



## **Able Marine Energy Park**

### *Material Change 2*

## **Statement of Common**

## **Ground with**

## **Environment Agency**

**ABLE MARINE ENERGY PARK DCO 2014  
MATERIAL CHANGE 2**

**Planning Inspectorate Reference: TR030006**

**Statement of Common Ground**

**Between**

**ABLE HUMBER PORTS LIMITED**

**and**

**ENVIRONMENT AGENCY**

<b>Document control</b>			
<b>Document properties</b>			
<b>Parties</b>		<b>Able Humber Ports Limited</b>  <b>and</b>  <b>Environment Agency</b>	
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<b>Title</b>		<b>Statement of Common Ground between</b> <b>Able Humber Ports Limited and the</b> <b>Environment Agency</b>	
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# 1 Introduction and Purpose

## 1.1 Purpose of Statement of Common Ground

1.1.1 This Statement of Common Ground ('SoCG') is between Able Humber Ports Limited ('the Applicant') and the Environment Agency in relation to an application ('the Application') for a material change to the Able Marine Energy Park Development Consent Order 2014 (the 'DCO'). The Application was made pursuant to section 153 and paragraphs 3 and 4 of Schedule 6 of the Planning Act 2008, and Regulation 16 of the Infrastructure Planning (Changes to, and Revocation of, Development Consent Orders) Regulations 2011.

1.1.2 The Planning Inspectorate allocated the Application the reference number TR030006, and published documents relating to the Application on its website under the title "Material Change 2". The Applicant submitted the Application to the Planning Inspectorate on 25 June 2021.

1.1.3 The Applicant and the Environment Agency are collectively referred to in this SoCG as 'the parties'. The parties have been, and continue to be, in direct communication in respect of the interface between the application and the Environment Agency's interests and responsibilities.

1.1.4 The purpose and possible content of SoCGs is set out in paragraphs 58 – 65 of the Department for Communities and Local Government's guidance entitled "*Planning Act 2008: examination of applications for development consent*" (26 March 2015). Paragraph 58 of that guidance explains the basic function of SoCGs:

*"A statement of common ground is a written statement prepared jointly by the applicant and another party or parties, setting out any matters on which they agree. As well as identifying matters which are not in real dispute, it is also useful if a statement identifies those areas where agreement has not been reached. The statement should include references to show where those matters are dealt with in the written representations or other documentary evidence."*

1.1.5 SoCGs are therefore a useful and established means of ensuring that the evidence at the examination focuses on the material differences between the main parties, and so aim to help facilitate a more efficient examination process.

1.1.6 The purpose of this SoCG is to set out agreed factual information about the Application. It is intended that this SoCG should provide matters on which the Parties agree. As well as identifying matters which are not in dispute, the SoCG may also identify areas where agreement has not been reached.

1.1.7 This SoCG has been prepared in response to the relevant representation made by the Environment Agency regarding the Application, received by the Planning Inspectorate on 13 August 2021. The matters addressed are:

*UES Chapter 8 – Hydrodynamic and Sedimentary Regime*

- Potential for changes to hydrodynamics on Hawkins Point;
- Alternate or additional mitigation;

## *UES Chapter 13 – Flood Risk and Drainage*

- Description of provisions of the legal agreement between the Applicant and the Environment Agency entered into in respect of the original DCO;

### *Water Framework Directive Assessment*

- Approach and evidence for Water Framework Directive ('WFD') assessment; and
- Conclusions of WFD assessment.

1.1.8 It is envisaged that this SoCG will evolve during the examination phase of the DCO material change application.

1.1.9 Subsequent drafts will be agreed and issued, with the version numbers clearly recorded in the 'Document Control' table at the beginning of the document.

## **1.2 Description of the DCO and material change application**

1.2.1 The Able Marine Energy Park is a proposed 1288m long quay on the south bank of the Humber Estuary approximately 14 miles south-east of Hull, and north of North Killingholme. It is comprised of a quay, reclaimed estuarine habitat and facilities to allow offshore energy components and parts to be manufactured, assembled, stored and exported to their installation sites and elsewhere. The development is located in the administrative areas of North Lincolnshire Council and East Riding of Yorkshire Council (although the Application relates to part of the development located in the administrative area of North Lincolnshire Council only).

