

I N T E R	MEMO	<b>North Lincolnshire Council</b> <a href="http://www.northlincs.gov.uk">www.northlincs.gov.uk</a>
O F F I C E		

To: Rebecca Leggott, Development Management

From: Environmental Protection Team

Your Ref: PA/2023/421

Our Ref: PLU007447

Subject: Planning permission for the construction & operation of a post-combustion carbon capture plant, including carbon dioxide compressor & metering, cooling equipment, stacks, substations, internal roads, partial ditch realignment, new & modified services, connections, internal roads, accesses, maintenance & laydown areas

Location: VPI Power Station, Rosper Road, South Killingholme, DN40 3DZ

Date: 21 April 2023

Thank you for your consultation on the above application. I can confirm that this department has the following comments to make.

An Environmental Statement (ES) has been prepared in relation to two planning applications for the construction, operation and maintenance of two Post-Combustion Carbon Capture (PCC) developments and associated facilities located at VPI Immingham Combined Heat and Power (CHP) Plant and Phillips 66's Humber Refinery.

The Proposed Developments comprise the first phase of the Humber Zero project. A Scoping Request was submitted to North Lincolnshire Council in early 2022 (SCO/2022/2).

**Noise and Construction**

Comments to follow.

**Contaminated land**

This department has received and reviewed the following report:

- AECOM Limited, Humber Zero :- Environmental Statement: Volume II, Appendix 10A: Phase I Geo-Environmental and Geotechnical Desk Study. Dated February 2023

The above report has been prepared to support two planning applications for development at Phillips 66 Ltd (PA/2023/422) and VPI Immingham LLP (PA/2023/422) which form collectively the “Humber Zero Project”.

The Phase 1 Report has been separated into different sections relating to the above two planning applications.

### Phase 1 Desk Study – VPI Site

The report confirms that a site walk over was undertaken in May 2022. The northern part of the VPI Site consists of the VPI Immingham CHP Plant. This comprises of hardstanding, buildings and industrial infrastructure, including cooling towers, tanks, a chimney and electrical sub stations. There is also undeveloped areas and some areas were not accessed due to the density of vegetation and high fencing across the site.

The South Killingholme drain, runs through the centre of the undeveloped land within the VPI Site. Near the eastern boundary, the drain splits into culverted drains beneath Rosper Road. Overhead pipelines were noted within the site boundary, and fly tipped waste was encountered within the overgrown vegetation. The railway embankment was to the south of the site and several buildings which were contained within a fenced off area between the southern VPI Site boundary and railway embankment. Towards the west of the site consisted of a row of mature trees and overgrown vegetation.

The historical maps dating back to 1887, shows the site consisted of agricultural fields. A review of the maps shows that the entire VPI site was mostly undeveloped until 2006 when the VPI Immingham CHP Plant was built in the northern area of the site. The remaining southern area has remained mostly undeveloped except pipeline infrastructure located in the south-west. A railway line has also been present to the south-west of the site from 1932 onwards. The surrounding area of the site has been extensively developed from the 1970s onwards for industrial land use purposes.

The phase 1 also discusses previous ground investigations reports that have been undertaken for both developments.

A ground investigation report by SOCOTEC in 2018 was within the Philips 66 site development, but also confirms samples were undertaken to the north of and adjacent to the VPI site boundary. The report confirms that a ground investigation was undertaken within the undeveloped land of the VPI Site by Geotechnics Limited in September 2022.

This previous report has been summarised as follows:

- *“A groundwater investigation was undertaken by Ramboll between 20<sup>th</sup> and 23<sup>rd</sup> October 2020 on the wider Phillips 66 Refinery Site.*

- *four cable percussion boreholes (BH01, BH02, BH02A, BH05) to depths between 21.75 m bgl and 23.08 m bgl. However, the presence of a concrete obstruction resulted in the termination of BH02 at 0.9 m bgl. The report notes that an additional two boreholes (BH03 and BH04) will be completed during an additional phase of investigation; and groundwater and ground gas monitoring in boreholes BH01 and BH02A between 9 m bgl to 10 m bgl and 18.4 m bgl and 19.4 m bgl respectively.*
- *groundwater strikes were encountered between 7 m bgl and 13 m bgl within clay. Groundwater strikes were recorded in sand and gravel at 14.9 m bgl and 15 m bgl respectively. One groundwater strike was recorded within chalk bedrock at 18.7 m bgl;*
- *the results of the controlled waters risk assessment indicated an EQS exceedance of zinc in BH01 (20 µg/l).*
- *EQS and DWS exceedances were also recorded for Aliphatics >C16-C21 (26 ug/l) and >C21-C34 (14 ug/l) and exceedances of EQS and DWS were also recorded for Aromatics >C16-C21 (19ug/l) in BH02A. However, Geotechnics consider this to be a minor exceedance and therefore not an indication of significant hydrocarbon contamination;*
- *the results indicated an exceedance of copper was recorded for EQS, however, a m-BAT tool was used resulting in a modified EQS which was greater than the recorded concentration of copper in BH01; and*
- *the results of the human health risk assessment indicated that there were no exceedances of the human health GAC within seven soil samples analysed;*
- *no asbestos was detected in seven screened samples;*
- *the results of the ground gas monitoring undertaken on four visits between 30th September 2022 and 31st October 2022 indicate that there is no significant source of ground gas at depth.*
- *Geotechnics note that the ground gas regime is designated as Gas Regime A and there are no ground gas protection measures required”.*

