CONSTRUCTION WASTE MANAGEMENT PLAN
NORTHWOOD & PINNER COTTAGE HOSPITAL
PINNER ROAD, HA6 1DE
NHS PROPERTY SERVICES AND NHS HILLINGDON CCG
WMP-22143-20-215
MARCH 2021

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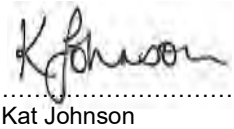

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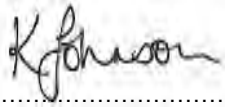

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Document Revisions

Rev	Date	Author	Approved	Issued	Remarks
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SECTION 1 INTRODUCTION

1.1 IDOM Merebrook Ltd has been appointed by NHS Property Services and NHS Hillingdon CCG to provide a construction-phase Waste Management Plan (WMP) to support an application for the redevelopment of an NHS Site in Northwood, London Borough of Hillingdon (LBH).

1.2 The appointment follows an offer under cover of letter reference L-BDMERMA-20-S319-KRJ dated 7 May 2020 and subsequent acceptance dated 14 May 2020.

1.3 In accordance with recommended practice of LBH, this report sets out a high-level WMP which will be adopted by the Principal Contractor during the implementation of the project.

1.4 The document provides a framework against which waste and material management decisions will be made.

1.5 This report has been prepared for NHS Property Services and NHS Hillingdon CCG for the sole purpose described above and no extended duty of care to any other third party is implied or offered. NHS Property Services and NHS Hillingdon CCG and IDOM Merebrook will provide qualified reliance upon the document to the principal contractor and selected subcontractors for the scheme.

SECTION 2 DESCRIPTION OF PROJECT

2.1 The current site includes the former Northwood and Pinner Cottage Hospital (Plot 1) and Northwood Health Centre (Plot 2). The two plots are adjacent with corridor connectivity. The plots have an approximate area of 0.6 ha and 0.5 ha respectively.

2.2 The proposed project includes partial demolition of the structure on Plot 1, while retaining significant portions of the existing cottage hospital structure. Works will include the refurbishment of the cottage hospital building with construction of a new wing to provide a healthcare facility. A residential block will be built in what is currently the grounds and car park of the existing property.

2.3 On Plot 2 the existing structures will be fully removed and a new residential block will be constructed. Drawing 17115_05_00_07_100 in Appendix 1 shows the general arrangement of the final proposals.

2.4 On both plots external details will include parking and landscaping (communal gardens and grassed/vegetated areas).

2.5 The new residential blocks will be of four storeys with mansard roof for plant and will be constructed using concrete frames for the main structure and steel frames for the roofs. Foundations for the columns are to be supported on pads which will be piled to allow the necessary bearing capacity to be achieved.

2.6 The new wing of the existing building on Plot 1 will be of traditional load-bearing masonry with a steel frame supporting timber first floor.

2.7 The use of the newly refurbished cottage hospital will be to house the relocated medical centre and therefore the project phasing involves decanting. However, the overall construction can be considered a single project.

2.8 It is understood that site investigations are awaited however, a Phase 1 Desk Study has been conducted for Plot 1 and is included as Appendix 2.

2.9 It can be seen from the desk study that the site was formerly farmland until the construction of the Northwood and Pinner War Memorial Hospital in approximately 1925. Plot 2 was undeveloped and may have been part of the hospital grounds until the early 1970's when the current medical centre was constructed.

2.10 The cottage hospital was extended on several occasions from 1925 and it is proposed to retain the original extent only while substantially removing later additions.

2.11 Documentary evidence from the structural engineers confirms the presence of extensive asbestos within the structure.

2.12 The medical centre is also of an age from which the presence of asbestos construction materials is strongly suspected.

SECTION 3 LEGISLATION AND GUIDANCE

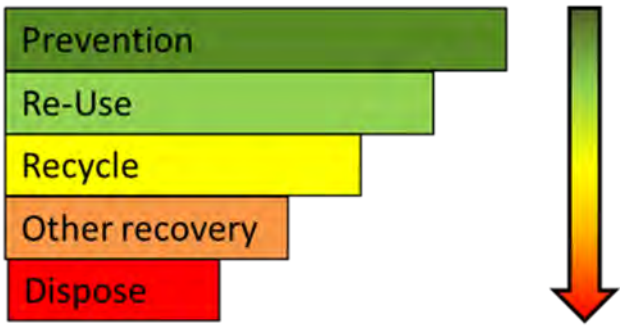
3.1 EU WASTE FRAMEWORK DIRECTIVE

3.1.1 Waste is defined in EU Legislation (transposed into UK legislation). Article 1 of Directive 2008/98/EC on waste (Waste Framework Directive) defines waste 'as any substance [not excluded from the scope of the Directive] which the holder discards, intends to discard or is required to discard'.

3.1.2 When a material fulfils the definition of waste under the Framework definition, then other articles and provisions in the Directive constrain how that material must be dealt with as discussed below.

3.1.3 Substances may cease to be waste when they are subject to certain recovery operations (including recycling) and comply with specific criteria.

3.1.4 Article 4 of the Directive sets out the hierarchy of waste which is required to be the priority order for waste management and prevention policy and which defines the best overall environmental outcomes in each situation (see below).



3.2 THE WASTE (ENGLAND AND WALES) REGULATIONS 2011

3.2.1 Section 12 of the Regulations requires that:

'An establishment or undertaking which imports, produces, collects, transports, recovers or disposes of waste, or which as a dealer or broker has control of waste must, on the transfer of waste, take all such measures available to it as are reasonable in the circumstances to apply the following waste hierarchy as a priority order—

(a) prevention;

(b) preparing for re-use;

(c) recycling;

(d) other recovery (for example energy recovery);

(e) disposal'.

3.3 SITE WASTE MANAGEMENT PLAN REGULATIONS

3.3.1 The Site Waste Management Plans (SWMP) Regulations 2008 set out legal requirements for the preparation of SWMPs for all projects in England exceeding a threshold contract value.

3.3.2 The requirements of plans under the Regulations included requirements to

i. describe the waste materials expected to be generated;

ii. estimate the quantity of each waste type likely to be generated;

iii. identify actions for each type of waste;

iv. keep records of quantities of wastes in each category;

v. keep records of materials reused; recycled, sent for recovery or disposed as waste; and,

vi. keep records of changes, updates to plan.

3.3.3 The Principal Contractor was also required under the Regulations to make a comparison of the forecast quantities of each type of waste generated with the actual quantities of waste generated in the project.

3.3.4 The 2008 Regulations were fully revoked in 2013 and are no longer a legal requirement

3.4 LONDON PLAN 2021

3.4.1 The London Plan 2021 includes several policies which support and reinforce the requirements of the Waste Framework Directive.

3.4.2 Chapter 3 relates to Design and Section 3.3.10 notes that:

'To minimise the use of new materials, the following circular economy principles (see also Figure 3.2) should be taken into account at the start of the design process…

- *designing out waste – ensuring that waste reduction is planned in from*
- *project inception to completion, including consideration of standardised components, modular build and re-use of secondary products and materials*
- *designing for longevity*
- *designing for adaptability or flexibility*
- *designing for disassembly*
- *using systems, elements or materials that can be re-used and recycled.'*

3.4.3 Chapter 9 relates to Sustainable Infrastructure and Policy SI 7 relates to Reducing waste and supporting the circular economy. The policy requires that

'A. Resource conservation, waste reduction, increases in material re-use and recycling, and reductions in waste going for disposal will be achieved by the Mayor, waste planning authorities and industry working in collaboration to:

1) promote a more circular economy that improves resource efficiency and innovation to keep products and materials at their highest use for as long as possible
2) encourage waste minimisation and waste prevention through the reuse of materials and using fewer resources in the production and distribution of products
3) ensure that there is zero biodegradable or recyclable waste to landfill by 2026
…
5) meet or exceed the targets for each of the following waste and material streams:
a) construction and demolition – 95 per cent reuse/recycling/recovery
b) excavation – 95 per cent beneficial use'
…"

3.4.4 Policy SI 8 on Waste capacity and net waste self-sufficiency requires that:

A. In order to manage London's waste sustainably:

1. the equivalent of 100 per cent of London's waste should be managed within London

…

5. environmental, social and economic benefits from waste and secondary materials management should be created.'

3.5 WEST LONDON WASTE PLAN

3.5.1 The West London Waste Plan, adopted July 2015, sets out a joint waste strategy for six London Boroughs.

3.5.2 The plan notes the target set in London Plans for the recycling/ composting/re-use target of greater than 95% of Construction, Excavation and Demolition waste to be recycled by 2020.

3.5.3 In Section 4.4.1 of the Plan it is noted that:

'Work undertaken in support of the Plan has established that the Plan area has a substantial quantity of processing capacity for this waste stream and that the London Plan (2011) city-wide targets of 95% recycling and reuse by 2020 are close to being met. This is expected to continue into the future and accordingly no allocations are made in this plan for facilities dealing specifically with such wastes. However, the evidence also indicates that it is not possible for the more specific target of 80% of that recycling to be met in the form of aggregates by 2020 due to the lack of suitable waste. The preference in West London is to ensure more on-site recycling and re-use on construction sites together with effective use of existing waste management sites and the appropriate provision of facilities at mineral extraction sites to ensure adequate provision of treatment capacity for this waste stream, In particular, policy encouragement is given to development of capacity for the production of material suitable for use as substitutes for virgin materials, such as recycled aggregates'.

3.6 LONDON BOROUGH OF HILLINGDON PLANNING STANDARDS

3.6.1 In order to encourage good environmental practice LBH requests that planning applications are supported by construction SWMPs. The aim of these is to allow identification of the volumes and types of material likely to be produced, particularly during the demolition and and/or excavation, opportunities for the re-use and recovery of materials and to demonstrate how off-site disposal of waste will be minimised and managed.

SECTION 4 DESIGN-STAGE ASSESSMENT

4.1 INTRODUCTION

4.1.1 An initial review of the project at design stage has been undertaken. The project will include works of demolition, excavation and construction and each has been considered.

4.1.2 The principal works of demolition are the existing Northwood Medical Centre and later additions to the Northwood and Pinner Cottage Hospital.

4.2 ASBESTOS

4.2.1 Both structures will have asbestos-containing materials (ACM) present. For construction safety purposes and to maximise the ability for the re-use of demolition wastes, a programme of extensive stripping of all ACM within the structures will be necessary. Some of this can be achieved prior to superstructure removal but it is also possible that elements of asbestos stripping will need to be accomplished within the demolition process.

4.2.2 Design and control of asbestos stripping will be informed by any Asbestos Registers held by the site owners together with additional surveys instructed as part of the project.

4.2.3 All works will be controlled under the Control of Asbestos Regulations 2012 and all stripped materials are likely to be Hazardous Waste within the definition of the Waste Framework Directive and under the Hazardous Waste Regulations (England and Wales) 2005.

4.2.4 For these reasons, there is unlikely to be means of waste reduction, re-use or recycling for such material

4.3 **SOFT STRIPPING**

4.3.1 Following asbestos removal, other soft stripping of the structures is likely to produce a mixture of materials including:

i. Plumbing and electrical - amenable to recycling off-site;

ii. Metals – amenable to recycling off-site;

iii. Wood – amenable to recycling or energy recovery off-site;

iv. Plastics/ furnishing – unlikely to be amenable to recycling; and,

v. Plaster/ plasterboard – amenable to off-site recycling.

4.4 **DEMOLITION**

4.4.1 When structures are demolished and foundations removed, the following fractions are likely to be produced:

i. Masonry/ tiles/ ceramic – amenable to recycling off site or on-site as aggregate;

ii. Concrete – amenable to recycling off site or on-site as aggregate;

iii. Wood – amenable to recycling or energy recovery off-site; and,

iv. Metal - amenable to recycling off site.

4.5 **EXCAVATION/ REPROFILING**

4.5.1 The site levels are not expected to be change from existing significantly however, there may some need for some cutting and filling. This may be, for instance, to refill excavations formed by foundation/contamination removal, as a result of new foundations/drainage, or due to access requirements.

4.5.2 Excavated materials may be re-used providing all necessary consideration is given to their suitability.

4.5.3 In the context of ground materials arising, the plan will encourage the adoption of re-use on site either under an exemption, under the CL:Aire Code of Practice, or under a site permit.

4.6 **CONSTRUCTION**

4.6.1 Construction will include groundworks, frame construction, façade construction and associated superstructure works, MEP fit-out and landscaping etc.

4.6.2 All works will be under the control of a Principal Contractor and the project will be supported by construction professionals including cost advisors.

4.6.3 The principal means of waste management through all stages of construction is by careful planning of resources to meet the requirements of the project – thus avoiding delivery to site of excess material which could later be discarded and become waste. Efficient resource and cost-planning will be the principal means of achieving this.

4.6.4 Nevertheless, it is inevitable within any project that some amount of surplus materials may brought to site, either due to design or programme reasons, and that some waste will be generated due to off-cuts, abortive work, design changes; unsatisfactory quality or other reasons.

4.6.5 The Principal Contractor will introduce controls to ensure that waste generation is minimised including the following actions:

i. Good and appropriate storage for all materials to protect from damage/ weather etc.;

ii. 'Just-in-time' delivery where possible for certain materials;

iii. Coordination of subcontractors to ensure efficient processes; and,

iv. Establishment of waste efficiency targets.

4.6.6 The Principal Contractor will also promote efficient re-use and recycling by the following means:

i. Well-designed waste management facilities to incorporate separation of each stream of material;

ii. Tidy-site policies;

iii. Encouragement of suitable means for using excess materials – e.g. timber off-cuts used for temporary shuttering, suitable aggregate arisings used in place of imported aggregates etc.;

iv. Tool-box talks for operatives to promote waste minimisation and recycling;

v. Suggestion box scheme to invite means of waste reduction.

4.7 **DISPOSAL**

4.7.1 Where there is no alternative other than to dispose of materials off-site as waste, they will be removed from site in accordance with the waste duty of care in Section

34 of the Environmental Protection Act 1990, and the Waste (England and Wales) Regulations 2011.

SECTION 5 OPERATIONAL WASTE MANAGEMENT PLAN

5.1 The Principal Contractor will be responsible for preparing a bespoke plan based on the principles of this document.

5.2 The plan will include any appropriate measures from the Principal Contractor's standing requirements on waste and material management but in case of any conflict, the requirements of this document shall take precedence.

5.3 The Principal Contractor will nominate a suitable team member (Site Manager or Deputy) as the Waste Coordinator for the scheme.

5.4 The Waste Coordinator will prepare a pre-start assessment of the likely waste streams at the commencement of the project using the spreadsheet set out in Appendix 3 or similar document.

5.5 The spreadsheet will be revised and amended as phases of work progress to record the amounts of waste generated and the means by which they are re-used/ recycled or disposed.

5.6 Waste reporting to the client will form an agenda item on regular project meetings.

5.7 All waste and waste-minimisation records produced under the plan will be retained by the Principal Contractor and client for two years.

5.8 The plan will meet the requirements of all Legislation and Policy as set out in Section 3 of this report.

SECTION 6 CONCLUSION

6.1 This document sets out a pre-start waste management framework for the project to redevelop the Northwood & Pinner NHS Site situated in the London Borough of Hillingdon.

6.2 This plan will be developed by the selected Principal Contractor to form an operational construction WMP meeting all relevant policy and legislative requirements

APPENDIX 1 ▪ Drawings

JUNIPER COURT

HEALTHCARE CENTRE

BLOCK A

BLOCK B

SOVEREIGN COURT

WAVERLEY GARDENS

PINNER ROAD

HIC Healing

Drop-off

Car Parking 19 Healthcare

Car Parking 2 Residential (Blue 1)

Car Parking 3 Healthcare Parking

Car Parking 30 Healthcare Parking

Residential Car Parking 67 (plus 2)

Entrance Lobby 1

Entrance Lobby 2

Plant

Substation

Bike 1 Sheffield stands

Bike 2 visitor

Bike 3 Sheffield stands

Bike 4 Sheffield stands

Bike 5 Sheffield stands

Bike 6 Sheffield stands

Bike 7 Sheffield stands

Bike 8 Sheffield stands

Bike 9 Sheffield stands

Bike 10 Sheffield stands

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Figured dimensions are in millimetres unless noted otherwise. All dimensions and levels shall be verified on site before proceeding with works. Detailed site survey to be carried out to verify positions and level relationships with site features and ordnance survey. The Architect must be notified of any discrepancy. Boundaries are indicative only and are to be verified by others.

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REV	DATE	DESCRIPTION	CKD
P1	MARCH 2021	ISSUED FOR PLANNING	AO

DRAFT - DESIGN FREEZE 15.02.2021

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A&M JOB NO: 17115_05

NHS - NORTHWOOD AND PINNER, LONDON

PROPOSED LEVEL 00 SITEWIDE PLAN PLANNING

17115_05_00_07_100

SCALE 1:250 @A1 1:500@A3

P1
Revision

APPENDIX 2 ▪ Phase 1 Desk Study – Plot 1

Former Northwood & Pinner Hospital Pinner Road Northwood

Report on Phase 1 Ground Condition Assessment

On behalf of **NHS Property Services**

Project Ref: 35554/3501/CBH/RP/DG | Rev: 00 | Date: September 2015

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Document Control Sheet

Project Name: **Northwood & Pinner Hospital**

Project Ref: **35554/3501**

Report Title: **Report on Phase 1 Ground Condition Assessment**

Doc Ref: **35554/3501 Issue 01**

Date: **September 2015**

	Name	Position	Signature	Date
Prepared by:	David Guinibert	Engineer		
Reviewed and Approved by:	Richard Puttock	Partner		
For and on behalf of Peter Brett Associates LLP				

Revision	Date	Description	Prepared	Reviewed	Approved

Contents

Figures

Tables

Appendices

1 Introduction

1.1 Background Information

1.1.1 Peter Brett Associates (PBA) has been instructed by NHS Property Services, the Client, to carry out a Phase 1 Ground Condition Assessment for the proposed redevelopment of the former Northwood & Pinner Hospital, Pinner Road, Northwood, HA6 1DE.

1.1.2 This report presents a Phase 1 Ground Condition Assessment comprising a Tier 1 qualitative contamination risk assessment and preliminary ground stability risk assessment which has been prepared to support the master planning process and subsequent planning application for the redevelopment of the site.

1.1.3 The assessment reviews readily available information in order to assess the existing ground conditions on the site and the potential for contamination to be present associated with previous and present uses of the site and the surrounding areas. The review enables a qualitative assessment to be made of the geotechnical and geoenvironmental constraints at the subject site, such that informed decisions on the design of the proposed development can be made, and the risk and hazards associated with existing or potential future contamination and instability of the ground identified, with recommendations for further studies and/or mitigation as appropriate.

1.1.4 Attention is drawn to the Guidance Note in Section 7 which provides advice for readers of this report.

1.2 Objectives

1.2.1 The primary aim of this assessment is to meet the requirements of the National Planning Policy Framework (NPPF) Clauses 120, 121 and 122. Under the definition ‘Site Investigation Information’ given in the NPPF glossary page 56, the Phase 1 Desk Study and contamination risk assessment is the minimum requirement under the NPPF to support any planning application on a site that might be potentially affected by contamination. Similarly, a desk study and site reconnaissance is the minimum information that should be provided for a site potentially at risk from ground instability.

1.3 Scope of Work / Terms of Reference

1.3.1 Guidance on ground condition assessment is given in CLR 11 Model Procedures for the Management of Contaminated Land (EA, 2004), which sets out a process based on a tiered risk assessment with increasing level of detail required to progress through the tiers.

1.3.2 The scope of work undertaken by PBA comprises:

- A review and collation of readily available geological, hydrogeological and aquifer vulnerability maps; geological information and historical Ordnance Survey maps.
- A walkover survey to examine the existing condition of the Site and surrounding area.
- A qualitative Tier 1 risk assessment utilising a Conceptual Site Model to identify 'source – pathway - receptor' linkages to assess the potential risk and hazards, if any, associated with existing or potential future contamination in the ground.
- A ground stability assessment of the risk of subsidence arising from artificial cavities; natural cavities; and potential adverse foundation conditions.

1.3.3 This report has been prepared in accordance with our offer and a copy of our Specification for Phase 1 Ground Condition Assessment which accompanied the offer is provided in **Appendix A**.

1.4 Site Location and Setting

1.4.1 The site is located approximately 1 km south east of Northwood train station, centred at National Grid Reference (NGR) TQ100906. The site is bounded by Pinner Road to the south, Acre Surgery to the north east and residential developments in all other directions. A Site Location is present as **Figure 1**.

1.4.2 The site occupies an area of approximately 0.6 ha and contains a partially disused hospital with associated hardstanding and soft landscaping. A site layout plan, annotated with the principal features discussed in this report is presented as **Figure 2**.

1.5 Proposed Development

1.5.1 No development plans were available at the time of the preparation of this report therefore it is assumed that residential end users (worst case) will be present following the development of the site.

1.6 Methodology and Report Format

1.6.1 The PBA Methodology for the assessment of contaminated land is presented in **Appendix B**.

1.6.2 The underlying principle is the evaluation of *pollutant linkages* in order to assess whether the presence of a source of contamination could potentially lead to harmful consequences. A pollutant linkage consists of the following three elements:-

- A source of contamination or hazard that has the potential to cause harm or pollution;
- A pathway for the hazard to move along / generate exposure; and
- A receptor which is affected by the hazard.

1.6.3 For each potential pollutant linkage identified the risk is estimated through consideration of the magnitude of the potential consequences and the likelihood or probability of an event occurring.

1.6.4 This report is divided into chapters identifying potential sources (hazard identification), potential pathway and receptor identification and risk estimation and assessment.

1.6.5 In relation to land stability the geological conditions, geomorphology and topography of the site area are reviewed and a qualitative assessment of the potential for geo-hazards to be present at the site is presented.

1.7 Sources of Information

1.7.1 The following sources of information were used in the preparation of this report:-

- A site visit to undertake a walkover inspection with selected photographic plates presented in **Appendix C**.
- Landmark Information Group (LIG) were commissioned to provide historical maps and environmental setting data searches (Envirocheck report), and this information is presented in its entirety in **Appendix D**.
- Ground stability information was obtained from the Natural Cavity and Artificial non-coal (underground) mining cavity databases managed and enhanced by Peter Brett Associates LLP (PBA)
- Environment Agency web site "What's in Your Back Yard?", http://maps.environment-agency.gov.uk;
- British Geological Survey (BGS) Geology Map held by PBA;
- The World War II bomb mapping website "Bomb Sight", www.bombsight.org; and
- Borehole Logs held by the British Geological Survey (BGS) as accessed via their website, www.bgs.ac.uk/data/boreholescans/home.html. Where logs have been referred to they have been included in their entirety in **Appendix E**.

2 Land Use Information

2.1 Introduction

2.1.1 This section presents a summary of current and historical land uses on and immediately adjacent to the site. Land use is used to inform the hazard identification element of the Tier 1 risk assessment.

2.1.2 The current land use information is based on a walkover inspection undertaken by PBA on the 27th August 2015. The main features noted during the site walkover and locations of photographs are marked on the Site Layout Plan presented as **Figure 2**.

2.1.3 Photographs taken during the site walkover (Plates 01 to 06) are presented in **Appendix C**.

2.1.4 The historical land use information is based on Ordnance Survey maps and aerial photography provided by LIG presented in **Appendix D**. Particular attention is given to potentially contaminative land uses within or adjacent to the site boundary.

2.2 Current Land Use

On-Site

2.2.1 The majority of the site is occupied by the partially disused Northwood & Pinner Hospital. The hospital building comprises two large wards (Plate 01) and a number of smaller rooms (Plate 02 and 03). The building spans over two levels and one small basement level. It is of brick construction (Plate 04) and understood to be a listed building.

2.2.2 The southern and occupied end of the building is used for the NHS ambulance service with the surrounding hardstanding used to store ambulances (Plate 05). The northern disused end has been cleared of all equipment and has fallen into a state of disrepair.

2.2.3 Access to the basement level was not possible at the time of the site walkover however it is understood that it contains the boiler room.

2.2.4 A transformer (Plate 06) is located in the south eastern corner of the site.

Topography

2.2.5 A topographical survey has been completed by Alan Rhodes Associates and is included as **Appendix F**. The topographic survey shows the site to very gently slope from the northern site boundary at an elevation of approximately 71.50 m AOD to the southern boundary at an elevation of 71.00 m AOD.

Off-Site

2.2.6 The current off site land use immediately surrounding the site is summarised below:-

North – A residential block of flats is present immediately north of the site. Acre Surgery is present adjacent to the north eastern corner of the site. The land is predominately residential beyond these items.

East / West – Residential developments occupy the land to the east and west of the site boundaries.

South – Pinner Road, being a single carriage way, bounds the southern boundary. Residential properties occupy the land to the south of Pinner Road. A railway line (Metropolitan Line) which runs in an approximate east-west direction is present approximately 130 m south of the site boundary.

2.3 Historical Land Use

On-Site

2.3.1 The earliest available Ordnance Survey (OS) map dated 1865 and scaled 1:2,500 shows the majority of the site to be open fields with the south eastern corner of the site occupied by trees.

2.3.2 The OS map dated 1932 and scaled 1:2,500 shows the site to have been developed into the currently existing Northwood & Pinner War Memorial Hospital.

2.3.3 An internet search of the hospital suggests that it was first opened in 1924 with an extension added in 1930. The hospital was initially used as a general hospital including an x-ray room and operating theatre. The hospital was later converted for respite and rehabilitation care for elderly in-patients, as well as physiotherapy and podiatry care to out-patients.

2.3.4 The OS map dated 1959 to 1965 shows the addition of two small buildings in the northern most edge of the site.

2.3.5 The OS map dated 1992 scaled 1:2,500 shows the northern most building first identified in the OS map dated 1959 to 1965 to have been removed.

2.3.6 No other significant changes are noted up to an including the latest issued OS map dated 2015. A number of OS maps have been provided in the Envirocheck report and provide adequate coverage from the earliest available until the latest issued.

Off Site

2.3.7 The earliest available Ordnance Survey (OS) map dated 1865 and scaled 1:2,500 shows the area surrounding the site to be in an agricultural setting. Farm buildings associated with the Hundred Acres Farm are located immediately east of the site boundary. Pinner Road is shown immediately adjacent the southern boundary. A number of ponds are shown to be within 250 m of the site boundary.

2.3.8 The OS map dated 1896 and scaled 1:2,500 shows the addition of the Metropolitan Railway Line approximately 130 m south of the site boundary running in an east-west direction.

2.3.9 The OS map dated 1897 and scaled 1:10:560 shows the initial development of Northwood to the north west of the site. The closest extent of Northwood is approximately 250m west of the site boundary.

2.3.10 The OS map dated 1913 and scaled 1:2,500 shows the continued development of Northwood. The closest extent of Northwood is shown to be within approximately 150m of the site boundary. Minor development is shown in the vicinity of the Hundred Arches Farm buildings. Residential properties and a school are shown immediately south east of the site boundary.

2.3.11 The OS map dated 1932 and scaled 1:2,500 shows substantial residential development bordering the southern and western edges of the site.

2.3.12 The OS map dated 1965 and scaled 1:2,500 shows the redevelopment of the Hundred Acres Farm into what is thought to be a large warehouse.

2.3.13 The OS map dated 2006 and scaled 1:10:000 shows the redevelopment of the land immediately east of the site from the large warehouse to an apartment building.

