



Proposed data centre at Thorney Business Park

Ground contamination assessment report eastern site area

Reference: 276894-24-ARP-XX-XX-RP-EC-00001

Issue 4 | 4 December 2025

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.







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Executive Summary

Ove Arup & Partners International Limited (Arup) has been appointed by the future site operator (the Client) to provide environmental consultancy support for the redevelopment of the western part of Thorney Business Park and adjacent land for a data centre and ancillary infrastructure.

The site is split into two principal parts. The eastern area of the site is the main development area and is located within the western end of Thorney Business Park. The proposed data centre and bulk of the development works will be located in this area. The western areas of the site comprise strips of land in the north, east and south of an arable field to the west of Thorney Business Park. Development in the western area will be limited to an emergency access road and utility connections. The site is bounded by Thorney Business Park to the east, the Grand Union Canal (Slough Branch) to the north, Great Western railway to the

This report has been prepared to set out the findings of ground investigation at the site and present a generic quantitative risk assessment (GQRA) for the eastern area of the site. The report is intended to be submitted to the local authority as part of the planning application to set out the current understanding of the ground contamination conditions of the site.

The site has been subject to various phases of ground investigations from 2015 through to 2025. The findings from these investigations have been used to inform the ground conditions and contamination conditions on site.

Site setting

The site appears to have been open fields with a few small structures until the 1880s. Between the 1880s and 1940s the majority of the site was quarried for mineral extraction and backfilled with general Made Ground fill as part of a wider workings that extended east into the rest of Thorney Business Park. The site was redeveloped by the 1960s as a concrete works plant which went through several phases of expansion in the 1960s and 1970s and was active until around 2008. In 2010 the concrete works was demolished, and the site was redeveloped as part of Thorney Business Park and remained relatively unchanged until early 2025 when the northeast part of the site was cleared to ground level in preparation of the proposed redevelopment of the site.

The field to the west, which includes the western site area, was also quarried for mineral extraction between the 1960s and 1980s. The date and nature of the backfilling are unconfirmed but was probably completed by the late 1980s and is known to have included domestic refuse from ground investigations.

There is a moderate contamination potential at this site based on the site history. There are recorded historic landfills to the east and west of the site. The boundary of the eastern landfill does encroach onto the site.

Ground conditions

The shallow ground conditions have been heavily influenced by the former quarrying and backfilling of the site. Made Ground has been recorded in every ground investigation location, but the thickness varies substantially; between 0.1m to 2.9m thick. The Lynch Hill Gravel vary spatially; in the south they are typically around 2m thick whereas in central and northern areas they tend to be less than 1m thick and are locally absent. The Made Ground is variable but generally comprises mixed soil fill with a range of anthropogenic material debris such as concrete, brick, glass, metal, clinker, plastic and ceramic fragments but no evidence of domestic refuse. Hydrocarbon odours were noted within some of the Made Ground across the site.

The London Clay Formation is present below the shallow superficial deposits and Made Ground and is over 10m thick. The Harwich Formation and the Lambeth Group have been encountered beneath the London Clay Formation. The White Chalk Subgroup has not been encountered during the ground investigations on site but was recorded in an investigation in the western site area at approximately 48.6m below ground level (m bgl).

The Lynch Hill Gravel Member is classified as a principal aquifer at this site. The Harwich Formation and the Lambeth Group are classified as Secondary A aquifers, while the deeper chalk is a principal aquifer. The London Clay is an unproductive stratum and is likely to act as an aquiclude.

Human health summary

Nine asbestos detections have been recorded out of 141 samples screened for asbestos equating to around 6% of the Made Ground samples. This is not unusually high and based on the proposed end use of the site is not considered to indicate a significant risk to future users.

With the exception of two samples, all soil results were below the relevant commercial GAC. In addition, there was no evidence of landfill material onsite. The two samples mentioned had elevated levels of lead compared to the commercial GAC. Based on the depth of these samples, the sample descriptions and the overall levels of lead at this site, lead is not considered to pose a significant risk to human health. Levels of PFAS within the soil were low, with most results being below the limit of detection (LoD). Concentrations of petroleum hydrocarbons were found to be above the saturation limit, but not the respective GACs.

Free product was identified within part of the drainage system within the northeast of the site. Localised product will need to be addressed as part of the development. PFAS was also detected within the sediment in the drainage systems, however, these were below the interim criteria and do not pose a significant risk.

The ground gas risk is assessed as CS1, which indicates that no ground gas mitigation measures are required.

Controlled waters summary

Metals are not considered to be a significant risk at this site. Petroleum hydrocarbons have been detected locally within the groundwater. Given these local elevated levels of hydrocarbons, along with the free product within the drainage and the results above the saturation level in soil, there is a potential risk to controlled waters from hydrocarbons at this site. This will be considered further as part of the detailed quantitative risk assessment (DQRA).

PFAS was widely detected in groundwater and drainage samples across the site. The highest concentrations in groundwater occur in the southwest adjacent to the western field that was extensively landfilled and is primarily situated off-site. The source of PFAS in the southwest of the eastern area is considered likely to be the adjacent landfill and therefore this is primarily an off-site source. The risk to controlled waters from PFAS will also be assessed as part of the DQRA.

Also in the southwest of the site locally high concentrations of ammoniacal nitrogen have been recorded in groundwater in the Lynch Gravels. Ammoniacal compounds often occur as a by-product following degradation of organic and therefore the adjacent landfill beneath the western field is a potential source of this. Ammoniacal nitrogen, however, requires further review and assessment through DQRA.

PFAS was also detected within the attenuation pond which is believed to be from the drainage system onsite. Some elevated metals were also detected within the drainage system and attenuation pond. Given the free product, metal and PFAS within these features. The existing drainage system will need to be decommissioned as part of the development.

1. Introduction

1.1 Purpose of Report

Ove Arup & Partners International Limited (Arup) has been appointed by the future site operator (the Client) to provide environmental consultancy support for the redevelopment of the western part of Thorney Business Park and land adjacent to the west for a data centre and ancillary infrastructure.

The site was previously granted a hybrid planning application (reference PL/22/1775/FA) in May 2024 for a Data centre. The Client is submitting a new planning application with an updated development scheme and Arup have been appointed to prepare ground contamination risk assessments and reporting to support the application.

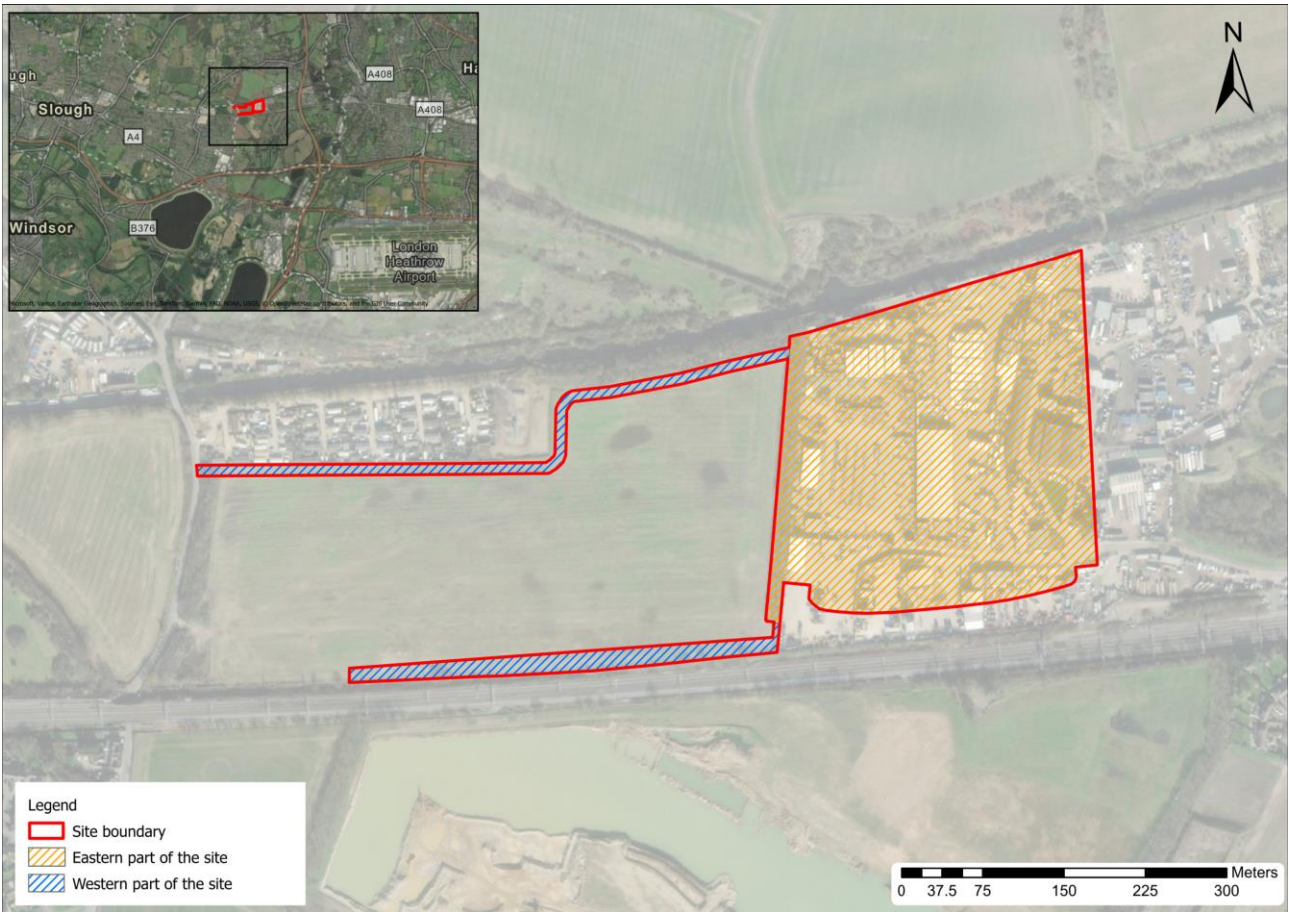
which will include the main development area for the data centre. Arup has prepared a separate GQRA [1] for the western area which will comprise an emergency access road and drainage infrastructure for the proposed development.

A preliminary risk assessment (PRA) [2] for the entire site has been prepared by Arup, based on desk study information to describe the environmental setting and to allow an initial review of contamination risk. The GQRAs provide a more detailed assessment of contamination risks than the PRA by using extensive ground investigation data to support the evaluation of contaminant linkages.

1.2 Site Location

The site is located approximately 1.2km south of Iver town centre in Buckinghamshire. The site occupies an area of approximately 10 hectares (Ha) primarily within Thorney Business Park Iver as well as sections of an agricultural field to the west. The National Grid co-ordinates for the site are TQ029800. The site boundary plan and location are shown in Figure 1.

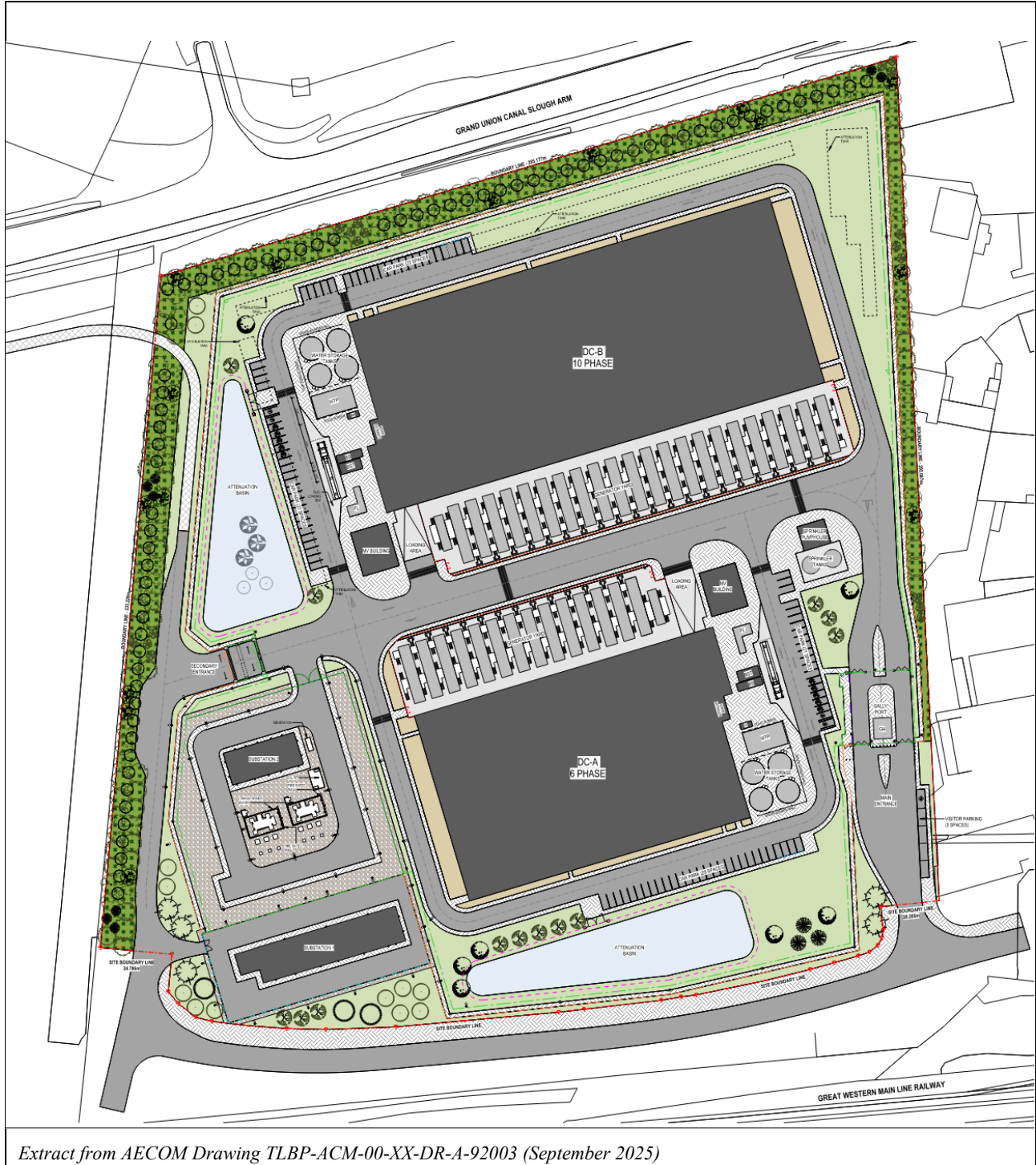
Figure 1 Site location plan



1.3 Proposed development

This report focusses on the eastern area of the site which includes the main development area for the proposed data centre and associated infrastructure and will comprise the construction of two data centre buildings and ancillary offices, plant, emergency backup generators and associated fuel storage, landscaping, sustainable drainage systems, an emergency access route, and parking and ancillary works. The proposed development plan for the eastern area of the site is shown below as Figure 2.

Figure 2 Proposed development plan



1.4 Planning context

The future site operator is submitting a new planning application for the proposed redevelopment. The site was previously granted a hybrid planning application (reference PL/22/1775/FA) in May 2024 for a Data centre. The Client is submitting a new planning application with an updated development scheme and Arup

Future Site Operator

Proposed data centre at Thorney
Business Park

have been appointed to prepare ground contamination risk assessments and reporting to support the application.

The planning permission for the hybrid application included a requirement for the completion of tiered contaminated land risk assessments and a remediation strategy and similar requirements are expected for the new application. This report is intended to satisfy the requirement for a generic quantitative risk assessment that would otherwise be included as a condition for the new application.

1.5 Aims and objectives

The scope of this report is as follows:

This report describes a GQRA for the eastern area of the site. Specific report objectives include the following:

- To summarise the ground conditions expected based on previous investigation data.
- To present a conceptual site model of source, pathways and receptors based on the proposed development and ground investigation findings.
- To provide a risk assessment of potential pollutant linkages.
- To identify data gaps associated with the assessment completed.
- To provide outline recommendations for further investigation, assessment and risk mitigation during redevelopment.

This report has been prepared in general accordance with the current December 2024 revision of the National Planning Policy Framework (NPPF) [3] and guidance, the British Standard for the Investigation of Potentially Contaminated Sites (BS 10175) [4] and Environment Agency Land Contamination Risk Management (LCRM) [5] guidance.

1.6 Limitations

This report has been prepared for the use of the Client and should not be relied upon by any third party the Client.

Arup has based this report on the sources detailed within the report and believes them to be reliable but cannot and does not guarantee the authenticity or reliability of third-party information. Reasonable skill and care have been exercised in preparation of this report in accordance with the technical requirements of the brief. The existing data from various phases of investigation provides a comprehensive understanding of the ground condition at the site. Notwithstanding the efforts made by the professional team in undertaking this contamination assessment, it is possible that ground conditions and contamination other than that potentially indicated by this report may exist at the site.

This report has been prepared based on current legislation, statutory requirements, planning policy and industry good practice prevalent at the time of writing. Any subsequent changes or new guidance may require the findings, conclusions and recommendations made in this report to be reassessed considering the circumstances. Should the proposed development change, for example, layout or use of the site, the assessments and conclusions presented in this report may need to be revised.

This report does not present a survey or assessment of the location, condition or liabilities associated with hazardous materials in the building fabric such as (but not limited to) asbestos containing materials, radiological or lead.

2. Site context

2.1 Information sources

This section sets out a summary of the site history and geoenvironmental setting of the eastern site area based on the detailed assessment of the available desk-based sources and previous site investigations set out in the Preliminary Risk assessment [2].

2.2 Current site uses and features

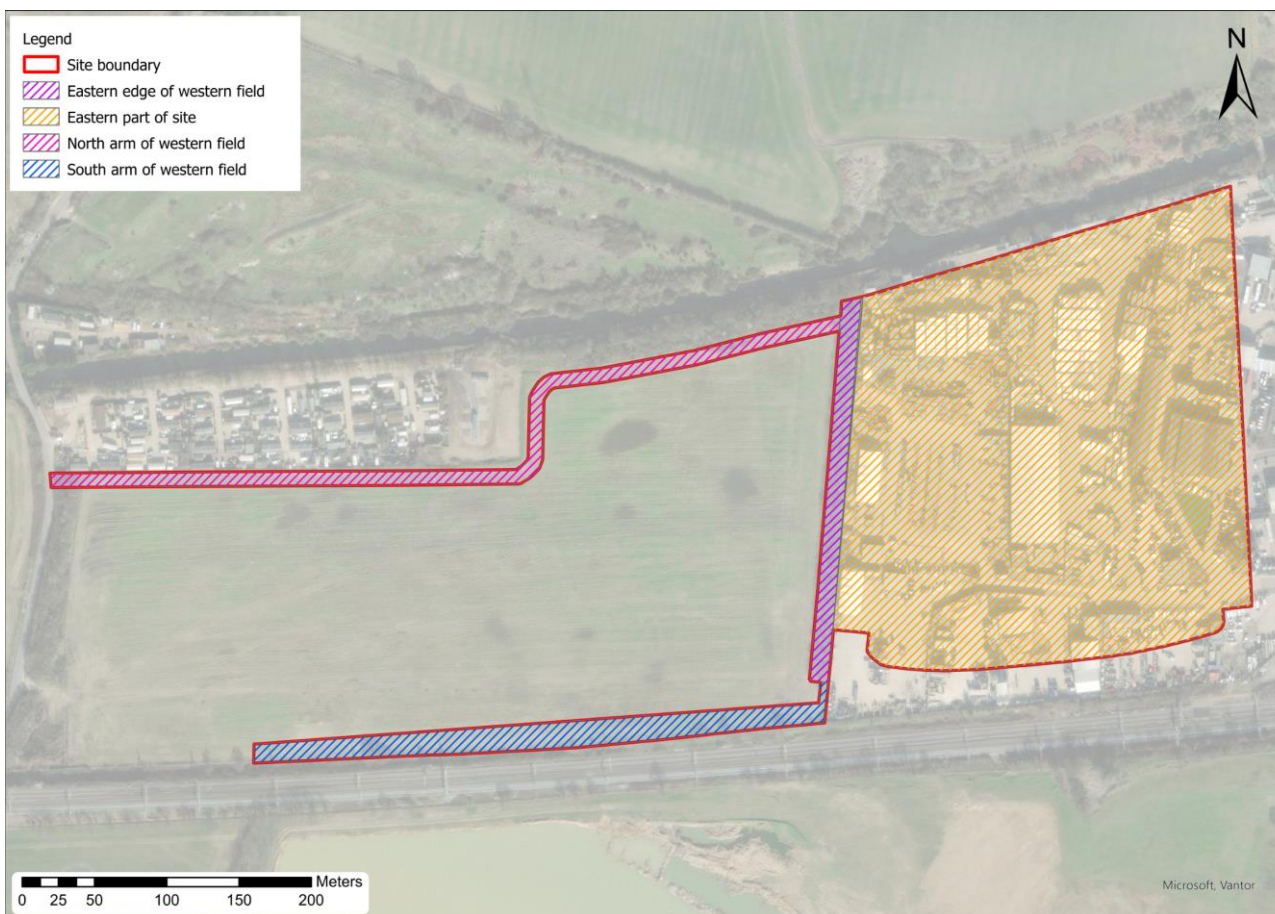
The eastern part of the site (orange) lies within the western end of Thorney Business Park, previously a mixed commercial and industrial complex occupied by multiple tenants split between several different storage yards, as well as temporary offices, a concrete batching plant, fuel points, and storage of filming support and accommodation trailers. The business park is now vacant and has mostly been cleared to ground level.

The site also includes a strip of land north (light blue) of the business park which comprises a vegetated embankment and the towpath for the adjacent canal to the north.

The site is bounded by the Slough arm of the Grand Union Canal to the north, the Great Western Main Line railway to the south, the wider Thorney Lane Business Park to the east, and the agricultural field (including western site area pink, purple and dark blue hatching) to the west.

A plan showing the recent site layout, prior to recent site clearance works, is included below as Figure 3

Figure 3 Site layout plan



2.3 Site history and contamination potential

2.3.1 Overview

An overview of the site history (including immediate surrounding area) and contamination potential is presented in Table 1. A more detailed description of the site history and extracts of the historical plans is presented in the PRA [2].

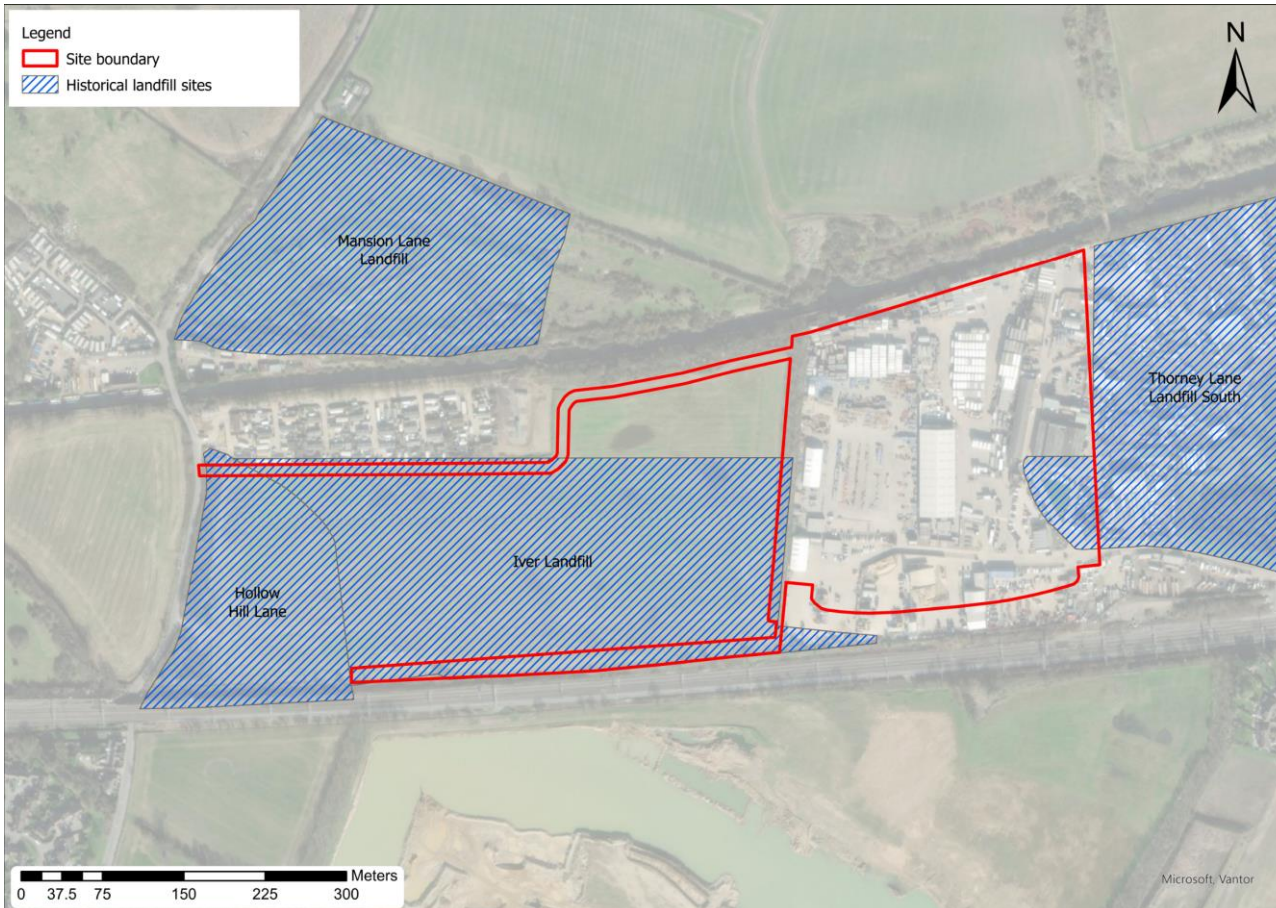
Table 1 Overview of site history

| Period | Land-use / activity | Contamination potential |
|----------------------|--|--|
| Up to Circa (c.)1884 | The site is shown as undeveloped open fields situated between the Grand Union Canal to the north and Greater Western railway to the south. | Unlikely |
| c.1884 to c.1945 | Gravel extraction occurred across all/most of the site, originally in the southwest/west of the site, then extending eastwards. By 1924, it appears that the gravel pit had been partially restored (possibly with previously stripped topsoil and subsoil), as there was still an embankment into the site shown along the western and southern boundaries and the western part of the site had become vegetated. A railway siding also extended into the gravel pit from the east of the site. | Made Ground of unknown origin as part of any partial restoration. Overall low contamination potential, considering the age. |
| c.1945 to 2008 | The site was redeveloped as part of a concrete works by 1945. It appears that site levels were raised slightly prior to construction of a concrete plant given the previous uneven ground levels were no longer shown. The plant significantly expanded in the late 1960s/early 1970s, to include travelling cranes, workshops, engineering works and electrical substation. There are two areas where above ground tanks are identified, which are most likely associated with fuel oil storage. Adjacent to the eastern site boundary, this included tanks. The tanks (and associated pumps) are more likely to have been for diesel for lorries and may have included a short length of underground pipework. The field to the west (including most of the western site area) was quarried between the 1960s and 1970s before being infilled, including with domestic refuse. This appears to have been mostly completed by the late 1980s. | Moderate potential, mainly from fuel oils, with metals, other hydrocarbons/organic compounds and asbestos and placement of fill of unknown origin prior to construction. |
| c.2008 to 2016 | The concrete works was closed by 2008 and had been mostly demolished by 2010. Several buildings in the northeast of the site appear to have been retained for subsequent use based on their footprint on the plans. From 2010 to 2015 there were a variety of land uses including fuel storage, vehicle dismantling, waste transfer stations and recycling centres. In April 2010, a large fire badly damaged a building in the northeast of the site. The building was clad in asbestos cement sheeting and required the attendance of the fire brigade. | Moderate potential, mainly from fuel oils, with metals, other hydrocarbons/organic compounds and asbestos and placement of fill of unknown origin prior to construction and from recycling operations. Contamination from the fire, including spread of asbestos fibres and PFAS, if firefighting foams were used (it appears that foams were not used during the 2010 fire). |
| c.2016 to present | As part of the Thorney Business Park the site was occupied by multiple commercial premises such as car breakers and dismantlers, concrete manufacturers and distributors, garage services, oil fuel distributors (Speedy Fuels), packaging supplies and road haulage. There are also several waste exempt activities such as storage and treating of waste, use of waste in construction, screening and blending of waste, treatment of waste wood and waste plant matter and recovery of scrap metal. | Moderate potential, mainly from fuel oils, with metals, other hydrocarbons/organic compounds. |

2.3.2 Landfills

The majority of the site was quarried for mineral extraction and then backfilled. Mineral extraction and infilling also occurred in the rest of Thorney Business Park to the east of the site and in the field to the west of the site. Details of the available landfilling records are included in the PRA. These indicate only a small area in the southeast of the eastern site area is considered as a historic landfill by the EA. Historic landfills are recorded immediately east (Thorney Lane Landfill South) and west (Iver Landfill and Hollow Hill Lane) of the site. A map showing the extent of the Environment Agency historic landfill boundaries is included as Figure 4.

Figure 4 Extent of historic landfills adjacent to site



2.4 Environmental setting

2.4.1 Geology and hydrogeology

Based on published records and previous information, the expected encountered geology is summarised in Table 2. The ground conditions encountered during recent ground investigations are detailed in Section 3.

Table 2 Summary of anticipated geology and aquifer designation

| Strata | Aquifer designation | Typical description / comment |
|--------------------------|-----------------------------|---|
| Made Ground | None | BGS records indicate that associated with gravel quarry. site; |
| Lynch Hill Gravel Member | Principal (shallow aquifer) | Orange-brown to greyish brown sandy flint gravel with possible lenses of silt, clay or peat. Thickness likely to be significantly reduced due to previous quarrying across the site. Age of gravel is ~0.1 to 0.36 million years (Wolstonian Stage of the Quaternary period). |

| Strata | Aquifer designation | Typical description / comment |
|-------------------------------------|--------------------------|---|
| | | The shallow gravels to the west of London are generally classified as a Principal aquifer as they support water abstraction for drinking water (as associated surface water abstractions). The gravels across the area have also been extensively quarried and infilled / landfilled. The gravel across the site was extracted over 100 years ago however the full depth of gravel was not removed probably to minimise or avoid the need for dewatering. From the available information, some extraction (around 1m or so) below the water table was undertaken across the site. |
| London Clay Formation | Unproductive strata | Stiff to very stiff grey-brown to blue-grey silty clays with some layers of sandy clay. Previous information indicates the London Clay is around 25m in thickness across the site. The London Clay thins to the west and thickens to the east of the site. |
| Harwich Formation and Lambeth Group | Secondary A | Vertically and laterally variable sequences of mainly clay, some silty or sandy with some sands and gravels. Upper beds consist of very stiff clays with possible pockets of sand. A BGS borehole just to the southeast of the site indicates the Lambeth Group to be around 24m in thickness. |
| White Chalk Sub-Group | Principal (deep aquifer) | Chalk with or without flint, with discrete beds of marl. Seaford Chalk Formation and Newham Chalk Formation. A BGS borehole just to the southeast of the site indicates the top of the chalk to be around 50m bgl and to be over 75m thick (to base of well). The rest water level was reported to be around 14m below ground level. |

2.4.2 Hydrology and hydrogeology

The Slough arm of the Grand Union Canal is present along the northern boundary of the site. It is unclear if the canal is lined but the water level in the canal is at a higher elevation than the shallow groundwater on site and therefore is not considered to be in connectivity with the groundwater.

A Flood Risk and Drainage Assessment [6] dated May 2022 was prepared by Waterman for the previous planning application and stated the following:

- Surface water runoff from the existing site drainage is to an infiltration basin to the east of the site which includes a storm overflow to the Grand Union Canal in accordance with a discharge licence with the Canal and Rivers Trust (CRT).
- The water levels in the canal are controlled by the CRT by using overflow weirs and pumping.
- Runoff from the development is proposed to discharge to an unnamed tributary of the Colne Brook located (approximately 500m) to the southwest of site or to the canal subject to obtaining a new discharge consent from the CRT.
- Due to potential contamination, the Environment Agency stated that infiltration SuDS are not acceptable as part of this development as they have the potential to mobilise contaminants or lead to a direct discharge of hazardous substances. The discharge to ground was precluded and this was agreed with Buckingham County Council.

Based on recent topographic survey the water level in the canal is around 30.5m Above Ordnance Datum (AOD). Groundwater levels in the north of the site (see Section 4.3) were also around 30.5m AOD but fall towards the south to 29.3m AOD. This indicates there may be some degree of connectivity and mixing between the canal and shallow groundwater, but this is expected to be limited and is more likely to involve flow from the canal into the groundwater due to the falling levels to the south.

A drainage ditch is located approximately 40m to the south of the site on the far side of the railway. Based on the redevelopment plans this ditch will receive the surface water drainage from the site following the installation of a new drainage system in the western site area [1]. The invert of the ditch adjacent close to the south-westerly point where the proposed connection will be is approximately 25.9mAOD. It is understood the ditch flows westward to this point from the eastern area and would need to be at a higher elevation to

maintain falls. This should mean it is comfortably higher than the level of groundwater recorded in the south of the site.

Beyond the western end of the site the ditch turns southwest at a field boundary before discharging into the Horton Brook approximately 200m southwest of the western corner of the site (approximately 500m from the eastern area). The Horton Brook follows a broadly southern course before discharging into the River Thames approximately 7.5km south of the site.

Groundwater flow in the chalk principal aquifer is most likely to be towards the east to southeast based on expected regional flows in the London basin.

There are no potable public water supply boreholes within 2km of the site and the site is not located in a groundwater source protection zone (SPZ). The closest groundwater abstraction licence is for the abstraction of Thames Groundwater by Cemex UK Material Limited at their Langley Quarry, Richings Park, approximately 500m to the south, for the purposes of general washing, process water, mineral washing and dust suppression. It is not clear whether these abstractions are from the gravel or chalk. Aerial photographs between 2015 and 2024 show ponds/open water within the gravel quarry and therefore the abstraction may be related to the shallow gravel aquifer.

3. Intrusive ground investigations and assessments

3.1 Overview

This section provides details of the scope of ground investigations previously undertaken within the eastern area of the site. Information from these investigations has been used to develop an understanding of the underlying ground conditions and in particular ground contamination risks in the eastern area of the site.

The site has undergone various phases of ground investigation. The phases considered further within the assessment are summarised below in Table 3.

Table 3 Summary of phases of ground investigation

| Contractor | Date | Main objectives and scope |
|--|-------|--|
| Richard Jackson [7] | 2008 | The report was commissioned to assist the sale of land prior to the redevelopment as part of the Thorney Business Park, including land to the west and east of the site. A total of eight of the window sample boreholes were located within the eastern area of the site. |
| Environ [8] | 2015 | A geo-environmental assessment was commissioned in connection with the proposal to obtain the leasehold and then develop an area in the northwest of the site for a commercial use. The investigation consisted of five hollow stem auger boreholes and six machine-dug trial pits. |
| ESI [9] | 2018 | A geo-environmental assessment was commissioned for the Thorney Business Park to support the proposed redevelopment for residential and commercial purposes. Two cable percussive boreholes and six window sample boreholes were located within the site. |
| Delta Simons [10] | 2021* | A geo-environmental assessment was commissioned to support the redevelopment of the site and associated planning permission. Six cable percussive boreholes and 21 dynamic sampler boreholes were located across the site. |
| Delta Simons [11] | 2022* | A geo-environmental assessment was commissioned to support the development of the wider Thorney Business Park. Three of the exploratory holes were located just to the south of the site. |
| Stantec [12] | 2022* | Infiltration testing across the entire Thorney Business Park. A total of 11 trial pits were carried out, with three being completed within the site. |
| Lucion (Delta Simons) [13] | 2024 | A supplementary geo-environmental assessment was commissioned for the site, to address data gaps from the 2021 ground investigation undertaken but none were located within the eastern site area. |
| Concept [14] | 2024 | A geo-environmental assessment was commissioned by the Client to support their potential acquisition and datacentre redevelopment. This investigation comprised of 10 cable percussive boreholes and eight dynamic sampler boreholes and focussed on addressing key data gaps, including PFAS testing. |
| Concept [15] | 2025 | A supplementary geo-environmental assessment was commissioned by the Client to support their potential acquisition and datacentre redevelopment. The investigation consisted of five cable percussive boreholes and 18 dynamic sampler boreholes. The primary objective was to further investigate PFAS concentrations, and to collect sufficient information to inform the contamination assessment, including possible detailed risk assessment and remediation strategy, to support the proposed development design and planning requirements. planning. |
| * A high-level summary of the factual data is presented in Appendix A. | | |

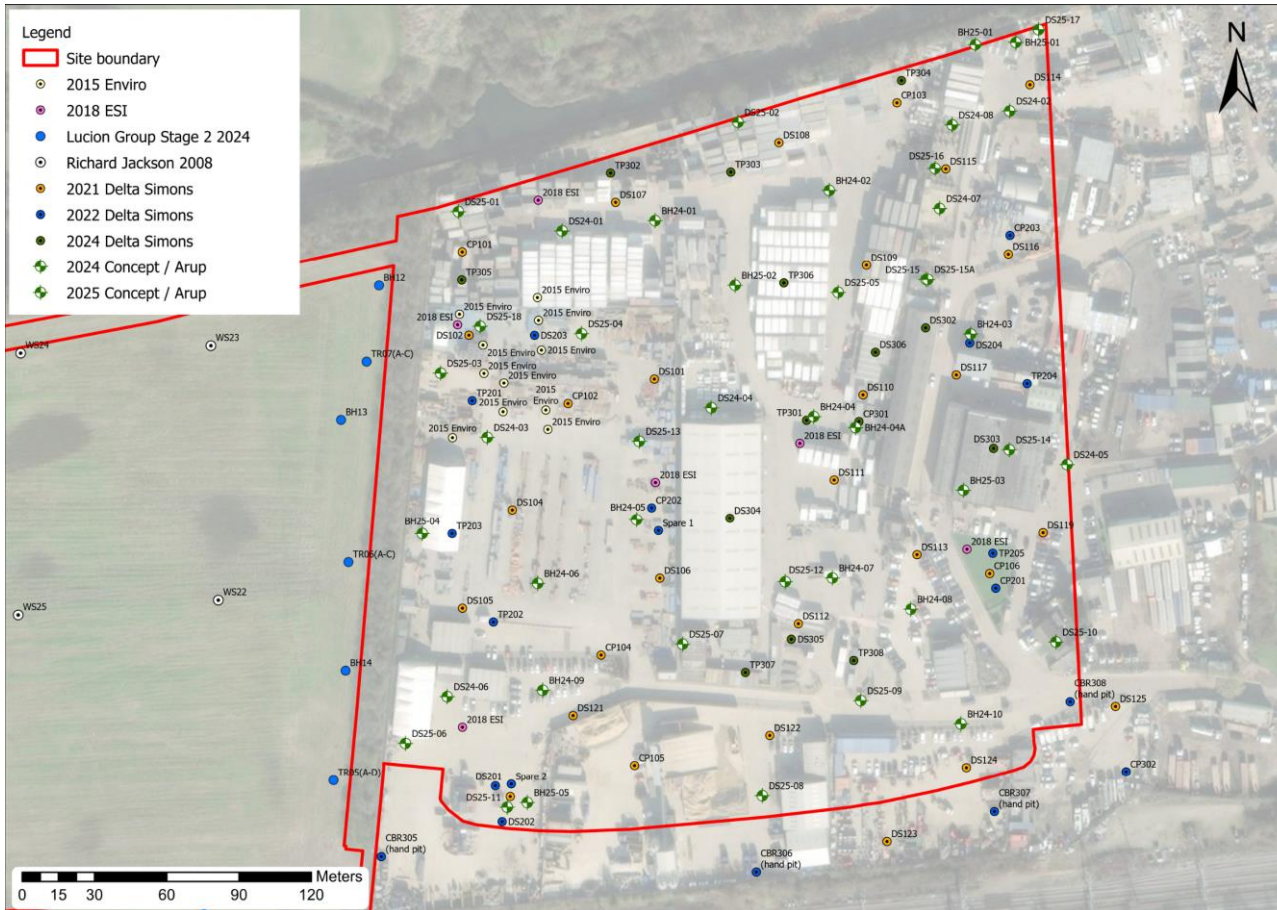
The 2024 and 2025 ground investigations undertaken by Concept, were designed to support the assessment of the site for the proposed redevelopment and the factual reports are included in Appendix B. The remaining previous reports have either previously been submitted to local authority under the existing planning application or were included for information purposes and have therefore not been included in the appendices of this report. A summary of the works undertaken and the findings from the 2021 to 2022 reports is included in Appendix A.

