

**VERIFICATION PLAN  
148 HIGH STREET  
KIMPTON  
SG4 8QR**

**Report Prepared For:**

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## **1.0 INTRODUCTION**

### **1.1 GENERAL**

WDE Consulting Ltd was appointed by Jarvis Homes (*the Client*) to prepare a Verification Plan for the proposed redevelopment of 148 High Street, Kimpton, herein referred to as "*the Site*".

The works described in this report are subject to the WDE Service Constraints presented in Appendix A. This report was finalised in October 2022 and should be read in the light of any subsequent changes in legislation, statutory requirements, statutory guidance, non-statutory guidance, relevant research and industry practices.

### **1.2 PLANNING CONDITIONS**

This report has been written in a format for consideration under the planning regime and has been prepared in line with the requirements of the planning condition (20/00667/FP) issued by North Herts Council.

### **1.3 SITE LOCATION AND DESCRIPTION**

The site forms an "L" shape, measuring approximately 0.19ha with maximum dimensions of ~110m north to south and ~50m east to west. Access to the site is via High Street on the southern boundary.

At the time of the previous site investigation, the site comprised several vacant stables and asbestos roofed outbuildings in the central portion currently being used to store vehicles and garden equipment. Open land forms the majority of site and is divided into two soft standing paddocks with several areas of mature trees (Oak) present around the site boundaries. Topography on site is generally level.

There was no evidence of any bulk tanks, surface staining or invasive plant species on site.

### **1.4 PROPOSED DEVELOPMENT PLANS**

It is understood that planning permission is for erection of six 4-bed dwellings and three 3-bed dwellings with associated hardstanding car parking and soft standing private gardens (Figure 2).

### **1.5 ROLES AND RESPONSIBILITIES**

The roles and responsibilities associated with the redevelopment of the Site are indicated in Table 1.

**Table 1 – Roles and Responsibilities**

| Company             | Role                     | Responsibility                                                                                                                                                                       |
|---------------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Jarvis Homes        | Client / Employer        | Implementing planning permission and ensuring compliance with the requirements of planning conditions and Section 106 agreement. Appointment of all contractors.                     |
| To be confirmed     | Civil Consultants        | Responsible for engineering design of development                                                                                                                                    |
| WDE Consulting Ltd  | Environmental Consultant | Managing contamination issues on site and ensuring verification provides sufficient evidence for compliance with conditions of planning. Liaising with Regulators where appropriate. |
| North Herts Council | Local Planning Authority | Regulatory authority responsible for ensuring sufficient works have been completed for the discharge of conditions of planning.                                                      |
| Environment Agency  | Advisor to LPA           | Regulatory authority responsible for controlled waters to ensure that there is adequate protection to groundwater and surface water bodies.                                          |

## 2.0 RELEVANT GUIDANCE

The methodology adopted for this report follows the Land Contamination Risk Management issued by the Agency<sup>1</sup>. The LCRM process provides a reasoned and structured mechanism to identify potential risk issues and, where necessary, provide a way forward to develop a robust risk management strategy to address potentially unacceptable risks in an appropriate manner.

Contained within the Verification section of the LCRM framework are the following stages:

1. Development of Verification Plan
2. On site verification
3. Preparation of Verification Report

For larger more complex sites, additional details may be needed within Implementation Plans including all aspects of the design, methods to be used, additional evidence to show suitability and further details on the verification and long-term monitoring strategy associated with the redevelopment of the site.

In 2008 the Environment Agency, National House-Building Council (NHBC) and the Chartered Institute of Environmental Health (CIEH) released a joint publication for the Safe Development of Housing on Land Affected by Contamination<sup>2</sup>. This publication focuses on the development of residential land and aligns with LCRM to encompass current best practice methods.

The Verification Plan will need consultation and approval from the regulatory authorities prior to commencing with the works. It will outline what actions are to be done and who will be responsible for completing the actions. It will also identify how the works are to be verified to demonstrate compliance with the remedial criteria and what steps are required to comply with the requirements of planning. Verification will need to conform with the Agency guidance on verification of remediation<sup>3</sup>.

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<sup>1</sup> Environment Agency. 2020. Land Contamination Risk Management

<sup>2</sup> Environment Agency. 2008. Guidance for the Safe Development of Housing on Land Affected by Contamination. R&D 66

<sup>3</sup> Environment Agency. 2007. DRAFT. Verification of Remediation of Land Contamination (Report reference: NC/00/38/SR)