2.3.14 The OS maps up to and including the latest issue OS map dated 2015 and scaled 1:10,000 shows continued development of Northwood to a point where developments are present on each of the sites boundaries. No other significant changes are noted within the OS mapping.

3 Environmental Setting

3.1 Introduction

3.1.1 Information about the environmental setting is used in the Hazard Assessment section of the risk assessment to identify potential pathways and receptors.

3.2 Geology

Published Information

3.2.1 The British Geological Survey (BGS) Solid and Drift Geology Map (Sheet 255: Beaconsfield BGS, 2005) indicates the entirety of the site to be underlain by the London Clay Formation comprising stiff clay.

3.2.2 No specific ground investigations have been provided for the site and as such there is no site specific geology information.

BGS Borehole Records

3.2.3 The BGS archive contains one record of a borehole sunk in the general vicinity of the Site. The borehole is located approximately 50m east of the site boundary and is identified by the BGS as TQ19SW40. A copy of this record has been obtained and is reproduced in **Appendix E** in its entirety.

3.2.4 The borehole proves approximately 0.2 m of made ground overlying the London Clay Formation to a depth of approximately 12 m below ground level (bgl). The Reading Formation is present beneath the London Clay to a depth of 27 m bgl followed by the Seaford and Newhaven Formations to a maximum proved depth (i.e. the formation was not penetrated) of 91 m bgl.

3.2.5 Standing groundwater was recorded at depth of approximately 27 m bgl or at the interface of the Reading Formation and the underlying Seaford and Newhaven Formations. This level could simply reflect the change in permeability of the strata therefore groundwater levels could be higher than this recorded depth.

3.3 Naturally Occurring Geological Hazards

3.3.1 An assessment of potential geological hazards that may give rise to instability or adverse foundation or construction conditions as supplied by the British Geological Survey (BGS) from their National Geoscience Information Service (NGIS) are presented in the Envirocheck Report, reproduced in **Appendix D**. The assessment is generated automatically based on digital geological maps and the scope and the accuracy is limited by the methods used to create the dataset and is therefore only indicative for the search area.

3.3.2 The information contained in the Envirocheck Report has been reviewed and where considered necessary reassessed considering the specific information available for the site. The modified assessment of the potential for geological hazards to be present on the site is summarised in Table 3.1 below.

Table 3.1 - Summary of Geological Hazards from Envirocheck Report

Description	BGS-NGIS Assessed Hazard Potential	PBA Opinion, Comment and Assessment
Coal Mining Affected Areas	Not Affected	Agree with the assessment.
Collapsible Ground Stability Hazards	No Hazard to Low	The risk associated with collapsible ground is minimal given that the site is underlain by the London Clay Formation (see Section 3.2) which is not known for its collapsible nature. We would therefore agree with this assessment. The risk associated with cavities is further discussed in Section 5.2.
Compressible Ground Stability Hazards	No Hazard to Low	The risk associated with compressible ground is minimal given that the site is underlain by the London Clay Formation (see Section 3.2) which is generally not susceptible to significant compression when loaded by relatively light structures. We would therefore agree with this assessment. It should be noted that if made ground is encountered this hazard should locally be increased to Moderate. This study however has not identified any potential deep deposits of made ground which would warrant a local increase of risk.
Dissolution Hazard	No Hazard	The risk associated with the dissolution of underlying materials is negligible given that the approximate depth to the nearest deposit susceptible to this hazard is circa 27 m. We would therefore agree with this assessment.
Landslide Ground Stability	Very Low to Low	The topographic survey presented in **Appendix F** proves the site to be relatively flat. We would therefore agree with this assessment. It should be noted that temporary stability issues may arise if development works require the removal of the underlying basement. Temporary works are outside of the scope of this report therefore are not further considered.
Running Sand	No Hazard	The risk associated with the running sand is negligible given that the approximate depth to the nearest deposit containing significant quantities of sand capable of being mobilised by groundwater is circa 12 m. We would therefore agree with this assessment.
Shrinking or Swelling Clay	Moderate	The site is underlain by the London Clay Formation which can contain significant portions of clay capable of swelling therefore we would agree with this assessment.

3.3.3 Identified ground stability hazards are further discussed in Section 5.

Radon

3.3.4 The Envirocheck Report indicates that *'The property is in a lower probability radon area, as less than 1% of homes are above the action level'*. The report goes on to suggest that *'No radon protective measures are necessary in the construction of new dwellings or extensions.*'

Natural and Non Coal Mining Cavity Records – Cavity Searches

3.3.5 A search of the PBA Natural Cavities Database indicated that there is one natural cavity location recorded within 2 km of the site centre. The details of this cavity are presented in Table 3.2 below.

Table 3.2 - Summary of Identified Natural Cavities

Approximate NGR	Approximate Distance from Site Centre (m)	Recorded Location	Geology	Natural Cavity Details	Source
TQ 115 905	1500 E	Pinner Mine, Blythwood Road / Norman Crescent, Pinner, Hertfordshire	**Superficial:** Worked Ground **Solid:** London Clay, Lambeth Group, Chalk Group	4 x Solution Pipes	*Edmonds, C.N. 1987. The engineering geomorphology of karst development and the prediction of subsidence risk up on chalk outcrop in England. Unpublished PhD thesis. University of London*

3.3.6 A search of the PBA Mining Cavities Database indicated that there are eleven recorded man made cavity locations within 2 km of the site centre. The details of each record are presented in Table 3.3 below.

Table 3.3 - Summary of Identified Mining Cavities

Approximate NGR	Approximate Distance from Site Centre (m)	Recorded Location	Geology	Mining Cavity Details	Source
Vicinity of TQ 094 912	850 NW	Hallowell Road, Northwood, Greater London	**Solid:** London Clay, Lambeth Group, Chalk Group	Chalkwell	*Chelsea Speleological Society, Volume(s): 27, page(s) : 47*
TQ 092 908	860 W	Highfield Crescent, Northwood	**Solid:** Lambeth Group, Chalk Group	Shaft Collapse	*Chelsea Speleological Society, Volume(s): 27, page(s) : 47*
Vicinity of TQ 092 908	860 W	Highfield Crescent, Northwood	**Solid:** Lambeth Group, Chalk Group	Sand Pit Shaft	*Ordnance Survey*
TQ 110 908	960 E	Pinner Hill Road / Potter Street, Pinner	**Solid:** London Clay, Lambeth Group, Chalk Group	'Pinner Hill Farm Mine' Shaft Entry Pillar & Stall Chalk Mine	*Chelsea Speleological Society, Volume(s): 11 page(s) : 51, 53-54, Ground engineering Ltd*
TQ 111 908	1060 E	Pinner Road / Albury Drive / South Way, Pinner	**Solid:** London Clay, Lambeth Group,	'Pinner Hill Road Mine' Shaft Entry Pillar & Stall Chalk mine	*Chelsea Speleological Society, Volume(s): 11 page(s) : 51-52, 54, Ground engineering Ltd*

			Chalk Group		
Centred at TQ 114 906	1350 E	Norman Crescent / Jubilee Close, Pinner	**Superficial:** Worked Ground **Solid:** London Clay, Lambeth Group, Chalk Group	'The Dingle / Pinner Mine' 3 Shaft Entry Pillars & Stall Chalk Mine	*Ground engineering Ltd, NIBC, Mike Rosenbaum Imperial College, Fieldwork*
TQ 115 905	1460 E	Adjacent to Montesole Playing Fields, A404 Uxbridge Road, Pinner	**Superficial:** Worked Ground **Solid:** London Clay, Lambeth Group, Chalk Group	'Uxbridge Road Mine' Shaft Entry Pillar & Stall Chalk Mine-Mined Ground	*Chelsea Speleological Society, Volume(s): 14 page(s) : 32-34*
TQ 089 916	1490 NW	Green Lane / Wellcote Drive, Northwood, London	**Solid:** London Clay, Lambeth Group, Chalk Group	Chalkwell	*Terrasearch Ltd. 12, Hillingdon Borough Council*
Vicinity of TQ 094 912	850 NW	Hallowell Road, Northwood, Greater London	**Solid:** London Clay, Lambeth Group, Chalk Group	Chalkwell	*Chelsea Speleological Society, Volume(s): 27, page(s) : 47*
TQ 092 908	860 W	Highfield Crescent, Northwood	**Solid:** Lambeth Group, Chalk Group	Shaft Collapse	*Chelsea Speleological Society, Volume(s): 27, page(s) : 47*
Vicinity of TQ 092 908	860 W	Highfield Crescent, Northwood	**Solid:** Lambeth Group, Chalk Group	Sand Pit Shaft	*Ordnance Survey*

3.3.7 The implications of the above identified cavities are discussed in Section 5.2.

3.4 Landfill Records

3.4.1 No active or historical landfill sites have been identified within 2km of the site boundary by the Envriocheck Report. Landfills are therefore not considered to pose a potential environmental hazard to the site or any proposed development.

3.5 Substantiated Pollution Incidents

3.5.1 Four substantiated pollution incidents have occurred within 1km of the site boundary as recorded by the Envirocheck Report. The incidents are not considered to pose a potential geoenvironmental risk to the site or any proposed development given that the water courses in which they occurred do not pass through or in proximity to the site and that the underlying relatively impermeable London Clay formation will limit the migration of any contaminate.

3.6 Controlled Waters - Groundwater

3.6.1 The following table summarises information recorded in the Envirocheck report regarding hydrogeology and groundwater vulnerability.

Table 3.4 - Summary of Hydrogeology and Groundwater Vulnerability Related Information

Item	Details
Aquifer Classification	London Clay Formation – Unproductive Strata
Soil Vulnerability	Unknown
Depth to Groundwater	Groundwater was noted on the BGS borehole to have been encountered at the junction of the Chalk and Reading Formation 27m bgl. This information could simply reflect the change in permeability of the strata and groundwater levels could be higher than the recorded depth.
Groundwater Flow Direction	The direction of the groundwater flow is unknown.
Source Protection Zone (SPZ)	The site is located within a SPZ Zone II (Outer Protection Zone) however this likely relates to the underlying chalk aquifer approximately 27 m bgl and not the overlying unproductive London Clay Formation.
Groundwater Abstraction	No groundwater abstractions have been identified within 1 km of the site boundary.

3.7 Controlled Waters - Surface Water

3.7.1 No surface water features have been identified either on site or in a position to be affected by the site.

3.7.2 The site has not been identified to be within a flood zone. The scope of this report however does not purport to be a flood risk assessment.

3.8 Ecological Systems

3.8.1 The Envirocheck report confirms the presence of a dual National Nature Reserve and Site of Special Scientific Interest (SSSI) located approximately 1 km south west of the site centre. The site is collectively known as Ruislip Woods. No other ecological systems have been identified within 2 km of the site centre within the Envirocheck Report.

3.8.2 Ruislip Woods has not been brought forward as potential receptor given the lack of potential pathways linking the subject site and the ecological system. This is due to the distance between the two sites, the relatively impermeable underlying London Clay Formation and the absence of linking surface water features.

3.8.3 It should be noted the statement regarding ecological systems does not purport to be an ecological risk assessment. The presence of a protected species (if applicable) requires a site specific survey and is outside the scope of this report.

3.9 Archaeology and Ancient Monuments

3.9.1 No readily identifiable ancient monuments or items of archaeological interest have been identified in close proximity to the site boundary as part of this report. It should be noted however that the statement regarding archaeology and ancient monuments does not purport

to be a risk assessment. The presence of sensitive sites/objects (if applicable) requires a site specific survey and is outside the scope of this report.

3.10 Unexploded Ordnance (UXO)

3.10.1 The website www.bombsight.org records three bombs to have fallen within 250m of the site boundary. The closet record is noted as being within the neighbouring site to the north. While no readily available evidence exists to suggest the site was bombed, given the proximity of known bomb falls and the lack of development on site since World War II it is recommended that an unexploded ordnance threat assessment study be undertaken prior to the commencement of any intrusive groundworks and to advice on any special mitigation measures that may be required for ground workers.

4 Tier 1 Preliminary Risk Assessment

4.1 Introduction

4.1.1 The methodology developed and adopted by PBA for the assessment of ground conditions is presented in **Appendix B**. In accordance with guidance presented in CLR 11 (EA Model Procedures for the Management of Land Contamination) we adopt a staged approach to risk assessment and this report presents a Tier 1 assessment or first stage.

4.1.2 The underlying principle to ground condition assessment is the identification of *pollutant linkages* in order to evaluate whether the presence of a source of contamination could potentially lead to harmful consequences.

4.2 Conceptual Site Model

4.2.1 The Tier 1 Preliminary Risk Assessment includes the development of a conceptual site model (CSM). The CSM describes the types and locations of potential contamination sources, the identification of potential receptors and the identification of potential transport/migration pathways.

4.2.2 For a pollutant linkage to be identified a connection between all three elements (source-pathway-receptor) is required.

4.3 Geoenvironmental Hazard Identification

On site Sources of Contamination

4.3.1 The site was known to be agricultural in nature until it was developed for use as a hospital circa 1924. It is considered that the previous agricultural use would not result in site wide ground contamination which would have any significant effect on future development. Any herbicides and pesticides sprayed as part of farming activities would have likely degraded to insignificant levels given the last elapsed time since they were last used (circa 90 years). Similarly the more recent hospital use is unlikely to have introduced any significant source of contamination which would result in site wide ground contamination. Therefore based on the current and historical uses the potential for site wide ground contamination to be present is considered to be Low.

4.3.2 The site walkover has however identified several potential localised sources of contamination. The identified sources are discussed below.

- Basement Boiler Room. A basement boiler room is located towards the southern end of the former hospital however access was not possible at the time of the site walkover. It is possible that the boiler room is in disrepair given the neglected state of other parts of the site. The basement boiler room is therefore considered to be a potential source for oil leaks and may have asbestos materials within it.

- On site Transformer. A transformer is located in the south eastern corner of the site. The age of the transformer is unknown however it is likely to have been in place for some time. It is therefore likely that maintenance of the transformer has taken place during its operational life giving rise to the potential risk of the surrounding soils to be contaminated from spilt PCBs.

- Hardstanding Areas. The area located to the south of the site is currently being used to store ambulances and historically the access road on the western boundary and the hardstanding area located at the northern end of the site would have been trafficked and used for parking. It

is therefore possible that the various vehicles which have visited the site have leaked fuels or oils which may have migrated into the underlying soils.

4.3.3 Whilst no evidence was encountered to suggest asbestos containing materials were used in the construction of the hospital they may still be present given the age of the building. Before demolition of any of the on-site structures, a full asbestos and hazardous materials survey should be undertaken and if necessary, asbestos materials should be removed by a licensed asbestos removal contractor. For the purposes of this risk assessment it has been assumed that the removal will be managed and carried out appropriately minimising the risk to future site users of asbestos fibres being mixed into the near surface soils.

4.3.4 The potential site wide for contamination to be present based on the past and present site use is assessed as classification score '2'; Low. (see Table 1, **Appendix B**) although there may be the potential for discrete localised contamination to be present associated with the sources listed in 4.3.2 above

Off site Sources of Contamination

4.3.5 Based on the known current residential and commercial land use and historical land agricultural use adjacent to the site, the potential for widespread contamination to be present is Very Low.

Summary of Potential Sources of Contamination (PSC)

4.3.6 The only identified potential sources of contamination that may affect the site are:

- Basement Boiler Room
- On site electrical transformer
- Hardstanding areas

Potential Contaminants of Concern

- Hydrocarbons and Polyaromatic Hydrocarbons (PAH) from the potential leaking boiler room, vehicles and road construction
- Polychlorinated Biphenyl (PCB) from the transformer (localised)

4.4 Hazard Assessment

Identification of Potential Receptors

4.4.1 It has been assumed that it is intended to redevelop the site for a residential end use. Details of the potential receptors considered and whether or not the receptor is plausible are presented in the following table:

Table 4.1 - Potential Receptors

Receptor Type	Comment	Potential Receptor? (Y/N)
Human	End User Current = Light Industrial End User Future = Residential Service Maintenance = Residential Off Site = Residential / Light Commercial / Construction Workers	Y Y Y Y Y

Surface Waters	None Identified	N
Groundwater	Unproductive Strata	N
Buildings / Materials	Residential structures are proposed	Y
Property - including crops, livestock	Off site	Y
Ecological Systems	None identified	N

Identification of Potential Pathways

4.4.2 Table 2 in the PBA methodology describes possible pathways for each receptor type. Each of these possible pathways is then considered when assessing the possible pollutant linkage (see below).

Potential Pollutant Linkages

4.4.3 Potential pollutant linkages have been identified using the information on potential sources (contaminant types), receptors and exposure pathways. The table in **Appendix G** identifies which pollutant linkages are considered to potentially exist.

4.5 Risk Estimation

4.5.1 When there is a pollutant linkage (and therefore some measure of risk) it is necessary to determine whether the risk matters and therefore whether further action is required. Risk estimation involves predicting the likely consequence (what degree of harm might result) and the probability that the consequences will arise (how likely the outcome is).

4.5.2 The table in **Appendix G** presents an assessment of consequence and probability for each potential pollutant linkage identified. Based on the information available, and assuming a worst case scenario, the estimated risks have been designated as follows:

- Human Health Future Users (On Site) – Low
- Human Health Future Users (Off Site) – Low
- Human Health (Construction Workers) – Very Low
- Buildings – Very Low
- Properties – Very Low

4.5.3 Risk estimation is defined in CLR 11 as “predicting the magnitude and probability of the possible consequences (what degree of harm or pollution might result and to what receptors, and how likely is it) that may arise as a result of a hazard”. The highest estimated risk of Low for human health is a function of:

- The consequences arising from the localised sources of contamination associated with the former hospital and current NHS Ambulance service land use has been assessed as Minor or Mild (see Table, **Appendix B**) for all pollutant linakages; and
- The likelihood of harm arising for each pollutant linkage is assessed as Unlikely or Low Likelihood.

4.5.4 A Low risk is defined as 'it is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.'

4.6 Risk Evaluation

4.6.1 Possible pollutant linkages are determined using professional judgement. If a linkage is considered possible, it is considered that this represents a potentially 'unacceptable risk' and therefore requires further consideration. This may be through remediation or mitigation or through further tiers of assessment.

4.6.2 Dependent on the final agreed layout for the proposed development an intrusive investigation may be required to define the extent and nature of the ground conditions and could inform foundation and associated infrastructure design. In any event, it is considered likely that due to the nature and/or scale of the land use activity viable risk management options are available. For human health it is considered that the risks can be managed through mitigation measures or localised remediation if necessary, and adoption of good practise measures during construction/demolition. On this basis, there is no reason that the Site would be designated as Contaminated Land under Part IIa of the Environmental Protection Act 1990.

4.6.3 The existing hospital buildings on site will require a hazardous materials survey prior to demolition or renovation works, and if necessary, removal will need to be undertaken in a controlled and safe manner.

4.7 Uncertainties and Data Gaps

4.7.1 The available ground condition data is preliminary in nature, based solely on desk based studies. Whilst considered unlikely, based on the Low risk rating for the site, further site specific data may be required in the future to be able to fully assess the potential risks prior to the identification of mitigation and or remediation measures.

5 Preliminary Geotechnical Assessment

5.1 Introduction

5.1.1 National Planning Policy Framework (NPPF) Clause 121 requires an assessment for a site potentially at risk from ground instability. The aspects considered with regards to ground instability are related to:

- Artificial Cavities
- Natural Cavities
- Foundation Conditions.

5.1.2 Consideration is given below to the risk of these potential causes of instability arising from existing ground conditions across the site, as identified by the data review.

5.2 Cavities

Natural Cavities

5.2.1 A search of the PBA Natural Cavities Database (see Section 3.2) indicates that there is one recorded natural cavity within 2 km of the site boundary. The cavity is located approximately 1.5 km east of the site centre and is a result of a solution feature.

5.2.2 It is considered that the geological setting in which the identified feature appeared is not representative of site conditions given there is an absence of London Clay. The London Clay Formation is relatively impermeable in nature therefore prevents the migration of soil particles which is required for a solution feature to form. Given that the site is underlain by approximately 12 m of London Clay the risk of the formation of a similar feature is considered to be negligible. This is supported by the BGS-NGIS assessed hazard potential for solution features being of 'No Hazard' (see Table 3.1) and the absence of natural cavity records within 2 km of the site boundary and within a similar geological setting.

5.2.3 It is therefore considered that the risk from natural cavities is Very Low.

Artificial Cavities

5.2.4 A search of the PBA Non-Coal Mining Cavities Database (see Section 3.2) indicates that there are eleven artificial cavities within 2 km of the site boundary. The entries all relate to 'Chalkwells' or 'Shafts' with the exception of one 'sand pit'. The records are located in regions where the London Clay Formation is expected be relatively thin when compared to the subject site or within regions of the underlying Reading Formation.

5.2.5 The Chalkwells and the Shafts have likely been advanced as part of agricultural activities to retrieve chalk from depth. These shafts are generally positioned in locations where the London Clay is absent, the London Clay is thinning or where the depth to chalk does not exceed approximately 20 m. Given the depth to chalk at the subject site is approximately 27 m bgl it is unlikely that a similar feature would exist on site. Given the amount of records in the general vicinity of the site however it cannot be discounted.

5.2.6 The presence of a sand pit similar to that recorded in the database search is unlikely given the site is underlain by the London Clay Formation which does not contain significant quantities of sand.

5.2.7 It is therefore considered that the risk arising from artificial cavities is Low.

5.3 Site Preparation

5.3.1 Former foundations, floor slabs and drainage/utilities which conflict with any proposed development will need to be removed prior to redevelopment and this could lead to areas of disturbed ground unsuitable for foundations. Any voids left by grubbing out should be backfilled with suitably engineered fill. It is anticipated that the initial site preparation would remove any limited Made Ground present.

5.3.2 Proof rolling of the formation should be undertaken and any soft or loose spots excavated and replaced with suitable clean general fill, and compacted in accordance with the Highways Agency Specification for Highway Works.

5.4 Sustainable Drainage Solutions

5.4.1 Given that the site is underlain by the London Clay Formation which is likely to have a low permeability, direct discharge of surface water to shallow soakaways or other infiltration systems is unlikely to be possible.

5.5 Potential Adverse Foundation Conditions

5.5.1 This study has indicated that the site is underlain by London clay Formation with the Reading Formation expected at approximately 12 m bgl. The full extent, thickness and nature of the strata at the site has not been determined at the current time. In due course this information will likely be required to inform detailed foundation and infrastructure design if it is required. Notwithstanding the above, this Ground Condition Assessment has not revealed any significant, difficult or unusual geotechnical problems or constraints that would lead to abnormal foundation or infrastructure costs.

5.5.2 Based on the ground conditions anticipated, conventional shallow spread strip and pad formations are likely to be suitable for relatively lightly loaded structures, assuming all the foundations for a particular building are entirely within an individual natural stratum. There is a risk of differential settlement if foundations span between materials of widely different settlement characteristics.

5.5.3 There is a possibility that deeper areas of Made Ground may be present at the site as a result of buried agricultural waste or manmade cavities however there is no evidence to suggest either exists. If any areas of Made Ground or filled ground are encountered, bespoke foundations may be required depending on the material properties and thicknesses. These may include trench fill or piled foundations into the more competent underlying natural strata.

5.5.4 Similarly, heavily loaded structures, wide span or settlement intolerant, may require an alternative foundation solution.

5.5.5 The London Clay formations will likely be classified as a shrinkable soil in accordance with guidance given in National House Building Council Standards (NHBC 2014). In accordance with the guidance a minimum foundation depth not less than 1.0m shall be applicable. When building near past or present trees or hedges, or those about to be removed, foundation depths should be taken down below the root zone of influence. Future landscaping and tree planting proposals should be considered also during foundation design. Suspended ground floors should be used in all situations where the area bounded by the foundations could be subject to heave or shrinkage.

6 Conclusions and Recommendations

6.1 Conclusions

6.1.1 The site was undeveloped agricultural land until circa 1924 when the Northwood and Pinner Hospital was built. The main hospital buildings are still present on-site.

6.1.2 Early OS maps (circa 1900) show the area surrounding the site to be undeveloped. Development being generally residential in nature is shown to steadily increase through subsequent mapping until the latest issue OS map dated 2015 when the entirety of the site is bordered by developments.

6.1.3 An estimated risk of Low for human health has been identified at the site and is a function of the sensitivity of the residential receptors, assessed as High (5) due to the assumed end use of residential housing with gardens as well as the possibility of localised concentrations of hydrocarbon, PAH and PCB contamination arising from the onsite electrical transformer, basement boiler room and the potential for historical small scale vehicle spills and leaks. On this basis, there is no reason that the Site would be designated as Contaminated Land under Part IIa of the Environmental Protection Act 1990.

6.1.4 It is considered that this study has not revealed any significant geoenvironmental or ground stability risks at the site which would preclude development for residential use. The potential risks identified in Chapters 4 and 5 can be mitigated through further work (see Section 6.2) and appropriate risk management, such as the adoption of good practice measures during construction.

6.1.5 Based on the ground conditions anticipated, conventional shallow spread strip and pad formations are likely to be suitable for relatively lightly loaded structures, assuming all the foundations for a particular building are entirely within an individual natural stratum.

6.1.6 The London Clay formations will likely be classified as a shrinkable soil in accordance with guidance given in National House Building Council Standards (NHBC 2014).

6.2 Recommendations

6.2.1 The study has identified a potential contamination risk associated with localised areas of potential hydrocarbons, PCB's and PAH's. It is recommended that if a preliminary ground investigation is required at the site it determines the actual ground conditions across the site, and to allow sampling of the near surface soils for geoenvironmental testing within the vicinity of the onsite transformer, basement boiler room and beneath the existing hardstanding.

6.2.2 It is considered that the requirement for a preliminary ground investigation could be included as a condition to any planning consent.

6.2.3 The existing hospital buildings on site will likely require a hazardous materials survey prior to demolition and if necessary removal of material, such as asbestos, will need to be undertaken in a controlled and safe manner.

6.2.4 It is recommended that an unexploded ordnance threat assessment study be undertaken prior to the commencement of any intrusive groundworks and to advice on any special mitigation measures that may be required for ground workers.

7 Essential Guidance for Report Readers

7.1.1 This report has been prepared within an agreed timeframe and to an agreed budget that will necessarily apply some constraints on its content and usage. The remarks below are presented to assist the reader in understanding the context of this report and any general limitations or constraints. If there are any specific limitations and constraints they are described in the report text.

7.1.2 The opinions and recommendations expressed in this report are based on statute, guidance, and appropriate practice current at the date of its preparation. Peter Brett Associates LLP (PBA) does not accept any liability whatsoever for the consequences of any future legislative changes or the release of subsequent guidance documentation, etc. Such changes may render some of the opinions and advice in this report inappropriate or incorrect and we will be pleased to advise if any report requires revision due to changing circumstances, especially those over one year old. Following delivery of any report PBA has no obligation to advise the Client or any other party of such changes or their repercussions.

7.1.3 Some of the conclusions in this report may be based on third party data. No guarantee can be given for the accuracy or completeness of any of the third party data used. Historical maps and aerial photographs provide a “snap shot” in time about conditions or activities at the site and cannot be relied upon as indicators of any events or activities that may have taken place at other times.

7.1.4 The conclusions and recommendations made in this report and the opinions expressed are based on the information reviewed and/or the ground conditions encountered in exploratory holes and the results of any field or laboratory testing undertaken. There may be ground conditions at the site that have not been disclosed by the information reviewed or by the investigative work undertaken. Such undisclosed conditions cannot be taken into account in any analysis and reporting.

