumVen** biotope sensitivity assessment within MarLIN	**NOT SENSITIVE** (tolerant x not relevant) Based on **EcorEns** biotope sensitivity assessment within MarLIN	**NOT SENSITIVE** (tolerant x not relevant) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	***VERY LOW*** *(low x very high)* *Based on* ***CCS.MedLumVen*** *and* ***SS.SCS.ICS.MoeVen*** *biotope sensitivity*	**NOT SENSITIVE** (tolerant x not relevant) Based on **SpnMeg** biotope sensitivity assessment within MarLIN	**LOW** (intermediate x high) Based on **CR.MCR.EcCr.FaAlCr.Po**biotope sensitivity assessment within MarLIN	**VERY LOW** (low x very high) Based on **LS.LSa.MoSa.AmSco.Eur** biotope sensitivity assessment within MarLIN	**LOW** (high x very high) Based on **LR.FLR.Eph.Ent** biotope sensitivity assessment within MarLIN

						assessment within MarLIN				
	Physical disturbance and abrasion	**LOW** (intermediate x high) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	**LOW** (intermediate x high) Based on **CCS.MedLumVen** biotope sensitivity assessment within MarLIN	**MODERATE** (high x moderate) Based on **EcorEns** biotope sensitivity assessment within MarLIN	**NOT SENSITIVE** (tolerant x not relevant) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	**LOW** (intermediate x high) *Based on* ***CCS.MedLumVen*** *and* ***SS.SCS.ICS.MoeVen*** biotope sensitivity assessment within MarLIN	**LOW** (intermediate x high) Based on **SpnMeg** biotope sensitivity assessment within MarLIN	***LOW*** (high x very high) Based on **CR.MCR.EcCr.FaAlCr.Po**biotope sensitivity assessment within MarLIN	**VERY LOW** (low x very high) Based on **LS.LSa.MoSa.AmSco.Eur** biotope sensitivity assessment within MarLIN	**LOW** (high x very high) Based on **LR.FLR.Eph.Ent** biotope sensitivity assessment within MarLIN

ES Chapter 12 Impact Heading	**Relevant MarLIN "Factor"**	**VER (Representative Biotopes)**								
		VER A - Sandy sediment supporting relatively low diversity benthic communities which form part of the Annex I Sandbank Feature **(within boundary of cSAC)**	**VER B** - Coarse sediments with medium to high diversity benthic communities which form part of the Annex I Sandbank Feature **(within boundary of cSAC)**	**VER C -** Muddy sand sediments with medium diversity benthic communities (including sea pens) which form part of the Annex I Sandbank Feature **(within boundary of cSAC)**	**VER D** - Sandy sediment supporting relatively low diversity benthic communities **outside cSAC boundary)**	**VER E** - Coarse sediments with medium to high diversity benthic communities **outside cSAC boundary**	**VER F** - Muddy sediments with medium diversity benthic communities (including sea pens) **outside cSAC boundary**	**VER G** - Rock-based infralittoral and circalittoral habitats	**VER H** - Intertidal sand-based habitats	**VER I -** Intertidal rock-based habitats
		Representative Biotopes SS.SSa.CFiSa.Apri BatPo SS.Ssa.CFiSa SS.SCS.ICS.SLan	**Representative Biotopes** SS.SMx.CMx SS.SCS.CCS.MedLumVen SS.SMx.CMx.OphMx	**Representative Biotopes** SS.SSa.IMuSa.EcorEns SS.SSa.CMuSa.AbraAirr SS.SMu.CFiMu.SpnMeg	**Representative Biotopes** SS.Ssa.CFiSa SS.SCS.ICS.SLan SS.SSa.CFiSa.ApriBatPo SS.SSa.CFiSa.EpusOborApri SS.SSa.IFiSa.NcirBat	**Representative Biotopes** SS.SMx.CMx SS.SMx.CMx.OphMx SS.SMx.OMx.PoVen	**Representative Biotopes** SS.SMu.CFiMu.SpnMeg SS.SMu.CSaMu.ThyNten/ AfilNten	**Representative Biotopes** CR.MCR.EcCr.FaAlCr	**Representative Biotopes** LS.LSa.MoSa.AmSco.Pon LS.LSa.MoSa.AmSco.Sco LS.LSa.FiSa.Po.Ncir LS.LSa.MoSa.BarSa LS.LSa.St.tal LS.LSa.MoSa.AmSco.Eur LS.LSa.FiSa.Po.Ncir,	**Representative Biotopes** LR.FLR.Eph.EntPor
Change in hydrodynamics and inter-related effects on benthos	**Increase in wave exposure**	**MODERATE**[3] (high x high) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	**LOW** (intermediate x high) Based on **CCS.MedLumVen** biotope sensitivity assessment within MarLIN	**MODERATE** [3] (high x moderate) Based on **SpnMeg** biotope sensitivity assessment within MarLIN	**MODERATE** [3] (high x high) Based on SS.SCS.ICS.SLan biotope sensitivity assessment within MarLIN	***LOW*** (intermediate x high) *Based on* ***CCS.MedLumVen*** *and* ***SS.SCS.ICS.MoeVen*** biotope sensitivity assessment within MarLIN	**MODERATE** [3] (intermediate x high) Based on **SpnMeg** biotope sensitivity assessment within MarLIN	**LOW** (intermediate x high) Based on **CR.MCR.EcCr.FaAlCr.Po**biotope sensitivity assessment within MarLIN	**MODERATE** [3] (high x high) Based on **LS.LSa.MoSa.AmSco.Eur** biotope sensitivity assessment within MarLIN	**VERY LOW** (low x very high) Based on **LR.FLR.Eph.Ent** biotope sensitivity assessment within MarLIN
	Decrease in wave	**NOT SENSITIVE** (tolerant x not	**LOW** (intermediate x high)	**NA**	**LOW** (high x very high)	***LOW***	NA	**NOT SENSITIVE** (tolerant x not	**MODERATE**[4] (high x high)	**LOW** (high x very high)