1.2.2 The DCO came into force on 29 October 2014. Since this time, construction of the pumping station has commenced.

1.2.3 On 25 June 2021 the Applicant submitted the Application which comprised the following proposed changes:

- (a) a realignment of the proposed quay (within its existing limits of deviation) to remove a berth pocket at the southern end and introduce a setback at the northern end;
- (b) changes to the construction methodology to allow the relieving slab at the rear of the quay to be at the surface as an alternative to being buried or to be omitted altogether, and the use of anchor piles as an alternative to flap anchors;
- (c) consequential changes to dredging; and
- (d) unrelated to the quay changes, the realignment of a footpath diversion to the north west of the site to go round the end of a railway track instead of crossing it.

Further details of the material change can be found in the Application cover letter [[APP-001](#)] which accompanies the material change application.

### **1.3 Environment Agency**

- 1.3.1 The Environment Agency is an executive non departmental public body, established under the Environment Act 1995. It was established to bring together responsibilities for protecting and improving the environment and to contribute to sustainable development. The Environment Agency is an environmental regulator, operator and advisor, and was a statutory consultee in relation to the Application.
- 1.3.2 The Environment Agency submitted a relevant representation to the Planning Inspectorate regarding the Application, received by the Planning Inspectorate on 13 August 2021.

### **1.4 Status of the SoCG**

- 1.4.1 This signed version of the SoCG represents the position between the Applicant and Environment Agency at 1 February 2022.

## **2 Summary of Consultation**

- 2.1 Consultation carried out by the Applicant and the way in which it has informed the Application is set out in full in the Consultation Report [[APP-061](#)] submitted with the Application.
- 2.2 The Environment Agency was included in the pre-application consultation carried out by the Applicant. The Environment Agency and the Applicant have continued direct communication in respect of the Application.
- 2.3 In particular, meetings between the Applicant and the Environment Agency to discuss the concerns raised in the Environment Agency's relevant representation were held on 1 October and 5 October 2021.

## **3 Matters which are fully agreed between the parties**

- 3.1 This section of the SoCG describes the 'matters agreed' in detail between the parties.

### *The Articles and Requirements in the draft DCO Amendment Order*

- 3.2 The Parties agree that there are no comments on or concerns regarding the Articles and Requirements contained within in the draft DCO Amendment Order.

### *Impact of changes to hydrodynamics on Hawkins Point*

- 3.3 In its relevant representation, the Environment Agency noted that one wave condition was chosen to carry out this assessment, and requested more clarity as to why this particular condition, and only one, was chosen. The Applicant has attached to this SoCG at Appendix 1 a Schedule of Responses that includes an explanation for the particular wave condition used in the assessment.
- 3.4 The Environment Agency is satisfied with the explanation provided, and is content that the modelling undertaken is sufficient.

- 3.5 In addition, the Environment Agency notes in its relevant representation that the assessment was undertaken using only present day conditions. It states that clarity on the assumptions made will help to confirm if present day data itself is appropriate, or whether changes due to the impact of sea level rise need further consideration.
- 3.6 The Applicant has provided detailed information to the Environment Agency on the reasons why present day data was used for the assessment. The Applicant has attached to this SoCG at Appendix 1 a Schedule of Responses that includes an explanation for the present day condition used in the assessment.
- 3.7 The Applicant has assessed that most material placed at the HU082 and HU081 disposal sites will disperse within a few years of placement, with a corresponding reduction to the magnitude of effect on wave conditions. On the basis of the transient nature of the small effects on waves, simulations of impacts from disposal activities relate to present day conditions. The Environment Agency is content that sufficient clarity has been provided with regards to the use of present day data in the assessment, and that changes due to the impact of sea level rise do not need further consideration and that the conclusions are reasonable, noting the agreed understanding that definitive conclusions cannot be made from modelling of a dynamic system, such as the Humber.
- 3.8 The Environment Agency requested in its relevant representation that potential impacts from increased wave activity resulting in foreshore erosion to the west of Hawkins Point needed some further consideration in regards to risk to habitat/flood defences. The Applicant has attached to this SoCG at Appendix 1 a Schedule of Responses that includes an explanation of the impacts on the foreshore at Hawkins Point. The Environment Agency is content with the Applicant's assessment.
- 3.9 The parties acknowledge that the draft DCO Amendment Order would not authorise the additional deposition of dredged arisings to HU082 and HU081; this would be permitted by means of a variation to the deemed marine licence, by means of a separate application to the Marine Management Organisation ('MMO') made under the Marine and Coastal Access Act 2009.
- 3.10 The parties recognise that the MMO's position, as set out in its relevant representation, is that *"...changes to tidal currents and wave climatology will be localised and not result in significant impacts to coastal and physical processes, including no effect on the ongoing erosion of Hawkins Point and the managed realignment sites to the east."*