7.1.5 It should be noted that groundwater levels, groundwater chemistry, surface water levels, surface water chemistry, soil gas concentrations and soil gas flow rates can vary due to seasonal, climatic, tidal and man made effects.

7.1.6 If the report indicates that asbestos has been identified within the ground, any work that involves, or is likely to involve, contact with asbestos must be undertaken in accordance with the Control of Asbestos Regulations 2012, particularly in regard to risk assessment, licencing and training. Risk assessment should be carried out prior to any activities that could lead to the disturbance of asbestos materials, either buried or on the ground surface and should include appropriate mitigation measures, such as damping down to prevent the spread of asbestos, air monitoring and minimum PPE and/or RPE requirements for the work proposed.

7.1.7 This report has been written for the sole use of the Client stated at the front of the report in relation to a specific development or scheme. The conclusions and recommendations presented herein are only relevant to the scheme or the phase of project under consideration. This report shall not be relied upon or transferred to any other party without the express written authorisation of PBA. Any such party relies upon the report at its own risk.

7.1.8 The interpretation carried out in this report is based on scientific and engineering appraisal carried out by suitably experienced and qualified technical consultants based on the scope of our engagement. We have not taken into account the perceptions of, for example, banks, insurers, other funders, lay people, etc, unless the report has been prepared specifically for that purpose. Advice from other specialists may be required such as the legal, planning and architecture professions, whether specifically recommended in our report or not.

7.1.9 Public or legal consultations or enquiries, or consultation with any Regulatory Bodies (such as the Environment Agency, Natural England or Local Authority) have taken place only as part of this work where specifically stated.

8 References

- BGS, 2005 Geological Map Sheet 255 Beaconsfield, Solid and Drift 1:50,000 published by the British Geological Survey (BGS), Keyworth.
- EA, 2004 The Model Procedures for the Management of Land Contamination CRL 11 published by the Environment Agency (EA).
- EA, 2010 Guiding Principles for Land Contamination GPLC 1 to 3. Environment Agency (EA).
- NHBC, 2014. NHBC Standards published by National House Building Council (NHBC)

Figures

Site Grid Ref: TQ 100 906

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Client

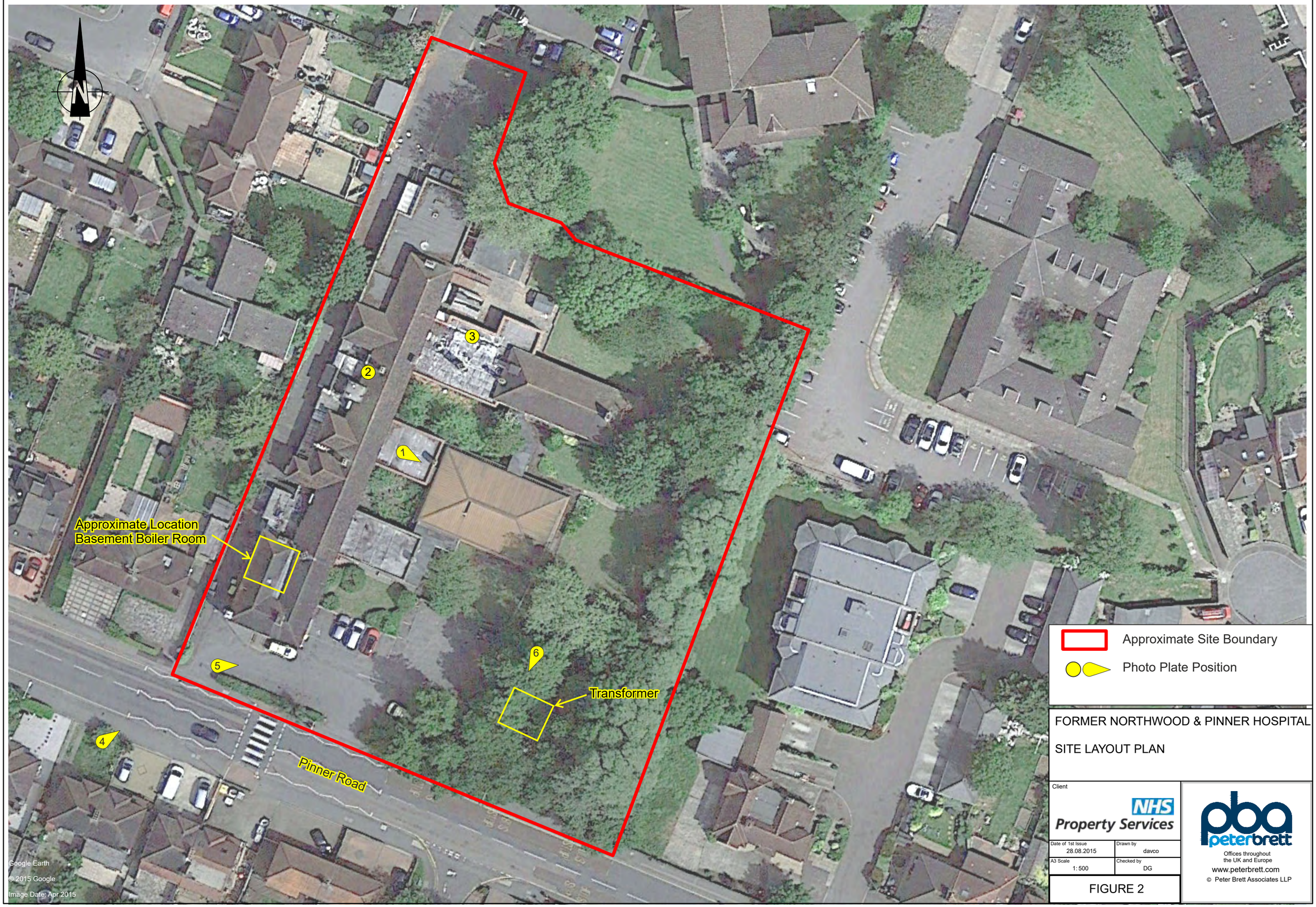
NHS Property Services

FORMER NORTHWOOD & PINNER HOSPITAL

SITE LOCATION PLAN

Date	28.08.2015
A4 Scale	1:50 000
Drawn by	davco
Checked by	DG
Revision	0

FIGURE 1



Approximate Site Boundary

Photo Plate Position

FORMER NORTHWOOD & PINNER HOSPITAL

SITE LAYOUT PLAN

Client

NHS Property Services

Date of 1st Issue	Drawn by
28.08.2015	davco
A3 Scale	Checked by
1:500	DG

FIGURE 2

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J:\35554 Northwood & Pinner Hospital\Geo\03_ Figures & Drawings\Corel

Appendix A PBA Specification for Phase 1 Ground Condition Assessment

Specification for a Combined Phase 1 Ground Condition Assessment (Geotechnical and Contamination)

1 Introduction

The objective of a Combined Phase 1 Ground Condition Assessment is to identify the likely ground conditions and environmental setting of a defined site and assess the information to identify potential issues that may have associated environmental liabilities or geotechnical and other ground engineering constraints that could affect the site redevelopment.

The Phase 1 Desk Study and contamination risk assessment is the minimum requirement under the National Planning Policy Framework (NPPF) Clause 121 and the definition of "*Site Investigation Information*" given in the Glossary Page 56, to support any planning application on a site that might be potentially affected by contamination. Similarly, a desk study and site reconnaissance is the minimum information that should be provided for a site potentially at risk from ground instability.

The data gathering stages of each assessment have many aspects in common and it is usually very cost effective to prepare a single combined report covering both contamination and instability requirements. The assessments are an important first step in the investigation of ground conditions at most sites, and can provide an early indication of geo-hazards, environmental liabilities, constraints and opportunities to feed into the master-planning process and development budgets. In many cases it is a pre-requisite for the planning application.

2 Scope of Works

The following sources of information will be included in our standard combined Phase 1 and geotechnical engineering desk study:

- A site reconnaissance visit to verify the current condition of the site and its immediate surroundings.
- Purchase of Historical Ordnance Survey maps.
- Third party database search to obtain environmental information in the public domain.
- Review of readily available published geological maps and memoirs, and review of technical papers or reports relating to the geology, geomorphology or geotechnics e.g. mineral assessment reports.
- Reference to useful publications on land stability (such as those in Appendix B of now withdrawn PPG14).
- Review of published texts on the general geotechnical properties of the geological horizons.
- Purchase of BGS Borehole Records (if appropriate/available).
- Review of PBA's national natural and mining cavities (non-coal) databases.
- Review of PBA's internal database of ground investigation reports and surveys.
- Review of published maps on hydrogeology and groundwater vulnerability.
- Telephone requests to the council for information that can be provided without charge
- An internet search (Google or a similar)
- Web based information on ecological sites with international and national designations using a search radius of 1, 2 or 5km depending on the site specific circumstances.

The factual data will be presented and assessed in a report that will include an assessment of the potential for natural and anthropogenic geo-hazards to be present, a preliminary conceptual site model (CSM), a Tier 1 Qualitative Risk Assessment based on a source-pathway-receptor model to identify potential pollutant linkages and a preliminary review of potential liabilities and constraints that might affect the development.

Preliminary advice will be provided where appropriate on likely requirements for foundations, infrastructure, earthworks (cut and fill), slope stability, retaining structures, pavements and the suitability of the ground for infiltration drainage systems. Outline recommendations for further work such as specialist surveys or intrusive ground investigation will be included as required.

3 Clarifications and Limitations

- Some of the searches will be undertaken using computerised database facilities. All databases have the limitation that they may not be up to date because they are only periodically updated.
- No guarantee can be given for the accuracy or completeness of third party information.
- Based on a review of the initial data the collection of further information, e.g. via formal requests to the relevant authorities, may be recommended. Any additional costs will be notified and approval sought.
- The absence of cavity records in the PBA natural and mining cavities (non-coal) databases should not be considered as conclusive as to the absence of cavities.
- Information presented on maps / photographs represents the situation as surveyed at a given time. It is possible for developments to have occurred between surveys that are not shown or for the map record to have been censored for military security.
- It should be noted that the Tier 1 risk assessment may determine that the identification of potential ecological receptors is inconclusive and recommend a Phase 1 habitat survey is subsequently undertaken.
- The comments and the opinions expressed will be based on the information obtained from the specified sources. However, there may be conditions pertaining to the site, which are not disclosed by this information and, therefore, can not be taken into consideration.
- Any interpretation is carried out based on a scientific and engineering appraisal and does not take into account the perceptions of, for example banks, insurers, lay people etc.
- When data is insufficient or inadequate to support a robust assessment we will state that any conclusions are provisional and recommend further works.
- It should be noted that NPPF requires that *"planning decisions should also ensure that adequate site investigation information, prepared by a competent person, is presented"*. A desk study may not be sufficient to enable the authority to grant planning permission.

An intrusive ground investigation may be required to confirm the actual site conditions and risks. It should be noted that the Combined Phase 1 Ground Condition Assessment described above does not purport to be an ecological, flood risk or archaeological survey. Additional specific surveys may be required to support a planning application.

Appendix B PBA Methodology for Ground Condition Assessment

PBA Methodology for Assessing Land Contamination in England

1 Introduction

This document defines the approach adopted by PBA in relation to the assessment of land contamination in England. The aim is for the approach to (i) be systematic and objective, (ii) provide for the assessment of uncertainty and (iii) provide a rational, consistent, transparent framework.

When preparing our methodology we have made reference to various technical guidance documents and legislation referenced in Section 7 of which the principal documents are (i) Contaminated Land Statutory Guidance (Defra 2012), (ii) the Model Procedures for the Management of Contamination (CLR 11) (EA 2004), (iii) Contaminated land risk assessment: A guide to good practice (C552) (CIRIA 2001) and (iv) National Planning Policy Framework (DCLG 2012).

2 Dealing with Land Contamination

Government policy on land contamination aims to prevent new contaminated land from being created and promotes a risk based approach to addressing historical contamination. With regard to historical contamination, regulatory intervention is held in reserve for land that meets the legal definition and cannot be dealt with through any other means, including through planning. Land is only considered to be "contaminated land" in the legal sense if it poses an unacceptable risk.

UK legislation on contaminated land is principally contained in Part 2A of the Environmental Protection Act, 1990 (which was inserted into the 1990 Act by section 57 of the Environment Act 1995). Part 2A was introduced in England on 1 April 2000 and provides a risk-based approach to the identification and remediation of land where contamination poses an unacceptable risk to human health or the environment. In 2004 the Model Procedures for the Management of Contamination (CLR 11) were published providing guidance on how the statutory requirements were to be delivery. The approach, concepts and principles for land contamination management promoted by CLR 11 are applied to the determination of planning applications.

Other legislative regimes may also provide a means of dealing with land contamination issues, such as the regimes for waste, water, environmental permitting, and environmental damage. Further, the law of statutory nuisance may result in contaminants being unacceptable to third parties whilst not attracting action under Part 2A or other environmental legislation.

2.1 Part 2A

The Regulations and Statutory Guidance that accompanied the Act, including the Contaminated Land (England) Regulations 2006, has been revised with the issue of The Contaminated Land (England) (Amendment) Regulations 2012 (SI 2012/263) and the Contaminated Land Statutory Guidance for England 2012.

Part 2A defines contaminated land as "*land which appears to the Local Authority in whose area it is situated to be in such a condition that, by reason of substances in, on or under the land that significant harm is being caused, or there is a significant possibility that such harm could be caused, or pollution of controlled waters is being, or likely to be, caused*".

Harm is defined as "*harm to the health of living organisms or other interference with the ecological systems of which they form part, and in the case of man, includes harm to his property*".

For the purposes of Part 2A, land is contaminated if it poses a significant possibility of significant harm (SPOSH).

Part 2A provides a means of dealing with unacceptable risks posed by land contamination to human health and the environment, and under the guidance enforcing authorities should seek to find and deal with such land. It states that "*under Part 2A the starting point should be that land is not contaminated land unless there is reason to consider otherwise. Only land where unacceptable risks are clearly identified, after a risk assessment has been undertaken in accordance with the Guidance, should be considered as meeting the Part 2A definition of contaminated land*". Further the guidance makes it clear that *"regulatory decisions should be based on what is reasonably likely, not what is hypothetically possible".*

The overarching objectives of the Government's policy on contaminated land and the Part 2A regime are:

"(a) To identify and remove unacceptable risks to human health and the environment.
(a) To seek to ensure that contaminated land is made suitable for its current use.
(b) To ensure that the burdens faced by individuals, companies and society as a whole are proportionate, manageable and compatible with the principles of sustainable development".

The enforcing authority may need to decide whether and how to act in situations where decisions are not straight forward, and where there is uncertainty. "*In so doing, the authority should use its judgement to strike a reasonable balance between: (a) dealing with risks raised by contaminants in land and the benefits of remediating land to remove or reduce those risks; and (b) the potential impacts of regulatory intervention including financial costs to whoever will pay for remediation, health and environmental impacts of taking action, property blight, and burdens on affected people".* The authority is required to "*take a precautionary approach to the risks raised by contamination, whilst avoiding a disproportionate approach given the circumstances of each case".* The aim is "*that the regime produces net benefits, taking account of local circumstances*".

The guidance recognises that *"normal levels of contaminants in soils should not be considered to cause land to qualify as contaminated land, unless there is a particular reason to consider otherwise".*

Normal levels are quoted as:
"a) natural presence of contaminants' such as from underlying geology *'that have not been shown to pose an unacceptable risk to health and the environment*
b) …low level diffuse pollution, and common human activity…"

Similarly the guidance states that significant pollution of controlled waters is required for land to be considered contaminated and the "*fact that substances are merely entering water"* or "*where discharge from land is not discernible at a location immediately downstream"* does not constitute contaminated land.

To help achieve a more targeted approach to identifying and managing contaminated land in relation to the risk (or possibility) of harm to human health, the revised Statutory Guidance presented a new four category system for considering land under Part 2A, ranging from Category 4, where there is no risk that land poses a significant possibility of significant harm (SPOSH), or the level of risk is low, to Category 1, where the risk that land poses a significant possibility of significant harm (SPOSH) is unacceptably high.

For land that cannot be readily placed into Categories 1 or 4 further assessment is required. If there is a sufficiently strong case that the risks are of sufficient concern to cause significant harm/pollution or have the significant possibility of significant harm/pollution the land is to be placed into Category 2. If the concern is not met land is considered Category 3.

The technical guidance clearly states that the currently published SGV and GAC's represent *"cautious estimates of level of contaminants in soils"* which should be considered *"no risk to health or, at most, a minimal risk"*. These values do not represent the boundary between categories 3 and 4 and "*should be considered to be comfortably within Category 4".*

At the end of 2013 technical guidance in support of Defra's revised Statutory Guidance (SG) was published (CL:AIRE 2013) which provided:
• A methodology for deriving C4SLs for four generic land-uses comprising residential, commercial, allotments and public open space; and
• A demonstration of the methodology, via the derivation of C4SLs for six substances – arsenic, benzene, benzo(a)pyrene, cadmium, chromium (VI) and lead.

2.2 Planning

The Local Planning Authority (LPA) is responsible for the control of development, and in doing so it has a duty to take account of all material considerations, including contamination.

Section 11, Paragraph 109 of the National Planning Policy Framework (NPPF) (DCLG 2012) states the planning system should contribute to and enhance the natural and local environment by *"preventing both new and existing developments from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water pollution"* and *"remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate"*. Paragraphs 120 and 121 describe the policy considerations the Government expects LPA to have in regard to land affected by contamination when preparing policies for development plans and in taking decisions on applications.

For planning purposes, the NPPF requires that the assessment of risks arising from contamination and remediation requirements should be considered on the basis of the current environmental setting, the current land use, and the circumstances of its proposed new use The NPPF stipulates that planning policies and decisions should ensure that "the site is suitable for its new use taking account of ground conditions and land instability, including from natural hazards or former activities from previous uses and any proposals for mitigation including land remediation or impacts on the natural environment arising from that remediation"; and that "after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part 2A of the Environmental Protection Act 1990; and adequate site investigation information, prepared by a competent person, is presented."

The level at which contamination is deemed to be unacceptable, or, gives rise to adverse effects under a planning context has not been identified but is envisaged to be more precautionary than the level required to detrmine land as contaminated under Part 2A.

In paragraph 121 the developer is required to ensure that land, after development, is not capable of being determined as contaminated land under Part 2A of the EPA 1990.

The principal planning objective is to ensure that any unacceptable risks to human health, buildings and other property and the natural and historical environment from the contaminated condition of the land are identified so that appropriate action can be considered and taken to address those risks. In order to grant a planning permission the Local Planning Authority (LPA) has to be satisfied that there is sufficient information about the condition of the land, its impacts and the availability of viable remedial options. NPPF Paragraph 21 states that *"planning policies and decisions should also ensure that adequate site investigation information, prepared by a competent person, is presented".* Site investigation information is further defined in the NPPF Glossary page 56 and that also states that investigations should be carried out in accordance with established procedures, including BS10175 (BSI 2011) that in turn links procedure to the requirements of CLR11.

A key distinction between the Soil Guideline Values (SGVs) and the C4SLs is the level of risk that they describe. As described by the Environment Agency (2009a):

"SGVs are guidelines on the level of long-term human exposure to individual chemicals in soil that, unless stated otherwise, are tolerable or pose a minimal risk to human health."

A letter from Lord de Mauley dated 3rd September 2014 provides more explicit direction to local authorities on the use of the C4SL in a planning context. The letter identifies four key points:
1) that the screening values were developed expressly with the planning regime in mind
2) their use is recommended in DCLG's planning guidance
3) soil concentrations below a C4SL limit are considered to be 'definitely not contaminated' under Part llA of the 1990 Environmental Protection Act and pose at most a 'low level of toxicological concern' and
4) exceedance of a C4SL screening value does not mean that land is definitely contaminated, just that further investigation may be warranted.

2.3 Building Control

The building control department of the local authority or private sector approved inspectors are responsible for the operation and enforcement of the Building Regulations (DCLG 2010) to protect the health, safety and welfare of people in and around buildings. Approved Document C requires the protection of buildings and associated land from the effects of contamination, to be applied (non-exclusively) in all changes of use from commercial or industrial premises, to residential property.

3 Approach

CLR 11 recommends a phased or tiered approach to risk assessment with the three tiers being:-

- Tier 1 - preliminary – a qualitative assessment forming part of a Phase 1 report,
- Tier 2 - generic - a quantitative assessment using published criteria to screen site specific ground condition data forming part of a Phase 2 report
- Tier 3 - detailed – a quantitative assessment involving the generation of site specific assessment criteria

Each tier of risk assessment comprises the following four stages:-

1. Hazard Identification – identifying potential contaminant sources on and off site;
2. Hazard Assessment – assessing the potential for unacceptable risks by identifying what pathways and receptors could be present, and what pollutant linkages could result (forming the Conceptual Site Model (CSM));
3. Risk Estimation – estimating the magnitude and probability of the possible consequences (what degree of harm might result to a defined receptor and how likely); and
4. Risk Evaluation – evaluating whether the risk needs to be, and can be, managed.

A PBA Phase 1 report normally comprises a desk study, walkover and Tier 1 risk assessment (the project specific offer defines the actual scope of work). This is the minimum requirement as defined by the NPPF, pp56. At Tier 1 the PBA approach to risk estimation involves identifying the magnitude of the potential consequence (taking into account both the potential severity of the hazard and the sensitivity of the receptor) and the magnitude of the likelihood i.e. the probability (taking into account the presence of the hazard and the receptor and the integrity of the pathway). This approach is promoted in current guidance such as R&D 66 (NHBC 2008).

The PBA approach is that if a pollution linkage is identified then it represents a potential risk which requires further consideration and either (1) remediation / direct risk management or (2) further tiers of assessment.

A PBA preliminary Phase 2 report comprises an intrusive investigation to collect site specific information, a Tier 2 quantitative generic risk assessment and a refinement of the CSM using the site specific data. Depending on the findings further investigation and/or progression to Tier 3 risk assessment and the generation of site specific assessment criteria may be required.

The PBA methodology provides an estimate of the level of risk, it does not identify a risk level at which the risk is considered “significant” and/or “unacceptable” as this is dependant on the view of the individual / stakeholder. For example; to a risk adverse stakeholder even a risk level of “very low” may be considered unacceptable and as such this stakeholder may require risk management options to be implemented.

4 Identification of Pollutant Linkages and Conceptual Site Model (CSM)

For all Tiers the underlying principle to ground condition assessment is the identification of *pollutant linkages* in order to evaluate whether the presence of a source of contamination could potentially lead to harmful consequences. A pollutant linkage consists of the following three elements:-

- A source/hazard – a substance or situation which has the potential to cause harm or pollution;
- A pathway – a means by which the hazard moves along / generates exposure; and
- A receptor/target – an entity which is vulnerable to the potential adverse effects of the hazard.

The *Conceptual Site Model* identifies the types and locations of potential contaminant sources/hazards and potential receptors and potential migration/transportation pathway(s). The CSM is refined as the assessment progresses through the Tiers.

4.1 Hazard Identification

A hazard is a substance or situation that has the potential to cause harm. Hazards may be chemical, biological or physical (e.g. explosive gases).

At Tier 1 the potential for hazards to be present is determined from consideration of the previous or ongoing activities on or near to the site in accordance with the criteria presented in the **Table 1**.

Based on the land use information Potential Contaminants of Concern (PCOC) are identified. The PCOC direct the scope of the collection of site specific data and the analytical testing selected for subsequent Tiers.

At Tier 2 the site specific data is screened using published assessment criteria (refer to PBA document entitled Rationale for the Selection of Tier 2 Assessment Criteria). In general, published criteria have been developed using highly conservative assumptions and therefore if the screening criterion is not exceeded then the PCOC is eliminated as a potential Hazard. It should be noted that exceedance does not necessarily indicate that a site is contaminated and/or unsuitable for use only that the PCOC is retained as a potential Hazard. Published criteria are generated using models based on numerous and complex assumptions. Whether or not these assumptions are appropriate in a site-specific context requires confirmation on a project by project basis and would form part of a Tier 3 assessment.

When reviewing or assessing site specific data PBA utilise published guidance on comparing contamination

data with a critical concentration (CL:AIRE/CIEH 2008) which presents a structured process for employing statistical techniques for data assessment purposes. The benefit of the statistical tool is uncertainty is quantified and decisions are made knowing the strength of the evidence. Correct decision probability is a function of sample size, difference in the mean and the critical concentration, variation in measured values and the significance level.

4.2 Receptor and Pathway Identification

For all Tiers the potential receptors (for both on site and adjoining land) that will be considered are:

- Human Health – including current and future occupiers, construction and future maintenance workers, and neighbouring properties/third parties;
- Ecological systems; *[1]
- Controlled waters *[2] – including surface water and groundwater;
- Property, Animal or Crop (existing or proposed) - including buildings, service lines and pipes, crops, livestock, pets, woodland; and
- Archaeological sites and ancient monuments.

*[1] International or nationally designated sites (as defined in the statutory guidance (Defra Circular 04/12)) "in the local area" will be identified as potential ecological receptors. A search radius of 1, 2 or 5km will be utilised depending on the site specific circumstances (see also pathway identification). The Environment Agency has published an ecological risk assessment framework (EA 2008) which promotes (as opposed to statutorily enforces) consideration of additional receptors to include locally protected sites and protected or notable species. These additional potential receptors will only be considered if a Phase 1 habitat survey, undertaken in accordance with guidance (JNCC 1993), is commissioned and the data provided to PBA. It should be noted that without such a survey the Tier 1 risk assessment may conclude that the identification of potential ecological receptors is inconclusive (refer to PBA Specification for Phase 1).

*[2] the definition of "pollution of controlled water" was amended by the introduction of Section 86 of the Water Act 2003. For the purposes of Part 2A groundwater does not include waters above the saturated zone and our assessment does not therefore address perched water other than where development causes a pathway to develop.

If a receptor is taken forward for further assessment it will be classified in terms of its sensitivity, the criteria for which are presented in **Table 2**. Table 2 has been generated using descriptions of environmental receptor importance/value given in various guidance documents including R&D 66 (NHBC 2008) and Transport Analysis Guidance (based on DETR 2000). Human health and buildings classifications have been generated by PBA using the attribute description for each class.

The exposure pathway and modes of transport that will be considered are presented in **Table 3**.

4.3 Note regarding Ecological Systems

The Environment Agency (EA) has developed an ecological risk assessment framework which aims to provide a structured approach for assessing the risks to ecology from chemical contaminants in soils (EA 2008). In circumstances where contaminants in water represent a potential risk to aquatic ecosystems then risk assessors will need to consider this separately.

The framework consists of a three tiered process:-

- Tier 1 is a screening step where the site soils chemical data is compared to a soil screening value (SSV)
- Tier 2 uses various tools (including surveys and biological testing) to gather evidence for any harm to the ecological receptors
- Tier 3 seeks to attribute the harm to the chemical contamination

Tier 1 is preceded by a desk study to collate information about the site and the nature of the contamination to assess whether pollutant linkages are feasible. The framework presents ten steps for ecological desk studies and development of a conceptual site model as follows.