[3] The benchmark increase in wave exposure required to trigger this Moderate sensitivity to this factor is a change from existing condition to `exposed' and 'very exposed' categories - such increases in wave exposure are not predicted to arise at Teesside A & B during the operational phase, with a maximum increase in significant wave height of 1% predicted along the south/southwest perimeter of Teesside B (in a band about 12km wide.
[4] The benchmark decrease in wave exposure required to trigger this Moderate sensitivity to this factor is a change from existing condition to 'very sheltered' or 'extremely sheltered' category – no impact is predicted on wave exposure at the coast (where VER H is situated)

	exposure	relevant) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	Based on **CCS.MedLumVen** biotope sensitivity assessment within MarLIN	Based on **SpnMeg** biotope sensitivity assessment within MarLIN	Based on **NcriBat** biotope sensitivity assessment within MarLIN	(intermediate x high) *Based on* ***CCS.MedLumVen*** *and* ***SS.SCS.ICS.MoeVen*** biotope sensitivity assessment within MarLIN	Based on **SpnMeg** biotope sensitivity assessment within MarLIN	relevant) Based on **CR.MCR.EcCr.FaAlCr.Po**biotope sensitivity assessment within MarLIN	Based on **LS.LSa.MoSa.AmSco.Eur** biotope sensitivity assessment within MarLIN	Based on **LR.FLR.Eph.Ent** biotope sensitivity assessment within MarLIN

