



Land & Development Advisory Ltd

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# **AGEAS BOWL, EASTLEIGH**

Geo-Environmental Preliminary Risk Assessment





Land & Development Advisory Ltd

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## **AGEAS BOWL, EASTLEIGH**

### **Geo-Environmental Preliminary Risk Assessment**

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**PROJECT NO. 70073579**

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# 1 INTRODUCTION

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## 1.1 AUTHORISATION

Land & Development Advisory Ltd ('the Client') instructed WSP UK Limited (WSP) to undertake a Geo-Environmental Preliminary Risk Assessment of the land at the Ageas Bowl site, Botley Road, West End, Southampton, SO30 3XH ('the Site').

WSP understands that the Site is approximately 15.9 ha and comprises the following five main redevelopment areas:

**Character Area 1 Northern Gateway** – Currently used for car parking for the hotel and golf course and also includes a section of the landscaped golf course with a section of a pond. This area will be redeveloped for additional parking facilities, a fan zone and a spectator bridge leading into the stadium.

**Character Area 2 Budget Hotel** – Located to the East of the stadium and occupied by two residential properties, an enclosed netted golf pod and golf buggy storage area and will be redeveloped for a five storey hotel which has access into the stadium leading to the fan zone concourse seating areas.

**Character Area 3 Pavilion and Maintenance** – Located to the South East of the main cricket pitches and incorporates a section of land comprising of the stadium concourse, part of the landscaped berm supporting the concourse and also part of the existing maintenance workshop area. The lower ground floor is to be used for maintenance storage and also storage of cricket nets. The ground floor is to provide a store for the wicket cover, more stores and WC/changing facilities. The final levels are on the stadium concourse, a pavilion is proposed to 'look out' to either the main cricket or practice pitch with a roof top bar above.

**Character Area 4 Southern Gateway** – Currently used by Hampshire Wellbeing Centre for physiotherapists, chiropractor and other services, parking for the facility, temporary container accommodation used by the golf course, also other shipping containers used for storage and landscaped areas. This will be redeveloped for pedestrian access from the temporary car parks to the South of the stadium.

**Character Area 5 Residential & Wellbeing** - Located to the east of the stadium and used for car parking for the Ageas Bowl Cricket Stadium. Site boundary and proposed development plans are presented in **Appendix C**.

A Geo-Environmental PRA is required to support the detailed application of this redevelopment.

## 1.2 OBJECTIVES AND SCOPE OF WORKS

The key objectives of this assessment are as follows:

- Develop a preliminary conceptual site model in order to identify potential ground contamination associated with the potential redevelopment of the Site; and,
- Evaluate the likely exposure and its potential significance on identified receptors and provide risk management advice to support redevelopment.

The scope of this report comprises the following:

- Completion of a Site walkover;

- A review of relevant previous reports pertaining to the Site (where available);
- A review of publicly available historical maps and plans (where available) to identify former land uses and potential contaminative activities on and surrounding the Site;
- A review of relevant regulatory databases;
- Contact relevant regulators (Environmental Agency, County Authority and Local Authority);
- A review of relevant publicly available information relating to hydrological features, hydrogeology, neighbouring land use, ecologically sensitive uses and geology in order to establish the environmental setting of the Site;
- Develop a preliminary Conceptual Site Model via the source-pathway-receptor contaminant linkage approach;
- Outline the environmental risks and / or opportunities, with respect to ground, groundwater and ground gas conditions, which may potentially arise as liabilities or constraints associated with redevelopment of the Site; and,
- Preparation of a Geo-Environmental Preliminary Risk Assessment Report.

### 1.3 LEGISLATIVE CONTEXT AND GUIDANCE

The assessment was undertaken in the legislative context of:

- Part 2A of The Environmental Protection Act (1990); and,
- The National Planning Policy Framework (2021).

The following good practice and statutory guidance was considered, and the assessment was undertaken in general accordance with:

- Environment Agency Land Contamination Risk Management (LCRM) guidance (2020); and,
- CIRIA C552 'Contaminated Land Risk Assessment. A guide to good practice' (2001).

### 1.4 SOURCES OF INFORMATION

The following relevant sources of information listed below in Table 1 were used in the production of this report:

**Table 1-1 – Sources of Information**

| Sources of Information | Report/Reference                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Public Information     | <ul style="list-style-type: none"> <li>■ British Geological Survey (BGS) Online Viewer (<a href="https://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html">https://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html</a>) accessed 25 November 2021;</li> <li>■ BGS map – Southampton, England and Wales Sheet 315, Solid and Drift Geology, 1:50 000 (2005) accessed 25 November 2021;</li> </ul> |

| Sources of Information  | Report/Reference                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         | <ul style="list-style-type: none"> <li>■ BGS Lexicon of Named Rock Units (<a href="https://webapps.bgs.ac.uk/lexicon/">https://webapps.bgs.ac.uk/lexicon/</a>) accessed 25 November 2021;</li> <li>■ Defra's Multi-Agency Geographic Information for the Countryside MAGIC website (<a href="https://magic.defra.gov.uk/MagicMap.aspx">https://magic.defra.gov.uk/MagicMap.aspx</a>) accessed 7 January 2022;</li> <li>■ Environment Agency Catchment Data Explorer, (<a href="https://environment.data.gov.uk/catchment-planning/">https://environment.data.gov.uk/catchment-planning/</a>) accessed 7 January 2022;</li> <li>■ Public Health England, UK Maps of Radon (<a href="https://www.ukradon.org/information/ukmaps">https://www.ukradon.org/information/ukmaps</a>) accessed 7 January 2022;</li> <li>■ Eastleigh Borough Council Planning Applications (<a href="https://www.eastleigh.gov.uk/planning-and-building/planning-applications">https://www.eastleigh.gov.uk/planning-and-building/planning-applications</a>), accessed 5 January 2022;</li> <li>■ The Coal Authority Interactive Viewer accessed at <a href="http://mapapps2.bgs.ac.uk/coalauthority/home.html">http://mapapps2.bgs.ac.uk/coalauthority/home.html</a> on 7 January 2022; and,</li> <li>■ Zetica UXO Risk Maps (<a href="https://zeticauxo.com/downloads-and-resources/risk-maps/">https://zeticauxo.com/downloads-and-resources/risk-maps/</a>), accessed 23 November 2021.</li> </ul> |
| Third Party Information | <ul style="list-style-type: none"> <li>■ Groundsure Enviro+Geo Insight Report, Order Number: 20136787, dated 23 November 2021 (<b>ordered by WSP and pertains to this study Site</b>);</li> <li>■ TJ Transport Limited – Waste Recovery Plan – Ageas Bowl Stadium – dated January 2017;</li> <li>■ Environ – Hampshire Rose Bowl EIA 2007 – Volume 9: Contamination – dated December 2007; and,</li> <li>■ ACS Testing Ltd – Thorneydown Farm – Desk Study and Contaminated Land Report – dated October 2019.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Notes:                  | The report contains British Geological Survey materials ©NERC 2019 and Environment Agency information ©Environment Agency and database right.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

## 1.5 LIMITATIONS

This report is addressed to and may be relied upon by Land & Development Advisory Ltd. It may not be relied upon or transferred to any other parties without the express written agreement of WSP. No responsibility will be accepted where this report is used, either in its entirety or in part, by any other party. WSP cannot be held liable for third party information. Full details of the limitations are provided in **Appendix A**.

## 1.6 UNDERSTANDING RISK

It is important to understand that any risks identified during a preliminary assessment, such as the ones presented in this document, are perceived risks based on the information reviewed. A more detailed assessment of the actual risks can only be undertaken following further intrusive



investigations. The preliminary assessments presented herein are qualitative and based on professional judgements following the review of available data and within the context of the existing / proposed use. Those risk categories presented (very low, low, low to moderate, moderate, high and very high) follow guidance presented in CIRIA Publication C552, Contaminated Land Risk Assessment – A Guide to Good Practice. CIRIA states that the risk levels should be based on an understanding of both the probability (likelihood) of a risk occurring and the magnitude of the potential consequence (severity) of risk. CIRIA defines four levels of probability and four levels of severity in relation to contaminated land, as presented in **Appendix B**.

## 2 SUMMARY OF SITE AND SURROUNDING AREA

### 2.1 SITE DESCRIPTION AND CURRENT USE

Site location and boundary plans are presented in **Appendix C**.

A summary of relevant site details is provided below in **Table 2-1**. A site walkover was undertaken by WSP on 22<sup>nd</sup> November 2021. Representative site photographs are included in **Appendix D**.

**Table 2-1 – Summary of Site Details**

| Summary of Site Details          |      | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name and Address of Site         |      | Land at the Ageas Bowl site, Botley Road, West End, Southampton, SO30 3XH.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| National reference               | Grid | 4478843, 114026                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Site Description and Current Use |      | The Site is irregular in shape consisting of five parcels of land within and around the periphery of the cricket stadium. The proposed areas of re-development are currently predominantly open air comprising a number of gravel or asphalt surfaced carparks, a section of the golf course which includes a number of sizeable man-made ponds to the North East and surrounding land including some woodland close to the site boundary. A number of existing buildings are also included within the proposed areas of re-development including a section of the stadium itself, the adjacent well-being centre and a few residential buildings ('Hickley Farm Cottages'). The site entrance is to the North off Botley Road, leading to an asphalt surfaced access road ('Marshall Drive') which splits at a small roundabout to the North of the stadium with one exit leading to an access road running anticlockwise around the stadium to access the main large gravel surfaced carpark in the Northwest and a smaller asphalt surfaced carpark for the well-being centre and training pitch/pavilion to the South. The other exit leads to a large asphalt surfaced carpark in front of the Hilton hotel to the North East and a smaller auxiliary gravelled carpark North East of this which can be accessed by a locked gate off of Botley Road as well as from the Hilton hotel carpark. |
| Area                             |      | Approximately 15.9 hectares.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Site Setting                     |      | <p>The Site is situated in the North Eastern outskirts of the greater Southampton area, within Eastleigh Borough, approximately 100 m west of the M27 motorway.</p> <p>The area is predominantly sub-urban residential with commercial stores beyond the M27 to the West, Hickley Woods to the East and a David Lloyd gym and Holiday Inn immediately to the North with residential housing beyond.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Boundaries and Surrounding Area  |      | The proposed car park area in the North East portion of the Site is bound to the North by mature treeline along Botley Road (B3035) and by tree line to the rear of a row of detached residential properties along Botley Road, one of which is operating as a UPVC recycling yard; to the East by a steep slope leading downwards to a small                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| Summary of Site Details     | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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|                             | <p>wooded area with ponds along the M27; to the South by a further section of the golf course including going through an existing man made pond and to the South by the Hilton hotel; and to the West by the rear of the footway along Marshal Drive.</p> <p>The proposed budget hotel, which lies to the South of the proposed car park area, adjoins the stadium at the Southern edge of the Hilton Hotel. This part of the site is currently occupied by 'Hickley Farm Cottages', an enclosed netted golf pod and golf buggy storage area and is bound to the West by the Stadium concourse, to the Northwest by the Hilton hotel, to the North by existing car park in front of the Hilton, to the East by the encroaching golf course and to the South by a wooded area (South East) and an access track leading on to the training ground.</p> <p>The proposed pavilion and area of extended berm occupying the Southern portion of the stadium are bound by stadium concourse to the North East and South West, by the main pitch to the North West and the training pitch and cricket training nets to the South.</p> <p>The proposed Southern Gateway area in the South West of the Site is currently occupied by the wellbeing centre, car park and a small, gravelled site compound. The Southern Gateway area is bound to the North by the access road, to the West by Woodland ('Hanger Copse'), to the South by treeline leading on to golf course and to the East by the training pitch and pavilion.</p> <p>The proposed area of residential development in the West of the Site is bound by a drainage ditch and treeline leading on to commercial properties (gym/sports facilities and vehicle hire) to the North East; drainage ditch and treeline leading on to residential properties to the North West; Woodland to the West and Southwest ('Hanger Copse' and 'Telegraph Woods'); and by access road around the stadium to the East. The main Westerly portion of this section of the Site is raised above the natural ground profile such that it slopes off steeply along the North East, North West and South West perimeters.</p> <p>The wooded area to the West of the Site covers approx. 57 acres extending 0.6 Km from the site at its widest. Beyond this and beyond the small area of commercial properties immediately North of the Site land use is predominantly residential for over 1 km. The nearest Agricultural land lies beyond the M27 approx. 0.5 Km North East of the Proposed car park area. To the East, beyond the M27, is an area of mixed industrial/commercial land use extending up to 1 Km from the Sites Eastern boundary, beyond which are further residential properties. The golf course continues beyond the Southern Site boundary for up 0.5 km beyond which lies a mix of commercial warehousing, industrial, residential and agricultural land.</p> |
| Vegetation and Ground Cover | <p>The proposed new car park area to the North East of the Site comprises a mixture of gravel and asphalt surfaced car park, golf course to grass, manmade ponds and connecting streams (culverted in places) and is heavily vegetated with scrub and mature trees around the perimeter.</p> <p>The proposed budget hotel covers a mix of hardstanding and soft landscaped areas including; the stadium itself which is surfaced with either brick paviours or asphalt, an asphalt surfaced access track which runs around the stadium and driveway leading to Hickley Farm Cottages, the footprint of Hickley Farm Cottages, an enclosed netted golf pod which is surfaced with artificial grass, a golf buggy storage area which is</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| Summary of Site Details | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         | <p>gravel surfaced with road planings and the golf course, which is to grass. Also there is a gas substation to the North East of the cottages, which is cut into the stadium berm with rock gabion retaining walls.</p> <p>The proposed pavilion/maintenance area surfacing is primarily hardstanding surfaced with either asphalt or brick pavements forming the public concourse to the rear of the seated areas of the stadium with a row trees planted to the rear. A steeply sloped grassed berm supports the stadium concourse.</p> <p>The proposed Southern Gateway area comprises a mix of ground cover with asphalt hardstanding covering the carpark for the wellbeing centre, gravelled track leading to a gravel surfaced storage/site compound, the well-being building itself, stockpiles of soil and manure, woodland and a large area which appears to have been recently landscaped and seeded to grass.</p> <p>The carpark, occupying the proposed housing area to the West of the Site, is gravel covered with the gravel being comprised mainly of road planings. In places, where surface water run-off channels have removed this covering, crushed demolition materials such as bricks and concrete can be seen beneath. This car park area is surrounded by raised mounds some of which are grass covered whilst others are more overgrown with vegetation with saplings planted in places. Beyond these raised mounds the site drops in level steeply downwards into a drainage ditch along the West perimeter of this section of the site, which was dry at the time of site walkover overgrown with vegetation and occasionally revealing more construction waste, beyond which lies treeline along bordering properties or woodland. The perimeter road leading from Marshal Drive around past this car park is asphalt surfaced along its whole length and landscaped along either side by grass and occasional trees.</p> |
| Topography              | <p>The topography of the Site varies significantly with major earthworks having been undertaken to achieve the current levels across site. Historical mapping reveals the natural profile once sloped down to the North East from 65 m AOD around Hanger Copse, along the South Western boundary of the proposed residential development area, down to less than 35 m AOD to the East along the boundary with the M27. The current profile is raised significantly in a number of places.</p> <p>The topography of the golf course to the East in the proposed car park area is undulating, along the Northern perimeter here there is a drainage ditch adjacent to Botley Road but no significant change in level to the road beyond. Along the Eastern perimeter however there is a significant change in level from the golf course down towards the woodland and ponds near the edge of the M27. The existing car parks in this area for the Hilton Hotel, golf course and beside Botley Road are relatively level. Although the gravelled carpark by Botley Road is at a lower level than the larger Hilton car park. An access road leads downwards from the Hilton car park to the towards the gravel surfaced car park adjacent to Botley Road. There is a further smaller car park directly in front of the east section of the Hilton hotel which is used by media trucks on international match day, again it is relatively flat with the southern end raised to adjacent ground and retained by rock gabions.</p> <p>The proposed budget hotel and pavilion are both to be constructed in part into the existing stadium, the outside of which is formed of a steeply graded grassy berm, which becomes a vertical reinforced concrete retaining wall structure adjacent to the existing access tunnel between the training pitch and main cricket pitch. The</p>                                                                            |