1 Establish Regulatory Context
2 Collate and Assess Documentary Information
3 Summarise Documentary Information
4 Identify Potential Contaminants of Concern
5 Identify Likely Fate Transport of Contaminants
6 Identify Potential Receptors of Concern
7 Identify Potential Pathways of Concern
8 Create a Conceptual Site Model
9 Identify Assessment and Measurement Endpoints
10 Identify Gaps and Uncertainties

The information in a standard PBA Phase 1 report covers Steps 1 to 4 inclusive. Step 5 considers fate and transport of contaminants and it should be noted that our standard report adopts a simplified approach considering only transport mechanisms. A simplified approach has also been adopted in respect of Steps 6 and 7 receptors (a detailed review of the ecological attributes has not been undertaken) and pathways (a food chain assessment has not been undertaken).
Step 9 is outside the scope of our standard Phase 1 report.

It should be noted that the Tier 1 assessment for ecological systems (i.e. where designated sites are identified) as part of a Phase 1 report will assess the viability of the mode of transport given the site specific circumstances not specific pathways.

The Tier 1 risk assessment may conclude that the risk to potential ecological receptors is inconclusive (see PBA Specification for Phase 1).

4.4 Note regarding Controlled Waters

Controlled Waters are rivers, estuaries, coastal waters, lakes and groundwaters, but not perched waters.

The Water Framework Directive (WFD) (2000) aims to protect and enhance the quality of surface freshwater, groundwaters and dependent eco systems, estuaries and coastal waters. The WFD was transposed into UK law in 2003 (Statutory Instruments 2003). Member states must aim to reach good chemical and ecological status as defined in the Directive by 2015.

The Ground Water Daughter Directive (GWDD) was enacted by the Groundwater Regulations (2009), which were subsumed by the Environmental Permitting Regulations (2010) which provide essential clarification including on the four objectives specifically for groundwater quality in the WFD:-

- Achieve 'Good' groundwater chemical status by 2015, commonly referred to as 'status objective';
- Achieve Drinking Water Protected Area Objectives;
- Implement measures to reverse any significant and sustained upward trend in groundwater quality, referred to as 'trend objective'; and
- Prevent or limit the inputs of pollutants into groundwater, commonly referred to as 'prevent or limit' objectives

The Water Act 2003 (Commencement No.11) Order 2012 amends the test for 'contaminated land' which relates to water pollution so that pollution of controlled waters must now be "significant" to meet the definition of contaminated land.

River Basin Management Plans (RBMP) have been developed for the 11 River Basin Districts in England and Wales. These were released by Defra in 2009 (Defra 2009).

These RBMP's establish the current status of waters within the catchments of the respective Districts and the current status of adjoining waters identified. As part of a Tier 2 risk assessment water quality data is screened against the WFD assessment criteria. Compare to the RBMP's current status of waters for the catchment under consideration would form part of a Tier 3 assessment.

5 Risk Estimation

Risk estimation classifies what degree of harm might result to a receptor (defined as consequence) and how likely it is that such harm might arise (probability).

At Tier 1 the consequence classification is generated by multiplying the hazard classification score and the receptor sensitivity score. This approach follows that presented in the republished R&D 66 (NHBC 2008).

The criteria for classifying probability are set out in **Table 4** and have been taken directly from Table 6.4 CIRIA C552 (CIRIA 2001). Probability considers the integrity of the exposure pathway.

The consequence classifications detailed in **Table 5** have been adapted from Table 6.3 presented in C552 and R&D 66 (Annex 4 Table A4.3).

The Tier 1 risk classification is estimated for each pollutant linkage using the matrix given in **Table 6** which is taken directly from C552 (Table 6.5). Subsequent Tiers refine the CSM through retention or elimination of potential hazards and pollutant linkages.

6 Risk Evaluation

In order to put the Tier 1 risk classification into context the likely actions are described in **Table 7** which is taken directly from C552 (Table 6.6). Subsequent Tiers identify potential risk management options through remediation and/or mitigation measures.

Unless the initial assessment clearly demonstrates that the risk from contamination can be satisfactorily reduced to an acceptable level, further site investigations and risk assessment will be needed before the application can be determined.

7 References

BSI 2007 BS 8485 Code of Practice for characterisation and remediation from ground gas in affected developments.
BSI 2011 BS 10175 (2011) Code of practice - Investigation of potentially contaminated sites

CIRIA 2001: Contaminated land risk assessment – a guide to good practice C552.

CIRIA 2008: Assessing risks posed by hazardous ground gases to buildings C655

CL:AIRE/EIH 2008 Guidance on Company Soil Contamination Data with a Critical Concentration. Published by Contaminated Land: Applications in Real Environments (CL:AIRE)

CL:AIRE 2013 SP1010 – Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination. Final Project Report published by Contaminated Land: Applications in Real Environments (CL:AIRE) 20th December 2013

DCLG 2010 Building Regulations 2010 Approved Document C Site preparation and resistance to contaminants and moisture.

DCLG 2012 National Planning Policy Framework.

DETR 2000 Methodology for Multi Modal Studies. Volume 2 Section 4. The Environmental Objective.

Defra Circular 01/2006

Defra Circular 04/2012 Environmental Protection Act 1990: Part 2A. Contaminated Land Statutory Guidance.

DEFRA, 2006 The Contaminated Land (England) Regulations 2006.

DEFRA, 2012 The Contaminated Land (England) (Amendment) Regulations 2012 (SI2012/263).

DEFRA, 2012 Environmental Protection Act 1990: Part 2A. Contaminated Land Statuary Guidance. April 2012.

DEFRA, 2013 Environmental Damage (Prevention and Remediation) Regulations 2009: Guidance for England and Wales

Defra '2009 Water for Life and Livelihoods. River Basin Management Plan. (11 Districts: Anglia, Dee, Humber, Northumbria, Northwest, Severn, Solway and Tweed, Southeast, Thames, Western Wales) December 2009

EA 2004: The Model Procedures for the Management of Land Contamination CRL 11 published by the Environment Agency (EA).

EA 2008 Ecological Risk Assessment Science Report Series SC070009 published by the Environment Agency (EA).

European Community 2000 Water Framework Directive (2000/60/EC)

JNCC 1993 Handbook for Phase 1 Habitat Survey – A Technical for Environmental Audit prepared by the Joint Nature Conservancy Council (JNCC)

NHBC/EA/CIEH 2008: R&D Publication 66 Guidance for the safe development of housing on land affected by contamination.

Statutory Instrument 2003 No. 3242 Water Resources, England and Wales. The Water Environment (Water Framework Directive) Regulations 2003.

Table 1: Criteria for Classifying Hazards / Potential for Generating Contamination

Classification/Score	Potential for generating contamination/gas based on land use
Very Low 1	Land Use: greenfield Contamination: None. Gas generation potential : Inert Made Ground
Low 2	Land Use: residential, retail or office use, recent small scale industrial. Contamination: None or locally slightly elevated concentrations. Gas generation potential : Shallow thickness of Alluvium
Moderate 3	Land Use: railway yards, collieries, scrap yards, light industry, engineering works. Contamination: Locally elevated concentrations. Gas generation potential : Dock silt and substantial thickness of organic alluvium/peat
High 4	Land Use: gas works, chemical works, heavy industry, non-hazardous landfills. Contamination: Possible widespread elevated concentrations. Gas generation potential : Shallow mine workings Pre 1960's landfill
Very High 5	Land Use: hazardous waste landfills. Contamination: Likely widespread elevated concentrations. Gas generation potential : Domestic landfill post 1960

"Greenfield" is land which has not been developed including not used for crop production or animal husbandry and no contamination source therefore no pollutant linkages.

Table 2: Criteria for Classifying Receptor Sensitivity/Value

Classification/Score	Definition
Very Low 1	Receptor of limited importance Groundwater: Non aquifer Surface water: GQA Grade F Ecology: No local designation Buildings: Replaceable Human health: Unoccupied/limited access
Low 2	Receptor of local or county importance with potential for replacement Groundwater: Secondary aquifer Surface water: GQA Grade D/E Ecology: local habitat resources Buildings: Local value Human health: Minimum score 4 where human health identified as potential receptor
Moderate 3	Receptor of local or county importance with potential for replacement Groundwater: Principal aquifer Surface water: GQA Grade B/C Ecology: County wildlife sites, Areas of Outstanding Natural Beauty (AONB) Buildings: Area of Historic Character Human health: Minimum score 4 where human health identified as potential receptor
High 4	Receptor of county or regional importance with limited potential for replacement Groundwater: Source Protection Zone 2 Surface water: GQA Grade A Ecology: SSSI, National or Marine Nature Reserve (NNR or MNR) Buildings: Conservation Area Human health: Minimum score 4 where human health identified as potential receptor
Very High 5	Receptor of national or international importance Groundwater: Source Protection Zone 1 Surface water: GQA Grade A Ecology: Special Areas of Conservation (SAC and candidates), Special Protection Areas (SPA and potentials) or wetlands of international importance (RAMSAR) Buildings: World Heritage site Human health: Residential, open spaces and uses where children are present

Table 3: Exposure Pathway and Modes of Transport

Receptor	Pathway	Mode of transport
Human health	Ingestion	Fruit or vegetable leaf or roots
		Contaminated water
		Soil/dust indoors
		Soil/dust outdoors
	Inhalation	Particles (dust / soil) – outdoor
		Particles (dust / soil) - indoor
		Vapours – outdoor - migration via natural or anthropogenic pathways
		Vapours - indoor - migration via natural or anthropogenic pathways
	Dermal absorption	Direct contact with soil
		Direct contact with waters (swimming / showering)
		Irradiation
Groundwater	Leaching	Gravity / permeation
	Migration	Natural – groundwater as pathway Anthropogenic (e.g. boreholes, culverts, pipelines etc.)
Surface Water	Direct	Runoff or discharges from pipes
	Indirect	Recharge from groundwater
	Indirect	Deposition of wind blown dust
Buildings	Direct contact	Sulphate attack on concrete, hydrocarbon corrosion of plastics
	Gas ingress	Migration via natural or anthropogenic paths
Ecological systems	See Notes	Runoff/discharge to surface water body
	See Notes	Windblown dust
	See Notes	Groundwater migration
	See Notes	At point of contaminant source
Animal and crop	Direct	Wind blown or flood deposited particles / dust / sediments
	Indirect	Plants via root up take or irrigation. Animals through watering
	Inhalation	By livestock / fish - gas / vapour / particulates / dust
	Ingestion	Consumption of vegetation / water / soil by animals

Table 4: Classification of Probability

Classification	Definition
High likelihood	There is a pollution linkage and an event either appears very likely in the short-term and almost inevitable over the long-term, or there is already evidence at the receptor of harm / pollution.
Likely	There is a pollution linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short-term and likely over the long-term.
Low likelihood	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such event would take place, and is less likely in the shorter-term.
Unlikely	There is a pollution linkage but circumstances are such that it is improbable that an event would occur even in the very long-term.

Table 5: Classification of Consequence (score = magnitude of hazard Table 1 and sensitivity of receptor Table 2)

Classification / Score	Examples
Severe **20-25**	Human health effect - exposure likely to result in "significant harm". Significant harm to humans is defined in circular 01/2006 as death, disease, serious injury, genetic mutation, birth defects or impairment of reproductive function. Controlled water effect - short-term risk of pollution (note: Water Resources Act contains no scope for considering significance of pollution) of sensitive water resource. Equivalent to EA Category 1 incident (persistent and/or extensive effects on water quality leading to closure of potable abstraction point or loss of amenity, agriculture or commercial value. Major fish kill. Ecological effect - short-term exposure likely to result in a substantial adverse effect. Catastrophic damage to crops, buildings or property
Medium **13-19**	Human health effect - exposure could result in "significant harm". Significant harm to humans is defined in circular 01/2006 as death, disease, serious injury, genetic mutation, birth defects or impairment of reproductive function. Controlled water effect - equivalent to EA Category 2 incident requiring notification of abstractor Ecological effect - short-term exposure may result in a substantial adverse effect. Damage to crops, buildings or property
Mild **6-12**	Human health effect - exposure may result in "significant harm". Significant harm to humans is defined in circular 01/2006 as death, disease, serious injury, genetic mutation, birth defects or impairment of reproductive function. Controlled water effect - equivalent to EA Category 3 incident (short lived and/or minimal effects on water quality). Ecological effect - unlikely to result in a substantial adverse effect. Minor damage to crops, buildings or property. Damage to building rendering it unsafe to occupy (for example foundation damage resulting in instability).
Minor **1-5**	No measurable effect on humans. Protective equipment is not required during site works. Equivalent to insubstantial pollution incident with no observed effect on water quality or ecosystems. Repairable effects to crops, buildings or property. The loss of plants in a landscaping scheme. Discolouration of concrete.

Table 6: Classification of Risk (Combination of Consequence Table 5 and Probability Table 4)

	Consequence			
Probability	***Severe***	***Medium***	***Mild***	***Minor***
High likelihood	Very high	High	Moderate	Low
Likely	High	Moderate	Moderate/low	Low
Low likelihood	Moderate	Moderate/low	Low	Very low
Unlikely	Moderate/low	Low	Very low	Very low

Table 7: Description of Risks and Likely Action Required

Risk Classification	Description
Very high risk	There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is currently happening. This risk, if realised, is likely to result in a substantial liability. Urgent investigation (if not undertaken already) and remediation is likely to be required in the short term.
High risk	Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short-term and are likely over the longer-term.
Moderate risk	It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. Investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer-term.
Low risk	It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.
Very low risk	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.

Appendix C Photographic Plates

Plate 01 – Southern Ward

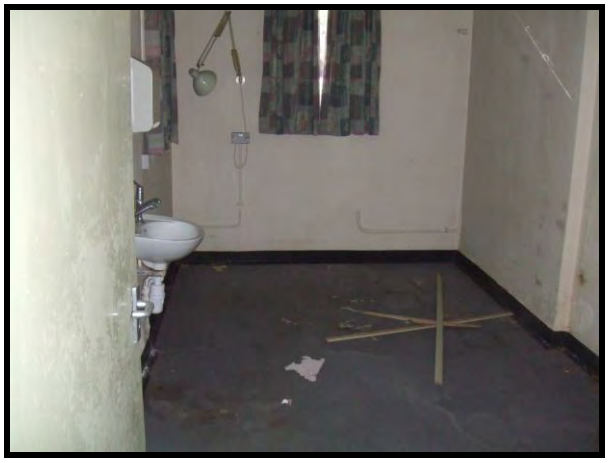


Plate 02 – Example of typical room

Plate 03 – Example of room in disrepair

Plate 04 – Southern edge of hospital looking north

Plate 05 – Southern hardstanding area used for storage of Ambulances

Plate 06 – Transformer located in the south eastern corner of the site

Appendix D Landmark Envirocheck Report

Envirocheck® Report:

BGS Boreholes Datasheet

Order Details:

Order Number:
71541451_1_1

Customer Reference:
35554/3501

National Grid Reference:
510020, 190670

Slice:
A

Site Area (Ha):
0.62

Borehole Search Buffer (m):
1000

Site Details:

Northwood & Pinner Hospital
Pinner Road
Northwood
HA6 1DE

Client Details:

Ms K Riley
Brett Consulting Ltd
Caversham Bridge House
Waterman Place
Reading
Berkshire
RG1 8DN

BGS Boreholes Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m
BGS Boreholes	pg 1	None	2	3	6

Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination.
For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.

In the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

A copy of the BGS Borehole Ordering Form is available to download from the Support section of www.envirocheck.co.uk.

Report Version v50.0

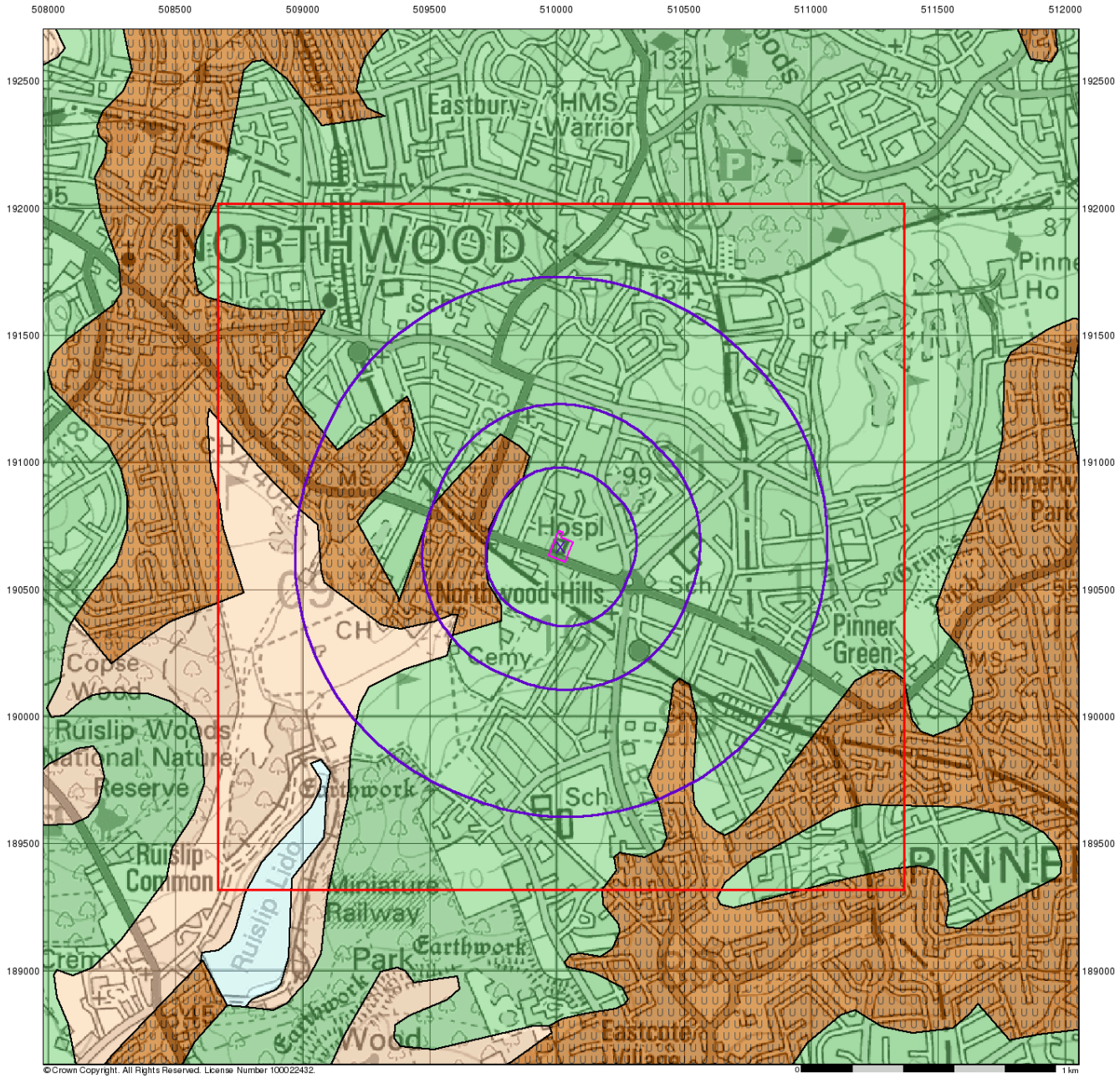
BGS Boreholes Detail

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
90	**BGS Boreholes** BGS Reference: Tq19sw40 Drilled Length (m): 91.44 Borehole Name: Hundred Acre Farm Link to Borehole Scan: http://scans.bgs.ac.uk/sobi_scans/boreholes/582975/	A13SE (E)	47	2	510100 190650
91	**BGS Boreholes** BGS Reference: Tq09se42 Drilled Length (m): Not Supplied Borehole Name: Northwood Drainage 12 Link to Borehole Scan: Not Available	A13NW (W)	230	2	509743 190676
92	**BGS Boreholes** BGS Reference: Tq09se41 Drilled Length (m): Not Supplied Borehole Name: Northwood Drainage 11 Link to Borehole Scan: Not Available	A13SW (W)	252	2	509718 190618
93	**BGS Boreholes** BGS Reference: Tq19sw92 Drilled Length (m): Not Supplied Borehole Name: Northwood Drainage 10 Link to Borehole Scan: Not Available	A8NE (S)	362	2	510020 190245
94	**BGS Boreholes** BGS Reference: Tq09se1 Drilled Length (m): 11.27 Borehole Name: Rickmansworth Road Bridge Ruislip Link to Borehole Scan: http://scans.bgs.ac.uk/sobi_scans/boreholes/577318/	A12NE (W)	400	2	509590 190760
95	**BGS Boreholes** BGS Reference: Tq19sw91 Drilled Length (m): Not Supplied Borehole Name: Northwood Drainage 9 Link to Borehole Scan: Not Available	A8NE (S)	532	2	510051 190075
96	**BGS Boreholes** BGS Reference: Tq19sw132 Drilled Length (m): 75 Borehole Name: Ellesselle, Gate End, Northwood, Middlesex Link to Borehole Scan: http://scans.bgs.ac.uk/sobi_scans/boreholes/17587812/	A18SE (N)	578	2	510100 191300
97	**BGS Boreholes** BGS Reference: Tq18nw98 Drilled Length (m): Not Supplied Borehole Name: Northwood Drainage 8 Link to Borehole Scan: Not Available	A8SE (S)	711	2	510073 189897
98	**BGS Boreholes** BGS Reference: Tq09se29 Drilled Length (m): Not Supplied Borehole Name: Chalkwell Hallowell Road Link to Borehole Scan: Not Available	A17SE (NW)	755	2	509410 191190
99	**BGS Boreholes** BGS Reference: Tq18nw203 Drilled Length (m): 35 Borehole Name: Joel Street Stables Link to Borehole Scan: http://scans.bgs.ac.uk/sobi_scans/boreholes/15640142/	A8SE (S)	826	2	510340 189840
100	**BGS Boreholes** BGS Reference: Tq09se14 Drilled Length (m): 53.34 Borehole Name: Northwood Golf Course Link to Borehole Scan: http://scans.bgs.ac.uk/sobi_scans/boreholes/577331/	A12SW (W)	961	2	509010 190570

Data Currency and Contact Details

BGS Boreholes	Version	Update Cycle
BGS Boreholes British Geological Survey - National Geoscience Information Service	July 2015	Quarterly

Contact Details	Contact Logo
2 **British Geological Survey - Enquiry Service** British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk	
- **Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk	



Groundwater Vulnerability

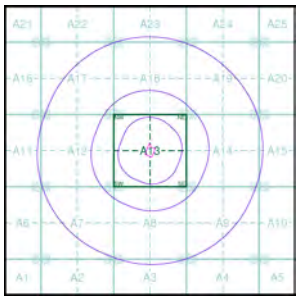
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes	Soil Classes
Major Aquifer (Highly Permeable)	High (H) 1, 2, 3, U
	Intermediate (I) 1, 2
	Low
Minor Aquifer (Variably Permeable)	High (H) 1, 2, 3, U
	Intermediate (I) 1, 2
	Low
Non Aquifer (Negligibly Permeable)	
Water or Sea	
Drift Deposit	

Site Sensitivity Context Map - Slice A



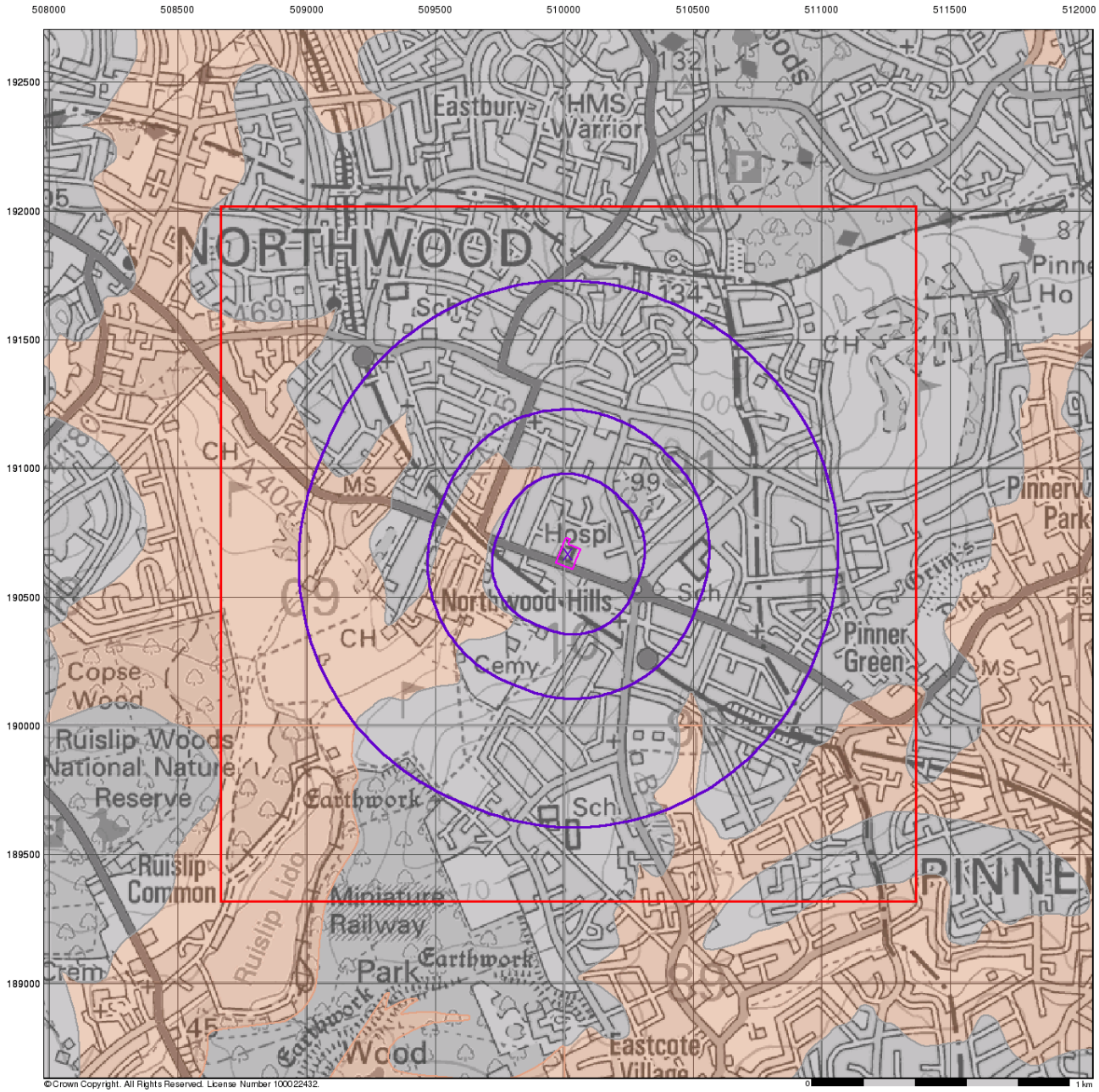
Order Details

Order Number:	71541451_1_1
Customer Ref:	35554/3501
National Grid Reference:	510020, 190670
Slice:	A
Site Area (Ha):	0.62
Search Buffer (m):	1000

Site Details

Northwood & Pinner Hospital, Pinner Road, Northwood, HA6 1DE

Landmark Information Group
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Bedrock Aquifer Designation

General

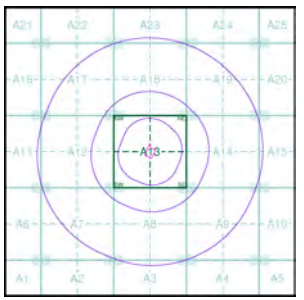
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown

