

# Verification Report

Client: Lidl Great Britain  
Ltd

Havant, Purbrook Way

Report No: 770.06.01

December/2025





## TABLE OF CONTENTS

|                                                               |           |
|---------------------------------------------------------------|-----------|
| <b>1. INTRODUCTION .....</b>                                  | <b>3</b>  |
| 1.1 OBJECTIVES .....                                          | 3         |
| 1.2 SCOPE OF WORK .....                                       | 3         |
| 1.3 PLANNING CONDITION REQUIREMENTS .....                     | 3         |
| 1.4 PREVIOUS REPORTS .....                                    | 3         |
| 1.5 LIMITATIONS .....                                         | 4         |
| <b>2. GENERAL SITE CHARACTERISTICS .....</b>                  | <b>5</b>  |
| 2.1 SITE DESCRIPTION .....                                    | 5         |
| 2.2 GROUND INVESTIGATION FINDINGS .....                       | 5         |
| 2.3 REMEDIATION STRATEGY REQUIREMENTS .....                   | 6         |
| 2.4 PRE-REMEDIATION CONCEPTUAL SITE MODEL .....               | 7         |
| <b>3. REMEDIATION ACTIVITIES .....</b>                        | <b>9</b>  |
| 3.1 EARTHWORKS .....                                          | 9         |
| 3.2 RETAINING WALLS .....                                     | 9         |
| 3.3 CAPPING .....                                             | 10        |
| 3.4 GROUND GAS PROTECTION .....                               | 11        |
| 3.5 SOFT LANDSCAPING TOPSOIL .....                            | 11        |
| 3.6 UNFORESEEN CONTAMINATION .....                            | 12        |
| <b>4 SOIL &amp; GROUNDWATER SAMPLING &amp; ANALYSIS .....</b> | <b>13</b> |
| 4.1 SAMPLE QUALITY ASSURANCE / QUALITY CONTROL .....          | 13        |
| 4.2 CRUSHED CONCRETE VERIFICATION .....                       | 13        |
| 4.3 TOPSOIL VERIFICATION .....                                | 13        |
| <b>3 RISK ASSESSMENT .....</b>                                | <b>15</b> |
| 5.1 MADE GROUND .....                                         | 15        |
| 5.2 SITE WON CRUSHED CONCRETE .....                           | 15        |
| 5.3 TOPSOIL .....                                             | 15        |
| 5.4 POST REMEDIATION CONCEPTUAL SITE MODEL .....              | 16        |
| <b>4 WASTE DISPOSAL RECORDS .....</b>                         | <b>18</b> |
| <b>REFERENCES &amp; GUIDANCE .....</b>                        | <b>19</b> |
| <b>STUDY LIMITATIONS .....</b>                                | <b>20</b> |

## TABLES

|         |                                        |
|---------|----------------------------------------|
| Table 1 | Pre-remediation Conceptual Site Model  |
| Table 2 | Generic Assessment Criteria            |
| Table 3 | Post-remediation Conceptual Site Model |

## FIGURE

|          |                        |
|----------|------------------------|
| Figure 1 | Site Location Plant    |
| Figure 2 | Remediation Activities |
| Figure 3 | Sample Locations       |



## LIST OF APPENDICES

|            |                                    |
|------------|------------------------------------|
| Appendix A | Cut Fill Drawing                   |
| Appendix B | Retaining Walls/Slopes Drawing     |
| Appendix C | Foundation Drawings                |
| Appendix D | Gas Membrane Verification Report   |
| Appendix E | Landscape Drawing                  |
| Appendix F | 6F2/5 Grading Results              |
| Appendix G | 6F2/5 Asbestos Analyses            |
| Appendix H | Supplier's BS3882 Topsoil Analysis |
| Appendix I | Topsoil Chemical Analyses.         |
| Appendix J | Example Waste Transfer Notes       |

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## 1. INTRODUCTION

Remada Ltd was appointed by Lidl Great Britain Ltd, 'the client' to prepare a Verification Report for the implementation of remediation works at Purbrook Way, Havant, PO9 3QJ at the location indicated in Figure 1.

### 1.1 Objectives

The objective of this assessment is to verify that the remediation works were implemented in general accordance with the approved Remediation Strategy to discharge Condition No 14 of Havant Borough Council Planning Application APP/24/00330.