*Alternate or additional mitigation*

- 3.11 In its relevant representation the Environment Agency stated that to safeguard any consequences from the potential flow acceleration during the ebb tide off the downstream end of the quay, the additional mitigation set out in section 8.5.2 of the UES must be secured using an appropriate mechanism. It also requested that monitoring be undertaken for a minimum of 10 years, and that the Applicant should set out what remedial action will be taken if impacts arise. This will be secured via the Marine Environmental Management and Monitoring Plan that the MMO must approve pursuant to the DCO.
- 3.12 The flow acceleration for the amended quay on the ebb tide is predicted to occur slightly further inshore and over a smaller area than was the case for the consented quay. The increased ebb tide currents are in line with the AMEP quay and extend downstream for up to 500m on spring tides. Peak speeds on the ebb tide at South Killingholme Oil Jetty may increase by up to 0.3m/s



and at the Immingham Gas Jetty by up to 0.1m/s. The parties agree that it is reasonable to expect that mitigation will not be required for this effect.

- 3.13 The Applicant has provided a proposed monitoring schedule to the Environment Agency, to supplement the information in Section 8.5.2 of the UES. This is attached to this SoCG as part of Appendix 1 and will also be submitted to the Planning Inspectorate at deadline 1 as part of its response to the Environment Agency's relevant representation. The monitoring includes for pre-construction activity, monitoring and compliance reporting during the dredging and continued monitoring post-construction. It is proposed that the post-construction monitoring be reviewed 3 years after disposal activities at HU081/82 is completed. Current measurements in proximity to South Killingholme Oil Jetty will be made pre- and post- construction of AMEP on spring tides of a similar range. The Applicant will commission bespoke LiDAR surveys of Hawkins Point to monitor changes to the site before, during and after completion of the disposal activities. The parties agree that the proposed monitoring and the proposed monitoring schedule are appropriate.
- 3.14 The parties acknowledge that appropriate mitigation and monitoring are secured by means of the requirements contained in Schedule 11 to the DCO, the Deemed Marine Licence contained in Schedule 8 to the DCO, the protective provisions contained in Part 2 of Schedule 9 to the DCO and the Monitoring Legal Agreement between the Applicant and the Environment Agency. In particular, Paragraph 19 of Schedule 11 requires the Applicant to submit a Marine Environmental Management and Monitoring Plan ('MEMMP') to the MMO for approval before construction can commence. The MEMMP must be consulted on with the Environment Agency. The additional mitigation proposed in paragraph 8.5.2 of Appendix 1 can be secured by minor changes to the DML (in respect of points 1 to 4) and the MEMMP (in respect of points 5 and 6), both of which are for the MMO to approve. No changes need to be made to any of the documents submitted as part of this material change application.

#### *Flood Risk and Drainage*

- 3.15 The Applicant notes the Environment Agency's representation that Table 13.1 and paragraph 13.2.11 in the UES do not accurately reflect the provisions of the legal agreement between the Applicant and the Environment Agency which was entered into with regards to the DCO ('the Agreement' – APP-141). The Applicant agrees that the 'improvement works' must be maintained for 20 years, while the elements of the quay that comprise strategic flood defences must be maintained until the quay is removed and replaced with an alternative flood defence.

#### *Water Framework Directive Assessment*

- 3.16 Following a meeting with the Environment Agency on 5 October 2021, additional information has been added to the Water Framework Directive assessment. The revised document will be submitted to the Planning Inspectorate by the Applicant at deadline 1.
- 3.17 Further discussions have taken place in respect of the Water Framework Directive assessment and further iterations of the assessment have been drafted. The agreed assessment, (HR Wallingford, DER6453-RT004-R06-00, January 2022) will be submitted by the Applicant at Deadline 4 (in connection with its reply to the Examining Body's Written Question, Q6.0.3).