Site Sensitivity Context Map - Slice A



Order Details

Order Number:	71541451_1_1
Customer Ref:	35554/3501
National Grid Reference:	510020, 190670
Slice:	A
Site Area (Ha):	0.62
Search Buffer (m):	1000

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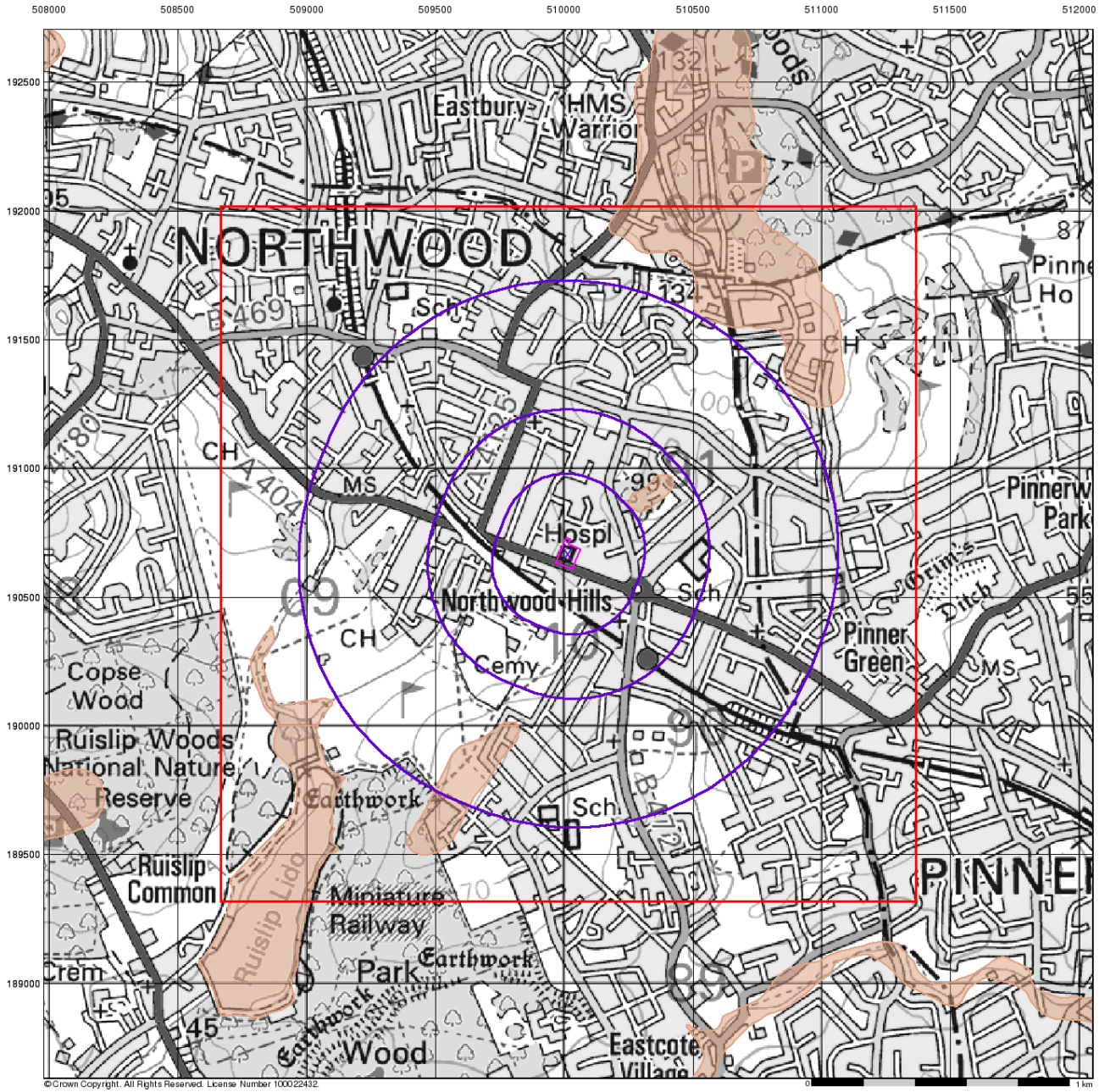


pba peterbrett

Superficial Aquifer Designation

General

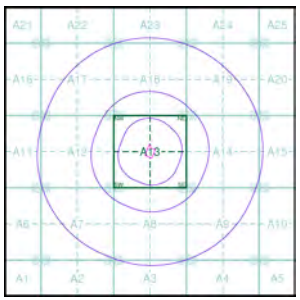
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown

Site Sensitivity Context Map - Slice A



Order Details

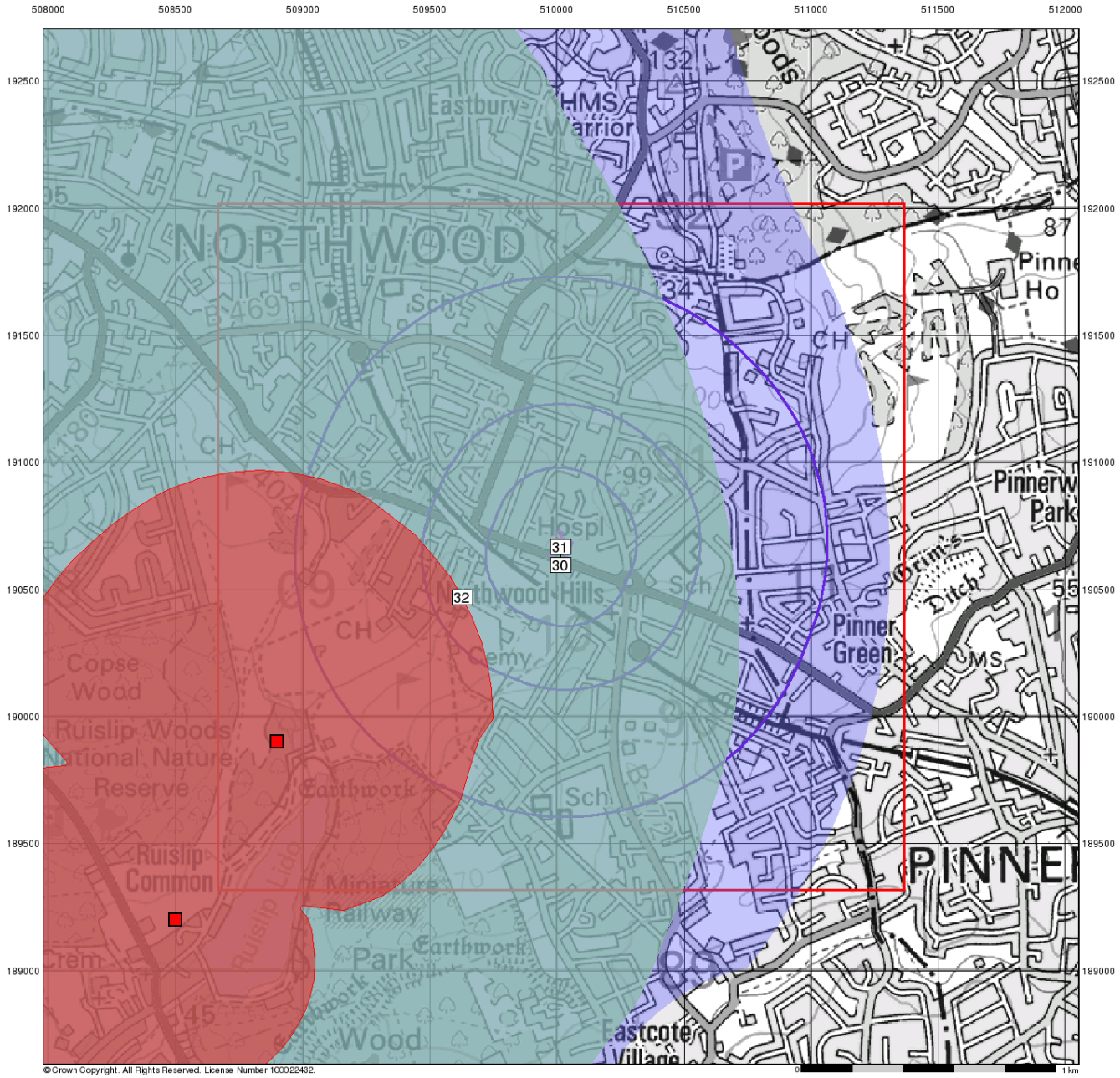
Order Number:	71541451_1_1
Customer Ref:	35554/3501
National Grid Reference:	510020, 190670
Slice:	A
Site Area (Ha):	0.62
Search Buffer (m):	1000

Site Details

Northwood & Pinner Hospital, Pinner Road, Northwood, HA6 1DE

Landmark Information Group

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



pba peterbrett

Source Protection Zones

General

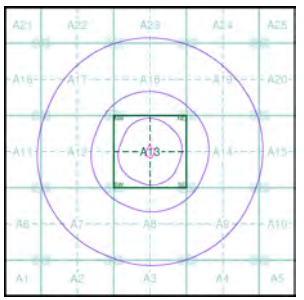
Specified Site | Specified Buffer(s) | Bearing Reference Point

Slice | Map ID

Agency and Hydrological

- Inner zone (Zone 1)
- Inner zone - subsurface activity only (Zone 1c)
- Outer zone (Zone 2)
- Outer zone - subsurface activity only (Zone 2c)
- Total catchment (Zone 3)
- Total catchment - subsurface activity only (Zone 3c)
- Special interest (Zone 4)
- Source Protection Zone Borehole

Site Sensitivity Context Map - Slice A



Order Details

Order Number:	71541451_1_1
Customer Ref:	35554/3501
National Grid Reference:	510020, 190670
Slice:	A
Site Area (Ha):	0.62
Search Buffer (m):	1000

Site Details

Northwood & Pinner Hospital, Pinner Road, Northwood, HA6 1DE

Landmark Information Group

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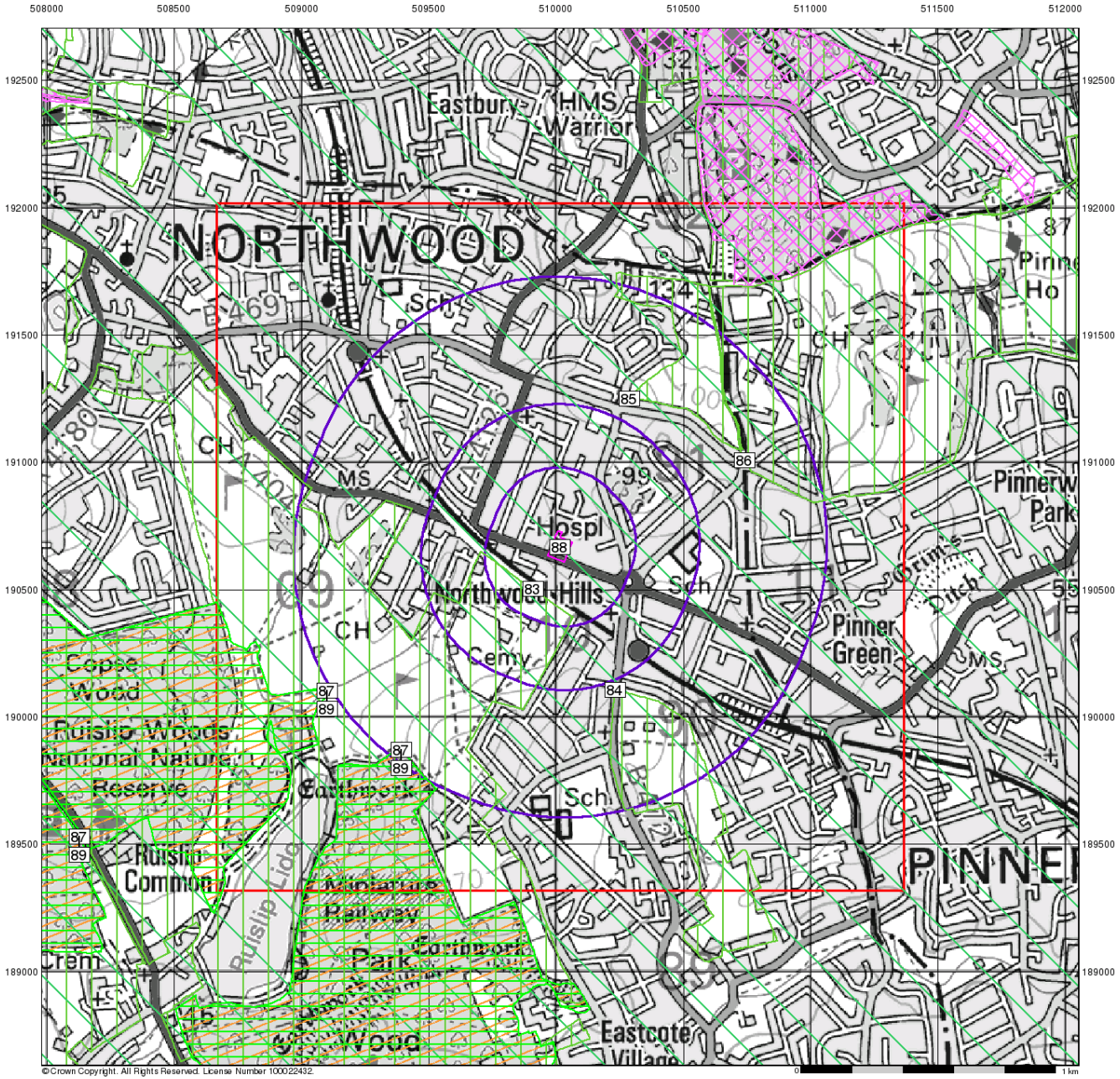


pba peterbrett

Sensitive Land Uses

General

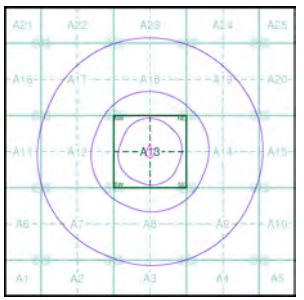
Specified Site | Specified Buffer(s) | Bearing Reference Point

Slice | Map ID

Sensitive Land Uses

- Area of Adopted Green Belt
- Area of Unadopted Green Belt
- Area of Outstanding Natural Beauty
- Environmentally Sensitive Area
- Forest Park
- Local Nature Reserve
- Marine Nature Reserve
- National Nature Reserve
- National Park
- Nitrate Sensitive Area
- Nitrate Vulnerable Zone
- Ramsar Site
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area

Site Sensitivity Context Map - Slice A



Order Details

Order Number:	71541451_1_1
Customer Ref:	35554/3501
National Grid Reference:	510020, 190670
Slice:	A
Site Area (Ha):	0.62
Search Buffer (m):	1000

Site Details

Northwood & Pinner Hospital, Pinner Road, Northwood, HA6 1DE

Landmark Information Group

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

Envirocheck® Report:

Datasheet

Order Details:

Order Number:
71541451_1_1

Customer Reference:
35554/3501

National Grid Reference:
510020, 190670

Slice:
A

Site Area (Ha):
0.62

Search Buffer (m):
1000

Site Details:

Northwood & Pinner Hospital
Pinner Road
Northwood
HA6 1DE

Client Details:

Ms K Riley
Brett Consulting Ltd
Caversham Bridge House
Waterman Place
Reading
Berkshire
RG1 8DN

Contents

Introduction

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In the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

Report Version v50.0

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
Contaminated Land Register Entries and Notices					
Discharge Consents					
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 1		1	1	1
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 1		Yes		
Pollution Incidents to Controlled Waters	pg 1			16	19
Prosecutions Relating to Authorised Processes					
Prosecutions Relating to Controlled Waters					
Registered Radioactive Substances					
River Quality					
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register	pg 7			2	2
Water Abstractions	pg 8				(*4)
Water Industry Act Referrals					
Groundwater Vulnerability	pg 8	Yes	n/a	n/a	n/a
Bedrock Aquifer Designations	pg 9	Yes	n/a	n/a	n/a
Superficial Aquifer Designations			n/a	n/a	n/a
Source Protection Zones	pg 9	2		1	
Extreme Flooding from Rivers or Sea without Defences				n/a	n/a
Flooding from Rivers or Sea without Defences				n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
Detailed River Network Lines	pg 9		Yes	Yes	n/a
Detailed River Network Offline Drainage	pg 10			Yes	n/a

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites					
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)					
Local Authority Recorded Landfill Sites					
Registered Landfill Sites					
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites					
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					
Geological					
BGS 1:625,000 Solid Geology	pg 12	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 12	Yes	Yes	Yes	Yes
BGS Recorded Mineral Sites					
BGS Urban Soil Chemistry	pg 16		Yes	Yes	Yes
BGS Urban Soil Chemistry Averages	pg 19	Yes			
Brine Compensation Area			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Man-Made Mining Cavities	pg 19				4
Natural Cavities					
Non Coal Mining Areas of Great Britain	pg 20		Yes	n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 20	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards				n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 20	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 21		Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 21	Yes		n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Industrial Land Use					
Contemporary Trade Directory Entries	pg 22	2	11	43	27
Fuel Station Entries	pg 29		1	1	1
Sensitive Land Use					
Areas of Adopted Green Belt	pg 30		1		3
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves	pg 30				1
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones	pg 30	1			
Ramsar Sites					
Sites of Special Scientific Interest	pg 30				1
Special Areas of Conservation					
Special Protection Areas					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	**Local Authority Pollution Prevention and Controls** Name: Gem Dry Cleaners Location: 12 The Broadway, Joel Street, Northwood Hill, Ha6 1pf Authority: London Borough of Hillingdon, Environmental Health Department Permit Reference: EPA/DC/037 Dated: Not Supplied Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning **Status: Permitted** Positional Accuracy: Manually positioned to the address or location	A13SE (SE)	241	3	510239 190484
2	**Local Authority Pollution Prevention and Controls** Name: Par Four Service Station Location: 4-6 Rickmansworth Road, NORTHWOOD, Middlesex, HA6 1HA Authority: London Borough of Hillingdon, Environmental Health Department Permit Reference: Not Given Dated: Not Supplied Process Type: Local Authority Air Pollution Control Description: PG1/14 Petrol filling station **Status: Authorised** Positional Accuracy: Automatically positioned to the address	A12NE (W)	461	3	509541 190805
3	**Local Authority Pollution Prevention and Controls** Name: Tesco Northwood Hills Service Station Location: Joel Street, Northwood, Middlesex, Ha5 2pa Authority: London Borough of Hillingdon, Environmental Health Department Permit Reference: EPA/SS/1/019/09/1998 Dated: Not Supplied Process Type: Local Authority Air Pollution Control Description: PG1/14 Petrol filling station **Status: Authorised** Positional Accuracy: Located by supplier to within 10m	A8NE (SE)	546	3	510250 190106
	Nearest Surface Water Feature	A13SE (S)	223	-	510069 190386
4	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Knoll Crescent, NORTHWOOD Authority: Environment Agency, Thames Region Pollutant: Unknown Sewage Note: Confirmed As A Pollution Incident Incident Date: 3rd March 1993 Incident Reference: N1930076 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12SE (W)	321	4	509650 190600
4	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Knoll Crescent, NORTHWOOD Authority: Environment Agency, Thames Region Pollutant: Unknown Sewage Note: Not Supplied Incident Date: 24th September 1996 Incident Reference: N1960501 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12SE (W)	371	4	509600 190600
5	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Knoll Crescent Authority: Environment Agency, Thames Region Pollutant: Unknown Sewage Note: Confirmed As A Pollution Incident Incident Date: 4th September 1990 Incident Reference: N1900499 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12NE (W)	368	4	509610 190710

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Knoll Crescent, NORTHWOOD Authority: Environment Agency, Thames Region Pollutant: Unknown Sewage Note: Confirmed As A Pollution Incident Incident Date: 14th August 1995 Incident Reference: N1950442 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A12NE (W)	375	4	509600 190695
5	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: NORTHWOOD Authority: Environment Agency, Thames Region Pollutant: Unknown Sewage Note: Confirmed As A Pollution Incident Incident Date: 1st August 1995 Incident Reference: N1950416 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12NE (W)	375	4	509600 190700
6	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: High Street, NORTHWOOD Authority: Environment Agency, Thames Region Pollutant: Storm Sewage Note: Not Supplied Incident Date: 9th January 1997 Incident Reference: THN11997030862 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12SE (SW)	389	4	509605 190495
6	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: NORTHWOOD Authority: Environment Agency, Thames Region Pollutant: Miscellaneous - Unknown Note: Confirmed As A Pollution Incident Incident Date: 14th April 1993 Incident Reference: N1930144 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12SE (W)	392	4	509600 190500
6	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Briarwood, NORTHWOOD HILLS Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Not Supplied Incident Date: 2nd February 1996 Incident Reference: N1960051 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12SE (W)	394	4	509600 190495
7	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Tolcarne Drive Authority: Environment Agency, Thames Region Pollutant: Miscellaneous - Unknown Note: Confirmed As A Pollution Incident Incident Date: Not Supplied Incident Reference: N1900018 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NE (S)	440	4	510200 190200

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
8	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Tolcarne Drive, PINNER Authority: Environment Agency, Thames Region Pollutant: Miscellaneous - Unknown Note: Confirmed As A Pollution Incident Incident Date: 12th August 1989 Incident Reference: N1890428 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14SW (E)	465	4	510490 190500
9	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Knoll Crescent, NORTHWOOD Authority: Environment Agency, Thames Region Pollutant: Storm Sewage Note: Not Supplied Incident Date: 27th January 1997 Incident Reference: THN11997030957 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12NE (W)	473	4	509500 190695
9	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Lees Avenue, NORTHWOOD Authority: Environment Agency, Thames Region Pollutant: Unknown Sewage Note: Not Supplied Incident Date: 16th October 1996 Incident Reference: N1960558 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12NE (W)	474	4	509500 190700
10	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: NORTHWOOD Authority: Environment Agency, Thames Region Pollutant: Unknown Sewage Note: Confirmed As A Pollution Incident Incident Date: 9th October 1994 Incident Reference: N1940338 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	479	4	510400 190300
11	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: NORTHWOOD Authority: Environment Agency, Thames Region Pollutant: Unknown Sewage Note: Confirmed As A Pollution Incident Incident Date: 12th April 1995 Incident Reference: N1950185 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12SE (W)	484	4	509505 190495
11	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: NORTHWOOD Authority: Environment Agency, Thames Region Pollutant: Unknown Sewage Note: Confirmed As A Pollution Incident Incident Date: 15th February 1993 Incident Reference: N1930057 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12SE (W)	488	4	509500 190500

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
11	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: PINNER Authority: Environment Agency, Thames Region Pollutant: Unknown Sewage Note: Confirmed As A Pollution Incident Incident Date: 8th July 1993 Incident Reference: N1930241 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12SE (W)	489	4	509500 190495
12	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: PINNER Authority: Environment Agency, Thames Region Pollutant: Chemicals - Unknown Note: Not Supplied Incident Date: 14th March 1997 Incident Reference: THN11997031160 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14SW (SE)	512	4	510500 190400
13	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Manor Cottages Authority: Environment Agency, Thames Region Pollutant: Unknown Sewage Note: Confirmed As A Pollution Incident Incident Date: 10th April 1989 Incident Reference: N1890193 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12SE (SW)	524	4	509500 190400
14	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: NORTHWOOD Authority: Environment Agency, Thames Region Pollutant: Unknown Sewage Note: Confirmed As A Pollution Incident Incident Date: 23rd July 1993 Incident Reference: N1930253 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	559	4	510500 190300
15	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: PINNER Authority: Environment Agency, Thames Region Pollutant: Unknown Sewage Note: Not Supplied Incident Date: 1st April 1996 Incident Reference: N1960151 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Unknown	A8NW (S)	606	4	510001 190001
16	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Tolcarne Drive Authority: Environment Agency, Thames Region Pollutant: Miscellaneous - Unknown Note: Confirmed As A Pollution Incident Incident Date: 10th June 1990 Incident Reference: N1900310 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	620	4	510500 190200

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
16	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: PINNER Authority: Environment Agency, Thames Region Pollutant: Unknown Sewage Note: Confirmed As A Pollution Incident Incident Date: 28th April 1994 Incident Reference: N1940159 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	623	4	510500 190195
16	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: NORTHWOOD HILLS Authority: Environment Agency, Thames Region Pollutant: Unknown Sewage Note: Confirmed As A Pollution Incident Incident Date: 27th October 1994 Incident Reference: N1940360 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	627	4	510505 190195
17	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Hillside Crescen, NORTHWOOD Authority: Environment Agency, Thames Region Pollutant: Unknown Sewage Note: Not Supplied Incident Date: 21st August 1996 Incident Reference: N1960451 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A18NE (N)	731	4	510300 191400
18	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Tolcarne Drive Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Yes Incident Date: 16th November 1990 Incident Reference: N1900616 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9NW (SE)	766	4	510501 190001
19	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Hallowell Road Authority: Environment Agency, Thames Region Pollutant: Unknown Sewage Note: Confirmed As A Pollution Incident Incident Date: Not Supplied Incident Reference: N1910294 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A17SE (NW)	769	4	509400 191200
20	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: NORTHWOOD Authority: Environment Agency, Thames Region Pollutant: Unknown Sewage Note: Confirmed As A Pollution Incident Incident Date: 11th June 1994 Incident Reference: N1940223 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A17SE (NW)	834	4	509400 191300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
20	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: NORTHWOOD Authority: Environment Agency, Thames Region Pollutant: Unknown Sewage Note: Confirmed As A Pollution Incident Incident Date: 9th August 1995 Incident Reference: N1950429 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A17SE (NW)	871	4	509350 191300
21	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: NORTHWOOD Authority: Environment Agency, Thames Region Pollutant: Unknown Sewage Note: Confirmed As A Pollution Incident Incident Date: 31st August 1995 Incident Reference: N1950489 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A17SW (NW)	848	4	509300 191195
21	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: NORTHWOOD Authority: Environment Agency, Thames Region Pollutant: Unknown Sewage Note: Confirmed As A Pollution Incident Incident Date: 15th June 1992 Incident Reference: N1920354 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A17SW (NW)	850	4	509300 191200
22	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Tolcarne Drive, PINNER Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 6th September 1993 Incident Reference: N1930293 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7NE (SW)	850	4	509401 190001
23	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: PINNER Authority: Environment Agency, Thames Region Pollutant: Chemicals - Unknown Note: Not Supplied Incident Date: 4th September 1998 Incident Reference: THNE1998040380 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9SW (SE)	906	4	510600 189900
24	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Hallowell Road, NORTHWOOD Authority: Environment Agency, Thames Region Pollutant: Storm Sewage Note: Not Supplied Incident Date: 21st September 1997 Incident Reference: THN11997029640 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A17SW (NW)	906	4	509300 191295