### 1.2 Scope of Work

The scope and layout of this document has been designed in mind of the Environment Agency's Land Contamination Risk Management guidance for land contamination reports.

The scope of remediation and/or enabling works implemented by the Principal Contractor, Adston Construction Ltd on behalf of Lidl Great Britain comprised:

- Vegetation clearance;
- preparation of ground levels in advance of store construction;
- construction of perimeter retaining walls and crib-lock walls; and
- disposal of wastes.

Remada was appointed to:

- attend site during the groundworks;
- sample recycled materials;
- sample landscape soils; and
- prepare the Remediation Verification Report.

### 1.3 Planning Condition Requirements

Planning Condition 14 requires the following:

*'Prior to the occupation of any relevant part of the permitted development, the verification report referred to in section 6 of the Remada Geo Consultants Remediation Strategy Ref 770.04.02; Jan 2024 ('the approved verification plan') shall be submitted to and approved in writing by the Local Planning Authority. The report shall include results of sampling and monitoring carried out in accordance with the approved verification plan and must demonstrate that site remediation criteria have been met'.*

### 1.4 Previous Reports

The following reports were previously prepared for the site:

- Phase 1 Site Investigation and Preliminary Risk Assessment – Purbrook Way, Havant, Remada 770.01.02 October 2020.
- Phase 2 Ground Investigation – Purbrook Way, Havant Remada 770.02.02 issued in October 2020.



- Phase 2 Ground Investigation – Purbrook Way, Havant, Remada 770.03.01 December 2020, superseding report 770.02.01.
- Remediation Strategy – Purbrook Way, Havant, Remada 770.04.02, January 2024.

## 1.5 Limitations

The comments given in this report and the opinions expressed are based on the information reviewed and observations during site work. However, there may be conditions pertaining to the site that have not been disclosed by this assessment and therefore could not be taken into account.

## 2. GENERAL SITE CHARACTERISTICS

### 2.1 Site Description

Prior to the commencement of construction of the Lidl store, the site has not been previously developed.

Remada's Phase 1 report states that *'its present-day topography and historic maps indicated that is formed of a spoil heap of surplus soils. The source of spoil heap (made ground) is not known but may be due to construction of either the B&Q store or adjacent roads (Purbrook Way and/or A3(M))'*.



View towards the South from Purbrook at the time of Remada's Ground Investigation



View towards South from the centre of the site at the time of Remada's Ground Investigation

### 2.2 Ground Investigation Findings

A review of previous reports pertaining to the study site has been undertaken by Remada and is summarised in this section.

#### Geological Mapping

Published geological maps indicate that the site is directly underlain by London Clay of thickness 77 to 120m which is designated as unproductive strata.

#### Ground Investigation

In August 2020, the ground investigation comprised 3 No cable tool boreholes to target 10m depth and 5 No window sample holes to 5m depth. Due to dense vegetation and restraints imposed by the ecologist, it was not possible to access all window sample locations within the proposed car park. Made Ground was observed at all exploratory locations as firm to stiff orange/brown grey slightly gravelly clay, to a maximum depth of 5.0m in CP1 and CP2 beneath the store footprint. At CP3A and CP3B the fill material contained concrete boulders and concrete kerbstones that were removed by excavator and the exploratory hole was advanced as a trial pit. WS2 was also obstructed by a concrete boulder within the fill material that was subsequently removed by excavator and the exploratory hole was advanced as a trial pit.

Bedrock was encountered in all the exploratory holes as stiff to very stiff micaceous blue grey CLAY considered to be representative of London Clay. Due to the change in topographical elevation between



the perimeter of the site and central area beneath the proposed store footprint, the depth to bedrock varied from 0.25m at WS1 to 5.0m bgl in CP1 and CP2.

In November 2020, the additional investigation comprised a 5m x 5m grid of dynamic probes to identify potential obstructions to piles and potential soft spots or pockets of waste within the fill material. In addition, previously inaccessible WS4 was excavated as trial pit TP1, whilst a second pit (TP2) was also excavated. The Dynamic Probe n100 data provide greater confidence that the fill material is formed from compacted or engineered clay and that no zones or pockets of soft waste are present beneath the proposed store footprint.

#### Human Health Assessment

The results of soil chemical analysis were compared to Human Health Generic Assessment Criteria for commercial land use. None of the analytes tested were detected at concentrations that exceeded the human health GAC protective of on-site workers.