#### **4 Matters agreed in principle between the parties**

##### *Provisions of the Legal Agreement between the Applicant and the Environment Agency*

- 4.1 The parties agree that the provisions of the Agreement will not be changed by the material change, and that this issue therefore does not relate to the Application. The parties agree that any minor corrections which may be made to table 13.1 and paragraph 13.2.11 to reflect the Environment Agency's representation would have no effect on the conclusions reached in the UES regarding likely significant effects resulting from the proposed material change.

##### *Water Framework Directive Assessment*

- 4.2 The EA has reviewed this document (HR Wallingford, DER6453-RT004-R06-00, January 2022) and requires no further evidence to justify the reasons for excluding certain projects from the cumulative assessment, and no further clarity in respect of Polycyclic Aromatic Hydrocarbon (PAH) status.

#### **5 Matters not agreed between the parties**

- 5.1 None. There are no outstanding matters to be agreed between the parties.

Signed on Behalf of ABLE HUMBER PORTS LIMITED

Signature:

Name: Richard Cram

Position: Engineering Director

Date:

Signed on Behalf of the ENVIRONMENT AGENCY

Signature:



Name: Annette Hewitson

Position: Principal Planning Adviser

Date: 1.2.22

[Header]

## APPENDIX 1

[Footer]

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To: Richard Cram, Able UK

From: Graham Siggers, Mike Dearnaley

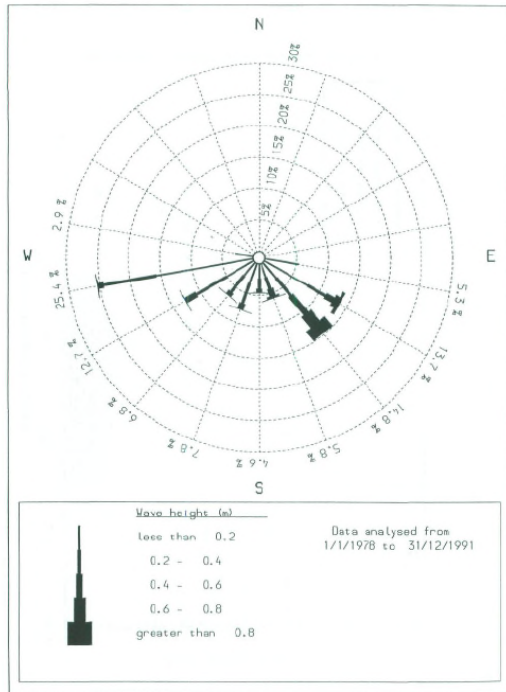
Date: 27 October 2021

Subject: Relevant Representations – AMEP Material Change 2

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**HR Wallingford responses to Relevant Representations provided by the Environment Agency (EA) and the Marine Management Organisation (MMO), relating to Environmental Statement (ES) Chapter 8 Hydrodynamics and Sediment.**

EA and MMO comments received are dated 13<sup>th</sup> August 2021 and 19<sup>th</sup> August 2021 respectively. Able UK and HR Wallingford met and presented/discussed draft responses with the Environment Agency on 1<sup>st</sup> October 2021. EA/MMO comments and HR Wallingford responses are provided in the Table below.

Comment by	Para.	Comment	ES Ch 8 Section (if noted)	HR Wallingford response
Environment Agency	4.1	<p>Impact of changes to hydrodynamics on Hawkins Point (Section 8.4.36 onwards):</p> <p>One wave condition was chosen to carry out this assessment, but it is not clear why this particular condition, and only one, was chosen. We, therefore, request more clarity on this in order to provide confidence in the conclusions reached.</p>	8.4.36 onwards	<p>The nearshore wave rose for Hawkins Point (from The Humber Tidal Database and Joint Probability Analysis of Large Waves and High Water Levels Annex II, ABPmer (2007) report for the Environment Agency) is shown below.</p>  <p style="text-align: center;">Wave rose for Hawkins Point</p>

The corresponding wave climate table is provided below. These data show, in parts per hundred thousand, the frequency, magnitude, and direction of waves at the nearshore point near Hawkins point for the 14-year period from January 1978 to December 1991.