### 3.0 BACKGROUND INFORMATION

#### 3.1 PREVIOUS REPORTS

WDE previously carried out a Geo-Environment Report<sup>4</sup> for the site which should be referred to for a full understanding of the site. A summary of this report is presented below:

| Site Setting               | Sensitivity Rating | Comments                                                                                                                                                      |
|----------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| On Site Sources            | Moderate           | Agricultural land use with several buildings. Potential imported made ground used for hard standing areas and beneath existing building footprints.           |
| Offsite Receptors          | Low                | Predominantly residential and agricultural land.                                                                                                              |
| Hydrogeology/<br>Hydrology | High               | Underlain by Principal Chalk Aquifer, within an Environment Agency Source Protection Zone 3. Nearest surface water feature located ~100m west.                |
| Flood Risk                 | Low                | Very low Risk of flooding from rivers and the sea.                                                                                                            |
| Environmental Receptor     | Moderate           | London Area Greenbelt, Kimpton Bottom Conservation Area                                                                                                       |
| Infilled land              | Low                | No landfills or potentially infilled land within 250m of subject site                                                                                         |
| Site Assessment            | Risk Rating        | Comments                                                                                                                                                      |
| Proven Ground Conditions   | Low                | Topsoil (0.15m) overlying gravelly clay (1.90m) and chalk (4.00m). Made ground encountered beneath topsoil in some locations. No groundwater encountered.     |
| Contamination Results      | Low/Moderate       | Minor exceedance in the soil for non-volatile PAHs (Dibenz(a,h)anthracene) of the adopted criteria for residential land use                                   |
| Waste                      | Low                | Natural materials classified as Inert for offsite disposal, made ground likely to be classified as Non Haz Waste, which can be disposed at an inert landfill. |
| Ground Gas                 | Low                | Very low ground gas risk (CS1) returned from single monitoring visit. No ground gas source materials identified.                                              |
| Excavations                | Low                | No groundwater encountered within upper 4m. No special precautions likely to be necessary for dewatering.                                                     |
| Foundations                | Moderate           | Shallow foundations within clay and chalk materials may be possible, but mature trees and shrinkable clays likely to require foundations to be extended.      |
| Drainage                   | Low                | Soakages to ground are likely to be feasible within the encountered materials (10 <sup>-5</sup> m/sec)                                                        |

There is one exceedance for PAHs within the upper 0.30m of the made ground. The exceedance is non-volatile and therefore pathway control measures are likely to be appropriate for protection of future end users. There remains a relevant contaminant linkage (RCL) within the made ground, which is summarised in Table 2.

<sup>4</sup> WDE Consulting. Geo-Environmental Report. 20977R1. April 2020.

**Table 2 – Summary of the RCLs**

| Potential Sources | Human Health        |                      | Controlled Waters |
|-------------------|---------------------|----------------------|-------------------|
|                   | On-site Residential | Off-site Residential |                   |
| Made Ground       | ✓                   | X                    | X                 |

- Notes: ✓ = Risk assessment will consider Relevant Pollutant Linkages; x = No RPLs

## 4.0 REMEDIAL STRATEGY

### 4.1 OVERVIEW

Potential remedial strategies are based on the following main two categories:

- Source reduction measure
- Pathway control measure

The identified contaminant of concern Dibenz(a,h)anthracene is non-volatile and therefore can be managed via pathway control measures. The occurrence and concentrations of the elevated contaminants of concern are not considered to warrant any large-scale remedial actions.

Consideration will also need to be given to following a Discovery Strategy with ongoing validation of site won materials.

### 4.2 PATHWAY CONTROL MEASURES

Based on the previous reports and the proposed redevelopment, it is considered that there remains low/moderate risk to future residential receptors from residual concentrations within areas of soft-standing. The non-volatile contaminants can be managed via pathway control measures. The proposed control measure is presented in Table 3.

**Table 3 – Proposed Pathway Control Measure**

| Potential Sources                                | Potential Active Pathway           | Pathway Control Measure                                                                                | Pathway Assessment |
|--------------------------------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------|--------------------|
| Made Ground containing non-volatile contaminants | Dermal contact, home produce, dust | Importation of surface cover in areas of soft-standing. Hard-standing over remaining portions of site. | Pathway broken     |

#### 4.2.1 Feasible Remedial Methods

The encountered exceedance of Dibenz(a,h)anthracene is beneath proposed future buildings and therefore can be managed via pathway control measures (hard-standing) with no large-scale remedial works required.

## 4.3 REQUIRED DEPTH OF SURFACE COVER

It is proposed to adopt the BRE Cover System<sup>5</sup> to provide adequate protection to future end users in soft-standing areas. The proposed composition of the surface cover is presented in Table 4 for each of the plots.

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<sup>5</sup> BRE 2004. Cover System for Land Regeneration

**Table 4 – Design of Surface Cover Layer in Soft-Standing Areas**

| Scenario             | Item          | Depth       | Details                                                                             |
|----------------------|---------------|-------------|-------------------------------------------------------------------------------------|
| Private Garden Areas | Topsoil Layer | 0 - 150mm   | Imported materials from a BS certified source. Requires onsite verification testing |
|                      | Subsoil Layer | 150 – 300mm | Imported/site won materials. Requires on site verification                          |
| Landscaped Areas     | Topsoil Layer | 0 - 150mm   | Imported materials from a BS certified source. Requires onsite verification testing |
|                      | Subsoil Layer | 150 – 300mm | Imported/site won materials. Requires on site verification                          |

## 5.0 CONSTRUCTION WORKS

### 5.1 MATERIAL MANAGEMENT

Stockpile management areas will be needed to segregate the various types of material that are likely to be encountered to prevent cross contamination. The types of materials likely to be encountered includes:

- Site won topsoil/subsoil materials
- Site won made ground
- Site won hard-standing/foundations
- Imported topsoil

Reuse of site materials is to be encouraged and will require a Material Management Plan to comply with the CL:AIRE Definition of Waste: Code Practice<sup>6</sup> or U1 waste exemption form. Any surplus site won materials will require offsite disposal to a licensed landfill in line with Duty of Care regulations.