ES Chapter 12 Impact Heading	**Relevant MarLIN "Factor"**	**VER (Representative Biotopes)**								
		VER A - Sandy sediment supporting relatively low diversity benthic communities which form part of the Annex I Sandbank Feature **(within boundary of cSAC)**	**VER B** - Coarse sediments with medium to high diversity benthic communities which form part of the Annex I Sandbank Feature **(within boundary of cSAC)**	**VER C -** Muddy sand sediments with medium diversity benthic communities (including sea pens) which form part of the Annex I Sandbank Feature **(within boundary of cSAC)**	**VER D** - Sandy sediment supporting relatively low diversity benthic communities **outside cSAC boundary)**	**VER E** - Coarse sediments with medium to high diversity benthic communities **outside cSAC boundary**	**VER F** - Muddy sediments with medium diversity benthic communities (including sea pens) **outside cSAC boundary**	**VER G** - Rock-based infralittoral and circalittoral habitats	**VER H** - Intertidal sand-based habitats	**VER I -** Intertidal rock-based habitats
		Representative Biotopes SS.SSa.CFiSa.ApriBatPo SS.Ssa.CFiSa SS.SCS.ICS.SLan	**Representative Biotopes** SS.SMx.CMx SS.SCS.CCS.MedLumVen SS.SMx.CMx.OphMx	**Representative Biotopes** SS.SSa.IMuSa.EcorEns SS.SSa.CMuSa.AbraAirr SS.SMu.CFiMu.SpnMeg	**Representative Biotopes** SS.Ssa.CFiSa SS.SCS.ICS.SLan SS.SSa.CFiSa.ApriBatPo SS.SSa.CFiSa.EpusOborApri SS.SSa.IFiSa.NcirBat	**Representative Biotopes** SS.SMx.CMx SS.SMx.CMx.OphMx SS.SMx.OMx.PoVen	**Representative Biotopes** SS.SMu.CFiMu.SpnMeg SS.SMu.CSaMu.ThyNten/ AfilNten	**Representative Biotopes** CR.MCR.EcCr.FaAlCr	**Representative Biotopes** LS.LSa.MoSa.AmSco.Pon LS.LSa.MoSa.AmSco.Sco LS.LSa.FiSa.Po.Ncir LS.LSa.MoSa.BarSa LS.LSa.St.tal LS.LSa.MoSa.AmSco.Eur LS.LSa.FiSa.Po.Ncir,	**Representative Biotopes** LR.FLR.Eph.EntPor
Change in hydrodynamics and inter-related effects on benthos (cont'd)	**Increase in water flow rate**	**MODERATE**[5] (high x high) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	**LOW** (intermediate x high) Based on **CCS.MedLumVen** biotope sensitivity assessment within MarLIN	**MODERATE** [5] (high x high) Based on **EcorEns** biotope sensitivity assessment within MarLIN	**MODERATE** [5] (high x high) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	***LOW*** (intermediate x high) *Based on* ***CCS.MedLumVen*** *and* ***SS.SCS.ICS.MoeVen*** biotope sensitivity assessment within MarLIN	**MODERATE** [5] (high x high) Based on **SpnMeg** biotope sensitivity assessment within MarLIN	**MODERATE** [5] (high x high) Based on **CR.MCR.EcCr.FaAlCr.Po**biotope sensitivity assessment within MarLIN	**MODERATE** [5] (high x high) Based on **LS.LSa.MoSa.AmSco.Eur** biotope sensitivity assessment within MarLIN	**NOT SENSITIVE** (low x immediate) Based on **LR.FLR.Eph.Ent** biotope sensitivity assessment within MarLIN
	Decrease in water flow	**MODERATE**[6] (high x high)	**LOW** (intermediate x high)	**MODERATE** [6] (high x high)	**MODERATE** [6] (high x high)	***LOW***	**MODERATE** [6] (high x high)	**NOT RELEVANT**	**MODERATE** [6] (high x high)	**NOT SENSITIVE** (low x immediate)

[5] The benchmark increase in water flow rate required to trigger these Moderate sensitivities to this factor is a change of at least two classes from the existing "Weak" flow rate (<0.5m/s - typical tidal currents are less than 0.4m/s in the study area) to "Strong" (1.5 – 3m/s). Such increases in tidal currents are not predicted to arise at Teesside A & B during the operational phase, with the maximum change in current velocity predicted to be less than 2% along narrow (3km) bands restricted to the project boundaries

[6] The benchmark decrease in water flow rate required to trigger these Moderate sensitivities to this factor is a change of at least two classes from the existing "Weak" flow rate (<0.5m/s - typical tidal currents are less than 0.4m/s in the study area). Such decreases in tidal currents are not predicted to arise at Teesside A & B during the operational phase, with the maximum change in current velocity predicted to be less than 2% along narrow (3km) bands restricted to the project boundaries

