

CampbellReith
consulting engineers

Kemp Heaton Avenue

Verification Report

For
Hargreaves

Project No.
13753

Date
July 2026

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1.0 INTRODUCTION

1.1.1 This verification report has been produced by Campbell Reith Hill LLP (CampbellReith) on behalf of Hargreaves (the Client) in relation to the residential development at Kemp Heaton Avenue, Bury, BL9 9RA. Figures showing the site location, development boundary and the development plan to which this Verification Report pertain, are presented in Appendix 1.

1.1.2 This report has been produced to summarise information associated with the remediation works completed at the site and is based on records provided by Hargreaves, Construction Site Validation Services, and CampbellReith.

1.1.3 The information contained herein is required to discharge Planning Condition 5 of planning application 71532:

- *Where remediation is required, the approved Remediation Strategy must be carried out to the satisfaction of the Local Planning Authority within agreed timescales; and A Site Verification Report detailing the actions taken and conclusions at each stage of the remediation works, including substantiating evidence, shall be submitted to and approved in writing by the Local Planning Authority prior to the development being brought into use.*

1.1.4 It is recommended that this report is retained by Hargreaves for their records and included in site documentation.

1.1.5 This report should be read in conjunction with the following CampbellReith reports:

[1] CampbellReith Geo-environmental and Geotechnical Desktop Study, Kemp Heaton Avenue, Bury, Ref: 13753-CRH-XX-XX-RP-LQ-0001, dated July 2022

[2] CampbellReith Coal Mining Risk Assessment, Kemp Heaton Avenue, Bury, Ref: 13753-CRH-XX-XX-RP-GE-0001, dated July 2022

[3] CampbellReith Land Quality Statement, Kemp Heaton Avenue, Bury, Ref: 13753-CRH-XX-XX-RP-LQ-0003_P02, dated September 2024

[4] CampbellReith Remediation Strategy, Kemp Heaton Avenue, Bury, Ref: 13753-CRH-XX-XX-RP-LQ-0004_P02_RemStrat, dated September 2024

[5] CampbellReith Pipeline Risk Assessment Technical Note, Kemp Heaton Avenue, Bury, Ref: 13753-CRH-XX-XX-TN-LQ-0006, dated March 2026

[6] CampbellReith Application for Discharge of Condition 8 (Coal Mining) for Kemp Heaton Avenue (Application Number: 70015), Ref: 13753-CRH-XX-XX-CO-GE-0001_Condition 8, dated Mary 2026

1.1.6 The site assessments and recommendations for remediation are detailed in the above documents.

1.1.7 This report is produced solely for the benefit of Hargreaves and no liability is accepted for any reliance placed upon it by any other party unless specifically agreed in writing. The full limitations are attached at the rear of this report.

2.0 BACKGROUND

2.1 Environmental Setting

2.1.1 The site location is presented in Figure 1, Appendix 1. The site is located at postcode BL9 9RA and Grid Reference 380990E, 409020N. It is accessed from St Peter's Road to the west of the site. Kemp Heaton Avenue is located in the west of the site and provides access to the development to the south of the site.

2.1.2 A full appraisal of the site's environmental setting is provided in the CampbellReith Land Quality Statement [3]. In summary:

- the site is underlain by Made Ground over superficial deposits comprising Head Deposits, Alluvium, and River Terrace Deposits overlying Glacial Till. The bedrock geology comprises the Pennine Lower Coal Measures Formation;
- the Glacial Till deposits are classified as a Secondary Undifferentiated Aquifer. The superficial deposits listed above, and the bedrock are classified as Secondary A Aquifers;
- the nearest surface water receptor is the River Roch, located approximately 25m northeast of the site;
- there are no Source Protection Zones (SPZs) within 500m of the site;
- the residential development is considered to be of **high** sensitivity.

2.2 Site History and Industrial Setting

2.2.1 From the earliest available historical mapping the site comprised undeveloped fields until it was developed into the William Kemp Heaton Training Centre in the 1970s. The training centre was demolished in c. 2017. Kemp Heaton Avenue was constructed adjoining St Peters Road in c. 2018.