The initial conceptual site model has identified several pollutant linkages which are all considered low to moderate. The pollutant linkages relate to onsite, off-site, historical and current land uses, and receptors that have been considered are human health (construction workers and future site users), controlled waters, development infrastructure and flora and fauna.

The main conclusions in relation to the pollutant linkages are:

*“Made Ground, pipeline networks on the VPI Site, the off-site landfills and surrounding industrial land use are considered to be sources of potential contamination on the VPI Site. Ground gas may also be generated within Made*

*Ground and natural strata located both on and off site, as well as within landfills located off site.*

*All levels of risk in respect to the LC:RM classifications are considered to be Acceptable for all of the pollutant linkages”.*

The geotechnical aspects have also concluded:-

- *“Made Ground is anticipated in the northern areas of the undeveloped VPI Site. Warp has also been observed in historical boreholes at depths between 0.3 m bgl and 3.96 m bgl.*
- *Superficial deposits are anticipated across the VPI Site, including Tidal Flat Deposits within the majority of the undeveloped areas of the VPI Site which may have potential compressibility and running sands hazards. This overlies the Devensian Till (Diamicton) deposits across the entire site.*
- *The bedrock is designated as the Burnham Chalk Formation which is present across the whole VPI Site.*
- *The VPI Site is potentially underlain by significant depths of soft/compressible cohesive deposits which are likely to comprise of the Tidal Flat Deposits (Clay and Silt), which pose a risk of total or differential settlement of foundations”.*
- *There may be utilities and underground services across the VPI Site, therefore, this needs to be considered during the ground investigation”.*

The report has recommended that the above risks can be mitigated by undertaking a further ground intrusive investigation and risk assessment across the footprint of the proposed VPI development site.

**Therefore, considering the above this department would recommend the following condition should the application be approved.**

Unless otherwise agreed by the Local Planning Authority, development other than that required to be carried out as part of an approved scheme of remediation must not commence until parts 1 to 4 below have been complied with. If unexpected contamination is found after development has begun, development must be halted on that part of the site affected by the unexpected contamination to the extent specified by the Local Planning authority in writing until part 4 has been complied with in relation to that contamination.

### **Part 1: Site Characteristics**

An investigation and risk assessment, in addition to any assessment provided with the planning application, must be completed in accordance with a scheme to assess the nature and extent of any contamination on the site, whether or not it originates on the site. The contents of the scheme are subject to the approval in writing of the Local Planning Authority. The investigation and risk assessment must be undertaken by competent persons and a written report of

the findings must be produced. The written report is subject to the approval in writing of the Local Planning Authority. The report of the findings must include:

- i. a survey of the extent, scale, and nature of contamination.
- ii. an assessment of the potential risks to:  
human health,  
property (existing or proposed) including buildings, crops, livestock, pets, woodland and service lines and pipes, adjoining land,  
groundwaters and surface waters,  
ecological systems,  
archaeological sites and ancient monuments.
- iii. an appraisal of remedial options, and a proposal of the preferred option(s).

This must be conducted in accordance with Environment Agency's Land Contamination Risk Management (LCRM) guidance April 2021.

## **Part 2: Submission of Remediation Scheme**

A detailed remediation scheme to bring the site to a condition suitable for the intended use by removing unacceptable risks to human health, buildings and other property and the natural and historical environment must be prepared and is subject to the approval in writing of the Local Planning Authority. The scheme must include all works to be undertaken, proposed remediation objectives and remediation criteria, timetable of works and site management procedures. The scheme must ensure that the site will not qualify as contaminated land under Part 2A of the Environmental Protection Act 1990 in relation to the intended use of the land after remediation.

## **Part 3: Implementation of Approved Remediation Scheme**

The approved remediation scheme must be carried out in accordance with its terms prior to the commencement of development other than that required to carry out remediation, unless otherwise agreed in writing by the Local Planning Authority. The Local Planning Authority must be given two weeks written notification of commencement of the remediation scheme works.

Following completion of measures identified in the approved remediation scheme, a verification report (referred to in PPS23 as a validation report) that demonstrates the effectiveness of the remediation carried out must be produced and is subject to the approval in writing of the Local Planning Authority.