The datasets of the 2021 to 2025 investigations have been combined, for example, in the screened data and collectively assessed in the following sections. The data from the 2008, 2015 and 2018 investigations are not available electronically, and therefore have not been included in the datasets.

3.2 Exploratory locations

A plan showing all the exploratory locations undertaken across the phases of investigation is included as Figure 5 below.

Figure 5 Ground investigation location plan



A summary of the exploratory locations completed across the site since 2021 is presented in Table 4.

Table 4 Summary of ground investigation locations undertaken

| Hole references | Contractor | Type | Total No. | Depth range (mbgl) | Rationale |
|--|--------------|------|-----------|--------------------|--|
| CP101 to CP106 | Delta-Simons | CP | 6 | 15.0-30.0 | Targeting the proposed building footprints to provide preliminary geotechnical information and assist with preliminary foundation design. Also, to provide general coverage of the site to assess for potential contaminants. |
| DS101, DS102, DS104 to DS108, DS110 to DS117, DS119 to DS123 and DS125 | Delta-Simons | DS | 21 | 0.25-5.0 | Targeting current and former potential generic sources of contamination and providing generic coverage of the site to assess for potential contaminants. |
| CP201 to CP203 and CP301 | Delta-Simons | CP | 4 | 33.0-40.0 | To obtain deep soil data for pile design purposes including the assessment of any |

| Hole references | Contractor | Type | Total No. | Depth range (mbgl) | Rationale |
|---|--------------|------|-----------|--------------------|---|
| | | | | | deep groundwater bodies that were encountered. |
| DS201 and DS202 | Delta-Simons | DS | 2 | 5.0 | To allow for further delineation of potential contamination from an above ground diesel tank that was present onsite. To obtain shallow soil data for geotechnical design and assessment of contamination. |
| DS203 and DS204, DS302 to DS306 | Delta-Simons | DS | 7 | 0.45-5.0 | To obtain shallow soil data for geotechnical design and assessment of contamination. |
| TP201 to TP205 and TP301 to TP308 | Delta-Simons | TP | 13 | 0.45-3.2 | |
| BH24-01 to BH24-10 | Concept | CP | 10 | 10.0 | General site coverage based on gaps from Delta-Simons investigations. |
| DS24-01 and DS24-03 to DS25-06 | Concept | DS | 5 | 1.55-5.0 | Collection of samples for geotechnical and chemical testing. |
| DS24-02 | Concept | DS | 1 | 1.25 | Targeting Speedy Fuels yard. Collection of samples for geotechnical and chemical testing. |
| DS24-07 and DS24-08 | Concept | DS | 2 | 5.0 | To target the historic building fire. Collection of samples for geotechnical and chemical testing. |
| BH25-02 | Concept | CP | 1 | 10.0 | General site coverage based on gaps from Delta-Simons investigations. |
| DS25-02, DS25-04 to DS25-05, DS25-07 to DS25-09 | Concept | DS | 15 | 2.0-5.0 | Collection of samples for chemical testing. |
| DS25-01, DS25-03 and DS25-06 | Concept | DS | 2 | 3.0-5.0 | To assess groundwater quality from western landfill. Collection of samples for chemical testing. |
| BH25-05 | Concept | CP | 1 | 10.0 | Downstream from hydrocarbon contamination identified in previous Delta-Simons ground investigation. |
| DS25-11 | Concept | DS | 1 | 1.6 | To target historic tank. Collection of samples for chemical testing. |
| DS25-12 and DS25-13 | Concept | DS | 2 | 5.0 | Targeting of the area used to clean trailers. Collection of samples for chemical testing. |
| BH25-03 and BH25-04 | Concept | CP | 2 | 10.0 | Targeting former building along the eastern and western boundaries of the site, which were demolished following the 2024 investigation. |
| DS25-10 and DS25-14 | Concept | DS | 2 | 4.6 | To assess groundwater quality from western landfill. Collection of samples for chemical testing. |
| DS25-15 and DS25-16 | Concept | DS | 2 | 5.0 | Targeting former drum / vehicle storage areas. |

| Hole references | Contractor | Type | Total No. | Depth range (m bgl) | Rationale |
|-----------------|------------|------|-----------|---------------------|--|
| | | | | | Collection of samples for chemical testing. |
| BH25-01 | Concept | CP | 1 | 10.0 | Targeting speedy fuels depot. |
| DS25-17 | Concept | DS | 1 | 4.0 | Targeting the point closest to the outfall to the canal. Collection of samples for chemical testing. |
| DS25-18 | Concept | DS | 1 | 5.0 | Targeting unknown feature identified within aerial imagery. Collection of samples for chemical testing. |

3.3 Monitoring

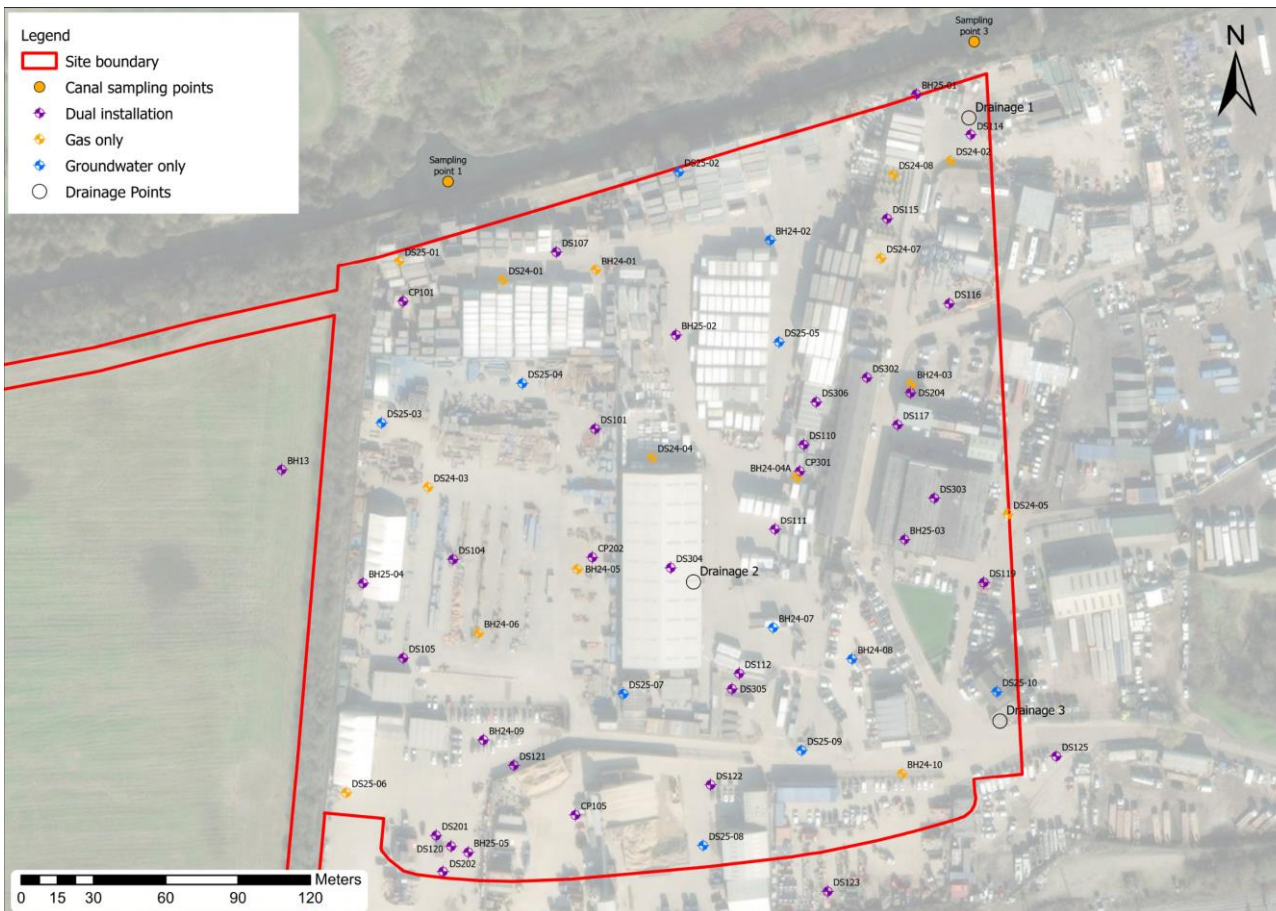
3.3.1 Well installation

A total of 20 out of the 27 boreholes within the 2021-2022 Delta-Simons investigation and nine of the 27 boreholes within the 2023 Delta-Simons ground investigation had monitoring wells installed as part of the borehole construction. 17 of the 18 boreholes within the 2024 investigation and 15 of the 23 boreholes within the 2025 investigation were installed with monitoring installations.

In addition, during the Concept 2024 investigation, historic boreholes were developed for groundwater monitoring. There were 22 historic boreholes which were scoped to be monitored as part of the 2024 investigation, although access was only available for 13 of them.

The monitoring locations across the Delta-Simons and Concept ground investigations is shown in Figure 6.

Figure 6 Monitoring locations plan



3.3.2 Groundwater level monitoring

The groundwater level monitoring rounds are summarised in Table 5 and discussed in Section 4.3.

Table 5 Summary of groundwater level monitoring

| Contractor | Monitoring round | Monitoring start dates | No. of wells monitored |
|--|------------------|------------------------|------------------------|
| Delta-Simons (2021-2022) | 1 | 9 August 2021 | 20 |
| | 2 | 17 August 2021 | 20 |
| | 3 | 17 February 2022 | 20 |
| | 4 | 2 March 2022 | 19 |
| | 5 | 11 March 2022 | 20 |
| | 6 | 22 March 2022 | 20 |
| Delta-Simons (2023) | 1 | 11 May 2023 | 13 |
| | 2 | 17 May 2023 | 14 |
| | 3 | 2 November 2023 | 5 |
| | 4 | 10 November 2023 | 5 |
| | 5 | 23 November 2023 | 5 |
| Concept (2024) | 1 | 15 August 2024 | 4 |
| | 2 | 19 August 2024 | 8 |
| | 3 | 10 September 2024 | 1 |
| Concept additional PFAS monitoring (2024) | 1 | 29 October 2024 | 12* |
| | 2 | 11 November 2024 | 12* |
| Concept (2025) | 1 | 24 March 2025 | 27** |
| | 2 | 31 March 2025 | 27** |
| | 3 | 7 April 2025 | 27** |
| <p>Notes:</p> <p>* In addition to the wells monitored, samples were taken from three locations within the canal.</p> <p>**In addition to the wells monitored, samples were taken from the attenuation pond, four drainage locations and four locations within the canal.</p> | | | |

3.3.3 Ground gas monitoring

A summary of the extent of ground gas monitoring during the Delta-Simons and Concept investigations is included in Table 6 below.

Table 6 Summary of ground gas monitoring

| Contractor | Monitoring round | Monitoring start dates | No. of wells monitored |
|--------------------------|------------------|------------------------|------------------------|
| Delta-Simons (2021-2022) | 1 | 9 August 2021 | 18 |
| | 2 | 17 August 2021 | 16 |
| | 3 | 17 February 2022 | 15 |
| | 4 | 2 March 2022 | 14 |
| | 5 | 11 March 2022 | 11 |
| | 6 | 22 March 2022 | 13 |
| Delta-Simons (2023) | 1 | 11 May 2023 | 7 |
| | 2 | 17 May 2023 | 13 |
| | 3 | 2 November 2023 | 5 |
| | 4 | 10 November 2023 | 4 |
| Concept (2024) | 1 | 15 August 2024 | 10 |
| | 2 | 30 August 2024 | 4 |
| | 3 | 4 September 2024 | 4 |
| | 4 | 9 September 2024 | 7 |
| Concept (2025) | 1 | 24 March 2025 | 9 |
| | 2 | 31 March 2025 | 9 |
| | 3 | 7 April 2025 | 9 |

During the Delta-Simons 2021-22 investigation, 20 wells were monitored over six rounds. Most wells were at least partially flooded, with wells being completely flooded on 21 occasions. There were five occasions in which methane was recorded above the detection limit, with a maximum methane of 23.6% occurring in a mostly flooded well. These results may not be reflective of the actual ground gas conditions due to the influence of the limited response zone. No carbon dioxide concentrations of above 5% were recorded.

In the 2023 monitoring by Delta-Simons, 14 wells were initially monitored during the five-round monitoring schedule, but it dropped to five wells during the last three visits. Across this period there were two occasions where the carbon dioxide exceeded 5% (maximum concentration of 5.5%), but these occurred in wells that were mostly flooded. On four occasions methane levels exceeded the detection limit a maximum concentration of 6.7% was recorded. It should be noted that these wells were completely flooded on two occasions and mostly flooded on the other two.

Ground gas monitoring was undertaken by Concept as part of the 2024 and 2025 ground investigations. The monitoring wells were monitored for gas flow and then tested for methane, carbon dioxide, oxygen, hydrogen sulphide, and carbon monoxide using a Gas Data GFM 436 gas analyser. Volatile Organic Compounds (VOCs) were measured using a PhoCheck Tiger photo-ionisation detector (PID). Samples were also collected in gas bags and sent for laboratory analysis. Nine locations were monitored over three rounds as part of the 2025 ground investigation, while 11 locations were monitored over four rounds during the 2024 ground investigation. Not all the wells were monitored on every round during the 2024 ground investigation.

During the 2024 ground investigation, only DS25-02 during rounds 1 and 4, and DS25-03 during round 1 were not flooded. The remaining locations were all partially or mostly flooded, with BH24-01 having a completely flooded response zone during round 1. During the 2025 ground investigation, BH24-03, DS24-02, BH25-01 and BH25-02 were not flooded on any occasions. DS25-01 was not flooded during round 3, but was partially flooded for the first two rounds. The remaining locations were either partially or mostly flooded during the visits. The results of the ground gas monitoring rounds are assessed in Section 5.4.

3.4 Laboratory analysis

3.4.1 Overview

The selected laboratory for the soil analysis during the Delta-Simons ground investigations was i2 Analytical Ltd. The selected laboratory for the soil analysis during the 2024 and 2025 ground investigations was Eurofins. Groundwater analysis was also performed by Eurofins during the 2024 ground investigation, while ALS was used for the surface water and groundwater analysis for the additional PFAS monitoring and the 2025 ground investigation. The various laboratory accreditations (e.g. UKAS) and methods are detailed on

chemical analysis undertaken is summarised in the below sections and assessed in Section 5.

3.4.2 Soil

Chemical analysis mainly focused on Made Ground during the 2025 ground investigation, with some testing within the shallow natural soils, as these soils had the higher potential to be contaminated and encountered during the proposed development. The 2024 ground investigation also focussed mainly on testing the Made Ground but included a higher proportion of samples from the Lynch Hill Gravels and London Clay Formation than in 2025.

The number of tests per contaminant are shown in Table 7, these are combined totals from the 2024 and 2025 investigations. The testing results for each sample are provided in the laboratory certificates of analysis within the factual reports, included as Appendix B and in screening tables in Appendix C.

Table 7 Summary of soil analysis by determinant

| Type | Determinant ¹ | No. of samples | | Comment / Rationale |
|---------------|--|------------------------|-----------------------------|--|
| | | Concept investigations | Delta-Simons investigations | |
| General suite | Arsenic, Cadmium, Chromium (total and hexavalent), Copper, Lead, Mercury, Nickel, Selenium and Zinc Antimony, Beryllium, Boron, Cyanide (total) Molybdenum and Vanadium | 107 | 73 | General suite of contaminants typically encountered, including in Made Ground of unknown origin. |
| | pH, total organic carbon (TOC) | 107 | 73 | |
| | Cyanide speciation | 8 | 0 | |
| | Asbestos identification | 78 | 73 | Potential contaminant in Made Ground. Quantification testing in soil only undertaken if asbestos was identified. |
| | Asbestos quantification | 2 | 6 | |
| | Ammoniacal nitrogen | 1 | 0 | Analysed in sample based on olfactory observation during investigation. |
| Organics | Speciated total petroleum hydrocarbons (TPH) by GC-FID with aliphatic/aromatic class separation with criteria working group (CWG) banding | 108 | 70 | Based on contamination commonly encountered including Made Ground of unknown origin. |
| | Benzene, toluene, ethylbenzene, m,p-xylene and o-xylene (BTEX) | 107 | 86 | Previous uses on Site (e.g., Speedy Fuels yard), mainly associated with the storage of oil and fuel. |
| | Polycyclic aromatic hydrocarbons (PAH) (USEPA16) | 108 | 70 | |

| Type | Determinant ¹ | No. of samples | | Comment / Rationale |
|--|---|------------------------|-----------------------------|--|
| | | Concept investigations | Delta-Simons investigations | |
| | Polychlorinated biphenyls (PCB) WHO 12 congeners | 11 | 3 | |
| | VOC and SVOC | 16 | 24 | |
| | PFAS | 41 | 0 | |
| Waste Acceptance Criteria (WAC) | Solid: TOC, BTEX, PCB (7 congeners), Mineral oil (C10 C40), PAH (17 No.) | 25 | 0 | WAC data to assist with potential offsite disposal of material. |
| | Leachability: Arsenic, Barium, Cadmium, Chromium, Copper, Mercury, Molybdenum, Nickel, Lead, Antimony, Selenium, Zinc, Chloride, Fluoride, Sulphate, Total dissolved solids (TDS), Phenol Index, Dissolved organic carbon (DOC) | 25 | 0 | Leachability testing was undertaken in line with BS EN 12457 Part 2. This is extraction at liquid to solid ratios of 10:1 (reported in mg/l). The WAC results are expressed in terms of a final calculated liquid/solid ratio of 10:1 (mg/kg). Leachability data to support controlled waters assessment. |
| Notes: 1. Variations in test suites occurred between investigations where not all determinants (e.g., Molybdenum) were analysed. | | | | |

3.4.3 Leachate

During the 2025 ground investigation, 25 samples were submitted to the laboratory for waste assessment criteria (WAC) analysis and leachability analysis. The testing focused on Made Ground; however, shallow samples of Lynch Hill Gravel and London Clay were also submitted for WAC and leachability analysis. No WAC analysis was carried out prior to the 2025 investigation.

3.4.4 Sediment

During the 2025 investigation, a total of 8 sediment samples were taken from the attenuation pond and the drainage points and tested for PFAS. The locations of the drainage samples are shown in Figure 5.

3.4.5 Surface samples

11 samples of surface soils / dust were collected for asbestos analysis during the 2024 Concept ground investigation. No detectable levels of asbestos were found in the samples.

3.4.6 Groundwater

Table 8 summarises the groundwater chemical analysis from both the 2024 and 2025 ground investigations, including the 2024 additional monitoring for PFAS. During the 2025 investigation, three duplicates and field blanks were taken to validate the data from the laboratory. These are not included in the totals below.

Table 8 Groundwater chemical analysis

| Type | Determinant | No. of samples | | Comment / Rationale |
|-----------------------|--|------------------------|-----------------------------|--|
| | | Concept investigations | Delta-Simons investigations | |
| Metal / metalloids | Arsenic, Cadmium, Chromium (total and hexavalent), Copper, Lead, Mercury, Nickel, Selenium and Zinc Antimony, Beryllium, Boron, Cyanide (total) Molybdenum and Vanadium | 66 | 31 | Common contaminants. |
| Organics | TPH by GC-FID with aliphatic/aromatic class separation with CWG banding | 66 | 13 | Based on previous uses on Site (e.g., Speedy Fuels yard), mainly associated with the storage of oil and fuel. |
| | BTEX | 66 | 13 | |
| | PAH (USEPA16) | 66 | 13 | |
| | VOC and SVOC | 8 | 18 | |
| | PFAS | 78 | 0 | No testing for PFAS was carried out prior to the 2024 ground investigation. PFAS testing was undertaken to address this gap. |
| General water quality | pH, hardness, alkalinity, DOC, Ammoniacal nitrogen, Chloride and Cyanide | 66 | 31 | General water quality parameters. |
| | Calcium, Iron, Manganese, Magnesium, Sodium, Potassium, Sulphates, Sulphides, Nitrate, and Nitrite | 66 | 31 | |

3.4.7 Surface water

Table 9 summarises the surface water (canal and drainage system) chemical analysis from both the 2024 and 2025 ground investigations, including the 2024 additional monitoring for PFAS.

Table 9 Surface water chemical analysis

| Type | Determinant ¹ | No. of samples | | Comment / Rationale |
|---|--|------------------------|--|--|
| | | Concept investigations | Delta-Simons investigations ² | |
| Metal / metalloids ¹ | Arsenic, Cadmium, Chromium (total and hexavalent), Copper, Lead, Mercury, Nickel, Selenium and Zinc Antimony, Beryllium, Boron, Cyanide (total) Molybdenum and Vanadium | 21 | 0 | General suite of contaminants |
| Organics | TPH by GC-FID with aliphatic/aromatic class separation CWG banding | 21 | 0 | Based on potential contaminative uses of the site, mainly associated with the storage and use of oil and fuel. |
| | BTEX | 21 | 0 | |
| | PAH (USEPA16) | 21 | 0 | |
| | VOC and SVOC | 3 | 0 | |
| | PFAS | 21 | 0 | No testing for PFAS was carried out prior to the 2024 ground investigation. PFAS testing was undertaken to address this gap. |
| General water quality | pH, hardness, alkalinity, DOC, Ammoniacal nitrogen, Chloride and Cyanide | 21 | 0 | General water quality parameters. |
| | Calcium, Iron, Manganese, Magnesium, Sodium, Potassium, Sulphates, Sulphides, Nitrate, and Nitrite | 21 | 0 | |
| <p>1. Only pH, hardness and DOC were analysed within the additional PFAS monitoring in 2024. These accounted for six of the surface water samples.</p> <p>2. No surface water testing was carried out within the Delta-Simons investigations.</p> | | | | |

3.4.8 Ground gas

To supplement the in-situ ground gas monitoring, three confirmatory ground gas samples were submitted for analysis during the 2025 ground investigation and six were submitted during the 2024 investigation.

3.5 Hydraulic conductivity testing

Hydraulic conductivity (permeability) testing comprising rising head and falling head tests were undertaken in selected installations (DS24-03, DS24-07, DS24-04, BH24-09 and BH24-10) during the additional 2024 monitoring.

The Concept Factual report [14] includes hydraulic conductivity values derived by the contractor in the factual report using the Basic Time lag method. Arup have undertaken separate assessment of the results using the modified Hvorslev method for time lag set out in now withdrawn BS 5930:1995 [16]. This approach provides a simple approach for estimating permeability in borehole tests and remains in use after the withdrawal of the standard in 2015. Arup used a different shape factor to account for the impermeable section of the piezometer in the monitoring installation that was implemented by Concept.

The testing recorded permeability values of between 10^{-5} m/s to 10^{-7} m/s with an overall mean value of 1.1×10^{-5} m/s across all the tests. These are at the lower end of anticipated ranges for a gravel aquifer but are considered to be representative given the different response zone soil types present in the shallow ground conditions and the lower end values (10^{-7} m/s) were recorded in BH24-09 which had a clayey Made Ground response zone for which a lower permeability is expected.

The contractor and Arup derived permeability values were within 30%, with the Arup assessment providing higher permeability values due to the use of a shape factor accounting for the impermeable sections of the piezometer. Therefore, these values are more representative.

A summary of the response zone stratum, test results and average permeability is presented in Table 10.

Table 10 Summary of hydraulic conductivity test results

| Borehole | Response zone (mbgl) | Stratum in response zone | Avg. permeability (m/s) | Test type | Test date | Test number | Calculated permeability value (m/s) |
|----------|----------------------|--|-------------------------|-----------|------------|-------------|-------------------------------------|
| DS24-03 | 1.0 to 3.0 | Made Ground and Lynch Hill Gravel | 4.2×10^{-6} | RHT | 29/10/2024 | 1 | 3.1×10^{-7} |
| | | | | RHT | 29/10/2024 | 2 | 8.0×10^{-6} |
| DS24-04 | 1.0 to 3.0 | Made Ground, Lynch Hill Gravel and London Clay | 1.3×10^{-5} | RHT | 31/10/2024 | 1 | 1.0×10^{-5} |
| | | | | FHT | 31/10/2024 | 2 | 2.0×10^{-5} |
| | | | | RHT | 31/10/2024 | 3 | 7.5×10^{-6} |
| | | | | RHT | 31/10/2024 | 4 | 1.5×10^{-5} |
| DS24-07 | 0.75 to 1.6 | Lynch Hill Gravel and London Clay | 3.4×10^{-6} | RHT | 30/10/2024 | 1 | 5.7×10^{-7} |
| | | | | FHT | 30/10/2024 | 2 | 6.3×10^{-6} |
| BH24-09 | 1.0 to 3.0 | Made Ground | 2.8×10^{-7} | FHT | 31/10/2024 | 1 | 2.5×10^{-7} |
| | | | | RHT | 31/10/2024 | 2 | 3.1×10^{-7} |
| BH24-10 | 1.0 to 4.0 | Made Ground, Lynch Hill Gravel and London Clay | 1.5×10^{-5} | RHT | 30/10/2024 | 1 | 5.6×10^{-6} |
| | | | | RHT | 30/10/2024 | 2 | 5.9×10^{-6} |
| | | | | RHT | 30/10/2024 | 3 | Test failed |
| | | | | FHT | 30/10/2024 | 4 | 1.7×10^{-5} |
| | | | | FHT | 30/10/2024 | 5 | 2.0×10^{-5} |
| | | | | RHT | 30/10/2024 | 6 | 1.8×10^{-6} |
| | | | | RHT | 12/11/2024 | 7 | 1.6×10^{-5} |

| Borehole | Response zone (mbgl) | Stratum in response zone | Avg. permeability (m/s) | Test type | Test date | Test number | Calculated permeability value (m/s) |
|----------|----------------------|--------------------------|-------------------------|-----------|------------|-------------|-------------------------------------|
| | | | | RHT | 12/11/2024 | 8 | 1.9 x 10 ⁻⁵ |
| | | | | FHT | 12/11/2024 | 9 | 1.8 x 10 ⁻⁵ |
| | | | | FHT | 12/11/2024 | 10 | 1.9 x 10 ⁻⁵ |
| | | | | FHT | 12/11/2024 | 11 | 1.9 x 10 ⁻⁵ |
| | | | | RHT | 12/11/2024 | 12 | 1.6 x 10 ⁻⁵ |

3.6 Constraints on investigation

3.6.1 Coverage

The intrusive ground investigations were largely implemented as planned with no significant constraints or variations. DS25-12 and DS25-13 were moved outside of the Translux workshop, this has not affected the assessment. There was a total of four refusals, which have not materially impacted the findings of the assessment. The base of the Made Ground was not found at DS25-11 due to a refusal from a concrete obstruction, but BH25-05 was carried out within and gives an indication of the depth of the Made Ground in this location.

3.6.2 Deviations

Arup specified that all soil and groundwater sampling for analysis (including PFAS) was undertaken under strict protocols in line with the specification to mitigate against potential for cross contamination. All sample receptacles were provided by the accredited laboratory Eurofins and ALS, for each of the selected determinants.

Leachate

Insufficient sample was sent to the laboratory for the WAC analysis for BH25-02 at 0.40m, DS25-16 at 1.80m and DS25-13 at 2.70m. The results from these samples may not be representative of the actual ground conditions but will still give an indication of what the conditions are.

Groundwater

Due to the laboratory not carrying out testing within the holding times, the PFAS species MeFOSAA, EtFOSAA, MeFOSE and EtFOSE are deviating in the groundwater samples listed below. Given the expected longevity of these contaminants within groundwater, the deviation is not expected to cause a significant difference in the results.

- 16 out of the 20 samples taken in the first round.
- All samples taken in the second round.
- All samples taken in the third round.

Surface water

MeFOSAA, EtFOSAA, MeFOSE and EtFOSE are deviating in all surface water samples taken.

There was no VOC, BTEX and short chain TPH bands testing carried out on Canal sample 3 taken on 3rd March 2025 as the sample vial arrived at the laboratory empty. .

No determination was possible in the following samples:

- Drainage point 1 on the 3rd March 2025 for metals, water quality parameters, TPH and VOC.
- Drainage point 1 on 2nd April 2025 for DOC.
- Drainage point 1 on 3rd April 2025 for metals, PFAS and DOC.

This was due to the presence of oil, which also caused a matrix interference in the sample from drainage point 1 on 3rd April 2025 for the TPH suite. This means that the TPH result may not be accurate for this sample, however, it will still give an indication of the TPH level in the sample. In addition, there was a sample deviation from the method for the TPH suite for the sample taken from drainage point 1 on 3rd March 2025. This was also due to the presence of oil. This sample will also give an indication of the TPH levels but will not be accurate.

There was also matrix interference in the samples from DS25-08 on 7th April 2025 and DS25-02 and DS25-04 on 8th April 2025 caused by the presence of oil, all for PFAS. Again, this likely means that the result may not be accurate but can still be used for an indication.

3.6.3 PFAS testing method

The PFAS soil testing and first round of groundwater PFAS testing from 2024 was undertaken by the Dutch branch of Eurofins, Eurofins Omegam. The testing was undertaken with the Dutch accreditation scheme AS3000 or RvA which have slightly different reporting requirements to the UK MCERTS and UKAS accreditation. Overall, there is not considered to be an impact on the quality of the results for individual compounds. However, these standards using an averaging method for the sum concentration of subcomponents (i.e. branched and linear PFOS) which includes an uncertainty factor of 0.7 when the individual subcomponent compounds are below the limit of detection.

For instance, where PFOS Linear is <0.1 µg/kg and PFOS Branched is <0.1 µg/kg, a value of 0.1 µg/kg is reported for sum PFOS based on $(<0.1 * 0.7) + (<0.1 * 0.7) = 0.14\text{ng/kg}$ which is greater than the detection limit (0.1 µg/kg) and therefore reported as 0.1ng/kg.

To avoid reporting detections when there are none for the individual compounds these have been considered as <0.2 µg/kg for the purpose of this assessment. Therefore, the laboratory certificates in the factual reports (Appendix B) and the screening tables (Appendix C) differ.

4. Ground conditions

4.1 Encountered ground conditions and geology

4.1.1 Stratigraphy

The following sections provide an overview of the encountered ground conditions. The ground conditions are summarised in Table 11, with material descriptions provided in the following subsections.

Table 11 Ground conditions

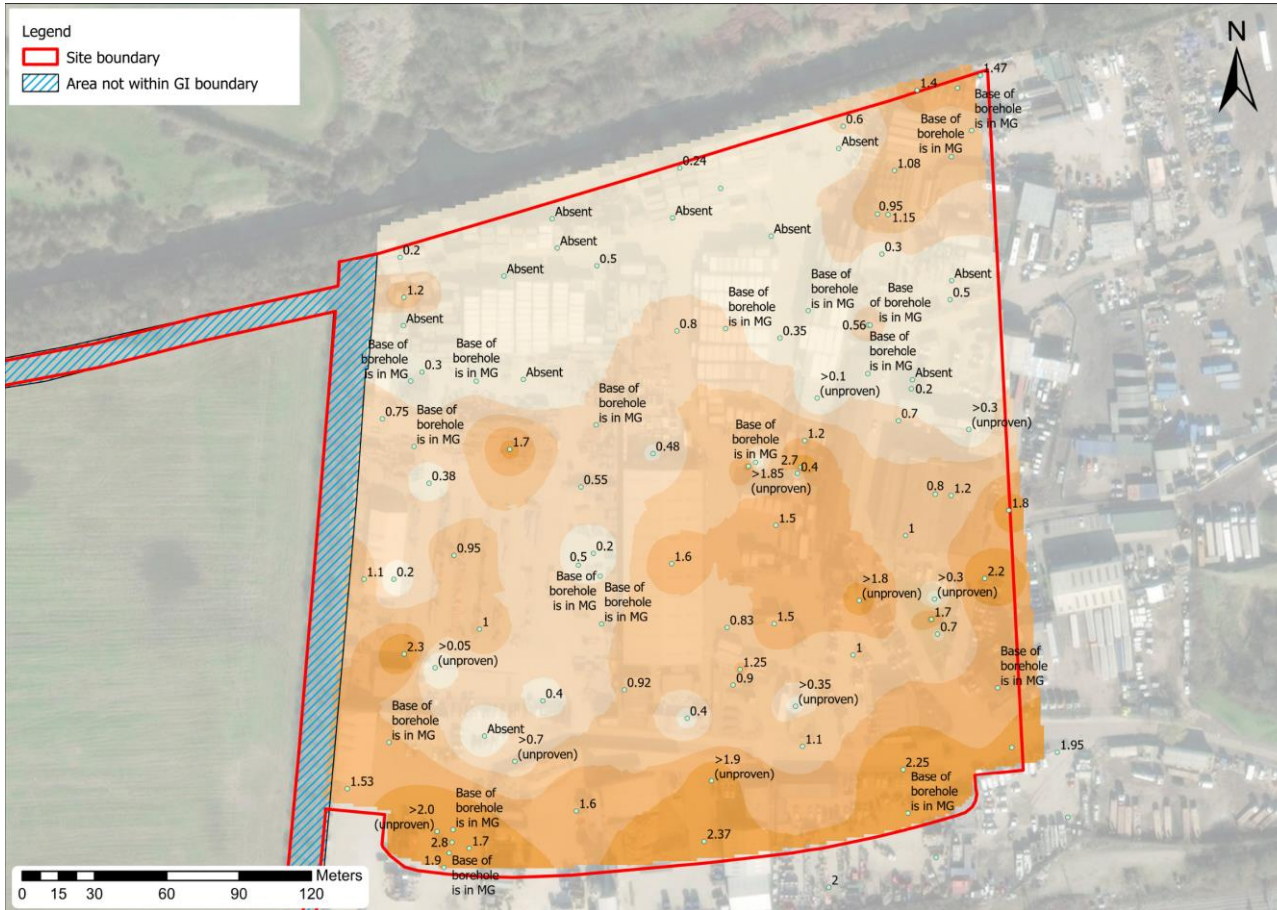
| Strata | Elevation top of strata (mOD) | Elevation top of strata (mbgl) | Elevation base of strata (mOD) | Elevation base of strata (mbgl) | Thickness (m) | Average thickness (m) |
|--|-------------------------------|--------------------------------|--------------------------------|---------------------------------|----------------------------|-----------------------|
| Made Ground | +32.63 to +30.71 | Ground level to 0.33 | +31.26 to +27.71 | 0.40 to 3.00 | 0.1 to 2.9 | 1.70 |
| Lynch Hill Gravel Member | +31.26 to +28.48 | 0.40 to 3.00 | +30.66 to +26.21 | 0.90 to 4.70 | 0.2 to 2.37 | 0.94 |
| London Clay Formation | +30.67 to +26.21 | 0.90 to 4.70 | +9.28 to unproven at +1.69 | 22.00 to unproven at 30 | 20.7 to not proven at 28.6 | 23.3 |
| Harwich Formation | +9.28 to +5.09 | 22.00 to 26.00 | +6.08 to +4.09 | 25.20 to 27.00 | 0.50 to 3.20 | 1.75 |
| Lambeth Group | +6.08 to +3.27 | 25.20 to 27.00 | -16 ¹ | 49.7 ¹ | ~24.5 ¹ | - |
| Chalk Group ¹ | -16 | 49.7 | Not proven | Not proven | - | - |
| <p>1. The base of the Lambeth Group or the top of the chalk were not encountered in the ground investigations; this data has been taken from the BGS borehole data [17].</p> | | | | | | |

4.1.3 Lynch Hill Gravel Member

The Lynch Hill Gravel Member was present beneath the Made Ground or Alluvium at most locations; however it was absent at BH24-02, BH24-03, BH24-09, DS24-01 and DS25-04, most of which are in the north of the site.

The Lynch Hill Gravel Member typically consists of brown to orange-brown gravelly sand to sandy gravel, with the gravel comprising of flint. The thickness of the Lynch Hill Gravel Member was variable across the site, with thicknesses between 0.2m and 2.37m, as demonstrated in Figure 8. The Lynch Hill Gravel was thinner and often absent within the centre and northwest of the site, which is likely due to the historic mineral extraction in this area.