#### Water Resources Assessment

The results of the soil chemical analysis undertaken has identified that concentrations of metals and inorganic contaminants are within the range of typical Made Ground. Detectable concentrations of TPH and PAHs were encountered WS2; however, BGS Sheet 316 indicates that the London Clay extends to a minimum of 77m and it is therefore considered to be protective of the underlying groundwater source protection zone. There are no watercourses within close proximity of site.

#### Waste Classification

Additional sampling and analyses were undertaken on the Made Ground fill at between 0.5m and 3.5m bgl to enable an assessment of potential waste disposal classification as it was anticipated that ground levels would be reduced to enable the development. The concentrations of metals and organic contaminants were generally in the range of inert soils and in general, the results of the chemical analysis indicate that the material would generally be classified as inert however due to concentration of Total Organic Carbon it may be necessary to discuss the results with the potential receiving site to ensure that the surplus is removed as an inert material.

#### Ground Gas

The results of four rounds of gas monitoring visits placed the site into Characteristic Situation 2 and therefore ground gas protection measures will be required within the proposed store.

### **2.3 Remediation Strategy Requirements**

Environmental and geotechnical remediation requirements are summarised below:

The principal environmental remediation objectives are to:

- Identify, manage and assess unforeseen contamination;
- Assess cut soil prior to placement as fill material to ensure that it is suitable for use.
- Construct hard – cover surfacing beneath car park and external to store footprint;
- Provide clean cover of fill to the proposed landscaped areas; and
- Install basic gas protection measures.

#### Geotechnical Remediation Objectives

The principal geotechnical remediation objectives are to:



- Remove existing earthworks fill material beneath the proposed store footprint and car park to a depth of approximately 1.5m to enable construction of capping and subbase layers beneath the proposed store and car park levels.
- Remove buried obstructions beneath proposed store footprint in their entirety;
- Remove buried obstructions beneath proposed car park;
- Crush, screen and emplace existing hard dig obstructions for re-use as engineered fill or capping materials.

## **2.4 Pre-Remediation Conceptual Site Model**

The pre-remediation Conceptual Site Model has been reproduced below:



| Potential Source Areas                                     | Potential Contaminant of Concern                                                         | Pathways                                                                      | Potential Receptor                             | Exposure Route (Human unless otherwise stated)      | Potential Identified Linkage (unmitigated) | Findings of Ground Investigation | Risk (Un-mitigated) | Proposed Remediation (Mitigation) Measures | Residual Risk Estimation |
|------------------------------------------------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|------------------------------------------------|-----------------------------------------------------|--------------------------------------------|----------------------------------|---------------------|--------------------------------------------|--------------------------|
| <u>On-site Sources</u>                                     | Asbestos / Metals As, Be, Cd, Cu, Cr (VI), Cr (III) Hg, Ni, Se, Va, Zn, Boron, TPH /PAH. | Disturbance due to construction plant causing direct contact, dusts, vapours. | Occupants of the development / building fabric | • Direct Soil Ingestion                             | Yes                                        | <GAC                             | N/A                 | N/A                                        | Negligible               |
| Earthworks spoil heap                                      |                                                                                          |                                                                               |                                                | • Indoor Dust ingestion                             | Yes                                        | <GAC                             | N/A                 | N/A                                        | Negligible               |
|                                                            |                                                                                          |                                                                               |                                                | • Skin Contact with Soils                           | Yes                                        | <GAC                             | N/A                 | N/A                                        | Negligible               |
|                                                            |                                                                                          |                                                                               |                                                | • Skin Contact with Dust                            | Yes                                        | <GAC                             | N/A                 | N/A                                        | Negligible               |
| <u>Off-site Sources</u>                                    |                                                                                          | Direct Contact with occupants of the proposed development                     |                                                | • Inhalation of Outdoor Dust                        | Yes                                        | <GAC                             | N/A                 | N/A                                        | Negligible               |
|                                                            |                                                                                          |                                                                               |                                                | • Inhalation of Outdoor Vapours                     | Yes                                        | <GAC                             | N/A                 | N/A                                        | Negligible               |
|                                                            |                                                                                          |                                                                               |                                                | • Inhalation of Indoor Vapours                      | Yes                                        | <GAC                             | N/A                 | N/A                                        | Negligible               |
| Highways                                                   |                                                                                          | Inhalation of fibres / vapours / gases by occupants of proposed development   | Adjacent residents during construction         | • Inhalation of ground gas                          | Yes                                        | CS2                              | Potential risk      | Protection Measures to BS8485              | Negligible               |
| Nearby Petrol station                                      |                                                                                          |                                                                               |                                                | • Inhalation of radon gas                           | No                                         | N/A                              | Negligible          | Negligible                                 | Negligible               |
|                                                            |                                                                                          | Permeation of water supply pipework Leachate                                  | N/A                                            | • Ingestion via permeated water supply pipework     | Yes                                        | <GAC                             | N/A                 | N/A                                        | Negligible               |
|                                                            |                                                                                          |                                                                               |                                                | • Direct contact with Bedrock – Unproductive Strata | No                                         | As above                         | Negligible          | None                                       | Negligible               |
| • Groundwater Source Protection Zone (Beneath London Clay) |                                                                                          |                                                                               |                                                | No                                                  | N/A                                        | Negligible                       | None                | Negligible                                 |                          |

