The Planning Inspectorate
National Infrastructure and Planning
Temple Quay House
Temple Quay
Bristol
BS1 6PN

Our ref: AN/2023/135033/01-L01
Your ref: EN070008

Date: 11 January 2023

Dear Sir/Madam

Application by Chrysaor Production (UK) Limited for a Development Consent Order ("DCO") for a 55km underground pipeline for the transport of Carbon Dioxide from the Immingham industrial area to offshore storage – the Viking CCS Pipeline ("the Proposed Development")

1.0 The Environment Agency's Role

1.1 The Environment Agency is an executive non-departmental public body, established under the Environment Act 1995.

1.2 We were established to bring together responsibilities for protecting and improving the environment and to contribute to sustainable development. We take an integrated approach in which we consider all elements of the environment when we plan and carry out our work. This allows us to advise on the best environmental options and solutions, taking into account the different impacts on water, land, air, resources and energy.

1.3 We help prevent hundreds of millions of pounds worth of damage from flooding. Our work helps to support a greener economy by protecting and improving the natural environment for beneficial uses, working with businesses to reduce waste and save money, and helping to ensure that the UK economy is ready to cope with climate change. We will facilitate, as appropriate, the development of low carbon sources of energy ensuring people and the environment are properly protected.

1.4 We have three main roles:

- We are an **environmental regulator** – we take a risk-based approach and target our effort to maintain and improve environmental standards and to minimise unnecessary burdens on businesses. We issue a range of permits and consents.

- We are an **environmental operator** – we are a national organisation that operates locally. We work with people and communities across England to protect and improve the environment in an integrated way. We provide a vital incident response capability.

- We are an **environmental adviser** – we compile and assess the best available evidence and use this to report on the state of the environment. We use our own monitoring information and that of others to inform this activity. We provide technical information and advice to national and local governments to support their roles in policy and decision-making.

1.5 The Environment Agency takes action to conserve and secure the proper use of water resources, preserve and improve the quality of rivers, estuaries and coastal waters and groundwaters through pollution control powers and regulating discharge permits.

1.6 We have regulatory powers in respect of waste management and remediation of contaminated land designated as special sites. We also encourage the remediation of land contamination through the planning process.

1.7 The Environment Agency is the principal flood risk management operating authority. It has the power (but not the legal obligation) to manage flood risk from designated main rivers and the sea. The Environment Agency is also responsible for increasing public awareness of flood risk, flood forecasting and warning and has a general supervisory duty for flood risk management. We also have a strategic overview role for all flood and coastal erosion risk management.

2.0 Scope of these Representations

2.1 These Relevant Representations contain an overview of the project issues, which fall within our remit. They are given without prejudice to any future detailed representations that we may make throughout the examination process. We may also have further representations to make if supplementary information becomes available in relation to the project.

2.2 We have reviewed the Development Consent Order (DCO) application, Environmental Statement (ES) and supporting documents submitted as part of the above-mentioned application, following notification of its acceptance for Examination on 22 November 2023. Our comments below are presented using the document references and ES Chapter headings relevant to our remit.

3.0 2.1 Draft Development Consent Order [APP-006]

3.1 ***Article 2: Interpretation*** – the interpretation of 'Theddlethorpe Facility (Option 1)' is incorrect. Option 1 is shown as Work No. 44 (not Work No. 42) on Sheet 35 of the Works Plans. The interpretation of 'Theddlethorpe Facility (Option 2) is also incorrect. Option 2 is shown as Work No. 42 (not Work No. 44) on Sheet 35 of the Works Plans. We also request the inclusion of the definition of "watercourse" in this Article, as per our comments under paragraph 3.5 below.

3.2 ***Article 17: Discharge of Water*** – we note that the wording of this Article is based (according to the explanatory memorandum [APP-007]) on model provisions and can be found in other DCOs including Article 18 of the Southampton to London Pipeline DCO, Article 15 of the North Shropshire Electricity Distribution Network Order 2020 and Article 15 of the North Vanguard

DCO 2020. Although such a provision does feature in these DCOs some of the wording is different. In respect of subclause (7), this refers to discharges into 'controlled waters' and subclause 8(b) provides interpretation for the Article, referring to the Environmental Permitting (England and Wales) Regulations 2016, which does not replicate the cited DCOs.

3.3 It is our view that the cited DCOs include the correct text for this Article. Accordingly, we request subclause 7 is amended to read:

> "Nothing in this article overrides the requirement for an environmental permit under regulation 12(1)(b) of the Environmental Permitting (England and Wales) Regulations 2016 in respect of a water discharge activity or groundwater permit".