| Summary of Site Details                                                                     | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                             | <p>proposed budget hotel will protrude outwards to the East from the stadium at the Southern end of the Hilton hotel, here there is a significant level difference between the level of the stadium concourse and the surrounding land (golf course, enclosed netted golf pod and Hickley Farm Cottages) such that the berm is much higher here than at the location of proposed pavilion. The proposed pavilion is situated above the access tunnel between the training pitch and main pitch, there is a small change in topography between the inside and outside of the stadium as both pitches are levelled flat. Where it is proposed to extend the berm in order to form a wider 'Fan Zone' between the proposed pavilion and budget hotel the land slopes down from the training pitch towards Hickley Farm Cottages.</p> <p>The topography of the proposed Southern gateway area also varies significantly. In the vicinity of the existing wellbeing centre and adjoining carpark it slopes upwards in gradient from the stadium access road to the wellbeing centre and then levels off to the south towards the adjoining golf course. To the East however, beyond the existing pavilion a steep slope leads down to the training pitch, where it has been cut into the natural slope to form a relatively flat area. The existing gravel surfaced site compound/storage area lies immediately North of the wellbeing centre, here the ground has been terraced to form a relatively flat area close to the profile of the adjoining golf course to the South however beyond this to the West the ground is grassed and steeply slopes upwards to the South and East towards the natural profile of Hangar Woods.</p> <p>The carpark to the West in the proposed residential area slopes downwards in gradient to the East, the main western part of which is surrounded by raised mounds where earthworks have been performed to form a less steep gradient around the carpark beyond which the topography changes in level down towards a drainage ditch or the land surrounding the Site. This is most significant at the far West corner and along the North West edge where the natural profile of Hanger copse is approx. 10-15 m lower. Raised mounds are also present along the East side of the car park towards the access road leading round to the welfare car park area.</p> <p>As the car-park tapers off towards Marshall Drive it continues to slope East becoming closer to the profile of the surrounding land such that the change in level is eliminated by the time it reaches Marshall Drive. The drainage ditch continues along the North boundary here beyond which lies the roundabout and access road for the adjacent gym.</p> |
| <p><b>Observed debris potentially contaminative sources</b></p> <p><b>waste, and/or</b></p> | <p>The car park to the west of the stadium is surfaced in road planings and is built up significantly with imported fill which is expected to initially consist primarily of crushed construction waste. The golf course has been significantly landscaped and built up in areas with imported fill material.</p> <p>Composting piles of organic material were observed in a number of areas around the Site. Considerable quantities of grass cuttings in various states of decay exist along the South West perimeter of the carpark area to the west of the stadium. Wood chippings piles were located around the edges of the gravel carpark beside Botley Road. Also leaf piles were observed in the wooded area behind Hickley Farm Cottages.</p> <p>The wooded area behind Hickley Farm Cottages contained a number of other waste materials including potentially creosote soaked railway sleepers. This area also</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Summary of Site Details | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         | <p>contained a large storage tank, likely for water storage from the nearby groundwater abstraction point (Licence No: SO/042/0030/005, Details: Spray Irrigation – Storage).</p> <p>A golf caddy storage compound behind Hickley Farm Cottages was observed to contain a number of engine oil/fuel canisters stored outside in a plastic tray. To the North of the stadium cut into the berm in a similar manner was a similar shed containing an electricity sub-station.</p> <p>The site compound/storage area to the North of the Wellbeing centre contained a large waste skip, numerous old fridges and evidence of old site buildings locations where the ground was covered by crushed demolition waste (potential asbestos content). Stockpiles of soil and manure were also observed just to the North of here.</p> <p>The workshop area off the access tunnel between the training pitch and main pitch contained a variety of fuels, oils and lubricants and the concrete hardstanding floor was stained in places from previous small-scale spills and sawdust was observed being used to soak up a recent spill. Within the access tunnel itself was a twin skinned plastic above ground fuel storage tank beside which the concrete floor was stained from historic spillages. A large bunded storage tank containing liquid fertiliser, bags of pelleted fertiliser and numerous bottles of liquid fertiliser were also stored here.</p> |

### 3 HISTORICAL LAND USE

#### 3.1 SITE HISTORY

##### 3.1.1 HISTORICAL MAP REVIEW

Historical maps provided as part of the Groundsure report (**Appendix E**) were reviewed. **Table 3-1 and 3-2** below provides a summary of this information:

**Table 3-1 – Historical Map Summary (On-Site)**

| Map Dates            | Land Use                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1868-1871            | The Site is mostly occupied by open fields with some woodland, Westwood Copse occupying the West section of the proposed car-parking area and extending to the Northern perimeter of the proposed residential area and Round Copse occupying a portion of the proposed residential development to the West of the site. Hickley Farm lies mostly within the South section of the cricket ground, there are several outbuildings some of which along with a well and a paddock/garden are occupying the North section of the proposed Southern Gateway area. A small building/cottage is situated around the position of the existing Hickley Farm Cottages accessed by a small road from Hickley Farm and also track from Botley Road. |
| 1895-1896, 1896-1897 | On-site a portion of Round Copse has been felled so it now forms the South-Western Site boundary and off-site a section of Westwood Copse has also been felled so only the small portion to the North of the proposed parking area exists. Some field boundaries appear to have been removed so one large field now occupies most of the current cricket ground, the entire proposed residential development area and a portion of the proposed parking area.                                                                                                                                                                                                                                                                          |
| 1910                 | A small outbuilding has been added in the rear garden area of what is now Hickley Farm Cottages.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1957                 | Three additional outbuildings have been constructed around Hickley Farm within the footprint of the cricket ground. A field to the South adjoining Hickley Farm that occupies the east section of the proposed Southern Gateway and also part of the Pavilion and Maintenance areas has been changed to an orchard. Two tracks running NW-SE and two additional fences have been put in place splitting the large field. An area created by this split to the North of Westwood Copse is shown to be occupied by allotment gardens.                                                                                                                                                                                                    |
| 1967-1968            | Additional fences splitting the field occupying the proposed residential area have been formed and an additional small building at Hickley Farm Cottages constructed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 1978-1981            | A spring is shown on the East site boundary first marked as origin for a small stream flowing away from the Site to the East. The track to the South dividing the large field no longer shown.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 1987, 1989-1993      | The remaining track dividing large field appears to have been removed, a number of fences dividing fields occupying the East portion of the proposed car-parking area also have been removed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| Map Dates                                       | Land Use                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1999</b> (aerial photograph) and <b>2001</b> | Significant development has occurred on Site. The current stadium area now occupied by County Cricket Ground shown in 1999, the pitch is surrounded by an embankment, which may have been constructed from chalk. The South East section of the cricket stadium has been cut into the existing slope. The current training pitch now occupied by Nursery Ground with a tunnel through the embankment leading between Nursery Ground and County Cricket Ground. Hickley Farm buildings have been removed/demolished, no farmland, orchard or allotments on-site. An access track runs South off Botley Road towards the cottages. There is also an access road leading from Botley Road around the West and South perimeter of the cricket ground with a side-track accessing the proposed residential development area and another to Hickley Farm Cottages where it joins a dirt track which runs around the Eastern perimeter of the cricket ground. The proposed residential area to the West is shown in the 1999 aerial photograph to be occupied by two bowling greens in the centre cut into the sloping site to form a level terrace. A Club House (current wellbeing centre) and Pavilion have been constructed to the South West of the Nursery Ground. A small car park area is shown to the North West of buildings connected to the stadium where the perimeter track and Western perimeter access road meet. A drainage ditch is shown on the 2001 map running West to East through Westwood Copse turning to the South along the access road to Hickley Farm Cottages before passing under the road to supply a small pond to the East of Hickley Farm Cottages within the proposed car parking area, an additional larger pond lies to the far East of the proposed car parking area along the site boundary. |
| <b>2005</b> (aerial photograph)                 | The cricket stadium has been further developed with a main pavilion constructed to the south west of the pitch with an indoor practice area beyond. Terraced seating around internal side of the embankment with brick paviours and asphalt surfacing the stadium concourse around the top of the embankment. An assumed temporary building has been constructed on the northern bowling green within the proposed residential development area. A roundabout along the access road has been constructed to the north of the stadium.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>2010</b>                                     | The access road from Botley Road to Hickley Farm Cottages is not shown.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>2013</b> (aerial photograph)                 | The Hilton Hotel and additional stands to North and South of main pavilion have been constructed. A gravel covered carpark forms the majority of the residential wellbeing area of the proposed development, with the bowling green removed although vegetation exists around the periphery of this area. A Golf Course and additional man-made ponds are shown to be under construction to the North of the hotel with the proposed car park area mostly covered by bare earth and temporary access track suggesting significant earthworks to construct golf course. Westwood Copse layout has been altered with trees felled in its centre to form a golf fairway, drainage ditch and further car-park.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>2017</b> (aerial photograph) and <b>2021</b> | The Site now shown in its current condition. Access road from Botley Road now named Marshall Drive. Additional ponds have been constructed on the golf course within proposed car parking area. Additional car parks have been constructed in front of the Hilton Hotel and towards Botley Road. The large water storage tank is first shown on the 2017 image in the woods behind Hickley Farm Cottages.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

## 3.2 SURROUNDING AREA HISTORY

A review of the land uses and environmentally pertinent information immediately surrounding the site (within 500 m) has been undertaken and summarised in **Table 3-2** below.

**Table 3-2 – Historical Map Summary (Off-Site)**

| Map Dates            | Land Use                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1868-1871            | <p>The Site is surrounded for up to 500 m to the North West, East and South by a mixture of woodland and open fields, with predominantly woodland to the West. A road forms the North Eastern perimeter of Site beyond which lies a mixture of woodland and open fields for up to 500 m North.</p> <p>A row of houses and an associated well lie along the road to the North East of Site cutting into the site perimeter. The small hamlet of Flanders lies further along the road to the East whilst a number of houses and farms (with associated wells) lie along the road to the West leading towards West End. To the North of this road approximately 250 m North West of Site is a union workhouse and a short distance North East of this there are barrows/burial mounds.</p> <p>The wood to the West of Site is called Telegraph Wood and is shown to contain the Telegraph Gravel Pits (and associated well), a kiln, a dog Kennel (and associated well) and a row of houses at near 500 m from Site with two further wells. A number of tracks and roads also run through these woods connecting the houses and gravel pits and running up to what is now Botley Road to the North, West End to the West and Hickley Farm On-Site.</p> |
| 1895-1896, 1896-1897 | <p>Additional buildings have been added around the Union Workhouse (now South Stoneham Union Workhouse) including a hospital, well, gatehouse and infant school. A cemetery has been added to the North of Telegraph Woods near to what is now Botley Road at nearly 500 m from Site. The kiln within Telegraph Wood is no longer shown however a number of new houses have been added with one additional well. In addition to the Telegraph Gravel Pits there are now two sand pits, an additional gravel pit and an old gravel pit now marked just South of the site boundary less than 100 m from the proposed residential development area. Some of the woodland to the South and East has been cleared to make way for more open fields and the kennel in Telegraph Woods is now Keepers Lodge.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 1910                 | <p>The hospital near to the workhouse is now shown as Isolation Hospital and the nearby infant school is shown as mission room (likely church building). New school building constructed near to the cemetery to the North of Telegraph Woods. Additional outbuildings have been constructed around Keepers Lodge with an additional sand pit shown to the South West. A number of Sand and Gravel pits around Telegraph Woods are now marked as old whilst others have been extended. Round Copse now Hangar Copse. One open field to South-East and one to the North-East are now mapped as marsh/bog.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 1957                 | <p>An area of woodland around the barrow/tumuli to the North has been replaced by an open field with a track and buildings. The workhouse and isolation hospital have been taken over by Moorgreen Hospital with two large additional buildings constructed to the East and West as well as a number of smaller additional outbuildings. A field to the North West of the hospital is now shown as a sports ground. Significant residential</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

| Map Dates                             | Land Use                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                       | development of houses and terraces has occurred beyond this to the East on both sides of the road for up to 500 m from Site. The portion of Telegraph Woods furthest from Site to the East has been built over up to Telegraph Road requiring the backfilling of most of the sand and gravel pits by this date, Keepers Lodge (near side of Telegraph Road) is now shown as Dog Kennel Farm. Much subdivision of the open fields to the South of Site but little change to the East save for additional buildings around Flanders and allotment gardens along Botley Road (far side North-West of Site).                                                                                                                                                    |
| <b>1967-1968</b>                      | The open field with buildings to the North of the hospital is now shown as Moorgreen Dairy Farm. Additional residential developments with an increase in density of buildings within residential areas to the North-West and West of Telegraph Woods, now predominately terraced or semi-detached. No active gravel pits are shown within Telegraph Woods and only one former gravel pit is discernible on the map suggesting some backfilling may have occurred. A drain is clearly marked from the vicinity of the main gravel pits to the South West perimeter of site. A depot is shown on the near side of Botley Road, less than 150 m North West of Site. Little change has occurred to the South and East barring some minor subdivision of fields. |
| <b>1978-1981</b>                      | A new garage has been constructed approximately 150 m north of the site, also a school has been constructed to North of Moorgreen Hospital nearly 500 m from Site. Additionally a police station has been constructed to West of the school and a cemetery on Botley Road nearly 500 m from Site. Additional buildings have been constructed around the depot to the North West of Site. A section of the M27 to the South of Botley Road and immediately East of Site is now under construction.                                                                                                                                                                                                                                                           |
| <b>1987</b>                           | Additional housing has been constructed between the hospital and school to the North. A reservoir has been constructed to the South West of Telegraph Woods. Construction of the M27 is now complete along the East perimeter of Site and along its full length to the North and South for up to 500 m from Site. Waterloo Industrial Estate has been constructed to the East of Flanders Farm up to 500 m from Site.                                                                                                                                                                                                                                                                                                                                       |
| <b>1989-1993</b>                      | The Sports ground to North West is now shown as Recreation Ground. Superstores and a Depot have been constructed on open farmland to the South of Waterloo Industrial Estate and East of the M27.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>1999 (aerial photo), 2001</b>      | A sports/tennis club and associated parking now in place immediately off Site to the North West. An additional large commercial/retail building is in place to the South of Botley Road and East of the M27. Golf course replaces farmland/open fields to the South of Site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>2005 (aerial photograph), 2010</b> | A hotel has been constructed on the nearside of Botley Road, North of Site and to the West of the access road.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>2013 (aerial photograph)</b>       | The golf course to South of site is largely covered by bare earth suggesting significant re-working of the golf course and potential earthworks around this time.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

| Map Dates                              | Land Use                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>2017</b> (aerial photograph)        | Evidence of car parking/vehicle storage on the open field to the North of Site between Botley Road and the M27.                                                                                                                                                                                                                                                           |
| <b>2021, recent aerial photograph.</b> | Site and surrounding area are shown in current condition, with the reservoir to the South West of Site no longer shown, possibly covered/infilled. Additional ponds are in place on the golf course to the South of Site. Bare earth apparent in recent aerial photograph of the field to the North of Botley Road and West of the M27, possible earthworks/construction. |

Please note that electrical substation records >300 m from Site are not discussed further given their considerably low risk when at such distances from Site.

There are no records of any military land within 500 m of the Site.

## 4 REGULATORY INFORMATION AND CONSULTATION

### 4.1 REGULATORY DATABASE

The following information has been obtained from a summary of information databases contained within the Groundsure Report obtained for the site. The regulatory database information is included within **Appendix E**.