Table 1: Pre-remediation Conceptual Site Model

### 3. REMEDIATION ACTIVITIES

#### 3.1 Earthworks

The remediation and site preparation works commenced in April 2025 with site clearance, construction of the perimeter retaining and crib lock walls, and preparation of formation for the development platform. Remediation Activities are indicated on **Figure 2**.

The existing fill area consisted of London Clay and was reduced in level to achieve the required formation level as per the SDS cut / fill drawing 25055-SDS-00-SL-DR-C-3013-CN1 presented at **Appendix A**. The estimate volume of cut was 3907m<sup>3</sup> and estimate volume of fill was 3262m<sup>3</sup>. The photos below taken on 11<sup>th</sup> April 2025.



View towards west (site entrance) with reduced level dig in progress



View towards west of attenuation tank excavation



View towards Northwest



View towards North

#### 3.2 Retaining Walls

Existing slopes were replaced with retaining walls to achieve the proposed site layout as per SDS Drawing 25055-SDS-00-SL-DR-C-3030-CN4 presented at **Appendix B**.

The photos below were taken on 17<sup>th</sup> June 2025.



View towards Northeast over Criblock retaining wall to B&Q access road



View towards East and B&Q car park of completed retaining walls.



View from B&Q car park of pre-cast and Criblock retaining walls



View of southern boundary and retaining wall

### 3.3 Capping

The formation was capped with 6F5 crushed concrete from Farlington Aggregates EPR /DP3091EQ prior to blinding with fines in preparation for the ground gas membrane to be installed beneath the raft foundation as per the photo below.



### 3.4 Ground Gas Protection

#### 3.4.1 Foundation Details

SDS Engineer's Foundation General Arrangement Drawing 25055-SDS-16-FND-DR-5-3400-CN4 and Foundation Section Drawings 3041 to 3403 are presented at **Appendix C**. The raft foundation has minimum thickness of 160mm between downstands or edge beam and is reinforced with two layers of rebar.

The foundation section drawings require a CS2 membrane to installed beneath the raft in accordance with BS8485.

#### 3.4.2 Ground Gas Membrane Installation

An Corden EPS membrane was installed as per the Verification Report prepared Geoshield and presented at **Appendix D**.

### 3.5 Soft Landscaping Topsoil

The extent of soft landscaping both outside and inside the retaining walls is indicated on SDS Drawing 25055-SDS-00-SL-DR-C-3020-CN2 at **Appendix E**. Topsoil was placed over the existing London Clay fill material or a natural sand fill.

The photos below were taken on 26<sup>th</sup> November 2025.





### 3.6 Unforeseen Contamination

There were no visible or olfactory indicators of unforeseen contamination during the works.

## 4 SOIL & GROUNDWATER SAMPLING & ANALYSIS

### 4.1 Sample Quality Assurance / Quality Control

Samples for chemical laboratory testing purposes were collected in amber glass jars, amber glass vials and plastic tubs and retained in a cool box for transport to the laboratory. All samples were submitted to an approved United Kingdom Accredited Laboratory (UKAS) and MCERTS laboratory under a completed chain of custody. The laboratory carried out its own QA/QC programme to ensure that the quality of the analytical data conformed to the appropriate test method protocols. Containers for volatile analysis were filled so that minimal (soil) air space remained prior to sealing the container.