3.4 Subclause 8(b) should be amended to read:

> "other expressions, excluding watercourse, used both in this article and in the Water Resources Act 1991 have the same meaning as in that Act".

3.5 It will also then be appropriate to include a definition of "watercourse" in Article 2 Interpretation to read: "includes all rivers, streams, ditches, drains, canals, cuts, culverts, dykes, sluices, sewers and passages through which water flows except a public sewer or drain".

3.6 ***Article 36: Application and modification of legislative provisions -*** We are currently discussing the wording of protective provisions with the applicant and hope to reach an agreement on these, which would then enable us to agree to disapply Regulation 12 (the requirement for environmental permit) of the Environmental Permitting (England and Wales) Regulations 2016 in respect of flood risk activities. We will provide further updates on this during the examination.

3.7 If we can agree to this, it is our view that the drafting of Article 36 will need to be amended to delete the reference to the repealed section of the Water Resources Act 1991 as it has no relevance to the current Environmental Permitting Regulations 2016. Accordingly, we request Article 36(1)(a) is amended as follows:

> "the 2016 Regulations, (requirement for environmental permit) of ~~to the extent that they require a permit for anything that would have required consent made under section 109 of the Water Resources Act 1991(**b**) immediately before the repeal of that section or for any activities defined under~~ the Environmental Permitting (England and Wales) Regulations 2016, in respect of a ~~as~~ flood risk activiti~~es~~y only;"

3.8 ***Article 44: Certification of plans, etc*** – we note this Article refers to an "outline operational and maintenance environmental management plan (document number 6.4.3.6)". This document number relates to the ES Appendix 3-6 Operational Phase Mitigation [APP-073]. We request that confirmation is provided on whether document 6.4.3.6 is the intended outline operational and maintenance environmental management plan. Also see comments in paragraph 3.11 below regarding this plan and Requirement 15 in Schedule 2.

Schedule 2, Part 1, Requirements

3.9 ***Requirement 5: Construction environmental management plan*** – The Environment Agency requests that it is added as a specific consultee to the discharge of this requirement so that it can advise on matters within its remit.

3.10 ***Requirement 9: Contaminated land and groundwater*** – The wording of this requirement is not satisfactory and should be amended to ensure that work ceases in any location where contamination is suspected. This is necessary to prevent the risk of contaminant migration or further pathways for pollution to reach sensitive receptors. The Environment Agency also requests it is added as a specific consultee to the discharge of this requirement. Accordingly, we request that Requirement 9 is amended to include the following additional [underlined] text:

> 9.—(1) In the event that contamination is found at any time when carrying out the authorised development then works in that location must cease immediately and it must be reported in writing to the relevant planning authority as soon as reasonably practicable.
> (2) Where contamination has been reported to the relevant planning authority in accordance with sub-paragraph (1), an investigation and risk assessment must be completed in accordance with a contamination scheme to assess the nature and extent of any contamination on the part of the Order limits within which works are being carried out, whether or not that contamination originates on that part of the Order limits; and—
>
> > (a) the contents of that scheme are subject to the approval of the relevant planning authority, following consultation with the Environment Agency; and
> > (b) that investigation and risk assessment must be undertaken within timescales agreed with the relevant planning authority and the Environment Agency, and in accordance with the approved contamination scheme and a written report of the findings must be submitted to the relevant planning authority.
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> (3) Where remediation is determined by the relevant planning authority to be required having had regard to the results of an investigation and risk assessment carried out under sub-paragraph
> (2), a detailed remediation scheme must be prepared and submitted for the approval of the relevant planning authority, following consultation with the Environment Agency.
> (4) The approved remediation scheme must be implemented in accordance with its terms.

3.11 ***Requirement 15: Operational and maintenance environmental management plan*** – as mentioned in paragraph 3.8 above, we are unsure if document 6.4.3.6 "Operational Phase Mitigation" constitutes this plan. If this is the case then the document should be renamed so that it is clear this document is the one that any final plan submitted under this requirement has to be in accordance with. Paragraph 5.6 below provides further comment in relation to the contents of document 6.4.3.6.

3.12 ***Requirement 16: Decommissioning environmental management plan*** – the Environment Agency requests that it is added as a specific consultee to the discharge of this requirement so that it can advise on the decommissioning of

any apparatus below main rivers, as well as general pollution prevention issues and waste management arrangements.

Schedule 2, Part 2, Procedure for discharge of Requirements

3.13 ***Requirement 22: Further information* -** The Environment Agency is of the view that the provisions in this requirement will not provide sufficient time for adequate consultation to take place for the discharge of requirements. In particular, 22(3) requires the discharging authority to notify the Applicant in writing of any further information it needs within 21 days of receipt of the application. This would not provide sufficient time for the discharging authority to request a consultee's comments or for the consultee to adequately consider and respond to the consultation request.