Site won materials will need to be segregated on site, with different stockpiles for made ground and naturally occurring materials of not more than 250m<sup>3</sup> per stockpile. Each stockpile will need to be inspected for any visible evidence of gross contamination in line with the adopted Discovery Strategy (Section 5.4). Made ground containing visible ACM will need to be segregated and stockpiled separately and will be required to follow CAR-Soil Control of Asbestos Regulations 2012. Stockpiles will require validation and only if compliant can be reused on site.

Generation of site won aggregates will need to follow the WRAP Quality Protocol<sup>7</sup> prior to their reuse. It is anticipated that using site won aggregates such as demolished structures will need to comply with WRAP Quality Protocol. Imported materials should be placed on a plastic barrier and verified as being suitable for use prior to being placed within the areas of soft-standing.

### 5.2 MASS BALANCE CALCULATIONS

The anticipated volume of site won materials that will be generated/required during the construction are summarised in Table 5.

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<sup>6</sup> CL:AIRE 2011 The Definition of Waste: Development Industry Code Practice. Version 2

<sup>7</sup> WRAP Quality Protocol. Aggregates from Inert Waste. 2013

**Table 5 – Anticipated Volumes of Materials (m<sup>3</sup>)**

| Source of Materials                    | Type of Material | Volume Generated | Volume Required | Cumulative Balance | Options                                                                  |
|----------------------------------------|------------------|------------------|-----------------|--------------------|--------------------------------------------------------------------------|
| Reduce dig gardens, hardstanding areas | Made Ground      | 300              | 300             | 0                  | Reuse on site beneath roads/hard-standing, with surplus disposed offsite |
| Reduce dig gardens, hardstanding areas | Natural          | 900              | 900             | 0                  | Reuse on site in soft-standing                                           |
| Foundations, drainage, SuDS            | Natural          | 100              | 100             | 0                  | Reuse on site in soft-standing.                                          |

### 5.3 MEMBRANE BARRIER

No elevated volatile compounds or ground gas concentrations have been identified from the site assessments to date. Therefore, a standard membrane to CS1/NHBC Green specification is required.

### 5.4 DISCOVERY STRATEGY

A Discovery Strategy is in place during the redevelopment of the site to manage any previously unidentified contamination which may be encountered (a copy of which is provided in Appendix B). This sets out the methodology to be adopted by all contractors on site. A log will be kept on site of any discoveries that are recorded.

### 5.5 ENVIRONMENTAL NUISANCE

There will be a requirement for mitigation of environmental nuisance from noise, dust, traffic and waste during the development of the site. It will be the responsibility of the Principal Contractor to record any obvious odour and noise issues within the site diary and to undertake additional mitigations measures as required.

## **6.0 VERIFICATION PLAN**

### **6.1 GENERAL**

The verification of the remedial works will adopt the 'lines of evidence' approach for each remedial option in line with LCRM guidance. Satisfactory lines of evidence will clearly demonstrate how each relevant pollution linkage has been broken.

Breaking the pollution linkage will ensure that the site is fit for the intended residential land-use and does not pose a risk either to human health or controlled water. The verification objectives are:

- Provide clear lines of evidence that verification criteria have been met
- Provide lines of evidence that the site is suitable for the intended land use following completion of the remedial works

These verification objectives are to be achieved by undertaking the following:

- Undertake sufficient sampling of media to ensure compliance with verification criteria
- Ensure appropriate laboratory analyses are tested
- Verification of depth for imported surface cover materials
- Undertake contingency measures in the event of non-conformance with verification criteria
- Ensure appropriate documentation is maintained during the works and that information is forwarded to relevant parties
- A Verification Report/Closure Report is produced on completion of the development to present line of evidence that the works have conformed to the verification objectives

### **6.2 SAMPLING OF MEDIA**

#### **6.2.1 Soils and Vapours**

The *Environmental Consultant* will be responsible for undertaking the following tasks:

- On site screening of materials for organic vapour concentrations (OVC)
- Verification sampling and laboratory testing of materials

It is envisaged that the *Environmental Consultant* will guide the *Principal Contractor* during the construction programme to ensure compliance with the verification criteria. Verification sampling will be undertaken during the construction programme with laboratory testing scheduled on materials. Testing will be conducted at an UKAS accredited analytical laboratory using MCERTS methods. Samples will be stored in appropriate containers and will be sent to the laboratory under chain of custody documentation.