Significant wave height		Wave Direction Degrees North (Hawkins Point)												
H1	H2	10	30	50	90	110	130	150	170	190	210	230	250	270
		30	50	70	110	130	150	170	190	210	230	250	270	290
0	0.1				4581	3724	954	763	532	594	692	1190	5539	2529
0.1	0.2				26	2248	238	747	1153	1712	1122	2116	6750	
0.2	0.3					1924	1730	786	868	1677	2167	2940	6449	
0.3	0.4					1332	1926	1121	768	1682	1173	2693	2063	
0.4	0.5					685	1733	671	368	710	478	1247	712	
0.5	0.6					719	1975	542	233	328	233	718	266	
0.6	0.7					185	954	275	64	10	4	43	130	
0.7	0.8					517	1290	95	20	0	4	46	15	
0.8	0.9					174	473	33	1	1	2	2	3	
0.9	1					48	200	8				1		
1	1.1					99	584	2				2		
1.1	1.2					26	103							
1.2	1.3					81	205							
1.3	1.4					5	130							
1.4	1.5					6	45							
1.5	1.6					42	142							
1.6	1.7					1	9							
1.7	1.8					14	29							
1.8	1.9						29							
1.9	2						1							
2	2.1						3							
<b>Energy</b>	<b>100.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.1%</b>	<b>15.3%</b>	<b>45.1%</b>	<b>6.4%</b>	<b>3.3%</b>	<b>5.5%</b>	<b>4.4%</b>	<b>9.9%</b>	<b>10.1%</b>	<b>0.1%</b>

Selected wave condition is the same as was selected in EXB.7A (Hs 1m, Tm-10 4s, Dir 135 degrees - MSL, MHWS, MLWS)  
 60% of all wave energy is incident from 110 to 150 degrees  
 99.7% of wave energy for waves of Hs = 1m or higher is from 110

In line with the original ES submission, to assess the potential changes to waves resulting from disposal activities (now at both HU081 and HU082), waves entering through the mouth of the estuary were selected. The value selected was Hs 1m, Tm-10 = 4s, and direction 135 degrees was considered appropriate to capture the effects on larger waves (which will “feel” the seabed at deeper depths than smaller waves) of the disposal mounds. In terms of why other directions were not selected, it is seen from the table and wave rose above that a) 60% of all wave energy (including much smaller waves) is predicted to be incident from between 110 and 150 degrees, and b) almost all waves of Hs = 1m and above are incident from this direction.

This single wave direction of 135 degrees was therefore representative of these incident waves. Importantly, the waves were also modelled for three different water depths (as per the original ES). For these larger Hs = 1m waves from 135 degrees, the predicted changes to wave height are negligible for MHWS, approximately +/-2cm for MSL, and approximately +/-5cm for MLWS.