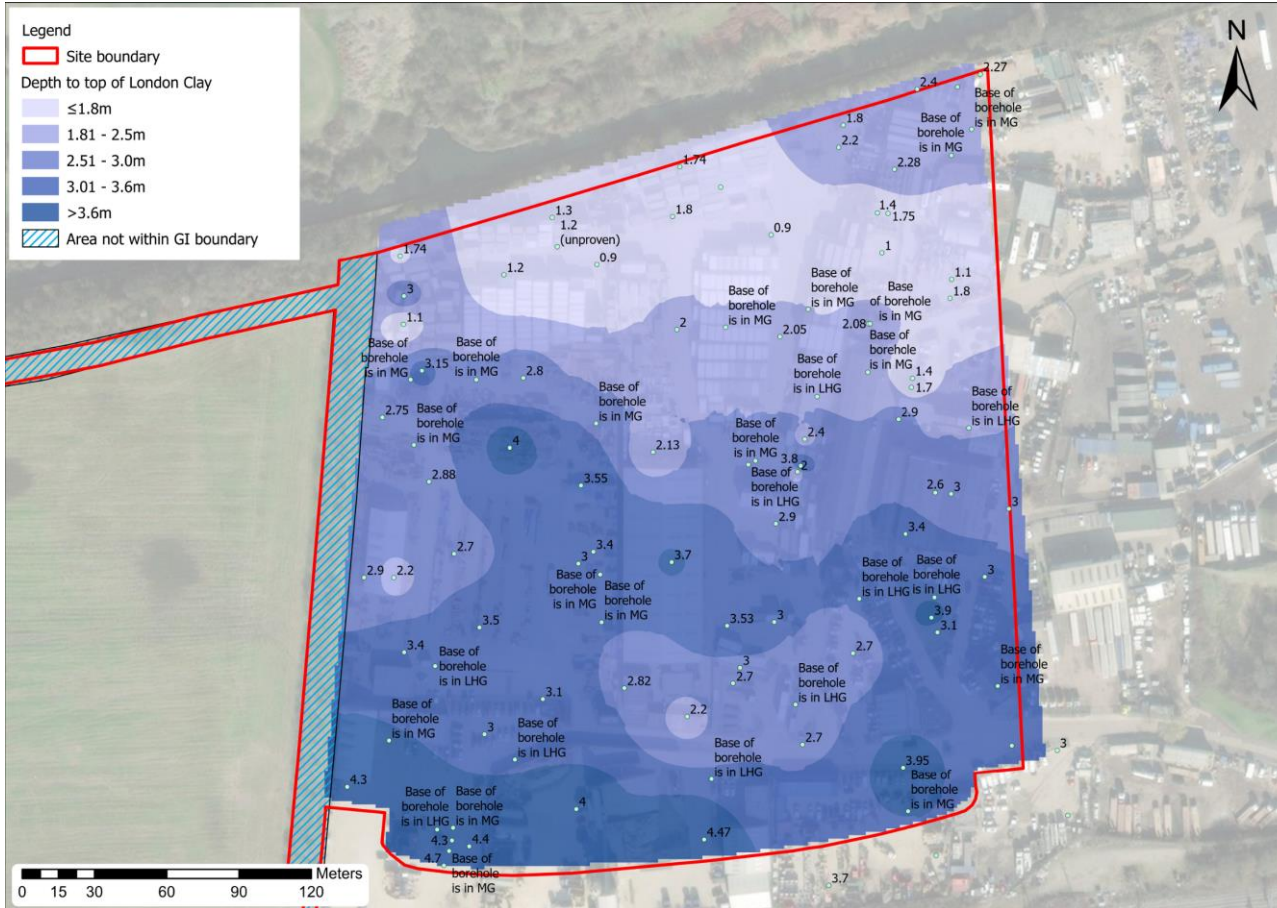
Figure 8 Lynch Hill Gravel Member thickness



4.1.4 London Clay Formation

The London Clay Formation was encountered beneath the Lynch Hill Gravel Member. At six locations, where the Lynch Hill Gravel Member was absent, the London Clay Formation was directly beneath the Made Ground. The London Clay Formation was often described as a brown to greyish brown micaceous clay with occasional pockets / lenses of sand (the weathered London Clay), becoming a dark grey slightly micaceous clay with depth. The depth to the London Clay Formation during the ground investigations is shown on Figure 9 below.

Figure 9 Depth to top of London Clay Formation



4.1.5 Deeper stratigraphy

In the 2024 ground investigation, the Harwich Formation was encountered beneath the London Clay Formation at four locations, between depths of 22m and 26m bgl. The Harwich Formation was typically described as dark grey slightly sandy, silty clay with rare to occasional shell fragments.

At these four locations, the Reading Formation of the Lambeth Group was found to be present at depth, between 25.2m and 27m bgl. The Reading Formation was described as dark grey mottled bluish grey to reddish brown slightly sandy, silty fissured clay with occasional pockets of sand.

This deeper stratigraphy was not encountered during the 2025 investigation due to the depths of the exploratory locations being limited to a maximum of 10m.

One borehole undertaken in the western site area [1] encountered the Chalk Formation at -19.5m AOD, around 49m bgl. There is also a historic borehole record within 50m to the southeast within the British [17]. The borehole, TQ07NW430, encountered chalk at approximately 49.7mbgl which suggests a fairly consistent depth to Chalk in the site vicinity.

4.2 Visual and olfactory evidence of contamination

During the Delta-Simons and Concept ground investigations, visual or olfactory evidence of contamination was recorded in 27 out of 97 locations. A summary of the locations which had visual or olfactory evidence of contamination are listed in Table 12. Results of the soil and groundwater testing, discussed in Section 5, indicate that there is not a significant risk from hydrocarbon contamination.

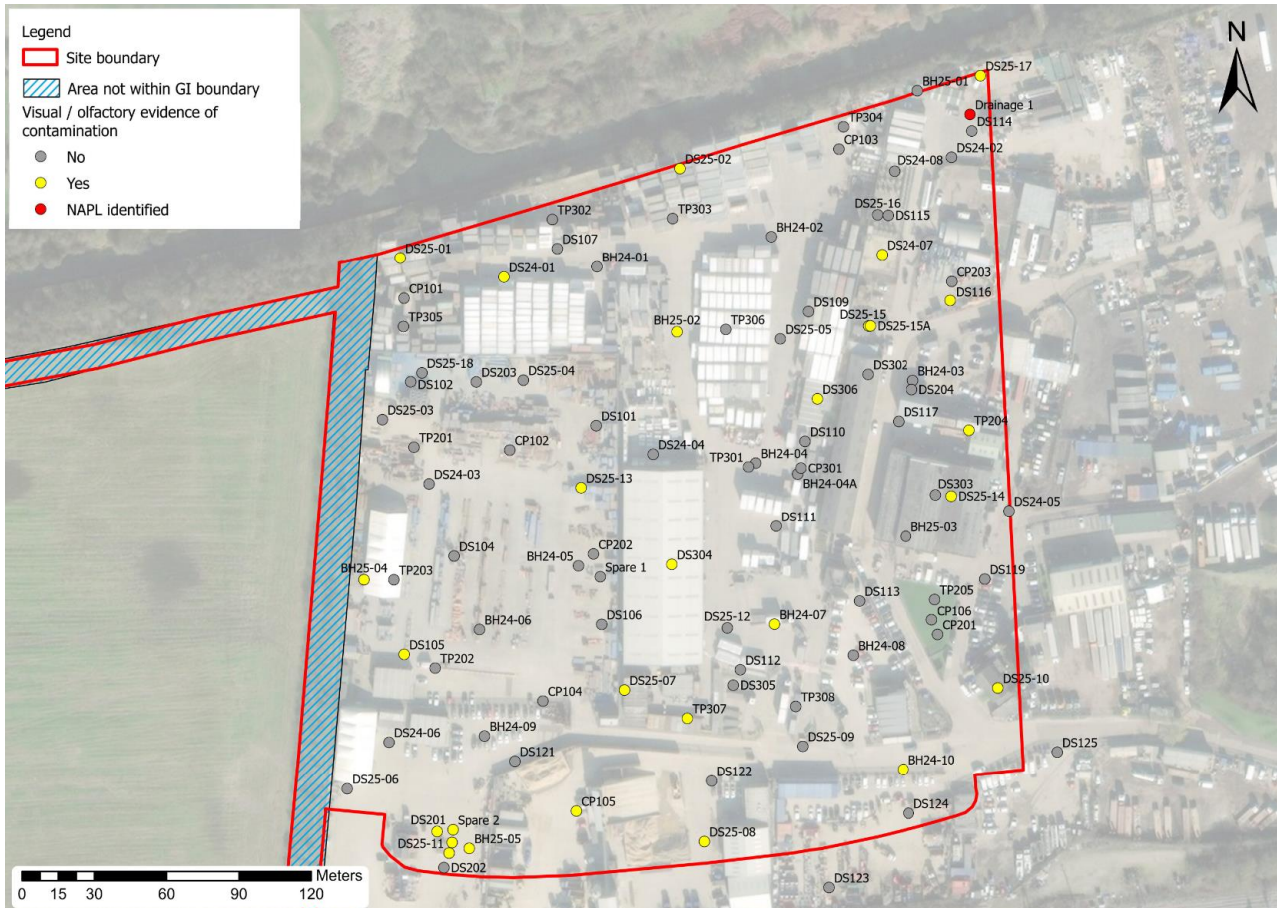
There were localised pockets of hydrocarbon contamination, these are found in BH24-10, DS25-07, DS25-10, DS105, DS120, CP105 and DS201. These are further discussed in Section 5.3.3.

Table 12 Summary of contamination observations

| Location | Depth (mbgl) | Contamination observations |
|--|--------------|--|
| Delta-Simons ground investigation observations | | |
| DS105 | 0.55-0.65 | Hydrocarbon odour |
| DS116 | 0.90-1.30 | Slight hydrocarbon odour |
| DS120 | 1.40-1.50 | Hydrocarbon odour and staining |
| CP105 | 1.45 | Slight sheen on groundwater during the first monitoring visit |
| DS201 | 1.60-1.70 | Slight hydrocarbon odour and staining |
| Spare 2 | 0.30-0.40 | Very strong hydrocarbon odour |
| TP204 | 0.25-0.30 | Hydrocarbon odour |
| TP307, DS304 and DS306 | 0.55-1.80 | Slight hydrocarbon odour |
| Concept 2024 ground investigation observations | | |
| BH24-07 | 0.70-1.20 | Hydrocarbon odour and oily residue at 0.70m, and weak to moderate odour at 0.90m |
| BH24-10 | 0.30-0.90 | Strong hydrocarbon odour |
| DS24-01 | 0.90-1.20 | Hydrocarbon odour and staining |
| DS24-07 | 0.25-1.00 | Strong hydrocarbon odour |
| Concept 2025 ground investigation observations | | |
| BH25-02 | 0.24-1.2 | Mild hydrocarbon odour |
| BH25-04 | 1.0-1.8 | Mild hydrocarbon odour |
| BH25-05 | 3.00 | Strong ammonia odour |
| DS25-01 | 1.50 | Slight peat / tarmac odour |
| DS25-01 | 2.00 | Mild hydrocarbon odour |
| DS25-02 | 1.00-1.20 | Tar-like odour with oily sheen in water |
| BH25-05, DS25-01, DS25-02, DS25-07, DS25-08, DS25-10, DS25-11 and DS25-15A | 0.30-2.82 | Slight hydrocarbon odour |
| DS25-13 | 1.20-1.56 | Mild hydrocarbon odour |
| DS25-13 | 2.00-3.00 | Low hydrocarbon odour |
| DS25-14 | 1.20-1.50 | Black staining |
| DS25-15A | 0.80-1.52 | Very strong hydrocarbon odour. Water also had a very strong hydrocarbon odour |
| DS25-17 | 0.30-0.80 | Slight hydrocarbon odour with oily sheen on the gravel |
| Drainage 1 | - | Free product within drainage |

The location of the observations for odours and visual contaminations are shown on Figure 10 Figure 10 below and show a widespread distribution across the site. A cluster of observations are recorded in the southwest corner of the site where hydrocarbon contamination was recorded in the shallow groundwater. t other particular source areas. The majority of these observations are also relatively minor, relating to odours and staining. Free product was only recorded in one location, a drainage chamber (Drainage 1) in the northeast of the site.

Figure 10 Locations with visual and olfactory evidence of contamination



4.3 Groundwater

4.3.1 Perched water

The results of the groundwater monitoring suggests that shallow groundwater is present within the Made Ground at this site. The results also indicate that groundwater in the Made Ground is typically part of the shallow groundwater aquifer and is not perched.

4.3.2 Shallow aquifers

Shallow groundwater was typically encountered within 1.5m bgl. During borehole construction, the groundwater strikes were recorded in the Lynch Hill Gravel Member or Made Ground.

The dataset of groundwater level monitoring extends over a total of eight rounds undertaken between 2024 and 2025. The range of groundwater levels recorded across the site is between 28.24 and 31.29mOD but was also absent in some locations.

An average of the groundwater levels from across the monitoring visits since 2021 has been calculated and presented in Figure 11.

5. Data assessment

5.1 Data assessment criteria

5.1.1 Overview

The evaluation of ground investigation data has been carried out in accordance with the risk assessment methodology, which is summarised below, and follows the principles of the Land Contamination Risk Management (LCRM) guidance [5] and CIRIA C552 [18].

For this generic assessment, concentrations of contaminants recorded in soil, soil leachate and water have been compared with generic assessment criteria (GAC). Concentrations above GAC do not necessarily represent a risk to human health or controlled waters, but that additional consideration should be given to the results including detailed risk assessment if appropriate.

5.1.2 Human health soil criteria

Soil chemical results have been initially compared to GAC that are protective of chronic exposure via exposure pathways including direct soil and indoor dust ingestion, skin contact with soils and dusts, and inhalation of dust and vapours. The GAC used for this assessment are based on commercial land use.

Arup has derived human health GAC using CLEA 1.07 software. Input data for the toxicological effects, physical characteristics and contaminant fate and transport parameters for the determinands have been taken from sources published by the Environment Agency and other sources (including LQM/CIEH [19] [20]).

Not all contaminant pathways upon which the GAC are based will be appropriate for areas of proposed development, for example, beneath hardcover. The GAC for organic contaminants have been conservatively based on a soil organic matter (SOM) of 1%. There are no published GAC for asbestos in soils in the UK. The risk from asbestos has been determined using CL:AIRE guidance [21]. CL:AIRE guidance has been used for the GAC of certain PFAS compounds [22].

The results have been assessed using multiple lines of evidence as to the potential significance during and after construction based on the latest guidance in CAR-SOIL [21] and CIRIA C733 [23]. There are also no published GAC for PCBs, dioxins or furans in the UK. Results have been screened against the relevant UK median urban soil concentration as detailed in the Environment Agency UK Soil and Herbage Pollutant Survey [24].

5.1.3 Ground gas

Results from ground gas monitoring have been assessed in line with BS 8485 [25].

5.1.4 Controlled Waters

The laboratory results of groundwater, leachate and surface water sample analysis have been compared with relevant water quality standards (WQS). Based on the site setting, the primary controlled waters receptors area considered to be nearby surface water courses including the Grand Union Canal and the Horton Brook located approximately 200m southwest of the site (though closer to 500m from the eastern site) which follows a broadly southerly course towards the Thames.

Although the underlying Lynch Hill Gravel is designated a principal aquifer, these deposits are limited in extent and there are no recorded potable abstractions within a 1km radius.

Therefore, the main WQS utilised are the Water Framework Directive Freshwater Environmental Quality Standards (EQS). Where EQS values are not available the drinking water values have been used, along with some other statutory or non-statutory values where required. Details of the screening criteria are provided in Appendix C.

There are limited water quality standards available for PFAS compounds, relative potency factors from RIVM [26] have been used to derive EQS equivalent criteria for several compounds as well as the Tier 3 threshold of 100ng/l for drinking water [27] from the Drinking Water Inspectorate. A summary of the relative potency factors and derived EQS equivalents is set out in Table 13

Table 13 Summary of derived groundwater screening criteria for PFAS

| PFAS compounds | Relative Potency factor to PFOS | Derived WQS (ng/l) |
|----------------|---------------------------------|--------------------|
| PFBS | 0.0005 | 1,300 |
| PFOS | 1 | 0.65 |
| PFOA | 0.5 | 1.3 |
| PFNA | 5 | 0.13 |
| PFBA | 0.03 | 22 |
| PFPeA | 0.025 | 26 |
| PFHpA | 0.5 | 1.3 |
| PFHxS | 0.3 | 2.17 |
| PFDS | 1 | 0.65 |
| PFHxA | 0.005 | 130 |
| PFDA | 5 | 0.13 |
| PFUnDA | 2 | 0.33 |
| PFDoDA | 1.5 | 0.43 |
| PFTrDA | 1.5 | 0.43 |
| PFTeDA | 0.15 | 4.33 |
| PFHxDA | 0.01 | 65 |
| PFODA | 0.01 | 65 |
| PFPeS | 0.3 | 2.2 |
| PFHpS | 1 | 0.65 |

For some determinants (e.g. fluoranthene), the laboratory method detection limit (MDL) is above the very low WQS. Where this occurs, the MDL is not considered to be representative of a concentration that is above the WQS and has therefore not been considered further.

5.2 Human health assessment

The concentrations of contaminants in soils have been screened against commercial end-use GAC. The screening table is provided in Appendix C.

5.2.1 Soil

The screening assessment for the proposed commercial area includes a total of 180 samples, tested for a range of contaminants including metals and metalloids, TPH, VOC, BTEX, PCB, PAH, phenols, asbestos and PFAS.

Of the 180 samples tested, excluding lead and asbestos, none of the contaminants were recorded at concentrations above the commercial GAC. This indicates that the soils onsite generally pose a low risk to human health for the proposed commercial development. This is consistent with the previous Delta-Simons assessments and the findings of the 2007, 2015 and 2018 investigations.

Lead

Two samples had concentrations above the GAC; DS25-04 at 1.8m depth and DS25-10 at 0.3m depth. The concentrations in these two locations were 8,200mg/kg and 3,700mg/kg, respectively. The sample from DS25-04 was noted as being ash, which was black in colour and having rare white ceramic pottery pieces. These ceramic pieces could have been glazed with lead. This sample also had raised levels of copper and zinc, which were both below the commercial GAC. This indicates that the lead level may also be a component of the ash, as well as the ceramic pottery. The sample from DS25-10 had a slight hydrocarbon odour. The next highest concentration after these samples was 1,200mg/kg in BH25-03 at 0.30m.

The lead concentrations and statistical analysis (excluding sample DS25-04) have been summarised in Table 14 below. The statistical analysis for the Made Ground at this site shows that the 95th percentile is well below the commercial GAC, indicating that this contaminant does not pose a significant risk to human health.

The sample from DS25-04 is within a band of ash and ceramics pottery fragments which can result in elevated lead concentrations, and therefore this sample has been removed from the dataset and assessed separately. The elevated lead in ceramic and ash fragments is very unlikely to result in the same exposure (e.g., from dust or ingestion) and the sample was located at depth at 1.8m, so there is not considered to be a plausible pathway between this source and a potential receptor.

Table 14 Summary of lead exceedances

| Contaminant | Range (mg/kg) | Standard deviation | Mean (mg/kg) | 95 th Percentile (mg/kg) | Commercial GAC (mg/kg) |
|-------------|---------------|--------------------|--------------|-------------------------------------|------------------------|
| Lead | 0.3 to 3,700 | 299 | 100 | 198 | 2,300 |

Total petroleum hydrocarbons

None of the concentrations of TPH recorded in soil exceed the commercial GAC, however, in several samples, concentrations were recorded above saturation limits, at which point the potential for free phase hydrocarbons becomes more likely and the CLEA algorithms may not apply. A screen of TPH fractions against saturation limits has been undertaken and the results are summarised in Table 15 below. The areas with results above the saturation limit were widespread. Areas which were expected to have higher TPH results, such as the areas of fuel storage and transfer, and areas with historic tanks such as in the southwest, also had exceedances of the saturation limits.

Table 15 Samples where the saturation limit for TPH is exceeded

| Contaminant | Saturation limit (mg/kg) | No. of samples exceeding saturation limit | Max. concentration (mg/kg) |
|----------------------|--------------------------|---|----------------------------|
| Aromatics >EC12-EC16 | 169 | 2 | 320 at DS201 |
| Aliphatics >C10-C12 | 47.5 | 10 | 180 at BH24-10 |
| Aliphatics >C12-C16 | 23.7 | 30 | 1,200 at BH24-10 |
| Aliphatics >C16-C21 | 8.48 | 85 | 3,800 at DS25-02 |
| Aliphatics >C21-C35 | 8.48 | 89 | 1,900 at DS25-02 |

PFAS

As part of the 2024 investigation a total of 18 soil samples were tested for PFAS. A total of 40 compounds were tested. Detections above the (OD) were recorded in four samples. The concentrations of PFOS, PFOA, PFHxS and PFNA were below the associated C4SLs, and hazard index [26] indicating that these compounds are not a risk to human health.

As part of the 2025 ground investigation, a total of 23 soil samples were tested for PFAS. A total of 41 compounds were tested. Detectable concentrations were recorded in 12 of the samples. Though concentrations of PFOS, PFOA, PFHxS and PFNA were below the associated C4SLs, and hazard index [26], indicating that these compounds are not a risk to human health for the proposed commercial development.

The results for the individual PFAS compounds that were above the LOD, were typically below 1 µg/kg. The linear PFOS compound within DS25-15 at 0.3m depth was 1.4 µg/kg. The sum of the PFOS compounds within this sample was 1.5 µg/kg, which is below the commercial GAC and is not considered a risk to human health.

6:2 FTAB, a notable compound detected in the groundwater in the north east of the site (see section 5.3.3), is not included in the PFAS soils suite (this may represent a data gap and require testing at a later date to provide support for remedial design). However, 6:2 FTAB is not expected to be present in significant quantities within the soil. In the three boreholes where 6:2 FTAB was detected in groundwater, no soil detection for any PFAS compounds was found. Furthermore, the more persistent breakdown product of 6:2 FTAB, 6:2 FTS, was tested for and no detections were found.

As set out in Section 3.6.3 the summarised results have been adjusted for sum concentrations to avoid reporting positive detections due to the averaging method from the Dutch AS3000 used for the soil PFAS testing.

Asbestos

A total of 141 samples were tested for asbestos across 95 locations completed in the Delta-Simons and Concept ground investigations. Nine samples had positive detections of asbestos. The results of the asbestos testing are summarised in Table 16 and indicate that asbestos is not widespread and is present in low quantities. The results indicate that the risk to human health from asbestos is expected to be low following redevelopment and can be managed through application of standard mitigation measures during the construction phase.

Table 16 Asbestos encountered

| Location | Sample depth (mbgl) | Concentration (%) | Type |
|----------|---------------------|-----------------------------|----------------------------|
| DS111 | 1.10 | Not quantified ¹ | Chrysotile bitumen |
| DS115 | 0.35 | Not quantified ¹ | Amosite loose fibres |
| DS120 | 1.45 | Not quantified ¹ | Amosite loose fibres |
| CP105 | 1.75 | Not quantified ¹ | Chrysotile loose fibres |
| CP302 | 0.50 | Not quantified ¹ | Chrysotile loose fibres |
| DS303 | 0.30 | Not quantified ¹ | Chrysotile loose fibres |
| DS304 | 0.30 | Not quantified ¹ | Chrysotile asbestos cement |
| BH24-09 | 1.2 | <0.001 | Chrysotile fibres / clumps |
| DS25-18 | 0.4 | 0.001 | Chrysotile fibres / clumps |

Notes:

1. No quantification was carried out during the Delta-Simons ground investigation.

5.2.2 Sediment

To date we have received the chemical results for six out of the eight sediment results. None of the results exceeded the commercial GAC, however, there were exceedances of the saturation limit for aromatics >EC12-EC16 and aliphatics >C12-C16, >C16-C21 and >C21-C35 in drainage 1.

PFAS

Six sediment samples from the drainage system have been analysed for PFAS and recorded concentrations above the LOD. The concentrations of PFOS, PFOA, PFHxS and PFNA were below the associated C4SLs and hazard index [22] indicating that these compounds are not a risk to human health.

The sample taken from drainage point 2 on 25th March 2025 had a linear PFOS concentration of 1 µg/kg, and a total PFOS concentration of 1.1 µg/kg. This is below the commercial GAC and is not considered a risk to human health.

Three samples from the attenuation pond recorded several PFAS compounds above the LODs, however, the concentrations of PFOS, PFOA, PFHxS and PFNA were below the associated C4SLs and hazard index indicating that these compounds are not a risk to human health.

The PFAS compound profile within the attenuation pond and drainage is different to both the soil and groundwater profiles onsite. 6:2 fluorotelomer sulfonic acid (6:2 FTS) and methylperfluorooctanesulfonamidoethanol (MeFOSE) was present within the drainage sediment, whereas these compounds were not present within the soils. MeFOSE was also not present within the groundwater, while 6:2 FTS was present within the groundwater. 6:2 FTS is also a breakdown product of 6:2 FTAB which occurs in groundwater in the northeast of the site and has been linked with the former fire.

MeFOSE was not present within the water in the drainage system and therefore its presence in sediment suggests a less recent source or a stronger tendency to sorb to soil organics than other PFAS¹. MeFOSE was historically used in clothing and other textile coatings.

5.3 Controlled waters assessment

5.3.1 Soil

The total concentrations of contaminants found within the soils are generally low and not indicative of contamination which would present a significant risk to controlled waters. However, there are localised pockets of hydrocarbon contamination that may have impacted groundwater quality. This will need to be assessed as part of the DQRA.

5.3.2 Leachability

Leachate data from 25 samples taken across the site as part of the 2025 ground investigation have been screened against the respective WQS. This provides a conservative assessment of potential risk due to soil leaching as the leachate derivation methodology (including sample crushing and agitation) is designed to encourage the release of substances into dissolved phase to establish a likely worst case rather than an accurate quantification of in-situ leachability.

The results are summarised in Table 17. Leachable concentrations of copper and lead were consistently above the WQS. The results from the groundwater chemical testing, which is discussed in the following subsection, demonstrates that copper and lead are not entering the shallow aquifer and are not considered a significant risk at this site.

Table 17 Summary of leachability results

| Contaminant | WQS (µg/l) | Maximum concentration (µg/l) | No. of samples above the WQS | Location of max. conc. above the WQS |
|---------------|------------|------------------------------|------------------------------|--------------------------------------|
| Metals | | | | |
| Antimony | 0.005 | 0.0064 | 2 | DS25-10, 0.3m |
| Arsenic | 0.01 | 0.012 | 1 | DS25-01, 0.8m |
| Barium | No GAC | 0.024 | - | - |
| Cadmium | 0.00008 | <0.00011 | 0 | - |
| Chromium | 0.0047 | 0.0064 | 4 | BH25-05, 0.3m |

¹ The USEPA CompTox data base indicates that MeFOSE has an organic carbon partition coefficient (KOC) of >5,000/Kg which, for example, is approximately 3 times higher than PFOS and does therefore suggest a reasonably high sorption potential.

| Contaminant | WQS (µg/l) | Maximum concentration (µg/l) | No. of samples above the WQS | Location of max. conc. above the WQS |
|-------------------|------------|------------------------------|------------------------------|--------------------------------------|
| Copper | 0.001 | 0.025 | 25 | DS25-01, 0.8m |
| Lead | 0.0012 | 0.025 | 11 | DS25-01, 0.8m |
| Mercury | 0.001 | 0.00013 | 0 | - |
| Nickel | 0.004 | 0.0048 | 5 | DS25-15A, 0.3m |
| Selenium | 0.01 | 0.012 | 1 | DS24-01, 1.6m |
| Zinc | 0.0123 | 0.019 | 6 | DS25-07, 1.3m |
| Inorganics | | | | |
| Chloride | 250 | 6.6 | 0 | - |
| Fluoride | 1 | 1.4 | 1 | DS24-07, 0.3m |
| Sulphate | 250 | 100 | 0 | - |

5.3.3 Shallow groundwater

Concentrations of analytes tested in groundwater have been screened against relevant WQS. The water screening results are included in Appendix C. The EQS values have been used in preference to DWS. Where there is no EQS, the DWS has been used.

Inorganics

Widespread concentrations of ammoniacal nitrogen, above the WQS of 0.3mg/l occur across the site up to a maximum of 168mg/l recorded in DS25-05. As depicted in Figure 12 the highest concentrations occur in the southwest of the site. Elsewhere levels are typically between 0.2mg/l to 8mg/l which is common on brownfield sites and within urban areas and these concentrations do not indicate a significant risk. High concentrations in the southwest corner of the site however are potentially significant and will require further consideration through DQRA.

Ammoniacal nitrogen commonly occurs as a by-product associated with degradation of organic materials. Hydrocarbons have been detected in the groundwater in the southwest of the site which could be contributing to the presence of ammoniacal compounds. A significant or primary contributory factor could also be the landfill beneath the western field.

Figure 13 Chloride distribution in shallow groundwater

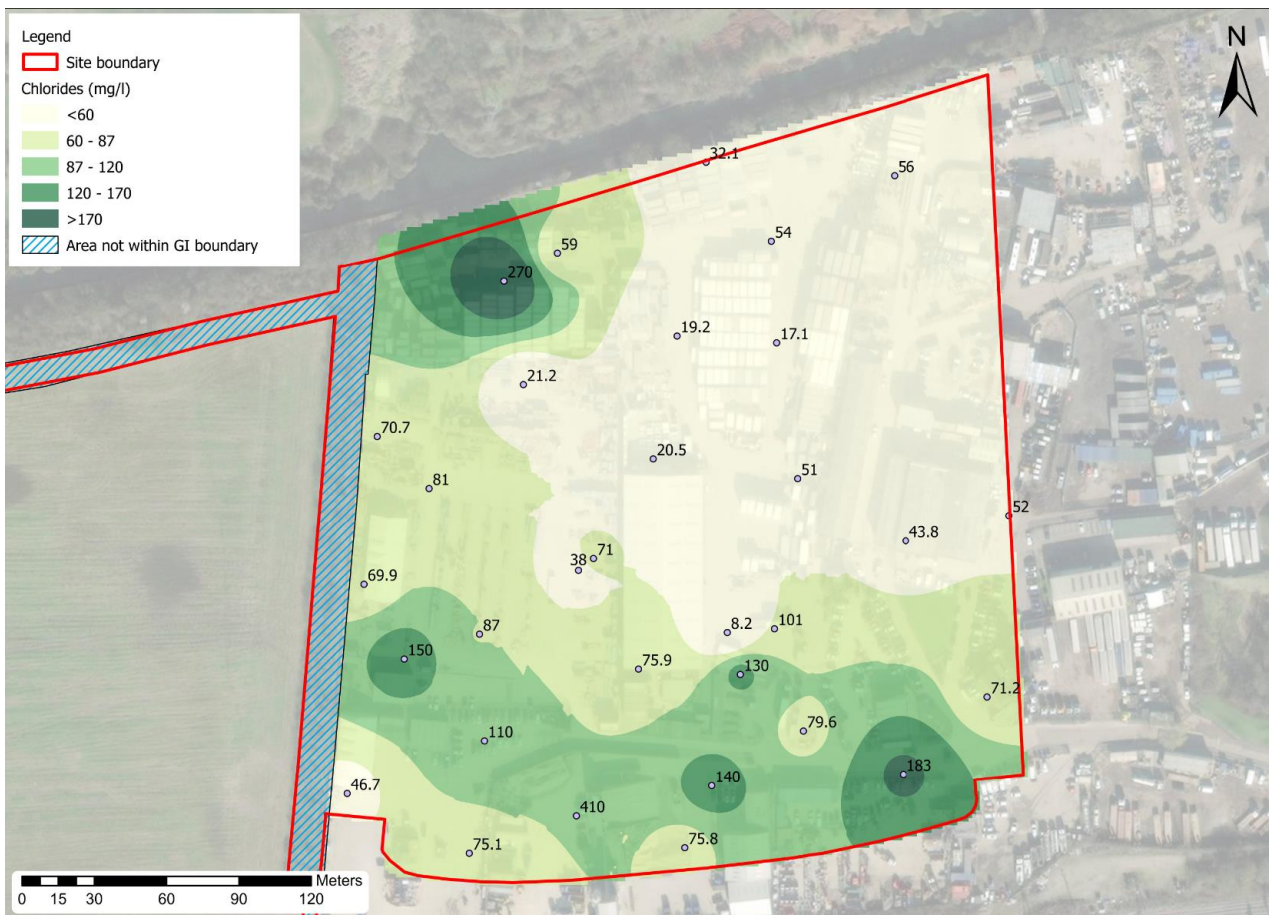
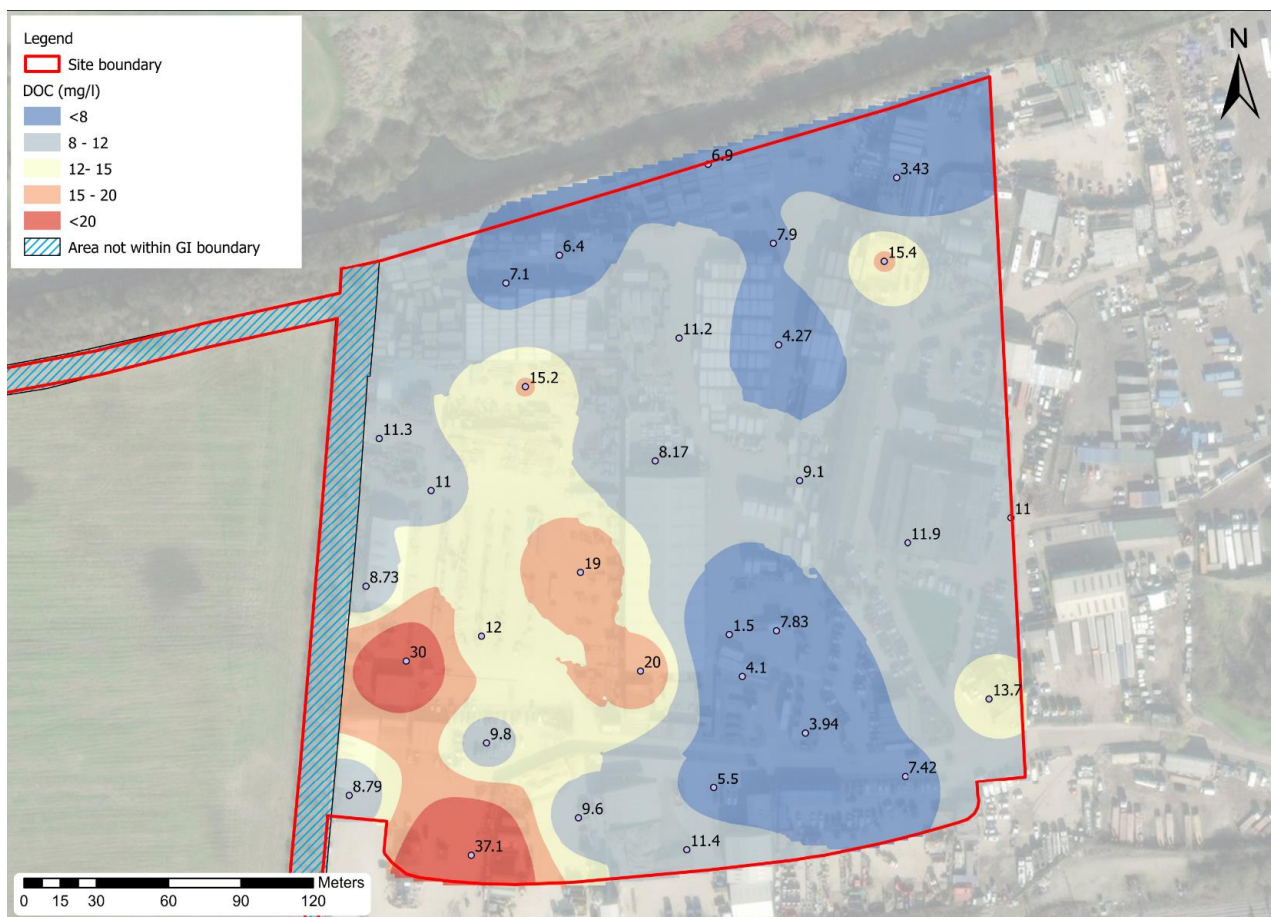


Figure 14 DOC distribution in shallow groundwater



Metals

The groundwater screening results for metals are included in full in Appendix C and summarised in Table 18 below.

Most contaminants only had a limited number of samples which recorded a concentration higher than the WQS. However, nickel had widespread concentrations above the WQS. The soil and leachable results did not indicate widespread elevated levels of nickel. Manganese also had elevated levels compared to the GAC. One of the field blanks taken during the investigation also recorded elevated levels of nickel. However, given the lack of sensitive receptors and the results of the manganese and nickel recorded, there is not considered to be a significant risk to controlled waters from these contaminants.

Table 18 Summary of metal concentrations in groundwater

| Contaminant | WQS (mg/l) | Total no. of samples above GAC | Max. conc. (mg/l) / location of max. conc. |
|-------------|------------|--------------------------------|--|
| Cadmium | 0.00008 | 19 | 0.00035 / DS111 |
| Lead | 0.00833 | 1 | 0.00969 / DS25-10 |
| Copper | 0.0296 | 0 | 0.00182 / BH24-05 |
| Manganese | 0.408 | 30 | 5.2 / DS24-03 |
| Nickel | 0.0168 | 30 | 0.033 / DS25-10 |
| Selenium | 0.01 | 1 | 0.11 / DS24-01 |
| Vanadium | 0.02 | 4 | 0.059 / BH24-05 |

| Contaminant | WQS (mg/l) | Total no. of samples above GAC | Max. conc. (mg/l) / location of max. conc. |
|-------------|------------|--------------------------------|--|
| Lead | 0.0379 | 1 | 0.00969 / DS25-10 |

PAH, VOC and SVOC

The groundwater screening results for PAH are summarised in Table 19 below.

The levels of PAH are very low and for most analytes were only detected in a small number of samples compared to the number tested. Fluoranthene occurs more frequently than other compounds and where it does it also exceeds the extremely stringent EQS. Exceedances of stringent EQS for PAH is common on Brownfield Site and in urban areas and this does not indicate a potential statutory breach of a WQS, as the groundwater on site does not present an immediate risk of impact to surface waters. At the sub parts per billion (ppb) levels recorded this level of contamination can still be regarded as minor and is not considered to require further assessment.

