



ABLE HUMBER PORTS

ADDENDUM FLOOD RISK ASSESSMENT FOR THE PLANNING APPLICATION FOR USE OF ENABLING WORKS EAST (AREA G) FOR PORT RELATED STORAGE

DECEMBER 2016

Able UK Ltd
Able House,
Billingham Reach Industrial Estate,
Teesside
TS23 1PX
Tel: 01642 806080 Fax: 01642 655655

APPROVAL & REVISION REGISTER

	NAME	SIGNATURE	DATE
Originator:	J Salisbury		20/12/2016
Checked by:	R Cram		04/01/2017
Approved by:	R Cram		04/01/2017

REVISION	COMMENTS	DATE

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1 **INTRODUCTION**

1.1 **BACKGROUND & PURPOSE**

This document is provided in support of a planning application for temporary operational use for the area previously consented under PA/2013/0519 that provided for the uplift in the levels to form a construction compound for the AMEP quay works (the 'enabling works'). The temporary use, that comprises car storage, is required for the period February to September 2017.

The AMEP works (consented under the Able Marine Energy Park Development Consent Order 2014) was supported by a flood risk assessment (AMEP FRA) dealing with the risks associated with the final development of that scheme¹

The flood risk assessment for the previously consented enabling works was JBA report dated April 2014 (2013s7261 Final Report v3) (2014FRA). This document is included in Appendix A of this report for completeness.

1.2 **FLOOD RISK ISSUES FROM PREVIOUS FRA**

The site is in Flood Zone 3 and is currently protected by a coastal defence embankment and wave wall.

The site lies within the fluvial flood plain of the Killingholme Marshes Drainage system.

The flooding issues considered in the enabling works 2014FRA were

- a) the tidal flood risks associated with the risks of a breach or overtopping of the tidal defences
- b) the fluvial flood risks
- c) the surface water runoff.

These issues will be reviewed in this report to identify if the risks are changed in any way by the proposed change of use or by any other new information, and if so what measures will be put in place to remove or mitigate the flood risks.

2 **TIDAL FLOOD RISK**

2.1 **PREVIOUSLY IDENTIFIED RISKS**

The AMEP FRA identified that the site would be at a significant risk of inundation from a breach event. The maximum present day flood level predicted within the AMEP development site, based on site specific modelling, was stated to be in the range 4.2 - 4.6 metres above ordnance datum (mAOD), the higher level occurring once the AMEP development is complete.

However the 2014 FRA noted that, since the development of Area G was only a small proportion of the AMEP scheme as a whole the present day breach flood

¹ <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR030001/TR030001-000400-13.1%20-%20Flood%20Risk%20Assessment%20and%20Drainage%20Strategy.pdf>

level due to the enabling works would be approximately 4.232mAOD (paragraph 4.2).

2.2 AFFECT OF PROPOSALS ON PREVIOUSLY IDENTIFIED RISKS

The predicted still water levels for the River Humber are now, following the surge vent in December 2013) slightly more onerous than at the time the modelling was run for AMEP; 5.428mAOD (now), cf. 5.18mAOD (2012). However, this will have only a marginal effect on the volumes of water entering the breach (ie. the flood level will not increase by as much as the increase in the extreme water level). Thus a conservative peak water level during a breach can be taken to be $(4.232+0.248)$ mAOD, or 4.38mAOD.

Since a small area of the site will be at risk of flooding in the breach scenario (the area below 4.48mAOD), a flood warning and evacuation plan will be put in place prior to operation of the site.

No cars will be stored in the area where the FGL is below the conservative peak floodplain level of 4.48mAOD.

3 FLUVIAL FLOOD RISKS

3.1 PREVIOUSLY IDENTIFIED RISKS

The site lies within the Killingholme Marshes drainage system that is controlled by the local internal drainage board, North East Lindsey Drainage Board (NELDB). In the AMEP scheme, a pumping station will be built and the drainage channel system improved to provide unrestricted surface water discharges from the development.

The design of the pumping station and channel system is in progress but the pumping station will not be constructed by the time the operational use is required (February to September 2017). The existing fluvial flood risk is therefore to be considered in this FRA addendum.

In the 2014FRA, the 1% Indicative Floodplain Map showed an area of fluvial floodplain within the proposed construction compound site. The flood level was 2.9mAOD and a minimum level for the compound set at 3.1mAOD.

As mitigation for the loss of floodplain storage caused by the raising of the levels on the site, a new length of ditch was proposed as compensation. The required volume of compensatory storage was calculated as 2,850m³.

3.2 AFFECT OF PROPOSALS ON PREVIOUSLY IDENTIFIED RISKS

The ground has been raised to a min of 3.25mAOD, therefore there should not be any flooding from the watercourses in the proposed scheme.

The ditch required to provide the compensatory flood storage has been built parallel and adjacent to the railway.

4 SURFACE WATER FLOOD RISK

4.1 PREVIOUSLY IDENTIFIED RISKS

The 2014FRA identified that the NELDB required that the site compound did not result in an increase to the surface water runoff to the existing watercourse system.

The NELDB required discharges to be controlled to the nominal greenfield runoff rate of 1.4l/s/ha and that surface was considered as being impermeable.

Calculations were carried out in the 2014FRA for the required storage for one area on the construction compound site for the 1 in 100 year event without climate change.

In order to mitigate the possibility of pollution entering the watercourses, runoff directly to the watercourses was required to be prevented by forming a perimeter bund.

4.2 AFFECT OF PROPOSALS ON PREVIOUSLY IDENTIFIED RISKS

The calculation of the volume of storage based on the 2014FRA calculations have been provided in Appendix B.

The appended calculations are based on 1 in 100 year event, with no climate change (due to the short duration of the operation) and 100% runoff. In summary:


Area G1/G2 required storage = 9,700m³

Area G3 required storage = 3,800m³

The site has been profiled to form ridges and furrows and a bund has been formed around the lowest edges of the development to contain the surface water runoff. Small orifice pipes have been installed through the bund to allow the discharge of water to greenfield runoff rates.

The cars proposed to be stored on site are brand new and kept with minimal amounts of fuel in their tanks so the risk of a pollution incident from the spillage of fuel is extremely low. The bunds formed to contain the surface water runoff will also act as pollution control.

No cars will be stored in the area to be used for attenuation, which is all the area below around 4.5mAOD.

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APPENDIX A

JBA ENABLING WORKS EAST FLOOD RISK ASSESSMENT

APRIL 2014

(2013S7261 FINAL REPORT V3)

 The logo for 'able' features a stylized Union Jack flag to the left of the word 'able' in a bold, blue, sans-serif font. Below the word 'able' is the website address 'www.ableuk.com' in a smaller, blue, sans-serif font. able www.ableuk.com	<p>ABLE HUMBER PORTS ADDENDUM FLOOD RISK ASSESSMENT AREA G</p>	<p>DECEMBER 2016</p>
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APPENDIX B

CALCULATIONS FOR THE SURFACE WATER STORAGE REQUIREMENTS