Soil samples for chemical analysis were collected in plastic tubs and amber glass bottles. All samples were retained in a cool box with a chain of custody for transport to the laboratory for subsequent environmental analysis.

### 4.2 Crushed Concrete Verification

Three (3 No.) samples of crushed concrete 6F2/5 were taken for grading tests and the analysis of asbestos fibres. Sample locations are indicated on **Figure 3**. Grading results are presented at **Appendix F** and chemical analyses at **Appendix G**.

### 4.3 Topsoil Verification

#### 4.3.1 Supplier Data

The topsoil supplier (Sammy Wilson) has provided the result of BS3882 topsoil analysis as presented at **Appendix H**. The result indicates partial compliance with various topsoil grades specified in BS3882.

#### 4.3.2 Topsoil Depths

Topsoil depths were checked at the sample locations indicated in **Figure 3** and as recorded in the photos below. Approximately 100mm thickness of topsoil was found to overlie 300mm of sand fill.





#### 4.3.3 Topsoil Chemical Analyses.

Three (3 No.) samples of topsoil were taken for the chemical analysis from the locations indicated in **Figure 3** on the 26<sup>th</sup> November 2025. Sample locations are indicated on **Figure 3** chemical analyses at Appendix H.



## 5 RISK ASSESSMENT

The results of the chemical analyses have been compared with the LQM/CIEH S4ULs for Commercial Land Use as presented in the Remediation Strategy and reproduced as **Table 2** below.

### 5.1 Made Ground

The Phase 2 Ground Investigation, Remediation Strategy and Pre-Remediation Conceptual Model did not identify a need to remediate the Made Ground fill (London Clay).

### 5.2 Site Won Crushed Concrete

All three samples of crushed concrete produced a well graded material generally in compliance with 6F2 grading.

Asbestos was not detected in any of the three samples.

### 5.3 Topsoil

The concentrations of potential contaminants of concern within the site won topsoil did not exceed the Generic Assessment Criteria (GAC) for a commercial development as presented in **Table 2** below.