Verification samples will also be taken of imported/site won materials for use as surface cover in areas of soft standing. It would be prudent to test each batch of imported materials prior to being placed in the areas of soft-standing, with imported materials being stockpiled prior to sampling. Photographic evidence will be required for the verification of the depth of the imported surface cover materials.

Surplus site won materials should be tested to determine the waste classification and landfill designation prior to offsite disposal.

The proposed soil sampling verification schedule for each of the actions are summarised below:

**Table 6 – Proposed Soil Sampling Verification Schedule**

| Type of Material              | Source   | Proposed Destination                         | Quantity            | Frequency               | Suite of Testing |
|-------------------------------|----------|----------------------------------------------|---------------------|-------------------------|------------------|
| Naturally occurring materials | Site won | Reuse as topsoil/subsoils in surface cover   | 1,000m <sup>3</sup> | 1 per 100m <sup>3</sup> | QRA              |
| Made Ground                   | Site won | Reused on site beneath roads or hardstanding | 300m <sup>3</sup>   | 1 per 250m <sup>3</sup> | QRA              |
| Surface Cover                 | Imported | Upper 300 mm in soft standing areas          | TBC                 | 1 per 100m <sup>3</sup> | QRA              |

This represents a proposed sampling frequency and is subject to change depending on the findings encountered during the proposed additional investigation and/or groundworks.

### 6.3 ADOPTED SOIL VERIFICATION CRITERIA FOR USE ON SITE

The selected verification criteria for materials are presented below for the following scenarios:

- Imported topsoil in soft-standing areas (0mm – 150mm)
- Imported/site won subsoil in soft-standing areas (150mm – 300mm)
- In situ materials below surface cover/hard-standing (>450-600mm)

#### 6.3.1 Verification criteria

The proposed verification criteria for imported surface cover materials in soft-standing areas on the site are to be published GACs for residential land, which are currently the LQM Suitable for Use Levels (S4UL). Imported topsoil is to be sourced from a British Standard<sup>8</sup> supplier and will need to comply with BS criteria. An overview of the application of the verification criteria is summarised in Table 7.

<sup>8</sup> British Standard. 2007. Specification for topsoil and requirements for use. BS 3882: 2007

**Table 7 – Overview of Application of Verification Criteria**

| Scenario                                          | Item              | Depth       | Verification Criteria                                           |
|---------------------------------------------------|-------------------|-------------|-----------------------------------------------------------------|
| Private Garden Areas                              | Topsoil Layer     | 0 - 150mm   | British Standard and published GACs for residential land use    |
|                                                   | Subsoil Layer     | 150 – 300mm | Published GACs for residential land use                         |
| Landscaped Areas                                  | Topsoil Layer     | 0 - 150mm   | Published GACs for public open space residential land use       |
|                                                   | Subsoil Layer     | 150 – 300mm |                                                                 |
| >300mm surface cover/beneath roads, hard-standing | In situ materials | >300mm      | Published GACs (sufficiently volatile) for residential land use |

## 6.4 VERIFICATION ANALYSIS

The following determinants have been identified as representing the priority contaminants of concern for this site, herein referred to the “verification suite” that will represent the laboratory testing regime for soils:

- *Hydrocarbons – TPH aromatic/aliphatic, BTEX, PAH 16*
- *Heavy Metals – As, Br, Cd, Cr, Cu, Hg, Pb, Ni, Se, Zn,*
- *Cyanide, Phenols*
- *Asbestos screen/quantification*

Surplus site won materials to be exported from site will also require WAC testing to ensure the appropriate landfill designation.

### 6.4.1 Surface Cover in Soft Standing Areas

The criteria for surface cover in the soft standing areas are presented in Table 8.

**Table 8 – Soil Verification Criteria for Surface Cover in Soft Standing Areas (mg/kg)**

| Contaminant        | Private Gardens   |                     | Landscaped Areas  |                     | Source |
|--------------------|-------------------|---------------------|-------------------|---------------------|--------|
|                    | Topsoil (0-150mm) | Subsoil (150-300mm) | Topsoil (0-150mm) | Subsoil (150-300mm) |        |
| Asbestos           | BDL               | BDL                 | BDL               | BDL                 | WDE    |
| Cyanide            | 50                | 50                  | 50                | 50                  | DIV    |
| Total Phenols      | 280               | 280                 | 760               | 760                 | LQM    |
| Naphthalene (PAH)  | 2.3               | 2.3                 | 4900              | 4900                | LQM    |
| Acenaphthylene     | 170               | 170                 | 15000             | 15000               | LQM    |
| Acenaphthene       | 210               | 210                 | 15000             | 15000               | LQM    |
| Fluorene           | 170               | 170                 | 9900              | 9900                | LQM    |
| Phenanthrene       | 95                | 95                  | 3100              | 3100                | LQM    |
| Anthracene         | 2400              | 2400                | 74000             | 74000               | LQM    |
| Fluoranthene       | 280               | 280                 | 3100              | 3100                | LQM    |
| Pyrene             | 620               | 620                 | 7400              | 7400                | LQM    |
| Benzo(a)anthracene | 7.2               | 7.2                 | 29                | 29                  | LQM    |
| Chrysene           | 15                | 15                  | 57                | 57                  | LQM    |