**Table 4-1 – Summary of Regulatory Database Information within 500 m of the Site**

| Data type          | On-Site | 0-50 m | 50-250 m | 250-500 m | Comments                                                                                                                                                                                          |
|--------------------|---------|--------|----------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Discharge Consents | 1       | 1      | 0        | 14        | <b>Groundsure ID: 1</b> – Hickley Farm – On-Site.<br>Discharge of unspecified effluent to freshwater river. Licence issued 1966, revoked 1991.                                                    |
|                    |         |        |          |           | <b>Groundsure ID: 2</b> – Botley Road – 26 m East of Site.<br>Miscellaneous discharges of surface water to freshwater river. Licence issued 1981, revoked 1997.                                   |
|                    |         |        |          |           | <b>Groundsure ID: 21</b> – Hampshire Business Park – 268 m South East of Site.<br>Miscellaneous discharges of surface water to freshwater river. Licence issued 1988, revoked 1997.               |
|                    |         |        |          |           | <b>Groundsure ID: 23</b> – Hampshire Business Park – 314 m East of Site.<br>Miscellaneous discharges of surface water to freshwater river. Licence issued 1988, revoked 1997.                     |
|                    |         |        |          |           | <b>Groundsure ID: 25</b> – Moorgreen Hospital – 330 m North of Site.<br>Discharge of unspecified sewage to freshwater river. Licence issued 1963, revoked 2017.                                   |
|                    |         |        |          |           | <b>Groundsure ID: 26</b> – Hampshire Business Park – 352 m South East of Site.<br>Miscellaneous discharges of surface water to freshwater river. Licence issued 1988, revoked 1997.               |
|                    |         |        |          |           | <b>Groundsure ID: 27</b> – Moorlands, Moor Green – 380 m North of Site.<br>Miscellaneous discharges of surface water to freshwater river. Licence issued 1981, revoked 1997.                      |
|                    |         |        |          |           | <b>Groundsure ID: H</b> – Hampshire Business Park – 402 m South East and 415 m East of Site.<br>Miscellaneous discharges of surface water to freshwater river. Licence issued 1988, revoked 1997. |

| Data type                         | On-Site | 0-50 m | 50-250 m | 250-500 m | Comments                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------|---------|--------|----------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                   |         |        |          |           | <p><b>Groundsure ID: 31</b> – Moor Green Dairy Farm, West End – 460 m North of Site.</p> <p>Miscellaneous discharges of surface water to freshwater river. Licence issued 1991, revoked 1998.</p>                                                                                                                                                                                                                                                                                    |
|                                   |         |        |          |           | <p><b>Groundsure ID: J</b> – Hampshire Business Park - 465 m South East, 471 m South East, 474 m South East, 480 m South East and 488m South East of Site.</p> <p>Miscellaneous discharges of surface water to freshwater river. Licence issued 1988, revoked 1997.</p>                                                                                                                                                                                                              |
|                                   |         |        |          |           | <p><b>Groundsure ID: 32</b> – Hampshire Business Park – 482 m East of Site.</p> <p>Miscellaneous discharges of surface water to freshwater river. Licence issued 1988, revoked 1997.</p>                                                                                                                                                                                                                                                                                             |
| Substantiated Pollution Incidents | 0       | 0      | 0        | 1         | <p><b>Groundsure ID: 6</b> – Unnamed site – 476 m South East of Site</p> <p>In 2003 general biodegradable materials and wastes (food and drink) were released causing a Category 2 (significant) impact to water.</p>                                                                                                                                                                                                                                                                |
| Licensed Waste Sites              | 1       | 0      | 3        | 0         | <p><b>Groundsure ID: 1</b> – Ageas Bowl Stadium – on-site.</p> <p>Operated by T J Transport Ltd, “Deposit of waste to land as a recovery operation”, 25000 tonnes, annual tonnage of 0.</p> <p>Licence issued 27/06/2017, surrendered 09/11/2018.</p>                                                                                                                                                                                                                                |
|                                   |         |        |          |           | <p><b>Groundsure ID: C</b> – Rose Bowl – 245 m South of Site.</p> <p>Three records pertaining to the same site.</p> <p>Operated by Harfield Bros (Contractors) Ltd and Keltbray Golf Environmental Ltd, “Waste deposited to land as a recovery operation”, greater than 75,000 tonnes each with an additional 25,000 tonnes for Keltbray, annual tonnage of 0.</p> <p>Licenses issued 15/02/2011, surrendered by Keltbray 03/08/2017 and no end date provided for Harfield Bros.</p> |
| Waste Exemptions                  | 0       | 1      | 10       | 13        | <p><b>Groundsure ID: 3</b> – Keltbray Ltd, The Rose Bowl – 39 m North of Site.</p> <p>Use of waste in construction – exempt from requiring a usage permit.</p>                                                                                                                                                                                                                                                                                                                       |
|                                   |         |        |          |           | <p><b>Groundsure ID: 4</b> – The Ageas Bowl – 55 m North East of Site.</p> <p>Use of waste in construction – exempt from requiring a usage permit.</p>                                                                                                                                                                                                                                                                                                                               |

| Data type | On-Site | 0-50 m | 50-250 m | 250-500 m | Comments                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------|---------|--------|----------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |         |        |          |           | <p><b>Groundsure ID: 5</b> - The Ageas Bowl – 92 m North West of Site.</p> <p>Use of waste in construction – exempt from requiring a usage permit.</p>                                                                                                                                                                                                                                                                                                                     |
|           |         |        |          |           | <p><b>Groundsure ID: 6</b> – Pitter Transport Botley Road Garage – 111 m North of Site.</p> <p>Use of waste in construction – exempt from requiring a usage permit.</p>                                                                                                                                                                                                                                                                                                    |
|           |         |        |          |           | <p><b>Groundsure ID: A</b> – Unnamed site and Unit 1 Westwood, Botley Road – 202 m West and 208 m West of Site.</p> <p>Use of waste in construction – exempt from requiring a usage permit.</p> <p>Recovery of scrap metal – exempt from requiring a treatment permit.</p> <p>Preparatory treatments (baling, sorting, shredding etc.) – exempt from requiring a treatment permit.</p> <p>Storage of waste in a secure place – exempt from requiring a storage permit.</p> |
|           |         |        |          |           | <p><b>Groundsure ID: B</b> – Unnamed site and Tom Rudd Unit, Moorgreen Hospital – Both 206 m North West of Site.</p> <p>Both for sorting and de-naturing of controlled drugs for disposal – exempt from requiring a treatment permit</p>                                                                                                                                                                                                                                   |
|           |         |        |          |           | <p><b>Groundsure ID: 7</b> – Tom Rudd Unit, Moorgreen Hospital – 231 m North West of Site.</p> <p>Sorting and de-naturing of controlled drugs for disposal – exempt from requiring a treatment permit.</p>                                                                                                                                                                                                                                                                 |
|           |         |        |          |           | <p><b>Groundsure ID: D</b> – Unnamed site and Moorgreen Hospital – 253 m North West and 261 m North West of Site.</p> <p>Both for sorting and de-naturing of controlled drugs for disposal – exempt from requiring a treatment permit</p>                                                                                                                                                                                                                                  |
|           |         |        |          |           | <p><b>Groundsure ID: 9</b> – Moorgreen Road, West End – 375 m North of Site.</p> <p>Sorting and de-naturing of controlled drugs for disposal – exempt from requiring a treatment permit.</p>                                                                                                                                                                                                                                                                               |
|           |         |        |          |           | <p><b>Groundsure ID: E</b> – Unit 8, Flanders Road and 3, Unit 6 Flanders Road – 448 m East, 461 m East, 473 m East and 475 m East of Site.</p> <p>Crushing waste fluorescent tubes – exempt from requiring a treatment permit.</p>                                                                                                                                                                                                                                        |

| Data type                   | On-Site | 0-50 m | 50-250 m | 250-500 m | Comments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------|---------|--------|----------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                             |         |        |          |           | <p>Storage of waste in secure containers – exempt from requiring a storage permit. 2 exemptions.</p> <p>Storage of waste in a secure place – exempt from requiring a storage permit. 4 exemptions.</p> <p><b>Groundsure ID: F</b> – 2 unnamed sites and Land off Charles Watts Way – 470 m South and 494 m South of Site.</p> <p>Screening and blending of waste – exempt from requiring a treatment permit.</p> <p>Use of waste in construction – exempt from requiring a usage permit.</p> |
| Recent Industrial Land Uses | 1       | 2      | 25       | N/a       | <b>Groundsure ID: A</b> – Gas governor – on-site.                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                             |         |        |          |           | <b>Groundsure ID: 1</b> – Electrical substation – 19 m South West of Site.                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                             |         |        |          |           | <b>Groundsure ID: B</b> – Electrical substation – 34 m North West of Site.                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                             |         |        |          |           | <b>Groundsure ID: 4</b> – Pylon – 66 m East of Site.                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                             |         |        |          |           | <b>Groundsure ID: 5</b> – Electrical substation – 68 m North of Site.                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                             |         |        |          |           | <b>Groundsure ID: 8</b> – Electrical substation – 82 m North West of Site.                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                             |         |        |          |           | <b>Groundsure ID: 9</b> – Electrical substation – 90 m West of Site.                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                             |         |        |          |           | <b>Groundsure ID: C</b> – Pitter Transport, distribution and haulage – 100 m North of Site.                                                                                                                                                                                                                                                                                                                                                                                                  |
|                             |         |        |          |           | <b>Groundsure ID: 10</b> – Pit (disused) – 118 m West of Site.                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                             |         |        |          |           | <b>Groundsure ID: 11</b> – Electrical substation – 138 m North West of Site.                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                             |         |        |          |           | <b>Groundsure ID: C</b> – Pitter Self Drive, vehicle hire and rental – 144 m North of Site.                                                                                                                                                                                                                                                                                                                                                                                                  |
|                             |         |        |          |           | <b>Groundsure ID: C</b> – Pitter Commercial Ltd, new vehicles – 153 m North of Site.                                                                                                                                                                                                                                                                                                                                                                                                         |
|                             |         |        |          |           | <b>Groundsure ID: C</b> – Princess Coaches, vehicle hire and rental – 168 m North of Site.                                                                                                                                                                                                                                                                                                                                                                                                   |
|                             |         |        |          |           | <b>Groundsure ID: C</b> – Pitter Self Drive, vehicle hire and rental – 174 m North of Site.                                                                                                                                                                                                                                                                                                                                                                                                  |

| Data type                         | On-Site | 0-50 m | 50-250 m | 250-500 m | Comments                                                                                                      |
|-----------------------------------|---------|--------|----------|-----------|---------------------------------------------------------------------------------------------------------------|
|                                   |         |        |          |           | <b>Groundsure ID: C</b> – Electrical substation – 176 m North West of Site.                                   |
|                                   |         |        |          |           | <b>Groundsure ID: D</b> – S P I Lasers, cutting drilling and welding services – 177 m North East of Site.     |
|                                   |         |        |          |           | <b>Groundsure ID: E</b> – Pylon – 182 m East of Site.                                                         |
|                                   |         |        |          |           | <b>Groundsure ID: 16</b> – Cleangreen Stoves, cookers and stoves (non-electrical) – 192 m West of Site.       |
|                                   |         |        |          |           | <b>Groundsure ID: F</b> – Tank – 193 m North of Site.                                                         |
|                                   |         |        |          |           | <b>Groundsure ID: 17</b> – Pylon – 201 m South East of Site.                                                  |
|                                   |         |        |          |           | <b>Groundsure ID: F</b> – Coliseum Coaches, vehicle hire and rental – 204 m North of Site.                    |
|                                   |         |        |          |           | <b>Groundsure ID: G</b> – Pylon – 209 m East of Site.                                                         |
|                                   |         |        |          |           | <b>Groundsure ID: 18</b> – International Paint Ltd, paints, varnishes and lacquers – 213m North East of Site. |
|                                   |         |        |          |           | <b>Groundsure ID: G</b> – Electrical substation – 213 m East of Site.                                         |
|                                   |         |        |          |           | <b>Groundsure ID: E</b> – Electrical substation – 220 m East of Site.                                         |
|                                   |         |        |          |           | <b>Groundsure ID: 19</b> – Electrical substation – 231 m North West of Site.                                  |
|                                   |         |        |          |           | <b>Groundsure ID: 20</b> – Moorgreen Hospital – 232 m North West of Site.                                     |
|                                   |         |        |          |           | <b>Groundsure ID: G</b> – Bensons for Beds, furniture 237 m East of Site.                                     |
| Historical Landfill Sites         | 0       | 1      | 0        | 0         | <b>Groundsure ID: 2</b> – Moorlands, Botley Road – 20 m North of Site – No further details.                   |
| Current or recent petrol stations | 0       | 1      | 0        | 0         | <b>Groundsure ID: B</b> – Botley Road – 25m North East of Site – No further details.                          |

According to the Groundsure report, there are **no records** for the following within 500 m of the Site:

- Active or recent landfills
- Contaminated land determinations
- COMAH Sites / Explosive Sites / Hazardous Substance Control sites / Radioactive sites

- Significant (Red list) pollution incidents to surface waters / public sewers
- List 1 or 2 dangerous substances
- Pollution inventory substances / waste transfers / radioactive wastes
- Railway / Infrastructure projects

Multiple items are included in the Groundsure report related to EA datasets around waste exemptions and licenced discharges to controlled waters (e.g. Alton Wastewater Treatment Works) which were found to relate to locations outside of the study area with incorrectly listed distances from site. These have not been included in the summary tables in the report.

## 4.2 CONSULTTEES

### 4.2.1 LOCAL AUTHORITY ENVIRONMENTAL HEALTH OFFICER

Eastleigh Borough Council (EBC) were contacted on 25 November 2021 regarding environmentally pertinent information held relating to the site. They confirmed that no land on-Site or within 250 m of Site has been determined as Statutory Contaminated Land (as defined by Part IIA of the EPA 1990). A review of records held by the local authority showed 1 historic landfill/waste site (Ref – EAHLD34229, SU448000114400) within 250 m of the Site and 4 locations with historical petroleum storage providing the following details;

- C11/11 – Moorgreen Service Station – Botley Road, West End – 447578 114382
- C11/15 – JHG Barfoot – Botley Road, West End – 447442 114391
- C12/13 – Homebase, Tollbar Way, Hedge End – 448282 114159
- C1/2 – Autocolour, Unit 1, Wellington Park, Hedge End – 448338 114348

Eastleigh Borough Council confirmed that they did not hold any information regarding previous investigations/reports barring that held by the council's planning department. A copy of their response is contained in Appendix G.

### 4.2.2 PLANNING INFORMATION

Reference was made to planning information for the Site provided by the Eastleigh Borough Council Website, and pertinent information is summarised below in **Tables 4-2 and 4-3**.