VOC and SVOC testing were carried out within five samples. Except for BH25-05, all VOC compounds were below the LOD. Within BH25-05, chlorobenzene and 4-iso-propyltoluene were above the LOD; although WQS are not available at the low levels recorded these contaminants are not considered to present a significant risk. It is also noted that groundwater in BH25-05 appears to be impacted by groundwater contamination originating from off-site to the west which is a potential source of SVOC in this area.

Table 19 Summary of PAH and other SVOC concentrations within groundwater

| Contaminant | WQS (mg/l) | Total no. of samples above GAC | Max. conc. (mg/l) / location of max. conc. |
|---------------------|------------|--------------------------------|--|
| Fluoranthene | 0.0000063 | 27 | 0.00064 / DS202 |
| Naphthalene | 0.002 | 5 | 0.00863 / DS202 |
| Anthracene | 0.0001 | 3 | 0.0006 / DS202 |
| Benzo(a)pyrene | 0.00000017 | 1 | 0.00003 / DS25-04 |
| Chlorobenzene | - | 0 | 0.0023 / BH25-05 |
| 4-iso-propyltoluene | - | 0 | 0.00288 / BH25-05 |

TPH

The groundwater screening results for TPH are summarised in Table 19 below.

Table 20 Summary of TPH results in groundwater

| TPH Band | WQS (mg/l) | Total number of samples above GAC | Max. conc. (mg/l) / location of max. conc. |
|--------------------|------------|-----------------------------------|--|
| Aliphatics >C12-16 | 0.3 | 1 | 0.55 / BH24-10 |
| Aromatics >C10-12 | 0.09 | 2 | 0.2 / DS201 |
| Aromatics >C12-16 | 0.09 | 6 | 0.26 / BH24-10 |
| Aromatics >C16-21 | 0.09 | 8 | 0.33 / DS201 |
| Aromatics >C21-35 | 0.09 | 5 | 0.34 / DS201 |

Elevated results above the WQS were identified in the southwest and centre of the site during previous investigations, in the location of DS105, DS120, DS201, DS202 and DS304.

The elevated results above the GAC occurred in three locations in the 2024 and 2025 investigations, BH24-10, DS25-07 and DS25-10. The soil results for BH24-10 and DS24-10 were above the saturation level,

indicating that free phase hydrocarbons are present in this area. The results for the DS25-07 were below the saturation level, however, it should be noted that olfactory evidence of hydrocarbons was present at this location which indicates that free phase product is present.

Locations of groundwater results above the GAC in the recent Concept investigations are located in the south and southeast. The samples taken from the southwest were all below the commercial GAC; only one sample collected from BH25-05 recorded levels above the LOD. A groundwater sample taken from DS105 during 2024 monitoring was below LOD which suggests that hydrocarbon concentrations in the groundwater have substantially decreased.

Further consideration of risks to controlled waters by TPH in soil and groundwater will be provided through DQRA.

Phenol

Elevated phenol concentrations above the WQS were recorded in eight of the 55 samples tested. These were recorded in samples from BH25-05, DS25-07 and DS25-10, which are scattered across the site. The maximum concentration was 0.16mg/l compared to an WQS of 0.077mg/l. Given the scattered locations of the detections and low concentrations across the rest of the site these appear to be localised impacts and not impacting the wider shallow groundwater. Therefore, they are not considered to represent a significant risk to controlled waters.

PFAS

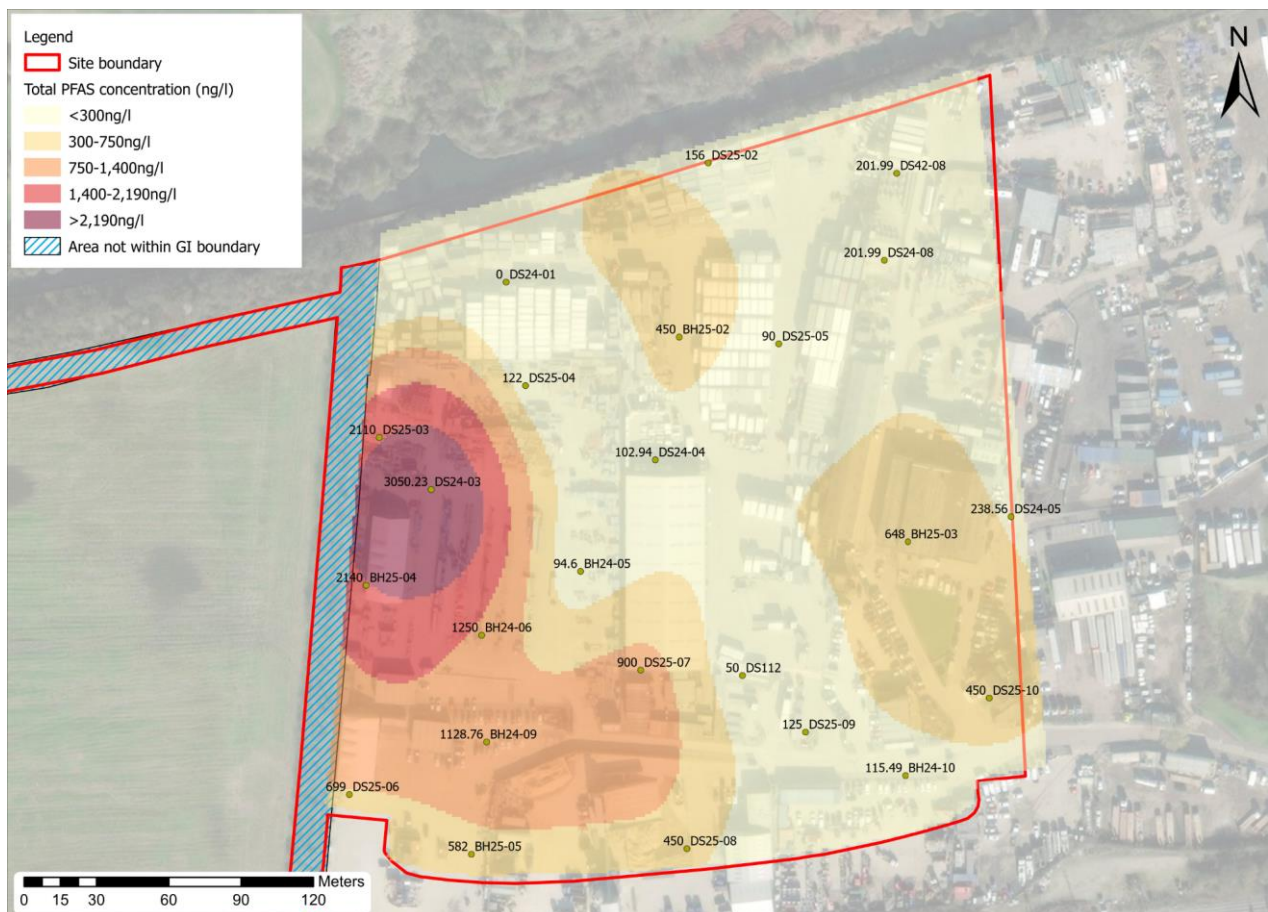
EQS equivalent criteria for several PFAS compounds have been derived using the EQS for PFOS of 0.65ng/l and relative potency factors from the Dutch National Institute for Public Health and the Environment (RIVM) [26]. For total PFAS, the Drinking Water Inspectorate guidance [27] has also been used as a screening value. The screening results are summarised in Table 21 below.

A total of 20 samples were tested as part of the 2024 ground investigation. Of these, 20 samples were above the EQS for total PFOS. 15 were above the DWI Tier 3 limit of 100ng/l for total PFAS. The highest levels of PFAS were consistently found within DS24-03 along the western boundary of the site, while high levels were also present in the southwest, centre of the site and the east.

A total of 49 samples were tested as part of the 2025 ground investigation. Of these, 21 samples were above the DWI Tier 3 limit for total PFAS. 44 samples were above the EQS for total PFOS. The highest levels were recorded along the western boundary of the site, which is consistent with the results from 2024.

The PFAS spatial distribution is shown in Figure 15 below.

Figure 15 Distribution of sum PFAS in shallow groundwater



A summary of the results of screening PFAS compounds against WQS is summarised in Table 21.

Table 21 PFAS shallow groundwater exceedance summary

| PFAS compound | WQS (ng/l) | No. of samples above calculated criteria in 2024 and 2025 GI |
|---------------|------------|--|
| Total PFAS | 100 | 57 of 71 |
| Total PFOS | 0.65 | 64 of 71 |
| Total PFOA | 1.3 | 64 of 71 |
| PFPeS | 2.2 | 24 of 71 |
| PFHxS | 2.16 | 52 of 71 |
| PFNA | 0.13 | 41 of 71 |
| PFHxA | 130 | 10 of 71 |

| PFAS compound | WQS (ng/l) | No. of samples above calculated criteria in 2024 and 2025 GI |
|---------------|------------|--|
| PFHpA | 1.3 | 64 of 71 |
| PFHpS | 0.65 | 4 of 71 |
| PFBS | 1,300 | 0 of 71 |
| PFDA | 0.13 | 17 of 71 |
| PFBA | 22 | 29 of 71 |

The locations in the west and southwest of the site have notably similar profiles with higher proportions of perfluorooctanoic acid (PFOA), perfluoroheptanoic acid (PFHpA) and perfluorohexanoic acid (PFHxA) with PFOA in DS24-03 up to 0.977µg/l. Much lower concentrations of PFOA (<0.04µg/l) were recorded across the rest of the site and in previous monitoring.

Based on the absence of an identified source of PFAS in this part of the eastern site and the distribution and profile of PFAS in groundwater which suggests a broad plume rather than discrete sources, it is considered likely that PFAS in this part of the site has originated from the off-site landfill to the west. Further lines of evidence supporting this theory include the known condition of the adjacent landfill, which lacks a liner and cap and locations where landfill directly overlies granular strata and also the presence of other analytes in the groundwater that are commonly associated with landfill leachate notably ammoniacal compounds and DOC.

6:2 fluorotelomer sulfonamide alkylbetaine (6:2 FTAB) was higher in DS24-08, in the northeast of the site, both in proportion to other PFAS compounds in the same sample and when compared with other groundwater samples from across the rest of the site. 6:2 FTAB was above detection in samples from DS24-04, DS25-04, DS25-08, BH25-03 and DS25-03, however, the results were significantly higher within DS24-08.

The 6:2 FTAB results indicates a localised source. 6:2 FTAB is a component and indicator of aqueous film forming foams (AFFF) which are commonly used in firefighting. The potential for PFAS to be present in the northeast of the site may be due to a fire in 2010 and the potential use of PFAS-containing firefighting foams. It is considered likely that 6:2 FTAB entered the groundwater in runoff from firefighting foam when the fire was extinguished.

PFAS in groundwater will be subject to further review and assessment through DQRA.

5.3.4 Deep groundwater

Three of the sampling locations were from the deeper aquifer (BH24-02, BH24-07 and CP105), though are still from predominantly cohesive response zones. 10 samples were taken during the Delta-Simons and Concept monitoring 2024 and 2025 monitoring though not all samples were tested for the full suite of determinands

Inorganics

Concentrations of ammoniacal nitrogen were elevated in all six samples tested for this determinant with concentrations recorded between 0.5 and 3.8 mg/l. Although these are all above the EQS value they are relatively lower than the concentrations recorded in the shallow groundwater (see Section 5.3.3).

Results for the other inorganic suite were generally as expected; chloride and DOC concentrations were generally low but within the broad range of results recorded in the shallow groundwater.

Metals

Concentrations of metals were generally low though there were some results above the WQS. Manganese was above the WQS (0.408mg/l) in four out of five samples tested including a maximum concentration of 2.14mg/l. As with the shallow groundwater this is not considered to present a significant risk. Nickel was above the WQS in two out of the 6 samples, both from BH24-07, including a maximum concentration of 0.037mg/l. This is similar to the concentrations recorded in the shallow groundwater and similarly is not considered to present a significant risk.

TPH and PAH

No detectable concentrations of speciated TPH bands were recorded in the five samples tested. Detectable concentrations of PAHs were recorded in two of the five samples but at trace concentrations close to the limits of detection that are not considered to present a significant risk.

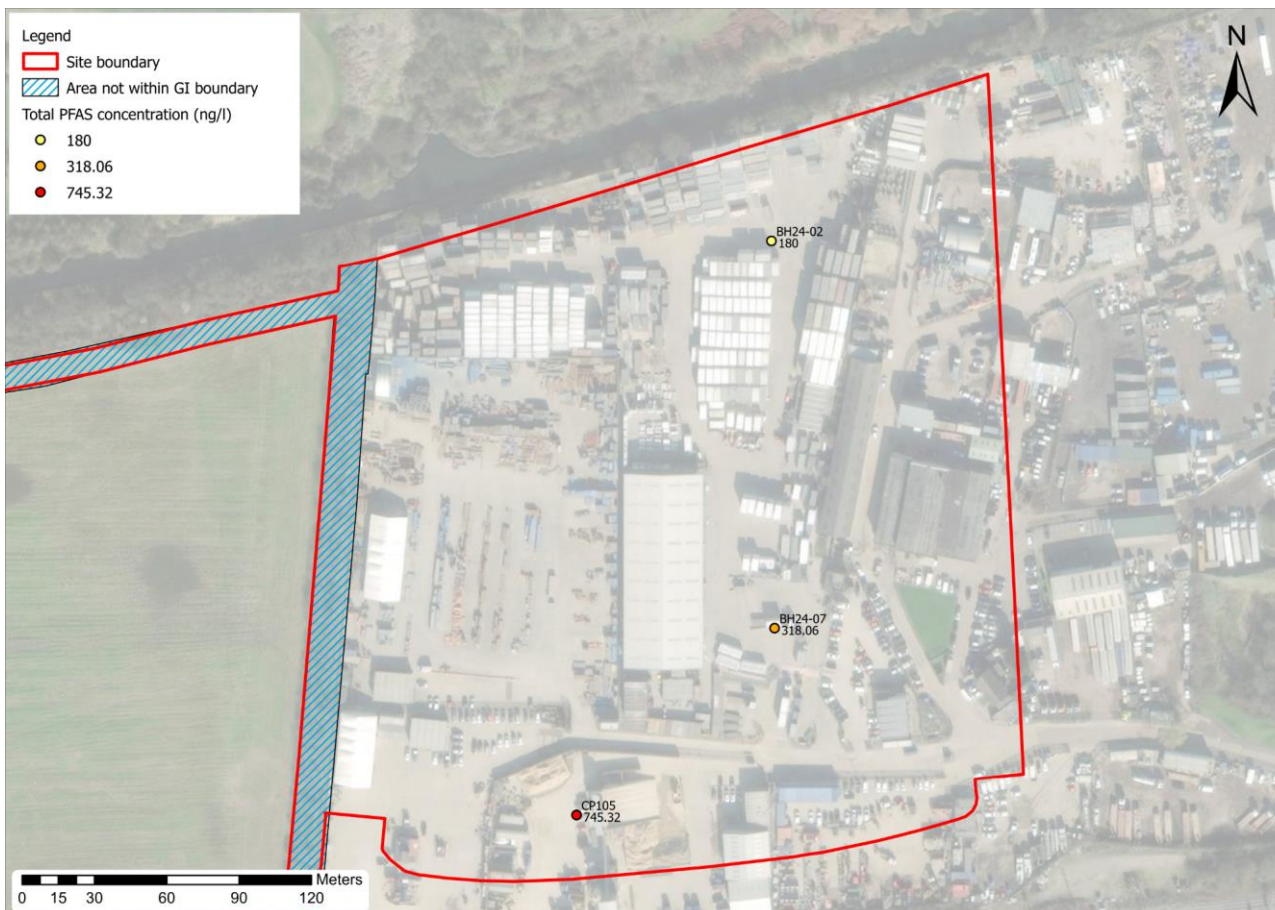
VOC and SVOC

Only two samples were tested for VOCs and SVOCs. A minor concentration of 5 µg/l of 2,4-Dimethylphenol was detected in one of the two samples, from CP105. No other compounds were above the LODs.

PFAS

PFAS was detected in all six samples. The maximum total PFAS concentrations recorded at these locations is shown in Figure 16.

Figure 16 Distribution of sum PFAS in deep groundwater



A summary of the main PFAS compounds detected in the deep groundwater samples is shown in Table 22. Similar PFAS compounds occur in CP105 and BH24-07 though concentrations tend to be higher in the former and the profile is generally similar except for a higher proportion of PFOS in BH24-07.

Most of the PFAS compounds tested were below detection in the single sample collected from BH24 where over 60% of the PFAS was recorded as 6:2FTS.

Table 22 Summary of PFAS results for deep groundwater samples

| PFAS compound | BH24-02 (ng/l) | CP105 (ng/l) [mean] | BH24-07 (ng/l) [mean] | Calculated criteria (ng/l) | Number of samples above criteria |
|-------------------|----------------|---------------------|-----------------------|----------------------------|----------------------------------|
| PFBA | 20 | 30.6 to 82.5 [59.0] | 3.2 to 25.5 [14.6] | 22 | 5 of 8 |
| PFPA | <20 | 71 to 96.7 [83.6] | 6.1 to 48.3 [31.8] | - | - |
| PFHxA | 40 | 8.5 to 110 [69.1] | 3.6 to 20.3 [14.3] | 130 | 0 of 8 |
| PFHpA | <20 | 43.3 to 78.4 [60.6] | 1.4 to 13.1 [8.9] | 1.3 | 6 of 6 |
| PFNS | <20 | <1 to 61.4 [35.9] | <1 to 30.8 [11.2] | - | - |
| PFBS | <20 | 10.7 to 22.9 [18.2] | 1.2 to 10.1 [6.3] | 1,300 | 0 of 8 |
| PFPeS | <20 | 6.6 to 22.1 [16.3] | <1 to 1.75 [1.3] | 2.2 | 3 of 8 |
| PFHxS | <20 | 20 to 61.4 [39.1] | 1.8 to 30.8 [17.8] | 2.16 | 6 of 8 |
| 6:2 FTS | 120 | 4.1 to 70 [29.1] | <1 to 5.3 [2.4] | - | - |
| Total PFOA | <20 | 120 to 186 [147.3] | 1.2 to 14.8 [8] | 1.3 | 8 of 8 |
| Total PFOS | <20 | 16.8 to 24.6 [20.6] | 5.0 to 118 [61.7] | 0.65 | 6 of 8 |
| Sum detected PFAS | 120 | 205 to 706 [461] | 29.7 to 404 [212] | 100 | 7 of 8 |

The profile of PFAS compounds in CP105 and BH24-07 are also broadly similar to the profile recorded in the shallow groundwater in the southwest of the eastern part of the site and may indicate a degree of connectivity between the shallow and deep groundwater bodies. This connectivity (if present) may occur to the west of the site where the London Clay is known to thin.

BH24-02 is located in the northeast of site near where the fire was. The primary compound present was 6:2 FTS which is absent from most other locations, however it is a known breakdown product of 6:2 FTAB which has been recorded in the shallow groundwater in the northeast and linked with the former fire. Further consideration of the significance of PFAS in the deeper groundwater will be provided through DQRA.

5.3.5 Drainage and canal

Metals

The metal concentrations were generally low and below the respective WQS. On one visit (3 March 2025), concentrations of nickel, chromium, zinc, copper and antimony were recorded above their respective WQS in the attenuation pond but dropped below the limits during the following rounds except for nickel which remained elevated above the WQS with a maximum of 0.0469mg/l.

In the drainage system elevated concentrations of metals were also low and one sample recorded a concentration of nickel above the WQS at 0.0263mg/l.

Testing from the canal recorded generally low metal concentrations, though two samples from Canal sampling point 3 recorded concentrations of nickel and cadmium slightly above the WQS, with maximum concentrations of 0.0277mg/l and 0.00014mg/l respectively. Canal sampling point 3 is the downgradient location to the east of the site. Concentrations near the storm outfall from the site (canal 2) were below the WQS during both these rounds.

Hydrocarbons

High concentrations of TPH were recorded within drainage sample point 1, the attenuation pond and the canal sampling point 3. High levels of PAH were also recorded within the attenuation pond and drainage point 1.

The sample of water collected from drainage 1 was predominantly oil. A product ID analysis carried out on a sample from drainage point 1 identified the product as diesel range hydrocarbons, with a calculated age of 15+/-2 years. Drainage 1 was located in the area of the Speedy Fuels yard, where refuelling and the transfer of fuel was taking place. The presence of fuel storage and refuelling points onsite and the product ID results suggest that diesel range hydrocarbons have been entering drains via surface water runoff and subsequently entering the canal and attenuation pond. However, the results from the soil and groundwater testing suggest that the hydrocarbons are not entering the groundwater.

Inorganics

Elevated concentrations of phenol (total and monohydric) were recorded in all five of the drainage samples with a maximum concentration of 1.95mg/l. No detectable concentrations of phenol were recorded in either the attenuation pond or canal, indicating the phenol is not moving through the drainage system. Elevated concentrations of phenol were also recorded in the shallow groundwater in three locations, but they were not near these drainage samples and concentrations in the wider shallow groundwater were low. Therefore, the recorded phenol is not considered to represent a significant risk. The recorded phenol may be a breakdown product from the hydrocarbon also recorded in the drainage samples.

PFAS

A summary of the detected PFAS compounds in samples collected from drainage across the site and surface water (attenuation pond and the Slough Arm of the Grand Union Canal) is provided below in Table 23. Raised levels of PFAS were present within several of the canal samples.

The canal samples have very similar profiles and are notably different to the groundwater samples from the site. PFHxDA has only been recorded in the canal samples and is not present in the groundwater on site. PFDA, PFNS, PFHpS, 8:2 FTS, MeFOSAA, PFBSA and 6:2 FTAB have been recorded in the groundwater samples but not in any of the canal samples. Although this does not exclude the possibility of a potentially significant discharge of PFAS from the site into the surface water, no clear evidence of this has been identified based on the testing completed to date and it appears very likely that other sources are contributing to levels of PFAS observed in the canal.

The PFAS levels in drainage are consistently low and is not considered to be affected by the PFAS from the soils and groundwater at this site. The PFAS within the attenuation pond has a similar signature to the PFAS found within DS24-08, which suggests that the PFAS within the attenuation pond could be related to the potential PFAS released during the 2010 fire event. A summary of the results is included in Table 23 below.

Table 23 Summary of PFAS compounds in drainage and surface water

| PFAS compound | WQS (ng/l) | Drainage system | | Canal | |
|---------------|------------|----------------------------|-----------------------------|----------------------------|-----------------------------|
| | | Concentration range (ng/l) | Number of samples above WQS | Concentration range (ng/l) | Number of samples above WQS |
| Total PFAS | 100 | <90 to 573 | 3 of 6 | <90 to 497 | 4 of 6 |
| Total PFOS | 0.65 | 2.2 to 32 | 4 of 6 | 11.8 to 66 | 15 of 15 |
| PFOA | 1.3 | <10 to 48.8 | 3 of 6 | 9.31 to 35.4 | 15 of 15 |
| PFHxS | 2.16 | 5.5 to 11.7 | 3 of 6 | 6.89 to 26.2 | 15 of 15 |
| PFNA | 0.13 | 6.8 to <10 | 3 of 6 | <10 to 2.62 | 6 of 15 |
| PFHxA | 130 | 1.5 to 115 | 0 of 6 | 9.5 to 43 | 0 of 15 |

| PFAS compound | WQS (ng/l) | Drainage system | | Canal | |
|---------------|------------|----------------------------|-----------------------------|----------------------------|-----------------------------|
| | | Concentration range (ng/l) | Number of samples above WQS | Concentration range (ng/l) | Number of samples above WQS |
| PFBS | 1,300 | <10 to 14.6 | 0 of 6 | 3.71 to 17.7 | 0 of 15 |
| PFBA | 22 | <10 to 39 | 3 of 6 | 16.3 to 36 | 3 of 15 |
| 6:2 FTS | - | 4.6 to 157 | - | 1.21 to 9.91 | - |
| 6:2 FTAB | - | 110 to 115 | - | <50 | - |

5.4 Ground gas and vapour assessment

5.4.1 Ground gas

Delta-Simons completed a total of six gas monitoring rounds between 9 August 2021 and 22 March 2022, and a further six rounds between 11 May 2023 and 23 November 2023. More recently a total of four monitoring rounds were completed by Concept in 2024 and 2025.

Concentrations of methane and carbon dioxide have been generally low; typically below 1% and 5% respectively. Elevated concentrations were detected in 12 instances however these were mostly in wells with partially or fully flooded response zones due to the shallow groundwater.

Concentrations of up to 1.4% methane and 6.8% carbon dioxide were recorded in non-flooded wells. No sustained flow rates were recorded during the monitoring. Nine ground gas samples were taken across the 2024 and 2025 monitoring for confirmatory laboratory testing and aligned with the recorded concentrations from the field testing.

The generally low recorded concentrations and absence of detectable flow rates indicate ground gases present a low risk to the development. Gas Screening Values (GSVs) calculated from the results conformed to Characteristic Situation (CS1) in accordance with BS 8485 [25].

Carbon dioxide concentrations above 5% were recorded and in accordance with BS 8485 [25] the potential need to increase the CS classification has been considered. There is not a significant source of ground gas generation present onsite as the Made Ground does not contain substantial quantities of degradable organic material and is of limited thickness (generally <5m).

The Made Ground was also likely placed in the 1960s (or before) and most gas generation would have already occurred. The historic landfill to the west is understood to have last received [domestic] waste over 40 years ago and therefore peak ground gas generation will have already occurred.

In addition, the proposed development is for data centres which will have significant thickness of concrete foundation slab, which will act as a barrier to ground gas. In addition, data centres will include significant ventilation as part of its cooling requirements, which will further mitigate against any ground gas accumulation. Therefore, the need to increase the CS (to CS2) classification is not considered to be necessary.

5.4.2 Vapours

No soil concentrations were above the screening criteria which are protective of vapour risks. The localised recorded free product in the drainage was tentatively identified as weathered diesel, this may have the potential for localised increased vapour risk but given its age and the planned removal of existing drainage, is not considered to represent a significant vapour risk at the site.

Groundwater concentrations have been screened using the Society of Brownfield Risk Assessment (SoBRA) GAC for groundwater vapour risk [28]. The assessment is included in Appendix C and did not record any concentrations above the commercial limits for hydrocarbons, BTEXs and VOCs. The locations with high TPH concentrations primarily comprised heavy long chain bands which are less volatile and do not have

specific criteria due to the lower risks posed. Overall risks from vapours from the groundwater contamination is assessed to be low.

5.6 Overview

There is a comprehensive dataset from the phases of ground investigation undertaken.

The main contamination issue at the site is the presence of PFAS in groundwater at concentrations above WQS. The PFAS is present in both the shallow and deep aquifers and profiling of the PFAS compounds indicates that there are potential similarities between the shallow and deep groundwater.

The highest concentrations of PFAS occur in the southwest of the site and currently the most likely source of this contamination is the landfill situated beneath the field to the west which is mainly off-site. PFAS in groundwater in the northeast of the site, characterised by 6:2FTAB in shallow groundwater and 6:2FTS in deeper groundwater is potentially associated with firefighting foam released during a fire in 2010.

The absence of formal criteria for most of the compounds limits the assessment of the potential risks posed but PFOS is substantially above the EQS in the groundwater onsite. The potential sources of the PFAS contamination and risks posed will be assessed further in the DQRA.

Asbestos is very sporadic onsite, with only two occurrences in the 2024 and 2025 ground investigations at low levels, which are considered normal for brownfield sites. Mitigation measures during construction will be enough to manage the risks. These measures will be outlined in the remediation strategy.

Localised areas of hydrocarbon contamination have also been recorded in the shallow soils and groundwater. Concentrations are below respective GAC but above the saturation limits and there have been widespread odours observed within soils across the site which could indicate residual free-phase hydrocarbons. However, based on the groundwater results, it does not appear free-phase product is migrating from soils to the groundwater in sufficient volumes to impact groundwater beyond the immediate vicinity of the soil sources.

Diesel-range free product has been recorded within the drainage system and also poses a localised potential risk. Mitigation and control measures will need to be considered within the remediation strategy and are likely to include excavation of drainage where gross hydrocarbon contamination (such as free product) is encountered.

Ground gas has not been identified as a significant risk at the site. Based on the monitoring undertaken to date, a CS1 gas regime has been determined for the site, largely based on the absence of steady flow rate and generally low gas concentrations, but also due to the likely inherent protection offered by the data centre.

6. Risk assessment and revised CSM

6.1 Overview

A preliminary conceptual site model (CSM) for the whole site is provided in the PRA [2]. This section provides a summary of the contamination risk assessment and an updated CSM based on the findings of the ground investigation and assessment set out in the previous sections of this report. The risk evaluation has been based on a qualitative assessment, taking into consideration the magnitude of the potential severity of the risk as well as the probability of the risk occurring. The definition of risk and risk characterisations are based on CIRIA C552 [18] as summarised in Appendix D.

6.2 Contamination sources

The preliminary CSM in the PRA identified six potential sources of contamination for the wider site. These have been reviewed and updated to reflect the findings of the ground investigation including consideration of the specific contaminants recorded during the on-site investigations. The PRA also covers the whole application site whereas this assessment focuses on the eastern site area which has a different CSM to western areas of the site. The updated potential sources are set out in Table 24.

Table 24 updated potential contamination sources

| PRA amalgamated source reference | Description | Potential contaminants |
|----------------------------------|--|--|
| S1 to S4 | Asbestos has been detected in approximately 6% of the soil samples tested. The majority of these were not quantified, limiting the assessment of the risks posed. The distribution appears to be sporadic across the Made Ground on site. No clear evidence found to confirm contamination due to asbestos fibre release in the northeast of the site during the fire in 2010. | ACMs and asbestos fibres |
| S1 to S3 | Contamination testing has recorded generally low levels of other soil contaminants. Two lead concentrations exceeded commercial GAC used and localised hydrocarbon contamination exceeds saturation limits. | Metals and Speciated TPH hydrocarbons in soil |
| S4 | Clear evidence of a soil source not detected in the northeast. Detectable concentrations of PFAS were recorded in approximately 40% of the soil samples tested. Concentrations are below the criteria for human health but may present a risk to controlled waters. | PFAS in soil and drainage |
| S4 and S5 | PFAS has been recorded in the groundwater across the site. Concentrations for most PFAS compounds are highest in the west and southwest which may be from the landfill to the west. Recorded concentrations are above the screening criteria used for controlled waters. 6:2 FTAB in shallow groundwater and 6:2 FTS in deeper groundwater are potentially associated with firefighting foams from the fire in 2010. | PFAS in groundwater |
| S1 to S4 | Elevated concentrations of hydrocarbons (TPH, BTEX, PAHs and phenol), free product, and PFAS have been recorded in the drainage sediment and water samples. | PFAS, speciated TPH, BTEX, PAH and phenol, and free product in drainage |
| S1 to S3 and S5 | Locally elevated concentrations hydrocarbons and ammoniacal nitrogen recorded in groundwater. The distribution of ammoniacal nitrogen indicates it is likely associated with the landfill to the west. Hydrocarbons are more localised and are more locally associated with on-site commercial activities. | Speciated TPH and ammoniacal nitrogen in groundwater |
| S1, S2, S3, S5 | Ground gas monitoring has indicated generally low concentration on site. Some elevated results have been recorded in locations with partially or fully flooded response zones but there are not considered to be representative. | Methane, carbon dioxide, carbon monoxide, hydrogen sulphide, depleted oxygen |

| PRA amalgamated source reference | Description | Potential contaminants |
|---|--|------------------------|
| S6 | No evidence of significant contamination migrating on to site identified with the exception of possible landfill leachate (i.e. S5) therefore S6 not considered to require further evaluation. | NA |
| <p>PRA Source definitions</p> <p>S1 - Made Ground in eastern site area from backfilling of the gravel extraction works and construction of concrete works and Thorney Business Park.</p> <p>S2 - Industrial activity during operation of the concrete works</p> <p>S3 Recent commercial / industrial activity at Thorney Business Park</p> <p>S4 Fire in the north east of the site</p> <p>S5- Historical landfill beneath western field</p> <p>S6 Other off-site uses including railways, commercial premises to the north and east.</p> | | |

6.3 Receptors

Potential receptors have been based on the PRA and are summarised below in Table 25.

Table 25 Potential receptors

| Receptor ID | Potential receptor | Sensitivity |
|--------------------------|--|---|
| Human Health | | |
| R1 | Site workers and visitors | Construction workers (particularly groundworkers) will come into direct contact with soil for excavation during excavations for site clearance and removal of obstructions foundations and services. |
| R2 | Offsite neighbours (commercial) | Offsite commercial neighbours are relatively limited and are mainly associated with commercial properties at Thorney Business Park to the east. Potential risks are higher during construction due to increased exposure pathways during the ground disturbance such as dust generation. Potential risks are lower during site operation when potential exposure pathways are more limited. Potential risks during construction should be managed through appropriate controls, such as dust suppression. |
| R3 | Future site users | Limited potential for exposure expected after site redevelopment due to prevalence of hard standing and buildings. |
| R4 | Maintenance / utility workers | Below ground works are likely to be infrequent and localised Risks will need to be managed by implementation of health and safety procedures. |
| Controlled Waters | | |
| R5 | Principal aquifer with shallow groundwater in Lynch Hill Gravel Member | High regional sensitivity, though much of the receptor has been removed from the site. The local sensitivity is considered to be reduced by the proximity of several landfills and limited residual aquifer thickness. Not considered to be viable as a drinking water source. Therefore, risk is driven by the value of the aquifer in terms of providing base flow to rivers (e.g. Horton Brook and the River Thames). |
| R6 | Secondary Aquifer in Lambeth Group and Harwich | Low to moderate sensitivity considering the largely clayey nature of the deposits. The upper beds of the Lambeth Group and intervening London Clay Formation will act as an aquitard, restricting the downwards migration of shallow groundwater. This receptor has the potential to be impacted due to the creation of preferential pathways, primarily through deep piled foundation that penetrate the London Clay. However, the foundation details of previous or proposed structures are not known. It is likely that the future datacentres will be piled, and this will require a foundation works risk assessment. |
| R7 | Principal Aquifer associated with the Chalk | High sensitivity, however, as the chalk is around 50m bgl and protected by the overlying low permeability strata. Not considered to be plausible receptor except where there would be creation of preferential pathways. |

| Receptor ID | Potential receptor | Sensitivity |
|--------------|--|---|
| R8 | Slough Arm of the Grand Union Canal | The canal is a potential receptor primarily through the discharge of the surface water drainage [via an attenuation pond] to the canal. It is understood that the surface water drainage system will be replaced as part of the proposed development, and this may also include the discharge to the canal. The canal is not considered to have a significant connectivity with the shallow groundwater due to the resting levels of the groundwater and canal. |
| Other | | |
| R9 | Onsite building materials and services | Building material, e.g. below ground contact, and utilities, e.g. potable water supply pipes, will come into direct contact with soil |
| R10 | Planting in soft landscaping areas | The potential risk is normally mitigated through the selection of appropriate planting to suit the ground conditions. |

6.4 Pathways

The potential exposure pathways between the identified sources and receptors are summarised in

Table 26 Summary of potential exposure pathways

| Pathway ID | Potential contaminant pathway | Presence of pathway |
|------------|--|---|
| P1 | Ingestion of soil or dust. Inhalation of dust, vapours or fibres. Dermal contact with soil or dust. | During construction: potential exposure of site workers, especially during bulk earthworks and excavation, including stockpiling and materials movement. During operation: most of the site will be covered with hardstanding with limited areas of soft landscaping (mostly trees and shrubs) which will substantially limit potential for direct exposure. |
| P2 | Migration of hazardous ground gas and vapours and accumulation in confined spaces. Inhalation of ground gases or vapours. | Migration, including by diffusion, dissolution from shallow groundwater and along any preferential pathways (such as utility trenches) and accumulation in confined spaces, such as excavations (during construction) or future buildings. Potential inhalation of landfill gases (e.g. carbon dioxide and methane) and depleted oxygen levels (in excavations). Potential explosive risk (from methane) very unlikely based on available data and age of the landfill in the location of the northern and southern access roads. Ground gas regime is deemed a CS1 within the main site based on the 2024/2025 Concept GI ground gas monitoring. |
| P3 | Rainwater infiltration and leaching of contaminants and lateral groundwater migration. | During construction: As part of the removal of hardcover, there may be some localised disturbance and mobilisation of contamination. Any dewatering required as part of earthworks also has the potential to cause increased migration and mobilisation of contaminant sources. Due to the significant thickness of London Clay, a direct pathway (e.g. via drainage under gravity) from shallow soils and groundwater contamination to the Harwich Formation/Lambeth Group is unlikely. During operation: Much of the site will be covered with buildings and hardcover and infiltration SuDS drainage is not permitted due to the potential to mobilise contamination. Therefore, there is limited potential for leaching of contamination in the unsaturated zone. |
| P4 | Creation of preferential pathways during construction (piling). | It does not appear that there has been an historical abstraction well on the site. It is possible that piled foundations were previously used; although unlikely, these could have resulted in a preferential pathway towards the Harwich Formation/Lambeth Group. A foundation works risk assessment will be prepared prior to any deep piling as part of the proposed development to identify potential risks and mitigation to minimise the potential creation of preferential pathways. |
| P5 | Direct discharge via existing or future drainage. | The current drainage discharges off site to the east to an attenuation pond from where it has the potential to enter the canal via a stormwater overflow. It is understood that this system will be decommissioned and that the new development will be serviced by new drainage that discharges into the drainage ditch to the southwest of the site which connects to the River Colne. |

| Pathway ID | Potential contaminant pathway | Presence of pathway |
|------------|---|--|
| P6 | Direct contact of concrete and services with contaminated soils or groundwater. | Direct contact of aggressive ground with concrete and permeation of plastic potable water pipes by organic contaminants. |
| P7 | Plant uptake. | Plant uptake of phytotoxic contaminants from shallow soil and groundwater |

6.5 Updated CSM

An updated CSM setting out the consideration of potential sources-pathways-receptors (PCLs) has been presented in Table 27. The identified viable PCLs are discussed further in Sections 6.6 to 6.9.