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
24	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Hallowell Road, NORTHWOOD Authority: Environment Agency, Thames Region Pollutant: Unknown Sewage Note: Not Supplied Incident Date: 26th September 1996 Incident Reference: N1960503 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A17SW (NW)	910	4	509300 191300
25	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Hallowell Road Authority: Environment Agency, Thames Region Pollutant: Unknown Sewage Note: Confirmed As A Pollution Incident Incident Date: 3rd July 1994 Incident Reference: N1940251 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A17NE (NW)	940	4	509350 191400
26	**Substantiated Pollution Incident Register** Authority: Environment Agency - Thames Region, North East Area Incident Date: 1st March 2012 Incident Reference: 966299 Water Impact: Category 2 - Significant Incident Air Impact: Category 4 - No Impact Land Impact: Category 4 - No Impact Positional Accuracy: Located by supplier to within 10m Pollutant: Crude Sewage	A12NE (W)	368	4	509613 190726
27	**Substantiated Pollution Incident Register** Authority: Environment Agency - Thames Region, North East Area Incident Date: 18th June 2008 Incident Reference: 597499 Water Impact: Category 3 - Minor Incident Air Impact: Category 3 - Minor Incident Land Impact: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 10m Pollutant: Other Sewage	A12NE (W)	396	4	509577 190686
28	**Substantiated Pollution Incident Register** Authority: Environment Agency - Thames Region, North East Area Incident Date: 18th March 2002 Incident Reference: 64992 Water Impact: Category 2 - Significant Incident Air Impact: Category 2 - Significant Incident Land Impact: Category 4 - No Impact Positional Accuracy: Located by supplier to within 10m Pollutant: General Biodegradable Materials And Wastes: Food And Drink	A9NW (SE)	610	4	510541 190271
29	**Substantiated Pollution Incident Register** Authority: Environment Agency - Thames Region, North East Area Incident Date: 2nd April 2004 Incident Reference: 227191 Water Impact: Category 2 - Significant Incident Air Impact: Category 4 - No Impact Land Impact: Category 4 - No Impact Positional Accuracy: Located by supplier to within 10m Pollutant: Oils - Diesel (Including Agricultural)	A12NW (W)	883	4	509092 190736

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Affinity Water Limited Licence Number: 28/39/28/0336 Permit Version: 102 Location: Poors Field Pumping Station Authority: Environment Agency, Thames Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 14th November 2012 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A6SE (SW)	1296	4	508900 189900
	Water Abstractions Operator: Veolia Water Central Limited Licence Number: 28/39/28/0336 Permit Version: 101 Location: Poors Field Pumping Station Authority: Environment Agency, Thames Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 20th July 2009 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A6SE (SW)	1296	4	508900 189900
	Water Abstractions Operator: Three Valleys Water Plc Licence Number: 28/39/28/0336 Permit Version: 100 Location: Poors Field Pumping Station Authority: Environment Agency, Thames Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 27276 Yearly Rate (m3): 1 Details: Annual Abstraction Total Aggregated To Another Licence For Quantity Purposes. Chalk (Undifferentiate Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 12th June 1967 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A6SE (SW)	1296	4	508900 189900
	Water Abstractions Operator: Ministry Of Defence Licence Number: 28/39/28/0441c Permit Version: 1 Location: Boreholes Grouped At Hms Warrior Authority: Environment Agency, Thames Region Abstraction: Crown and Government: Drinking, Cooking, Sanitary, Washing, (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Hms Warrior, Northwood Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 14th December 1976 Permit End Date: Not Supplied Positional Accuracy: Manually corrected supplier location	A23NE (N)	1573	4	510100 192300
	Groundwater Vulnerability Soil Classification: Not classified Map Sheet: Sheet 39 West London Scale: 1:100,000	A13SW (NE)	0	4	510016 190665
	Drift Deposits None				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Bedrock Aquifer Designations Aquifer Designation: Unproductive Strata	A13SW (W)	0	2	510001 190665
	Bedrock Aquifer Designations Aquifer Designation: Unproductive Strata	A13SW (NE)	0	2	510016 190665
	Superficial Aquifer Designations No Data Available				
30	**Source Protection Zones** Name: Various Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone III (Total Catchment): The total area needed to support the discharge from the protected groundwater source.	A13SW (NE)	0	4	510016 190665
31	**Source Protection Zones** Name: Various Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone II (Outer Protection Zone): Either 25% of the source area or a 400 day travel time whichever is greater.	A13SW (NE)	0	4	510016 190665
32	**Source Protection Zones** Name: Various Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone I (Inner Protection Zone): Travel time of 50 days or less to the groundwater source.	A12SE (SW)	379	4	509628 190468
	Extreme Flooding from Rivers or Sea without Defences None				
	Flooding from Rivers or Sea without Defences None				
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				
33	**Detailed River Network Lines** River Type: Tertiary River River Name: Drain Hydrographic Area: D006 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A13SE (S)	223	4	510069 190386
34	**Detailed River Network Lines** River Type: Tertiary River River Name: Drain Hydrographic Area: D006 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A8NW (S)	310	4	509898 190327

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
35	**Detailed River Network Lines** River Type: Secondary River River Name: Not Supplied Hydrographic Area: D006 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A12NE (W)	363	4	509619 190727
36	**Detailed River Network Lines** River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D006 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A8NW (S)	410	4	509850 190238
37	**Detailed River Network Lines** River Type: Extended Culvert (greater than 50m) River Name: Drain Hydrographic Area: D006 River Flow Type: Primary Flow Path River Surface Level: Below Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk Management Status: Other Rivers Water Course Name: Not Supplied Water Course Reference: Not Supplied	A8NW (S)	448	4	509831 190205
38	**Detailed River Network Offline Drainage** River Type: Tertiary River Hydrographic Area: D006	A18SW (N)	293	4	509952 191017
39	**Detailed River Network Offline Drainage** River Type: Tertiary River Hydrographic Area: D006	A18SW (N)	374	4	509987 191103

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Local Authority Landfill Coverage Name: London Borough of Hillingdon - Has not been able to supply Landfill data		0	3	510016 190665
	Local Authority Landfill Coverage Name: London Borough of Harrow - Has supplied landfill data		670	12	510733 190698

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Thames Group	A13SW (NE)	0	2	510016 190665
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A13SW (W)	0	2	510000 190665
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A13SW (NE)	0	2	510016 190665
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A13NW (NW)	239	2	509820 190881
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A13NE (NE)	255	2	510253 190854
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NW (N)	271	2	510000 191000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NW (N)	271	2	510016 191000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A13NW (N)	288	2	509910 191000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A13NW (NW)	324	2	509830 191000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A13NW (NW)	334	2	509812 191000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A12NE (NW)	439	2	509591 190887
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A8NW (S)	606	2	510016 190000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A8NW (S)	607	2	510000 190000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A8NW (S)	636	2	509807 190012
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A8NW (S)	643	2	509820 190000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A9NW (SE)	659	2	510487 190130
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A17SE (NW)	674	2	509400 191021
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A14SE (E)	709	2	510771 190659
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A9NW (SE)	731	2	510440 190000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A14NE (NE)	779	2	510775 191000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A9NW (SE)	792	2	510541 190000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A12NW (W)	851	2	509200 191000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A14SE (E)	937	2	511000 190665
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A9NE (SE)	951	2	510765 190000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A12NW (W)	954	2	509089 191000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A11SE (W)	969	2	509000 190665
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14NE (E)	989	2	511000 191000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: <15 mg/kg	A19NW (NE)	998	2	510525 191586
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 510292, 190771 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 12.00 mg/kg Cadmium Measured Concentration: 0.60 mg/kg Chromium Measured Concentration: 93.00 mg/kg Lead Measured Concentration: 58.00 mg/kg Nickel Measured Concentration: 20.00 mg/kg	A13NE (E)	245	2	510292 190771
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 509721, 190626 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 16.00 mg/kg Cadmium Measured Concentration: 0.30 mg/kg Chromium Measured Concentration: 73.00 mg/kg Lead Measured Concentration: 74.00 mg/kg Nickel Measured Concentration: 17.00 mg/kg	A13SW (W)	248	2	509721 190626

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 510349, 190352 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 16.00 mg/kg Cadmium Measured Concentration: 0.60 mg/kg Chromium Measured Concentration: 85.00 mg/kg Lead Measured Concentration: 139.00 mg/kg Nickel Measured Concentration: 29.00 mg/kg	A13SE (SE)	406	2	510349 190352
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 509718, 190267 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 13.00 mg/kg Cadmium Measured Concentration: 0.30 mg/kg Chromium Measured Concentration: 82.00 mg/kg Lead Measured Concentration: 68.00 mg/kg Nickel Measured Concentration: 19.00 mg/kg	A8NW (SW)	444	2	509718 190267
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 509847, 191198 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 15.00 mg/kg Cadmium Measured Concentration: 0.70 mg/kg Chromium Measured Concentration: 75.00 mg/kg Lead Measured Concentration: 204.00 mg/kg Nickel Measured Concentration: 24.00 mg/kg	A18SW (N)	496	2	509847 191198
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 510239, 191291 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 15.00 mg/kg Cadmium Measured Concentration: 0.30 mg/kg Chromium Measured Concentration: 86.00 mg/kg Lead Measured Concentration: 266.00 mg/kg Nickel Measured Concentration: 28.00 mg/kg	A18SE (N)	607	2	510239 191291
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 510775, 190735 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 19.00 mg/kg Cadmium Measured Concentration: 0.30 mg/kg Chromium Measured Concentration: 103.00 mg/kg Lead Measured Concentration: 103.00 mg/kg Nickel Measured Concentration: 37.00 mg/kg	A14NE (E)	714	2	510775 190735

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 509266, 190779 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 84.00 mg/kg Cadmium Measured Concentration: 0.30 mg/kg Chromium Measured Concentration: 83.00 mg/kg Lead Measured Concentration: 173.00 mg/kg Nickel Measured Concentration: 23.00 mg/kg	A12NW (W)	718	2	509266 190779
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 510654, 191252 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 15.00 mg/kg Cadmium Measured Concentration: 0.30 mg/kg Chromium Measured Concentration: 100.00 mg/kg Lead Measured Concentration: 57.00 mg/kg Nickel Measured Concentration: 26.00 mg/kg	A19SW (NE)	820	2	510654 191252
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 510790, 190267 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 17.00 mg/kg Cadmium Measured Concentration: 0.30 mg/kg Chromium Measured Concentration: 77.00 mg/kg Lead Measured Concentration: 137.00 mg/kg Nickel Measured Concentration: 21.00 mg/kg	A9NE (SE)	831	2	510790 190267
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 509218, 190227 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 12.00 mg/kg Cadmium Measured Concentration: 0.30 mg/kg Chromium Measured Concentration: 77.00 mg/kg Lead Measured Concentration: 50.00 mg/kg Nickel Measured Concentration: 16.00 mg/kg	A7NW (SW)	854	2	509218 190227
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 509722, 189743 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 15.00 mg/kg Cadmium Measured Concentration: 0.30 mg/kg Chromium Measured Concentration: 92.00 mg/kg Lead Measured Concentration: 65.00 mg/kg Nickel Measured Concentration: 26.00 mg/kg	A8SW (S)	918	2	509722 189743

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 510246, 189653 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 19.00 mg/kg Cadmium Measured Concentration: 3.80 mg/kg Chromium Measured Concentration: 95.00 mg/kg Lead Measured Concentration: 289.00 mg/kg Nickel Measured Concentration: 30.00 mg/kg	A3NE (S)	977	2	510246 189653
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 509665, 191657 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 22.00 mg/kg Cadmium Measured Concentration: 0.60 mg/kg Chromium Measured Concentration: 90.00 mg/kg Lead Measured Concentration: 140.00 mg/kg Nickel Measured Concentration: 25.00 mg/kg	A17NE (N)	989	2	509665 191657
	BGS Urban Soil Chemistry Averages Source: British Geological Survey, National Geoscience Information Service Sample Area: London Count Id: 7189 Arsenic Minimum Concentration: 1.00 mg/kg Arsenic Average Concentration: 17.00 mg/kg Arsenic Maximum Concentration: 161.00 mg/kg Cadmium Minimum Concentration: 0.30 mg/kg Cadmium Average Concentration: 0.90 mg/kg Cadmium Maximum Concentration: 165.20 mg/kg Chromium Minimum Concentration: 13.00 mg/kg Chromium Average Concentration: 79.00 mg/kg Chromium Maximum Concentration: 2094.00 mg/kg Lead Minimum Concentration: 11.00 mg/kg Lead Average Concentration: 280.00 mg/kg Lead Maximum Concentration: 10000.00 mg/kg Nickel Minimum Concentration: 2.00 mg/kg Nickel Average Concentration: 28.00 mg/kg Nickel Maximum Concentration: 506.00 mg/kg	A13SW (NE)	0	2	510016 190665
	Coal Mining Affected Areas In an area that might not be affected by coal mining				
	Man-Made Mining Cavities Easting: 509400 Northing: 191200 Distance: 769 Quadrant Reference: A17 Quadrant Reference: SE Bearing Ref: NW Cavity Type: Chalkwell Commodity: Chalk Solid Geology Detail: London Clay, Lambeth Group, Upper Chalk Formation Superficial Geology Detail: No Details	A17SE (NW)	769	5	509400 191200

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Man-Made Mining Cavities Easting: 509200 Northing: 190800 Distance: 787 Quadrant Reference: A12 Quadrant Reference: NW Bearing Ref: W Cavity Type: Shaft Collapse Commodity: Unknown Solid Geology Detail: Lambeth Group, Upper Chalk Formation Superficial Geology Detail: No Details	A12NW (W)	787	5	509200 190800
	Man-Made Mining Cavities Easting: 509200 Northing: 190800 Distance: 787 Quadrant Reference: A12 Quadrant Reference: NW Bearing Ref: W Cavity Type: Sand Pit Shaft marked Commodity: Sandstone Solid Geology Detail: Lambeth Group, Upper Chalk Formation Superficial Geology Detail: No Details	A12NW (W)	787	5	509200 190800
	Man-Made Mining Cavities Easting: 511000 Northing: 190800 Distance: 944 Quadrant Reference: A14 Quadrant Reference: NE Bearing Ref: E Cavity Type: Shaft Entry Pillar and Stall Chalk Mine Commodity: Chalk Solid Geology Detail: London Clay, Lambeth Group, Upper Chalk Formation Superficial Geology Detail: No Details	A14NE (E)	944	5	511000 190800
	Non Coal Mining Areas of Great Britain Risk: Rare Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	139	2	509887 190807
	Non Coal Mining Areas of Great Britain Risk: Rare Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	198	2	510000 190927
	Non Coal Mining Areas of Great Britain Risk: Highly Unlikely Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	239	2	509820 190881
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	0	2	510000 190665
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (NE)	0	2	510016 190665
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	0	2	510000 190665
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (NE)	0	2	510016 190665
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	0	2	510000 190665
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (NE)	0	2	510016 190665
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	0	2	510000 190665
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (NE)	0	2	510016 190665

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (E)	181	2	510241 190720
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	0	2	510000 190665
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (NE)	0	2	510016 190665
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	239	2	509820 190881
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	0	2	510000 190665
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SW (NE)	0	2	510016 190665
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	0	2	510001 190665
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13SW (NE)	0	2	510016 190665
	Radon Potential - Radon Affected Areas Affected Area: The property is in a lower probability radon area, as less than 1% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	0	2	510001 190665
	Radon Potential - Radon Affected Areas Affected Area: The property is in a lower probability radon area, as less than 1% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	A13SW (NE)	0	2	510016 190665

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
40	**Contemporary Trade Directory Entries** Name: Northwood & Pinner Community Hospital Location: Pinner Road, Northwood, Middlesex, HA6 1DE Classification: Hospitals **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	0	-	510003 190685
40	**Contemporary Trade Directory Entries** Name: Northwood & Pinner Community Hospital Location: Pinner Road, Northwood, Middlesex, HA6 1DE Classification: Hospitals **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	0	-	510003 190685
41	**Contemporary Trade Directory Entries** Name: Board Of Ironing Location: 12, Robina Close, Northwood, Middlesex, HA6 1PS Classification: Ironing & Home Laundry Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SW (S)	93	-	509972 190531
42	**Contemporary Trade Directory Entries** Name: A Lawrance Location: 46, Acre Way, Northwood, Middlesex, HA6 1SX Classification: Cabinet Makers **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NE (N)	99	-	510024 190827
43	**Contemporary Trade Directory Entries** Name: Bugz Pest Control Location: 45, Waller Drive, Northwood, Middlesex, HA6 1DG Classification: Pest & Vermin Control **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SE (S)	128	-	510022 190479
44	**Contemporary Trade Directory Entries** Name: Northholt Tyre Service Ltd Location: 106, Pinner Road, Northwood, Middlesex, HA6 1BS Classification: Tyre Dealers **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NW (W)	176	-	509815 190719
44	**Contemporary Trade Directory Entries** Name: Northolt Tyres Ltd Location: 106, Pinner Road, Northwood, Middlesex, HA6 1BS Classification: Tyre Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (W)	177	-	509811 190712
44	**Contemporary Trade Directory Entries** Name: Northolt Tyre Service Ltd Location: 106, Pinner Road, Northwood, Middlesex, HA6 1BS Classification: Tyre Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (W)	177	-	509811 190712
44	**Contemporary Trade Directory Entries** Name: Northolt Tyre Service Ltd Location: 106, Pinner Road, Northwood, Middlesex, HA6 1BS Classification: Tyre Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (W)	177	-	509811 190712
44	**Contemporary Trade Directory Entries** Name: Schoenitz Dental Laboratory Uk Ltd Location: Clearview House, 201, Pinner Road, Northwood, Middlesex, HA6 1BX Classification: Medical & Dental Laboratories **Status: Active** Positional Accuracy: Manually positioned to the address or location	A13NW (W)	190	-	509784 190675
45	**Contemporary Trade Directory Entries** Name: Arthur E Renow Location: 162, Northwood Way, Northwood, Middlesex, HA6 1RB Classification: Mirrors & Decorative Glass **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (E)	193	-	510231 190584
46	**Contemporary Trade Directory Entries** Name: Gem Location: 12, The Broadway, Joel Street, Northwood, Middlesex, HA6 1PF Classification: Dry Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	240	-	510239 190484

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
46	**Contemporary Trade Directory Entries** Name: Northwood Hills Location: 16, The Broadway, Joel Street, Northwood, Middlesex, HA6 1PF Classification: Dry Cleaners **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	246	-	510240 190476
47	**Contemporary Trade Directory Entries** Name: The Jay White Company Appliance Repairs Location: 130c, Pinner Road, Northwood, Middlesex, HA6 1BP Classification: Domestic Appliances - Servicing, Repairs & Parts **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NW (W)	257	-	509735 190740
47	**Contemporary Trade Directory Entries** Name: Bedford & Packington Location: 132a, Pinner Road, Northwood, Middlesex, HA6 1BP Classification: Joinery Manufacturers **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NW (W)	270	-	509732 190766
47	**Contemporary Trade Directory Entries** Name: Hawkins Of Northwood Location: 136, Pinner Road, Northwood, Middlesex, HA6 1BP Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NW (W)	276	-	509717 190746
47	**Contemporary Trade Directory Entries** Name: Howard Motor Co Location: 136, Pinner Road, Northwood, Middlesex, HA6 1BP Classification: Garage Services **Status: Active** Positional Accuracy: Manually positioned to the address or location	A13NW (W)	276	-	509717 190746
47	**Contemporary Trade Directory Entries** Name: Northwood Cars Location: 136, Pinner Road, Northwood, Middlesex, HA6 1BP Classification: Car Dealers **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NW (W)	276	-	509717 190746
47	**Contemporary Trade Directory Entries** Name: Zeppelin Trading Co Ltd Location: 2-4, High Street, Northwood, Middlesex, HA6 1BN Classification: Commercial Vehicle Servicing, Repairs, Parts & Accessories **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	307	-	509704 190797
47	**Contemporary Trade Directory Entries** Name: Zeppelin Trading Co Ltd Location: 2-4, High Street, Northwood, Middlesex, HA6 1BN Classification: Commercial Vehicle Servicing, Repairs, Parts & Accessories **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	307	-	509704 190797
48	**Contemporary Trade Directory Entries** Name: Autocentre Northwood Ltd Location: Pinner Road, Northwood, Middlesex, HA6 1DD Classification: Car Dealers - Used **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NW (W)	278	-	509703 190712
49	**Contemporary Trade Directory Entries** Name: Northwood Light Engineering Co Ltd Location: A,128 Hallowell Rd, Northwood, Middlesex, HA6 1DU Classification: Engineers - General **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A13NW (NW)	305	-	509722 190836
49	**Contemporary Trade Directory Entries** Name: Northwood Launderette Location: 12, High Street, Northwood, Middlesex, HA6 1BN Classification: Laundries & Launderettes **Status: Active** Positional Accuracy: Manually positioned to the address or location	A13NW (NW)	305	-	509719 190830
49	**Contemporary Trade Directory Entries** Name: Aquaswim Services Ltd Location: 8-10, High Street, Northwood, Middlesex, HA6 1BN Classification: Swimming Pool Contractors, Repairers & Service **Status: Active** Positional Accuracy: Manually positioned to the address or location	A13NW (NW)	306	-	509716 190825

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
49	**Contemporary Trade Directory Entries** Name: Oasis Pool Co Ltd Location: 8-10, High Street, Northwood, Middlesex, HA6 1BN Classification: Swimming Pool Contractors, Repairers & Service **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	306	-	509716 190825
49	**Contemporary Trade Directory Entries** Name: Gables Location: 18a, High Street, Northwood, Middlesex, HA6 1BN Classification: Textile Manufacturing **Status: Active** Positional Accuracy: Manually positioned to the address or location	A13NW (NW)	306	-	509727 190848
49	**Contemporary Trade Directory Entries** Name: Anna'S Touch Of Beauty Location: 20, High Street, Northwood, Middlesex, HA6 1BN Classification: Electrolysis **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	307	-	509729 190856
50	**Contemporary Trade Directory Entries** Name: Northwood Commercials Location: Pinner Road, Northwood, Middlesex, HA6 1DD Classification: Commercial Vehicle Dealers **Status: Inactive** Positional Accuracy: Automatically positioned in the proximity of the address	A13SE (SE)	308	-	510304 190461
50	**Contemporary Trade Directory Entries** Name: Northwood Hills Service Station Location: 105-107, Pinner Road, Northwood, Middlesex, HA6 1DD Classification: Mot Testing Centres **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	308	-	510304 190461
50	**Contemporary Trade Directory Entries** Name: Northwood Hills Tyre & Battery Ltd Location: 105-107, Pinner Road, Northwood, Middlesex, HA6 1DD Classification: Tyre Dealers **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	308	-	510304 190461
51	**Contemporary Trade Directory Entries** Name: The Board Of Ironing Location: 28, High Street, Northwood, Middlesex, HA6 1BN Classification: Ironing & Home Laundry Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	310	-	509737 190880
51	**Contemporary Trade Directory Entries** Name: The Board Of Ironing Location: 28, High Street, Northwood, Middlesex, HA6 1BN Classification: Ironing & Home Laundry Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	310	-	509737 190880
51	**Contemporary Trade Directory Entries** Name: Purrfect Fires Location: 32, High Street, Northwood, Middlesex, HA6 1BN Classification: Fireplaces & Mantelpieces **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	312	-	509742 190893
51	**Contemporary Trade Directory Entries** Name: Tennis Tech Ltd Location: 36, High Street, Northwood, Middlesex, HA6 1BN Classification: Sports Equipment Manufacturers & Distributors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	314	-	509749 190907
51	**Contemporary Trade Directory Entries** Name: British Bottled Water Cooler Association Location: 40a, High Street, Northwood, Middlesex, HA6 1BN Classification: Water Coolers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	316	-	509756 190920
51	**Contemporary Trade Directory Entries** Name: British Bottled Water Cooler Association Location: A, 40, High Street, Northwood, Middlesex, HA6 1BN Classification: Water Coolers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	316	-	509756 190920

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
52	**Contemporary Trade Directory Entries** Name: Kenton Car Centre Location: 36, Oakdale Avenue, Northwood, Middlesex, HA6 1PG Classification: Car Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	317	-	510283 190413
52	**Contemporary Trade Directory Entries** Name: Nik Hardware Ltd Location: 25, The Broadway, Joel Street, Northwood, Middlesex, HA6 1NU Classification: Hardware **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	319	-	510282 190408
52	**Contemporary Trade Directory Entries** Name: Admarc Printing Services Location: 4, Ferndown, Northwood, Middlesex, HA6 1PQ Classification: Printers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	338	-	510272 190368
52	**Contemporary Trade Directory Entries** Name: Gospel Studios Location: 33, The Broadway, Joel Street, Northwood, Middlesex, HA6 1NZ Classification: Stained Glass Designers & Producers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	338	-	510272 190368
53	**Contemporary Trade Directory Entries** Name: Gleaming Marvellous Location: 11, Emmanuel Road, Northwood, Middlesex, HA6 1TB Classification: Cleaning Services - Domestic **Status: Active** Positional Accuracy: Automatically positioned to the address	A18SW (N)	343	-	509995 191072
53	**Contemporary Trade Directory Entries** Name: Gleaming Marvellous Cleaning Services Location: 11, Emmanuel Road, Northwood, Middlesex, HA6 1TB Classification: Cleaning Services - Domestic **Status: Active** Positional Accuracy: Automatically positioned to the address	A18SW (N)	343	-	509995 191072
54	**Contemporary Trade Directory Entries** Name: Pneumatic Services (London) Ltd Location: 64, High Street, Northwood, Middlesex, HA6 1BL Classification: Pneumatic Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	346	-	509790 190998
54	**Contemporary Trade Directory Entries** Name: P S London Ltd Location: 64, High Street, Northwood, Middlesex, HA6 1BL Classification: Pneumatic Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	346	-	509790 190998
55	**Contemporary Trade Directory Entries** Name: Manor Office Cleaning Co Location: 8, Manor Cottages, Northwood, Middlesex, HA6 1HS Classification: Commercial Cleaning Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A12SE (W)	350	-	509619 190640
56	**Contemporary Trade Directory Entries** Name: Waukesha Bearings Location: 53-55, The Broadway, Joel Street, Northwood, Middlesex, HA6 1NZ Classification: Bearing Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NE (SE)	382	-	510267 190305
57	**Contemporary Trade Directory Entries** Name: Printrun Location: 80, Joel Street, Northwood, Middlesex, HA6 1LL Classification: Printers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NE (SE)	400	-	510210 190248
58	**Contemporary Trade Directory Entries** Name: The Service Centre Location: 74, Joel Street, Northwood, Middlesex, HA6 1LL Classification: Washing Machines - Servicing & Repairs **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NE (S)	457	-	510209 190185