#### 4.2.2.1 On-Site

**Table 4-2 – List of Planning Applications On Site**

| Status / Date         | Ref.        | Location                                     | Official Description                                                                                                                                                                                                                                                             |
|-----------------------|-------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Valid /<br>26/10/2017 | DC/17/81773 | THE AGEAS BOWL,<br>MARSHALL DRIVE, WEST END, | Discharge of Conditions application following Planning Permission F/16/78213 for Alteration and Expansion of Existing Car Park Area and Associated Landscaping and Earthworks to Increase Parking Capacity: Discharge of Conditions 3 (treatment of watercourse), 7 (contractors |

| Status / Date                                         | Ref.       | Location                                                                                   | Official Description                                                                                                                                                                                                                                                     |
|-------------------------------------------------------|------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                       |            | SOUTHAMPTON, SO30 3XH.                                                                     | compound), 8 (temporary construction parking), 12 (mud prevention measures), 13 (dust management), 14 (noise), 17 (permissive path) and 19 (haul road).                                                                                                                  |
| Decided Permit /<br>22/04/2016                        | F/16/78213 | The Ageas Bowl, Botley Road, West End, Southampton SO30 3XH.                               | Alteration and expansion of existing car park area and associated landscaping and earthworks to increase parking capacity.                                                                                                                                               |
| Decided Permit /<br>13/11/2015                        | F/15/77559 | Colin Ingleby-Makenzie Stand, The Ageas Bowl, Botley Road, West End, Southampton SO30 3XH. | Use of concessions catering facility as a hot food takeaway and delivery service (A5) & catering unit (B2) for temporary a period of two years.                                                                                                                          |
| Decided Consent To The Advert Display /<br>05/05/2015 | A/15/76066 | The Ageas Bowl, Botley Road, West End, Southampton SO30 3HA.                               | Display of five. Illuminated and three non-illuminated fascia signs, an illuminated monument sign, six non-illuminated column signs, three non-illuminated free-standing signs and 28 non-illuminated post signs.                                                        |
| Decided Permit /<br>26/01/2015                        | X/15/75888 | The Ageas Bowl, Botley Road, West End, Southampton SO30 3HA.                               | Relief of Conditions 13 & 17 of planning permission Z/30368/022 to allow for the staging of a maximum of three concerts per annum with a maximum audience at each of up to 35,000 spectators.                                                                            |
| Decided Permit /<br>25/11/2014                        | F/14/75673 | Hampshire County Cricket Ground, Botley Road, West End, Southampton SO30 3XH.              | Public artwork comprising of six silhouette figures representing a slow motion capture of a fast bowling action.                                                                                                                                                         |
| Decided Permit /<br>11/02/2014                        | F/14/73900 | The Ageas Bowl, Botley Road, West End, Southampton SO30 3HA.                               | Enclosure of mezzanine at first floor of the Colin Ingleby Mackenzie Stand to provide new gym area and boxing club.                                                                                                                                                      |
| Decided Permit /<br>01/08/2013                        | F/13/72929 | The Ageas Bowl, Botley Road, West End, Southampton SO30 3HA.                               | Change of Use of former clubhouse from retail (A1) to gym (D2) and consultation rooms (D1) with alterations to entrance.<br><br><i>NOTE: This relates to the existing wellbeing centre which is to be demolished to make way for the proposed Southern Gateway area.</i> |
| Decided Withdrawn by                                  | F/13/72385 | The Ageas Bowl, Botley Road, West End,                                                     | Formation of grassed sports pitches suitable for football, rugby or hockey on land to the west of the                                                                                                                                                                    |

| Status / Date                                          | Ref.              | Location                                                                          | Official Description                                                                                                                                                                                                                                                                             |
|--------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Applicant /<br>01/05/2013                              |                   | Southampton<br>SO30 3HA.                                                          | stadium and associated re-modelling of the land and amendments to parking area.                                                                                                                                                                                                                  |
| Decided –<br>Permit /<br>02/08/2012                    | <b>X/12/71258</b> | The Ageas Bowl,<br>Botley Road,<br>West End,<br>Southampton<br>SO30 3HA.          | Relief of conditions 13 and 17 of planning permission 30368/022 to enable use of stadium for an annual firework display on or around 5th November.                                                                                                                                               |
| Decided –<br>Temporarily<br>Approve /<br>08/05/2012    | <b>X/12/70787</b> | Ageas Bowl,<br>Botley Road,<br>West End,<br>Southampton<br>SO30 3HA.              | Relief of conditions 13 & 17 of planning permission 30368/22 to enable four concerts to be staged at the Ageas Bowl stadium over a two year period with an audience of up to 35,000.                                                                                                             |
| Decided –<br>Permit<br>Variation /<br>29/02/2012       | <b>V/12/70320</b> | The Ageas Bowl,<br>Botley Road,<br>West End,<br>Southampton<br>SO30 3HA.          | Variation to S106 legal agreement dated 18/03/2009 to enable HGV movements for hotel construction via Marshall Drive.                                                                                                                                                                            |
| Decided –<br>Temporarily<br>Approve /<br>03/02/2012    | <b>F/12/70355</b> | The Ageas Bowl,<br>Botley Road,<br>West End,<br>Southampton<br>SO30 3HA.          | Temporary use of the Ageas Bowl as check-in facility for cruises from 1 July 2012 to 4 July 2012, together with temporary siting of two marquees on the East Berm.                                                                                                                               |
| Withdrawn /<br>22/07/2011                              | <b>F/11/69397</b> | The Hampshire<br>Rose Bowl, Botley<br>Road, West End,<br>Southampton<br>SO30 3HA. | Installation of sculpture on column and plinth on roundabout (maximum height 8.35 m) with up lighting.                                                                                                                                                                                           |
| Decided –<br>Permit /<br>08/04/2011                    | <b>F/11/68834</b> | The Ageas Bowl,<br>Botley Road,<br>West End,<br>Southampton<br>SO30 3HA.          | Construction of golf course lagoon (amendment to previously approved design).                                                                                                                                                                                                                    |
| Decided –<br>Permit /<br>24/03/2011                    | <b>F/11/68774</b> | The Hampshire<br>Rose Bowl, Botley<br>Road, West End,<br>Southampton<br>SO30 3HA. | Amendment to the design and layout of the hotel approved under planning permissions F/07/61830 and F/09/65045 to accommodate enlarged spa facility within excavated berm (additional 538 m <sup>2</sup> of floor space) and 'back of house' uses (additional 338 m <sup>2</sup> of floor space). |
| Decided –<br>Withdrawn by<br>Applicant /<br>15/02/2011 | <b>S/11/68660</b> | The Hampshire<br>Rose Bowl, Botley<br>Road, West End,<br>Southampton<br>SO30 3HA. | County Council Consultation: Exportation of surplus material generated by the Hampshire Rose Bowl construction project.                                                                                                                                                                          |

| Status / Date                  | Ref.              | Location                                                              | Official Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------|-------------------|-----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Decided Permit /<br>20/05/2010 | <b>F/10/67251</b> | The Hampshire Rose Bowl, Botley Road, West End, Southampton SO30 3HA. | Construction of glazed dining area on third floor of the Hopkins Pavilion. (Retrospective).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Decided Permit /<br>30/12/2009 | <b>X/09/66408</b> | The Hampshire Rose Bowl, Botley Road, West End, Southampton SO30 3HA. | Variation of condition 14 of planning permission F/07/61830 to increase hours of working for the stands to 0700 to 2000 hours (Mon-Fri) & 0800 to 1800 hours Saturday with no working on Sundays or public holidays. Variation of condition 14 to allow power floating activities during night time hours on no more than three occasions in any week for the period of Jan 2010 to the end of March 2010. Temporary relief of condition 6 of Planning Permission F/05/53301 to allow use of floodlights during (Variations relate to construction of new stands only).                                                                                                                                                                                                                                                                |
| Decided Permit /<br>09/06/2009 | <b>F/09/65289</b> | The Hampshire Rose Bowl, Botley Road, West End, Southampton SO30 3HA. | Construction of irrigation pond, park and ride pick-up & drop off area, taxi rank, part realignment of access road & landscaping/remodelling works.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Decided Permit /<br>01/05/2009 | <b>F/09/65045</b> | The Hampshire Rose Bowl, Botley Road, West End, Southampton SO30 3HA. | Amendments to the design and internal layout of the hotel approved under planning permission F/07/61830 and relocation of two floodlight towers.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Decided Permit /<br>07/12/2007 | <b>F/07/61830</b> | The Hampshire Rose Bowl, Botley Road, West End, Southampton SO30 3HA. | Construction of four storey, 175-bedroom hotel to include dual media & hospitality uses, media centre, restaurant & bar, golf clubhouse facility conference rooms & spa leisure facility with car parking & access from Marshall Drive; construction of new covered stands to include permanent & temporary seating (total site capacity 25,000 spectators), catering facilities, executive boxes, retail units, screens & scoreboard, match control room, outside broadcast compound & perimeter fencing; redesign, re-contouring & extension of existing golf course to provide 18-hole golf course to include re-routing of footpaths, a feature lake & landscaping; & provision of temporary construction access off Botley Road.(Application includes Environmental Statement and is subject to Environmental Impact Assessment). |
| Decided Permit /<br>21/09/2007 | <b>F/07/61192</b> | The Hampshire Rose Bowl, Botley Road, West End, Southampton SO30 3HA. | Construction of secondary access road off A27 Moorhill Road for use on occasional basis on major event days.<br><br><i>Note: Largely off-site crossing the golf course from Moorhill Road but joins the perimeter road around</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| Status / Date                            | Ref.       | Location                                                              | Official Description                                                                                                                                                                                                                                                                                                 |
|------------------------------------------|------------|-----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                          |            |                                                                       | <i>the stadium around the location of the existing wellbeing centre and pavilion building within the footprint of the proposed Southern Gateway.</i>                                                                                                                                                                 |
| Decided Permit / 12/06/2007              | X/07/60296 | The Hampshire Rose Bowl, Botley Road, West End, Southampton SO30 3HA. | Renewal of temporary permission X/05/53854 to enable a further four concerts to be staged at the Rose Bowl over a two year period (further relief of conditions 13 and 17 of permission 30368/022).                                                                                                                  |
| Decided Permit / 25/05/2007              | F/07/60174 | The Hampshire Rose Bowl, Botley Road, West End, Southampton SO30 3HA. | Construction of new pedestrian access between Rose Bowl and Botley road and associated works (part retrospective).<br><i>Note: Pertains to a now relocated pedestrian access route approx. 90 m West along Botley Road from the current pedestrian access route. Within footprint of proposed new car park area.</i> |
| Decided Permit / 19/04/2007              | X/07/59862 | The Hampshire Rose Bowl, Botley Road, West End, Southampton SO30 3HA. | Variation of condition 2 of planning permission F/05/53301 to allow use of the floodlights at the Rose Bowl until midnight. Partial relief of condition 3 to allow use of the floodlights for more than six occasions per annum.                                                                                     |
| Decided Permit / 06/04/2007              | F/07/59779 | The Hampshire Rose Bowl, Botley Road, West End, Southampton SO30 3HA. | Formation of emergency response vehicle access road.                                                                                                                                                                                                                                                                 |
| Decided Temporarily Approve / 23/06/2006 | F/06/57304 | The Hampshire Rose Bowl, Botley Road, West End, Southampton SO30 3XH. | Retention of structure (Hampshire Suite) to be used as ancillary corporate uses to the cricket club together with private function facilities.                                                                                                                                                                       |
| Decided Temporarily Approve / 25/04/2005 | X/05/53854 | The Rose Bowl Plc, Botley Road, West End, Southampton SO303XH.        | Temporary relief of conditions 13 and 17 of planning permission 30368/022 for the purpose of staging concerts at the Rose Bowl Stadium for a maximum of four occasions within a period of two years with up to 35,000 spectators.                                                                                    |
| Decided Temporarily Approve / 19/07/2004 | F/04/51528 | Botley Road, West End, Southampton, SO303XH.                          | Retention of ten temporary hospitality boxes, three marquees, six storage containers, two grandstands, a catering outlet marquee, two media facilities, a sky installation gantry and an ice-cream kiosk for a period of five years.                                                                                 |
| Decided Temporarily Approve / 17/07/2004 | F/04/51527 | Rose Bowl, Botley Road, West End, Southampton SO303XH.                | Retention of nine temporary toilet blocks, three temporary ticket kiosks, a temporary commentary box, scorers box, match day administration office, Hampshire Cricket shop and charity shop, for a period of five years.                                                                                             |

| Status / Date                                                     | Ref.                  | Location                                                            | Official Description                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------------------|-----------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Decided –<br>Withdrawn by<br>Applicant /<br>24/05/2004            | <b>F/04/50984</b>     | Rose Bowl, Botley<br>Road, West End,<br>Southampton<br>SO303XH.     | Retrospective: Retention of prefabricated marquee to be used as ancillary accommodation to cricket ground for corporate entertainment for a period of three years.                                                                                                                                |
| Decided –<br>Refuse<br>Planning<br>Permission For<br>/ 26/02/2004 | <b>F/04/50305</b>     | Botley Road,<br>West End,<br>Southampton,<br>SO30 3XH.              | Erection of a prefabricated marquee for a temporary period of 3 years.                                                                                                                                                                                                                            |
| Decided –<br>Historic<br>Record /<br>22/08/2003                   | <b>Z/30368/045/00</b> | Hampshire Rose<br>Bowl Botley Road,<br>West End Hants,              | Retrospective application for retention of marquee (gross floor area 352.80 m <sup>2</sup> ) and 14 temporary portable buildings (gross floor area 316.06 m <sup>2</sup> ) for a period of two years.                                                                                             |
| Decided –<br>Historic<br>Record /<br>10/06/2003                   | <b>Z/30368/042/00</b> | Hampshire<br>County Cricket<br>Club Botley Road,<br>West End Hants, | Temporary relief of condition 13 and 17 of planning permission 30368/022 to allow the installation of sound amplification equipment in connection with concert events on the following dates- 18 <sup>th</sup> and 24 <sup>th</sup> June 2003, 30 <sup>th</sup> and 31 <sup>st</sup> August 2003. |

#### Planning Application Ref. F/16/78213 (22/04/2016) and DC/17/81773 (26/10/2017)

Available plans show application F/16/78213 relates to the gravel covered car-parking area to the West of the Site where the proposed residential housing development is to be situated. The proposal is to utilise inert fill to improve the car park area and provide an additional 200 spaces.

Plans (1746161) (1499.03) provides drainage layout as well as proposed cut and fill elevations and existing ground levels at the time of the application. Supporting Documents (1746147) reveals the total volume of fill required for the proposal to be 36,145 m<sup>3</sup>.

An environmental assessment was submitted with this application but provides a record of nearby sensitive areas only and does not include any further pertinent information relevant to this Desk Study Report.

DC/17/81773 relates to the discharge of a number of the conditions originally placed on F/16/78213 including Condition 13 (Dust) following the contractor's (TJ Transport Ltd) response to queries raised by Environmental Health. The attached documents included in their response include a Waste Recovery Plan which includes a detailed works specification and a description of the waste types proposed for use with no intention of accepting contaminated materials.

Condition 3 (Treatment of Watercourse) was also discharged, and documents submitted in relation to this include details of a culverted watercourse running beneath the existing car park area from Telegraph Woods and into a drainage ditch running along the site boundary parallel with the access road to the current David Lloyd Gym.

#### Planning Application Ref. F/13/72385 (01/05/2013)

This withdrawn application relates to the existing carpark area to the West of the stadium within the footprint of the proposed residential housing development. The withdrawn application was for the re-modelling of this area of land and amendments to the car-parking area to allow the formation of two grassed sports pitches.

Included among the supporting documents is a photo showing an existing view of the area at the time prior to the extensive earthworks involved in extending the car park area (as per F/16/78213). This photo shows significant stockpiles/mounds of earth partly covered in vegetation along the small car park area present at the time and an area of standing water/pond along the Western site boundary with Hanger Copse.

Planning Application Ref. F/11/68834 (08/04/2011)

This application presents an amendment to the feature lake forming part of the golf course originally proposed in F/07/61830 which is a larger proposal covering construction of the 4-storey hotel, significant developments throughout the stadium and re-design and extension of the golf course. The feature lake discussed in this amendment is situated to the East of the Stadium within the proposed car-parking area. The proposed changes are to split the lake in half with a weir in the centre allowing the portion of the lake closest to the stadium to be raised 1.5 m higher than originally approved. This was to be done in order to reduce the height of a retained section of land between the lake and outside broadcast area of hardstanding in front of the Hotel.

The amendment itself does not present any further pertinent information relevant to this Desk Study Report beyond what is submitted under the main proposal F/07/61830.

Planning Application Ref. F/09/65289 (09/06/2009)

This application proposes the development of an irrigation pond to provide uninterrupted irrigation for the cricket ground independently of the mains water supply. The pond is to be 25 m by 80 m and up to 3.5 m deep with a capacity of 4000 m<sup>3</sup>, it is to be lined with flood protection measures built in. In order to supply the pond a borehole 40 m deep is to be created extracting < 20 m<sup>3</sup> of water on a daily basis. A pump and pipe are to be installed underground to pump water from the pond to a tank near the groundsman's tunnel at the stadium (*Route of pipe and location of the tank is unclear but is assumed to be around the South West side of the stadium to the access tunnel between the training ground and main pitch*).

Additionally to this, the proposal includes removing the existing underground culvert from telegraph woods and replacement with a new open stream to link in with the existing water course/drainage ditch. Construction of new access road from Marshall Drive Roundabout. Regrading of the land to create the pond, park and ride area, and taxi rank and also screen the pond and improve gradients where necessary for pedestrians.

The drainage pond, borehole and park and ride all fall within the footprint of the currently proposed housing development to the West of the stadium.

It is not clear to what extent these plans were implemented if at all as in later applications relating to this area (F/13/72385 – withdrawn, F/16/78213 and DC/17/81773) the watercourse leading under the site from telegraph woods remains culverted.

Planning Application Ref. F/07/61830 (07/12/2007)

Relates to the construction of the four-storey hotel (elsewhere referred to as the Hilton Hotel), car parking and access off Marshall Drive. New covered stands, catering facilities, executive boxes, retail units, screens and scoreboard, match control room, outside broadcast compound and perimeter fencing (all within the stadium itself and largely outside of the footprint of any of the proposed development areas covered by this Desk Study Report). Redesign and extension of the golf-course

and provision of temporary construction access off Botley Road. This is to require significant earthworks including excavation of soil for the hotel and raising ground levels across the golf course. A desk study was required under the Environmental Impact Assessment in order to identify any potential land contamination issues and any associated risks. The contamination section of the Environmental Statement (non-technical summary) identified no contamination risk to be present prior to investigation (chemical testing of soil during geotechnical investigation and sampling and analysis of imported material). A Construction Environmental Management Plan (CEMP) was required to set out measures to avoid, reduce or control potential demolition and construction effects.