2.2.2 There were several potential sources of contamination identified on site, including Made Ground associated with previous on site development, possible raising of ground levels with uncontrolled fill and the backfilled goit in the east of the site which has been identified as a historical landfill site.

2.3 Site Development

2.3.1 The development of the site comprises the construction of eight bungalows, seven houses, ten cottage flats and eighteen apartments for supported living. The development also includes access, infrastructure, gardens, landscaping and parking provisions.

2.4 Site Investigations

2.4.1 Following a review of the environmental status of the site, a ground investigation was commissioned by CampbellReith and undertaken in two phases in July and November 2023 by Dunelm Environmental & Geotechnical Ltd.

2.4.2 The investigations generally confirmed the anticipated sequence of strata comprising Made Ground from ground level to depths >3.60m, River Terrace Deposits from ground level to

6.45m bgl, Glacial Till from 4.00m to 13.78m bgl, and the Pennine Lower Coal Measures Formation from 8.00m bgl to >30.00m bgl.

2.4.3 Chemical analysis of soil and ground gas samples was undertaken at UKAS accredited laboratories. Ground gas and groundwater levels were monitored on 11no. occasions between 21st August 2023 and January 2024 [3]. Table 2.1 presents the testing undertaken.

Table 2.1: Laboratory Testing of Made Ground Samples

Test type	Number
SOIL	
S1.3 Asbestos screen	13
S1.4 Total Organic Carbon	6
S1.6 General Suite: pH, moisture content, metals and inorganics, phenol, speciated polycyclic aromatic hydrocarbons (PAHs) and total petroleum hydrocarbons (TPH)	17
GAS	
Bulk gases, carbon monoxide, hydrogen sulphide and nitrogen	2

2.5 Environmental Assessment

2.5.1 Following the ground investigations, the risks associated to the receptors from contamination identified at the site was assessed in Sections 7 of the CampbellReith GQRA [3]. This risk assessment is summarised below.

Soil

2.5.2 There were marginal exceedances of dibenzo(ah)anthracene in 2no. samples retrieved from WS02 at 0.50m and TP05 at 0.20m.

2.5.3 Exploratory hole location TP05 is located beneath an area of proposed hardstanding, thus removing the direct pathway between impacted soils and residential end users. WS02 is located within the communal soft landscaped area adjacent to the supported living apartments in the north of the site.

2.5.4 Asbestos was not visually identified during the intrusive investigations, and no fibres were identified in the 13 no. samples analysed.

Ground Gas / Vapours

2.5.5 Sporadic elevated concentrations of methane (up to 74.80%) and carbon dioxide (up to 13.20%) were recorded. Potential gas sources were identified as alluvium, uncontrolled placement of Made Ground and hydrocarbon degradation.

2.5.6 Detailed assessment of the gas monitoring results indicated that the site should be classified as CIRIA Characteristic Situation 2. Therefore, gas protection measures (CS2) are required in all proposed buildings.

2.5.7 The risk from vapours is not significant and, as such, vapour protection measures were not required [3].

Groundwater

2.5.8 Groundwater sampling was not undertaken as part of the ground investigation. No significant contaminant concentrations were recorded within Made Ground soils which pose a risk to controlled waters and therefore no specific remediation measures were required [3].

3.0 CONCEPTUAL SITE MODEL AND REMEDIAL REQUIREMENTS

3.1 Introduction

3.1.1 Based on information obtained during the site investigations and the subsequent assessment, a contaminant linkage site conceptual model was developed. A detailed review of the site conceptual site model is provided in the CampbellReith's Land Quality Statement, dated September 2024 [3]. The following section provides a summary and details the remedial works considered necessary to mitigate the risks identified during the investigations.

3.2 Site End Users

3.2.1 The identified contaminant concentrations within the soils were considered to pose a low risk to future end users due to the absence of significant contaminant concentrations recorded in representative samples of Made Ground.

3.2.2 The site-won soils were considered unsuitable for use in private gardens and communal soft landscaped areas due to the presence of Made Ground. Therefore, imported soils were required to make up the cover system.