Table 27 Updated CSM

| Potential Contaminant Linkage (PCL) | | | | Classification / Risk Estimation (without mitigation) | | |
|--|--|--|--|---|------------------|----------------------------|
| Ref. | Source | Pathway | Receptor | Probability | Consequence | Risk |
| Risks to human health during construction | | | | | | |
| PCL1a | ACM and asbestos fibres, TPH, metals and PFAS in soil (Sources S1 to S5) | P1: Ingestion of soil or dust Inhalation of dust or fibres | R1: Site workers and visitors | Low likelihood | Severe | Moderate |
| PCL1b | | Dermal contact with soil or dust Exposure to contaminated groundwater | R2: Offsite neighbours (commercial) | Low likelihood | Medium to severe | Moderate to moderate / low |
| PCL2 | Ground gases (Sources S1, S2, S3, S5) | P2: Migration of hazardous ground gas and vapours and accumulation in confined spaces Inhalation of ground gases or vapours | R1: Site workers and visitors (during excavations) | Unlikely | Medium to severe | Moderate / low to low |
| Risks to human health during operation | | | | | | |
| PCL3a | ACM and asbestos fibres, TPH and PFAS in soil (Sources S1 to S5) | P1: Ingestion of soil or dust Inhalation of dust or fibres | R3: Future site users and R4: Maintenance / utility workers | Unlikely | Severe | Moderate / low |
| PCL3b | | Dermal contact with soil or dust Exposure to contaminated groundwater | R2: Offsite neighbours (residential) | Unlikely | Severe | Moderate / low |
| PCL4a | Ground gases (Sources S1, S2, S3, S5 and S6) | P2: Migration of hazardous ground gas and vapours and accumulation in confined spaces | R3: Future site users and R2: Offsite neighbours (residential) | Unlikely | Severe | Moderate / low |
| PCL4b | | Inhalation of ground gases or vapours | R4: Maintenance / utility worker | Unlikely | Severe | Moderate / low to low |

| Potential Contaminant Linkage (PCL) | | | | Classification / Risk Estimation (without mitigation) | | |
|---|--|---|---|--|------------------|---|
| Ref. | Source | Pathway | Receptor | Probability | Consequence | Risk |
| Risks to controlled waters during construction and operation | | | | | | |
| PCL5a | PFAS, speciated TPH and ammoniacal nitrogen in soil and groundwater (Sources S1 to S5) | P3: Rainwater infiltration, leaching and lateral groundwater migration P4: Via preferential pathways such as piled foundations | R5: Principal aquifer in shallow Lynch Hill Gravel Member aquifer | Low likelihood to likely | Medium | Moderate / low to Moderate |
| PCL5b | | | R6: Secondary aquifer associated with the Harwich Formation and Lambeth Group | Low likelihood | Medium | Moderate / low |
| PCL5c | | | R7: Principal aquifer in deeper Chalk Aquifer | Unlikely | Medium to severe | Moderate / low to low |
| PCL6 | PFAS, speciated TPH, phenol, BTEX and PAH in drainage (Sources S1 to S4) | P5: Via existing drainage | R8: Slough Arm of the Grand Union Canal | Likely (during construction becomes unlikely once redeveloped) | Medium | Moderate (becomes low once redeveloped) |
| Risks to planting and structures during operation | | | | | | |
| PCL7 | Aggressive ground conditions in soil and groundwater (Source S1 to S6) | P6: Direct contact of concrete and services with contaminated soils or groundwater. | R9: Building materials and services | Likely | Mild | Moderate / low |
| PCL8 | Phytotoxic contaminants (Sources S1 to S6) | P7: Plant uptake of phytotoxic contaminants | R10: Planting in soft landscaping areas | Low likelihood | Mild | Low |

6.6 Human health assessment summary

Based on the field observations, chemical data for soil and groundwater, and ground gas monitoring, the previously identified potential onsite and offsite contaminant sources are considered unlikely to have resulted in unusual or extensive contamination risks over and above those normally encountered during redevelopment on brownfield sites. Specific health risks applicable to construction and site operation post development are discussed below.

6.6.1 During construction (PCL1 and PCL2)

Based on relatively low levels of contamination, risks to construction workers, visitors, and neighbours are generally moderate to low.

Potential contamination issues that require further consideration and /or assessment include the following:

- Presence of asbestos contamination which may be present as both fragments and free fibres; this is an inherent risk for most brownfield sites and the identified levels represent an overall low potential that is not necessarily unexpected or indicative of abnormal conditions. Measures to manage risks from asbestos during construction will be defined within the remediation strategy.

- Further testing of PFAS within areas with impacted groundwater will be required to discount PFAS in soils as a potential source. In addition, concrete testing will be required for PFAS.
- Localised hydrocarbon contamination across the site. No concentrations above the commercial GAC were found, but evidence of free product was encountered in some locations. Measures to manage potential exposure to hydrocarbons will be discussed in the remediation strategy.
- The potential exists for localised areas of unknown or unexpected contamination to occur. Appropriate procedures for discovery, recording and management of unknown or unexpected contamination will be included within the remediation strategy.

6.6.2 During operation (PCL3 and PCL4)

The low levels of asbestos and occasional fragments would pose a risk to future site users though this can be mitigated by breaking the exposure pathway (hardstanding and use of a growth medium in any areas of soft landscaping).

Good standards of working practice including appropriate PPE will be required by future maintenance workers involved in works that break ground that may come into contact with the residual asbestos in the Made Ground. These risk mitigation requirements will be defined within the remediation strategy.

Groundwater chemical data and vapour monitoring has not identified elevated concentrations of potentially volatile compounds or a need for vapour mitigation for the future site users or adjacent receptors.

The ground gas assessment has indicated a low risk (CS1) and that ground gas protection measures are not required. Mitigation may be required where there is an increased potential for accumulation such as in confined spaces, particularly in areas closer to the western landfill where there may be increased risk of gas generation. This can be achieved through appropriate working practices and management procedures and is not an abnormal risk for confined spaces.

6.7 Controlled waters assessment summary

Most contaminants in groundwater have been recorded below the WQS. Relatively high concentrations of PFAS occur in groundwater, the attenuation pond and within the canal. Potential risks associated with controlled waters in relation to both construction and operational phases of the development are described below.

6.7.1 During construction and operation (PCL5 and PCL6)

Ground investigations have identified widespread PFAS and ammoniacal nitrogen in groundwater and localised TPH within soils and the drainage system. The following potential residual issues have been identified:

- PFAS concentrations are elevated in both the shallow and deep groundwater and may pose a risk to controlled waters receptors. Further risk assessment as part of the DQRA required to assess the risks to controlled waters.
- PFAS has been detected in the drainage system and attenuation pond situated off-site to the east and has the potential to be discharged to the Grand Union Canal via the storm overflow. This pollutant linkage will need to be mitigated. This will be provided by the replacement of the current drainage system with a clean system. Consideration should be given to temporary treatment of the current discharge as an interim measure depending on the length of time until construction commences. This will be considered further as part of the remediation strategy.
- Ammoniacal nitrogen concentrations are elevated in the shallow groundwater in the southwest of the site. Although this may be associated with the landfill to the west further consideration and assessment will be required through DQRA.

- Free product identified within the drainage system, along with associated high TPH levels in drainage sediment. Risks from the hydrocarbon contamination recorded shall be considered further in the DQRA. The existing drainage system is expected to be decommissioned and associated impacted material removed as part of the development, which will mitigate the risk for contamination in the drainage.
- Localised hydrocarbon contamination in soil and groundwater has the potential to cause further impact, or prevent improvement, of controlled waters. Further assessment will be undertaken as part of the DQRA to consider potential mitigation requirements.
- Risks will be reduced further by the adoption of good environmental practice, a watching brief for previously unidentified contamination, and pollution prevention measures, for example, associated with the use and storage of fuels and dewatering and discharge of groundwater.

The operational use of the site is not expected to introduce new contamination risks. Any new chemical and fuel storage and handling areas should be in accordance with industry best practice and pollution prevention measures.

Further assessment of PFAS and potentially ammoniacal nitrogen, in groundwater including fate transport modelling will be undertaken during the DQRA to identify the potential for wider environmental impacts, and if required to identify potential remedial requirements to prevent risks during operation of the site.

6.8 Risks to building materials and buried services

6.8.1 During operation (PCL 7 and PCL8)

The contamination assessment has not identified soil or groundwater contaminants that are likely to present a significant risk of degradation to buried concrete. A sulphate assessment has not been undertaken as part of this risk assessment but would be mitigated through adoption of appropriate concrete design classes.

Appropriate water supply pipe materials will need to be adopted to prevent permeation of contaminants and degradation of the pipe work. This assessment will need to be undertaken to UKWIR requirements once the route of water supply pipes are known. Based on the localised hydrocarbon contamination and proximity of landfills there may be a requirement for the use of barrier pipes for potable water supply, but this will need to be confirmed with the statutory water supply company.

6.9 PCL summary

A summary of the PCLs identified in the updated CSM and the recommendations for next steps is set out in Table 29 using the risk classifications set out in Table 28.

Table 28 PCL classification definitions

| PCL risk classification | Description |
|--------------------------------------|---|
| Further assessment required | Potentially significant pollutant linkage (RCL); further assessment required e.g. through DQRA and/ or targeted intervention in the remediation strategy. |
| Mitigation measures will be required | Impact is possible but can be mitigated by standard control measures during works and/or managed under an alternative regime such as permitted operation or occupational safety. Further detail of mitigation requirements / control measures to be provided in the remediation strategy. |
| Impact can be ruled out | Impact can be ruled out and no further assessment is required. |

Table 29 Conceptual site model

| PCL reference | Summary of PCL | Plausibility of linkage / risk |
|---------------|--|--|
| PCL1a | Risks to site workers and visitors from contact with soil and groundwater contaminants during construction | Mitigation measures will be required Can be mitigated during construction phase by adoption of good site practices and PPE. |
| PCL1b | Risks to offsite neighbours from asbestos and soil contaminants during construction | Mitigation measures will be required Can be mitigated during construction phase by adoption of good site practices and PPE. |
| PCL2 | Risks to site workers and visitors from ground gases during construction (excavations) | Mitigation measures will be required Can be mitigated during construction phase by adoption of good site practices and environmental monitoring. |
| PCL3a | Risks to future site users and maintenance workers during operation from soil and groundwater contaminants | Mitigation measures will be required Can be mitigated with use of a cover layer (hardstanding and soil in landscaping), and adoption of good site practices during maintenance works. |
| PCL3b | Risks to offsite neighbours during operation from soil and groundwater contaminants | Mitigation measures will be required Can be mitigated with use of a cover layer (hardstanding and soil in landscaping). |
| PCL4a | Risks to future site users during operation from ground gases | Impact can be ruled out. –Ground gas monitoring results indicate low risk and site considered to be CS1 and not require gas protection. |
| PCL4b | Risks to maintenance workers during operation from ground gases | Mitigation measures will be required Can be mitigated by adoption design to minimise enclosed spaces where gases can accumulate and adoption of appropriate safety and mitigation measures during maintenance activities. |
| PCL5a | Risks to Lynch Hill principal aquifer from rainwater infiltration from soil contaminants and lateral migration of contamination in groundwater and preferential pathways | Further assessment required Further assessment of potential risks from PFAS, ammoniacal nitrogen and hydrocarbon contamination required. This will be assessed in the Controlled waters DQRA. Foundation works risk assessment required to identify mitigation measures from proposed foundation. |
| PCL5b | Risks to Harwich / Lambeth Group secondary A aquifer from rainwater infiltration from soil contaminants and lateral and vertical migration of contamination in groundwater and preferential pathways | Further assessment required Although risks are substantially lower than for more sensitive Lynch Hill Gravels further data review and assessment of PFAS only considered appropriate through DQRA. Foundation works risk assessment required to identify mitigation measures from proposed foundation. |
| PCL5c | Risks to Chalk principal aquifer rainwater infiltration from soil contaminants and lateral and vertical migration of contamination in groundwater and preferential pathways | Further assessment required Further assessment of potential risks from PFAS required. This will be assessed in the Controlled waters DQRA. Foundation works risk assessment required to identify mitigation measures from proposed foundation. |
| PCL6 | Risks to Slough Arm of Grand Union Canal from contamination in site drainage | Mitigation measures will be required - Can be mitigated through the decommissioning and replacement of the existing drainage system. Consideration of temporary intervention shall be considered in the remediation strategy depending on timescales for the development works. |
| PCL7 | Risks to building materials and services from contact with aggressive soil or groundwater conditions | Mitigation measures will be required Can be mitigated through adoption of appropriate design classifications and material specifications for buried concrete and services. |
| PCL8 | Risks to planting from phytotoxic contaminants in shallow soil or groundwater conditions | Mitigation measures will be required Can be mitigated through use of a growth medium in areas of soft landscaping. |

7. Preliminary waste soil assessment

7.1 Background and methodology

Excess material generated during groundworks and piling may require offsite disposal. A material management strategy will be presented as part of the separate remediation strategy. It is understood that levels will be raised and cut minimised, which will reduce the potential offsite disposal requirement. There are strong lines of evidence that does not extend onto the site both at the western and eastern site boundaries. The Environment Agency may have specific requirements or comments with respect to material that they consider was previously deposited as a waste. If this occurs it is likely to make any re-use onerous and timely, should they require an environmental permit.

Disposal to landfill should be avoided and there is a requirement to treat all waste. Where possible, sustainable disposal or re-use options should be considered, including reclamation and soil treatment facilities. It is recommended that a licensed waste specialist is consulted to identify potential cost-effective, sustainable disposal options.

The soil results have been compared against hazardous waste thresholds from WM3 [29] using a commercially available software package (HazWasteOnline™). The selection of chemical compounds is based on the most likely to be present in the soil, considering the laboratory analytical reports and the conceptual site model. Justification for the selection of individual metal species is included in the classification reports in Appendix E.

Soil samples classified as hazardous (i.e. where hazardous substances were at concentrations above hazardous waste thresholds) have then been compared with hazardous WAC thresholds, which indicates the suitability for disposal at landfill and potential for additional treatment before landfill. Soil samples not classified as hazardous have been compared with inert WAC thresholds.

7.2 Hazardous waste

WM3 states that if the contaminating oil is unknown, a marker compound can be used, whereby if the concentration of benzo(a)pyrene is <0.01% of the TPH concentration, the waste is not carcinogenic and mutagenic. This approach has been applied.

HP3(i) (flammability) has also been considered in the assessment. Hydrocarbon concentrations have not been recorded at sufficient levels for this hazard property to apply and no free product was encountered during the ground investigation within soils. However, a strong hydrocarbon odour and free product was encountered within drainage point 1 and high TPH concentrations (>80,000mg/kg) were recorded within the sediment sample. A flash point test can be undertaken to determine if the waste is flammable, defined as waste with a flash point of >55°C and <75°C.

pH was recorded above 11.5 in one sample of Made Ground (BH25-01 at 0.3m), which results in a hazardous classification due to HP8 (corrosive). However, it is likely that the high pH results are due to concrete fragments being ground into the sample in the laboratory during the preparation process. An acid alkali reserve test and in-vitro testing may be undertaken to indicate that there are no substances in the waste that could generate a high pH and it is therefore not corrosive and non-hazardous.

Eight samples may be classified as hazardous waste due to high metal or TPH concentrations. This comprises five Made Ground samples and three sediment samples. A summary is presented as Table 30.

Table 30 Summary of samples classified as hazardous waste

| Location | Depth (m bgl) | Strata | Hazard property (HP) | Hazardous determinand(s) | Concentration(s) of determinand(s) (mg/kg) |
|--|---------------|--------|---|--|--|
| Soil | | | | | |
| DS24-07 | 0.3 | MG | HP7 Carcinogenic HP11 Mutagenic | TPH (C ₆ to C ₄₀) | 1,400 |
| DS25-18 | 0.9 | MG | HP7 Carcinogenic HP11 Mutagenic | TPH (C ₆ to C ₄₀) | 1,400 |
| DS25-04 | 1.8 | MG | HP10 Toxic for reproduction HP14 Ecotoxic | Lead | 8,200 |
| | | | HP14 Ecotoxic | Zinc | 1,200 |
| DS25-14 | 0.3 | MG | HP7 Carcinogenic HP11 Mutagenic | TPH (C ₆ to C ₄₀) | 3,200 |
| DS25-10 | 0.3 | MG | HP10 Toxic for reproduction HP14 Ecotoxic | Lead | 3,700 |
| Sediment | | | | | |
| Drainage 1 | N/A | N/A | HP3(i) Flammable* HP10 Toxic for reproduction HP14 Ecotoxic | TPH (C ₆ to C ₄₀) | 80,088 |
| | | | HP14 Ecotoxic | Zinc | 1,600 |
| Drainage 2 | N/A | N/A | HP7 Carcinogenic HP11 Mutagenic | TPH (C ₆ to C ₄₀) | 1,700 |
| Drainage 3 | N/A | N/A | HP7 Carcinogenic HP11 Mutagenic | TPH (C ₆ to C ₄₀) | 2,900 |
| <p>Notes: * The sediment sample from drainage point 1 has a high TPH concentration and diesel free product is present in this location. In the absence of flammability flash point laboratory testing, this sample is considered potentially flammable.</p> <p>One additional Made Ground sample may be classified as hazardous (due to pH) depending on the results of acid alkali reserve test and in-vitro testing.</p> | | | | | |

Asbestos was detected in approximately 6% of the Made Ground samples. As summarised in Table 16 the detections recorded during the Delta-Simons investigations were not quantified, two detections during the Concept investigations were recorded and quantified at very low quantities (<0.001% and 0.001%), which are below the hazardous waste threshold of 0.1%w/w. No ACM fragments were encountered in soil samples, although may be present. WM3 states that if fragments of ACM can be identified in the waste soils by the naked eye of a competent person, then the waste should be regarded as a mixed waste and segregation of the waste streams is required. If the ACM cannot be segregated, the waste as a whole would be classified as hazardous if the concentration of asbestos in the ACM pieces alone is greater than 0.1% w/w. This has the potential to increase the volume of soil classified as hazardous for disposal.

If representative of the material that will be excavated onsite, the limited WAC testing suggests that most material classified as hazardous waste would likely be accepted at a hazardous waste landfill. The sample from BH25-01 at 0.3m recorded a loss on ignition (LOI) (13%) above the threshold for a hazardous waste landfill (10%). No WAC leachability testing was undertaken on sediment samples or on samples collected during the 2024 investigation.

7.3 Non-hazardous waste

WAC leachability testing was undertaken on 22 of the samples classified as non-hazardous waste in 2025, comprising 19 Made Ground, one Lynch Hill Gravel Member and two London Clay samples. If representative of the material that will be excavated onsite and require disposal, the WAC testing suggests that approximately 74% of non-hazardous Made Ground would meet the inert waste landfill WAC limits. However, other aspects (e.g., presence of anthropogenic material or asbestos) may preclude an inert classification of Made Ground.

The remaining non-hazardous material is unlikely to meet the inert waste landfill WAC limits due to concentrations of mineral oil above 500mg/kg and leachable concentrations of antimony and fluoride above 0.06mg/kg and 10mg/kg, respectively. The three natural soil samples recorded total and leachable concentrations below inert waste landfill limits. The contractor will be responsible for undertaking sufficient testing of material to confirm the waste classification prior to off-site disposal.

8. Summary of findings and conclusions

The Arup ground investigations were undertaken in 2024 and 2025, without any significant constraints. In conjunction with the previous investigations, there is a comprehensive dataset that allows for a robust conceptual site model and assessment. Based on the contamination assessment presented in this report:

- There is an overall low contamination potential associated with the site soils, with the majority of concentrations below commercial end-use criteria. There were two locations which had lead concentrations above the commercial end-use criteria, but no specific source removal is required as there is no plausible contaminant pathway.
- Groundwater has had relatively low concentrations for most contaminants, indicative of natural background conditions except for nickel and more widespread PFAS and ammoniacal nitrogen. The results of the ground investigations indicate that the ammoniacal nitrogen and PFAS is likely to be from an offsite source, possibly from the landfill to the west.
- High levels of TPH have been recorded within the site drainage. Free product was identified within part of the existing drainage. This product was identified as diesel-based hydrocarbons. As part of the development, the existing drainage should be decommissioned to remove residual sources. PFAS, phenol and other organic contaminants such as BTEXs were also recorded in the drainage samples.
- Further assessment and remedial measures related to PFAS in the shallow groundwater and drainage infrastructure will be required as part of the DQRA and remedial strategy.
- The ground gas regime was assessed as low risk (CS1), where due to low gas flows and the inherent protection offered by the development, no specific additional gas protection (e.g., gas membrane) is warranted.

The occurrences of asbestos were isolated and low/trace levels, with only two locations having detections of asbestos fibres. This is an inherent risk to most brownfield sites. It is possible that further occurrences of asbestos fragments will be encountered at the site during future groundworks and therefore a watching brief should be maintained; further details will be presented in the remediation strategy.

No significant pre-works remedial intervention (e.g., removal of widespread contamination) is expected to be required for the proposed development, based on the following lines of evidence.

- Low level of contaminants within soils across most of the site with concentrations mostly below the commercial end-use criteria.
- Low end-use commercial sensitivity across most of the site which offers an inherent level of protection in building and hardcover areas where there will be no plausible contaminant pathway.
- Underlying shallow aquifer, although it is a principal aquifer, is not a significant risk, based on the lack of potable groundwater abstractions and the lack of sensitive receptors close to the site. In addition, the groundwater concentrations appear to be largely due to upgradient conditions, including the landfill immediately to the west of the site although further data review and assessment is required to confirm this.
- Potential low risks can be designed out, for example, by incorporating standard brownfield development measures during construction and as part of the development.

Potential risks (and pre-construction remedial measures) related to hydrocarbons and PFAS are confirmed as part of the DQRA.

It is anticipated that most of the excavated soil will be chemically suitable for re-use on site as part of the earthworks design. Excavated material is expected to be suitable for re-use under the CL:AIRE DoWCoP [30] if appropriately documented in a materials management plan and the works verified. The earthworks design including cut and fill requirements is yet to be finalised although there is expected to be a surplus of material which will require removal from offsite. It is recommended that early consultation is undertaken with licenced contractors to identify the most cost-effective and sustainable option. Early consultation should also be undertaken with the Environment Agency, as they can have onerous requirements regarding the re-use of material they consider has been deposited as a waste, although there are strong lines of evidence that

If localised pockets of soil with asbestos fragments are encountered, these should be segregated and disposed of to a licenced landfill, as hazardous waste. Based on the available chemical results, if Made Ground and topsoil were disposed to landfill, providing it was free from visible asbestos fragments, the material is likely to be classified as non-hazardous waste. However, there is the potential for localised pockets of hazardous waste to be generated, especially if soil contaminated with hydrocarbons is encountered.

Dewatering should be avoided or kept to a minimum as it may generate contaminated water (including PFAS) that requires pre-treatment and could result in localised contaminant migration.

The main elements of the remediation strategy and verification plan will be completed based on the DQRA. The findings of the DQRA and this report will be used to determine the scope of the remediation strategy and verification plan. Principally the key elements are likely to consist of:

- Environmental controls such as dust suppression and health and safety measures.
- Robust material management, including segregation at the point of excavation.
- Watching brief strategy for encountering previously unidentified contamination including potential asbestos fragments.
- Verification of site won and imported materials.
- SuDS infiltration will not be permitted based on previous communication with the Environment Agency as part of the hybrid planning application. In addition, general rainwater infiltration (and diffuse drainage) should be minimised where possible and the existing drainage system (on site) should be removed and replaced as it is likely may be a source of contamination.
- Placement of a cover of clean topsoil (minimum 300mm) in proposed soft landscape areas. It is likely that any topsoil will have to be imported; all imported material must be appropriately certified, clean, chemically suitable (including free of asbestos) and meet any specific landscape and re-use/import criteria and requirements.
- Localised removal of gross (e.g., with free product) hydrocarbon contamination.

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[23]

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Appendix A

Review of ground investigations

A.1 Review of recent ground investigations prior to

A.1.1 Delta-Simons Geo -Environmental Assessment, Land at Thorney Business Park, Iver, SL0 9HF, (Ref: 21 -0054.05), April 2022

Delta-Simons undertook a ground investigation between 26 July and 5 August 2021 to assess the potential contamination at the site as well as provide preliminary geotechnical information.

The ground investigation comprised, six cable percussive boreholes to a maximum depth of 30 m bgl and 21 dynamic sampler boreholes to a maximum depth of 5m bgl. Groundwater and ground gas monitoring was undertaken on 9th and 17th August 2021, and an additional four groundwater and ground gas monitoring rounds were undertaken between 17th and 22nd March 2022. 18 groundwater samples were collected on 10th August 2021.

Made Ground was recorded at variable depths up to a maximum thickness of 2.70m. The Made Ground generally comprised gravelly clay and sand with gravels of concrete, brick, flint, glass, wood, pumice and clinker and the report highlighted that there was no evidence of landfill type waste material.

The Lynch Hill Gravel Member was recorded underlying the Made Ground up to a maximum thickness of 2.80m, and the London Clay Formation was recorded underlying the Lynch Hill Gravel Member up to a maximum thickness of 26.50m. The Lambeth Group was recorded underlying the London Clay at three locations and both the base of the strata and the thickness was not proven during this investigation.

Groundwater was encountered within the Made Ground and the Lynch Hill Gravel Member during drilling and monitoring and ranged between 0.40m and 1.98m bgl, equating to 29.11m to 31.01 metres above ordnance datum (mOAD). The groundwater in the Made Ground and Lynch Hill Gravel Member was considered to be in continuity, in the absence of any significant difference between the groundwater levels between wells.

Key findings of the contamination assessment reported by Delta-Simons are as follows:

- Hydrocarbon odours were noted within the Made Ground in three of the soil samples (DS105 between 0.55m and 0.65m bgl, DS116 between 0.90m and 1.30m bgl and DS120 between 1.40m and 1.50m bgl). Hydrocarbon staining was also noted within the Made Ground soil sample at DS120. A slight hydrocarbon sheen was noted on the surface of the groundwater sample during the first monitoring round at CP105. These locations are shown on Figure 5 of this report.
- Asbestos, including chrysotile bitumen and loose fibres and amosite loose fibres, was detected within four out of the 26 (15%) Made Ground samples tested. The report concluded that the asbestos found within the Made Ground samples could be managed through the construction phase mitigation measures.
- No soil samples tested recorded concentrations above the GAC for a commercial land use utilised by Delta Simons.
- Marginally elevated concentrations of arsenic and nickel were recorded in the groundwater above the GAC (10µg/l for arsenic and 20µg/l for Nickel); exceedances of the GAC were recorded in seven samples for arsenic and eight samples for nickel. The maximum arsenic concentration of 19µg/l was recorded in DS101, and the maximum nickel concentration of 90µg/l was recorded in DS116. Delta-Simons concluded that this was not considered to represent a risk to the wider environment.
- Localised TPH was identified above the GAC in the southwest and centre of the site within three monitoring locations (DS105, DS120 and DS121). The maximum TPH concentration of 485µg/l was recorded in DS121. Concentrations of the PAH compounds, namely naphthalene, anthracene and fluoranthene, were recorded above the screening criteria within three locations in the southwest of the site (DS101, DS105 and DS21). Figure 10-7 shows the locations where visual and / or olfactory evidence of contamination was identified and where the hydrocarbon concentrations were recorded above the GAC. Delta-Simons observed that the screening criteria used for PAH was the water framework directive

criteria for surface water features due to the absence of drinking water standards; noting the absence of any sensitive receptors Delta-Simons concluded that PAH concentrations above these GAC did not indicate a significant risk. For TPH the report mentioned that although the detected concentrations were not considered to represent a risk to wider controlled waters the report recommended that further delineation should be undertaken prior to construction works being undertaken in order to assess any potential sources and then determine any implications for the development.

- Elevated carbon dioxide and methane concentrations were recorded in several of the monitoring installations. Concentrations of methane above 1% were recorded in four of the 18 locations and concentrations of carbon dioxide were above 1% in eight of the locations. Gas flow rates were generally below the limit of detection, with detectable flow rates in only three locations. A maximum flow of 3.1

screening values (GSVs) indicative of a Characteristic Situation (CS) 2 in three of the monitoring installations (DS105, DS110 and DS117) and CS1 in the remaining 15 installations.

A.1.2 Hughes Craven, Mineral Assessment, Land at Thorney Business Park Iver, Buckinghamshire (Ref: HC/0741/20), April 2022.

Hughes Craven produced a mineral assessment for the wider Thorney Business Park in 2022 in relation to the existing planning permission as the area is within a Mineral Safeguarding Area (MSA). The assessment was based on the Delta-Simons investigation in 2021 [10] and concluded that there were only residual gravel deposits left that were not of economic value and that redevelopment is considered to be in line with all relevant mineral safeguarding policies.

A.1.3 Stantec, Thorney Lane, Iver: Infiltration Testing, Factual Report (Ref:330202081R1), April 2022

Stantec undertook an infiltration testing ground investigation across the wider Thorney Lane Business Park; works on the site between 16 and 22 March 2022.

In total 11 trial pits were excavated across the estate to a maximum depth of 3.5m bgl, for the purpose of conducting infiltration testing. Three of the trial pits were located onsite (SA07, SA09 and SA10) at the locations presented on Figure 5.

Made Ground was encountered up to a maximum thickness of 1.5m, and generally comprised gravelly sand or gravelly sandy clay, with gravels comprising concrete, brick, tarmac, plastic, ceramic, glass and wood. The Lynch Hill Gravel Member was only encountered in one location onsite (SA07) underlying the Made Ground. The London Clay Formation was encountered underlying the Made Ground at SA09 and SA10.

Thin layers of black stained sand / clay with a slight hydrocarbon odour were noted at 1.4m bgl within the Made Ground at SA07.

Groundwater was only encountered within SA07, at a depth of 1.5m bgl within the Lynch Hill Gravel Member. SA09 and SA10 were dry but were terminated at 1.1m bgl and 0.9mbgl respectively.

For SA09 and SA10 only one soakaway test was completed, and the infiltration test was not able to achieve the minimum 75% effective volume and therefore the report stated that there was insufficient infiltration. For SA07 three soakaway tests were completed and an infiltration rate of 1.51×10^{-5} m/s was derived. The report mentioned that the results indicate a coefficient of permeability that is common for very fine sands, silts and clay-silt laminate.

The report concluded that the wider Thorney Lane Business Park was not suitable for infiltration drainage, due to the majority of the tests failing and the ground conditions not being considered suitable for testing to be undertaken. The report stated that the Lynch Hill Gravel Member would be the ideal stratum for infiltration type drainage, however due to the historical extraction, the stratum is either reduced or removed entirely at the site, also the groundwater is elevated across the site saturating the stratum.

A.1.4 Delta-Simons, Interim Factual Geotechnical and Interpretive Environmental Report, Thorney Business Park – Access Road (Ref: 88279.546252), January 2022

Delta-Simons produced a factual geotechnical report and interpretive environmental assessment for intrusive ground investigation undertaken across the wider Thorney Business Park. These locations are offsite and have been used to inform the conditions in the surrounding area. The ground investigations works were conducted by Delta-Simons between 7 and 16 November 2022.

The ground investigation comprised the drilling of three cable percussive boreholes to a maximum depth of 8.50m bgl, one cable percussive borehole to a maximum depth of 25m bgl and one foundation pit to a maximum depth of 0.95m bgl.

Made Ground thickness varied within the exploratory hole locations within the area of the proposed access road and varied between 0.10m (CP303) and 2.5m (CP302). The Lynch Hill Gravel Member was encountered underlying the Made Ground up to a maximum thickness of 3.1m in CP303. The London Clay Formation was encountered underlying the Lynch Hill Gravel Member; however, the base and thickness was not proven during this investigation.

Groundwater strikes were recorded within the Lynch Hill Gravel Member and ranged between 1.80m bgl and 3.20m bgl (28.83mOD and 27.94mOD).

Key findings reported by Delta-Simons are summarised below:

- No visual or olfactory evidence of contamination was observed during the ground investigation.
- Asbestos including chrysotile loose fibres was detected within one sample (CP302 at 0.5m bgl) out of a total of 11 (total tested overall).
- All the soil samples tested recorded concentrations below the relevant commercial / industrial generic assessment criteria (GAC).

A.1.5 Delta-Simons, Additional Geo -Environmental Assessment, Thorney Business Park, Iver (Ref:94284.568550), January 2024

The appendices which include exploratory hole plans, exploratory hole logs and chemical laboratory results have not been made available for Arup to review, therefore the information summarised below has just been taken from the main body of the report. .

Delta-Simons undertook an additional geo-environmental assessment at the site in two phases in April and May 2023 (Phase 1) and in October 2023 (Phase 2). The investigation is stated to have been in order to assess the potential contamination linkages and as well as to provide geotechnical information. The contamination assessment in this additional assessment report does not appear to incorporate the previous results from investigations completed in 2022 so the assessment completed, and conclusions drawn may not be complete or apply to the entire site.

Overall, the two phases of ground investigation comprised the excavation of 13 trial pits to a maximum depth of 3.20m bgl, the drilling of four cable percussive boreholes to a maximum depth of 40m bgl, and the drilling of ten dynamic sampler boreholes to a maximum depth of 5m bgl. Two rounds of groundwater level monitoring and sampling as well as ground gas monitoring were undertaken between 11 and 18 May 2023 for Phase 1 and between 2 and 10 November 2023 for Phase 2. An additional groundwater level monitoring round was undertaken on 23 November 2023.

Made ground was recorded at variable depths up to a maximum thickness of between 0.5m and 2.80m. The Made Ground was recorded to be generally consistent with the previous 2022 investigation, comprising clayey sandy gravel / gravelly sandy clay, with gravels of brick, concrete, metal, flint and wood. The Lynch Hill Gravel Member was recorded underlying the Made Ground and the report noted that the thickness was variable across the site likely due to the historic quarrying. Underlying the Lynch Hill Gravel Member was the London Clay Formation that had a maximum thickness of 22.8m. The Lambeth Group was encountered underlying the London Clay Formation and proven to a maximum depth of 40m bgl. The Lambeth Group was recorded to comprise mottled sandy clay.

Groundwater was encountered onsite within the Made Ground, Lynch Hill Gravel Member and within the Lambeth Group during the investigation. The groundwater within the Made Ground ranged between 30m and 29mOD. Groundwater within the Lynch Hill Gravel Member ranged between 30m and 27mOD. The groundwater within the Lambeth Group was sub-artesian and rose to between 29.67m and 28.58mOD. The report stated that due to the past quarrying activities onsite, the Lynch Hill Gravel Member thickness has reduced and therefore this has led to the groundwater being in continuity with the Made Ground.

A summary of the key contamination related findings from Delta-Simons is as follows:

- A hydrocarbon odour was noted within six exploratory hole locations. Staining was also noted within the Made Ground within three exploratory hole locations either within the granular Made Ground or directly underlying the concrete hardstanding.
- Asbestos, including chrysotile loose fibres and chrysotile cement, was detected within two out of 16 Made Ground soil samples tested.
- The report stated that all the soil samples tested recorded concentrations below the relevant commercial / industrial GAC and therefore is not considered to represent a risk to human health.
- The report stated that no widespread or significant contamination was identified in the groundwater. However, there were localised elevated concentrations of individual PAH, TPH and metals recorded above the conservative WFD screening values for surface water in five locations installed within the Lynch Hill Gravel Member. The report also mentioned that the samples that recorded the highest concentrations were located in close proximity to the above ground fuel storage tank located in the southwest of the site (Cappagh yard)). The report stated that the Lynch Hill Gravel Member groundwater body is unlikely to be used as a groundwater resource and the reduced thickness of the Gravel Member has caused the groundwater to be in continuity with the infilled Made Ground, and therefore concluded that the groundwater is unlikely to present a risk to human health and future site users.
- Gas monitoring was undertaken in around half of the wells from the 2022 investigation and newly installed locations. The new monitoring results recorded methane concentrations above 1% in three of the 15 locations, with a maximum concentration of 6.7%. Carbon dioxide concentrations were above 1% in seven of the 15 locations. Detectable gas flows were recorded in 11 of the locations. GSVs derived using the new data indicated a CS2 in one location; the rest were indicative of CS1 and an overall classification of CS1 was considered appropriate.

Appendix B

Concept Factual Reports

B.1 Concept 2024 factual report



Ground Investigation Report - Factual

Thorney Lane Phase 1 Due Diligence

Prepared for: Arup

Issue 02



Concept: 24/3980-GIR-F01
16/12/2024

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APPENDIX A: UXO RISK ASSESMENT REPORT

1. INTRODUCTION

Arup contracted Concept Engineering Consultants (Concept) to conduct a geotechnical and geoenvironmental investigation at Thorney Lane, located in the Thorney Business Park area, Iver SLO 9EE. The works were carried out in accordance with the Arup's Ground Investigation Specification document "*LHR042 Thorney Lane Data Centre Ground Investigation*", job number 276894-00, dated 12/07/2024, and Concept's Method Statement, reference no.: 24/3980-RAMS-01, Rv02, dated 19/07/2024.

The geotechnical and geoenvironmental investigation is the first phase of intrusive investigations required for the proposed development of a data centre with associated buildings and infrastructure at Thorney Lane.

The report has been prepared in accordance to the current Eurocode Standards, including the relevant National Annexes:

- BS EN 1997-1:2004+A1:2013 and National Annex NA to BS EN 1997-1:2004
- BS EN 1997-2:2007 and National Annex NA to BS EN 1997-2:2007

2. LIMITATIONS

This report contains factual information only and forms part of the Ground Investigation Report for the project as determined in BS EN 1997-2: 2007. Desktop studies, evaluation of geotechnical information and any interpretation of the data obtained other than the extrapolation of the test results where appropriate is beyond the scope of this report.

The data presented in this report reflects the ground conditions encountered at the locations of the investigation points at the time of the investigation. Ground conditions may vary away from the investigation locations and it is possible that ground conditions other than those indicated in this report may exist at the site. Test results of parameters sensitive to seasonal variations such as groundwater may also differ if carried out at a different time.

This report has been prepared for Arup and is based on their specific requirements and instructions and reasonable skill and care have been exercised in its preparation in accordance with the technical requirements of the brief. Any other party using the information in this report for any other purpose does so at their own risk and any duty of care to that party is excluded unless as determined in the contract documents of this project.