The Environmental Impact Assessment Volume 9: Contamination included a review of historical maps, geological data including BGS maps, EA hydrogeological maps and an Envirocheck report, contacting the local planning office, EA, Petroleum Officer and Environmental Health Officer and an environmental site inspection. The findings (as summarised in the non-technical summary) were that no significant contaminated land issues were anticipated during the development.

#### Planning Application Ref. F/07/59779

Details plans for the construction of a new emergency access road from the slip road of Junction 7 on the M27 to a holding/parking area by the groundsman's cottages to the East of the stadium (within the footprint of the proposed stadium).

Supporting Documents (598697) refers to a government pipeline running South to North which the proposed road was to cross at a 90° Angle. Whilst this point is likely to be off-site in terms of the currently proposed development it is possible that the pipeline, running North, may lie within the footprint of the proposed new car park area.

No further detail of this pipeline location is provided in either the plans or supporting documents.

#### **4.2.2.2 Off-Site**

**Table 4-3 – List of Planning Applications near to the Site**

| <b>Status<br/>Date</b>              | <b>Ref.<br/>(and<br/>associ-<br/>ated)</b> | <b>Location<br/>(and distance<br/>from Site)</b>                                                                                             | <b>Official Description</b>                                                                                                                                                                                        | <b>Researcher Remarks</b>                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Decided –<br>Permit /<br>03/09/2020 | <b>F/20/8<br/>8655</b>                     | Boundary<br>Lakes Golf<br>Course,<br>Moorhill Road,<br>West End,<br>Southampton,<br>SO30 3XH.<br><br>Approx. 700 m<br>South West of<br>Site. | Erection of golf course<br>clubhouse and ancillary<br>facilities, golf cart store and<br>car parking area, together<br>with repositioned internal<br>access roads, landscaping,<br>SuDS and two entrance<br>signs. | Construction to take place in South<br>West corner of golf course<br>adjoining the Site.<br><br>Includes Geo-Environmental PRA<br>(WSP) which found the following:<br><br>-Low to moderate risk to human<br>health identified from exposure to<br>Made Ground (including potential<br>ACMs) on-site.<br><br>-Low to moderate risk to human<br>health from ground gas and<br>vapours relating to gas holder and<br>gas governor 205 m East. |

| Status / Date      | Ref. (and associated) | Location (and distance from Site)                                                         | Official Description                                                                                                                                                                                                                                                                                                                                                                                                        | Researcher Remarks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------|-----------------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |                       |                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                             | <p>-Exposure of 3<sup>rd</sup> party neighbours considered low.</p> <p>-Risk to Secondary A Aquifer, low.</p> <p>-Risk to plant life from potential contaminants in shallow soil, low to moderate.</p> <p>- Low to moderate risk to future buildings and below ground services based on potential for petroleum hydrocarbons in made ground.</p> <p>-Moderate UXO risk.</p> <p>Ground investigation was recommended and planning permission was granted under the condition that works not be started until a Ground Investigation Report has been submitted and any remediation scheme required has been carried out and verified.</p> |
| Valid / 03/12/2021 | <b>X/21/9 2054</b>    | Thorneydown Farm, Moorhill Road, West End, Southampton, SO30 3AY.<br>Approx. 300 m South. | Variation of condition 1 (approved drawings) of planning permission F/18/83908 for construction of golf course extension and its dual use for temporary, occasional car parking for major events (more than 15,000 capacity) for the Ageas Bowl between April and October for up to 1300 cars on approximately 12 occasions per annum. Associated landscaping, drainage, ecological enhancement, tree works and earthworks. | Minor change to annotations on drawing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Valid / 29/10/2019 | <b>DC/19/ 86735</b>   | Thorneydown Farm, Moorhill Road, West End, Southampton, SO30 3AY.<br>Approx. 300 m South. | Discharge of conditions 19 (arboricultural monitoring statement), 20 (biodiversity mitigation & enhancement plan), 21 (landscape scheme) and 24 (bird hazard management plan) of planning permission F/18/83908 for construction                                                                                                                                                                                            | Discharge of planning conditions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| Status / Date      | Ref. (and associated) | Location (and distance from Site)                                                             | Official Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Researcher Remarks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------|-----------------------|-----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |                       |                                                                                               | of golf course extension for occasional use.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Valid / 18/10/2019 | <b>DC/19/86685</b>    | Thorneydown Farm, Moorhill Road, West End, Southampton, SO30 3AY.<br><br>Approx. 300 m South. | Discharge of conditions 3 (Surface water management, Site levels and hard surface details), 10 (Construction and Environmental Management Plan), 14 (Contamination remediation) and 16 (soil testing protocols and certification procedures and on-site storage proposals) of planning permission F/18/83908 for the Construction of golf course extension and its dual use for temporary, occasional car parking for major events (more than 15,000 capacity) for the Ageas Bowl between April and October for up to 1300 cars on approximately 12 occasions per annum. Associated landscaping, drainage, ecological enhancement, tree works and earthworks. | Discharge of conditions including;<br><br>10 (Construction and Environmental Management Plan) – Document submitted as required so condition discharged.<br><br>14 (Contamination remediation) – Desk study and contaminated land report submitted and Environmental Health Officer agrees no further assessment required based on desk study and proposed end use.<br><br>16 (Soil testing protocols and certification procedures and on-site storage proposals) – On the grounds that that Materials Management Plan (MMP) must be submitted to satisfy the Definition of Waste: Code of Practice (DoWCoP) and this will contain all the information required by condition 16.<br><br>CEMP summarises construction methodology in order to ensure effective environmental management during construction.<br><br>Desk Study and Contaminated Land Report finds no sources of contamination considered to be a risk to the proposed development and as such a very low risk of contamination posed to both human health and controlled waters. |
| Valid / 24/09/2019 | <b>DC/19/86493</b>    | Thorneydown Farm, Moorhill Road, West End, Southampton, SO30 3AY.<br><br>Approx. 300 m South. | Approval of details of conditions 3 (surface water), 7 (construction compound), 8 (access improvements), 11 (noise management), 12 (dust management), 17 (lighting) and 23 (roads & footways) of planning permission F/18/83908.                                                                                                                                                                                                                                                                                                                                                                                                                              | Approval that conditions have been met including;<br><br>12 (dust management) – Dust management plan submitted identifying seven potential receptors. Dust control measures employed on-site deemed effective                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

| Status / Date                                        | Ref. (and associated) | Location (and distance from Site)                                                                         | Official Description                                                                                                                                                                                                                                                                                                                                                                                                           | Researcher Remarks                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------------------------|-----------------------|-----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                      |                       |                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                | in achieving negligible impact at receptors.                                                                                                                                                                                                                                                                                                                                                                                                           |
| Decided – Permit / 29/08/2018                        | <b>F/18/8 3908</b>    | Thorneydown Farm, Moorhill Road, West End, Southampton, SO30 3AY.<br><br>Approx. 300 m South.             | Discharge of conditions 7, 8, 20, 21 and 23 of planning permission F/18/83908 for the construction of golf course extension and its dual use for temporary, occasional car parking for major events (more than 15,000 capacity) for the Ageas Bowl between April and October for up to 1300 cars on approximately 12 occasions per annum. Associated landscaping, drainage, ecological enhancement, tree works and earthworks. | Planning and design access statement states - Construction of golf course extension and its dual use for temporary occasional parking, associated landscaping, drainage, ecological enhancement and tree works.<br><br>Land previously open field.<br><br>Discharge of conditions 7, 8, 20, 21 and 23 (as stated in official description) as a non-material amendment was not accepted on the grounds that amendments were considered too significant. |
| Decided – Permit / 15/03/2012                        | <b>F/12/7 0563</b>    | The Ageas Bowl, Botley Road, West End, Southampton SO30 3HA.<br><br>Approx. 500 m South West of Site.     | Amendment to temporary haul route and golfer's path approved under F/07/61830.                                                                                                                                                                                                                                                                                                                                                 | Minor amendment to haul route used to remove spoil from hotel berm for use in golf course works.<br><br>Conducted in order to avoid loss of dormouse habitat.                                                                                                                                                                                                                                                                                          |
| Decided – Consent to The Advert Display / 27/01/2012 | <b>A/12/7 0356</b>    | McDonalds Restaurants Ltd, Tollbar Way, Hedge End, Southampton SO30 2UH.<br><br>Approx. 600 m South East. | Display of 1no. Internally illuminated free standing sign.                                                                                                                                                                                                                                                                                                                                                                     | Free standing advertisement, no significance to current Desk Study Report.                                                                                                                                                                                                                                                                                                                                                                             |
| Decided – Permit / 17/02/2005                        | <b>F/05/5 3301</b>    | Botley Road, West End, Southampton, SO30 3XH.                                                             | Erection of 6no. Flood lighting on static columns for use between April & September each year on no more than six occasions per annum                                                                                                                                                                                                                                                                                          | No supporting documents, unclear whether floodlights are situated at the stadium itself (on-site) or along Botley Road.                                                                                                                                                                                                                                                                                                                                |

| Status / Date                                        | Ref. (and associated) | Location (and distance from Site)                                 | Official Description                                                                                                                                                                                                                                                                                                                                                                       | Researcher Remarks                                                                                                      |
|------------------------------------------------------|-----------------------|-------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Decided – Consent to The Advert Display / 25/01/2005 | <b>A/05/53097</b>     | Botley Road, West End, Southampton, SO30 3XH.                     | Erection of 2 No. non-illuminated, 1.2m high, free standing signs.                                                                                                                                                                                                                                                                                                                         | No supporting documents, unclear whether signage is situated at the stadium itself (on-site) or along Botley Road.      |
| Decided – Withdrawn by Applicant / 23/11/2004        | <b>F/04/52581</b>     | Botley Road, West End, Southampton, SO303XH.                      | Erection of 6 No. 35 metre high flood lighting columns.                                                                                                                                                                                                                                                                                                                                    | No supporting documents, unclear whether floodlights are situated at the stadium itself (on-site) or along Botley Road. |
| Decided – Historic Record / 28/11/2003               | <b>Z/30368/048/00</b> | The Rose Bowl Hampshire Cricket Club Botley Road, West End Hants, | Retention of temporary wooden golf training facility.                                                                                                                                                                                                                                                                                                                                      | No Supporting Documents, assumed to be within off-site portion of golf-course.                                          |
| Decided – Historic Record / 03/10/2001               | <b>Z/30368/034/00</b> | Hampshire County Cricket Ground Botley Road, West End Hants,      | Construction of golf driving range with two storey building (2383.5 m <sup>2</sup> ground floor area) comprising of 60 driving bays, sales area, café/bar area and rooftop floodlighting, new access road, parking with lighting, 5-15 m high ball stop netting, new balancing ponds/swales, new path to golf course, putting green with down lights, landscaping and new public footpath. | No Supporting Documents, assumed to be within off-site portion of golf-course.                                          |
| Decided – Historic Record / 07/09/2001               | <b>Z/30368/033/00</b> | Hampshire County Cricket Club Botley Road, West End Hants,        | Renewal of temporary permission for siting of seven portable buildings for temporary offices.                                                                                                                                                                                                                                                                                              | No supporting documents, unclear whether on-site.                                                                       |

#### 4.2.3 ENVIRONMENT AGENCY

The Environment Agency was contacted on 25 November 2021 regarding any information relevant to the Site. No response has been received.



#### 4.2.4 COAL AUTHORITY

The Coal Authority website confirmed that the Site is not located within a Coal Authority designated mining area.

#### 4.2.5 UNEXPLODED ORDNANCE (UXO)

The Zetica online bomb map indicates that there is a **low risk** from encountering UXO. The map is included as **Appendix F**. A Pre-Desk Study Assessment, also undertaken by Zetica, recommends that a detailed UXO desk study is not considered essential at the Site. Therefore, it is recommended that the UXO risk level is **low**.

#### 4.2.6 HAMPSHIRE COUNTY COUNCIL

Hampshire County Council has been contacted and we are awaiting a response in relation to existing/historical petroleum licenses.

## 5 ENVIRONMENTAL SETTING

### 5.1 HYDROLOGY

There are a number of culverted and surface water features within the Site boundary, also man-made lined ponds have been constructed around the golf course on and off Site. Surface water features within 250 m of the Site, identified in the Groundsure Report, are summarised below in **Table 5-1**. Chemical water quality data is not provided in the Groundsure Report.

**Table 5-1 - Summary of Hydrological Features within 250 m**

| Surface Water Features                              | Distance | Direction | Ground Level      | Permanence |
|-----------------------------------------------------|----------|-----------|-------------------|------------|
| Inland river not influenced by normal tidal action. | On-Site  | -         | Underground       | Year-round |
| Inland river not influenced by normal tidal action. | On-Site  | -         | Not Provided      | Year-round |
| Inland river not influenced by normal tidal action. | On-Site  | -         | On ground surface | Year-round |
| Inland river not influenced by normal tidal action. | On-Site  | -         | On ground surface | Year-round |
| Inland river not influenced by normal tidal action. | On-Site  | -         | On ground surface | Year-round |
| Inland river not influenced by normal tidal action. | On-Site  | -         | Underground       | Year-round |
| Inland river not influenced by normal tidal action. | On-Site  | -         | On ground surface | Year-round |
| Lake, loch or reservoir.                            | On-Site  | -         | On ground surface | Year-round |
| Inland river not influenced by normal tidal action. | On-Site  | -         | On ground surface | Year-round |
| Lake, loch or reservoir.                            | On-Site  | -         | On ground surface | Year-round |
| Lake, loch or reservoir.                            | On-Site  | -         | On ground surface | Year-round |

| Surface Water Features                              | Distance | Direction  | Ground Level      | Permanence |
|-----------------------------------------------------|----------|------------|-------------------|------------|
| Inland river not influenced by normal tidal action. | On-Site  | -          | Underground       | Year-round |
| Inland river not influenced by normal tidal action. | On-Site  | -          | On ground surface | Year-round |
| Lake, loch or reservoir.                            | On-Site  | -          | On ground surface | Year-round |
| Inland river not influenced by normal tidal action. | On-Site  | -          | On ground surface | Year-round |
| Inland river not influenced by normal tidal action. | On-Site  | -          | On ground surface | Year-round |
| Inland river not influenced by normal tidal action. | On-Site  | -          | Underground       | Year-round |
| Inland river not influenced by normal tidal action. | On-Site  | -          | On ground surface | Year-round |
| Lake, loch or reservoir.                            | On-Site  | -          | On ground surface | Year-round |
| Inland river not influenced by normal tidal action. | On-Site  | -          | On ground surface | Year-round |
| Inland river not influenced by normal tidal action. | 2 m      | South      | On ground surface | Year-round |
| Lake, loch or reservoir.                            | 12 m     | South West | On ground surface | Year-round |
| Inland river not influenced by normal tidal action. | 17 m     | South West | On ground surface | Year-round |
| Inland river not influenced by normal tidal action. | 32 m     | South East | On ground surface | Year-round |
| Inland river not influenced by normal tidal action. | 40 m     | South East | Not provided      | Year-round |

| Surface Water Features                              | Distance | Direction  | Ground Level      | Permanence |
|-----------------------------------------------------|----------|------------|-------------------|------------|
| Inland river not influenced by normal tidal action. | 113 m    | South East | On ground surface | Year-round |
| Inland river not influenced by normal tidal action. | 119 m    | South West | On ground surface | Year-round |
| Inland river not influenced by normal tidal action. | 167 m    | South East | Underground       | Year-round |
| Inland river not influenced by normal tidal action. | 169 m    | North      | On ground surface | Year-round |
| Inland river not influenced by normal tidal action. | 185 m    | South East | On ground surface | Year-round |
| Inland river not influenced by normal tidal action. | 198 m    | South West | On ground surface | Year-round |
| Inland river not influenced by normal tidal action. | 238 m    | South East | Not provided      | Year-round |

The River Itchen is the nearest major river, located >3 km to the west of the Site.

The Site lies within the East Hampshire Rivers operational catchment area (coastal), and the East Hampshire management catchment area, draining South Eastwards towards the Hamble River.