	rate	Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	Based on **CCS.MedLumVen** biotope sensitivity assessment within MarLIN	Based on **SpnMeg** biotope sensitivity assessment within MarLIN	Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	(intermediate x high) *Based on* ***CCS.MedLumVen*** *and* ***SS.SCS.ICS.MoeVen*** biotope sensitivity assessment within MarLIN	Based on **SpnMeg** biotope sensitivity assessment within MarLIN	Based on **CR.MCR.EcCr.FaAlCr.Po**biotope sensitivity assessment within MarLIN	Based on **LS.LSa.MoSa.AmSco.Eur** biotope sensitivity assessment within MarLIN	Based on **LR.FLR.Eph.Ent** biotope sensitivity assessment within MarLIN
ES Chapter 12 Impact Heading	**Relevant MarLIN "Factor"**	**VER (Representative Biotopes)**								
		VER A - Sandy sediment supporting relatively low diversity benthic communities which form part of the Annex I Sandbank Feature **(within boundary of cSAC)**	**VER B** - Coarse sediments with medium to high diversity benthic communities which form part of the Annex I Sandbank Feature **(within boundary of cSAC)**	**VER C -** Muddy sand sediments with medium diversity benthic communities (including sea pens) which form part of the Annex I Sandbank Feature **(within boundary of cSAC)**	**VER D** - Sandy sediment supporting relatively low diversity benthic communities **outside cSAC boundary)**	**VER E** - Coarse sediments with medium to high diversity benthic communities **outside cSAC boundary**	**VER F** - Muddy sediments with medium diversity benthic communities (including sea pens) **outside cSAC boundary**	**VER G** - Rock-based infralittoral and circalittoral habitats	**VER H** - Intertidal sand-based habitats	**VER I -** Intertidal rock-based habitats
		Representative Biotopes SS.SSa.CFiSa.Apri BatPo SS.Ssa.CFiSa SS.SCS.ICS.SLan	**Representative Biotopes** SS.SMx.CMx SS.SCS.CCS.MedLumVen SS.SMx.CMx.OphMx	**Representative Biotopes** SS.SSa.IMuSa.EcorEns SS.SSa.CMuSa.AbraAirr SS.SMu.CFiMu.SpnMeg	**Representative Biotopes** SS.Ssa.CFiSa SS.SCS.ICS.SLan SS.SSa.CFiSa.ApriBatPo SS.SSa.CFiSa.EpusObor Apri SS.SSa.IFiSa.NcirBat	**Representative Biotopes** SS.SMx.CMx SS.SMx.CMx.OphMx SS.SMx.OMx.PoVen	**Representative Biotopes** SS.SMu.CFiMu.SpnMeg SS.SMu.CSaMu.ThyNten/ AfilNten	**Representative Biotopes** CR.MCR.EcCr.FaAlCr	**Representative Biotopes** LS.LSa.MoSa.AmSco.Pon LS.LSa.MoSa.AmSco.Sco LS.LSa.FiSa.Po.Ncir LS.LSa.MoSa.BarSa LS.LSa.St.tal LS.LSa.MoSa.AmSco.Eur LS.LSa.FiSa.Po.Ncir,	**Representative Biotopes** LR.FLR.Eph.EntPor
Increase in suspended sediment concentration due to scour associated with foundations	**Increased SSC**	**NOT SENSITIVE** (low x immediate) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	**VERY LOW** (low x very high) Based on **CCS.MedLumVen** biotope sensitivity assessment within MarLIN	**LOW** (low x high) Based on **EcorEns** biotope sensitivity assessment within MarLIN	**NOT SENSITIVE** (tolerant x not relevant) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	**VERY LOW** (low x very high) Based on **CCS.MedLumVen** and **SS.SCS.ICS.MoeVen** biotope sensitivity assessment within MarLIN	**NOT SENSITIVE** (low x immediate Based on **SpnMeg** biotope sensitivity assessment within MarLIN	***VERY LOW*** (low x very high) Based on **CR.MCR.EcCr.FaAlCr.Po**biotope sensitivity assessment within MarLIN	**NOT SENSITIVE** (tolerant x not relevant) Based on **LS.LSa.MoSa.AmSco.Eur** biotope sensitivity assessment within MarLIN	**NOT SENSITIVE** (tolerant x not relevant) Based on **LR.FLR.Eph.Ent** biotope sensitivity assessment within MarLIN
Increase in sediment deposition following increase in suspended sediment concentration due to scour associated with	**Smothering**	**NOT SENSITIVE** (low x immediate) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	**VERY LOW** (low x very high) Based on **CCS.MedLumVen** biotope sensitivity assessment within MarLIN	**NOT SENSITIVE** (tolerant x not relevant) Based on **EcorEns** biotope sensitivity assessment within MarLIN	**NOT SENSITIVE** (tolerant x not relevant) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	**VERY LOW** (low x very high) Based on **CCS.MedLumVen** and **SS.SCS.ICS.MoeVen** biotope sensitivity assessment within MarLIN	**NOT SENSITIVE** (tolerant x not relevant) Based on **SpnMeg** biotope sensitivity assessment within MarLIN	**LOW** (intermediate x high) Based on **CR.MCR.EcCr.FaAlCr.Po**biotope sensitivity assessment within MarLIN	**VERY LOW** (low x very high) Based on **LS.LSa.MoSa.AmSco.Eur** biotope sensitivity assessment within MarLIN	**LOW** (high x very high) Based on **LR.FLR.Eph.Ent** biotope sensitivity assessment within MarLIN