3. PROJECT PARTICULARS

| | |
|----------------------------------|---|
| Site Location: | Thorney Business Park Thorney Lane Iver, SLO 9HE |
| Client: | Arup |
| Investigation Supervisor: | Arup |
| Fieldwork: | 22/07/2024 – 15/08/2024 |
| Laboratory Work: | 07/08/2024 – 30/10/2024 |
| Postfield Works: | 15/08/2024 – 10/09/2024 |

4. SITE DESCRIPTION

The site was bounded by the Slough Arm of the Grand Union Canal to the north, Great Western mainline to the south, additional mixed use industrial units to the east and fields to the west. The topography of the site was largely flat, sloping gently towards south of site.

The approximate centre of the site was located at National Reference: 502950E, 180050N.



Figure 1.1 Site Location Plan Not to Scale / Map data ©2024 Google

5. PURPOSE AND SCOPE OF WORKS

This ground investigation was the first phase of intrusive investigation of the site for geotechnical and geoenvironmental assessment. The main purpose of the ground investigation was to inform ground conditions at the site and potential Geotech and geoenvironmental risks possibly present.

The site was a mixed use commercial/industrial park comprising multiple business units, warehouses, hardstanding carparking, yard areas and storage spaces. It was formerly used for gravel pits, subsequently developed with concrete works (later demolished), warehouses and light industrial work.

The proposed works involved a Data Centre, comprising data storage warehouses, security facilities, access roads, parking, substation and associated infrastructure.

The scope of the works comprised the following:

- 10 No. Cable Percussion Boreholes to a maximum depth of 33.00m;
- 8 No. Dynamic Sampling Boreholes to a maximum depth of 5.00m;
- 11 No. Locations for Surface Dust Sampling ;
- 11 No. Locations for Thermal Resistivity Testing ;
- 1 No. Location for Electrical Resistivity Testing ;
- Logging and Photographing;
- Instrumentation Monitoring and Sampling;
- Geotechnical & Chemical Testing.

Table 1 – Exploratory Hole List

| Hole ID | Hole Type | Depth (m) | Easting | Northing | Level (mOD) |
|----------|-----------|-----------|-----------|-----------|-------------|
| BH24-01 | CP | 25.50 | 502894.64 | 180110.11 | 31.28 |
| BH24-02 | CP | 15.00 | 502966.95 | 180122.64 | 31.57 |
| BH24-03 | CP | 30.00 | 503025.84 | 180062.88 | 31.69 |
| BH24-04 | IP | 1.15 | 502960.47 | 180028.68 | 31.51 |
| BH24-04A | CP | 10.00 | 502977.88 | 180024.12 | 31.51 |
| BH24-05 | CP | 26.00 | 502886.95 | 179985.83 | 30.98 |
| BH24-06 | CP | 20.00 | 502845.89 | 179959.35 | 30.85 |
| BH24-07 | CP | 33.00 | 502968.25 | 179961.59 | 31.00 |
| BH24-08 | CP | 30.45 | 503000.95 | 179948.63 | 31.09 |
| BH24-09 | CP | 20.00 | 502847.96 | 179915.06 | 30.71 |
| BH24-10 | CP | 10.00 | 503021.78 | 179901.13 | 30.86 |
| DS24-01 | DS | 5.00 | 502856.04 | 180105.85 | 31.60 |
| DS24-02 | DS | 1.25 | 503042.01 | 180155.62 | 32.63 |
| DS24-03 | DS | 5.00 | 502824.96 | 180020.02 | 31.03 |

| Hole ID | Hole Type | Depth (m) | Easting | Northing | Level (mOD) |
|---------|-----------|-----------|-----------|-----------|-------------|
| DS24-04 | DS | 5.00 | 502917.95 | 180032.29 | 31.06 |
| DS24-05 | DS | 5.00 | 503065.84 | 180008.78 | 31.55 |
| DS24-06 | DS | 1.55 | 502808.35 | 179912.43 | 31.05 |
| DS24-07 | DS | 5.00 | 503012.95 | 180115.16 | 31.66 |
| DS24-08 | DS | 5.00 | 503018.14 | 180149.85 | 31.86 |

Key

- CP – Cable Percussion Borehole
- DS – Dynamic Sampling Borehole
- IP – Inspection Pit / Aborted Borehole Location

| Hole ID | Hole Type | Easting | Northing | Level (mOD) |
|-------------------|-----------|-----------|-----------|-------------|
| SS24-01 | SS | 502810.00 | 180060.00 | 31.31 |
| SS24-02 | SS | 502810.00 | 180000.00 | 30.81 |
| SS24-03 | SS | 502840.00 | 179910.00 | 30.78 |
| SS24-04 | SS | 502910.00 | 179910.00 | 30.58 |
| SS24-05 | SS | 503030.00 | 179900.00 | 30.83 |
| SS24-06 | SS | 503070.00 | 179970.00 | 31.77 |
| SS24-07 | SS | 503010.00 | 180110.00 | 31.63 |
| SS24-08 | SS | 503050.00 | 180170.00 | 32.64 |
| SS24-09 | SS | 502980.00 | 180070.00 | 31.60 |
| SS24-10 | SS | 502980.00 | 180140.00 | 31.59 |
| SS24-11 | SS | 502900.00 | 180050.00 | 31.29 |
| TR24-01 | TR | 502903.58 | 180142.94 | 31.56 |
| TR24-02 | TR | 502827.69 | 180091.98 | 31.36 |
| TR24-02A | TR | 502827.69 | 180091.98 | 31.36 |
| TR24-03 | TR | 502992.27 | 180048.58 | 33.66 |
| TR24-04 | TR | 503028.83 | 179976.57 | 31.65 |
| TR24-05 | TR | 503035.52 | 179954.10 | 31.58 |
| TR24-06 / BH24-03 | TR | 503025.84 | 180062.88 | 31.69 |
| TR24-07 / BH24-07 | TR | 502968.25 | 179961.59 | 31.00 |
| TR24-08 / BH24-08 | TR | 503000.95 | 179948.63 | 31.09 |
| TR24-09 / BH24-05 | TR | 502886.95 | 179985.83 | 30.98 |
| TR24-10 / BH24-10 | TR | 503021.78 | 179901.13 | 30.86 |
| ER | ER | 503033.99 | 179961.79 | 31.75 |

Key

- SS – Surface Dust Sample Location
- TR – Thermal Resistivity Testing Location
- ER – Electrical Resistivity Testing Location

6. INVESTIGATION METHODS

6.1 Ground Penetrating Radar Survey (GPR)

The GPR clearance survey was undertaken specialist subcontractor MCD Ground Solutions. The survey was designed to obtain information from the subsurface on the position of any additional underground services not locatable using conventional electromagnetic locators and to identify additional ground anomalies, voids and obstructions that may be present.

All the services were marked out in the ground.

6.2 Utilities Survey and Inspection Pits

The detection of underground services followed the guidelines of PAS 128:2014. Prior to boring commencing all exploratory hole locations were checked for utilities / buried services using a CAT and genny, existing utility information and hand dug inspection pits to an appropriate depth as identified by the services plans typically to a depth of 1.20m.

Surface concrete and asphalt where encountered, were diamond cored.

6.3 Explosive UXO Risk Assessment

A detailed UXO risk assessment was carried out by 1st Line Defence with Document Reference: DA20371-00 Thorney Lane, Iver dated 23/07/2024. 1st Line Defence has assessed that there was an overall Medium Risk from German and anti-aircraft unexploded ordnance at the site of proposed works. And there was an assessed Low Risk from Allied unexploded ordnance.

The report is included in [Appendix A](#).

UXO survey clearance was undertaken by subcontractor Primely at 1.50m intervals in each exploratory hole location during drilling by a specialist contractor to a maximum depth of 11.00m

6.4 Cable Percussion Drilling

10 No. Cable Percussion Boreholes (BH24-01 to BH24-10) were drilled to a maximum depth of 33.00m using a standard cable percussion rig (Dando 2000) with 200mm and 150mm diameter casing as appropriate.

BH24-04 was aborted at 1.15m depth due to obstruction and moved to position BH24-04A.

6.4.1 Sampling and Testing during Cable Percussion Drilling

Bulk and large bulk samples were taken at regular intervals in the Made Ground and thereafter at each change in strata. Undisturbed 102mm (U100) nominal diameter samples were taken using a down-hole sliding hammer in cohesive material at specified intervals or as instructed by the Investigation Supervisor.

Standard Penetration Tests (SPT) were carried out at specified intervals or as otherwise instructed by the Investigation Supervisor. The resulting SPT "N" blow count values are presented in the relevant borehole records. Where an SPT using a split spoon sampler was not possible, due to the

granular nature of the material, a solid cone was used. The SPT hammer calibration sheets are included in [Section 11](#) of this report.

Small, disturbed samples were retrieved from the cutting shoe of the U100 sampler, the SPT split spoon sampler and at intervals specified by the Investigation Supervisor.

Environmental samples (tubs, jars and vials) were taken for chemical analysis in the Made Ground or at each change of strata and where visual or olfactory evidence of contamination was noted or as instructed by the Investigation Supervisor. Following the guidance in the ICE Specification for Ground Investigation 3rd Edition - Headspace readings for volatile organic compounds (VOC) content were taken in all of the samples using a Phocheck Tiger photoionization detector (PID) with a 10.6 eV Krypton PID lamp. In accordance with the manufacturers guidelines, the PID was tested with a source of vapours at the start of each shift to ensure that it was not blocked and that the instrument calibration was within acceptable limits.

The borehole logs are presented in [Section 11](#) of this report.

6.5 Dynamic Sampling Boreholes

8 No. Dynamic Sampling Boreholes (DS24-01 to DS24-08) were carried out to a maximum depth of 5.00m. The boreholes were drilled using a tracked Geo drive-tube sampling rig (Global GEO Rig-Terrier) with 110mm diameter casing and a variety of liner sizes for sample retrieval.

DS24-02 was aborted at 1.25m depth due to refusal.

Semi-rigid plastic core liners were recovered from each borehole location. The excavated soil was logged in accordance with BS5930:2015+A1:2020 and photographed.

Environmental samples (tubs, jars and vials) were taken for chemical analysis as described in [Section 6.4.1](#) Representative bulk and disturbed samples were taken for soil analysis.

SPTs were carried out at the base of the inspection pit and thereafter at 1.00m intervals.

The borehole logs and SPT hammer calibration sheet are presented in [Section 12](#) and the core photographs are available in [Section 17](#) of this report.

6.6 Surface Dust Sampling

11 No. Surface dust samples were retrieved at locations as instructed by the Investigation Supervisor and were submitted to specialist subcontractor 4-RAIL Services Limited to undertake testing of materials to confirm presence or absence of asbestos. None of the samples were found to contain asbestos.

The sampling locations as shown on the Exploratory Hole Location Plan in [Section 10](#) and the testing results are included in [Section 16](#) along with the chemical laboratory testing.

6.7 Thermal Resistivity and Electrical Resistivity Testing

11 No. Thermal resistivity tests (TR24-01 to TR24-10) and 1 No. Electrical resistivity test (ER) were carried out under the Investigation Supervisor's instruction in the inspection pits of some boreholes (BH24-03, BH24-05, BH24-7, BH24-08 & BH24-10) and in locations as shown on the Exploratory Hole Location Plan in [Section 10](#).

Thermal resistivity testing was carried out using a KD2 Pro Thermal Properties Meter in accordance with ASTM D5334 – 14 – 'Standard test method for determination of thermal

conductivity of soil and soft rock.' The test was conducted by inserting probes at a depth of 0.5m in trial pits.

In addition, electrical resistivity was conducted using a four terminal Megger resistivity meter and associated electrode probes in general accordance with BS 7430-2011 and IEEE Standard 81 Part 1 – 2012. The testing regime required the four electrode probes to be set at varying distances apart and inserted to between 100 and 200mm depth.

The testing results are presented in [Section 13](#) of this report.

6.8 Standpipe Installations and Backfill

Monitoring wells were installed in the boreholes as follows:

Table 3 – Monitoring Installation Details

| Hole ID | Base of Borehole (m bgl) | Diameter of Installation (mm) | Type of Installation | Base of Installation (m bgl) | Response Zone | |
|----------|--------------------------|-------------------------------|----------------------|------------------------------|---------------|----------------|
| | | | | | Top (m bgl) | Bottom (m bgl) |
| BH24-01 | 25.50 | 50 | GMP | 1.00 | 0.50 | 1.00 |
| BH24-02 | 15.00 | 50 | GWMP | 14.00 | 12.00 | 14.00 |
| BH24-03 | 30.00 | 50 | GMP | 1.35 | 0.60 | 1.50 |
| BH24-04A | 10.00 | 50 | GMP | 3.00 | 1.00 | 3.00 |
| BH24-05 | 26.00 | 50 | GMP | 3.00 | 1.00 | 3.00 |
| BH24-06 | 20.00 | 50 | GMP | 3.00 | 1.00 | 3.00 |
| BH24-07 | 33.00 | 50 | GWMP | 32.00 | 22.00 | 33.00 |
| BH24-08 | 30.45 | 19 | SPIE | 8.80 | 7.00 | 9.00 |
| BH24-09 | 20.00 | 50 | GMP | 3.00 | 1.00 | 3.00 |
| | | 19 | SPIE | 18.00 | 17.00 | 19.00 |
| BH24-10 | 10.00 | 50 | GMP | 3.80 | 1.00 | 4.00 |
| DS24-01 | 5.00 | 50 | GMP | 3.00 | 1.00 | 3.00 |
| DS24-02 | 1.25 | 50 | GMP | 1.25 | 0.50 | 1.25 |
| DS24-03 | 5.00 | 50 | GMP | 3.00 | 1.00 | 3.00 |
| DS24-04 | 5.00 | 50 | GMP | 3.00 | 1.00 | 3.00 |
| DS24-05 | 5.00 | 50 | GMP | 3.00 | 0.70 | 3.00 |
| DS24-07 | 5.00 | 50 | GMP | 1.60 | 0.75 | 1.60 |
| DS24-08 | 5.00 | 50 | GMP | 2.30 | 1.00 | 2.30 |

KEY

| | |
|------|--------------------------------|
| GMP | – Gas Monitoring Point |
| GWMP | – Groundwater Monitoring Point |
| SPIE | – Standpipe Piezometer |

The boreholes were backfilled at the base with cement / bentonite grout and bentonite pellets with the gas/groundwater response zones backfilled with a 10mm pea shingle filter with a geosock surround. Where standpipe piezometers were installed the boreholes were backfilled with a pea shingle around the piezometer tip with a bentonite seal above. All installations were finished with bentonite pellets to the surface with concrete and a lockable stopcock cover flush with the ground.

The boreholes with no installations were backfilled with bentonite pellets.

On completion of works the ground surface at all fieldwork locations was permanently reinstated to its original condition as appropriate.

6.9 Instrumentation Monitoring and Sampling

Gas and groundwater monitoring was carried out by Concept during fieldworks and subsequent to completion of the boreholes on 3 No. scheduled visits completed in 6 days due to the large number of locations, between the 15/08/2024 and 10/09/2024.

The condition of historic boreholes included in the Schedule 2 of the specifications was completed over two visits on site (25th July and 9th August). After the survey the Investigator Supervisor confirmed that monitoring was required in 22 No of the historic boreholes: DS101, DS102, DS105, DS107, DS108, DS111, DS112, DS114, DS115, DS116, DS117, DS119, DS120, DS121, DS123, DS125, CP101, CP104, CP105, CP302 & CP303.

Boreholes were developed prior to sampling using a Wasp pump which provides a relatively high pumping rate to remove water and entrained sediment. Development continued until either the well ran dry, the water ran clear or at least 3 well volumes were removed.

- Development of the boreholes was carried out as follows:

15/08/2024: DS107(3), BH24-07, BH24-09 & BH24-10

19/08/2024: BH24-04A, BH24-05, BH24-06, DS24-01, DS24-03, DS24-04, DS24-05 & DS24-08

- Water samples were taken from all borehole installations during 4 No. rounds as follows:

Round 1- 27/08/2024: BH24-05, BH24-06, BH24-10, DS24-01, DS24-03 & DS107(3)

Round 2- 04/09/2024: DS24-03, DS24-05, DS105 & DS122

Round 3- 09/09/2024: BH24-04A, BH24-07, BH24-09 & DS24-04

Round 4- 10/09/2024: BH24-02, CP105 & DS112

The samples were retrieved using a peristaltic pump at a low pumping rate. The pump tubing was lowered to target the standpipe response zone and a dipmeter was used during purging to ensure that the pumping rate did not reduce the water level. Generally, the water level remained steady at pumping rates of 1 litre every 3 minutes. Water parameters (pH, conductivity, dissolved oxygen, temperature and Redox levels) were recorded during purging using a flow cell and a YSI Professional Probe. Purging was considered complete when parameters stabilised to within 10%. Generally the water was noted as clear and the purging complete after 3 litres were removed. On completion of purging, the water samples were collected in containers (3x300ml and 3xvial). They were then transferred to Concept laboratory inside cool boxes protected by bubble wrap and kept in the fridge until collection from the chemical laboratory was arranged. Each borehole was purged and sampled using a new length of tubing. The water quality field records are presented in [Section 14](#).

- Gas sampling was carried out by Concept during 2 No. rounds as follows:

Round 1- 04/09/2024: BH24-03 & DS24-03

Round 2- 09/09/2024: BH24-10

Gas canister samples were collected using Tedlar bags.

An In-Situ Rugged interface probe was used to prove/disprove the presence LNAPL and DNAPL. However neither LNAPL nor DNAPL were detected throughout the water column in the boreholes therefore a Geosense dipmeter was used for the subsequent visits. The gas concentrations were recorded using Gas data GFM436 monitors. Where 0.00 is shown on the results indicates value lower than the detection limit of the machine. PID readings were taken during all monitoring rounds. The accuracy of the instruments is summarised in [Section 14](#) where the gas monitoring reports and groundwater results are presented along with the instruments calibration sheets.

6.10 Logging / Laboratory Testing

Logging of all soil samples was carried out in accordance with BS5930:2015+A1:2020.

Geotechnical testing was performed at subcontracted UKAS accredited laboratories in accordance with current British Standards unless otherwise stated in the report. Where subcontracted analysis has been carried out, the details of the laboratory (and accreditation where applicable) are shown in the individual test report or summary.

The results are presented in tabular format in [Section 15](#) of this report.

All chemical testing was specified and scheduled by Arup and carried out by Eurofins in accordance with the requirements of UKAS ISO17025 and MCERTS. The results are presented in tabular format in [Section 16](#) of this report.

6.11 Setting Out

The locations of all exploratory holes were agreed with the Investigation Supervisor and set out prior to commencement of the site works.

Following completion of the ground works the locations and elevations of the boreholes were established by Concept using GPS equipment relevant to UK National Grid and Newlyn datum. The GPS equipment used for the survey was a Leica GS07 model. The data sheet and certificate of conformity is appended in [Section 10](#) of this report along with the Exploratory Hole Location Plan presenting the co-ordinates and levels of all as-built locations.

7. RISK REGISTER

This entire report forms part of the Health and Safety File of the project. The table below highlights particular risks only and is not inclusive of every risk that is encountered on site. The various sections of this report describe the site and ground conditions encountered during the investigation works whilst laboratory testing determines the level of contamination encountered during the works.

Underground services where encountered were identified on the exploratory hole logs and where necessary, the holes were repositioned locally to avoid identified services. The presentation of services information is beyond the scope of this report.

Table 4 – Risk Register

| HAZARD | DESCRIPTION | MITIGATION |
|---|---|--|
| Contamination Pathways associated with Monitoring installations | Monitoring installations were constructed at several locations as detailed in Section 6.8 of this report. | Decommissioning of the installations which will involve either filling the pipe with cement-bentonite grout where possible or by drilling out the pipework and then backfilling using cement- bentonite grout. |
| UXO | UXO surveys were carried out at certain locations only as detailed in the report. | No UXO was encountered at any of the exploratory hole locations. No further mitigation required at these locations but may still be necessary at nearby locations. |
| Contamination | Potentially contaminated ground was encountered at several locations during the investigation as detailed in the logs. | Contamination testing results are detailed in Section 16 of this report. |

8. GEOLOGICAL GROUND PROFILE

The geological strata encountered during the investigation are summarised in the table below. The Top and Bottom of the strata noted in the table indicates the highest and lowest boundaries encountered in all exploratory holes.

Table 5 - Geological Ground Profile

| STRATUM | TOP (mOD) | BASE (mOD) | DESCRIPTION |
|---|------------------|------------------|---|
| <p>CONCRETE <i>(All Locations, except DS24-02)</i></p> | +32.63 to +30.71 | +32.53 to +30.46 | <p>Grey CONCRETE with flint gravel clasts and generally rare air voids;</p> <p>Asphalt was encountered at one location, DS24-02, at +32.63 to +32.53 mOD;</p> <p>BH24-05 encountered Concrete at the following elevations, between Made Ground:</p> <ul style="list-style-type: none"> +30.98 to +30.73 mOD +30.08 to +29.78 mOD +29.58 to +29.38 mOD |
| <p>MADE GROUND <i>(All Locations)</i></p> | +32.53 to +30.46 | +30.96 to +27.71 | <p>Top: +31.49 - +28.71</p> <p>Base: +31.01 - +27.71</p> <p>Soft to firm, dark grey and brownish grey slightly gravelly slightly sandy CLAY with occasional orangish brown fine sand pockets, white flecks, lignite fragments, dark grey staining. occasional wood fragments and strong hydrocarbon odour. Gravel comprises angular to subrounded fine to coarse flint, brick, concrete and clinker-like fragments.</p> |
| | | | <p>Top: +32.53 - +30.48</p> <p>Base: +31.38 - +29.80</p> <p>Brown gravelly fine to medium SAND. Gravel comprises angular to subrounded fine to coarse flint, brick, concrete and clinker-like fragments</p> |
| | | | <p>Top: +30.79</p> <p>Base: +30.39</p> <p>Brownish grey mottled brown clayey fine SAND and GRAVEL with 1No metal fragment (<220mm). Gravel comprises angular to subrounded fine to coarse flint, brick and concrete fragments. Sand is fine.</p> |
| | | | <p>Top: +31.03 - +29.79</p> <p>Base: +30.93 - +29.39</p> <p>Brown sandy GRAVEL with concrete cobble content and occasional glass fragments, locally with slight organic odour. Gravel comprises angular to subrounded fine to coarse flint, brick, concrete, mortar and clinker-like fragments.</p> |

| STRATUM | TOP (mOD) | BASE (mOD) | DESCRIPTION |
|---|---------------------|---------------------|--|
| ALLUVIUM (DS24-03, DS24-04) | +29.83 to +29.71 | +29.41 to +28.53 | Soft and firm, dark grey slightly gravelly slightly sandy silty CLAY with occasional pockets of dark grey carbonaceous material and slight organic odour. Gravel is subrounded to rounded fine to medium flint. |
| LYNCH HILL GRAVEL MEMBER (BH24-01, BH24-04A to BH24-08, BH24-10, DS24-03 to DS24-05, DS24-07, DS24-08) | +30.96 to +28.48 | +30.66 to +26.91 | Brown and orangish brown gravelly fine to coarse SAND. with strong hydrocarbon odour. Gravel is angular to subrounded fine to coarse flint. <i>Encountered in only one borehole (DS24-08) between +30.06m and +29.58mOD.</i> Brown mottled brownish grey and orangish brown sandy silty locally clayey angular to subrounded locally rounded to well rounded fine to coarse flint GRAVEL with black flecks. |
| WEATHERED LONDON CLAY (BH24-01 to BH24-03, BH24-04A to BH24-07, BH24-10, DS24-01, DS24-03 to DS24-05, DS24-07, DS24-08) | +30.67 to +26.91 | +30.37 to +26.00 | Firm locally firm to stiff, brown locally orangish brown and grey slightly sandy locally slightly gravelly silty CLAY with occasional pockets of brown fine sand. Gravel is angular to subrounded medium to coarse flint. Sand is fine locally fine to coarse. |
| LONDON CLAY (BH24-01 to BH24-03, BH24-04A to BH24-07, BH24-10, DS24-01, DS24-03 to DS24-05, DS24-07, DS24-08) | +30.37 to +26.00 | +9.28 to +5.09 | Firm to stiff, variably fissured grey mottled greyish brown slightly sandy silty CLAY with occasional pockets and partings of brown/grey fine sand, occasional bioturbation and black staining, variable fine to coarse gravel size claystone fragments. Stiff to very stiff, grey and dark grey silty CLAY with foraminifera, rare to frequent pockets of greenish grey/dark grey/grey/brown fine sand, rare pyritised lignite fragments and pyrite nodules, shell fragments (<2mm). |
| HARWICH FORMATION (BH24-01, BH24-02, BH24-05, BH24-07, BH24-08) | +9.28 to +5.09 | +6.08 to +4.09 | Very stiff, dark grey and grey locally slightly gravelly slightly sandy to very sandy silty CLAY with occasional pockets of greenish grey fine sand and frequent off-white and brown shell fragments (<25mm). Gravel is rounded to well rounded fine to coarse dark grey and black flint. |
| LAMBETH GROUP (BH24-01, BH24-02, BH24-05, BH24-07, BH24-08) | +6.08 to +4.09 | Extent not proven | Very stiff, dark brown mottled bluish grey and reddish grey silty CLAY. |

9. REFERENCES

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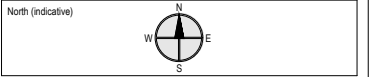
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10. EXPLORATORY HOLE LOCATION PLAN

HEAD OFFICE:
218
Northfields Avenue
London W13 9SJ
si@conceptconsultants.co.uk
+44(0) 20 8811 2880

LABORATORY:
47-49 Brunel Road
Old Oak Common
Industrial Estate
Acton London W3 7XR
lab@conceptconsultants.co.uk
+44(0) 20 8740 1553

MIDLANDS OFFICE:
Unit D Herlad Way
Binley Industrial Estate
Coventry CV3 2RQ
coventry@conceptconsultants.co.uk
+44(0) 24 7708 7670



- KEY**
- BH - Cable Percussion Borehole
 - DS - Dynamic Sampling Borehole
 - ER - Electrical Resistivity Test
 - SS - Surface Dust Sampling
 - TR - Thermal Resistivity Testing

- NOTES**
1. Coordinates and levels quoted refer to Ordnance Survey (OS) National Grid.
 2. Base drawing provided by ARUP.
 3. This drawing should not be scaled.
 4. All levels are in mOD (metres above Ordnance Datum).

ISSUES

| Revision | Details | By | Date |
|----------|---------------------------------|----|----------|
| 00 | Drawing completed and corrected | ST | 23/09/24 |
| | | | |
| | | | |
| | | | |
| | | | |

Client **Arup**

Project **Thorney Lane
Phase 1 Due Diligence**

Address **Thorney Business Park,
Thorney Lane South, Iwer, SL0 9HE**

Plan title **Exploratory Hole
Location Plan**

| | | | | | |
|------------|-----------|------------|-------|-------------------|----|
| Project no | 24/3980 | Drawing no | 01 | Revision | 00 |
| Scale | NTS | Sheet size | A3 | (297.00x420.00mm) | |
| Date | Sept 2024 | Status | Issue | | |

| | | | |
|-------------|----------|------------|-----------|
| Surveyed by | Drawn by | Checked by | Passed by |
| C | ST | AD | OS |



| Hole ID | Easting | Northing | Level (mOD) |
|----------|-----------|-----------|-------------|
| BH24-01 | 502894.64 | 180110.11 | 31.28 |
| BH24-02 | 502966.95 | 180122.64 | 31.57 |
| BH24-03 | 503025.84 | 180062.88 | 31.69 |
| BH24-04 | 502960.47 | 180028.68 | 31.51 |
| BH24-04A | 502977.88 | 180024.12 | 31.51 |
| BH24-05 | 502886.95 | 179985.83 | 30.98 |
| BH24-06 | 502845.89 | 179959.35 | 30.85 |
| BH24-07 | 502968.25 | 179961.59 | 31.00 |
| BH24-08 | 503000.95 | 179948.63 | 31.09 |
| BH24-09 | 502847.96 | 179915.06 | 30.71 |
| BH24-10 | 503021.78 | 179901.13 | 30.86 |
| DS24-01 | 502856.04 | 180105.85 | 31.60 |
| DS24-02 | 503042.01 | 180155.62 | 32.63 |
| DS24-03 | 502824.96 | 180020.02 | 31.03 |
| DS24-04 | 502917.95 | 180032.29 | 31.06 |
| DS24-05 | 503065.84 | 180008.78 | 31.55 |
| DS24-06 | 502808.35 | 179912.43 | 31.05 |
| DS24-07 | 503012.95 | 180115.16 | 31.66 |
| DS24-08 | 503018.14 | 180149.85 | 31.86 |
| ER | 503033.99 | 179961.79 | 31.75 |
| SS24-01 | 502810.00 | 180060.00 | 31.31 |
| SS24-02 | 502810.00 | 180000.00 | 30.81 |
| SS24-03 | 502840.00 | 179910.00 | 30.78 |
| SS24-04 | 502910.00 | 179910.00 | 30.58 |
| SS24-05 | 503030.00 | 179900.00 | 30.83 |
| SS24-06 | 503070.00 | 179970.00 | 31.77 |
| SS24-07 | 503010.00 | 180110.00 | 31.63 |
| SS24-08 | 503050.00 | 180170.00 | 32.64 |
| SS24-09 | 502980.00 | 180070.00 | 31.60 |
| SS24-10 | 502980.00 | 180140.00 | 31.59 |
| SS24-11 | 502900.00 | 180050.00 | 31.29 |
| TR24-01 | 502903.58 | 180142.94 | 31.56 |
| TR24-02 | 502827.69 | 180091.98 | 31.36 |
| TR24-02A | 502827.69 | 180091.98 | 31.36 |
| TR24-03 | 502992.27 | 180048.58 | 33.66 |
| TR24-04 | 503028.83 | 179976.57 | 31.65 |
| TR24-05 | 503035.52 | 179954.10 | 31.58 |
| TR24-06 | 503025.84 | 180062.88 | 31.69 |
| TR24-07 | 502968.25 | 179961.59 | 31.00 |
| TR24-08 | 503000.95 | 179948.63 | 31.09 |
| TR24-09 | 502886.95 | 179985.83 | 30.98 |
| TR24-10 | 503021.78 | 179901.13 | 30.86 |



Unit B, Brunel Way, Stephenson Industrial Estate, Coalville, LE67 3HF
01530 832 382 | survey-service@sunbeltrentals.co.uk | sunbeltrentals.co.uk

Certificate of Conformity

Certificate No.: 0000282245

Instrument Serial No.: GS07-NR17

Prepared For: Sunbelt Survey

Instrument Make: Leica

Instrument Model: GS07 NetRover

This is to certify that the equipment detailed hereon has been inspected and unless otherwise stated conforms in all aspects to the manufacturer's original specifications or company work instructions.

Testing was carried out using equipment which is subject to regular verification and where applicable, is traceable to International/National standards.

Signed for and on behalf of
Sunbelt Rentals - Survey

Daniel Lee

Technician: Daniel Lee

Test Date: 28/02/2024

Retest Due: 27/02/2025

11. CABLE PERCUSSION BOREHOLE LOGS

| | | | | | | |
|--|-----------------------|------------|-----------------|-----------|---------------------------|--------------------|
| Project Name Thorney Lane Phase 1 Due Diligence | | | | | | |
| Project No 24/3980 | Date Started | 31/07/2024 | Easting | 502894.64 | Ground Level (mOD) | Final Depth |
| | Date Completed | 01/08/2024 | Northing | 180110.11 | 31.28 | 25.50 m |
| Client Arup | | | | | | |

| BOREHOLE SUMMARY | | | | | | | | | |
|-------------------------|----------|------|--------------|------------|----------|--------|----------------|-------------|-----------|
| Top (m) | Base (m) | Type | Date Started | Date Ended | Rig Crew | Logger | Plant Used | Barrel Type | Drill Bit |
| 0.00 | 0.25 | DC | 31/07/2024 | 31/07/2024 | BW | EP | Hilti DD350 | | |
| 0.25 | 1.20 | IP | 31/07/2024 | 31/07/2024 | BW | EP | Hand Excavated | | |
| 1.20 | 25.50 | CP | 31/07/2024 | 01/08/2024 | BW | EP | Dando 2000 | | |

| WATER STRIKES | | | | | WATER ADDED | | HOLE | | CASING | |
|----------------------|------------------|-------------|------------|------------|--------------------|--------|-------------|---------------|---------------|---------------|
| Strike at (m) | Casing Depth (m) | Depth Water | Time (min) | Sealed (m) | From (m) | To (m) | Depth (m) | Diameter (mm) | Depth (m) | Diameter (mm) |
| | | | | | | | 0.00 | 150 | 0.00 | 150 |
| | | | | | | | 25.50 | 150 | 3.00 | 150 |


| CHISELLING & SLOW DRILLING | | | |
|---------------------------------------|--------|------------------|--------------------|
| From (m) | To (m) | Duration (hr:mm) | Material / Remarks |
| | | | |

| PROGRESS | | | | |
|-----------------|----------------|------------------|-----------------|---------|
| Date | Hole Depth (m) | Casing Depth (m) | Water Depth (m) | Remarks |
| 31/07/2024 | 0.00 | | Dry | |
| 31/07/2024 | 9.00 | 3.00 | Dry | |
| 01/08/2024 | 9.00 | 3.00 | Dry | |
| 01/08/2024 | 25.50 | 3.00 | Dry | |

| INSTALLATION DETAILS | | | | | | |
|-----------------------------|-----------|-----------|------------|-------------|-------|-------------------|
| Type | Diam (mm) | Depth (m) | Top RZ (m) | Base RZ (m) | Cover | Date Installation |
| GMP | 50 | 1.00 | 0.50 | 1.00 | Flush | 01/08/2024 |

| BACKFILL DETAILS | | | | |
|-------------------------|----------|--------------------------|---------------|---------|
| Top (m) | Base (m) | Description | Backfill Date | Remarks |
| 0.00 | 0.25 | Concrete | 01/08/2024 | |
| 0.25 | 0.50 | Bentonite pellets | | |
| 0.50 | 1.00 | Pea Shingle | | |
| 1.00 | 2.00 | Bentonite Pellets | | |
| 2.00 | 25.50 | Cement / Bentonite Grout | | |