	<p>4.2</p>	<p>In addition, it is noted that the assessment was undertaken using only present day conditions. We recall a previous discussion with Able Humber Ports Limited (“the Applicant”) regarding this in relation to the assumption of short term impacts due to the nature of the material and other processes in the estuary. However, further clarity on the assumptions made will help to confirm if present day data itself is appropriate, or whether changes due to the impact of sea level rise needs further consideration.</p>	<p>In the report by HR Wallingford (2021), Erosion of placed clay at HU081 and HU082, the timescale for erosion of placed clay is assessed. An extract of this report is provided below with the relevant passage highlighted in bold text.</p> <p>The proposed dredging required for construction of AMEP includes the removal of glacial till by Back Hoe Dredger (BHD) and with options for the placement of this glacial till by barge at disposal site HU082. The dredging strategy has been revised however and the volume of material to be placed has increased from the previous estimate of 455,000 m<sup>3</sup> to the larger volume of 590,000 m<sup>3</sup>. Consideration is also being given to placement of some of this material at disposal site HU081. This report considers how readily the glacial till dredged by BHD will erode and disperse from the HU081 and HU082 disposal sites after placement by barge.</p> <p>The study assumes that the glacial till will be placed across the HU081 and HU082 sites and estimates, on the basis of literature studies, that a representative threshold for erosion of the glacial till is a bed shear stress of around 1.2-1.59 N/m<sup>2</sup>. <b>On this basis the study concludes that most material placed at the sites will erode and disperse within a few years of placement.</b></p> <p><b>The extent to which sand and gravel (released as the glacial till erodes) can be dispersed away from the site, will be a significant factor in the timescale of the erosion of the placed material. This dispersion will depend on the variation in the elevation of the glacial till following placement, and the extent to which the sand/gravel particles will be trapped and sheltered in troughs between the mounds formed by placement.</b></p> <p>Placement of the glacial till on top of (or underneath) more readily-erodible material will reduce the volume available for placement of the glacial till, and so reduce the amount of glacial till placed. This means that the overall time-scale over which material will disperse from either site will reduce.</p> <p>It was therefore assessed that most placed material placed at the HU082 and HU081 disposal sites will disperse within a few years of placement, with a corresponding reduction to the magnitude of effect on wave conditions (reducing from the effects quoted above). On the basis of the transient nature of the small effects on waves, simulations of impacts from disposal activities relate to present day conditions.</p>
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	4.3	<p>If these points can be clarified, the conclusion that there is limited impact on the currently eroding section seems reasonable. However, this assessment does also indicate some increasing wave activity which could result in foreshore erosion to the west of Hawkins Point (8.4.39). Whilst this section of the foreshore is currently stable, the potential impact here needs some further consideration in regards to risk to habitat/flood defences.</p>		<p>For a combination of high waves with a high sea level there is negligible change to the wave heights and therefore likely a negligible effect on flood risk. For lower sea levels, changes to wave heights, as noted above, are +/- 2cm at MSL and +/-5cm at MLWS.</p> <p>It is worth noting that these impacts relate to the two disposal sites conservatively being assumed to be filled to the -5.3mCD limit, when in reality it is expected that the post-construction level will be lower than this.</p> <p>The predicted changes to waves are within the natural variability of incident wave conditions. The predicted changes are transient (they will diminish with the dispersion of disposed material from HU081 and HU082) and are expected to last for a few years.</p> <p>Overall, for the above reasons, there is considered to be no increase to flood risk.</p> <p>Analysis of historic change of profiles derived from LiDAR data running across the low intertidal up to the elevation of marsh level have shown that to the west of Hawkins Point the lower intertidal of the foreshore is relatively stable, unlike that to the east of Hawkins Point. Whilst it is recognised that at MLWS and MSL there are small increases in wave heights (see above) it is not considered that such small increases will lead to significant erosion of the lower foreshore which appears currently to be stable. The increases are likely to be insignificant within the natural variability of the incident wave conditions.</p> <p>If this foreshore were presently subject to erosion a small increase in such erosion might be anticipated for the few years that it will take for the glacial clay to disperse from the disposal sites. However, given the relative stability of the lower foreshore to the west of Hawkins Point, it is unlikely that the small predicted increase in wave height at lower water levels will be sufficient to instigate a trend for erosion.</p>
	4.5	<p>As explained in the Introduction of Chapter 8, the Humber's hydrodynamic and sedimentary regime is very complex and subject to constant change. In addition to</p>		<p>Noted. Agreed.</p>

		<p>the assertions based on modelling, made in Chapter 8, in terms of impacts on the Hawkins Point area, all the listed measures regarding HU081 and HU082 in 8.5.2 would be crucial in understanding the actual evolving impacts, during and after dredging disposal.</p>		
4.6		<p>To safeguard any consequences from the potential flow acceleration during the ebb tide off the downstream end of the quay, we require the additional mitigation set out in 8.5.2 to be undertaken, and included/secured using the appropriate mechanism (e.g. Marine Licence, Marine Environmental Management and Monitoring Plan etc, or monitoring legal agreement with the Agency). Currently there is no time limit specified in 8.5.2 for monitoring aspects - we require this to be for a minimum of 10 years. We also request that the applicant indicates what remedial action they will implement if this risk is realised.</p>		<p>The flow acceleration for the amended quay on the ebb tide is predicted to occur slightly further inshore and over a smaller area than was the case for the consented quay. The increased ebb tide currents are in line with the AMEP quay and extend downstream for up to 500m on spring tides. Peak speeds on the ebb tide at South Killingholme Oil Jetty may increase by up to 0.3m/s and at the Immingham Gas Jetty by up to 0.1m/s.</p> <p>It is not expected that mitigation will be required for this effect.</p> <p>A proposed monitoring schedule is provided below to supplement the information in Section 8.5.2.</p> <p>The monitoring includes for pre-construction activity, monitoring and compliance reporting during the dredging and continued monitoring post-construction. It is proposed that the post-construction monitoring be reviewed 3 years after disposal activities at HU081/82 is completed.</p> <p>Current measurements in proximity to South Killingholme Oil Jetty will be made pre- and post- construction of AMEP on spring tides of a similar range.</p>