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
58	**Contemporary Trade Directory Entries** Name: Dana Glacier Vandervell Location: Argyle Ho,Joel St, Northwood, Middlesex, HA6 1NW Classification: Engineers - General **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A8NE (S)	462	-	510208 190179
58	**Contemporary Trade Directory Entries** Name: Crease Busters Location: 82, Joel Street, Northwood, Middlesex, HA6 1LL Classification: Dry Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NE (S)	477	-	510207 190163
58	**Contemporary Trade Directory Entries** Name: Dana Glacier Vandervell Ltd Location: Argyle Ho,Joel St, Northwood, Middlesex, HA6 1LN Classification: Bearing Manufacturers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A8NE (S)	492	-	510204 190146
58	**Contemporary Trade Directory Entries** Name: Tolcarne Service Station Location: Joel St, Pinner, Middlesex, HA5 2PA Classification: Garage Services **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A8NE (S)	527	-	510225 190116
59	**Contemporary Trade Directory Entries** Name: Parfour Service Station Location: 4-6, Rickmansworth Road, Northwood, Middlesex, HA6 1HA Classification: Petrol Filling Stations **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NE (W)	461	-	509541 190805
60	**Contemporary Trade Directory Entries** Name: P M Cleaning Location: 79, Potter Street, Northwood, Middlesex, HA6 1QH Classification: Carpet, Curtain & Upholstery Cleaners **Status: Active** Positional Accuracy: Automatically positioned to the address	A14NW (E)	489	-	510544 190773
61	**Contemporary Trade Directory Entries** Name: Wrapping Cars Location: 11, Ryefield Crescent, Northwood, Middlesex, HA6 1LT Classification: Window Tinting **Status: Active** Positional Accuracy: Automatically positioned to the address	A8NE (SE)	490	-	510309 190202
62	**Contemporary Trade Directory Entries** Name: Dean Office Ltd Location: 49, Highland Road, Northwood, Middlesex, HA6 1JR Classification: Office Furniture & Equipment **Status: Active** Positional Accuracy: Automatically positioned to the address	A8NW (S)	495	-	509995 190113
63	**Contemporary Trade Directory Entries** Name: C T Taylor & Co Location: 4, Colchester Road, Northwood, Middlesex, HA6 1LX Classification: Electrical Goods Sales, Manufacturers & Wholesalers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NE (S)	496	-	510163 190128
64	**Contemporary Trade Directory Entries** Name: Junkbusters Ltd Location: 3, Townsend Way, Northwood, Middlesex, HA6 1TG Classification: Waste Disposal Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18SW (N)	513	-	509916 191234
65	**Contemporary Trade Directory Entries** Name: Set Two Interiors Uk Location: 5, Hillside Gardens, Northwood, Middlesex, HA6 1RN Classification: Sawmills & Wood Shavings **Status: Active** Positional Accuracy: Automatically positioned to the address	A14NW (NE)	524	-	510506 190963
66	**Contemporary Trade Directory Entries** Name: System Seal Location: Unit 18, Ryefield Crescent, Northwood, Middlesex, HA6 1LT Classification: Stained Glass Designers & Producers **Status: Inactive** Positional Accuracy: Automatically positioned in the proximity of the address	A8NE (SE)	530	-	510349 190182

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
66	**Contemporary Trade Directory Entries** Name: Ferndown Motor Service Location: 14-16, Ryefield Crescent, Northwood, Middlesex, HA6 1LT Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	540	-	510359 190177
66	**Contemporary Trade Directory Entries** Name: T C Engineering Location: 22-28, Ryefield Crescent, Northwood, Middlesex, HA6 1LT Classification: Sheet Metal Work **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	540	-	510359 190177
66	**Contemporary Trade Directory Entries** Name: Harrow Optical Services Ltd Location: 22, Ryefield Crescent, Northwood, Middlesex, HA6 1LT Classification: Optical Goods - Manufacturers **Status: Active** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	540	-	510359 190177
66	**Contemporary Trade Directory Entries** Name: Lockwood Audio Location: 24-28, Ryefield Crescent, Northwood, Middlesex, HA6 1LT Classification: Electrical goods - servicing & repairs **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A9NW (SE)	540	-	510359 190177
67	**Contemporary Trade Directory Entries** Name: Tesco Petrol Filling Station Location: Joel St, Pinner, Middlesex, HA5 2PA Classification: Petrol Filling Stations **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A8NE (S)	542	-	510244 190108
68	**Contemporary Trade Directory Entries** Name: Sunflower Wheelchair Supplies Location: 27, Hillside Road, Northwood, Middlesex, HA6 1PY Classification: Disability Equipment - Manufacturers & Suppliers **Status: Active** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	593	-	510376 191199
69	**Contemporary Trade Directory Entries** Name: Qws (Uk) Ltd Location: 67, Stanley Road, Northwood, Middlesex, HA6 1RJ Classification: Water Softeners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NW (E)	624	-	510644 190911
70	**Contemporary Trade Directory Entries** Name: Diamond Shine Oven Cleaning Co Location: 24, Alandale Drive, Pinner, Middlesex, HA5 3UY Classification: Oven cleaning **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SE (E)	651	-	510710 190613
71	**Contemporary Trade Directory Entries** Name: Sentryguard Ltd Location: 76, Lyndhurst Avenue, Pinner, Middlesex, HA5 3XA Classification: Damp & Dry Rot Control **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SE (E)	696	-	510742 190530
72	**Contemporary Trade Directory Entries** Name: D S & P Services Ltd Location: 120, Green Lane, Northwood, Middlesex, HA6 1AW Classification: Wrought Ironwork **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18NW (NW)	727	-	509698 191387
73	**Contemporary Trade Directory Entries** Name: Grant & Stone Ltd Location: Joel Street, PINNER, Middlesex, HA5 2PB Classification: Builders' Merchants **Status: Active** Positional Accuracy: Automatically positioned to the address	A8SE (S)	789	-	510249 189848
74	**Contemporary Trade Directory Entries** Name: Lenrich Labs Location: 7, Shefton Rise, Northwood, Middlesex, HA6 3RE Classification: Hygiene & Cleansing Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	808	-	510442 191413

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
75	**Contemporary Trade Directory Entries** Name: Northwood Auto Services Location: Whittles Yard Rear of 12-18, Hallowell Road, Northwood, Middlesex, HA6 1DW Classification: Mot Testing Centres **Status: Active** Positional Accuracy: Automatically positioned to the address	A17SW (NW)	880	-	509336 191298
76	**Contemporary Trade Directory Entries** Name: Diamond Home Support Location: 176, Joel Street, Pinner, Middlesex, HA5 2PE Classification: Cleaning Services - Domestic **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SE (S)	937	-	510221 189689
77	**Contemporary Trade Directory Entries** Name: Amyoil Location: 30, Greenway, PINNER, Middlesex, HA5 3SP Classification: Oil Companies **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SE (E)	950	-	510985 190459
78	**Contemporary Trade Directory Entries** Name: The Nuttery Location: High Barn, Pinner Hill Road, Pinner, Middlesex, HA5 3YQ Classification: Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (E)	958	-	511018 190756
78	**Contemporary Trade Directory Entries** Name: Wdp Communications Ltd Location: The Folly, Pinner Hill Farm, Pinner Hill Road, Pinner, Middlesex, HA5 3YQ Classification: Printers **Status: Active** Positional Accuracy: Automatically positioned to the address	A15NW (E)	973	-	511032 190769
79	**Contemporary Trade Directory Entries** Name: Steamers Location: 74, Green Lane, Northwood, Middlesex, HA6 2XS Classification: Ironing & Home Laundry Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17NW (NW)	983	-	509326 191437
79	**Contemporary Trade Directory Entries** Name: Steamers Location: 74, Green Lane, Northwood, Middlesex, HA6 2XS Classification: Ironing & Home Laundry Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17NW (NW)	983	-	509326 191437
79	**Contemporary Trade Directory Entries** Name: Pressed For Time Location: 74, Green Lane, Northwood, Middlesex, HA6 2XS Classification: Ironing & Home Laundry Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A17NW (NW)	983	-	509326 191437
79	**Contemporary Trade Directory Entries** Name: Northwood Coachworks Ltd Location: Station Approach, Northwood, Middlesex, HA6 2XN Classification: Car Body Repairs **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17NW (NW)	986	-	509290 191405
79	**Contemporary Trade Directory Entries** Name: Howard Motor Co Location: 14, Station Approach, Northwood, Middlesex, HA6 2XN Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17NW (NW)	990	-	509276 191396
79	**Contemporary Trade Directory Entries** Name: Taylor'S Autos Location: 14, Station Approach, Northwood, Middlesex, HA6 2XN Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17NW (NW)	990	-	509276 191396

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
80	**Fuel Station Entries** Name: Northwood Commercials Location: Pinner Road, NORTHWOOD, Middlesex, HA6 1DD Brand: Obsolete Premises Type: Not Applicable **Status: Obsolete** Positional Accuracy: Approximate location provided by supplier	A13NW (W)	225	-	509758 190710
81	**Fuel Station Entries** Name: Par Four Filling Station Location: 4-6, Rickmansworth Road, NORTHWOOD, Middlesex, HA6 2QQ Brand: Total Premises Type: Not Applicable **Status: Obsolete** Positional Accuracy: Manually positioned to the address or location	A12NE (W)	462	-	509540 190804
82	**Fuel Station Entries** Name: Northwood Express Location: Joel Street, Pinner, Middlesex, HA5 2PA Brand: ESSO Premises Type: Petrol Station **Status: Open** Positional Accuracy: Manually positioned to the address or location	A8NE (S)	542	-	510244 190108

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
83	**Areas of Adopted Green Belt** Authority: London Borough of Hillingdon Plan Name: Hillingdon Unitary Development Plan **Status: Adopted** Plan Date: 30th September 1998	A13SW (SW)	142	6	509908 190503
84	**Areas of Adopted Green Belt** Authority: London Borough of Hillingdon Plan Name: Hillingdon Unitary Development Plan **Status: Adopted** Plan Date: 30th September 1998	A8NE (S)	539	6	510232 190106
85	**Areas of Adopted Green Belt** Authority: London Borough of Hillingdon Plan Name: Hillingdon Unitary Development Plan **Status: Adopted** Plan Date: 30th September 1998	A18SE (NE)	588	6	510288 191248
86	**Areas of Adopted Green Belt** Authority: London Borough of Harrow Plan Name: Proposal Map **Status: Adopted** Plan Date: 4th July 2013	A19SE (NE)	749	7	510739 191006
87	**National Nature Reserves** Name: Ruislip Woods Multiple Areas: Y Total Area (m2): 2954782 Source: Natural England Reference: 1006764 Designation Date: Not Supplied	A7SE (SW)	957	9	509390 189871
88	**Nitrate Vulnerable Zones** Name: Not Supplied Description: Surface Water Source: Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	A13SW (NE)	0	10	510016 190665
89	**Sites of Special Scientific Interest** Name: Ruislip Woods Multiple Areas: Y Total Area (m2): 3074478 Source: Natural England Reference: 1003633 Designation Details: Local Wildlife Trust Reserve Designation Date: 23rd April 1990 Date Type: Notified Designation Details: National Nature Reserve Designation Date: 23rd April 1990 Date Type: Notified Designation Details: Nature Conservation Review Designation Date: 23rd April 1990 Date Type: Notified Designation Details: Local Nature Reserve Designation Date: 23rd April 1990 Date Type: Notified	A7SE (SW)	957	9	509390 189871

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
Watford Borough Council - Environmental Health Department	April 2014	Annual Rolling Update
Three Rivers District Council - Environmental Health Department	January 2015	Annual Rolling Update
London Borough of Hillingdon - Environmental Protection Unit	March 2015	Annual Rolling Update
London Borough of Ealing - Environmental Health and Trading Standards Division	October 2013	Annual Rolling Update
London Borough of Harrow - Environmental Health Services	October 2014	Annual Rolling Update
South Buckinghamshire District Council - Environmental Health Department	October 2014	Annual Rolling Update
Hertsmere Borough Council - Environmental Health Department	September 2014	Annual Rolling Update
Discharge Consents		
Environment Agency - Thames Region	April 2015	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - Thames Region	March 2013	As notified
Integrated Pollution Controls		
Environment Agency - Thames Region	October 2008	Not Applicable
Integrated Pollution Prevention And Control		
Environment Agency - Thames Region	April 2015	Quarterly
Local Authority Integrated Pollution Prevention And Control		
London Borough of Hillingdon - Environmental Health Department	August 2014	Annual Rolling Update
London Borough of Harrow - Environmental Health Services	December 2014	Annual Rolling Update
Three Rivers District Council - Environmental Health Department	February 2015	Annual Rolling Update
Hertsmere Borough Council - Environmental Health Department	January 2015	Annual Rolling Update
London Borough of Ealing - Environmental Health and Trading Standards Division	July 2015	Annual Rolling Update
Watford Borough Council - Environmental Health Department	June 2014	Annual Rolling Update
South Buckinghamshire District Council - Environmental Health Department	September 2014	Annual Rolling Update
Local Authority Pollution Prevention and Controls		
London Borough of Hillingdon - Environmental Health Department	August 2014	Annual Rolling Update
London Borough of Harrow - Environmental Health Services	December 2014	Annual Rolling Update
Three Rivers District Council - Environmental Health Department	February 2015	Annual Rolling Update
Hertsmere Borough Council - Environmental Health Department	January 2015	Annual Rolling Update
London Borough of Ealing - Environmental Health and Trading Standards Division	July 2015	Annual Rolling Update
Watford Borough Council - Environmental Health Department	June 2014	Annual Rolling Update
South Buckinghamshire District Council - Environmental Health Department	September 2014	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements		
London Borough of Hillingdon - Environmental Health Department	August 2014	Annual Rolling Update
London Borough of Harrow - Environmental Health Services	December 2014	Annual Rolling Update
Three Rivers District Council - Environmental Health Department	February 2015	Annual Rolling Update
Hertsmere Borough Council - Environmental Health Department	January 2015	Annual Rolling Update
London Borough of Ealing - Environmental Health and Trading Standards Division	July 2015	Annual Rolling Update
Watford Borough Council - Environmental Health Department	June 2014	Annual Rolling Update
South Buckinghamshire District Council - Environmental Health Department	September 2014	Annual Rolling Update
Nearest Surface Water Feature		
Ordnance Survey	July 2012	Quarterly
Pollution Incidents to Controlled Waters		
Environment Agency - Thames Region	September 1999	Not Applicable
Prosecutions Relating to Authorised Processes		
Environment Agency - Thames Region	March 2013	As notified
Prosecutions Relating to Controlled Waters		
Environment Agency - Thames Region	March 2013	As notified
River Quality		
Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points		
Environment Agency - Head Office	July 2012	Annually

Agency & Hydrological	Version	Update Cycle
River Quality Chemistry Sampling Points Environment Agency - Head Office	July 2012	Annually
Substantiated Pollution Incident Register Environment Agency - Thames Region - North East Area	April 2015	Quarterly
Water Abstractions Environment Agency - Thames Region	April 2015	Quarterly
Water Industry Act Referrals Environment Agency - Thames Region	April 2015	Quarterly
Groundwater Vulnerability Environment Agency - Head Office	April 2015	Not Applicable
Drift Deposits Environment Agency - Head Office	January 1999	Not Applicable
Bedrock Aquifer Designations British Geological Survey - National Geoscience Information Service	October 2012	As notified
Superficial Aquifer Designations British Geological Survey - National Geoscience Information Service	January 2015	As notified
Source Protection Zones Environment Agency - Head Office	April 2015	Quarterly
Extreme Flooding from Rivers or Sea without Defences Environment Agency - Head Office	May 2015	Quarterly
Flooding from Rivers or Sea without Defences Environment Agency - Head Office	May 2015	Quarterly
Areas Benefiting from Flood Defences Environment Agency - Head Office	May 2015	Quarterly
Flood Water Storage Areas Environment Agency - Head Office	May 2015	Quarterly
Flood Defences Environment Agency - Head Office	May 2015	Quarterly
Detailed River Network Lines Environment Agency - Head Office	March 2012	Annually
Detailed River Network Offline Drainage Environment Agency - Head Office	March 2012	Annually
Surface Water 1 in 30 year Flood Extent Environment Agency - Head Office	October 2013	As notified
Surface Water 1 in 100 year Flood Extent Environment Agency - Head Office	October 2013	As notified
Surface Water 1 in 1000 year Flood Extent Environment Agency - Head Office	October 2013	As notified
Surface Water Suitability Environment Agency - Head Office	October 2013	As notified

Data Currency

Waste	Version	Update Cycle
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites		
Environment Agency - Thames Region - North East Area	May 2015	Quarterly
Integrated Pollution Control Registered Waste Sites		
Environment Agency - Thames Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency - Thames Region - North East Area	August 2014	Quarterly
Licensed Waste Management Facilities (Locations)		
Environment Agency - Thames Region - North East Area	April 2015	Quarterly
Local Authority Landfill Coverage		
Buckinghamshire County Council	May 2000	Not Applicable
Hertfordshire County Council - Spatial Planning and Economy Unit	May 2000	Not Applicable
Hertsmere Borough Council - Environmental Health Department	May 2000	Not Applicable
London Borough of Ealing	May 2000	Not Applicable
London Borough of Harrow - Environmental Health Services	May 2000	Not Applicable
London Borough of Hillingdon - Environmental Health Department	May 2000	Not Applicable
South Buckinghamshire District Council	May 2000	Not Applicable
Three Rivers District Council - Environmental Health Department	May 2000	Not Applicable
Watford Borough Council - Environmental Health Department	May 2000	Not Applicable
Local Authority Recorded Landfill Sites		
South Buckinghamshire District Council	August 2006	Not Applicable
Buckinghamshire County Council	May 2000	Not Applicable
Hertfordshire County Council - Spatial Planning and Economy Unit	May 2000	Not Applicable
Hertsmere Borough Council - Environmental Health Department	May 2000	Not Applicable
London Borough of Ealing	May 2000	Not Applicable
London Borough of Harrow - Environmental Health Services	May 2000	Not Applicable
London Borough of Hillingdon - Environmental Health Department	May 2000	Not Applicable
Three Rivers District Council - Environmental Health Department	May 2000	Not Applicable
Watford Borough Council - Environmental Health Department	May 2000	Not Applicable
Registered Landfill Sites		
Environment Agency - Thames Region - North East Area	March 2003	Not Applicable
Registered Waste Transfer Sites		
Environment Agency - Thames Region - North East Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites		
Environment Agency - Thames Region - North East Area	June 2015	Not Applicable

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	June 2015	Bi-Annually
Explosive Sites		
Health and Safety Executive	June 2015	Bi-Annually
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements		
London Borough of Harrow	April 2015	Annual Rolling Update
London Borough of Ealing	December 2014	Annual Rolling Update
Three Rivers District Council	December 2014	Annual Rolling Update
Hertsmere Borough Council - Planning Department	February 2015	Annual Rolling Update
London Borough of Hillingdon	November 2014	Annual Rolling Update
South Buckinghamshire District Council - Development Control Department	November 2014	Annual Rolling Update
Hertfordshire County Council - Spatial Planning and Economy Unit	October 2014	Annual Rolling Update
Buckinghamshire County Council	September 2013	Annual Rolling Update
Watford Borough Council - Development Control	September 2014	Annual Rolling Update
Planning Hazardous Substance Consents		
London Borough of Harrow	April 2015	Annual Rolling Update
London Borough of Ealing	December 2014	Annual Rolling Update
Three Rivers District Council	December 2014	Annual Rolling Update
Hertsmere Borough Council - Planning Department	February 2015	Annual Rolling Update
London Borough of Hillingdon	November 2014	Annual Rolling Update
South Buckinghamshire District Council - Development Control Department	November 2014	Annual Rolling Update
Hertfordshire County Council - Spatial Planning and Economy Unit	October 2014	Annual Rolling Update
Buckinghamshire County Council	September 2013	Annual Rolling Update
Watford Borough Council - Development Control	September 2014	Annual Rolling Update

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	January 2009	Not Applicable
BGS Estimated Soil Chemistry British Geological Survey - National Geoscience Information Service	January 2010	Annually
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	May 2015	Bi-Annually
BGS Urban Soil Chemistry British Geological Survey - National Geoscience Information Service	June 2011	Annually
BGS Urban Soil Chemistry Averages British Geological Survey - National Geoscience Information Service	June 2011	Annually
Brine Compensation Area Cheshire Brine Subsidence Compensation Board	August 2011	Not Applicable
Coal Mining Affected Areas The Coal Authority - Mining Report Service	March 2014	As notified
Mining Instability Ove Arup & Partners	October 2000	Not Applicable
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	July 2014	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service	July 2011	As notified
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	July 2011	As notified
Industrial Land Use	**Version**	**Update Cycle**
Contemporary Trade Directory Entries Thomson Directories	May 2015	Quarterly
Fuel Station Entries Catalist Ltd - Experian	August 2015	Quarterly

Sensitive Land Use	Version	Update Cycle
Areas of Adopted Green Belt		
Hertsmere Borough Council - Planning Department	May 2015	As notified
London Borough of Ealing	May 2015	As notified
London Borough of Harrow	May 2015	As notified
London Borough of Hillingdon	May 2015	As notified
South Buckinghamshire District Council - Development Control Department	May 2015	As notified
Three Rivers District Council	May 2015	As notified
Watford Borough Council	May 2015	As notified
Areas of Unadopted Green Belt		
Hertsmere Borough Council - Planning Department	May 2015	As notified
London Borough of Ealing	May 2015	As notified
London Borough of Harrow	May 2015	As notified
London Borough of Hillingdon	May 2015	As notified
South Buckinghamshire District Council - Development Control Department	May 2015	As notified
Three Rivers District Council	May 2015	As notified
Watford Borough Council	May 2015	As notified
Areas of Outstanding Natural Beauty		
Natural England	February 2015	Bi-Annually
Environmentally Sensitive Areas		
Natural England	August 2014	Annually
Forest Parks		
Forestry Commission	April 1997	Not Applicable
Local Nature Reserves		
Natural England	April 2015	Bi-Annually
Marine Nature Reserves		
Natural England	July 2013	Bi-Annually
National Nature Reserves		
Natural England	March 2015	Bi-Annually
National Parks		
Natural England	August 2015	Bi-Annually
Nitrate Sensitive Areas		
Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	February 2012	Not Applicable
Nitrate Vulnerable Zones		
Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	July 2014	Annually
Ramsar Sites		
Natural England	March 2014	Bi-Annually
Sites of Special Scientific Interest		
Natural England	April 2015	Bi-Annually
Special Areas of Conservation		
Natural England	March 2014	Bi-Annually
Special Protection Areas		
Natural England	April 2015	Bi-Annually

Data Suppliers

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	
Centre for Ecology and Hydrology	
Natural Resources Wales	
Scottish Natural Heritage	
Natural England	
Public Health England	
Ove Arup	
Peter Brett Associates	

Useful Contacts

Contact	Name and Address	Contact Details
2	**British Geological Survey - Enquiry Service** British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
3	**London Borough of Hillingdon - Environmental Health Department** Civic Centre, High Street, Uxbridge, Middlesex, UB8 1UW	Telephone: 01895 250111 Fax: 01895 277443 Website: www.hillingdon.gov.uk
4	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 08708 506 506 Email: enquiries@environment-agency.gov.uk
5	**Peter Brett Associates** Caversham Bridge House, Waterman Place, Reading, Berkshire, RG1 8DN	Telephone: 0118 950 0761 Fax: 0118 959 7498 Email: reading@pba.co.uk Website: www.pba.co.uk
6	**London Borough of Hillingdon** Civic Centre, High Street, Uxbridge, Middlesex, UB8 1UW	Telephone: 01895 250111 Fax: 01895 250830 Website: www.hillingdon.gov.uk
7	**London Borough of Harrow** Civic Centre, Station Road, Harrow, Middlesex, HA1 2XF	Telephone: 020 8863 5611 Fax: 020 8863 8267 Website: www.harrow.gov.uk
8	**Three Rivers District Council** Three Rivers House, Northway, Rickmansworth, Hertfordshire, WD3 1RL	Telephone: 01923 776611 Fax: 01923 896119 Website: www.threerivers.gov.uk
9	**Natural England** Suite D, Unex House, Bourges Boulevard, Peterborough, Cambridgeshire, PE1 1NG	Telephone: 0845 600 3078 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
10	**Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)** Government Buildings, Otley Road, Lawnswood, Leeds, West Yorkshire, LS16 5QT	Telephone: 0113 2613333 Fax: 0113 230 0879
11	**Environment Agency - Head Office** Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol, Avon, BS32 4UD	Telephone: 01454 624400 Fax: 01454 624409
12	**London Borough of Harrow - Environmental Health Services** P O Box 18, Civic Centre, Harrow, Middlesex, HA1 2UT	Telephone: 020 8863 5611 Fax: 020 8863 8267 Website: www.harrow.gov.uk
-	**Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

Please note that the Environment Agency / Natural Resources Wales / SEPA have a charging policy in place for enquiries.

Geology 1:50,000 Maps Legends

Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	WGR	Worked Ground (Undivided)	Void	Holocene - Holocene

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Flandrian - Flandrian
	STGR	Stanmore Gravel Formation	Sand and Gravel	Pleistocene - Pleistocene
	SGAO	Sand and Gravel of uncertain age and Origin	Sand and Gravel	Quaternary - Quaternary

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	LC	London Clay Formation	Clay, Silt and Sand	Eocene - Eocene
	LMBE	Lambeth Group	Clay, Silt and Sand	Paleocene - Paleocene

pba peterbrett

Geology 1:50,000 Maps

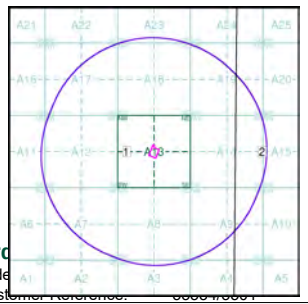
This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:50,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around the site. This mapping may be more up to date than previously published paper maps.

The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page. Not all layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:50,000 Maps Coverage

Map ID:	**2**	**Map ID:**	**1**
Map Sheet No:	**256**	**Map Sheet No:**	**255**
Map Name:	**North London**	**Map Name:**	**Beaconsfield**
Map Date:	**2006**	**Map Date:**	**2005**
Bedrock Geology:	**Available**	**Bedrock Geology:**	**Available**
Superficial Geology:	**Available**	**Superficial Geology:**	**Available**
Artificial Geology:	**Available**	**Artificial Geology:**	**Available**
Faults:	**Not Supplied**	**Faults:**	**Not Supplied**
Landslip:	**Available**	**Landslip:**	**Available**
Rock Segments:	**Not Supplied**	**Rock Segments:**	**Not Supplied**

Geology 1:50,000 Maps - Slice A



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Customer Reference:

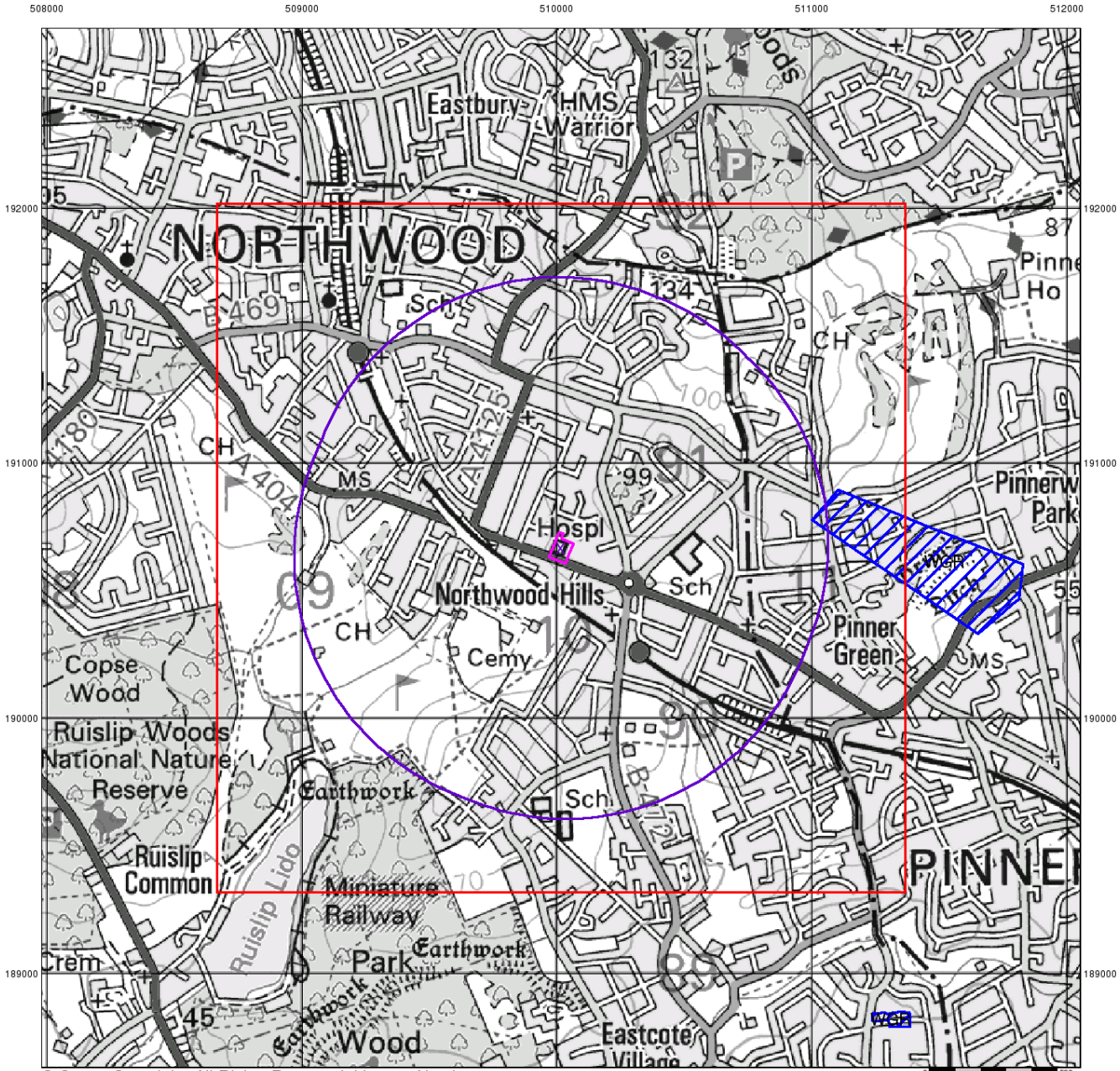
National Grid Reference:	510020, 190670
Slice:	A
Site Area (Ha):	0.62
Search Buffer (m):	1000

Site Details:

Northwood & Pinner Hospital, Pinner Road, Northwood, HA6 1DE

Landmark Information Group

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Artificial Ground and Landslip

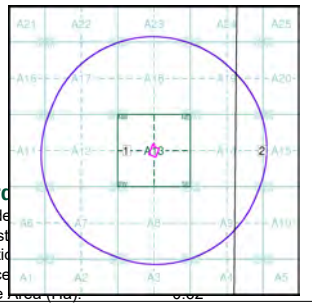
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions and unstable ground.