3.14 The Environment Agency requests that this is amended so that the discharging authority has 20 business days in which to notify the undertaker of the further information requested to provide sufficient consultation timescales that align with those in the Development Management Procedure Order 2015, i.e. 21 days (equivalent to 15 business days) in addition to the 5 business days allocated for the relevant discharging authority to issue the consultation. The words "*and in any event within 21 days of receipt of the application*" should be deleted.

3.15 We also request that the term 'business days' as defined in Article 1 Interpretation is used throughout Schedule 2 Part 2 to provide clarity to the drafting.

3.16 We note that the Applicant's justification for including these procedural requirements takes the form of wording that has been established in a number of other DCOs. However, the practical application of the "10 business days" timescale will not facilitate adequate consultation.

3.17 **Schedule 2, Part 7, Protective Provisions**

As mentioned in paragraph 3.6 above, we are in discussions with the applicant regarding protective provisions. The protective provisions included in the draft DCO are not currently in a format we can agree to. However, we will update the Examining Authority when agreement is reached on this matter.

4.0 3.3 Book of Reference [APP-011]

4.1 The Environment Agency has various land interests recorded in the Book of Reference for plot references 1/56, 1/65, 26/7, 26/10, 31/12 and 33/5. The Environment Agency is not the registered owner of any of these and does not have any comments to make in respect of the plots.

5.0 6.2.3 ES Chapter 3: Description of the Proposed Development Document [APP-045]

5.1 We welcome the confirmation in paragraph 3.12.226 that groundwater is not being considered as a source of water for hydrostatic testing of the pipelines. This satisfies our previous concerns about water availability in this location.

5.2 **6.4.3.1 Appendix 3-1: Draft Construction Environmental Management Plan (CEMP) [APP-068]**

There is a typo in Table 2 where the Drainage Strategy is given as Appendix 14-3, when it should be 11-3.

5.3 We agree with the proposed mitigation outlined in Table 3, and section E specifically. Of particular note for the applicant's attention is:

- E3 – the project manager needs to have regard for the abstraction licensing requirements for dewatering; the requirement for a Water Resources Abstraction Licence applies unless the activity is exempt under The Water Abstraction and Impounding (Exemptions) Regulations 2017. The contractor should determine the need for an abstraction licence at an early stage. We advise early consideration is given to this so that permitting timescales can be built into the development programme so as not to cause delays. We will not agree to disapply the need for such a licence in the DCO.
- E8 - we look forward to further correspondence in relation to the discovery and disposal strategy for dealing with potential unsuspected contamination.
- E28 - the potential for uncontrolled water resource loss, due to unexpected artesian flow, needs to be planned for and managed. An abstraction licence may be required if no exemption or regulatory position statement applies. The ground investigation and groundwater monitoring proposals should provide a better understanding of the hydrogeological conditions to expect during construction.
- F9 – the relevant British Standard for topsoil is now BS3882:2015, not BS3882:2007.

5.4 **6.4.3.2 ES - Appendix 3-2: Crossing Schedule [APP-069]**
We have reviewed the Crossing Schedule and this is satisfactory.

5.5 **6.4.3.5 ES - Appendix 3-5: Decommissioning Strategy [APP-072]**
Decommissioning may include the removal of redundant infrastructure under flood defence assets. However, we are satisfied that providing the Environment Agency is added as a specific consultee to the discharge of Requirement 19 (Decommissioning Environmental Management Plan), this will allow us adequate opportunity to provide advice on this at the relevant time.

5.6 **6.4.3.6 ES - Appendix 3-6: Operational Phase Mitigation [APP-073]**
Commitment reference number Op04 is additional mitigation and enhancement measure G27. Commitment reference number Op05 is similar in wording to additional mitigation and enhancement measure G1. Please refer to our comments on these for Chapter 11: Water Environment in paragraphs 8.21-8.22 and 8.38-8.40 below.

6.0 6.2.9 ES Chapter 9: Geology and Hydrogeology [APP-051]

6.1 We welcome the full consideration and inclusion of all potable water supplies and corrections/adjustments made to hydrogeological and sensitivity classifications. We also note that the remediation of the Theddlethorpe and Immingham facilities will be secured prior to development through the lease agreement.