3.2.3 Imported soils were to be certified to demonstrate suitability for use and analysed for an appropriate suite of contaminants, in accordance with a Remediation Strategy [4].

3.2.4 A watching brief and formation level inspections were to be maintained throughout the works by the Contractor to verify the absence of significant contamination.

3.2.5 Based on the conceptual site model and detailed assessment, the risk from ground gas was considered low. Ground gas protection measures were required in all proposed buildings comprising a ventilated sub floor void, gas resistant membrane, and independent verification in accordance with CIRIA C735.

3.3 Controlled Waters

3.3.1 The risk to the underlying Secondary A Aquifer was considered low. The site is not located within a Source Protection Zone and therefore lies in an area of moderate sensitivity with respect to hydrogeology.

3.3.2 No significant contamination was recorded in representative samples of Made Ground therefore it is unlikely to pose a significant risk to surface and groundwater receptors. Therefore, no remedial works were required relating to controlled water receptors.

3.4 Access to the backfilled goit during ground investigation works was restricted due to the presence of dense vegetation and trees. Further investigation and risk assessment to consider the potential risk posed by Made Ground within the goit to the nearby River Roch may be prudent.

3.5 Infrastructure

3.5.1 The presence of TPH and PAH concentrations in the soil indicated a possible need for protection of public water supply pipework, such as the use of organic resistant pipework.

3.6 Waste

3.6.1 Records relating to waste soil disposal were required to show compliance with waste legislation.

4.0 COLLATED INFORMATION

4.1 Remedial Implementation

4.1.1 Information associated with the implementation of the remedial works has been supplied by Hargreaves and Construction Site Validation Services.

4.2 Summary of Information Presented

4.2.1 In order to satisfy the verification requirements, information as detailed below has been presented in Appendices 2 to 7 of this report:

- Appendix 2 – confirmation from Hargreaves of completion of the site watching brief, foundation inspections and associated photographs;
- Appendix 3 – records associated with the trial trench in the backfilled goit, including chemical test certificates of verification samples;
- Appendix 4 - imported topsoil / subsoil chemical test certificates and information relating to cover system thickness;
- Appendix 5 - information relating to the installation of gas protection measures;
- Appendix 6 – records relating to pipework installation; and,
- Appendix 7 – example waste records for soil arisings removed from site.

5.0 SUMMARY OF REMEDIAL WORKS

5.1 Watching Brief

5.1.1 A watching brief was maintained throughout groundworks in order to confirm the absence of previously undiscovered sources of potential contamination. Hargreaves provided watching brief reports that included photographs of excavations across the site. The reports stated whether anything unusual was encountered during excavations.

5.1.2 The watching brief report dated 30th June 2025 documents the removal of soils on three areas of the site which were contaminated by Invasive Non-Native Plants. Approximately 25 loads of soil impacted by Horsestail (referenced Marestail) were removed and disposed of at a permitted facility by Churchill Enviro Ltd. The report includes photographic evidence and waste transfer notes to confirm the remediation and is provided in Appendix 2.

5.1.3 An invasive species location plan is included in the report which shows the location of Himalayan balsam and Horsetail on site, as well as Japanese knotweed in close proximity to the northeast boundary. According to email correspondence with Hargreaves, the Himalayan Balsam was cleared prior to development. A contractor has also been appointed to apply Glyphosate based herbicide via a knapsack sprayer to potential re-growth in area HB4 in May and July of 2026, 2027 and 2028.

5.1.4 The watching brief report dated 31st July 2025 documents the inspection of formation levels which includes photographic evidence. Generally, Hargreaves stated that there were no observations of unexpected signs of contamination (visual or olfactory) and nothing unusual was encountered in the soils. The report includes a topographical survey and photographs of the formation level inspections and is provided in Appendix 2.

5.2 Inspection of the Backfilled Goit

5.2.1 CampbellReith attended site on the 23rd June 2025 to supervise the trial pit excavation within the backfilled goit to inspect the possible landfill materials. The trial pit location is shown in Figure 3, Appendix 1. A summary of the site visit, together with the trial pit log and photographs are provided in Appendix 3.