				<table border="1"> <thead> <tr> <th data-bbox="1014 300 1854 327">Additional monitoring / mitigation</th> <th data-bbox="1854 300 2089 327">Period/duration</th> </tr> </thead> <tbody> <tr> <td data-bbox="1014 327 1854 379">Placement by barge of material dredged by CSD into sites HU081 and HU082 to spread impact during the placement period.</td> <td data-bbox="1854 327 2089 379">During construction</td> </tr> <tr> <td data-bbox="1014 379 1854 443">Depending upon overall volumes of material to be placed at HU081 and HU082 consider greater quantity of material being placed into HU082 than HU081 to reduce potential for increased tidal currents around HU081.</td> <td data-bbox="1854 379 2089 443">During construction</td> </tr> <tr> <td data-bbox="1014 443 1854 507">Target placement of any glacial till dredged by BHD to HU082 so that changes caused by placement at HU081 occur for a shorter period.</td> <td data-bbox="1854 443 2089 507">During construction</td> </tr> <tr> <td data-bbox="1014 507 1854 603">Programme of bathymetric survey over HU081 and HU082 and in their vicinity during and after placement</td> <td data-bbox="1854 507 2089 603">Pre-construction/during/post-construction (review 3 years after completion of disposal activities)</td> </tr> <tr> <td data-bbox="1014 603 1854 699">Use ongoing LiDAR monitoring as a source for surveillance of foreshore around Hawkins Point</td> <td data-bbox="1854 603 2089 699">Pre-construction/during/post-construction (review 3 years after completion of disposal activities)</td> </tr> <tr> <td data-bbox="1014 699 1854 794">Current measurements pre- and post- construction of AMEP at the South Killingholme Oil Jetty to establish the significance of any changes to ebb tidal currents after construction of AMEP.</td> <td data-bbox="1854 699 2089 794">Pre-construction/post-construction</td> </tr> </tbody> </table>	Additional monitoring / mitigation	Period/duration	Placement by barge of material dredged by CSD into sites HU081 and HU082 to spread impact during the placement period.	During construction	Depending upon overall volumes of material to be placed at HU081 and HU082 consider greater quantity of material being placed into HU082 than HU081 to reduce potential for increased tidal currents around HU081.	During construction	Target placement of any glacial till dredged by BHD to HU082 so that changes caused by placement at HU081 occur for a shorter period.	During construction	Programme of bathymetric survey over HU081 and HU082 and in their vicinity during and after placement	Pre-construction/during/post-construction (review 3 years after completion of disposal activities)	Use ongoing LiDAR monitoring as a source for surveillance of foreshore around Hawkins Point	Pre-construction/during/post-construction (review 3 years after completion of disposal activities)	Current measurements pre- and post- construction of AMEP at the South Killingholme Oil Jetty to establish the significance of any changes to ebb tidal currents after construction of AMEP.	Pre-construction/post-construction
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Programme of bathymetric survey over HU081 and HU082 and in their vicinity during and after placement	Pre-construction/during/post-construction (review 3 years after completion of disposal activities)																	
Use ongoing LiDAR monitoring as a source for surveillance of foreshore around Hawkins Point	Pre-construction/during/post-construction (review 3 years after completion of disposal activities)																	
Current measurements pre- and post- construction of AMEP at the South Killingholme Oil Jetty to establish the significance of any changes to ebb tidal currents after construction of AMEP.	Pre-construction/post-construction																	
	4.7	<p>We note that although a bespoke programme of bathymetric survey is described, it is implied that existing LiDAR Monitoring surveys (i.e. Environment Agency commissioned surveys) will be used to survey the Hawkins Point foreshore. Scheduled surveys will not be on sufficient enough frequency to guarantee an optimal comparative dataset. Therefore, bespoke LiDAR surveys will need to be commissioned by the Applicant to fully understand inter-tidal and terrestrial impacts integrated with the inter-tidal and</p>		<p>Noted. Able UK will commission bespoke LiDAR surveys of Hawkins Point to monitor changes to the site before, during and after completion of the disposal activities.</p>														