6.2 We welcome the intention to consult the Environment Agency regarding further hydrogeological and remediation assessments, and on the proposed contamination inspection and discovery strategy (we need to be a consultee to the discharge of Requirements 5 and 9 to facilitate this). Any dewatering strategy required either for the pipeline or at the reception facilities needs to take account of the requirement for a Water Resources Abstraction Licence (and associated timescales for obtaining this) unless the activity is exempt under The Water Abstraction and Impounding (Exemptions) Regulations 2017. The applicant should determine the need for an abstraction licence at an early stage. This

should be included within the commitment to mitigation measures of E3 and E28 of the draft Construction Environmental Management Plan (CEMP).

6.3 Horizontal Directional Drilling (HDD) or piling which will exceed 10m in depth will require careful consideration and control, in consultation with the Environment Agency, in terms of risks of groundwater contamination as well as losses through artesian flow, and management of dewatering. This should be the focus of further detailed hydrogeological risk assessments for such activities. We acknowledge that full ground investigation and groundwater monitoring is planned to inform such activities, which is covered in paragraphs 9.8.9-12.

6.4 The mitigation measures proposed within the Draft CEMP provide confidence that risks should be suitably managed, in particular A5, E1 - E3, E6 – E8, E17, E19 – E20, and E27 – E28. Accordingly, we refer to our request to be a specific consultee to the discharge of Requirement 5 to enable us to comment on the details of these measures.

6.4.9.3 Appendix 9-3: Hydrogeological Risk Assessment [APP-094]

6.5 Section 1.3.2 states that groundwater safeguard zones are meant to be designated in Figures 1.2 and 1.3; these are not evident on the diagrams.

6.6 We note that in the absence of site-specific ground investigation data at this stage, the Hydrogeological Risk Assessment (HyRA) is considered to be 'preliminary' and will be reviewed and updated based on the findings of future ground investigations. We would like to be consulted on any future updates and believe this is secured through mitigation measure E3 in the draft CEMP (subject to our request to be a specific consultee to the final CEMP discharge).

6.7 Section 1.3.4 confirms that if drilling is required greater than a depth of 10m within the chalk bedrock, the Environment Agency would be consulted, which we welcome.

6.8 Sections 1.3.14, 35, 55, 73 and 94 confirm the requirement for a dewatering plan – this should be developed with regard to all licencing requirements previously outlined. Sections 1.3.21 and 42 confirm the need for an abstraction licence for dewatering more than 20m³/d; timescales of obtaining the licence need to be factored into the works programme.

6.9 Sections 1.3.18, 39, 58, 77 and 97 do not reference potential additional (unidentified) sources of pollution including migration of contaminants already present within the ground due to historical use, mobilised by construction. Additional pathways which are not referenced include deeper drilling (HDD) or piling.

6.10 Sections 1.3.13 and 34 states that HDD may extend to 20m depth – can the applicant please confirm if this is correct? This seems to contradict other text. If it is correct, the risk is less about contaminants entering the chalk bedrock, but more about managing the uncontrolled artesian groundwater pressure – this needs to be fully considered and addressed in tables 4 and 10.

7.0 6.2.10 ES - Chapter 10: Agriculture and Soils [APP-052]

7.1 We welcome the inclusion of G33 in the Draft CEMP, whereby an Environmental Emergency Response Plan will be prepared, documenting measures to prevent pollutants from infiltrating into the soils beneath the site and reaching surface and

groundwater receptors. We look forward to commenting on these as a consultee to the final CEMP.

8.0 6.2.11 ES Chapter 11: Water Environment [APP-053]

8.1 Paragraph 11.5.65 – the Environment Agency has permissive powers for the management of flood risk.

8.2 Paragraph 11.5.67 - the definitions shown in this paragraph are incorrect. The Flood Zones shown on the Flood Map for Planning (Rivers and Sea) shows flood risk from rivers and the sea only. The flood zones are defined as:

- Zone 1 Low Probability: Land having a less than 0.1% annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map for Planning – all land outside Zones 2 and 3)
- Zone 2 Medium Probability: Land having between a 1% and 0.1% annual probability of river flooding; or land having between a 0.5% and 0.1% annual probability of sea flooding. (Land shown in light blue on the Flood Map)
- Zone 3a High Probability: Land having a 1% or greater annual probability of river flooding; or Land having a 0.5% or greater annual probability of sea. (Land shown in dark blue on the Flood Map)

8.3 The risk of flooding from surface water map shows four levels of flood risk. These are:

- High - each year, the area has a chance of flooding of greater than 1 in 30 (3.3%)
- Medium - each year, the area has a chance of flooding of between 1 in 100 (1%) and 1 in 30 (3.3%)
- Low - each year, the area has a chance of flooding of between 1 in 1000 (0.1%) and 1 in 100 (1%)
- Very low - each year, the area has a chance of flooding of less than 1 in 1000 (0.1%)

8.4 The risk of flooding from Reservoirs shows the maximum extent of flooding from reservoirs when:

- river levels are normal; and
- there is also flooding from rivers.