|                        |       |       |        |        |        |
|------------------------|-------|-------|--------|--------|--------|
| Benzo(b)fluoranthene   | 2.6   | 2.6   | 7.1    | 7.1    | LQM    |
| Benzo(k)fluoranthene   | 77    | 77    | 190    | 190    | LQM    |
| Benzo(a)pyrene         | 2.2   | 2.2   | 5.7    | 5.7    | LQM    |
| Indeno(1,2,3-cd)pyrene | 27    | 27    | 82     | 82     | LQM    |
| Dibenz(a,h)anthracene  | 0.24  | 0.24  | 0.57   | 0.57   | LQM    |
| Benzo(ghi)perylene     | 320   | 320   | 640    | 640    | LQM    |
| Arsenic                | 37    | 37    | 79     | 79     | LQM    |
| Cadmium                | 11    | 11    | 120    | 120    | LQM    |
| Chromium               | 910   | 910   | 1500   | 1500   | LQM    |
| Copper                 | 100   | 2400  | 100    | 12000  | LQM/BS |
| Lead                   | 210   | 210   | 760    | 760    | C4SL   |
| Inorganic Mercury      | 40    | 40    | 120    | 120    | LQM    |
| Nickel                 | 60    | 180   | 60     | 3400   | LQM/BS |
| Selenium               | 250   | 250   | 1100   | 1100   | LQM    |
| Vanadium               | 410   | 410   | 2000   | 2000   | LQM    |
| Zinc                   | 200   | 3700  | 200    | 170000 | LQM/BS |
| Benzene                | 0.087 | 0.087 | 72     | 72     | LQM    |
| Toluene                | 130   | 130   | 56000  | 56000  | LQM    |
| Ethylbenzene           | 47    | 47    | 24000  | 24000  | LQM    |
| Xylenes (sum)          | 56    | 56    | 41000  | 41000  | LQM    |
| MTBE                   | DL    | DL    | DL     | DL     | LQM    |
| Aliphatic >C5 - C6     | 42    | 42    | 570000 | 570000 | LQM    |
| Aliphatic >C6 - C8     | 100   | 100   | 600000 | 600000 | LQM    |
| Aliphatic >C8 - C10    | 27    | 27    | 13000  | 13000  | LQM    |
| Aliphatic >C10 - C12   | 130   | 130   | 13000  | 13000  | LQM    |
| Aliphatic >C12 - C16   | 1100  | 1100  | 13000  | 13000  | LQM    |
| Aliphatic >C16 - C35   | 65000 | 65000 | 250000 | 250000 | LQM    |
| Aromatic >C5 - C7      | 70    | 70    | 56000  | 56000  | LQM    |
| Aromatic >C7 - C8      | 130   | 130   | 56000  | 56000  | LQM    |
| Aromatic >C8 - C10     | 34    | 34    | 5000   | 5000   | LQM    |
| Aromatic >C10 - C12    | 74    | 74    | 5000   | 5000   | LQM    |
| Aromatic >C12 - C16    | 140   | 140   | 5100   | 5100   | LQM    |
| Aromatic >C16 - C21    | 260   | 260   | 3800   | 3800   | LQM    |
| Aromatic >C21 - C35    | 1100  | 1100  | 3800   | 3800   | LQM    |

Note: Topsoil will also need to comply with the British Standard<sup>7</sup> criteria for topsoil.

#### 6.4.2 Verification Criteria for Materials Below Surface Cover/Hardstanding

The Verification Criteria for materials below Surface Cover or areas of hard-standing are presented in Table 9, which are limited to sufficiently volatile/soluble substances of concern.

**Table 9 – Soil Verification Criteria Beneath Hard-standing/Surface Cover (mg/kg)**

| Substance of Concern             | Beneath Hard-standing/>300mm Surface Cover | Source |
|----------------------------------|--------------------------------------------|--------|
| Total Phenols                    | 750                                        | LQM    |
| Cyanide                          | 50                                         | DIV    |
| Naphthalene (surrogate for PAHs) | 2.3                                        | LQM    |
| Benzene                          | 0.38                                       | LQM    |
| Toluene                          | 880                                        | LQM    |
| Ethylbenzene                     | 83                                         | LQM    |
| Xylenes (sum)                    | 79                                         | LQM    |
| MTBE                             | DL                                         | DL     |
| Aliphatic >C5 - C6               | 42                                         | LQM    |
| Aliphatic >C6 - C8               | 100                                        | LQM    |
| Aromatic >C5 - C7                | 370                                        | LQM    |
| Aromatic >C7 - C8                | 860                                        | LQM    |
| Aromatic >C8 - C10               | 47                                         | LQM    |
| Aromatic >C10 - C12              | 250                                        | LQM    |

## **6.5 NON-CONFORMANCE WITH VERIFICATION CRITERIA**

Non-conformance with the remedial criteria will be managed using the following the strategy:

- On site soil screening will reduce the risk of non-conformance with the verification criteria.
- Any non-conformance may require further actions to be undertaken unless there are plausible reasons for not doing so. This includes such things as physical constraints, such as neighbouring boundaries or structures/roads. Any other type of non-conformance will require regulatory approval should additional actions not be carried out. Laboratory testing will be required following completion of any additional remedial actions to demonstrate compliance with the verification criteria.
- Any non-conformance of the imported surface cover material with the verification criteria will result in the materials being removed from site and more appropriate materials being used.
- Any non-conformance of site won surface cover/subsurface cover materials in areas of soft-standing will require removal and replacement with appropriate materials.