foundations										
Introduction of new habitat in the form of foundation structures, leading to potential colonisation	**Introduction of non-native species**	**INSUFFICIENT INFORMATION** (insufficient information x not relevant) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	**NOT SENSITIVE** (tolerant x not relevant) Based on **CCS.MedLumVen** biotope sensitivity assessment within MarLIN	**LOW** (low x high) Based on **EcorEns** biotope sensitivity assessment within MarLIN	**INSUFFICIENT INFORMATION** (insufficient information x not relevant) Based on **SS.SCS.ICS.SLan** biotope sensitivity assessment within MarLIN	**INSUFFICIENT INFORMATION** (insufficient information x not relevant) Based on **CCS.MedLumVen** and **SS.SCS.ICS.MoeVen** biotope sensitivity assessment within MarLIN	**NOT SENSITIVE** (tolerant x not relevant) Based on **SpnMeg** biotope sensitivity assessment within MarLIN	**INSUFFICIENT INFORMATION** (insufficient information x not relevant) Based on **CR.MCR.EcCr.FaAlCr.Po**biotope sensitivity assessment within MarLIN	**INSUFFICIENT INFORMATION** (insufficient information x not relevant) Based on **LS.LSa.MoSa.AmSco.Eur** biotope sensitivity assessment within MarLIN	**NOT RELEVANT** Based on **LR.FLR.Eph.Ent** biotope sensitivity assessment within MarLIN
ES Chapter 12 Impact Heading	**Relevant MarLIN "Factor"**	**VER (Representative Biotopes)**								
		VER A - Sandy sediment supporting relatively low diversity benthic communities which form part of the Annex I Sandbank Feature **(within boundary of cSAC)**	**VER B** - Coarse sediments with medium to high diversity benthic communities which form part of the Annex I Sandbank Feature **(within boundary of cSAC)**	**VER C -** Muddy sand sediments with medium diversity benthic communities (including sea pens) which form part of the Annex I Sandbank Feature **(within boundary of cSAC)**	**VER D** - Sandy sediment supporting relatively low diversity benthic communities **outside cSAC boundary)**	**VER E** - Coarse sediments with medium to high diversity benthic communities **outside cSAC boundary**	**VER F** - Muddy sediments with medium diversity benthic communities (including sea pens) **outside cSAC boundary**	**VER G** - Rock-based infralittoral and circalittoral habitats	**VER H** - Intertidal sand-based habitats	**VER I -** Intertidal rock-based habitats
		Representative Biotopes SS.SSa.CFiSa.ApriBatPo SS.Ssa.CFiSa SS.SCS.ICS.SLan	**Representative Biotopes** SS.SMx.CMx SS.SCS.CCS.MedLumVen SS.SMx.CMx.OphMx	**Representative Biotopes** SS.SSa.IMuSa.EcorEns SS.SSa.CMuSa.AbraAirr SS.SMu.CFiMu.SpnMeg	**Representative Biotopes** SS.Ssa.CFiSa SS.SCS.ICS.SLan SS.SSa.CFiSa.ApriBatPo SS.SSa.CFiSa.EpusObor Apri SS.SSa.IFiSa.NcirBat	**Representative Biotopes** SS.SMx.CMx SS.SMx.CMx.OphMx SS.SMx.OMx.PoVen	**Representative Biotopes** SS.SMu.CFiMu.SpnMeg SS.SMu.CSaMu.ThyNten/ AfilNten	**Representative Biotopes** CR.MCR.EcCr.FaAlCr	**Representative Biotopes** LS.LSa.MoSa.AmSco.Pon LS.LSa.MoSa.AmSco.Sco LS.LSa.FiSa.Po.Ncir LS.LSa.MoSa.BarSa LS.LSa.St.tal LS.LSa.MoSa.AmSco.Eur LS.LSa.FiSa.Po.Ncir,	**Representative Biotopes** LR.FLR.Eph.EntPor
Potential operational phase impacts on the Dogger Bank cSAC	**Physical disturbance and abrasion** **Increased SSC** **Smothering**	**As above for individual factors**								
Potential operational phase impacts on the Flamborough Head SAC	**Physical disturbance and abrasion** **Increased SSC** **Smothering**	**As above for individual factors**								