8.5 *Table 11-16 - Section 1 of Pipeline Corridor within DCO Site Boundary*
Tidal: The level of flood risk is unclear as this paragraph states average breach depths rather than potential maximum breach depths (2006 0.5% and 0.1% breach maximum depths are greater).
Climate Change: Again, the level of flood risk is unclear as this paragraph states average breach depths rather than potential maximum breach depths (2006 0.5% and 0.1% breach maximum depths are greater).

8.6 *Table 11-17: Section 2 of Pipeline Corridor within DCO Site Boundary*
Fluvial: the 'Comments' section refers to Ref 1 and Figure 2 - should this refer to Figure 11.41 and Figure 11-7 respectively?

8.7 *Table 11-17: Section 2 of Pipeline Corridor within DCO Site Boundary, Table 11-18: Section 3 of Pipeline Corridor within DCO Site Boundary and Table 11-19: Section 4 of Pipeline Corridor within DCO Site Boundary*
Fluvial: There are also non-main river crossings that lie within Flood Zones 2 and 3. These sections also contain an incorrect definition of fluvial Flood Zone 2.

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Fluvial Flood Zone 2 is defined as land having between a 1% and 0.1% annual probability of river flooding.
Climate Change: Climate change is likely to result in an increased risk of flooding from all sources, not just groundwater.

8.8 *Table 11-20: Section 5 of Pipeline Corridor within DCO Site Boundary*
Climate change: The Shoreline Management Plan for Saltfleet to Gibraltar Point has a policy of 'Hold the Line' in the short-medium term. However, there is a 'Hold the Line/Managed Realignment' policy in the long term (from 2055- 2105) between Theddlethorpe St Helen to Gibraltar Point. Although this epoch is beyond the stated lifetime of this proposed development, it is something to be aware of if the operational life of the pipeline is extended.

8.9 *Table 11-21: Receptor Importance Values*
For many of the receptor importance values, the flood risk importance is medium importance as located within an area with industrial / less vulnerable development. However, there are instances where the proposed development is close to development of a higher vulnerability, for example, residential properties.

8.10 *Table 11-22: Embedded and Standard Mitigation*
Pre-Construction Mitigation - Topsoil will be stripped, in accordance with the Outline Soil Management Plan (ES Volume IV: Appendix 10.1 (Application Document 6.4.10.1)). The Outline Soil Management Plan (paragraph 4.7.3) states, *'topsoil and subsoil will not be stored directly adjacent to the watercourse but will be stored a minimum of 20m from the watercourse'* and *'no topsoil or subsoil will be stored within a fluvial or surface water flood zone (flood zone 2 and 3) unless supported by a risk assessment (i.e. consideration of weather forecast and duration of storage) and additional mitigation (i.e. drainage bypass channel for overland flow)*'.

8.11 However, the FRA (Appendix 11-5: Flood Risk Assessment [APP-101]) does not adequately consider and assess impacts of working within the floodplain. The Environment Agency does not generally support storage [of materials] in the floodplain.

8.12 Construction Mitigation - All works within 10m of main rivers will require Flood Risk Activity Permits (FRAPs). Prior approval of the Environment Agency is required for any permanent or temporary works:

- on or within 8 metres of a main river, flood defence structure or culverted main river (16 metres if tidal);
- on or within 16 metres of a sea defence;
- any excavation within 16 metres of any main river, flood defence or culvert; or
- within the floodplain of a main river if the activity could affect flood flow or storage and potential impacts are not controlled by a planning permission.

8.13 There is no embedded and standard mitigation in respect of people working within the floodplain during construction and operation. We support the intention to produce a flood warning and evacuation plan (FWEP) as additional mitigation to protect construction workers.

8.14 However, although Table 11-22 (page 11-110) implies there are no welfare requirements at any of the facilities, the FRA (page 14, Table 5 Section 1) states

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that the "*CCR at the Immingham Facility would be manned 24 hours a day, seven days a week*". Again, we support the intention to produce a FWEP as additional mitigation to address flood risk at this facility, but further consideration should be given to the possibility of including other embedded mitigation measures such as raising finished floor levels, places of refuge etc.

8.15 *Table 11-23: Assessment of Potential Impact: Construction Phase*
This table acknowledges there is a risk of displacing floodwater via the storage of materials / plant in the floodplain. However, the impact and any necessary mitigation required have not been considered.