| CLEA Category                          | mg/kg<br>1% SOM             | Commercial<br>mg/kg<br>2.5% SOM | mg/kg<br>5% SOM              | Reference           |
|----------------------------------------|-----------------------------|---------------------------------|------------------------------|---------------------|
| <b>Contaminant</b>                     |                             |                                 |                              |                     |
| Antimony                               | 7500                        | 7500                            | 7500                         | EIC/AGS/CLAIRE 2010 |
| Arsenic                                | 640                         | 640                             | 640                          | LOM/CIEH S4UL       |
| Barium                                 | 22000                       | 22000                           | 22000                        | EIC/AGS/CLAIRE 2010 |
| Beryllium                              | 12                          | 12                              | 12                           | LOM/CIEH S4UL       |
| Boron                                  | 240000                      | 240000                          | 240000                       | LOM/CIEH S4UL       |
| Cadmium                                | 190                         | 190                             | 190                          | LOM/CIEH S4UL       |
| Chromium III                           | 8600                        | 8600                            | 8600                         | LOM/CIEH S4UL       |
| Chromium VI                            | 33                          | 33                              | 33                           | LOM/CIEH S4UL       |
| Copper                                 | 68000                       | 68000                           | 68000                        | LOM/CIEH S4UL       |
| Mercury (Elemental Hg 4)               | 58 <sup>dir</sup> (25.8)    | 58 <sup>dir</sup> (25.8)        | 58 <sup>dir</sup> (25.8)     | LOM/CIEH S4UL       |
| Mercury (Inorganic Hg 2 <sup>+</sup> ) | 1100                        | 1100                            | 1100                         | LOM/CIEH S4UL       |
| Mercury (Methyl 4 <sup>+</sup> )       | 320                         | 320                             | 320                          | LOM/CIEH S4UL       |
| Molybdenum                             | 18000                       | 18000                           | 18000                        | EIC/AGS/CLAIRE 2010 |
| Nickel                                 | 980                         | 980                             | 980                          | LOM/CIEH S4UL       |
| Lead                                   | NC                          | NC                              | 2300                         | DEFRA C4SL          |
| Selenium                               | 12000                       | 12000                           | 12000                        | LOM/CIEH S4UL       |
| Vanadium                               | 9000                        | 9000                            | 9000                         | LOM/CIEH S4UL       |
| Zinc                                   | 730000                      | 730000                          | 730000                       | LOM/CIEH S4UL       |
| <b>BTEX</b>                            |                             |                                 |                              |                     |
| Benzene                                | 27                          | 47                              | 90                           | LOM/CIEH S4UL       |
| Toluene                                | 56000 <sup>sol</sup> (869)  | 110000 <sup>sol</sup> (1920)    | 180000 <sup>sol</sup> (3360) | LOM/CIEH S4UL       |
| Ethylbenzene                           | 5700 <sup>sol</sup> (518)   | 13000 <sup>sol</sup> (1220)     | 27000 <sup>sol</sup> (2840)  | LOM/CIEH S4UL       |
| O-Xylene                               | 6600 <sup>sol</sup> (478)   | 15000 <sup>sol</sup> (1120)     | 33000 <sup>sol</sup> (2620)  | LOM/CIEH S4UL       |
| M-Xylene                               | 6200 <sup>sol</sup> (825)   | 14000 <sup>sol</sup> (1470)     | 31000 <sup>sol</sup> (3460)  | LOM/CIEH S4UL       |
| P-Xylene                               | 5900 <sup>sol</sup> (578)   | 14000 <sup>sol</sup> (1350)     | 30000 <sup>sol</sup> (3170)  | LOM/CIEH S4UL       |
| <b>TPH Aliphatics</b>                  |                             |                                 |                              |                     |
| EC5-EC6                                | 3200 <sup>sol</sup> (304)   | 5900 <sup>sol</sup> (558)       | 12000 <sup>sol</sup> (1150)  | LOM/CIEH S4UL       |
| >EC6-EC8                               | 7800 <sup>sol</sup> (144)   | 17000 <sup>sol</sup> (322)      | 40000 <sup>sol</sup> (736)   | LOM/CIEH S4UL       |
| >EC8-EC10                              | 2000 <sup>sol</sup> (78)    | 4800 <sup>sol</sup> (190)       | 11000 <sup>sol</sup> (451)   | LOM/CIEH S4UL       |
| >EC10-EC12                             | 9700 <sup>sol</sup> (48)    | 23000 <sup>sol</sup> (118)      | 47000 <sup>sol</sup> (263)   | LOM/CIEH S4UL       |