		sub-tidal results from bathymetry surveys.		
	4.8	Provision should be made for an agile response to the results from monitoring work – i.e. if the results show departure from the predictions set out in Chapter 8, how significant is this, what are the impacts and, if appropriate, what further mitigation is required. This needs to be set out and secured using the appropriate mechanism (e.g. Marine Licence, Marine Environmental Management and Monitoring Plan etc) as well as the additional mitigation set out in 8.5.2. If this has already been done could the applicant please sign-post us to where this can be found.		<p>With regard to monitoring, the approved Marine Environmental Management and Monitoring Plan (MEMMP) sets out limits of acceptable change and remedial actions for effects greater than the prescribed limit. In accordance with Schedule 11 paragraph 19(2) of the AMEP DCO, the MEMMP is required to be approved by the MMO following consultation with the EA. This would be the appropriate place for any additional Objectives pursuant to the Material Change being approved.</p> <p>The response to Item 4.6 above repeats the additional mitigation proposed in paragraph 8.5.2 of the ES. The first four items can be addressed by minor changes to the Marine License. The remaining two can be addressed in an amended MEMMP to be approved following any approval of the material amendment.</p>
	4.9	<p><i>Minor comment</i></p> <p>There is a typo in paragraph 8.4.69 where Figure 8.39 is erroneously referenced as 8.40.</p>		Noted. Thank you.

MMO	4.10	<p>The MMO note that changes to tidal currents and wave climatology will be localised and not result in significant impacts to coastal and physical processes, including no effect on the ongoing erosion of Hawkins Point and the managed realignment sites to the east. We also acknowledge that the majority of material disposed of at HU081 and HU082 is considered likely to erode and disperse over a period of years due to hydrodynamic processes. The MMO also agrees that the proposed design will not cause significant changes in water levels on the regional tidal regime; and changes in the annual maintenance dredge budgets of the proposed project and existing operations within nearby infrastructure are anticipated but are not considered to be significant and are similar to those described in the original authorised development.</p>		Noted. Thank you.
	4.12	<p>The MMO has previously suggested that if the formation of discrete mounds due to disposal via split-hopper barge appear to be hindering dispersal (as discussed in the appendix "Erosion of Placed</p>		Noted and agreed that use of plough dredger is added to the list of formal mitigation measures, should this be deemed necessary based on bathymetric surveys during or on completion of disposal activities.

		<p>Clay”), the subsequent use of a plough dredger to ‘cap’ the mounds and fill the adjacent troughs is a potential mechanism to aid dispersal of inerodible material and reduce potential risk associated with safe navigation. This is a potential mitigation measure which is not listed in Section 8.5 of the ES. The MMO do however note that the Applicant has stated in Table 8.2, “whilst a plough dredger could be used as a last resort to redistribute any high spots arising from disposal operations, extensive plough operations at the disposal site are not proposed”. The MMO agree with this response, in that plough dredging should not be a primary mitigation measure, however, we would recommend that it still be added to the list of formal mitigation measures, in order to keep the option available, should it be deemed necessary by the MMO following subsequent monitoring.</p>		
	4.13	<p>Hydrodynamic and sediment transport modelling is described in Section 8.2 of the ES and underpins many of the studies investigating potential impacts on</p>		<p>Noted. Thank you.</p>

		<p>coastal and physical processes associated with the proposed works. An unbiased statistical accuracy assessment has not been carried out, however, the data used to inform the model is considered appropriate and the comparison of model and observational data shows good agreement. Although it is recognised that models predicting the potential impacts in a dynamic estuary such as the Humber have a degree of uncertainty (paragraph 8.2.29), the model outputs are considered to be of sufficient accuracy to inform the updated ES.</p>		