Artificial ground includes:

- Made ground - man-made deposits such as embankments and spoil heaps on the natural ground surface.
- Worked ground - areas where the ground has been cut away such as quarries and road cuttings.
- Infilled ground - areas where the ground has been cut away then wholly or partially backfilled.
- Landscaped ground - areas where the surface has been reshaped.
- Disturbed ground - areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground separately.

Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes foundered strata, where the ground has collapsed due to subsidence.

Artificial Ground and Landslip Map - Slice A



Search Buffer (m): 1000

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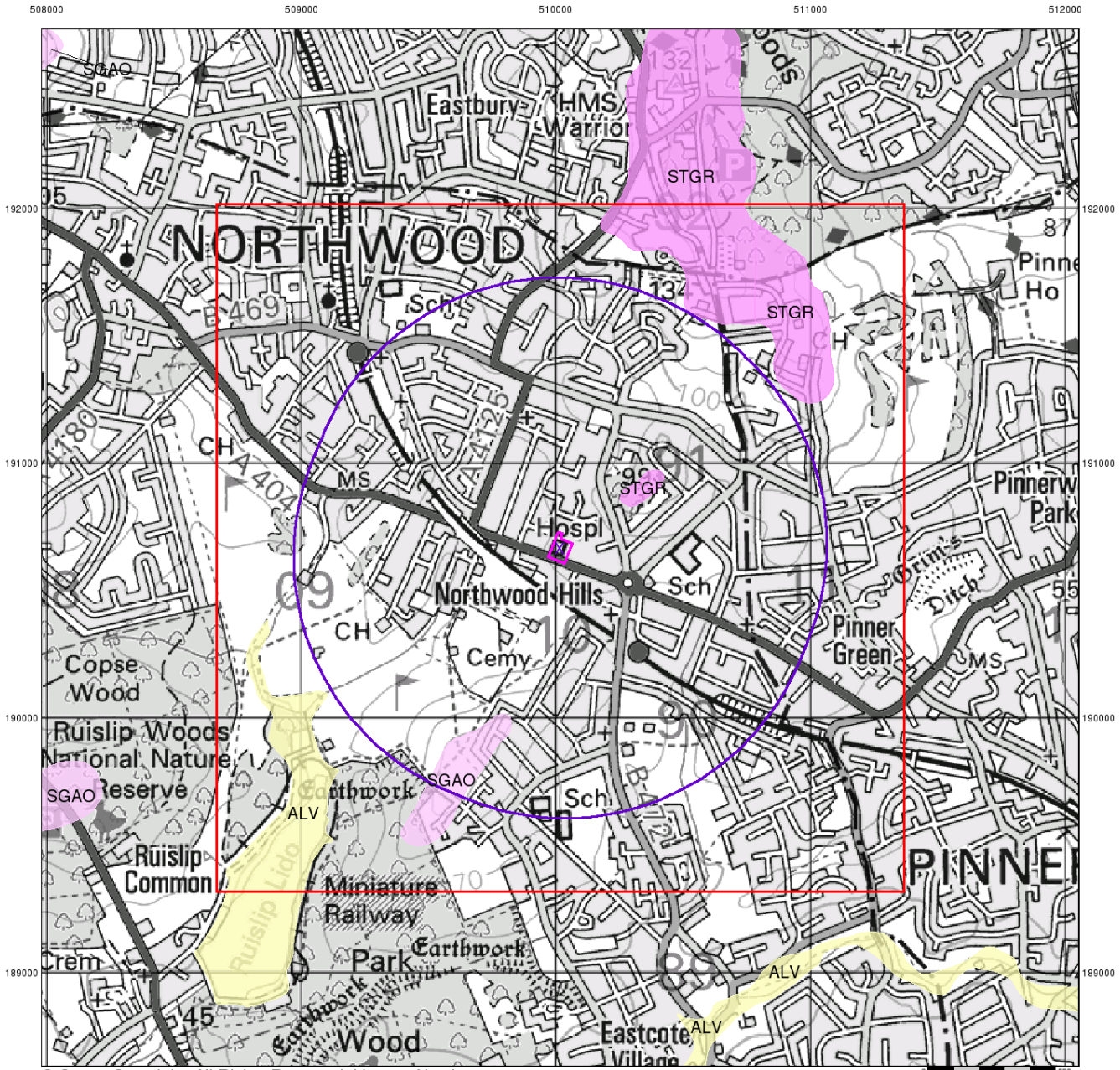

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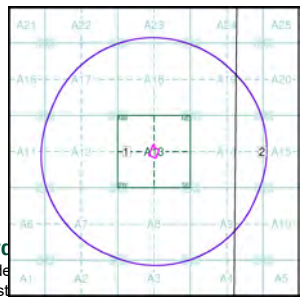
Superficial Geology

Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, the Quaternary, which extends back about 1.8 million years from the present.

They rest on older deposits or rocks referred to as Bedrock. This dataset contains Superficial deposits that are of natural origin and 'in place'. Other superficial strata may be held in the Mass Movement dataset where they have been moved, or in the Artificial Ground dataset where they are of man-made origin.

Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

Superficial Geology Map - Slice A



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National Grid Reference:	510020, 190670
Slice:	A
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Search Buffer (m):	1000

Site Details:

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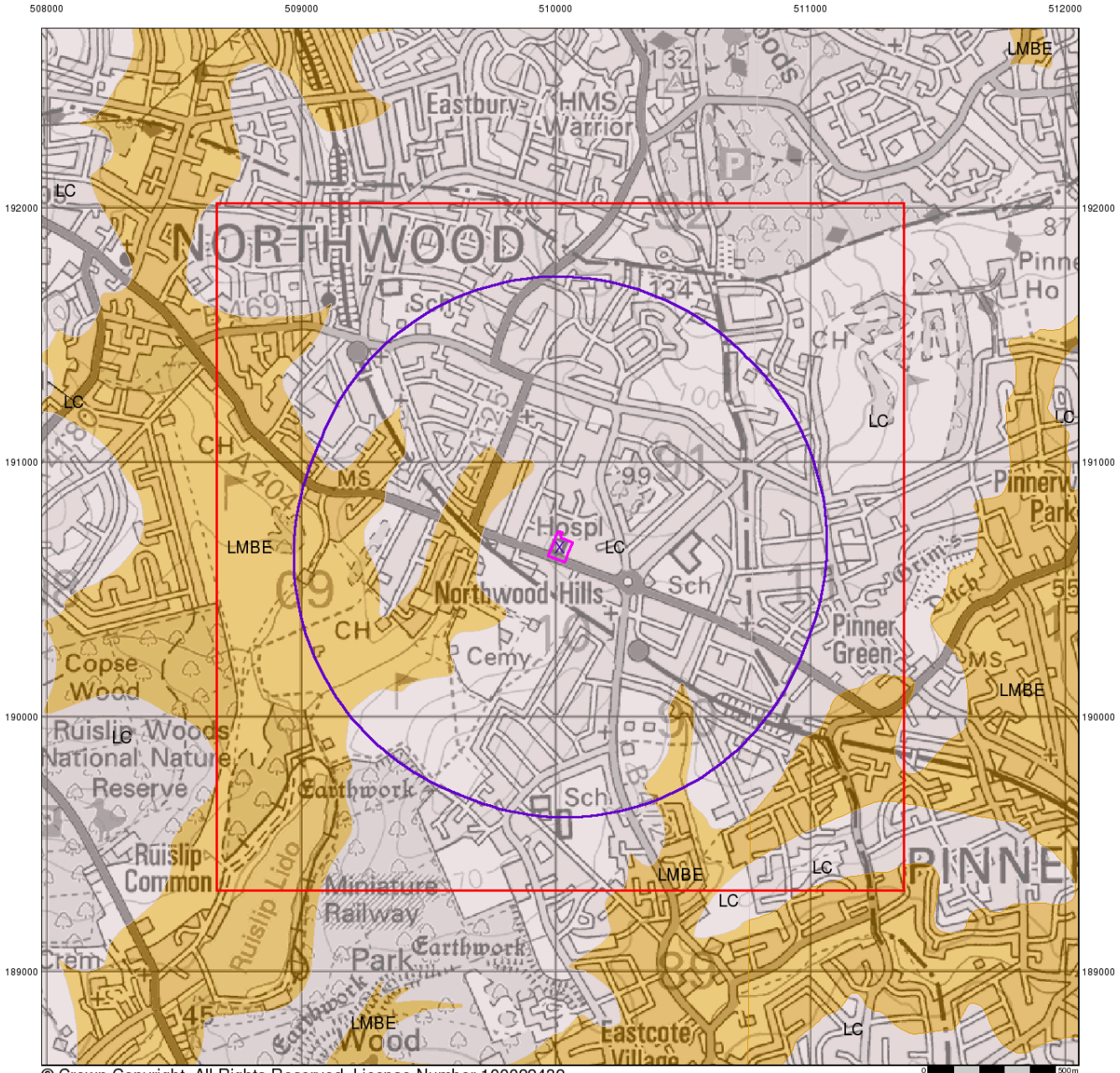


Bedrock and Faults

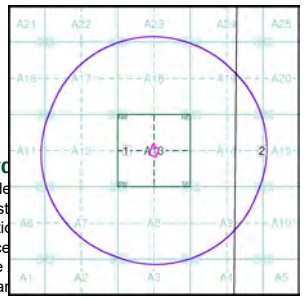
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or older, up to the relatively young Pliocene, 1.8 million years ago.

The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

The BGS Faults and Rock Segments dataset includes geological faults (e.g. normal, thrust), and thin beds mapped as lines (e.g. coal seam, gypsum bed). Some of these are linked to other particular 1:50,000 Geology datasets, for example, coal seams are part of the bedrock sequence, most faults and mineral veins primarily affect the bedrock but cut across the strata and post date its deposition.

Bedrock and Faults Map - Slice A



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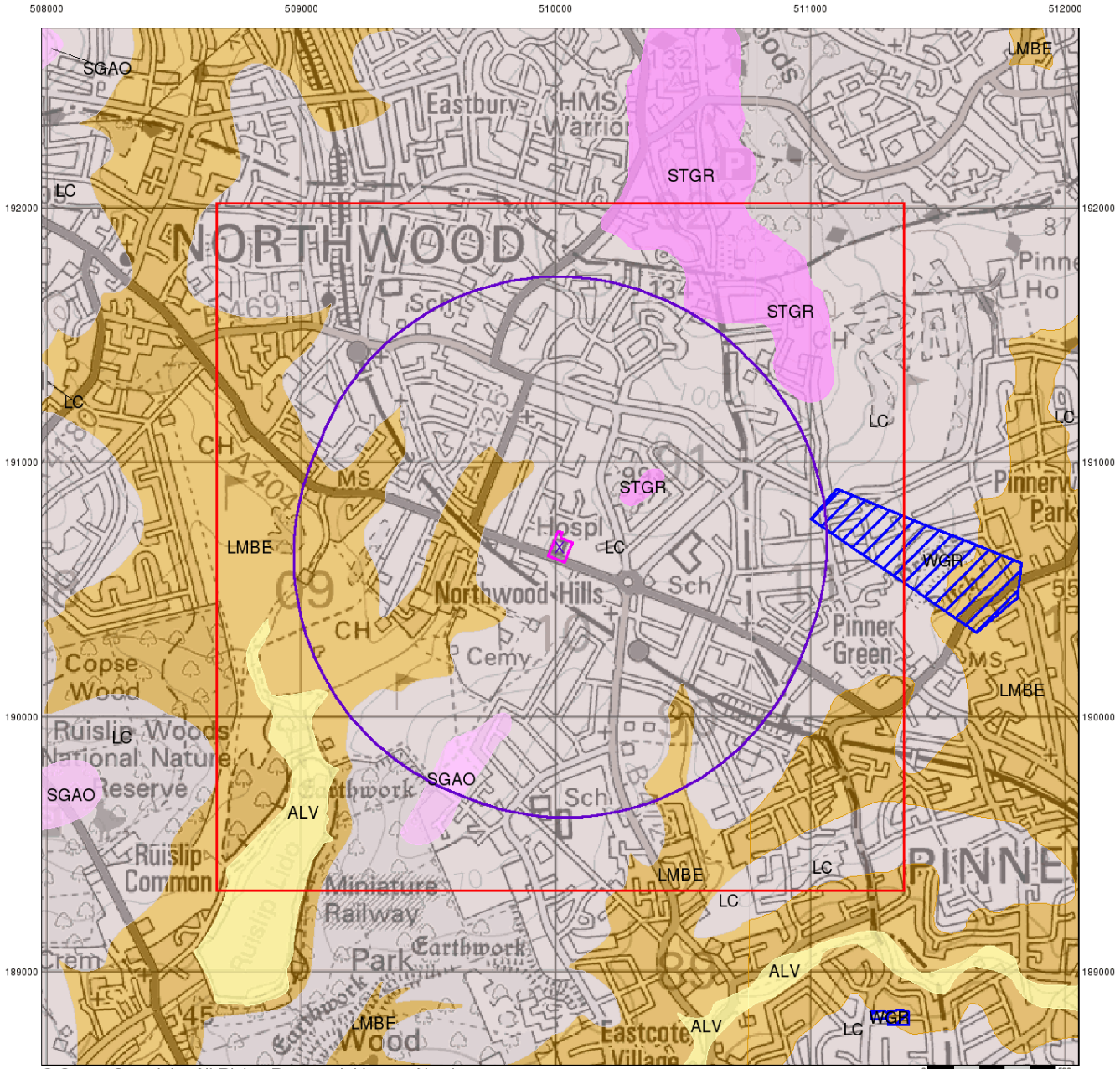

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Combined Surface Geology

The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

Please consult the legends to the previous maps to interpret the Combined "Surface Geology" map.

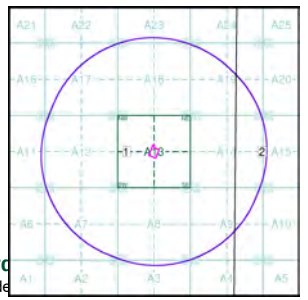
Additional Information

More information on 1:50,000 Geological mapping and explanations of rock classifications can be found on the BGS website. Using the LEX Codes in this report, further descriptions of rock types can be obtained by interrogating the 'BGS Lexicon of Named Rock Units'. This database can be accessed by following the 'Information and Data' link on the BGS website.

Contact

British Geological Survey
Kingsley Dunham Centre
Keyworth
Nottingham
NG12 5GG
Telephone: 0115 936 3143
Fax: 0115 936 3276
email: enquiries@bgs.ac.uk
website: www.bgs.ac.uk

Combined Geology Map - Slice A



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Customer Reference:	35554/3501
National Grid Reference:	510020, 190670
Slice:	A
Site Area (Ha):	0.62
Search Buffer (m):	1000

Site Details:

Northwood & Pinner Hospital, Pinner Road, Northwood, HA6 1DE

Historical Mapping Legends

Ordnance Survey County Series 1:10,560

Gravel Pit
Sand Pit
Other Pits
Quarry
Shingle
Orchard
Osiers
Reeds
Marsh
Mixed Wood
Deciduous
Brushwood
Fir
Furze
Rough Pasture
Arrow denotes flow of water
Trigonometrical Station
Site of Antiquities
Bench Mark
Pump, Guide Post, Signal Post
Well, Spring, Boundary Post
·285 Surface Level
Sketched Contour
Instrumental Contour
Main Roads
Fenced
Un-Fenced
Minor Roads
Fenced
Un-Fenced
Sunken Road
Raised Road
Road over Railway
Railway over River
Railway over Road
Level Crossing
Road over River or Canal
Road over Stream
Road over Stream
County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
Co. Boro. Bdy. County Borough Boundary (England)
Co. Burgh Bdy. County Burgh Boundary (Scotland)
R.D. Bdy. Rural District Boundary
Civil Parish Boundary

Ordnance Survey Plan 1:10,000

Chalk Pit, Clay Pit or Quarry
Gravel Pit
Sand Pit
Disused Pit or Quarry
Refuse or Slag Heap
Lake, Loch or Pond
Dunes
Boulders
Coniferous Trees
Non-Coniferous Trees
Orchard
Scrub
Coppice
Bracken
Heath
Rough Grassland
Marsh
Reeds
Saltings
Building
Direction of Flow of Water
Shingle
Sand
Glasshouse
Pylon
Electricity Transmission Line
Pole
Sloping Masonry
Cutting
Embankment
Standard Gauge Multiple Track
Road Under
Road Over
Level Crossing
Foot Bridge
Standard Gauge Single Track
Siding, Tramway or Mineral Line
Narrow Gauge
Geographical County
Administrative County, County Borough or County of City
Municipal Borough, Urban or Rural District, Burgh or District Council
Borough, Burgh or County Constituency
Shown only when not coincident with other boundaries
Civil Parish
Shown alternately when coincidence of boundaries occurs

BP, BS	Boundary Post or Stone	Pol Sta	Police Station
Ch	Church	PO	Post Office
CH	Club House	PC	Public Convenience
F E Sta	Fire Engine Station	PH	Public House
FB	Foot Bridge	SB	Signal Box
Fn	Fountain	Spr	Spring
GP	Guide Post	TCB	Telephone Call Box
MP	Mile Post	TCP	Telephone Call Post
MS	Mile Stone	W	Well

1:10,000 Raster Mapping

Gravel Pit
Refuse tip or slag heap
Rock
Rock (scattered)
Boulders
Boulders (scattered)
Shingle
Mud
Sand
Sand Pit
Slopes
Top of cliff
General detail
Underground detail
Overhead detail
Narrow gauge railway
Multi-track railway
Single track railway
County boundary (England only)
Civil, parish or community boundary
District, Unitary, Metropolitan, London Borough boundary
Constituency boundary
Area of wooded vegetation
Non-coniferous trees
Non-coniferous trees (scattered)
Coniferous trees
Coniferous trees (scattered)
Positioned tree
Orchard
Coppice or Osiers
Rough Grassland
Heath
Scrub
Marsh, Salt Marsh or Reeds
Water feature
Flow arrows
MHW(S) Mean high water (springs)
MLW(S) Mean low water (springs)
Telephone line (where shown)
Electricity transmission line (with poles)
BM 123.45 m Bench mark (where shown)
Triangulation station
Point feature (e.g. Guide Post or Mile Stone)
Pylon, flare stack or lighting tower
Site of (antiquity)
Glasshouse
General Building
Important Building

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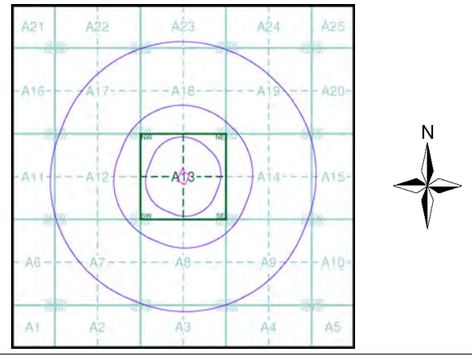
Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Middlesex	1:10,560	1868	3
Buckinghamshire	1:10,560	1883	4
Middlesex	1:10,560	1897 - 1899	5
Buckinghamshire	1:10,560	1900	6
Middlesex	1:10,560	1916	7
Middlesex	1:10,560	1916	8
Hertfordshire	1:10,560	1920	9
Middlesex	1:10,560	1935	10
Hertfordshire	1:10,560	1935	11
Hertfordshire	1:10,560	1938	12
Middlesex	1:10,560	1938	13
Historical Aerial Photography	1:10,560	1948 - 1950	14
Ordnance Survey Plan	1:10,000	1960	15
Ordnance Survey Plan	1:10,000	1965 - 1968	16
Ordnance Survey Plan	1:10,000	1975 - 1976	17
London	1:25,000	1985	18
Ordnance Survey Plan	1:10,000	1989	19
Ordnance Survey Plan	1:10,000	1990 - 1993	20
10K Raster Mapping	1:10,000	2006	21
VectorMap Local	1:10,000	2015	22

Historical Map - Slice A



Order Details

Order Number: 71541451_1_1
Customer Ref: 35554/3501
National Grid Reference: 510020, 190670
Slice: A
Site Area (Ha): 0.62
Search Buffer (m): 1000

Site Details

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Russian Military Mapping Legends

1:5,000 and 1:10,000 mapping

a. Not drawn to scale b. Drawn to scale

- Government and Administrative Buildings
- Military and Industrial Buildings
- Military and Communication Areas
- Subway Entrance
- Fireproof Building
- Prominent Fireproof Building
- Non-fireproof Building
- Non-fireproof Building (non-dwelling)
- Factory, mill, and flour mill, with chimneys
- Factory, mill, and flour mill, without chimneys
- Power Station, drawn to scale
- Hydroelectric Power Station
- Radio Station, drawn to scale
- Telephone Station, drawn to scale
- Abandoned Open-pit Mine or Quarry
- Open-pit Salt Mine
- Pit
- Oil Deposit or Well
- Oil Seepage
- Tailings Pile
- Fuel Storage Tanks
- Natural Gas Tank
- Bench Mark
- Drill Hole
- Burial Mound
- Triangulation Point on Burial Mound
- Single-track Railroad
- Double-track Railroad and Station Building
- Coniferous Forest
- Deciduous Forest
- Mixed Forest
- Lawns
- Citrus Orchard
- Wet Ground
- Scattered Vegetation

243,8 Values for prominent elevations

186.0 Numbers for spot elevations, depth soundings, contour lines, etc.

0,2 Velocity of the current, width of river bed, depth of river

180/12 180/12 Fractional terms: length and capacity of bridges; depth of fords and condition of the river bottom; height of forest and the diameter of trees

Russian Alphabet (For reference and phonetic interpretation of map text)

А а (A)	З з (Z)	П п (P)	Ч ч (CH)
Б б (B)	И и (I)	Р р (R)	Ш ш (SH)
В в (V)	Й й (Y)	С с (S)	Щ щ (SHCH)
Г г (G)	К к (K)	Т т (T)	ъ (–)
Д д (D)	Л л (L)	У у (U)	ы (Y)
Е е (E)	М м (M)	Ф ф (F)	ь (')
Ё ё (YO)	Н н (N)	Х х (KH)	Э э (E)
Ж ж (ZH)	О о (O)	Ц ц (TS)	Ю ю (YU or IU)
			Я я (YA or IA)

1:25,000 mapping

a. Not drawn to scale b. Drawn to scale

- Government and Administrative Buildings
- Military and Industrial Buildings
- Military and Communication Areas
- Subway Entrance
- Partly Demolished Buildings
- Demolished Buildings
- Built-Up Area with Fireproof Buildings Predominant
- Built-Up Area with Non-Fireproof Buildings Predominant
- Individual Fireproof Building
- Prominent Industrial Building
- Individual Dwelling, Fireproof
- Ruins of an Individual Dwelling
- Factory or Mill Chimney
- Factory or Mill with Chimney (бум.)
- Factory or Mill without Chimney (скип.)
- Mine or Open Pit Mine (медн.)
- Operating Shaft or Mine (кам. уг.)
- Non-Operating Shaft or Mine
- Salt Mine (сол.)
- Tailings Pile
- Pit (– 1.7)
- Stone Quarry (гл. пес. кам.)
- Gas Pump or Service Station
- Fuel Storage or Natural Gas Tank
- Oil or Natural Gas Derrick
- Small Hydroelectric Power Station
- Power Station
- Transformer Station (б.тр.)
- Cemetery
- Burial Mound (height in metres) (+ 8.1)
- Triangulation Point on Burial Mound (95.7)
- Triangulation Point (92.6)
- Bench Mark (52.1)
- Bench Mark (monumented) (71.1)
- Telegraph Office
- Telephone Station
- Radio Station
- Radio Tower
- Airfield or Seaplane Base
- Landing Strip
- Main Highway (Cut, Fill, Km Post, Plantings, Telegraph/Telephone Lines)
- Highway under Construction
- Improved Dirt Road (former truck road) (Width of Road, Steep Grade)
- Double-track Railroad with First Class Station (Small Bridge, Pipe (Culvert), Tunnel)
- Dismantled Railroad
- Railroad Under Construction
- Shore Embankment
- River or Ditch with Embankment (+2.4)
- Direction and velocity of current (Water Gauge, 135.1, Water Level Mark)
- Well (к. 125.0 гл.-сол.)
- Water Reservoir or Rain Water Pit (вдхр.)
- Spring (156.2 кл.)
- Isobath with value (20)
- Heavy (Index) Contour Line
- Contour Line and Value (20)
- Half Contour Line
- Spot Elevation Value (347.1)
- Coniferous
- Deciduous
- Mixed
- Scrub

Key to Numbers on Mapping

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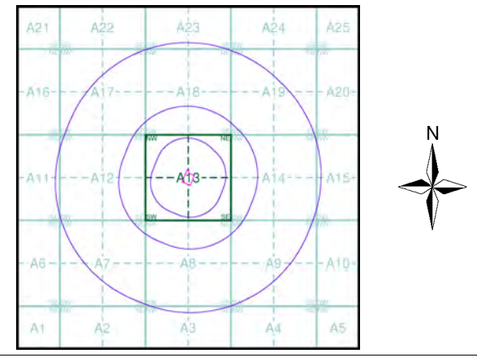
Historical Mapping & Photography included:

Russian Map - Slice A



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