| >EC12-EC16                             | 59000 <sup>sol</sup> (24)   | 82000 <sup>sol</sup> (59)       | 90000 <sup>sol</sup> (142)   | LOM/CIEH S4UL       |
| >EC16-EC35                             | 1600000                     | 1700000                         | 1800000                      | LOM/CIEH S4UL       |
| >EC35-EC44                             | 1600000                     | 1700000                         | 1800000                      | LOM/CIEH S4UL       |
| >EC44-EC70 (all+aro)                   | 28000                       | 28000                           | 28000                        | LOM/CIEH S4UL       |
| <b>TPH Aromatics</b>                   |                             |                                 |                              |                     |
| EC5-EC7 (Benzene)                      | 26000 <sup>sol</sup> (1220) | 46000 <sup>sol</sup> (2260)     | 86000 <sup>sol</sup> (4710)  | LOM/CIEH S4UL       |
| >EC7-EC8 (Toluene)                     | 56000 <sup>sol</sup> (869)  | 110000 <sup>sol</sup> (1920)    | 180000 <sup>sol</sup> (3360) | LOM/CIEH S4UL       |
| >EC8-EC10                              | 3500 <sup>sol</sup> (613)   | 8100 <sup>sol</sup> (1500)      | 17000 <sup>sol</sup> (3580)  | LOM/CIEH S4UL       |
| >EC10-EC12                             | 16000 <sup>sol</sup> (364)  | 28000 <sup>sol</sup> (899)      | 34000 <sup>sol</sup> (2150)  | LOM/CIEH S4UL       |
| >EC12-EC16                             | 36000 <sup>sol</sup> (169)  | 37000                           | 38000                        | LOM/CIEH S4UL       |
| >EC16-EC21                             | 28000                       | 28000                           | 28000                        | LOM/CIEH S4UL       |
| >EC21-EC35                             | 28000                       | 28000                           | 28000                        | LOM/CIEH S4UL       |
| >EC35-EC44                             | 28000                       | 28000                           | 28000                        | LOM/CIEH S4UL       |
| >EC44-EC70 (all+aro)                   | 28000                       | 28000                           | 28000                        | LOM/CIEH S4UL       |
| <b>PAH</b>                             |                             |                                 |                              |                     |
| Naphthalene                            | 190 <sup>sol</sup> (76.4)   | 460 <sup>sol</sup> (183)        | 1100 <sup>sol</sup> (432)    | LOM/CIEH S4UL       |
| Acenaphthylene                         | 83000 <sup>sol</sup> (86.1) | 97000 <sup>sol</sup> (212)      | 100000                       | LOM/CIEH S4UL       |
| Acenaphthene                           | 84000 <sup>sol</sup> (57)   | 97000 <sup>sol</sup> (141)      | 100000                       | LOM/CIEH S4UL       |
| Fluorene                               | 63000 <sup>sol</sup> (30.9) | 68000                           | 71000                        | LOM/CIEH S4UL       |
| Phenanthrene                           | 22000                       | 22000                           | 23000                        | LOM/CIEH S4UL       |
| Anthracene                             | 520000                      | 540000                          | 540000                       | LOM/CIEH S4UL       |
| Fluoranthene                           | 23000                       | 23000                           | 23000                        | LOM/CIEH S4UL       |
| Pyrene                                 | 54000                       | 54000                           | 54000                        | LOM/CIEH S4UL       |
| Benzo(a)anthracene                     | 170                         | 170                             | 180                          | LOM/CIEH S4UL       |
| Chrysene                               | 350                         | 350                             | 350                          | LOM/CIEH S4UL       |
| Benzo(b)fluoranthene                   | 44                          | 45                              | 45                           | LOM/CIEH S4UL       |
| Benzo(k)fluoranthene                   | 1200                        | 1200                            | 1200                         | LOM/CIEH S4UL       |
| Benzo(a)pyrene <sup>(1)</sup>          | 35                          | 35                              | 36                           | LOM/CIEH S4UL       |
| Indeno(1,2,3-c,d)pyrene                | 500                         | 510                             | 510                          | LOM/CIEH S4UL       |
| Dibenzo(a,h)anthracene                 | 3.5                         | 3.6                             | 3.6                          | LOM/CIEH S4UL       |
| Benzo(g,h,i)perylene                   | 3900                        | 4000                            | 4000                         | LOM/CIEH S4UL       |
| Coal Tar <sup>(1)</sup>                | 15                          | 15                              | 15                           | LOM/CIEH S4UL       |