Note: All depths are in metres.
 All diameters are in millimetres.
 Water rise strikes are in minutes.
 For details of abbreviations see Key overleaf



| | | | | | | |
|--|-----------------------|------------|-----------------|-----------|---------------------------|--------------------|
| Project Name Thorney Lane Phase 1 Due Diligence | | | | | | |
| Project No 24/3980 | Date Started | 31/07/2024 | Easting | 502894.64 | Ground Level (mOD) | Final Depth |
| | Date Completed | 01/08/2024 | Northing | 180110.11 | 31.28 | 25.50 m |
| Client Arup | | | | | | |

| ROTARY FLUSH DETAIL | | | | | SPT DETAILS | | | | | |
|---------------------|--------|------------|------------------|--------------|-------------|------|---------------------|------------|------------------|-----------------|
| From (m) | To (m) | Flush Type | Flush Return (%) | Flush Colour | Depth (m) | Type | Reported Result | Hammer Ref | Casing Depth (m) | Water Depth (m) |
| | | | | | 2.00 | S | N=10 (2,1/2,2,3,3) | SDA4 | | Dry |
| | | | | | 3.50 | S | N=11 (2,1/3,2,3,3) | SDA4 | | Dry |
| | | | | | 5.00 | S | N=19 (3,3/4,4,5,6) | SDA4 | 3.00 | Dry |
| | | | | | 6.50 | S | N=20 (2,3/4,5,5,6) | SDA4 | 3.00 | Dry |
| | | | | | 8.00 | S | N=27 (3,4/5,6,8,8) | SDA4 | 3.00 | Dry |
| | | | | | 9.50 | S | N=25 (3,4/5,6,7,7) | SDA4 | 3.00 | Dry |
| | | | | | 11.00 | S | N=27 (3,4/5,6,8,8) | SDA4 | 3.00 | Dry |
| | | | | | 12.50 | S | N=26 (3,4/6,6,7,7) | SDA4 | 3.00 | Dry |
| | | | | | 14.00 | S | N=28 (3,6/6,7,8,7) | SDA4 | 3.00 | Dry |
| | | | | | 15.50 | S | N=29 (3,4/6,7,8,8) | SDA4 | 3.00 | Dry |
| | | | | | 17.00 | S | N=31 (4,6/6,7,9,9) | SDA4 | 3.00 | Dry |
| | | | | | 18.50 | S | N=32 (4,6/7,8,8,9) | SDA4 | 3.00 | Dry |
| | | | | | 20.00 | S | N=30 (5,6/6,7,8,9) | SDA4 | 3.00 | Dry |
| | | | | | 21.50 | S | N=37 (4,7/8,9,9,11) | SDA4 | 3.00 | Dry |
| | | | | | 23.00 | S | N=36 (4,6/8,8,9,11) | SDA4 | 3.00 | Dry |
| | | | | | 24.50 | S | N=28 (4,6/6,7,7,8) | SDA4 | 3.00 | Dry |

| CORING INFORMATION | | | | |
|--------------------|--------|------------------|--------------|---------|
| From (m) | To (m) | Duration (hr:mm) | Recovery (%) | Remarks |
| | | | | |

| ABBREVIATIONS KEY | | | |
|--|---|--|---|
| HOLE TYPE IP - Inspection Pit CP - Cable Percussion RC - Rotary Cored CP+RC - Cable Percussion & Rotary DS - Dynamic Sampling DS+RC - Dynamic Sampling & Rotary DP - Dynamic Probe DS - Dynamic Sampling TP - Trial Pit/Trench | SAMPLES TT - Trial Trench VE - Vacuum Excavated OP - Observation Pit OH - Open Hole RO - Rotary Open Hole RS - Rota Sonic SL - Sampling Location HA - Hand Auger TP+HA - Trial Pit & Hand Auger | IN SITU TESTING ES - Environmental (Tab, Jar, Vial) U - 100mm Undisturbed UT - 100mm Undisturbed Thin Wall D - Disturbed B - Bulk LB - Large Bulk BLK - Block C - Core W - Water | INSTALLATION MONITORING TYPE SPT - Standard Penetration Test HV - Shear Hand Vane PP - Pocket Penetrometer PID - Volatile Organic Compounds CPT - In situ Cone Penetration Test DCP - Dynamic Cone Penetrometer Test ICBR - In situ CBR Test MP - Mackintosh Probe Test GMP - Gas Monitoring Point GWMP - Groundwater Monitoring Point ICM - Inclinator SPE - Standpipe Piezometer SP - Standpipe AZCL - Assumed Zone of Core Loss RZ - Response Zone |
| Issue: FINAL | Checked: FP | Approved: OS | Log Print Date: 23/10/2024 |



| | | | | | | |
|--|-----------------------|------------|-----------------|-----------|---------------------------|--------------------|
| Project Name Thorney Lane Phase 1 Due Diligence | | | | | | |
| Project No 24/3980 | Date Started | 31/07/2024 | Easting | 502894.64 | Ground Level (mOD) | Final Depth |
| | Date Completed | 01/08/2024 | Northing | 180110.11 | 31.28 | 25.50 m |
| Client Arup | | | | | | Sheet 1 of 3 |

| Well | PROGRESS | | | Water Strikes | Level (mOD) | Legend | Depth (m) | Stratum Description | SAMPLES & TESTS | | |
|------|----------|--------|-------|---------------|-------------|---------------|--|--|-----------------|---------------------------|---------------------------|
| | Date | Casing | Water | | | | | | Depth (m) | Type | Results |
| G | 31/07/24 | | Dry | | | | 0.25 | CONCRETE | 0.25 - 0.40 | LB1 | |
| | | | | | | | 0.35 | Grey slightly sandy clayey GRAVEL. Gravel comprises angular to subangular fine to coarse flint, brick, concrete and clinker-like fragments. Sand is fine. (MADE GROUND) | 0.40 | ES2 | |
| | | | | | | | 0.40 | | 0.40 - 0.60 | B3 | |
| | | | | | | | 0.40 | | 0.40 | PID | 0.30 ppm |
| | | | | | | | 0.90 | Brown slightly gravelly SAND. Gravel comprises angular to subrounded fine to coarse flint, brick and concrete fragments. Sand is fine to medium. (MADE GROUND) | 0.90 - 1.20 | B4 | |
| | | | | | | | 1.20 | Brown very sandy silty angular to subrounded fine to coarse flint GRAVEL. Sand is fine to medium. (LYNCH HILL GRAVEL MEMBER) | 1.20 | ES5 | |
| | | | | | | | 1.40 | | 1.20 | PID | 0.10 ppm |
| | | | | | | | 1.50 - 1.95 | | 1.50 - 1.95 | U6 | 23 blows 20% Recovery |
| | | | | | | | 2.00 - 2.45 | Firm, brownish grey slightly sandy gravelly silty CLAY with occasional to frequent pockets of brown fine sand. Gravel is angular to subrounded fine to coarse flint. Sand is fine. (THAMES GROUP: WEATHERED LONDON CLAY) | 2.00 | D7 SPT | N=10 (2,1/2,2,3,3) |
| | | | | | | | 2.70 | Firm, grey slightly micaceous slightly gravelly silty CLAY with occasional pockets of grey fine sand (<15mm) and rare to occasional white flecks. Gravel is subangular to subrounded fine to coarse claystone fragments. (THAMES GROUP: LONDON CLAY - A3) | 2.70 | D8 | |
| | | | | | | | 3.00 - 3.45 | ... becoming stiff with no claystone gravel below 5.00m | 3.00 - 3.45 | U9 | 44 blows 100% Recovery |
| | | | | | | | 3.50 | | 3.50 | D10 | |
| | | | | | | | 3.50 - 3.95 | | 3.50 | D11 SPT | N=11 (2,1/3,2,3,3) |
| | | | | | | | 4.20 | ... becoming stiff with no claystone gravel below 5.00m | 4.20 | D12 | |
| | | | | | | | 4.50 - 4.95 | | 4.50 - 4.95 | U13 | 55 blows 100% Recovery |
| | | | | | | | 5.00 | | 5.00 | D14 | |
| | | | | | | | 5.00 - 5.45 | ... becoming stiff with no claystone gravel below 5.00m | 5.00 - 5.45 | D15 | |
| | | | | | | | 5.00 | | 5.00 | SPT | N=19 (3,3/4,4,5,6) |
| | | | | | | | 5.70 | | 5.70 | D16 | |
| | | | | | | | 6.00 - 6.45 | ... becoming stiff with no claystone gravel below 5.00m | 6.00 - 6.45 | U17 | 50 blows 100% Recovery |
| | | | | | | | 6.50 | | 6.50 | D18 | |
| | | | | | | | 6.50 - 6.95 | | 6.50 | D19 SPT | N=20 (2,3/4,5,5,6) |
| | | | | | | | 7.20 | ... becoming stiff with no claystone gravel below 5.00m | 7.20 | D20 | |
| | | | | | | | 7.50 - 7.95 | | 7.50 - 7.95 | U21 | 88 blows 100% Recovery |
| | | | | | | 8.00 | 8.00 | | D22 | | |
| | | | | | | 8.00 - 8.43 | ... with 2No partings of grey fine sand at 9.50m ... with rare to occasional bioturbation and rare white flecks below 9.50m | 8.00 - 8.43 | D23 | | |
| | | | | | | 8.00 | | 8.00 | SPT | N=27 (3,4/5,6,8,8) | |
| | | | | | | 8.70 | | 8.70 | D24 | | |
| | | | | | | 9.00 - 9.45 | ... with 2No partings of grey fine sand at 9.50m ... with rare to occasional bioturbation and rare white flecks below 9.50m | 9.00 - 9.45 | U25 | 86 blows 100% Recovery | |
| | | | | | | 9.50 | | 9.50 | D26 | | |
| | | | | | | 9.50 - 9.95 | | 9.50 | D27 SPT | N=25 (3,4/5,6,7,7) | |
| | | | | | | 10.20 | Stiff, grey silty CLAY with rare foraminifera. (THAMES GROUP: LONDON CLAY - A2) | 10.20 | D28 | | |
| | | | | | | 10.50 - 10.95 | | 10.50 - 10.95 | U29 | 86 blows 100% Recovery | |
| | | | | | | 11.00 | | 11.00 | D30 | | |
| | | | | | | 11.00 - 11.45 | ... becoming closely to very closely fissured from 11.00m. Fissures are randomly orientated, planar, smooth, unpolished | 11.00 - 11.45 | D31 | | |
| | | | | | | 11.00 | | 11.00 | SPT | N=27 (3,4/5,6,8,8) | |
| | | | | | | 11.70 | | 11.70 | D32 | | |
| | | | | | | 11.70m | ... with 1No weak grey claystone fragment (<60mm) at 11.70m | | | | |

| | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|--|
| General Remarks | | | | | | | | | |
| 1. Borehole was diamond cored to 0.25m prior to borehole boring commencing. | | | | | | | | | |
| 2. UXO testing was carried out in the borehole. | | | | | | | | | |
| | | | | | | | | | |

| | | | | | | |
|--|-----------------------|------------|-----------------|-----------|---------------------------|--------------------|
| Project Name Thorney Lane Phase 1 Due Diligence | | | | | | |
| Project No 24/3980 | Date Started | 31/07/2024 | Easting | 502894.64 | Ground Level (mOD) | Final Depth |
| | Date Completed | 01/08/2024 | Northing | 180110.11 | 31.28 | 25.50 m |
| Client Arup | | | | | | Sheet 2 of 3 |

| Well | PROGRESS | | | Water Strikes | Level (mOD) | Legend | Depth (m) | Stratum Description | SAMPLES & TESTS | | |
|------|----------|--------|-------|---------------|-------------|--------|-----------|---------------------|-----------------|------|---------------------------|
| | Date | Casing | Water | | | | | | Depth (m) | Type | Results |
| | | | | | | | | | 12.00 - 12.45 | U33 | 42 blows 100% Recovery |
| | | | | | | | | | 12.50 | D34 | |
| | | | | | | | | | 12.50 - 12.95 | D35 | |
| | | | | | | | | | 12.50 | SPT | N=26 (3,4/6,6,7,7) |
| | | | | | | | | | 13.20 | D36 | |
| | | | | | | | | | 13.50 - 13.95 | U37 | 68 blows 100% Recovery |
| | | | | | | | | | 14.00 | D38 | |
| | | | | | | | | | 14.00 - 14.45 | D39 | |
| | | | | | | | | | 14.00 | SPT | N=28 (3,6/6,7,8,7) |
| | | | | | | | | | 14.70 | D40 | |
| | | | | | | | | | 15.00 - 15.45 | U41 | 64 blows 100% Recovery |
| | | | | | | | | | 15.50 | D42 | |
| | | | | | | | | | 15.50 - 15.95 | D43 | |
| | | | | | | | | | 15.50 | SPT | N=29 (3,4/6,7,8,8) |
| | | | | | | | | | 16.02 | D44 | |
| | | | | | | | | | 16.50 - 16.95 | U45 | 60 blows 100% Recovery |
| | | | | | | | | | 17.00 | D46 | |
| | | | | | | | | | 17.00 - 17.45 | D47 | |
| | | | | | | | | | 17.00 | SPT | N=31 (4,6/6,7,9,9) |
| | | | | | | | | | 17.07 | D48 | |
| | | | | | | | | | 18.00 - 18.45 | U49 | 66 blows 100% Recovery |
| | | | | | | | | | 18.50 | D50 | |
| | | | | | | | | | 18.50 | SPT | N=32 (4,6/7,8,8,9) |
| | | | | | | | | | 18.50 - 18.95 | D51 | |
| | | | | | | | | | 19.20 | D52 | |
| | | | | | | | | | 19.50 - 19.95 | U53 | 72 blows 100% Recovery |
| | | | | | | | | | 20.00 | D54 | |
| | | | | | | | | | 20.00 | SPT | N=30 (5,6/6,7,8,9) |
| | | | | | | | | | 20.00 - 20.45 | D55 | |
| | | | | | | | | | 20.70 | D56 | |
| | | | | | | | | | 21.00 - 21.45 | U57 | 75 blows 100% Recovery |
| | | | | | | | | | 21.50 | D58 | |
| | | | | | | | | | 21.50 | SPT | N=37 (4,7/8,9,9,11) |
| | | | | | 9.28 | | 22.00 | | 21.50 - 21.95 | D59 | |
| | | | | | | | | | 22.20 | D60 | |
| | | | | | | | | | 22.50 - 22.95 | U61 | 80 blows 100% Recovery |
| | | | | | | | | | 23.00 | D62 | |
| | | | | | | | | | 23.00 | SPT | N=36 (4,6/8,8,9,11) |
| | | | | | | | | | 23.00 - 23.45 | D63 | |
| | | | | | | | | | 23.70 | D64 | |

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|--|-------|-------|----|---------|----|----------|----|-----------|----|--|--------|------|-----------------|
| General Remarks 1. Borehole was diamond cored to 0.25m prior to borehole boring commencing. 2. UXO testing was carried out in the borehole. | | | | | | | | | | | | | |
| Issue: | FINAL | Crew: | BW | Logger: | EP | Checked: | FP | Approved: | OS | | Scale: | 1:60 | Log Print Date: |

| | | | | | | |
|--|-----------------------|------------|-----------------|-----------|---------------------------|--------------------|
| Project Name Thorney Lane Phase 1 Due Diligence | | | | | | |
| Project No 24/3980 | Date Started | 31/07/2024 | Easting | 502894.64 | Ground Level (mOD) | Final Depth |
| | Date Completed | 01/08/2024 | Northing | 180110.11 | 31.28 | 25.50 m |
| Client Arup | | | | | | Sheet 3 of 3 |

| Well | PROGRESS | | | Water Strikes | Level (mOD) | Legend | Depth (m) | Stratum Description | SAMPLES & TESTS | | |
|------|----------|--------|-------|---------------|-------------|--------|-----------|---|-----------------|------|---|
| | Date | Casing | Water | | | | | | Depth (m) | Type | Results |
| | 01/08/24 | 3.00 | Dry | | 6.08 | | 25.20 | ... becoming very sandy with frequent off-white shell fragments (<35mm) below 24.50m Stiff, bluish grey mottled greyish brown and reddish brown silty CLAY. (LAMBETH GROUP: READING FORMATION: Mottled Beds) End of hole at 25.50m | 24.00 - 24.45 | U65 | 88 blows 100% Recovery N=28 (4,6/6,7,7,8) |
| | | | | | 5.78 | | 25.50 | | 24.50 | D66 | |
| | | | | | | | | | 24.50 | SPT | |
| | | | | | | | | | 25.00 - 25.50 | B67 | |

| | | | | | | | | | | |
|--|-------|-------|----|---------|----|----------|----|-----------|----|--|
| General Remarks 1. Borehole was diamond cored to 0.25m prior to borehole boring commencing. 2. UXO testing was carried out in the borehole. | | | | | | | | | | |
| Issue: | FINAL | Crew: | BW | Logger: | EP | Checked: | FP | Approved: | OS | |

| | | | | | | |
|--|-----------------------|------------|-----------------|-----------|---------------------------|--------------------|
| Project Name Thorney Lane Phase 1 Due Diligence | | | | | | |
| Project No 24/3980 | Date Started | 26/07/2024 | Easting | 502966.95 | Ground Level (mOD) | Final Depth |
| | Date Completed | 31/07/2024 | Northing | 180122.64 | 31.57 | 15.00 m |
| Client Arup | | | | | | |

| BOREHOLE SUMMARY | | | | | | | | | |
|-------------------------|----------|------|--------------|------------|----------|--------|----------------|-------------|-----------|
| Top (m) | Base (m) | Type | Date Started | Date Ended | Rig Crew | Logger | Plant Used | Barrel Type | Drill Bit |
| 0.00 | 0.30 | DC | 26/07/2024 | 26/07/2024 | NB & DE | EP | Hilti DD350 | | |
| 0.30 | 1.20 | IP | 26/07/2024 | 26/07/2024 | NB & DE | EP | Hand Excavated | | |
| 1.20 | 15.00 | CP | 30/07/2024 | 30/07/2024 | NB & DE | EP | Dando 2000 | | |

| WATER STRIKES | | | | | WATER ADDED | | HOLE | | CASING | |
|----------------------|------------------|-------------|------------|------------|--------------------|--------|-------------|---------------|---------------|---------------|
| Strike at (m) | Casing Depth (m) | Depth Water | Time (min) | Sealed (m) | From (m) | To (m) | Depth (m) | Diameter (mm) | Depth (m) | Diameter (mm) |
| | | | | | | | 0.00 | 200 | 0.00 | 200 |
| | | | | | | | 15.00 | 200 | 3.00 | 200 |


| CHISELLING & SLOW DRILLING | | | |
|---------------------------------------|--------|------------------|--------------------|
| From (m) | To (m) | Duration (hr:mm) | Material / Remarks |
| | | | |

| PROGRESS | | | | |
|-----------------|----------------|------------------|-----------------|---------|
| Date | Hole Depth (m) | Casing Depth (m) | Water Depth (m) | Remarks |
| 26/07/2024 | 0.00 | | Dry | |
| 26/07/2024 | 1.20 | | Dry | |
| 30/07/2024 | 1.20 | | Dry | |
| 30/07/2024 | 15.00 | 3.00 | Dry | |

| INSTALLATION DETAILS | | | | | | |
|-----------------------------|-----------|-----------|------------|-------------|-------|-------------------|
| Type | Diam (mm) | Depth (m) | Top RZ (m) | Base RZ (m) | Cover | Date Installation |
| GWMP | 50 | 14.00 | 12.00 | 14.00 | Flush | 31/07/2024 |

| BACKFILL DETAILS | | | | |
|-------------------------|----------|--------------------------|---------------|---------|
| Top (m) | Base (m) | Description | Backfill Date | Remarks |
| 0.00 | 0.25 | Concrete | 31/07/2024 | |
| 0.25 | 11.00 | Cement / Bentonite Grout | | |
| 11.00 | 12.00 | Bentonite Pellets | | |
| 12.00 | 14.00 | Pea Shingle | | |
| 14.00 | 15.00 | Bentonite Pellets | | |

Note: All depths are in metres.
 All diameters are in millimetres.
 Water rise strikes are in minutes.
 For details of abbreviations see Key overleaf



Project Name

Thorney Lane Phase 1 Due Diligence

| | | | | | | |
|------------------------------|-----------------------|------------|-----------------|-----------|---------------------------|--------------------|
| Project No 24/3980 | Date Started | 26/07/2024 | Easting | 502966.95 | Ground Level (mOD) | Final Depth |
| | Date Completed | 31/07/2024 | Northing | 180122.64 | 31.57 | 15.00 m |

| | |
|-----------------------|--------------|
| Client Arup | Sheet 1 of 2 |
|-----------------------|--------------|

| Well | PROGRESS | | | Water Strikes | Level (mOD) | Legend | Depth (m) | Stratum Description | SAMPLES & TESTS | | |
|------|----------|--------|-------|---------------|-------------|--------|-----------|--|-----------------|---------------------------|--|
| | Date | Casing | Water | | | | | | Depth (m) | Type | Results |
| 1 | 26/07/24 | | Dry | | 31.27 | | 0.30 | Grey CONCRETE. Clasts are angular to subrounded fine to coarse flint (max. spacing between aggregate <4mm). Rare air voids. | 0.20 - 0.50 | B1 | |
| | | | | | 30.87 | | 0.70 | Soft to firm, dark grey slightly gravelly slightly sandy CLAY with occasional ash-like material and glass fragments (<60mm). Gravel comprises angular to subangular fine to coarse flint, brick, and clinker-like fragments. Sand is fine. | 0.30 | ES2 | 0.30 ppm |
| | | | | | 30.67 | | 0.90 | (MADE GROUND) | 0.50 | PID | |
| | | | | | 30.37 | | 1.20 | (MADE GROUND) | 0.50 - 0.70 | D3 | |
| | 26/07/24 | | Dry | | | | | ... with 1 No concrete cobble at 6.50m | 0.70 - 0.90 | B4 | |
| | 30/07/24 | | Dry | | | | | Firm, greyish brown mottled brown and orangish brown sandy clayey GRAVEL with high cobble content, frequent pockets of ash-like material (<10mm) and occasional to frequent pockets of orangish brown fine sand (<20mm). Gravel comprises angular to subangular fine to coarse flint and clinker-like fragments. Sand is fine. | 0.90 - 1.20 | B5 | |
| | | | | | | | | (MADE GROUND) | 1.20 | B6 | |
| | | | | | | | | Firm, greyish brown mottled brown and orangish brown sandy clayey GRAVEL with high cobble content, frequent pockets of ash-like material (<10mm) and occasional to frequent pockets of orangish brown fine sand (<20mm). Gravel comprises angular to subangular fine to coarse flint and clinker-like fragments. Sand is fine. | 1.20 | D7 | |
| | | | | | | | | (MADE GROUND) | 1.20 | ES8 | 0.10 ppm |
| | | | | | | | | Firm, greyish brown mottled brown slightly sandy CLAY with occasional to frequent pockets of orangish brown fine sand (<20mm). Sand is fine. | 1.50 - 1.95 | U9 | |
| | | | | | | | | (THAMES GROUP: WEATHERED LONDON CLAY) | 2.00 - 2.45 | D10 | 28 blows 45% Recovery N=10 (1,1/2,2,3,3) |
| | | | | | | | | Firm, greyish brown slightly sandy slightly micaceous CLAY with occasional pockets of grey fine sand (<4mm), rare very weak to weak claystone fragments (<10mm) and bioturbation. | 2.00 | SPT | |
| | | | | | | | | (THAMES GROUP: LONDON CLAY) | 2.70 | D11 | |
| | | | | | | | | ... becoming stiff below 5.00m | 3.00 - 3.45 | U12 | 37 blows 100% Recovery |
| | | | | | | | | ... with occasional white flecks below 7.00m | 3.50 | D13 | |
| | | | | | | | | ... with rare foraminifera at 8.00m | 3.50 - 3.95 | D14 | |
| | | | | | | | | ... becoming very stiff below 9.50m | 3.50 | SPT | N=13 (1,2/3,3,3,4) |
| | | | | | | | | ... with rare to occasional shell fragments (<10mm) below 11.00m | 4.20 | D15 | |
| | | | | | | | | | 4.50 - 4.95 | U16 | 55 blows 100% Recovery |
| | | | | | | | | | 5.00 | D17 | |
| | | | | | | | | | 5.00 - 5.45 | D18 | |
| | | | | | | | | | 5.00 | SPT | N=22 (3,4/5,5,6,6) |
| | | | | | | | | | 5.70 | D19 | |
| | | | | | | | | | 6.00 - 6.45 | U20 | 65 blows 100% Recovery |
| | | | | | | | | 6.50 | D21 | | |
| | | | | | | | | 6.50 - 6.95 | D22 | | |
| | | | | | | | | 6.50 | SPT | N=24 (3,5/4,7,7,6) | |
| | | | | | | | | 7.20 | D23 | | |
| | | | | | | | | 7.50 - 7.95 | U24 | 48 blows 100% Recovery | |
| | | | | | | | | 8.00 | D25 | | |
| | | | | | | | | 8.00 - 8.45 | D26 | | |
| | | | | | | | | 8.00 | SPT | N=26 (3,3/5,5,7,9) | |
| | | | | | | | | 8.70 | D27 | | |
| | | | | | | | | 9.00 - 9.45 | U28 | 80 blows 100% Recovery | |
| | | | | | | | | 9.50 | D29 | | |
| | | | | | | | | 9.50 - 9.95 | D30 | | |
| | | | | | | | | 9.50 | SPT | N=32 (3,5/7,7,9,9) | |
| | | | | | | | | 10.20 | D31 | | |
| | | | | | | | | 10.50 - 10.95 | U32 | 85 blows 100% Recovery | |
| | | | | | | | | 11.00 | D33 | | |
| | | | | | | | | 11.00 - 11.45 | D34 | | |
| | | | | | | | | 11.00 | SPT | N=40 (4,6/8,10,11,11) | |
| | | | | | | | | 11.70 | D35 | | |

| | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|--|
| General Remarks | | | | | | | | | |
| 1. Borehole was diamond cored to 0.25m prior to borehole boring commencing. | | | | | | | | | |
| 2. UXO testing was carried out in the borehole. | | | | | | | | | |
| | | | | | | | | | |

| | | | | | | |
|--|-----------------------|------------|-----------------|-----------|---------------------------|--------------------|
| Project Name Thorney Lane Phase 1 Due Diligence | | | | | | |
| Project No 24/3980 | Date Started | 26/07/2024 | Easting | 502966.95 | Ground Level (mOD) | Final Depth |
| | Date Completed | 31/07/2024 | Northing | 180122.64 | 31.57 | 15.00 m |
| Client Arup | | | | | | Sheet 2 of 2 |

| Well | PROGRESS | | | Water Strikes | Level (mOD) | Legend | Depth (m) | Stratum Description | SAMPLES & TESTS | | |
|------|----------|--------|-------|---------------|-------------|--------|-----------|-----------------------|-----------------|------|---|
| | Date | Casing | Water | | | | | | Depth (m) | Type | Results |
| | 30/07/24 | 3.00 | Dry | | 16.57 | | 15.00 | | 12.00 - 12.45 | U36 | 92 blows 100% Recovery N=30 (6,6/7,6,8,9) |
| | | | | | | | | | 12.50 | D37 | |
| | | | | | | | | | 12.50 - 12.95 | D38 | |
| | | | | | | | | | 12.50 | SPT | |
| | | | | | | | | | 13.20 | D39 | |
| | | | | | | | | | 13.50 - 13.95 | U40 | |
| | | | | | | | | | 14.00 | D41 | |
| | | | | | | | | | 14.00 - 14.45 | D42 | |
| | | | | | | | | | 14.00 | SPT | |
| | | | | | | | | | 14.70 | D43 | |
| | 15.00 | D44 | | | | | | | | | |
| | | | | | | | | End of hole at 15.00m | | | |

| | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|
| General Remarks | | | | | | | | | | |
| 1. Borehole was diamond cored to 0.25m prior to borehole boring commencing. 2. UXO testing was carried out in the borehole. | | | | | | | | | | |
| | | | | | | | | | | |

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|--|-----------------------|------------|-----------------|-----------|---------------------------|--------------------|
| Project Name Thorney Lane Phase 1 Due Diligence | | | | | | |
| Project No 24/3980 | Date Started | 09/08/2024 | Easting | 503025.84 | Ground Level (mOD) | Final Depth |
| | Date Completed | 13/08/2024 | Northing | 180062.88 | 31.69 | 30.00 m |
| Client Arup | | | | | | |

| BOREHOLE SUMMARY | | | | | | | | | |
|-------------------------|----------|------|--------------|------------|----------|--------|----------------|-------------|-----------|
| Top (m) | Base (m) | Type | Date Started | Date Ended | Rig Crew | Logger | Plant Used | Barrel Type | Drill Bit |
| 0.00 | 0.20 | DC | 09/08/2024 | 09/08/2024 | LP & JF | PO | Hilti DD350 | | |
| 0.20 | 1.20 | IP | 09/08/2024 | 09/08/2024 | LP & JF | PO | Hand Excavated | | |
| 1.20 | 30.00 | CP | 09/08/2024 | 13/08/2024 | LP & JF | PO | Dando 2000 | | |

| WATER STRIKES | | | | | WATER ADDED | | HOLE | | CASING | |
|----------------------|------------------|-------------|------------|------------|--------------------|--------|-------------|---------------|---------------|---------------|
| Strike at (m) | Casing Depth (m) | Depth Water | Time (min) | Sealed (m) | From (m) | To (m) | Depth (m) | Diameter (mm) | Depth (m) | Diameter (mm) |
| | | | | | | | 0.00 | 200 | 0.00 | 200 |
| | | | | | | | 30.00 | 200 | 2.50 | 200 |


| CHISELLING & SLOW DRILLING | | | |
|---------------------------------------|--------|------------------|--------------------|
| From (m) | To (m) | Duration (hr:mm) | Material / Remarks |
| 15.50 | 16.10 | 01:00 | Claystone |

| PROGRESS | | | | |
|-----------------|----------------|------------------|-----------------|---------|
| Date | Hole Depth (m) | Casing Depth (m) | Water Depth (m) | Remarks |
| 09/08/2024 | 0.00 | | | Dry |
| 09/08/2024 | 15.00 | 2.50 | | Dry |
| 12/08/2024 | 15.00 | 2.50 | | Dry |
| 12/08/2024 | 22.00 | 2.50 | | Dry |
| 13/08/2024 | 22.00 | 2.50 | | Dry |
| 13/08/2024 | 30.00 | 2.50 | | Dry |

| INSTALLATION DETAILS | | | | | | |
|-----------------------------|-----------|-----------|------------|-------------|-------|-------------------|
| Type | Diam (mm) | Depth (m) | Top RZ (m) | Base RZ (m) | Cover | Date Installation |
| GMP | 50 | 1.35 | 0.60 | 1.50 | Flush | 13/08/2024 |

| BACKFILL DETAILS | | | | |
|-------------------------|----------|--------------------------|---------------|---------|
| Top (m) | Base (m) | Description | Backfill Date | Remarks |
| 0.00 | 0.20 | Concrete | 13/08/2024 | |
| 0.20 | 0.60 | Bentonite Pellets | | |
| 0.60 | 1.50 | Pea Shingle | | |
| 1.50 | 2.50 | Bentonite Pellets | | |
| 2.50 | 30.00 | Cement / Bentonite Grout | | |

Note: All depths are in metres.
 All diameters are in millimetres.
 Water rise strikes are in minutes.
 For details of abbreviations see Key overleaf



| | | | | | | |
|--|-----------------------|------------|-----------------|-----------|---------------------------|--------------------|
| Project Name Thorney Lane Phase 1 Due Diligence | | | | | | |
| Project No 24/3980 | Date Started | 09/08/2024 | Easting | 503025.84 | Ground Level (mOD) | Final Depth |
| | Date Completed | 13/08/2024 | Northing | 180062.88 | 31.69 | 30.00 m |
| Client Arup | | | | | | |

| ROTARY FLUSH DETAIL | | | | | SPT DETAILS | | | | | |
|---------------------|--------|------------|------------------|--------------|-------------|------|------------------------------|------------|------------------|-----------------|
| From (m) | To (m) | Flush Type | Flush Return (%) | Flush Colour | Depth (m) | Type | Reported Result | Hammer Ref | Casing Depth (m) | Water Depth (m) |
| | | | | | 1.50 | S | N=9 (2,1/1,2,3,3) | SDA7 | 1.30 | Dry |
| | | | | | 3.00 | S | N=9 (1,2/1,2,3,3) | SDA7 | 2.50 | Dry |
| | | | | | 4.00 | S | N=13 (1,2/3,3,3,4) | SDA7 | 2.50 | Dry |
| | | | | | 5.00 | S | N=20 (2,2/4,4,5,7) | SDA7 | 2.50 | Dry |
| | | | | | 6.50 | S | N=26 (2,4/4,7,7,8) | SDA7 | 2.50 | Dry |
| | | | | | 8.00 | S | N=26 (3,4/4,7,7,8) | SDA7 | 2.50 | Dry |
| | | | | | 9.50 | S | N=30 (3,3/7,7,8,8) | SDA7 | 2.50 | Dry |
| | | | | | 11.00 | S | N=28 (3,5/5,7,8,8) | SDA7 | 2.50 | Dry |
| | | | | | 12.50 | S | N=27 (2,4/5,6,7,9) | SDA7 | 2.50 | Dry |
| | | | | | 14.00 | S | N=37 (4,4/8,9,9,11) | SDA7 | 2.50 | Dry |
| | | | | | 15.50 | S | N=50 (25 for 0mm/50 for 0mm) | SDA7 | 2.50 | Dry |
| | | | | | 17.00 | S | N=27 (4,5/6,8,6,7) | SDA7 | 2.50 | Dry |
| | | | | | 18.50 | S | N=33 (5,5/7,7,8,11) | SDA7 | 2.50 | Dry |
| | | | | | 20.00 | S | N=31 (4,5/7,7,8,9) | SDA7 | 2.50 | Dry |
| | | | | | 21.50 | S | N=37 (5,7/8,9,9,11) | SDA7 | 2.50 | Dry |
| | | | | | 23.00 | S | N=35 (5,5/7,8,10,10) | SDA7 | 2.50 | Dry |
| | | | | | 24.50 | S | N=43 (5,6/9,9,12,13) | SDA7 | 2.50 | Dry |
| | | | | | 26.50 | S | N=42 (5,6/8,10,12,12) | SDA7 | 2.50 | Dry |
| | | | | | 28.00 | S | N=43 (7,7/9,10,11,13) | SDA7 | 2.50 | Dry |
| | | | | | 29.50 | S | N=47 (7,8/10,12,12,13) | SDA7 | 2.50 | Dry |

| CORING INFORMATION | | | | |
|--------------------|--------|------------------|--------------|---------|
| From (m) | To (m) | Duration (hr:mm) | Recovery (%) | Remarks |
| | | | | |

| | | | |
|--|--|---|--|
| ABBREVIATIONS KEY | | | |
| HOLE TYPE IP - Inspection Pit CP - Cable Percussion RC - Rotary Cored CP+RC - Cable Percussion & Rotary DS - Dynamic Sampling DS+RC - Dynamic Sampling & Rotary DP - Dynamic Probe DS - Dynamic Sampling TP - Trial Pit/Trench | SAMPLES ES - Environmental (Tab, Jar, Vial) U - 100mm Undisturbed UT - 100mm Undisturbed Thin Wall D - Disturbed B - Bulk LB - Large Bulk BLK - Block C - Core W - Water | IN SITU TESTING SPT - Standard Penetration Test HV - Shear Hand Vane PP - Pocket Penetrometer PID - Volatile Organic Compounds CPT - In situ Cone Penetration Test DCP - Dynamic Cone Penetrometer Test ICBR - In situ CBR Test MP - Mackintosh Probe Test | INSTALLATION MONITORING TYPE GMP - Gas Monitoring Point GWMP - Groundwater Monitoring Point ICM - Inclinator SPE - Standpipe Piezometer SP - Standpipe AZCL - Assumed Zone of Core Loss RZ - Response Zone |
| Issue: FINAL | Checked: FP | Approved: OS | Log Print Date: 23/10/2024 |




Project Name

Thorney Lane Phase 1 Due Diligence

| | | | | | | |
|------------------------------|-----------------------|------------|-----------------|-----------|---------------------------|--------------------|
| Project No 24/3980 | Date Started | 09/08/2024 | Easting | 503025.84 | Ground Level (mOD) | Final Depth |
| | Date Completed | 13/08/2024 | Northing | 180062.88 | 31.69 | 30.00 m |

| | |
|-----------------------|--------------|
| Client Arup | Sheet 1 of 3 |
|-----------------------|--------------|

| Well | PROGRESS | | | Water Strikes | Level (mOD) | Legend | Depth (m) | Stratum Description | SAMPLES & TESTS | | |
|--|----------|--------|-------|---------------|-------------|--------|---------------------------------|--|-----------------|---------------------------|---------------------------|
| | Date | Casing | Water | | | | | | Depth (m) | Type | Results |
|  | 09/08/24 | | Dry | | 31.49 | | 0.20 | Grey CONCRETE. Clasts are angular to subangular fine to medium flint gravel (max. spacing between aggregate <7mm). Rare air voids. | 0.20 | ES2 | |
| | | | | | | | 0.20 - 0.60 | Greyish brown slightly sandy gravelly silty CLAY. | 0.20 | B1 | 0.80 ppm |
| | | | | | | 30.79 | 0.90 | Gravel comprises angular to subrounded fine to coarse flint, brick and concrete fragments. Sand is fine to coarse (MADE GROUND) | 0.50 | D3 | |
| | | | | | | | | ... with low flint cobble content at 0.60m | 0.90 | ES5 | |
| | | | | | | 30.39 | 1.30 | Greyish brown sandy clayey subangular to subrounded fine to coarse flint GRAVEL with low organic odour and occasional pockets of yellowish brown sandy clay. | 0.90 - 1.20 | B4 | 0.40 ppm |
| | | | | | | 30.29 | 1.40 | (MADE GROUND) | 0.90 | PID | |
| | | | | | | | | ... with rare wood fragments (<60mm) at 1.00m | 1.50 - 1.95 | D6 | |
| | | | | | | 29.69 | 2.00 | Greyish brown locally dark grey sandy subrounded to rounded fine to medium flint GRAVEL with slight organic odour. Sand is fine. | 1.50 | SPT | N=9 (2,1/1,2,3,3) |
| | | | | | | | | (MADE GROUND) | 1.70 | ES7 | |
| | | | | | | | | ... with rare pockets of dark grey silty sand (<10mm) below 2.30m | 1.70 | PID | 0.10 ppm |
| | | | | | | | | ... with no gravel below 3.95m | 2.00 | D8 | |
| | | | | | | | | ... with occasional pockets of light grey fine sand (<10mm) below 4.00m | 2.50 - 2.95 | U9 | 22 blows 100% Recovery |
| | | | | | | | | ... with occasional off-white flecks below 4.80m | 3.00 | D10 | |
| | | | | | | | | ... becoming stiff below 5.00m | 3.00 - 3.45 | D11 | |
| | | | | | | | | ... with 2No off-white shell fragments (<10mm) at 6.50m and 7.00m | 3.00 | SPT | N=9 (1,2/1,2,3,3) |
| | | | | | | | | ... becoming very stiff below 9.50m | 3.50 - 3.95 | U12 | 40 blows 60% Recovery |
| | | | | | | | | ... with medium strong to strong fine to coarse gravel size claystone fragments between 8.00m and 9.50m | 4.00 | D13 | |
| | | | | | | | | ... becoming stiff below 11.00m | 4.00 - 4.45 | D14 | |
| | | | | | | | | ... becoming stiff below 11.00m | 4.00 | SPT | N=13 (1,2/3,3,3,4) |
| | | | | | | | | ... becoming stiff below 11.00m | 4.50 - 4.95 | U15 | 51 blows 90% Recovery |
| | | | | | | | | ... becoming stiff below 11.00m | 5.00 | D16 | |
| | | | | | | | | ... becoming stiff below 11.00m | 5.00 - 5.45 | D17 | |
| | | | | | | | | ... becoming stiff below 11.00m | 5.00 | SPT | N=20 (2,2/4,4,5,7) |
| | | | | | | | | ... becoming stiff below 11.00m | 6.00 - 6.45 | U18 | 57 blows 80% Recovery |
| | | | | | | | | ... becoming stiff below 11.00m | 6.50 | D19 | |
| | | | | | | | | ... becoming stiff below 11.00m | 6.50 - 6.95 | D20 | |
| | | | | | | | | ... becoming stiff below 11.00m | 6.50 | SPT | N=26 (2,4/4,7,7,8) |
| | | | | | | | | ... becoming stiff below 11.00m | 7.00 | D21 | |
| | | | | | | | ... becoming stiff below 11.00m | 7.50 - 7.95 | U22 | 59 blows 100% Recovery | |
| | | | | | | | ... becoming stiff below 11.00m | 8.00 - 8.45 | D23 | | |
| | | | | | | | ... becoming stiff below 11.00m | 8.00 | SPT | N=26 (3,4/4,7,7,8) | |
| | | | | | | | ... becoming stiff below 11.00m | 9.00 - 9.45 | U24 | 77 blows 100% Recovery | |
| | | | | | | | ... becoming stiff below 11.00m | 9.50 | D25 | | |
| | | | | | | | ... becoming stiff below 11.00m | 9.50 - 9.95 | D26 | | |
| | | | | | | | ... becoming stiff below 11.00m | 9.50 | SPT | N=30 (3,3/7,7,8,8) | |
| | | | | | | | ... becoming stiff below 11.00m | 10.50 - 10.95 | U27 | 81 blows 80% Recovery | |
| | | | | | | | ... becoming stiff below 11.00m | 11.00 | D28 | | |
| | | | | | | | ... becoming stiff below 11.00m | 11.00 - 11.45 | D29 | | |
| | | | | | | | ... becoming stiff below 11.00m | 11.00 | SPT | N=28 (3,5/5,7,8,8) | |

General Remarks

- Borehole was diamond cored to 0.20m prior to borehole boring commencing.
- UXO testing was carried out in the borehole.