## **6.6 DOCUMENTATION AND TRANSFER OF INFORMATION**

A record will be required to be maintained on site during the construction works that will include the following results from the Environmental Monitoring:

- Any observable noise, odour, dust issues

The results from the on-site screening and laboratory results received during the works will also be maintained and regularly updated. An example of the Field Record sheet is presented in Appendix C.

The following information will be recorded during the construction programme:

- Results from PID screening of vapour concentrations
- Laboratory test results
- Any other observations, such as presence of asbestos
- Retention of importation/exportation tickets

These records will be made available for inspection by the regulators at all times and will be forwarded to each of the relevant parties at regular intervals.

## **6.7 VERIFICATION REPORTING**

It is envisaged that a number of reports will be required to demonstrate compliance with the verification criteria, as indicated below:

- Groundworks/Discovery Strategy
- Surface Cover Verification

### **6.7.1 Groundworks/Discovery Strategy**

A Verification Report may need to be prepared on the Groundworks/Discovery Strategy phase which will include the following items:

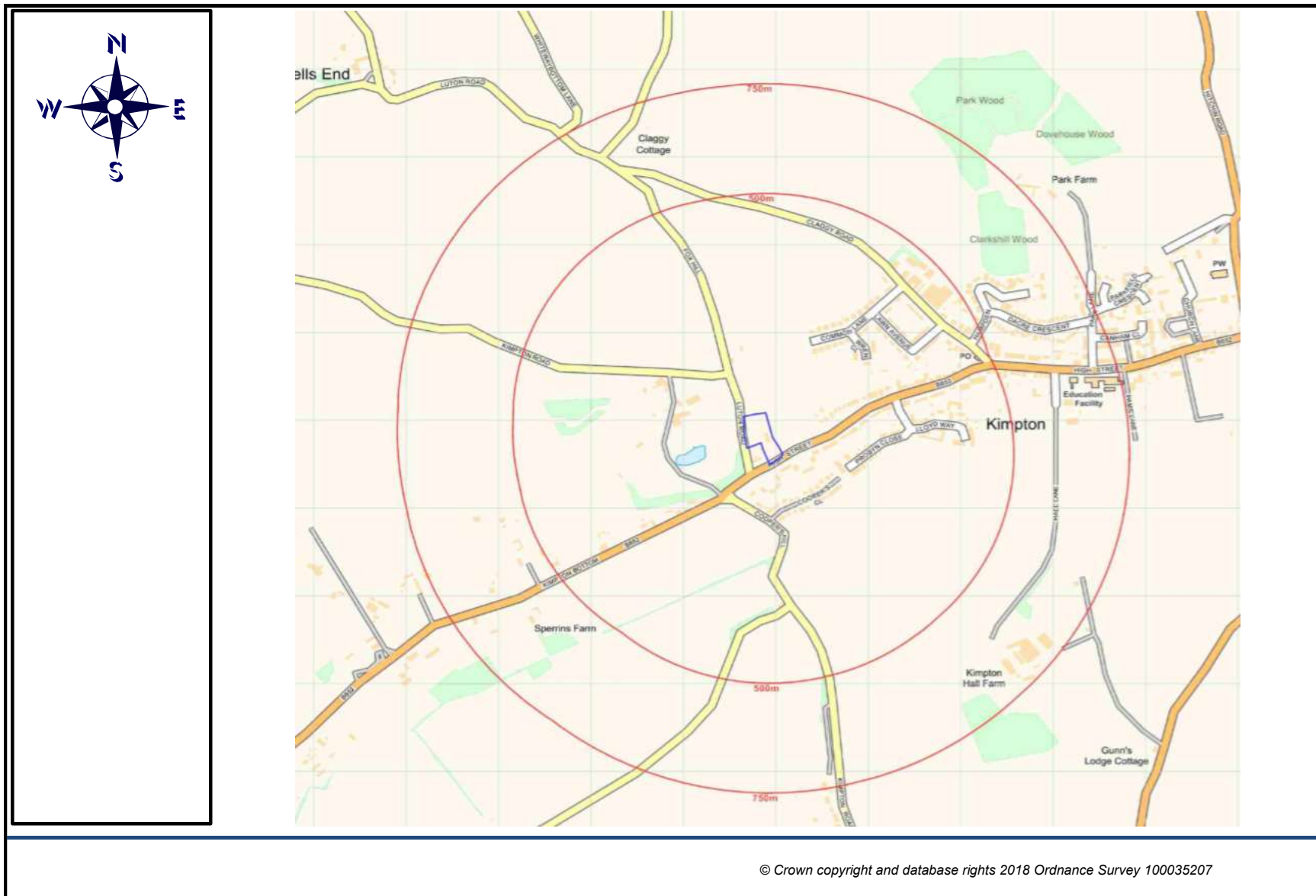
- Verification of site won materials for reuse/offsite disposal
- Additional verification undertaken as part of the Discovery Strategy (if required)
- Copies of waste transfer notes from exported materials during groundworks phase