The Site is located in a flood zone 1 (1:1000 year chance of flooding) and in an area with a low probability of flooding from the rivers and sea. The highest risk of surface water flooding on-Site is 1 in 30 year, 0.3 m-1.0 m and within 50 m of the Site is 1 in 30 year, > 1.0 m.

There are no areas at risk of flooding from rivers or seas, historical flood events, flood defences or flood storage areas within 250 m of the Site.

## 5.2 GEOLOGY

BGS borehole data on and surrounding the Site is provided in **Table 5-2** below. 1968 investigation records pertain to works completed for the Ministry of Transport. 1998 records pertain to work completed by Structural Soils for Hyder Consulting Ltd for a development in Hedge End, Southampton.

**Table 5-2 – Summary of BGS Borehole Data**

| Reference | Date      | Drilled Depth (m bgl) | Location in relation to Site | Strata Descriptions (depths in m bgl)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------|-----------|-----------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SU41SE23  | July 1968 | 6.71                  | 20 m North                   | <p>0.00 to 0.46: Topsoil.<br/> 0.46 to 2.29: Stiff brown sandy clay with fissured medium gravel.<br/> 2.29 to 2.90: Medium dense brown clayey sand and gravel.<br/> 2.90 to 3.96: Firm dark grey sandy clay.<br/> 3.96 to 5.49: Firm brown and grey sandy clay.<br/> 5.49 to 5.72: Firm brown and grey clayey sand.<br/> 5.72 to 6.71: Dense brown fine sand.</p> <p>Groundwater strike at 2.29 m below ground level (m bgl). Final groundwater level 3.66 m bgl casing at 5.94 m bgl.</p>                                                                           |
| SU41SE20  | July 1968 | 16.76                 | 34 m North                   | <p>0.00 to 0.61: Topsoil.<br/> 0.61 to 4.27: Stiff brown and grey sandy clay with some rounded fine gravel.<br/> 4.27 to 6.55: Stiff dark grey sandy clay.<br/> 6.55 to 8.86: Stiff dark grey-brown sandy clay<br/> 8.86 to 11.43: Very dense brown clayey fine sand with layers of brown sandy clay.<br/> 11.43 to 15.09: Very dense green-brown fine sand.<br/> 15.09 to 16.76: Very dense brown-green clayey fine sand with pockets of brown sandy clay.</p> <p>Groundwater strike at 3.96 m bgl. Final groundwater level 10.97 m bgl, casing at 15.85 m bgl.</p> |
| SU41SE19  | July 1968 | 9.14                  | 45 m North East              | <p>0.00 to 0.23: Topsoil.<br/> 0.23 to 1.82: Medium dense brown clayey sand with layers of brown sandy clay.<br/> 1.82 to 3.81: Dense brown clayey sand.<br/> 3.81 to 6.55: Stiff dark grey silty clay with pockets of fine sand.<br/> 6.55 to 9.14: Stiff grey-green sandy clay.</p> <p>Groundwater strike at 6.71 m bgl. Final groundwater level 7.62 m bgl, casing at 7.62 m bgl.</p>                                                                                                                                                                             |
| SU41SE18  | July 1968 | 19.81                 | 64 m East                    | <p>0.00 to 0.23: Topsoil.<br/> 0.23 to 2.90: Very dense brown and grey clayey sand with layers of grey sandy clay.<br/> 2.90 to 3.66: Stiff brown and grey sandy clay.<br/> 3.66 to 6.71: Stiff dark grey sandy clay with some pockets of light grey fine sand.</p>                                                                                                                                                                                                                                                                                                  |

| Reference | Date        | Drilled Depth (m bgl) | Location in relation to Site | Strata Descriptions (depths in m bgl)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------|-------------|-----------------------|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |             |                       |                              | <p>6.71 to 8.84: Stiff dark grey sandy clay.<br/> 8.84 to 12.19: Stiff laminated brown and dark grey sandy clay.<br/> 12.19 to 13.56: Dense dark grey and brown clayey sand.<br/> 13.56 to 15.24: Dense brown and grey clayey fine and medium sand.<br/> 15.24 to 19.51: Dense grey-green and brown clayey fine and medium sand with pockets of sandy clay.<br/> 19.51 to 19.81: Very stiff fissured dark grey-green and brown sandy clay.</p> <p>Seepage at 2.59 m bgl. Sealed from 3.66 m bgl and groundwater strike at 6.86 m bgl. Final groundwater level 16.76 m bgl with casing at 18.90 m bgl.</p> |
| SU41SE25  | July 1968   | 4.57                  | 79 m South East              | <p>0.00 to 0.46: Topsoil.<br/> 0.46 to 0.91: Compact fine and medium gravel with some brown clayey fine sand.<br/> 0.91 to 1.68: Dense grey-green clayey fine sand.<br/> 1.68 to 4.57: Dense green-brown clayey sand with thin layers of green-brown sandy clay.</p> <p>Seepage at 2.74 m bgl. Final groundwater level dry with casing at 3.05 m bgl.</p>                                                                                                                                                                                                                                                 |
| SU41SE24  | August 1968 | 4.88                  | 79 m South East              | <p>0.00 to 0.30: Topsoil.<br/> 0.30 to 2.90: Firm grey-green sandy clay with pockets of brown sand.<br/> 2.90 to 3.35: Firm grey-green sandy clay and brown fine sand.<br/> 3.35 to 4.72: Dense grey-green and brown clayey fine sand.<br/> 4.72 to 4.88: Dense dark brown sand.</p> <p>Groundwater strike at 3.05 m bgl. Final groundwater level 2.74 m bgl with casing at 3.35 m bgl.</p>                                                                                                                                                                                                               |
| SU41SE17  | July 1968   | 4.57                  | 91 m North                   | <p>0.00 to 0.46: Topsoil.<br/> 0.46 to 1.98: Medium dense grey-brown fine sand with pockets of grey sandy clay.<br/> 1.98 to 4.42: Stiff grey-brown sandy clay with pockets of brown sand.<br/> 4.42 to 4.57: Stiff dark grey sandy clay.</p> <p>Seepage at 1.98 m bgl. Sealed at 2.29 m bgl and dry to base. Final groundwater level dry casing at 3.66 m bgl.</p>                                                                                                                                                                                                                                       |

| Reference | Date         | Drilled Depth (m bgl) | Location in relation to Site | Strata Descriptions (depths in m bgl)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------|--------------|-----------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SU41SE26  | July 1968    | 4.57                  | 97 m South East              | <p>0.00 to 0.30: Topsoil.</p> <p>0.30 to 1.37: Firm brown and grey sandy clay with pockets of brown sand.</p> <p>1.37 to 2.59: Dense dark grey fine sand with layers of grey-brown sandy clay.</p> <p>2.59 to 4.57: Medium dense becoming dense brown fine sand with layers of grey-brown sandy clay.</p> <p>Groundwater strike at 2.13 m. Final groundwater level 1.83 m with casing at a depth of 3.05 m.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| SU41SE792 | October 1998 | 11.90                 | 101 m North East             | <p>0.00 to 0.20: Dark brown silty sand TOPSOIL with frequent thin roots. (With pockets of slightly orange brown clayey fine sandy silt below 0.15m).</p> <p>0.20 to 0.30: Firm brown slightly clayey SILT with occasional dark grey pockets and frequent fibrous plant remains.</p> <p>0.30 to 0.60: Loose grey and grey brown silty fine SAND with occasional pale grey brown silty fine SAND with a little scattered fine and medium rounded and subrounded flint gravel.</p> <p>0.60 to 0.97: Medium dense grey brown slightly silty fine and medium SAND with occasional pale grey brown weakly cemented horizons. (With darker grey brown veins towards base of layer).</p> <p>0.97 to 1.14: Medium dense brown fine and medium occasional cemented SAND with occasional dark brown veins.</p> <p>1.14 to 1.20: Medium dense grey and dark grey mottled slightly silty fine and medium SAND with a trace of medium rounded flint gravel.</p> <p>1.20 to 1.26: Medium dense buff to pale grey brown slightly silty fine and medium SAND with occasional brown veins.</p> <p>1.26 to 1.41: Medium dense dark brown slightly silty fine and medium SAND with occasional weakly cemented horizons. (Becoming increasingly cemented below 1.35 m, with frequent orange brown and grey staining).</p> <p>1.41 to 1.70: Medium dense yellow and orange brown mottled slightly silty occasionally weakly cemented medium SAND. (With thin orange brown and grey clay lenses below 1.55m).</p> <p>1.70 to 2.15: Medium dense brown and orange brown silty fine and medium SAND with orange brown staining and a trace of fine and medium ironstone gravel. (With thin horizontal and sub horizontal pale grey silty sandy clay laminations to 2.0 m). (Becoming slightly orange brown with fairly frequent grey brown thin laminations and veins towards base of layer).</p> |

| Reference | Date | Drilled Depth (m bgl) | Location in relation to Site | Strata Descriptions (depths in m bgl)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------|------|-----------------------|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |      |                       |                              | <p>2.15 to 2.35: Medium dense pale orange brown slightly silty occasionally weakly cemented fine and medium SAND with occasional pale grey brown staining. (With thin cemented slightly clayey laminations towards base of layer).</p> <p>2.35 to 2.40: Stiff pale grey and orange brown thinly laminated silty CLAY.</p> <p>2.40 to 2.55: Medium dense brown slightly silty fine and medium SAND with orange brown staining. (Becoming pale orange below 2.50 m). (With thin sub vertical pale grey and orange brown silty clay laminations between 2.40 m and 2.60 m. Extending into underlying layer).</p> <p>2.55 to 2.75: Medium dense interbedded orange brown slightly silty medium SAND and pale green grey very silty fine sand.</p> <p>2.75 to 2.80: Medium dense pale yellow and orange brown slightly silty fine and medium SAND.</p> <p>2.80 to 2.95: Stiff thinly interbedded orange brown and pale green grey silty sandy CLAY with thin seams of pale grey silty plastic clay.</p> <p>2.95 to 3.20: Medium dense yellow and orange brown and pale grey mottled slightly silty fine SAND with occasional thin pale grey silty clay laminae. (Becoming yellow and orange brown mottled fine SAND below 3.05 m with occasional iron stained clay laminae).</p> <p>3.20 to 3.40: Medium dense pale grey slightly silty fine SAND with occasional orange staining.</p> <p>3.40 to 3.46: Medium dense grey brown, brown and pale grey mottled slightly silty fine and medium SAND with occasional orange brown fine sandy silt laminations.</p> <p>3.46 to 3.55: Medium dense pale grey and orange brown slightly silty fine SAND with frequent thin sub horizontal orange brown and pale grey silty clay laminae.</p> <p>3.55 to 3.80: Medium dense yellow and orange brown and pale grey brown slightly silty fine and medium SAND with frequent very closely spaced thin horizontal orange brown and pale grey silty clay and occasional ironstone laminae. (With closely spaced pale grey silty clay occasional ironstone laminae below 3.60 m). (With frequent thin irregular sub horizontal to sub vertical ironstone laminations and gravel below 3.70 m).</p> <p>3.80 to 3.95: Medium dense interbedded grey brown and pale grey slightly silty fine and medium SAND and orange brown silty medium SAND with thin very closely spaced sub horizontal pale grey silty clay laminae. (With occasional thin ironstone laminations and occasional gravel below 3.90 m).</p> |

| Reference | Date | Drilled Depth (m bgl) | Location in relation to Site | Strata Descriptions (depths in m bgl)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------|------|-----------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |      |                       |                              | <p>3.95 to 4.00: Firm pale grey silty plastic CLAY with orange brown staining (sub vertical laminations).</p> <p>4.00 to 4.30: Medium dense pale grey fine SAND with very closely spaced horizontal pale grey and orange brown silty clay laminae. (Becoming fine and medium SAND below 4.05, with occasional widely spaced silty clay laminae and frequent ironstone gravel). (Slightly silty between 4.20 and 4.25 m).</p> <p>4.30 to 4.60: Medium dense buff to pale grey brown fine and medium SAND with closely spaced thin laminations of pale grey and orange brown silty clay with black iron stained surfaces between 4.42 and 4.45 m.</p> <p>4.60 to 4.66: Firm to stiff pale grey and orange brown silty CLAY (sub horizontal laminations).</p> <p>4.70 to 4.92: Medium dense pale orange slightly silty fine SAND with closely spaced horizontal pale grey silty clay laminae. (With occasional thin ironstone lenses and laminae below 4.70 m). (Becoming darker orange with pale grey and black staining below 4.80 m).</p> <p>4.92 to 5.43: Stiff pale grey, orange brown and pale slightly mauve brown thinly laminated occasionally silty plastic CLAY with occasional fine sand laminae. (Becoming firm to stiff silty CLAY below 5.05 m). (Becoming laminated pale grey and pale mauve CLAY with frequent orange brown and iron-stained sand laminae below 5.20 m).</p> <p>5.43 to 5.55: Medium dense orange brown slightly silty fine and medium SAND with occasional pale grey and dark orange staining. (Becoming very moist below 5.50 m).</p> <p>5.55 to 5.90: Firm to stiff pale grey, grey brown and orange brown laminated silty CLAY with frequent very closely spaced fine and medium sand and occasional thin ironstone laminae. (With very frequent very moist sand laminae towards base of layer.)</p> <p>5.90 to 6.10: Stiff grey occasionally slightly sandy silty CLAY with yellow and orange mottling. (With occasional grey brown and pale grey fine and medium sand lenses with orange staining below 5.95m).</p> <p>6.10 to 6.15: Medium dense orange brown fine SAND.</p> <p>6.15 to 6.30: Medium dense buff slightly silty fine SAND with occasional orange brown and pale grey staining and thin closely spaced clay laminations and a trace of fine subrounded ironstone gravel.</p> <p>6.30 to 7.37: Stiff grey silty CLAY with fairly frequent pale grey silt lenses and a trace of fine subrounded ironstone gravel. (Becoming slightly sandy below 6.50 m). (Becoming pale green grey below 6.90 m with frequent thin grey brown silty fine sand lenses and</p> |

| Reference | Date         | Drilled Depth (m bgl) | Location in relation to Site | Strata Descriptions (depths in m bgl)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------|--------------|-----------------------|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |              |                       |                              | <p>laminations). (Becoming slightly moist below 7.20 m). (Becoming stiff grey brown silty clay and firm green grey slightly sandy silty clay below 7.30 m).</p> <p>7.37 to 8.35: Stiff green grey slightly sandy silty slightly fissured CLAY with occasional pale grey fine sand partings. (Becoming slightly moist, green grey very sandy clay below 8.30 m).</p> <p>8.35 to 10.76: Medium dense slightly moist green grey clayey silty fine SAND and occasionally silty sandy clay. (Grading to silty fine sand below 8.60 m. Increasingly moist). (Becoming slightly clayey silty fine sand below 8.90 m). (Becoming very silty fine sand with occasional clayey sand inclusions below 9.10 m). (With frequent sandy clay inclusions between 10.40 m and 10.50 m). (Becoming clayey silty sand below 10.50 m). (Becoming paler green very silty fine sand below 10.55 m).</p> <p>10.76 to 11.90: Medium dense yellow and orange brown and pale grey thinly laminated very silty SAND. (Becoming pale green brown grey and orange laminated below 11.40 m).</p> <p>Groundwater level 7.95 m bgl, response zone 8.00 to 11.90 m bgl.</p>                                                                                              |
| SU41SE791 | October 1998 | 3.20                  | 108 m North East             | <p>0.00 to 0.20: Dark brown silty sand TOPSOIL with frequent thin roots. (With pockets of slightly orange brown clayey fine sandy silt below 0.15m).</p> <p>0.20 to 0.30: Firm brown slightly clayey SILT with occasional dark grey pockets and frequent fibrous plant remains.</p> <p>0.30 to 0.60: Loose grey and grey brown silty fine SAND with occasional pale grey brown silty fine SAND with a little scattered fine and medium rounded and subrounded flint gravel.</p> <p>0.60 to 0.97: Medium dense grey brown slightly silty fine and medium SAND with occasional pale grey brown weakly cemented horizons. (With darker grey brown veins towards base of layer).</p> <p>0.97 to 1.14: Medium dense brown fine and medium occasional cemented SAND with occasional dark brown veins.</p> <p>1.14 to 1.20: Medium dense grey and dark grey mottled slightly silty fine and medium SAND with a trace of medium rounded flint gravel.</p> <p>1.20 to 1.26: Medium dense buff to pale grey brown slightly silty fine and medium SAND with occasional brown veins.</p> <p>1.26 to 1.41: Medium dense dark brown slightly silty fine and medium SAND with occasional weakly cemented horizons. (Becoming increasingly cemented</p> |