NC: No published criteria

vap: Screening criteria presented exceed the vapour saturation limit, which is presented in brackets.

sol: Screening criteria presented exceed the solubility saturation limit, which is presented in brackets.

dir: Screening criteria based on threshold protective of direct skin contact (guideline in brackets based on health effects following long term exposure provided for illustration only).

(1): For assessment based on the use of the surrogate marker approach the GAC for Coal Tar must be used instead of benzo(a)pyrene.

**Table 2: Generic Assessment Criteria**

## 5.4 Post Remediation Conceptual Site Model

On completion of the site remediation, enabling works and separately the verification of gas protection measures the following Post Remediation Conceptual Site Model is considered appropriate.



| Potential Source Areas  | Potential Contaminant of Concern                                                         | Pathways                                                                      | Potential Receptor                             | Exposure Route (Human unless otherwise stated)             | Potential Identified Linkage (unmitigated) | Findings of Ground investigation | Risk (Un-mitigated) | Remediation (Mitigation) Measures          | Residual Risk Estimation |
|-------------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|------------------------------------------------|------------------------------------------------------------|--------------------------------------------|----------------------------------|---------------------|--------------------------------------------|--------------------------|
| <u>On-site Sources</u>  | Asbestos / Metals As, Be, Cd, Cu, Cr (VI), Cr (III) Hg, Ni, Se, Va, Zn, Boron, TPH /PAH. | Disturbance due to construction plant causing direct contact, dusts, vapours. | Occupants of the development / building fabric | • Direct Soil Ingestion                                    | Yes                                        | <GAC                             | N/A                 | N/A                                        | Negligible               |
| Earthworks spoil heap   |                                                                                          |                                                                               |                                                | • Indoor Dust ingestion                                    | Yes                                        | <GAC                             | N/A                 | N/A                                        | Negligible               |
|                         |                                                                                          |                                                                               |                                                | • Skin Contact with Soils                                  | Yes                                        | <GAC                             | N/A                 | N/A                                        | Negligible               |
|                         |                                                                                          | • Skin Contact with Dust                                                      |                                                | Yes                                                        | <GAC                                       | N/A                              | N/A                 | Negligible                                 |                          |
| <u>Off-site Sources</u> |                                                                                          | Direct Contact with occupants of the proposed development                     |                                                | • Inhalation of Outdoor Dust                               | Yes                                        | <GAC                             | N/A                 | N/A                                        | Negligible               |
| Adjacent B&Q store      |                                                                                          |                                                                               |                                                | • Inhalation of Outdoor Vapours                            | Yes                                        | <GAC                             | N/A                 | N/A                                        | Negligible               |
| Highways                |                                                                                          |                                                                               | • Inhalation of Indoor Vapours                 | Yes                                                        | <GAC                                       | N/A                              | N/A                 | Negligible                                 |                          |
| Nearby Petrol station   |                                                                                          | Inhalation of fibres / vapours / gases by occupants of proposed development   | Adjacent residents during construction         | • Inhalation of ground gas                                 | Yes                                        | CS2                              | Potential risk      | Raft Foundation and Gas Resistant Membrane | Negligible               |
|                         |                                                                                          | Permeation of water supply pipework                                           | N/A                                            | • Inhalation of radon gas                                  | No                                         | N/A                              | Negligible          | Negligible                                 | Negligible               |
|                         |                                                                                          |                                                                               |                                                | • Ingestion via permeated water supply pipework            | Yes                                        | <GAC                             | N/A                 | N/A                                        | Negligible               |
|                         |                                                                                          |                                                                               |                                                | • Direct contact with Bedrock – Unproductive Strata        | No                                         | As above                         | Negligible          | None                                       | Negligible               |
|                         |                                                                                          | Leachate                                                                      | N/A                                            | • Groundwater Source Protection Zone (Beneath London Clay) | No                                         | N/A                              | Negligible          | None                                       | Negligible               |

Table 3: Post Remediation Conceptual Site Model



### 3 WASTE DISPOSAL RECORDS

The following wastes were removed from site:

Approximately 340 loads of surplus soils were removed as inert by Inert Recycling UK Ltd to a site at Bosham PO18 8DD. 300 loads of surplus soils were also removed as inert by L&S Waste Management Ltd to Pendean Sand Quarry at West Lavington. Example transfer notes are presented at **Appendix J**.

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## STUDY LIMITATIONS

**IMPORTANT.** This section should be read before reliance is placed on any of the information, opinions, advice, recommendations or conclusions contained in this report.

1. This report has been prepared by Remada, Ltd with all reasonable skill, care and diligence within the terms of the Appointment and with the resources and manpower agreed with (the 'Client'). Remada does not accept responsibility for any matters outside the agreed scope.

2. This report has been prepared for the sole benefit of the Client unless agreed otherwise in writing.

3. Unless stated otherwise, no consultations with authorities or funders or other interested third parties have been carried out. Remada is unable to give categorical assurance that the findings will be accepted by these third parties as such bodies may have published, more stringent objectives. Further work may be required by these parties.

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7. This report has been prepared based on the information reasonably available during the project programme. All information relevant to the scope may not have received

8. This report refers, within the limitations stated, to the condition of the site at the time of the inspections. No warranty is given as to the possibility of changes in the condition of the site since the time of the investigation.

9. The content of this report represents the professional opinion of experienced environmental consultants. Remada does not provide specialist legal or other professional advice. The advice of other professionals may be required.

10. Where intrusive investigation techniques have been employed they have been designed to provide a reasonable level of assurance on the conditions. Given the discrete nature of sampling, no investigation technique is capable of identifying all conditions present in all areas. In some cases the investigation is further limited by site operations, underground obstructions and above ground structures. Unless otherwise stated, areas beyond the boundary of the site have not been investigated.

11. If below ground intrusive investigations have been conducted as part of the scope, service tracing for safe location of exploratory holes has been carried out. The location of underground services shown on any drawing in this report has been determined by visual observations and electromagnetic techniques. No guarantee can be given that all services have been identified. Additional services, structures or other below ground obstructions, not indicated on the drawing, may be present on site.

12. Unless otherwise stated the report provides no comment on the nature of building materials, operational integrity of the facility or on any regulatory compliance issues.

13. Unless otherwise stated, samples from the site (soil, groundwater, building fabric or other samples) have NOT been analysed or assessed for waste classification purposes.