## **Part 4: Reporting of Unexpected Contamination**

In the event that contamination is found at any time when carrying out the approved development that was not previously identified it must be reported in writing immediately to the Local Planning Authority. An investigation and risk assessment must be undertaken in accordance with the requirements of Part 1, and where remediation is necessary a remediation scheme must be prepared

in accordance with the requirements of Part 2, which is subject to the approval in writing of the Local Planning Authority. Following completion of measures identified in the approved remediation scheme a verification report must be prepared, which is subject to the approval in writing of the Local Planning Authority in accordance with Part 3.

**Reason for pre-commencement condition: To ensure the site is safe for future users and construction workers.**

### **Air Quality**

The impacts on local air quality have been assessed during both the construction and operational phases. Comments on each are provided below.

### **Construction**

This department has reviewed the following report:

- Environmental Statement: Volume II. Appendix 6A: Construction Phase Assessment

Emissions to air during the construction phase of the Proposed Developments have the potential to adversely affect human health, sensitive ecosystems and amenity as a result of localised air quality effects caused by dust and traffic generation, if not appropriately controlled.

The assessment has assessed the combined impacts of the two Proposed Developments, as this represents the worst-case scenario for construction dust and construction traffic, and therefore if these can be demonstrated to be not significant, then the impacts of either Proposed Development proceeding in isolation, would also be not significant.

Any further comments made by this department relate to the impacts on human health only.

The construction traffic modelling assessment has shown that changes in traffic as a result of the Proposed Developments cause a very small increase in traffic pollutants at human receptors. At human receptor locations, where background pollutant concentrations are below AQALs, the impact is described as negligible and therefore not significant.

The risk assessment for construction dust indicates that there would be a low risk of unmitigated dust impacts on human health (PM10) and a low to medium risk for dust soiling from unmitigated demolition/site preparation, earthworks, construction and track out activities for the Proposed Developments.

It is considered that with the implementation of appropriate mitigation and control measures set out in the Outline CEMP, the potential effect from fugitive emissions of construction dust would not be significant.

Comments in relation to the CEMP are set out in a separate section to this response.

### **Operational Phase**

This department has reviewed the following report:

- Environmental Statement – Volume II. Appendix 6B: Air Quality – Operational Phase

These comments relate to the impact on human health only.

### **Operational Traffic Emissions**

Chapter 8: Traffic and Transport (ES Volume I) sets out that during the operational of the Proposed Development that there would be no more than an additional 10 HDVs and 100 LDVs on the local road network (Para. 8.3.15). Movements of this magnitude are below the IAQM screening criteria.

This department agree with this conclusion.

### **Operational Process Emissions**

The magnitude of air quality impacts at sensitive human receptors has been quantified through detailed dispersion modelling of the pollutants emitted from the main stacks associated with the Proposed VPI Development and the Proposed Phillips 66 Development. The impact of emissions on human health receptors has been considered in the context of the relevant Air Quality Standards (AQS) and Environmental Assessment Levels (EALs).

The following pollutants have been assessed: NO<sub>x</sub>, CO, particulates, SO<sub>2</sub>, NH<sub>3</sub>, Total Amines and amides (assessed separately in Appendix C).

Having reviewed the assessment, this department note that the modelling of point source emissions has been undertaken in accordance with the Environment Agency 'Air emissions risk assessment for your environmental permit' (2016) ('AERA Guidance'). This guidance is used when operators are applying for an Environmental Permit (or varying an existing one) under the Environmental Permitting Regulations (2016). The assessment submitted is to support a planning application for which there is specific guidance issued by the IAQM/EPUK titled Land-Use Planning & Development Control: Planning for Air Quality.

The IAQM/EPUK Guidance makes the following comment in relation to the use of the EA assessment for planning applications:

*'It must be recognised, however, that the EA assessment methodology and the assessment guidance in this document serve different purposes. The EA methodology is intended for the purpose of screening out insignificant emissions of individual pollutants and identifying where there is a risk of other pollutants emitted being potentially significant in terms of environmental effects. This exercise is carried out as part of the impact assessment in support of an*

*application under the Environmental Permitting Regulations. The IAQM/EPUK guidance is intended to provide a means of reaching a conclusion on whether the proposed development has a likely significant effect on local air quality, taking into account the overall severity of the impacts and other factors as appropriate. In each case, the concept of significance has a deliberately different meaning and context.'*

With the above in mind, this department would expect the assessment to follow the IAQM/EPUK Guidance.

**These comments were raised during this department's consultation response to SCO/2022/2. No further comments can be made until the above matter has been addressed.**

**In addition, this department is unable to locate "Chapter 6 – Air Quality" of the Environmental Statement and require this to be submitted for review.**