| Reference | Date      | Drilled Depth (m bgl) | Location in relation to Site | Strata Descriptions (depths in m bgl)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------|-----------|-----------------------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |                       |                              | <p>below 1.35 m, with frequent orange brown and grey staining).</p> <p>1.41 to 1.70: Medium dense yellow and orange brown mottled slightly silty occasionally weakly cemented medium SAND. (With thin orange brown and grey clay lenses below 1.55m).</p> <p>1.70 to 2.15: Medium dense brown and orange brown silty fine and medium SAND with orange brown staining and a trace of fine and medium ironstone gravel. (With thin horizontal and sub horizontal pale grey silty sandy clay laminations to 2.0 m). (Becoming slightly orange brown with fairly frequent grey brown thin laminations and veins towards base of layer).</p> <p>2.15 to 2.35: Medium dense pale orange brown slightly silty occasionally weakly cemented fine and medium SAND with occasional pale grey brown staining. (With thin cemented slightly clayey laminations towards base of layer).</p> <p>2.35 to 2.40: Stiff pale grey and orange brown thinly laminated silty CLAY.</p> <p>2.40 to 2.55: Medium dense brown slightly silty fine and medium SAND with orange brown staining. (Becoming pale orange below 2.50 m). (With thin sub vertical pale grey and orange brown silty clay laminations between 2.40 m and 2.60 m. Extending into underlying layer).</p> <p>2.55 to 2.65: Medium dense interbedded orange brown occasionally clayey silty fine and medium SAND, and pale grey very silty fine sand.</p> <p>2.65 to 3.20: Medium dense/firm interbedded orange brown and pale grey silty fine and medium SAND and silty CLAY.</p> <p>Descriptions up to 2.55 m bgl are the same as for SU41SE792 which is a relocation of this borehole.</p> |
| SU41SE22  | July 1968 | 6.10                  | 132 m East                   | <p>0.00 to 0.30: Topsoil.</p> <p>0.30 to 2.59: Stiff light brown and grey silty clay with pockets of grey and brown fine sand.</p> <p>2.59 to 2.89: Stiff brown sandy clay.</p> <p>2.89 to 4.57: Medium dense brown clayey sand.</p> <p>4.57 to 5.49: Dense brown-grey clayey sand.</p> <p>5.49 to 6.10: Stiff dark grey sandy clay.</p> <p>Groundwater strike at 1.83 m bgl. Groundwater level 5.03 m bgl with casing to 5.33 m bgl.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

| Reference | Date         | Drilled Depth (m bgl) | Location in relation to Site | Strata Descriptions (depths in m bgl)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------|--------------|-----------------------|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SU41SE27  | July 1968    | 4.57                  | 139 m South East             | <p>0.00 to 0.30: Topsoil.</p> <p>0.30 to 0.76: Very soft brown and grey sandy clay with fine and medium gravel.</p> <p>0.76 to 1.22: Fine and medium gravel in a matrix of dark grey sandy clay.</p> <p>1.22 to 2.60: Dense green clayey sand with layers of brown sandy clay.</p> <p>2.60 to 4.57: Dense green-brown clayey sand.</p> <p>Groundwater strike at 2.44 m bgl. Groundwater level. 2.44 m bgl with casing to 3.05 m bgl.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| SU41SE794 | October 1998 | 8.20                  | 161 m North East             | <p>0.00 to 0.17: MADE GROUND: Dark brown silty sand TOPSOIL.</p> <p>0.17 to 0.46: MADE GROUND: Stiff dark brown slightly sandy silty clay with a little flint gravel and a trace of clinker and brick gravel.</p> <p>0.46 to 0.60: Medium dense brown and orange silty fine SAND.</p> <p>0.60 to 0.72: Medium dense pale yellow brown fine SAND.</p> <p>0.72 to 1.10: Medium dense pale grey and orange brown mottled silty fine SAND. (With pale grey clay pockets between 0.83 m and 0.85 m). (With pale yellow brown fine sand pockets between 0.96 m and 0.98 m). (Becoming weakly cemented towards base of layer).</p> <p>1.10 to 1.65: Medium dense orange brown slightly silty occasionally clayey fine SAND with occasional fine to medium nodular ironstone gravel. (With horizontal clay laminations up to 10mm thick at 1.44 m, 1.48 m, 1.52 m and 1.55 m).</p> <p>1.65 to 1.75: Dense orange brown silty fine SAND, with occasional thin pale grey clay laminations to 1.67 m.</p> <p>1.75 to 1.83: Medium dense orange brown clayey fine SAND with thin horizontal grey clay laminations at 1.77 m.</p> <p>1.83 to 2.22: Medium dense orange brown and pale grey occasionally clayey silty fine SAND, with thin interlaminations of brown organic clayey sand to 1.96 m. (With thin band of fine nodular ironstone gravel at 1.97 m, underlain by thin lamination of pale grey clay). (With 10mm thick horizontal pale grey clay lamination at 2.07 m). (with 1 mm thick horizontal pale grey clay laminations at 2.13 m, 2.16 m and 2.20 m).</p> <p>2.22 to 2.53: Medium dense orange brown slightly silty fine SAND with occasional horizontal laminations of pale grey clay up to 3mm thick. (With 1 mm thick</p> |

| Reference | Date      | Drilled Depth (m bgl) | Location in relation to Site | Strata Descriptions (depths in m bgl)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------|-----------|-----------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |                       |                              | <p>horizontal clay laminations at 3.20 m).</p> <p>2.53 to 3.00: Medium dense orange brown and red mottled occasionally clayey silty fine SAND with much fine to medium subrounded ironstone gravel and occasional pale grey silty clay partings. (With decrease in gravel content with depth).</p> <p>3.00 to 3.17: Stiff grey and orange brown mottled silty CLAY.</p> <p>3.17 to 3.56: Medium Dense orange brown silty SAND with some fine to medium subrounded ironstone gravel and occasional red-brown moulting. (With much fine ironstone gravel between 3.18 m and 3.22 m). (With extremely closely spaced thin horizontal pale grey clay laminations between 3.23 m and 3.26 m). (With much fine ironstone gravel between 3.48 m and 3.52 m).</p> <p>3.56 to 4.00: Stiff grey and orange brown silty CLAY with extremely closely spaced thin horizontal fine sand laminations.</p> <p>4.00 to 6.25: Stiff grey silty CLAY with occasional pale grey fine sand partings. (Becoming sandy (fine) below 4.20 m). (With thin laminations of green grey silty clay between 4.75 m and 4.80 m). Becoming very sandy below 6.10 m).</p> <p>6.25 to 6.28: Dense orange brown silty fine SAND.</p> <p>6.28 to 6.48: Dense grey and dark red-brown very silty fine SAND.</p> <p>6.48 to 8.20: Dense grey brown, orange brown and green-grey silty occasionally very silty fine SAND with black speckling. (with indistinct horizontal laminations below 7.60 m).</p> |
| SU41SE16  | July 1968 | 4.57                  | 166 m North                  | <p>0.00 to 0.76: Topsoil.</p> <p>0.76 to 1.37: Dense brown fine sand and gravel.</p> <p>1.37 to 2.29: Firm grey-green sandy clay.</p> <p>2.29 to 3.20: Dense brown clayey fine sand.</p> <p>3.20 to 4.57: Stiff dark grey sandy clay.</p> <p>Water strike at 1.52 m bgl. Dry from 3.35 m bgl.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| SU41SE28  | July 1968 | 4.57                  | 194 m South East.            | <p>0.00 to 0.30: Topsoil.</p> <p>0.30 to 1.37: Firm grey-green and brown sandy CLAY with fine gravel.</p> <p>1.37 to 1.83: Fine GRAVEL in a matrix of green-brown sandy clay.</p> <p>1.83 to 2.44: Firm grey-brown sandy CLAY.</p> <p>2.44 to 4.57: Dense grey-green clayey fine SAND with layers of brown sandy clay.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

| Reference | Date | Drilled Depth (m bgl) | Location in relation to Site | Strata Descriptions (depths in m bgl)           |
|-----------|------|-----------------------|------------------------------|-------------------------------------------------|
|           |      |                       |                              | Water strike at 3.05 m bgl, rose to 2.45 m bgl. |

British Geological Survey (BGS) map 315 of Southampton (1:50,000 scale, Solid and Drift Edition) and the BGS Geology of Britain Online Viewer have been reviewed and indicate that the site is not underlain by any superficial deposits. **Table 5-3** – Summary of Anticipated Geological Strata outlines anticipated bedrock geology beneath the Site.

**Table 5-3 – Summary of Anticipated Geological Strata**

| Group                                 | Unit                                      | Description                                                                                                                                                                                                                                             |
|---------------------------------------|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bracklesham Group - Bedrock (shallow) | Marsh Farm Formation                      | Laminated clay; wavy to lenticular-bedded sand interbedded with clay in equal proportions; and fine to medium-grained sparsely glauconitic sand with laminae and intercalations of clay.                                                                |
| Bracklesham Group - Bedrock (shallow) | Earnley Sand Formation                    | Glauconitic silty sands and sandy silts.                                                                                                                                                                                                                |
| Bracklesham Group - Bedrock           | Wittering Formation                       | Greyish brown laminated clay; wavy- to lenticular-bedded sand interbedded with clay in equal proportions; and fine to medium-grained sparsely glauconitic sand.                                                                                         |
| Thames Group - Bedrock                | London Clay Formation                     | Clay and silt comprising coarse to fine grained blue-grey or grey-brown, slightly calcareous silty clay, clayey silt and sometimes silt with some layers of clay. It also includes a few thin beds of shells and fine sand partings or pockets of sand. |
| Lambeth Group                         | Undifferentiated                          | Vertically and laterally variable sequences mainly of clay, some silty or sandy, with some sands and gravels, minor limestones and lignites and occasional sandstone and conglomerate.                                                                  |
| Chalk Group                           | White Chalk Subgroup - (Undifferentiated) | Chalk with flints. With discrete marl seams, nodular chalk, sponge-rich and flint seams throughout.                                                                                                                                                     |

Based on BGS mapping the site is expected to be underlain primarily by Earnley Sand Formation overlain in places by the Marsh farm Formation, particularly within parts of the proposed residential development, parking area and Southern Gateway. Where present Marsh Farm Formation is expected to be of very limited thickness whilst Earnley Sand and Wittering Formations are expected to be more substantial such that London Clay may underlie the site at >10 m depth. Significant thickness of London Clay is expected within the area such that the Chalk may be >60 m bgl although this is not proven in any historic BGS boreholes that are in in close proximity to site.

Areas of superficial River Terrace Deposits are expected to be present <100 m to the West within Telegraph Woods. Although BGS mapping suggests this does not overlap the Site it should be considered possible that localised pockets of this material may be present.

Considerable earthworks have taken place across the site, particularly to form the golf course to the East and car-parking area to the West, with substantial Made Ground deposits believed to be present. Whilst records show that inert material was imported for the more recent stages of development (extension of golf-course at time of hotel construction and re-levelling of carpark area to increase capacity) the nature of older fill material remains unknown.

## **5.3 HYDROGEOLOGY**

### **5.3.1 AQUIFER STATUS**

The Marsh Farm Formation, Earnley Sand Formation, nearby River Terrace Deposits and underlying Wittering Formation are all classified as Secondary (A) Aquifers, meaning layers are permeable and capable of supporting water supplies at a local rather than regional scale, and in some cases forming an important source of base flow to rivers. These strata are considered to be of Medium vulnerability with respect to leaching contaminants from the surface into groundwater bodies.

The London Clay Formation is classified as Unproductive Strata, meaning rock layers are of low permeability and have negligible significance for water supply, river base flow or vulnerability to leaching pollutants.

The BGS considers the potential for groundwater flooding on-Site to vary from negligible (South West) to moderate-high (North East) with high potential for groundwater flooding in some areas within 50 m of the Site (particularly approx. 10 m East of the site).

The Site is not in or within 1 km of a Source Protection Zone (SPZ).

### **5.3.2 GROUNDWATER ABSTRACTIONS**

There is one recorded groundwater abstraction licence (point) on-Site with no further records within 1 Km of Site. The on-Site groundwater abstraction licence is for spray irrigation – storage with a max daily volume of 125 m<sup>3</sup> and an annual volume of 18000 m<sup>3</sup>, it is located <100 m East of the groundskeepers' cottage (Hickley Farm Cottages).

## **5.4 SENSITIVE LAND USES**

The Site lies within the Hamble Estuary Eutrophic Nitrate Vulnerable Zone (NVZ).

There is 1 Special Site of Scientific Interest (SSSI) within 1 Km of Site. Moorgreen Meadows located 174 m North. The Site also lies within an SSSI Impact Zone relating to the Solent Nutrient Impact Area.

The MAGIC website (sourced from DEFRA) and Groundsure online maps indicate that there are no other sensitive land uses located within 500 m of the Site boundary, although Telegraph Woods is listed as a Site of Importance for Nature Conservation (SINC).



## 5.5 GROUND STABILITY

The ground stability hazards summarised in **Table 5-4** – Summary of Natural Ground Subsidence Hazards were outlined as part of the Groundsure Report (ultimately sourced from the BGS).

**Table 5-4 – Summary of Natural Ground Subsidence Hazards**

| Hazard                              | Potential       |
|-------------------------------------|-----------------|
| Shrinking or Swelling of Clay       | Low to Moderate |
| Landslides                          | Very Low        |
| Running Sands                       | Very Low        |
| Collapsible Deposits                | Very Low        |
| Compressible Deposits               | Negligible      |
| Ground Dissolution of soluble rocks | Negligible      |

## 5.6 RADON

Public Health England records indicate that the Site lies within a lower probability Radon area (less than 1% of homes are estimated to be at or above the Action Level). Therefore, no Radon protective measures are likely to be necessary in the construction of new residential dwellings or extensions.

## 5.7 PRELIMINARY HYDROGEOLOGICAL MODEL

Groundwater is likely to be present within the shallow bedrock of the Bracklesham Group (Marsh Farm Formation, Earnley Sand Formation and Wittering Formation) and is anticipated to be flowing in a South to South Easterly direction given its situation within the East Hampshire catchment which, in this region, drains into the River Hamble. It should be noted however that the Site is very close to the boundary between two catchment areas, so groundwater may flow in different directions based upon localised geology.

The London Clay Formation is indicated to present up to 50 m thickness in the region and likely acts as an aquitard to prevent hydraulic connectivity between overlying Secondary A Aquifers and Primary Chalk aquifers below.

## 6 RISK ASSESSMENT

### 6.1 PRELIMINARY CONCEPTUAL SITE MODEL

The preliminary Conceptual Site Model (CSM) is based upon the environmental conditions of the Site as described in the previous report sections and was developed in the context of the currently proposed development which comprises a mix of residential, commercial and public open space.

The methods used within this risk assessment follow a risk-based approach, with the potential environmental risk assessed qualitatively using the 'contaminant-pathway-receptor pollutant linkage' concept introduced in the guidance documents (principally the EA's CRM 2020) on the practical implementation of the Environmental Protection Act 1990. For a site to be determined as Contaminated Land (under Part IIA) there has to be demonstrated a significant possibility of significant harm from a significant plausible linkage between the identified Contaminants, Pathways and Receptors.

Any risks identified during a preliminary assessment, such as the ones presented in this document, are perceived risks based on the information reviewed. The risk categories presented follow guidance presented in CIRIA Publication C552, Contaminated Land Risk Assessment – A Guide to Good Practice. CIRIA defines four levels of probability and four levels of severity with relation to contaminated land, as presented in **Appendix B**.

The environmental risk assessment has been carried out by identifying and evaluating the significance of the following:

- **Potential sources of contamination:** these include actual or potentially contaminating materials and activities, located either on or in the vicinity of the Site.
- **Potential receptors of contamination:** these include future land users; and,
- **Potential pathways for contamination migration:** these are the routes or mechanisms by which contaminants may migrate from the source to the receptor.