8.16 *Risk of Breach - Assessment of Potential Impacts and Residual Effects*
[this is paragraph Y] Chapter 11 refers to the likelihood of a breach occurring as being very low and in the event of a breach the site will not be operational. We would highlight that the Environment Agency cannot provide prior warning of a breach. Breaches in flood defences can, and do, happen without warning at any time day or night. In the event of a breach, the consequences are likely to be significant given the location of the Immingham and Theddlethorpe facilities. The onset of water would be extremely quick and given the likely depths and velocities, floodwater would be hazardous resulting in a greater magnitude of risk.

8.17 Emergency plans and shutdown procedures should be considered further to ensure that the development can either remain operational or can be brought back online after flooding and those working on the sites, remain safe. This will be a key part of the flood risk mitigation with respect to the safety of people and the recoverability of the site.

8.18 *Development and works within the floodplain – Assessment of Potential Impacts and Residual Effects*
We have concerns regarding a potential reduction in floodplain storage, which could result from the stockpiling and storage of materials during construction. Additional mitigation and enhancement measures are proposed but no assessment on the impact of such activities in the floodplain has been made. Also see comments in paragraphs 8.32 – 8.34 below regarding this.

8.19 Paragraph 11.8.4: Construction Mitigation and Enhancement – We support the majority of the mitigation and enhancement measures proposed but draw attention to the following:

8.20 G20: We do not generally support the storage of materials in floodplain. This measure does not consider the impacts of the displacement of floodwater and whether any floodplain compensation is required. The FRA must assess the impact of construction, operation and decommissioning on the proposed development and third parties. Any compound, storage area or soil storage area must be set back further than 8m from the main rivers. These comments are also applicable for P9 referenced in the FRA and P7 within the Draft CEMP.

8.21 P23, P24, G27 and also P3 within the draft CEMP use the average breach depths for the site, which may result in potential flood depths not being mitigated (the maximum breach depths are greater). The 2115 0.1% breach depths and the critical flood level should be confirmed for both the Immingham Facility and Theddlethorpe Facility to ensure that the critical electrical equipment is set above this level.

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8.22 Given the significant flood depths that both sites are likely to experience, we strongly recommend that the advice of a structural engineer is sought regarding the design of any 'watertight surround' and the pressure it will need to withstand. Flood resistance measures cannot normally be set more than 600mm above floor levels. If the difference in flood depths between the inside and outside of buildings is greater than 600mm then structural damage is likely to occur.

8.23 **6.4.11.3 Appendix 11-3: Drainage Strategy [APP-099]**
Sections 3.1.14 and 3.2.7 describe the preference for infiltration drainage of surface water at Washingdales Lane block valve station only. We would highlight that this must not include drainage of areas subject to contamination, and must be designed in line with best practice.

8.24 **6.4.11.4 Appendix 11-4: Water Framework Directive (WFD) Assessment [APP-100]**
We have reviewed this document, which is not currently adequate for the reasons outlined below. Accordingly, we wish to make a **holding objection** to the application as the assessment is not sufficient for us to advise on the project's compliance with the relevant River Basin Management Plans and the WFD, as required by the relevant National Planning Policies.

8.25 Table 1 – groundwater bodies are scoped in with the justification that '*WFD groundwater bodies may be directly impacted by the Proposed Development due to a range of activities that would interact with the local watercourse network during construction, operation, and decommissioning phases*'. There may be risks to groundwater which do not bear any relevance to local watercourses.

8.26 Table 2 – groundwater bodies are scoped out for the Immingham facility (and other construction elements) with no groundwater body-specific reasoning given. The applicant should provide further reasoning for this.

8.27 Table 3 - Quantitative Elements. There are potential impacts from groundwater ingress to excavations for non-intrusive crossings on certain water bodies, roads, and the railway. This is not a quantitative issue, but a chemical risk. Unexpected artesian flow and water resource loss would be the quantity issues to address, which have been highlighted to the applicant during pre-application consultation.

8.28 Table 12 – again, Quantity tests are included under groundwater Quality issues. This may be a misunderstanding of terminology – the table heading should not be 'WFD Quality Element' but instead 'WFD Status Element'.

8.29 **6.4.11.5 Appendix 11-5: Flood Risk Assessment [APP-101]**
We have reviewed the Flood Risk Assessment (FRA) and consider that it does not adequately assess the flood risks to and from the development for the reasons outlined below. Accordingly, we wish to make a **holding objection** to the application as the assessment is not sufficient for us to advise on the project's compliance with the relevant National Policy Statements and National Planning Policy Framework requirements on flood risk and safety.