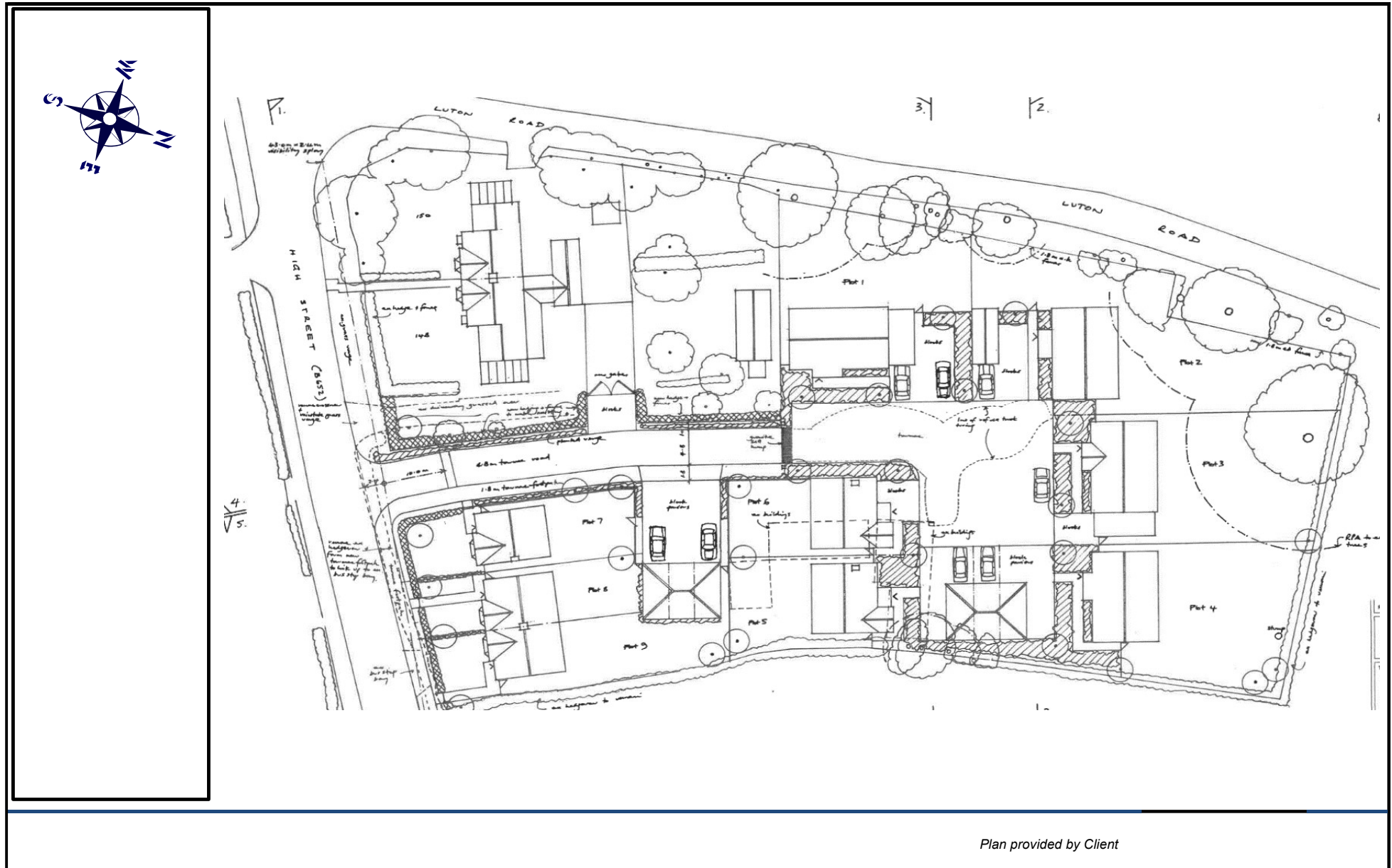
### **6.7.2 Surface Cover Verification**

A Surface Cover Verification Report will be prepared on completion of the construction programme that will act as the final report for discharge of the conditions on planning relating to contamination. This will include the following items:

- Evidence of suitability of use with respect to verification criteria (soft-standing areas)
- Transfer notes (importation)
- Evidence of depth of surface cover layer in soft-standing areas
- Regulatory correspondence

## FIGURES





## APPENDIX A

### LIMITATIONS AND EXCEPTIONS OF ASSESSMENT

Jarvis Homes (the client) has requested that a Verification Plan be performed for 148 High Street, Kimpton, SG4 8QR, to provide information to permit formulation of an opinion as to the potential for risks to human health & controlled waters posed by identified substances of concern.