### 6.2 PLAUSIBLE POLLUTANT LINKAGES

An evaluation of those potential contaminant linkages that we consider to be plausible given our current Site understanding is summarised in **Table 6-1** – Plausible Pollutant Linkages.

**Table 6-1 – Plausible Pollutant Linkages**

| Source                                                                                                                 | Pathway                                             | Receptor                                                                                                          |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>ON-SITE</b>                                                                                                         |                                                     |                                                                                                                   |
| Contaminants within localised Made Ground on Site. Unknown fill materials used in car park area to the West and raised | Direct contact with impacted soils and groundwater. | Construction and maintenance workers.<br><br>Current and future below ground services (e.g. potable water pipes.) |

| Source                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Pathway                                                                                                                                                                                                                                                                                                                                 | Receptor                                                                                                                                                                                                                                                                                                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>areas of the golf course to the North East.</p> <p>Storage of fuels and lubricants for ground maintenance equipment in the cricket stadium.</p> <p>Fuel and oil leaks from vehicles using the current car parks on site.</p> <p>Contaminants in underlying natural strata and historic Made Ground relating to historic farmyard/ agricultural land use.</p> <p>Herbicides, fungicides and pesticides, used in maintaining cricket pitch and golf course.</p> <p>Gasses/volatiles arising from decomposing organic matter: leaf, grass, manure, and wood mulch piles.</p> <p>Contaminants relating to the storage of waste materials including old railway sleepers and crushed construction waste.</p> <p>Potential contaminants likely to include:<br/>Asbestos containing materials, metals, polycyclic aromatic hydrocarbon (PAHs), hydrocarbons, herbicides, fungicides, pesticides, inorganics and bulk ground gases.</p> | <p>Inhalation of soil derived dust and rising vapours.</p> <p>Direct contact with or ingestion of impacted soils, including surrounding soils and future materials contaminated by material in the made ground migrating during potential groundwater flooding.</p> <p>Migration of ground gas and volatile vapours indoor/outdoor.</p> | <p>Future site users: Residential.</p> <p>Future site users: Commercial and public open space.</p> <p>Construction and maintenance workers.</p> <p>Third Party Neighbours.</p>                                                                                                                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <p>Vertical/lateral migration of contaminants leached from the soil via groundwater.</p>                                                                                                                                                                                                                                                | <p>Bracklesham Group (Secondary A Aquifer).</p> <p>Surface water features: Drainage ditches and golf course ponds.</p>                                                                                                                                                                                                   |
| <b>OFF-SITE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                          |
| <p>Made Ground from off-Site sources including:</p> <p>Golf course with raised sections filled with Made Ground.</p> <p>Infilled gravel and sand pits within Telegraph Woods to the West.</p> <p>Potential historical petrol station 25 m North East of Site on Botley Road.</p> <p>Historic garage shown 150 m North of the Site on the south side of Botley Road.</p> <p>Electrical sub-stations of unknown age (8 within 250 m, 1 within 50 m).</p> <p>Potential contaminants likely to include:</p>                                                                                                                                                                                                                                                                                                                                                                                                                            | <p>Vertical/lateral migration of contaminants via impacted groundwater.</p> <p>Direct contact with impacted groundwater transported to Site via lateral migration.</p> <p>Inhalation of windblown dust and vapours.</p> <p>Migration of ground gas and volatile vapours.</p>                                                            | <p>Bracklesham Group (Secondary A Aquifer).</p> <p>Construction and maintenance workers.</p> <p>Current and future below ground services (e.g. potable water pipes).</p> <p>Future site users: Residential.</p> <p>Future site users: Commercial and public open space.</p> <p>Construction and maintenance workers.</p> |

| Source                                                                                                                                                     | Pathway | Receptor |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------|
| Heavy metals, asbestos containing materials, ground gas, polycyclic aromatic hydrocarbon (PAHs), hydrocarbons, volatile organic compounds (VOCs) and PCBs. |         |          |

### 6.3 CONTAMINATED LAND RISK ASSESSMENT

The contaminated land risk assessment presented in **Table 6-2** – Contaminated Land Risk Assessment has been prepared based on the mix of residential, commercial and public open space land use within the proposed development. For this reason, the risk to human health for the proposed residential development area has been considered separately to the rest of the site (commercial and public open space). The risk categories presented in this report take into account both probability and severity, as sent out in CIRIA C552.

**Table 6-2 – Contaminated Land Risk Assessment**

| Receptor Group                                 | Risk Classification | Commentary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------------------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Human Health:<br>Residential development area. | <b>Moderate</b>     | <p>Site derived contamination is considered possible across the entirety of the proposed residential area. A varying and unconfirmed depth of Made Ground is believed to be present across the entire area resulting from at least two separate cut and fill operations. The latter is believed to have been completed with inert construction waste however the nature and origin of material used in the earlier fill operation remains unconfirmed. Further investigation is required to identify both depth and nature of fill across this area of Site.</p> <p>This area of the site is used for parking vehicles that may have released small amounts of fuels and oils. It is surfaced in a mix of road planings, grass and dense vegetation with significant change in topography having occurred since historical records. The site-walkover observed construction waste which underlies the current surfacing, which may contain asbestos containing materials (ACMs). Also grass cuttings piles in varying stages of decomposition with the potential to generate ground gas if built over.</p> <p>Due to the unknown nature and depth of the fill (with potential for ground gas, PAHs, metals, TPHs inorganics, and ACMs or other contaminants to be present), which the residential properties are to be built on, the risk to human health in this part of the Site is considered to be <b>Moderate</b> pending further assessment.</p> <p>Residential properties lie immediately off-Site in this area beyond the drainage ditch to the North and therefore there is a risk of exposure by windblown dust (particularly during construction if ACMs or other contaminants in the fill are exposed) or laterally migrating ground gas. Risk of exposure of</p> |

| Receptor Group                                                    | Risk Classification    | Commentary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                   |                        | 3 <sup>rd</sup> part neighbours is therefore considered <b>Low to Moderate</b> in this part of Site. If further development is considered, risk should be assessed following a ground investigation and any risks mitigated in line with CDM regulations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Human Health: Commercial and public open space development areas. | <b>Low to Moderate</b> | <p>Site derived contamination is considered possible in various areas of the Site. The golf course to the North East of the site, which is proposed to form a new car park area and proposed budget hotel, is expected to be underlain by a varying depth of Made Ground with significant change in topography since historical records in some areas, particularly in close proximity to the stadium and along the Eastern Site boundary. Made Ground in this part of the Site has also been placed over separate cut and fill operations with the most recent (extension from 9-hole to 18-hole golf course when the hotel was constructed) having been conducted using a combination of inert imported material and assumed Site derived material (originating from excavation of the stadium berm during hotel construction), whilst the nature of material within the older fill remains unknown. Additionally to the Made Ground within the golf course, there is also the berm which forms the outside of the stadium into which the proposed budget hotel and pavilion are to be built which is also of unknown origin.</p> <p>A number of other sources of Site derived contamination were also observed during the walkover: Mulch/compost piles consisting of grass cuttings, leaves and wood/bark chippings were observed in various areas including within the footprint of the proposed car park area, Southern Gateway and close to the footprint of the proposed budget hotel. Waste materials were observed in the wooded area behind Hickley farm cottages (close to the footprint of the proposed budget hotel) including old railway sleepers, which maybe impregnated with creosote. The site compound/storage area to the North of the existing wellbeing centre, which lies within the footprint of the proposed Southern Gateway, includes areas where the ground was observed to be covered by crushed construction waste, which may potentially include asbestos containing materials. Waste storage was also observed within this area including stockpiles of soil and manure, old fridges and a large waste skip.</p> <p>Further investigation is required to identify the potential for ground gas within deeper areas of fill and the potential for soil/groundwater contamination resulting from the various potential sources identified at the surface during the Site walkover. The risk to human health (including potential ACMs and ground gas) is therefore considered <b>Low to Moderate</b> pending further assessment. Exposure of third-party neighbours to contamination is <b>Low</b> based on the setting of these parts of the Site. If further development is considered, risk should be assessed following a ground investigation and any risks mitigated in line with CDM regulations.</p> |
| Controlled Waters                                                 | <b>Low</b>             | The presence of Site derived contamination cannot be fully discounted and if present is likely to be extensive, particularly within Made Ground beneath the proposed car-parking area.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| Receptor Group                 | Risk Classification    | Commentary                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                |                        | Although there is potential for contaminants to leach into groundwater of the Bracklesham Group (Secondary A Aquifer then into surface water features on site) from Made Ground deposits, the proposed development will introduce hardstanding and building cover over the most significantly affected areas, therefore reducing infiltration. The risk to the Secondary A Aquifer of the Bracklesham Group is therefore considered to be <b>Low</b> . |
| Buildings and Services         | <b>Low to Moderate</b> | <p>Accumulation of hazardous gases (if confirmed to be present) in confined spaces may increase the risk of explosion from methane and asphyxiation by carbon dioxide under extreme weather conditions such as low and falling atmospheric pressure.</p> <p>There is potential for petroleum and polycyclic aromatic hydrocarbons to be present in Made Ground which may pose a risk to potable water supply pipes.</p>                                |
| Plant life in landscaped areas | <b>Very Low</b>        | There is the potential for contaminants present in shallow soils that maybe phytotoxic in proposed areas of soft landscaping.                                                                                                                                                                                                                                                                                                                          |

## 7 CONCLUSIONS AND RECOMMENDATIONS

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### 7.1 CONCLUSIONS

The Site is currently made up of gravel surfaced (road planings) and asphalt carpark for the Ageas Bowl Cricket Stadium, areas of the adjacent golf course to the East (encroaching upon Site from the South), well-being facilities, residential cottages (Hickley Farm Cottages), and sections of the Ageas Bowl Cricket Stadium and surrounding areas. The Site comprises is a mixture of buildings, tarmac and gravel covered carparks and tracks, landscaped grassland and dense vegetation with some woodland/mature trees around the periphery of the site.

Historically, the Site was occupied by open fields, woodland and farm buildings from the time of the earliest available historical map in the 1860s-1870s up until the first available aerial photograph in 1999. By this time the farm buildings of Hickley Farm had been demolished and the County Cricket Ground (now Ageas Bowl Cricket Stadium) was constructed towards the centre of the Site along with Nursery Ground (training pitch), pavilion and club house to the South and a bowling green to the West with two access tracks leading off Botley Road to run around the perimeter of the stadium and to Hickley Farm Cottages. Numerous subsequent developments have occurred since this time with the addition of a pavilion in approximately 2005. Removal of one access road in approximately 2010. Addition of the Hilton Hotel, additional spectator stands, car park extension to the West of the site, golf course extension and vehicular access improvements with the addition of a roundabout to the North in approximately 2013. The Site was first shown in its current condition by 2017 with additional car parks and golf course ponds in place by this time.

Surrounding land uses have varied historically having included: open fields, farmland, woodland, orchards, gravel pits, residential developments, commercial developments, golf course, roads and motorway with hospitals, graveyards and industrial land uses nearby. In the 1860s-1870s the Site was surrounded by open fields and woodland to the East, South and West with gravel pits and a kiln within Telegraph Woods to the West and a road to the North along which lay a number of residential properties and farms and the nearby Union Workhouse. A hospital was added to the Union workhouse by 1895-1896 and additional sand/gravel pits were added within Telegraph Woods with a graveyard to the North. By 1957 the workhouse to the North had been renamed Moorgreen Hospital with relatively dense residential developments for up to 500 m beyond this to the North West of Site and replacing sections of Telegraph Woods to the East. By 1967-1968 no active gravel/sand pits were marked within Telegraph Woods and a drain could be seen running from the vicinity of the main pits to the South West perimeter of Site where a culvert is now known to run beneath the Site, a depot was first shown to the North West of the site at this time. Construction of the M27 to the East of the Site had begun by 1978-1981 and was completed by approximately 1987 by which time a reservoir had been constructed to the South West of Telegraph Woods. By 1999 additional commercial/retail buildings had been added to commercial/industrial estate East of the M27 and golf-course replaced open fields adjoining the Site to the South. Significant reworking of the golf-course occurred in 2013 with evidence of vehicle storage on an open field to the North of the Site in 2017 and Site and surrounding areas shown in current condition by 2021 with the reservoir to the South West covered or infilled and potential earthworks on the field to North of Botley Road.

The Site is underlain in places by shallow bedrock of the Marsh Farm Formation (Secondary A Aquifer) overlying the Earnley Sand Formation (Secondary A Aquifer), whilst elsewhere the site is underlain directly by the Earnley Sand Formation (Secondary A Aquifer). Beneath this lies bedrock of the

Wittering Formation (Secondary A Aquifer) which is in turn underlain by a significant thickness of London Clay Formation (Unproductive Strata). The upper sand bed (Whitecliff Sand Member) of the London Clay Formation is expected to thin out beneath or immediately to the East of Site however beneath this a sufficient thickness of impermeable London Clay is expected to be present in order to provide an aquiclude to protect the underlying Lambeth Group (Secondary A Aquifer), and thus the connecting underlying Chalk Group (Principal Aquifer), from contamination. It is considered likely that Made Ground deposits will be present beneath much of the Site particularly beneath the proposed residential area to the West, proposed car park area to the North East and within the berm which forms the Cricket Stadium concourse and spectator seating area into which the proposed budget hotel and pavilion are to be constructed. Anthropogenic materials including potentially asbestos containing materials were observed where the surfacing material has been washed away beneath the car park to the West and the periphery of the Golf Course to the East. The risk to human health (including that from ground gas and vapours) is therefore considered **Moderate** within the proposed residential development area and **Low to Moderate** within the proposed commercial and public open space development areas.

Exposure of 3<sup>rd</sup> party neighbours is considered **Low to Moderate** within the proposed residential development area where there are neighbouring residential properties and made ground containing potentially asbestos containing materials and **Low** within the proposed commercial and public open space development areas where there are no immediately adjoining properties and therefore only short-term exposure of users of the golf-course or public footpaths is plausible.

Although there is potential for contaminants to leach into groundwater of the Bracklesham Group (Secondary A Aquifer) from Made Ground deposits, the proposed development will introduce hardstanding and building cover over large areas of the site, therefore limiting infiltration. The risk to the Secondary A Aquifer of the Bracklesham Group is therefore considered to be **Low**.

Accumulation of hazardous ground gases in confined spaces may increase the risk of explosion from methane and asphyxiation by carbon dioxide under extreme weather conditions such as low and falling atmospheric pressure. There is also potential for petroleum and polycyclic aromatic hydrocarbons to be present in Made Ground which may pose a risk to potable water supply pipes. The risk to future buildings and below ground services is therefore considered to be **Low to Moderate**.

There is the potential for contaminants present in shallow soils to pose a risk to plant life in proposed areas of soft landscaping. The risk to plant life is therefore considered to be **Low**.

There are 8 electrical substations of unknown age within 250 m of Site one of which is within 50 m of Site (on Botley Road opposite residential properties to the North). There is also one electrical sub-station on-Site, by the roundabout on Marshall Drive, although this has been disregarded as having been constructed in-line with the stadium itself in the late 1990s after the use of PCBs was banned in the UK. Due to the presence of an electrical sub-station of unknown age within 50 m of Site the risk of PCB contamination on site is considered to be **Low** as PCBs are generally not mobile.

There is a **Low** risk of encountering UXO on-Site based on the Zetica Pre-Desk Study Assessment for the Site recommending that a detailed UXO desk study is not considered essential.

## 7.2 RECOMMENDATIONS

WSP recommends that a ground investigation compliant with BS10175:2011+A2:2017 and a Generic Quantitative Risk Assessment (GQRA) are undertaken. These are likely to be the requirement of any future planning consent and will allow the assessment of identified plausible contaminant linkages.

It is recommended that a ground investigation is designed based on the following technical objectives:

- Characterisation of the underlying ground and groundwater via intrusive investigation;
- Undertake soil and groundwater sampling for contamination analysis;
- Undertake ground gas and groundwater monitoring;
- Provide an assessment of risks to human health and controlled waters; and,
- Provide an assessment of geotechnical soil properties for the areas proposed to be developed.

The geo-environmental intrusive investigation can be combined with an investigation for geotechnical purposes, which would be required to assess potential geotechnical constraints for the proposed development and for design purposes.