8.30 *Vulnerability of the development* - The FRA confirms that the development is 'Essential Infrastructure' as described in Annex 3 of the National Planning Policy Framework (NPPF). The Planning Practice Guidance (PPG) (Flood Risk and Coastal Change section, paragraph 079, Notes to table 2) states that *'In Flood Zone 3a Essential Infrastructure should be designed and constructed to remain*

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operational and safe in times of flood'. The FRA confirms that the proposed development will not be operational during a breach event, due to the closure of the industries that feed CO_2 into the proposed development. The Environment Agency considers that it is a business decision to be made by the applicant as to whether or not the development remains operational or shuts down during a flood.

8.31 *Lifetime of the development*
The FRA states a development lifetime of 25 years, but in line with flood risk policy it has assessed for a lifetime of 75 years. The Environment Agency hazard mapping for 2115 has been used in the assessment of flood risk and proposed mitigation measures.

8.32 *Assessment of Flood Risk - development within the floodplain*
The FRA acknowledges that the proposed development lies within the floodplain and includes mitigation measure P9 (minimal storage of materials/plant in the floodplain). However, no assessment of the impact of the storage of materials/plant in the floodplain has been made.

8.33 Both the Immingham and Theddlethorpe facilities as well as some of the pipeline route, temporary compounds, temporary working, access and laydown areas are within the floodplain. The FRA must assess the impacts of land raising/storage on the displacement of floodwater from main river and non-main river sources and whether any flood plain compensatory storage is required. We would recommend that compounds, storage areas and stockpiles be outside of fluvial flood areas. The FRA must also assess the impacts on the tidal floodplain, particularly with regard to flood flow routes, to demonstrate that the proposed development will not increase flood risk to third parties, by deflecting flood water.

8.34 Any compound or storage areas must be set back further than 8.0m from the main rivers.

8.35 Paragraph 1.2.2 and 3.3.4: There are also non-main river crossings that lie within Flood Zones 2 and 3.

8.36 *Shutdown:* Paragraph 3.3.14 confirms that the proposed development will not be operational during a breach event, due to the closure of the industries that feed CO_2 into the Proposed Development. Please see paragraph 8.16 above regarding 'Risk of Breach - Assessment of Potential Impacts and Residual Effects' for Chapter 11: Water Environment.

8.37 Given the length of the pipeline and the considerable distance between the Immingham facility and the Theddlethorpe facility (both of which are at tidal flood risk), the FRA should further detail shutdown arrangements in the event of a breach at one site and not the other and vice versa – will the whole pipeline be shut down? (Please note this comment is also applicable to paragraph 5.3.18 of the FRA).

8.38 *Flood Warning and Evacuation Plan*
Emergency plans are a key part of the flood risk mitigation with respect to the safety of people and the recoverability of the site (to ensure that the development remains operational or can be brought back online after flooding), particularly with respect to a breach risk.

8.39 We do not normally comment on or approve the adequacy of flood emergency response procedures accompanying development proposals, as we do not carry out these roles during a flood. Our involvement with this development during an emergency will be limited to delivering flood warnings to occupants/users covered by our flood warning network.

8.40 In paragraph 5.13.19, mitigation measure G1 states that "*A Flood Warning and Evacuation Plan should be produced, including the locations of safe refuge provision, and implemented*". There is no information on the locations of safe refuge provision within the application. We appreciate that the flood warning and evacuation plan will be developed post consent, under the CEMP, but the application should include an indication of how and where such safe refuge provision will be provided, i.e. will this be within buildings with finished floor levels above the predicted flood level etc.

8.41 *Central Control Room (CCR)*
No specific details of the CCR have been provided. The FRA states that the pipeline operation would be managed from a CCR, manned 24 hours a day, seven days a week, at the Immingham Facility. The CCR will remotely monitor all aspects of the pipeline operations and open or close valves at the block valve stations and the Theddlethorpe Facility, as necessary. The Immingham Facilities Plot Plan, Routing and Elevations (Document Reference: EN070008/APP/4.6) shows a maximum elevation of 5.0m for the CCR. We request the applicant confirms if this is the only building that is to be manned. Also, what mitigation is proposed to ensure users of the Immingham facility (including the CCR) are safe (finished floor levels, refuge, etc?)

8.42 *Construction Phase including Crossing Techniques*
Paragraph 5.5.6: We have advised the applicant that the temporary crossings of the main rivers must not be flumed. This comment is also relevant for Table 11-22: Embedded and Standard Mitigation (ES Vol II Chapter 11 – Water Environment).

8.43 Paragraph 5.5.9: P9: Minimal storage of materials/plant in the floodplain. Please see comments in paragraphs 8.32 – 8.35 above on the 'Assessment of Flood Risk - development within the floodplain'.

8.44 Can the applicant please explain why the 50% confidence bound levels have been used within the information in Table 13, Table 14, Table 16 and Table 17. We would expect the 97.5% confidence bound to have been used.