The Verification Plan was conducted and this report has been prepared for the sole use and reliance of the Client. This report shall not be relied upon or transferred to any other parties without the express written authorisation of WDE Consulting Limited. If an unauthorised third party comes into possession of this report, they rely on it at their peril and the authors owe them no duty of care and skill.

The findings and opinions conveyed via this Verification Plan are based on information obtained from a variety of sources as detailed within this report, and which WDE Consulting Limited believes are reliable. Nevertheless, WDE Consulting Limited cannot and does not guarantee the authenticity or reliability of the information it has relied upon.

The report represents the findings and opinions of experienced geo-environmental consultants using current best practice and guidance. These opinions are therefore subject to change as regulations/guidance/policy/best practice are revised in the future and may therefore need to be reappraised in light of revisions to regulations/guidance/policy/best practice. WDE Consulting Limited does not provide legal advice and the advice of lawyers may also be required.

The Client is advised that the conditions stated within reports supplied to WDE Consulting Limited are subject to change. Certain indicators of the presence of hazardous substances may have been latent at the time of the most recent site reconnaissance and may subsequently have become observable.

It is possible that WDE Consulting Limited research, while fully appropriate for a Verification Plan, failed to indicate the existence of important information sources. Assuming such sources actually exist, their information could not have been considered in the formulation of WDE Consulting Limited findings and opinions.

Certain indicators or evidence of hazardous substances may have been outside the very limited portion of the subsurface investigated or monitored, latent at the time of this work or only partially intercepted by the works and thus their full significance could not have been appreciated. Groundwater levels are particularly susceptible to variations due to seasonal or other effects. Any comments on groundwater conditions are based on observations and analyses made by third parties at the time the site work was carried out. Accordingly, it is possible that WDE Consulting Limited work, whilst fully appropriate for a Verification Plan failed to indicate the presence or significance of hazardous substances. Assuming such materials present a hazard, their presence could not have been considered in the formulation of WDE Consulting Limited findings and opinions. The subsurface geological profiles and other plots are generalised by necessity and have been based on the information found at the locations of the exploratory holes and depths sampled and tested.

Any interpretation of the results of the Verification Plan have been based on the proposed site usage and the findings are not valid should the proposed land use and/or the regulatory regime/guidance change. Where interpretation is based on public domain guidance/protocols/models/software/code, WDE Consulting Limited is not liable for errors in the guidance/protocols/models/software/code.

WDE Consulting Limited believes that providing information about limitations is essential to help the client identify and thereby manage their risks. These risks can be mitigated, but they cannot be eliminated, through additional research. WDE Consulting Limited will on request, advise the client of the additional research opportunities available, their impact on risk, and their cost.

In preparing this report, it has been assumed that all past and present occupants have provided all relevant and other information, especially relating to known or potential hazards. This report is not required to identify insufficiencies or mistakes in the information provided by the user/owner or from any other source but has sought to compensate for these where obvious in the light of other information.

The work is also subject to WDE Consulting Limited terms and conditions.

## APPENDIX B

### DISCOVERY STRATEGY- DEMOLITION/CONSTRUCTION CONTAMINATED MATERIALS

#### INTRODUCTION

The site is to be redeveloped for residential purposes and part of the requirements of planning will be for a Discovery Strategy to be implemented during the demolition and construction phase of the programme. Its purpose is to define the process to be undertaken on site in the event that previously unidentified pockets of *contamination* or suspicious objects are discovered during the demolition and construction phases. It is intended to be understood and followed by all on-site workers and for all new site workers to be made aware of the procedure.

#### HOW TO IDENTIFY POTENTIAL CONTAMINATED MATERIAL

- Looks oily and has an oily odour
- Solvent type of odour
- Man-made materials in fill such as paint cans, car parts, glass fragments
- Contains fragments of white asbestos sheeting, coal/coke clinker
- Sand bags, and or/ subsurface concrete structures

(Examples only – This list is not exhaustive. If in any doubt, ask)

#### PROCEDURE

On the discovery of any suspicious pockets of material during the redevelopment the following procedure should be followed:

1. Site Personnel to immediately inform the Site Manager. Do not investigate it yourself.
2. The Site Manager will decide if material is potentially contaminated and will inform WDE Consulting Limited. Area will be cordoned off and work will cease in the vicinity.
3. WDE Consulting Limited will attend site to sample material for laboratory tested and will attempt to quantify the volume. The Local Authority will then be notified that potential contaminated material has been discovered and will be forwarded laboratory data and a remedial strategy for consideration in the event that the material is to be classified as *contaminated*.

## **APPENDIX C**

Example of Field Record Sheets



[illegible]