| | | | | | | |
|--|-----------------------|------------|-----------------|-----------|---------------------------|--------------------|
| Project Name Thorney Lane Phase 1 Due Diligence | | | | | | |
| Project No 24/3980 | Date Started | 09/08/2024 | Easting | 503025.84 | Ground Level (mOD) | Final Depth |
| | Date Completed | 13/08/2024 | Northing | 180062.88 | 31.69 | 30.00 m |
| Client Arup | | | | | | Sheet 2 of 3 |

| Well | PROGRESS | | | Water Strikes | Level (mOD) | Legend | Depth (m) | Stratum Description | SAMPLES & TESTS | | |
|------|----------|--------|-------|---------------|-------------|--------|-----------|---|-----------------|------|------------------------------|
| | Date | Casing | Water | | | | | | Depth (m) | Type | Results |
| | | | | | | | | | 12.00 - 12.45 | U30 | 49 blows 70% Recovery |
| | | | | | | | | | 12.50 | D31 | |
| | | | | | | | | | 12.50 - 12.95 | D32 | |
| | | | | | | | | | 12.50 | SPT | N=27 (2,4/5,6,7,9) |
| | | | | | | | | ... with rare dark grey staining at 13.50m | 13.50 - 13.95 | U33 | 57 blows 90% Recovery |
| | | | | | | | | ... becoming very stiff between 14.00m and 15.00m | 14.00 | D34 | |
| | | | | | | | | ... with 2 No polished surfaces at 14.20m and 15.00m | 14.00 - 14.45 | D35 | |
| | | | | | | | | | 14.00 | SPT | N=37 (4,4/8,9,9,11) |
| | 09/08/24 | 2.50 | Dry | | | | | | | | |
| | 12/08/24 | 2.50 | Dry | | | | | ... with a band of claystone between 15.50m and 16.10m | 15.50 | SPT | N=50 (25 for 0mm/50 for 0mm) |
| | | | | | | | | ... with occasional pockets of grey fine sand (<10mm) below 16.10m | 16.50 - 16.95 | U36 | 91 blows 100% Recovery |
| | | | | | | | | ... with rare medium gravel sized claystone fragments between 17.00m and 17.45m | 17.00 | D37 | |
| | | | | | | | | | 17.00 - 17.45 | D38 | |
| | | | | | | | | | 17.00 | SPT | N=27 (4,5/6,8,6,7) |
| | | | | | | | | ... becoming very stiff with rare pockets of dark grey fine sand (<5mm) below 18.50m | 18.00 - 18.45 | U39 | 93 blows 100% Recovery |
| | | | | | | | | | 18.50 | D40 | |
| | | | | | | | | | 18.50 - 18.95 | D41 | |
| | | | | | | | | | 18.50 | SPT | N=33 (5,5/7,7,8,11) |
| | | | | | | | | ... with 1No pyritised lignite fragment (<15mm) at 21.00m | 19.50 - 19.95 | U42 | 78 blows 90% Recovery |
| | | | | | | | | | 20.00 | D43 | |
| | | | | | | | | | 20.00 - 20.45 | D44 | |
| | | | | | | | | | 20.00 | SPT | N=31 (4,5/7,7,8,9) |
| | 12/08/24 | 2.50 | Dry | | | | | | 21.00 - 21.45 | U45 | 100 blows 90% Recovery |
| | 13/08/24 | 2.50 | Dry | | | | | | 21.50 | D46 | |
| | | | | | | | | | 21.50 - 21.95 | D47 | |
| | | | | | | | | | 21.50 | SPT | N=37 (5,7/8,9,9,11) |
| | | | | | | | | ... with occasional pockets and lenses of greenish grey fine sand (<20mm) and rare off-white shell fragments below 23.00m | 22.50 - 22.95 | U48 | 54 blows 90% Recovery |
| | | | | | | | | | 23.00 - 23.45 | D49 | |
| | | | | | | | | | 23.00 | SPT | N=35 (5,5/7,8,10,10) |

| | | | | | | | | | | | | | |
|--|-------|-------|---------|---------|----|----------|----|-----------|----|--|--------|------|-----------------|
| General Remarks 1. Borehole was diamond cored to 0.20m prior to borehole boring commencing. 2. UXO testing was carried out in the borehole. | | | | | | | | | | | | | |
| Issue: | FINAL | Crew: | LP & JF | Logger: | PO | Checked: | FP | Approved: | OS | | Scale: | 1:60 | Log Print Date: |

| | | | | | | |
|--|-----------------------|------------|-----------------|-----------|---------------------------|--------------------|
| Project Name Thorney Lane Phase 1 Due Diligence | | | | | | |
| Project No 24/3980 | Date Started | 09/08/2024 | Easting | 503025.84 | Ground Level (mOD) | Final Depth |
| | Date Completed | 13/08/2024 | Northing | 180062.88 | 31.69 | 30.00 m |
| Client Arup | | | | | | Sheet 3 of 3 |

| Well | PROGRESS | | | Water Strikes | Level (mOD) | Legend | Depth (m) | Stratum Description | SAMPLES & TESTS | | |
|---------------|----------|---------------------------|-------|---------------|-------------|--------|---|---------------------|-----------------|---------------------------|---------|
| | Date | Casing | Water | | | | | | Depth (m) | Type | Results |
| | 13/08/24 | 2.50 | Dry | 1.69 | | 30.00 | <p>... becoming slightly sandy with frequent pockets of light brown fine sand (<50mm) below 24.50m</p> <p>... with 1 No pyrite nodule at 26.00m</p> <p>... with no sand, occasional pockets of light brown fine sand (<12mm), off-white shell fragments (<20mm) and frequent foraminifera below 28.00m</p> <p>... with 2 No pyritised lignite fragments at 29.00m</p> <p>... with 1 No tabular foraminifera at 29.50m</p> <p>End of hole at 30.00m</p> | 24.00 - 24.45 | U50 | 80 blows 100% Recovery | |
| | | | | | | | | 24.50 | D51 | N=43 (5,6/9,9,12,13) | |
| | | | | | | | | 24.50 - 24.95 | D52 | | |
| | | | | | | | | 24.50 | SPT | | |
| | | | | | | | | 26.00 - 26.45 | U53 | 83 blows 60% Recovery | |
| | | | | | | | | 26.50 | D54 | N=42 (5,6/8,10,12,12) | |
| | | | | | | | | 26.50 - 26.95 | D55 | | |
| | | | | | | | | 26.50 | SPT | | |
| | | | | | | | | 27.50 - 27.95 | U56 | 90 blows 80% Recovery | |
| | | | | | | | | 28.00 | D57 | N=43 (7,7/9,10,11,13) | |
| 28.00 - 28.45 | D58 | | | | | | | | | | |
| 28.00 | SPT | | | | | | | | | | |
| 29.00 - 29.45 | U59 | 93 blows 70% Recovery | | | | | | | | | |
| 29.50 | D60 | N=47 (7,8/10,12,12,13) | | | | | | | | | |
| 29.50 - 29.95 | D61 | | | | | | | | | | |
| 29.50 | SPT | | | | | | | | | | |

| | | | | | | | | | | | | | |
|--|-------|-------|---------|---------|----|----------|----|-----------|----|--|--------|------|-----------------|
| General Remarks 1. Borehole was diamond cored to 0.20m prior to borehole boring commencing. 2. UXO testing was carried out in the borehole. | | | | | | | | | | | | | |
| Issue: | FINAL | Crew: | LP & JF | Logger: | PO | Checked: | FP | Approved: | OS | | Scale: | 1:60 | Log Print Date: |

| | | | | | | |
|--|-----------------------|------------|-----------------|-----------|---------------------------|--------------------|
| Project Name Thorney Lane Phase 1 Due Diligence | | | | | | |
| Project No 24/3980 | Date Started | 26/07/2024 | Easting | 502960.47 | Ground Level (mOD) | Final Depth |
| | Date Completed | 26/07/2024 | Northing | 180028.68 | 31.51 | 1.15 m |
| Client Arup | | | | | | Sheet 1 of 1 |

| Backfill | Water Strikes | Level (mOD) | Legend | Depth (m) | Stratum Description | SAMPLES & TESTS | | |
|----------|---------------|-------------|--------|-----------|--|-----------------|------|---|
| | | | | | | Depth (m) | Type | Results |
| | | 31.21 | | 0.30 | Grey CONCRETE. Clasts are angular to subangular fine to coarse flint gravel (max. spacing between aggregates <4mm). Rare air voids. | 0.30 - 0.50 | B1 | |
| | | | | | Brown gravelly SAND with low concrete cobble content. Gravel comprises angular to subrounded fine to coarse flint, brick, concrete and clinker-like fragments. Sand is fine to medium. (MADE GROUND) | 0.50 - 0.70 | B2 | |
| | | | | | | 0.70 - 0.90 | B3 | |
| | | | | | | 0.75 | ES4 | |
| | | | | | | 0.75 | PID | 1.00 ppm |
| | | 30.36 | | 1.15 | End of hole at 1.15m | 0.90 - 1.10 | B5 | |
| | | | | | | 1.10 | ES6 | 0.00 ppm |
| | | | | | | 1.10 | PID | ... Location aborted at 1.10m depth (see remarks) |

| Trial Pit Information | | | | | General Remarks | |
|----------------------------------|-----------------------|----------------------|----------------------|----------------|--|--|
| Excavation Method | Pit Length (m) | Pit Width (m) | Pit Stability | Shoring | 1. Borehole was diamond cored to 0.30m prior to borehole boring commencing. 2. Location aborted at 1.10m depth due to the presence of a concrete obstruction. location moved to position BH24-04A. 3. Borehole backfilled with bentonite pellets and made good upon completion.. | |
| Diamond Coring Hand Excavated | 0.30 | 0.30 | Stable | None | | |



ABBREVIATIONS KEY Samples: ES - Environmental (Tab, Jar, Vial), D - Disturbed, B - Bulk, LB - Large Bulk, BLK - Block Sample, W - Water, R-Root
Tests: HV - Shear Hand Vane, PP - Pocket Penetrometer, PID - Volatile Organic Compounds, ICBR - In situ CBR

| | | | | | | |
|---|-----------------------|------------|-----------------|-----------|---------------------------|--------------------|
| Project Name Thorney Lane Phase 1 Due Diligence | | | | | | |
| Project No 24/3980 | Date Started | 29/07/2024 | Easting | 502977.88 | Ground Level (mOD) | Final Depth |
| | Date Completed | 30/07/2024 | Northing | 180024.12 | 31.51 | 10.00 m |
| Client Arup | | | | | | |

| BOREHOLE SUMMARY | | | | | | | | | |
|------------------|----------|------|--------------|------------|----------|--------|----------------|-------------|-----------|
| Top (m) | Base (m) | Type | Date Started | Date Ended | Rig Crew | Logger | Plant Used | Barrel Type | Drill Bit |
| 0.00 | 0.25 | DC | 29/07/2024 | 29/07/2024 | NB | EP | Hilti DD350 | | |
| 0.25 | 1.20 | IP | 29/07/2024 | 29/07/2024 | NB | EP | Hand Excavated | | |
| 1.20 | 10.00 | CP | 29/07/2024 | 29/07/2024 | NB | EP | Dando 2000 | | |

| WATER STRIKES | | | | | WATER ADDED | | HOLE | | CASING | |
|---------------|------------------|-------------|------------|------------|-------------|--------|-----------|---------------|-----------|---------------|
| Strike at (m) | Casing Depth (m) | Depth Water | Time (min) | Sealed (m) | From (m) | To (m) | Depth (m) | Diameter (mm) | Depth (m) | Diameter (mm) |
| | | | | | | | 0.00 | 150 | 0.00 | 150 |
| | | | | | | | 10.00 | 150 | 4.00 | 150 |


| CHISELLING & SLOW DRILLING | | | |
|----------------------------|--------|------------------|--------------------|
| From (m) | To (m) | Duration (hr:mm) | Material / Remarks |
| | | | |

| PROGRESS | | | | |
|------------|----------------|------------------|-----------------|---------|
| Date | Hole Depth (m) | Casing Depth (m) | Water Depth (m) | Remarks |
| 29/07/2024 | 0.00 | | Dry | |
| 29/07/2024 | 1.20 | | Dry | |
| 29/07/2024 | 1.60 | | Dry | |
| 29/07/2024 | 10.00 | 4.00 | Dry | |

| INSTALLATION DETAILS | | | | | | |
|----------------------|-----------|-----------|------------|-------------|-------|-------------------|
| Type | Diam (mm) | Depth (m) | Top RZ (m) | Base RZ (m) | Cover | Date Installation |
| GMP | 50 | 3.00 | 1.00 | 3.00 | Flush | 29/07/2024 |

| BACKFILL DETAILS | | | | |
|------------------|----------|--------------------------|---------------|---------|
| Top (m) | Base (m) | Description | Backfill Date | Remarks |
| 0.00 | 0.20 | Concrete | 30/07/2024 | |
| 0.20 | 1.00 | Bentonite Pellets | | |
| 1.00 | 3.00 | Pea Shingle | | |
| 3.00 | 4.00 | Bentonite Pellets | | |
| 4.00 | 10.00 | Cement / Bentonite Grout | 29/07/2024 | |

Note: All depths are in metres.
 All diameters are in millimetres.
 Water rise strikes are in minutes.
 For details of abbreviations see Key overleaf



| | | | | | | |
|--|-----------------------|------------|-----------------|-----------|---------------------------|--------------------|
| Project Name Thorney Lane Phase 1 Due Diligence | | | | | | |
| Project No 24/3980 | Date Started | 29/07/2024 | Easting | 502977.88 | Ground Level (mOD) | Final Depth |
| | Date Completed | 30/07/2024 | Northing | 180024.12 | 31.51 | 10.00 m |
| Client Arup | | | | | | |

| ROTARY FLUSH DETAIL | | | | | SPT DETAILS | | | | | |
|---------------------|--------|------------|------------------|--------------|-------------|------|---------------------|------------|------------------|-----------------|
| From (m) | To (m) | Flush Type | Flush Return (%) | Flush Colour | Depth (m) | Type | Reported Result | Hammer Ref | Casing Depth (m) | Water Depth (m) |
| | | | | | 1.20 | S | N=6 (1,2/1,1,2,2) | SDA4 | | Dry |
| | | | | | 2.00 | C | N=26 (2,3/5,5,7,9) | SDA4 | | Dry |
| | | | | | 3.00 | S | N=10 (1,1/2,2,3,3) | SDA4 | | Dry |
| | | | | | 5.00 | S | N=20 (3,3/4,4,6,6) | SDA4 | 4.00 | Dry |
| | | | | | 7.50 | S | N=32 (3,5/6,8,8,10) | SDA4 | 4.00 | Dry |

| CORING INFORMATION | | | | |
|--------------------|--------|------------------|--------------|---------|
| From (m) | To (m) | Duration (hr:mm) | Recovery (%) | Remarks |
| | | | | |

| ABBREVIATIONS KEY | | | |
|--|---|--|--|
| HOLE TYPE | SAMPLES | IN SITU TESTING | INSTALLATION MONITORING TYPE |
| IP - Inspection Pit CP - Cable Percussion RC - Rotary Cored CP+RC - Cable Percussion & Rotary DS - Dynamic Sampling DS+RC - Dynamic Sampling & Rotary DP - Dynamic Probe DS - Dynamic Sampling TP - Trial Pit/Trench | TT - Trial Trench VE - Vacuum Excavated OP - Observation Pit OH - Open Hole RO - Rotary Open Hole RS - Rota Sonic SL - Sampling Location HA - Hand Auger TP+HA - Trial Pit & Hand Auger | ES - Environmental (Tab, Jar, Vial) U - 100mm Undisturbed UT - 100mm Undisturbed Thin Wall D - Disturbed B - Bulk LB - Large Bulk BLK - Block C - Core W - Water | SPT - Standard Penetration Test HV - Shear Hand Vane PP - Pocket Penetrometer PID - Volatile Organic Compounds CPT - In situ Cone Penetration Test DCP - Dynamic Cone Penetrometer Test ICBR - In situ CBR Test MP - Mackintosh Probe Test GMP - Gas Monitoring Point GWMP - Groundwater Monitoring Point ICM - Inclinator SPE - Standpipe Piezometer SP - Standpipe AZCL - Assumed Zone of Core Loss RZ - Response Zone |
| Issue: FINAL | Checked: FP | Approved: OS | Log Print Date: 23/10/2024 |



| | | | | | | |
|--|-----------------------|------------|-----------------|-----------|---------------------------|--------------------|
| Project Name Thorney Lane Phase 1 Due Diligence | | | | | | |
| Project No 24/3980 | Date Started | 29/07/2024 | Easting | 502977.88 | Ground Level (mOD) | Final Depth |
| | Date Completed | 30/07/2024 | Northing | 180024.12 | 31.51 | 10.00 m |
| Client Arup | | | | | | Sheet 1 of 1 |

| Well | PROGRESS | | | Water Strikes | Level (mOD) | Legend | Depth (m) | Stratum Description | SAMPLES & TESTS | | | |
|------|----------|--------|-------|---------------|-------------|--------|-----------|---|--|-------------------------------|--------------------|---------------------------|
| | Date | Casing | Water | | | | | | Depth (m) | Type | Results | |
| G | 29/07/24 | | Dry | | 31.26 | | 0.25 | Grey CONCRETE. Clasts are angular to subrounded fine to coarse flint gravel (max. spacing between aggregate <5mm). Rare air voids. | 0.30 | ES2 | | |
| | | | | | 31.01 | | 0.50 | Soft, brown mottled dark brown slightly sandy slightly gravelly CLAY. Gravel comprises angular to subrounded fine to coarse flint, brick and clinker-like fragments. Sand is fine to coarse. (MADE GROUND) | 0.30 - 0.50 0.30 0.40 0.50 - 0.70 0.90 - 1.20 | LB1 PID D3 LB4 B5 | 0.60 ppm | |
| | 29/07/24 | | Dry | | 30.31 | | 1.20 | Firm, brown mottled dark brown slightly gravelly slightly sandy CLAY with rare pockets of dark grey staining (<30mm). Gravel comprises angular to subangular fine to coarse flint, brick and clinker-like fragments. (MADE GROUND) | 1.20 1.20 | D6 ES7 | | |
| | 29/07/24 | | Dry | | 29.91 | | 1.60 | Firm, brown mottled dark brown slightly gravelly slightly sandy CLAY. Gravel is angular to subrounded fine to coarse flint, brick and clinker-like fragments. (MADE GROUND) | 1.20 - 1.65 1.20 | D8 SPT | N=6 (1,2/1,1,2,2) | |
| | | | | | 29.51 | | 2.00 | ... becoming mottled brownish grey below 0.70m (MADE GROUND) | 1.65 - 2.00 2.00 | B9 D10 | 0.10 ppm | |
| | | | | | | | | Firm, brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is angular to subrounded fine to coarse flint. Sand is fine to medium. (MADE GROUND) | 2.00 - 2.50 2.00 | B11 SPT | N=26 (2,3/5,5,7,9) | |
| | | | | | | | | Brown very sandy clayey angular to subrounded fine to coarse flint GRAVEL. Sand is fine to coarse. (LYNCH HILL GRAVEL MEMBER) | 3.00 - 3.45 3.00 | D12 SPT | N=10 (1,1/2,2,3,3) | |
| | | | | | | | | Firm to stiff, grey mottled greyish brown slightly sandy CLAY with occasional pockets of brown fine sand (20mm). Sand is fine. (THAMES GROUP: WEATHERED LONDON CLAY) | | | | |
| | | | | | | 27.51 | | 4.00 | ... becoming medium dense at 2.00m | 4.00 | D13 | |
| | | | | | | | | | Stiff, grey slightly micaceous CLAY with rare to occasional pockets of light grey sand (<15mm) and rare fine to coarse gravel size claystone fragments. (THAMES GROUP: LONDON CLAY) | 4.00 - 4.45 4.50 | U14 D15 | 32 blows 100% Recovery |
| | | | | | | | | | ... with rare white flecks and bioturbation below 6.00m | 6.00 6.00 - 6.45 | D18 U19 | 38 blows 100% Recovery |
| | | | | | | | | | ... with occasional pockets of light grey fine sand (<20mm) below 7.00m | 7.00 | D21 | |
| | | | | | | | | | ... becoming very stiff at 7.50m | 7.50 - 7.95 7.50 | D22 SPT | N=32 (3,5/6,8,8,10) |
| | | | | | | | | | ... with occasional partings of light grey fine sand below 8.00m | 8.00 | D23 | |
| | | | | | | | | | | 9.00 9.00 - 9.45 | D24 U25 | 86 blows 100% Recovery |
| | | | | | | | | | | 9.50 | D26 | |
| | 29/07/24 | 4.00 | Dry | | 21.51 | | 10.00 | | End of hole at 10.00m | 10.00 | D27 | |

| | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|
| General Remarks | | | | | | | | | |
| 1. Borehole was diamond cored to 0.25m prior to borehole boring commencing. 2. UXO testing was carried out in the borehole. | | | | | | | | | |
| | | | | | | | | | |

| | | | | | | |
|---|-----------------------|------------|-----------------|-----------|---------------------------|--------------------|
| Project Name Thorney Lane Phase 1 Due Diligence | | | | | | |
| Project No 24/3980 | Date Started | 23/07/2024 | Easting | 502886.95 | Ground Level (mOD) | Final Depth |
| | Date Completed | 02/08/2024 | Northing | 179985.83 | 30.98 | 26.00 m |
| Client Arup | | | | | | |

| BOREHOLE SUMMARY | | | | | | | | | |
|------------------|----------|------|--------------|------------|----------|--------|----------------|-------------|-----------|
| Top (m) | Base (m) | Type | Date Started | Date Ended | Rig Crew | Logger | Plant Used | Barrel Type | Drill Bit |
| 0.00 | 0.25 | DC | 23/07/2024 | 23/07/2024 | DN & SM | EP | Hilti DD350 | | |
| 0.25 | 0.90 | IP | 23/07/2024 | 23/07/2024 | DN & SM | EP | Hand Excavated | | |
| 0.90 | 1.20 | DC | 24/07/2024 | 24/07/2024 | DN & SM | EP | Hilti DD350 | | |
| 1.20 | 26.00 | CP | 26/07/2024 | 30/07/2024 | LP & BW | FT | Dando 2000 | | |

| WATER STRIKES | | | | | WATER ADDED | | HOLE | | CASING | |
|---------------|------------------|-------------|------------|------------|-------------|--------|-----------|---------------|-----------|---------------|
| Strike at (m) | Casing Depth (m) | Depth Water | Time (min) | Sealed (m) | From (m) | To (m) | Depth (m) | Diameter (mm) | Depth (m) | Diameter (mm) |
| 0.88 | | 0.83 | 20 | | | | 0.00 | 200 | 0.00 | 200 |
| 2.50 | 2.30 | 1.30 | 20 | | | | 3.50 | 200 | 3.50 | 200 |
| 24.00 | 3.50 | 24.00 | 30 | | | | 26.00 | 150 | 26.00 | 150 |


| CHISELLING & SLOW DRILLING | | | |
|----------------------------|--------|------------------|----------------------|
| From (m) | To (m) | Duration (hr:mm) | Material / Remarks |
| 1.40 | 1.60 | 02:00 | Concrete obstruction |
| 26.00 | 26.00 | 01:00 | Claystone |

| PROGRESS | | | | |
|------------|----------------|------------------|-----------------|------------------|
| Date | Hole Depth (m) | Casing Depth (m) | Water Depth (m) | Remarks |
| 23/07/2024 | 0.00 | | Dry | |
| 23/07/2024 | 0.88 | | 0.88 | ... Water strike |
| 24/07/2024 | 0.90 | | | |
| 24/07/2024 | 1.20 | | Wet | |
| 26/07/2024 | 1.20 | | 1.10 | |
| 26/07/2024 | 1.40 | 1.40 | | |
| 29/07/2024 | 1.40 | 1.40 | | |
| 29/07/2024 | 2.50 | 2.30 | 2.50 | ... Water strike |
| 29/07/2024 | 3.50 | 3.30 | Dry | |
| 29/07/2024 | 19.00 | 3.50 | Dry | |
| 30/07/2024 | 19.00 | 3.50 | Dry | |
| 30/07/2024 | 24.00 | 3.50 | 24.00 | ... Water strike |
| 30/07/2024 | 25.50 | 25.00 | 24.00 | |
| 30/07/2024 | 26.00 | 26.00 | 26.00 | |

| INSTALLATION DETAILS | | | | | | |
|----------------------|-----------|-----------|------------|-------------|-------|-------------------|
| Type | Diam (mm) | Depth (m) | Top RZ (m) | Base RZ (m) | Cover | Date Installation |
| GMP | 50 | 3.00 | 1.00 | 3.00 | Flush | 02/08/2024 |

| BACKFILL DETAILS | | | | |
|------------------|----------|--------------------------|---------------|---------|
| Top (m) | Base (m) | Description | Backfill Date | Remarks |
| 0.00 | 0.20 | Concrete | 02/08/2024 | |
| 0.20 | 1.00 | Bentonite Pellets | | |
| 1.00 | 3.00 | Pea Shingle | | |
| 3.00 | 4.00 | Bentonite Pellets | | |
| 4.00 | 26.00 | Cement / Bentonite Grout | | |

Note: All depths are in metres.
 All dimeters are in millimetres.
 Water rise strikes are in minutes.
 For details of abbreviations see Key overleaf



| | | | | | | |
|--|-----------------------|------------|-----------------|-----------|---------------------------|--------------------|
| Project Name Thorney Lane Phase 1 Due Diligence | | | | | | |
| Project No 24/3980 | Date Started | 23/07/2024 | Easting | 502886.95 | Ground Level (mOD) | Final Depth |
| | Date Completed | 02/08/2024 | Northing | 179985.83 | 30.98 | 26.00 m |
| Client Arup | | | | | | |

| ROTARY FLUSH DETAIL | | | | | SPT DETAILS | | | | | |
|---------------------|--------|------------|------------------|--------------|-------------|------|--------------------------------|------------|------------------|-----------------|
| From (m) | To (m) | Flush Type | Flush Return (%) | Flush Colour | Depth (m) | Type | Reported Result | Hammer Ref | Casing Depth (m) | Water Depth (m) |
| | | | | | 1.20 | C | N=50 (25 for 125mm/50 for 0mm) | SDA7 | 1.00 | 1.10 |
| | | | | | 2.50 | C | N=17 (3,5/4,4,5,4) | SDA7 | 2.30 | 1.30 |
| | | | | | 3.50 | S | N=15 (1,2/3,3,4,5) | SDA7 | 3.30 | Dry |
| | | | | | 6.00 | S | N=19 (2,3/4,4,5,6) | SDA7 | 3.50 | Dry |
| | | | | | 9.00 | S | N=21 (4,4/4,5,6,6) | SDA7 | 3.50 | Dry |
| | | | | | 12.00 | S | N=24 (3,4/5,6,6,7) | SDA7 | 3.50 | Dry |
| | | | | | 15.00 | S | N=27 (3,4/5,7,7,8) | SDA7 | 3.50 | Dry |
| | | | | | 18.00 | S | N=27 (4,4/5,6,8,8) | SDA7 | 3.50 | Dry |
| | | | | | 21.00 | S | N=35 (4,8/8,8,8,11) | SDA7 | 3.50 | Dry |
| | | | | | 22.50 | S | N=32 (4,6/7,8,8,9) | SDA7 | 3.50 | Dry |
| | | | | | 24.00 | S | N=50 (6,8/50 for 218mm) | SDA7 | 3.50 | 24.00 |
| | | | | | 25.50 | S | N=50 (6,7/50 for 295mm) | SDA7 | 25.00 | 24.00 |
| | | | | | 26.00 | S | N=50 (25 for 70mm/50 for 45mm) | SDA7 | 26.00 | 26.00 |

| CORING INFORMATION | | | | |
|--------------------|--------|------------------|--------------|---------|
| From (m) | To (m) | Duration (hr:mm) | Recovery (%) | Remarks |
| | | | | |

| | | | |
|--|---|--|---|
| ABBREVIATIONS KEY | | | |
| HOLE TYPE IP - Inspection Pit CP - Cable Percussion RC - Rotary Cored CP+RC - Cable Percussion & Rotary DS - Dynamic Sampling DS+RC - Dynamic Sampling & Rotary DP - Dynamic Probe DS - Dynamic Sampling TP - Trial Pit/Trench | SAMPLES TT - Trial Trench VE - Vacuum Excavated OP - Observation Pit OH - Open Hole RO - Rotary Open Hole RS - Rota Sonic SL - Sampling Location HA - Hand Auger TP+HA - Trial Pit & Hand Auger | IN SITU TESTING ES - Environmental (Tab, Jar, Vial) U - 100mm Undisturbed UT - 100mm Undisturbed Thin Wall D - Disturbed B - Bulk LB - Large Bulk BLK - Block C - Core W - Water | INSTALLATION MONITORING TYPE SPT - Standard Penetration Test HV - Shear Hand Vane PP - Pocket Penetrometer PID - Volatile Organic Compounds CPT - In situ Cone Penetration Test DCP - Dynamic Cone Penetrometer Test ICBR - In situ CBR Test MP - Mackintosh Probe Test GMP - Gas Monitoring Point GWMP - Groundwater Monitoring Point ICM - Inclinator SPE - Standpipe Piezometer SP - Standpipe AZCL - Assumed Zone of Core Loss RZ - Response Zone |
| Issue: FINAL | Checked: FP | Approved: OS | Log Print Date: 10/12/2024 |



Project Name

Thorney Lane Phase 1 Due Diligence

| | | | | | | |
|-------------------------------------|-----------------------|------------|-----------------|-----------|---------------------------|--------------------|
| Project No 24/3980 | Date Started | 23/07/2024 | Easting | 502886.95 | Ground Level (mOD) | Final Depth |
| | Date Completed | 02/08/2024 | Northing | 179985.83 | 30.98 | 26.00 m |

Client

Arup

Sheet 1 of 3

| Well | PROGRESS | | | Water Strikes | Level (mOD) | Legend | Depth (m) | Stratum Description | SAMPLES & TESTS | | |
|------|----------|--------|-------|---------------|-------------|--------|---|---|----------------------|---------------------------|--------------------------------|
| | Date | Casing | Water | | | | | | Depth (m) | Type | Results |
| G | 23/07/24 | | Dry | | 30.73 | | 0.25 | Grey CONCRETE. Clasts are angular to subrounded fine to coarse flint gravel (max. spacing between aggregates <10mm). Rare air voids. | 0.20 - 0.50 | LB1 | |
| | | | | | 30.48 | | 0.50 | Brown sandy GRAVEL. Gravel comprises angular to subrounded fine to coarse flint and concrete fragments. Sand is fine. | 0.40 0.40 | ES2 PID | 0.30 ppm |
| | 23/07/24 | | 0.88 | ☒ | 30.08 | | 0.90 | (MADE GROUND) | | | |
| | 24/07/24 | | | | 29.78 | | 1.20 | ... becoming grey with low concrete cobble content and clinker-like fragments. Sand becoming fine to coarse below 0.28m | 1.20 | ES3 | |
| | 26/07/24 | 1.40 | Wet | ☒ | 29.58 | | 1.40 | | 1.20 | SPT | N=50 (25 for 125mm/50 for 0mm) |
| | 26/07/24 | 1.40 | | | 29.38 | | 1.60 | Brown gravelly fine to coarse SAND. Gravel comprises angular to subrounded fine to coarse flint, brick, concrete and clinker-like fragments. | 1.20 1.60 - 2.10 | PID B4 | 0.10 ppm |
| | 29/07/24 | | | | | | | (MADE GROUND) | 2.00 | D5 | |
| | | | | | | | | CONCRETE | 2.20 | ES6 | |
| | 29/07/24 | 2.30 | 2.50 | ☒ | 28.48 | | 2.50 | Soft, brown mottled brownish grey slightly gravelly slightly sandy silty CLAY with dark grey staining. Gravel comprises angular to subangular fine to coarse flint and brick fragments. Sand is fine to coarse. | 2.20 2.50 | PID SPT | 0.30 ppm N=17 (3,5/4,4,5,4) |
| | | | | | | | | (MADE GROUND) | 3.00 | D8 | |
| | | | | | | | | CONCRETE | 3.00 - 3.50 | B7 | |
| | 29/07/24 | 3.30 | Dry | | | | | Soft, brown mottled dark grey slightly sandy slightly gravelly silty CLAY. Gravel comprises angular to subangular fine to coarse flint and brick fragments. Sand is fine to coarse. | 3.20 3.20 3.50 | ES9 PID SPT | 0.30 ppm N=15 (1,2/3,3,4,5) |
| | | | | | | | | (MADE GROUND) | 4.00 | D11 | |
| | | | | | | | | Medium dense, multicolored sandy silty angular to subrounded medium to coarse flint GRAVEL. Sand is fine to coarse. | 4.00 4.00 | ES10 PID | 0.20 ppm |
| | | | | | | | | (LYNCH HILL GRAVEL MEMBER) | 4.50 - 4.95 | U12 | |
| | | | | | | | | Firm to stiff, brown slightly sandy slightly gravelly silty CLAY. Gravel is angular to subrounded medium to coarse flint. Sand is fine to coarse. | | | 31 blows 100% Recovery |
| | | | | | | | | (THAMES GROUP: WEATHERED LONDON CLAY) | | | |
| | | | | | | | | Stiff, dark brown mottled dark grey slightly sandy silty CLAY with occasional pockets of grey and orangish brown silty fine sand (<12mm), lenses of white silt and lignite fragments (<2mm). Sand is fine. | | | |
| | | | | | | | | (THAMES GROUP: LONDON CLAY- A3) | 6.00 | D13 | |
| | | | | | | | | ... with a band of claystone between 4.10m and 4.50m | 6.00 - 6.45 | D14 | |
| | | | | | | | ... becoming slightly micaceous from 6.00m | 6.00 | SPT | N=19 (2,3/4,4,5,6) | |
| | | | | | | | ... with rare off-white shell fragments (<2mm) from 6.10m | | | | |
| | | | | | | | | 7.00 | D15 | | |
| | | | | | | | | 7.50 - 7.95 | U16 | 47 blows 80% Recovery | |
| | | | | | | | | 8.00 | D17 | | |
| | | | | | | | | 9.00 | D18 | | |
| | | | | | | | ... with occasional partings of silty fine sand at 9.00m | 9.00 - 9.45 9.00 | D19 SPT | N=21 (4,4/5,6,6) | |
| | | | | | | | | 10.00 | D20 | | |
| | | | | | | | | 10.50 - 10.95 | U21 | 52 blows 100% Recovery | |
| | | | | | 19.98 | | 11.00 | Stiff, dark grey silty CLAY. (THAMES GROUP: LONDON CLAY- A2) | 11.00 | D22 | |

General Remarks

- Borehole was diamond cored to 0.25m prior to borehole boring commencing.
- UXO testing was carried out in the borehole.
- Water seepage encountered at 0.88m depth, rising to 0.83m (30min), and at 2.50m depth, rising to 2.30m (5min), 2.00m (10 min), 1.70m (15min), and 1.30m (20min).
- Water seepage encountered at 24.00m depth.
- Location aborted at 26.00m depth due to refusal.



| | | | | | | |
|--|-----------------------|------------|-----------------|-----------|---------------------------|--------------------|
| Project Name Thorney Lane Phase 1 Due Diligence | | | | | | |
| Project No 24/3980 | Date Started | 23/07/2024 | Easting | 502886.95 | Ground Level (mOD) | Final Depth |
| | Date Completed | 02/08/2024 | Northing | 179985.83 | 30.98 | 26.00 m |
| Client Arup | | | | | | Sheet 2 of 3 |

| Well | PROGRESS | | | Water Strikes | Level (mOD) | Legend | Depth (m) | Stratum Description | SAMPLES & TESTS | | |
|------|----------|--------|-------|---------------|-------------|--------|-----------|---|---------------------------------|-------------------|---------------------------|
| | Date | Casing | Water | | | | | | Depth (m) | Type | Results |
| | | | | | | | | ... becoming extremely closely to closely fissured below 12.00m. Fissures are horizontal to subhorizontal, planar, smooth, unpolished | 12.00 12.00 - 12.45 12.00 | D23 D24 SPT | N=24 (3,4/5,6,6,7) |
| | | | | | | | | | 13.00 | D25 | |
| | | | | | | | | ... with rare to occasional black flecks from 14.00m ... with rare off-white and brown shell fragments (<2mm) from 14.10m ... becoming fissured below 14.20m. Fissures are randomly oriented, planar, smooth, unpolished ... with occasional partings of fine sand at 14.50m | 13.50 - 13.95 14.00 | U26 D27 | 55 blows 100% Recovery |
| | | | | | | | | | 15.00 15.00 | D28 SPT | N=27 (3,4/5,7,7,8) |
| | | | | | | | | | 16.00 | D29 | |
| | | | | | | | | | 16.50 - 16.95 | U30 | 70 blows 90% Recovery |
| | | | | | | | | | 17.00 | D31 | |
| | | | | | | | | | 18.00 18.00 - 18.45 18.00 | D32 D33 SPT | N=27 (4,4/5,6,8,8) |
| | 29/07/24 | 3.50 | Dry | | | | | ... with occasional bioturbation from 19.00m | 19.00 | D34 | |
| | 30/07/24 | 3.50 | Dry | | | | | | 19.50 - 19.95 | U35 | 68 blows 80% Recovery |
| | | | | | | | | ... with rare pockets of grey fine sand (<1mm) from 20.00m | 20.00 | D36 | |
| | | | | | | | | | 20.50 - 20.95 | U37 | 64 blows 85% Recovery |
| | | | | | | | | ... becoming very stiff with frequent foraminifera and rare pyritised lignite fragments (<1mm) below 21.00m ... with frequent lenses of white silt and occasional pockets of greenish grey sand (<3mm) at 21.40m | 21.00 21.00 - 21.45 21.00 | D38 D39 SPT | N=35 (4,8/8,8,8,11) |
| | | | | | | | | | 22.00 22.00 - 22.45 | D40 U41 | 67 blows 90% Recovery |
| | | | | | | | | | 22.50 - 22.95 22.50 | D42 SPT | N=32 (4,6/7,8,8,9) |
| | | | | | | | | ... becoming slightly sandy with frequent off-white and brown shell fragments (<4mm) and rare pyrite nodules (<20mm) below 23.20m | 23.50 - 23.95 | U43 | 100 blows 80% Recovery |

| | | | | | | | | |
|---|--|--|--|--|--|--|--|--|
| General Remarks | | | | | | | | |
| 1. Borehole was diamond cored to 0.25m prior to borehole boring commencing. 2. UXO testing was carried out in the borehole. 3. Water seepage encountered at 0.88m depth, rising to 0.83m (30min), and at 2.50m depth, rising to 2.30m (5min), 2.00m (10 min), 1.70m (15min), and 1.30m (20min). 4. Water seepage encountered at 24.00m depth. 5. Location aborted at 26.00m depth due to refusal. | | | | | | | | |