8.45 *Table 15: 2010 Northern Area Tidal Modelling study – breach scenario flood depths* -
The level of flood risk is unclear as this paragraph states average breach depths rather than maximum breach depth, which should be used to give an accurate account of the risk.

8.46 *Table 18: EA 2010 Northern Area Tidal Modelling study – Future overtopping scenario flood depths* – again, the level of flood risk is unclear as this paragraph states average overtopping depths rather than maximum depths (2115 0.5% and 0.1% overtopping maximum depths are marginally greater).

8.47 Paragraph 5.13.15: The Shoreline Management Plan (SMP) for Saltfleet to Gibraltar point has a policy of 'Hold the Line' in the short-medium term (but a

'Hold the Line/Managed Realignment' policy in the long term (from 2055- 2105) between Theddlethorpe St Helen to Gibraltar Point. Although this epoch is beyond the stated lifetime of this proposed development, it is something to be aware of in the event that the operational life of the pipeline is extended.

8.48 *Table 20 and paragraph 5.13.21 – H++ Sensitivity Test*
The applicant should explain why the 50% confidence bound levels have been used. We would expect the 97.5% confidence bound to be used. They should also provide additional information on:

- What does this mean for the development?
- How sensitive is the development to changes in the climate for different future scenarios?
- Is there adequate built-in resilience from the outset to ensure resilience to flood levels based on a current understanding of flood risk?

Please also see the comment in paragraph 8.47 above regarding the SMP policy.

8.49 *Section 6 - Flood Risk from the Development*
Please see earlier comments on the 'Assessment of Flood Risk - development within the floodplain' (paragraph 8.32 – 8.35 above). No assessment of the impact of the development has been made particularly in respect of the fluvial floodplain.

8.50 *Section 7 – Conclusion*
Please refer to all other comments on the FRA and Chapter 11: Water Environment.

9.0 6.2.15 ES Chapter 15: Climate Chance [APP-057]

9.1 *Table 15-31 Climate Change Resilience Assessment Summary: Operation Phase*
Sea level rise: Only considers the potential for damage to the Theddlethorpe facility. The Applicant is asked to explain why the Immingham facility, which is also within the floodplain, has been excluded.

10.0 6.2.18 ES Chapter 18: Materials and Waste [APP-060]

10.1 We have reviewed this Chapter and this is satisfactory – we have no comments to make on it.

10.2 **6.4.18.1 Appendix 18-1: Outline Site Waste Management Plan [APP-113]**
We have reviewed this outline plan and this is satisfactory – we have no comments to make on it.

11.0 6.2.19 ES Chapter 19: Major Accidents and Disasters [APP-061]

11.1 Table 19-6, Fluvial flooding: this table states that sections 1 and 5 are at risk of fluvial flooding. However, there are also parts of the pipeline within Sections 2, 3 and 4 that are at risk of fluvial flooding.

12.0 6.2.20 ES Chapter 20: Cumulative Effects Assessment [APP-062]

12.1 We have no comments to make on this Chapter.

13.0 7.2 Consents and Agreements Position Statement [APP-0130]

13.1 Paragraph 3.1.4 explains the various powers and consents that have been included in the draft DCO.

13.2 Paragraph 3.1.5 then lists "*The permits, consents and agreements that may be required for the construction and operation of the Proposed Development in addition to the powers included in the DCO*". However, this list includes some consents that are also listed under paragraph 3.1.4 – for example, a Flood Risk Activity Permit.

13.3 Paragraph 3.1.6 states that the final set of permits, consents and agreements will be dependent on the finalisation of the detailed design, and that discussion with consenting authorities is developing; Appendix A confirms that these discussions will take place during or following the examination period if needed. Appendix A implies that a water abstraction licence and an impoundment licence could be permitted under the powers of the DCO in Part 6 Article 36(a) and (b).

13.4 For the avoidance of doubt, the Environment Agency will not consent to the disapplication of legislation for either a water abstraction licence or an impoundment licence.

14.0 Further representations

14.1 In summary, we can confirm that we have no objection to the principle of the proposed development, as submitted. The issues and holding objections outlined above are all capable of resolution and we look forward to receiving additional information to resolve our outstanding concerns. We will also continue to work with the Applicant to agree on the wording of the protective provisions.

14.2 We reserve the right to add or amend these representations, including requests for DCO requirements and protective provisions should further information be forthcoming during the examination on issues within our remit.

Should you require any additional information, or wish to discuss these matters further, please do not hesitate to contact me at the number below.

Yours faithfully

Annette Hewitson
Principal Planning Adviser

Direct dial [redacted]
Direct e-mail [redacted]

End