5.2.2 No evidence of putrescible or highly degradable material was observed in the former landfill which would pose a risk of ground gas. However, an organic odour was noted in the shallow cohesive Made Ground, and a hydrocarbon odour was observed from 2.20m bgl in the possible landfill material.

5.2.3 Therefore, 2no. samples were retrieved for total organic carbon (TOC) analysis. An extended TPH CWG with BTEX suite was also scheduled on the possible landfill material due to the potential for hydrocarbon contamination.

5.2.4 The laboratory results summarised in Table 5.1 below indicate that the concentrations of petroleum hydrocarbons and BTEX compounds do not exceed the validation criteria for a residential end use with plant uptake. The concentrations of low chain hydrocarbons and BTEX compounds, which are considered the most volatile fractions, were also below the laboratory

limits of detection. The chemical test certificate (report no. 25-033607) is provided in Appendix 3.

Table 5.1 Contaminant Concentrations – Possible Landfill Materials

SUBSTANCE	TT01 2.20m	SOIL VALIDATION CRITERIA (mg/kg)
Speciated Total Petroleum Hydrocarbons		
Aliphatics >C5-6	< 0.010	42 [A]
Aliphatics >C6-8	< 0.010	100 [A]
Aliphatics >C8-10	< 0.010	27 [A]
Aliphatics >C10-12	1.3	130 [A]
Aliphatics >C12-16	17	1100 [A]
Aliphatics >C16-21	48	65000 [A]
Aliphatics >C21-35	400	65000 [A]
Aromatics >C5-7	< 0.010	81 [A]
Aromatics >C7-8	< 0.010	160 [A]
Aromatics >C8-10	< 0.020	36 [A]
Aromatics >C10-12	< 1.0	81 [A]
Aromatics >C12-16	26	160 [A]
Aromatics >C16-21	150	290 [A]
Aromatics >C21-35	790	1100 [A]
BTEX		
Benzene	<0.005	0.20[A]
Toluene	<0.005	160[A]
Ethylbenzene	<0.005	50[A]
O-Xylene	<0.008	63[A]
m,p xylenes	<0.005	59[A]
Methyl tert-butyl ether	<0.005	65[D]

All values above assume 1% Soil Organic Matter (SOM). [A]S4UL for Residential end use with plant uptake, [D]GAC derived using CLEA v1.071. All values are reported in mg/kg, after converting the BTEX laboratory results which were reported in µg/kg.

5.2.5 The total organic carbon (TOC) concentrations were recorded as 3.0% in TT01 at 2.20m and 4.2% in TT01 at 0.60m bgl. The trial pit log indicates that the shallow Made Ground and possible landfill materials comprise a predominantly soil matrix with inclusions of construction and demolition type materials. The TOC concentrations are therefore considered likely to reflect the precense of carbonaceous materials such as bituminous materials and macadam, rather than a significant degradable source capable of generating hazardous gas. As the material within the former goit was deposited approximately 40 years ago, any active gassing will have reduced significantly and given that ground gas protection measures have been

designed to CIRIA Characteristic Situation 2, the proposed measures are considered to provide a conservative level of protection for the development.

5.3 Imported Material and Cover System Installation

5.3.1 Site won materials were considered unsuitable for use in the near surface environment in private gardens and communal soft landscaped areas due to the presence of Made Ground. Therefore, the Remediation Strategy [4] specified the placement of a clean cover system comprising at minimum of 600mm of clean soils in private gardens and 450mm in communal soft landscaped areas.

5.3.2 Validation of the imported material and confirmation of cover system thickness is being carried out in three phases: the private gardens for Plots 1-5, the private gardens for the remaining dwellings, and the communal soft landscaped areas associated with the apartments.

5.3.3 To date, imported material has only been installed within the front and rear gardens of Plots 1 – 5. Hargreaves has confirmed that approximately 77m^3 of topsoil and 100m^3 of subsoil were imported for these plots. Hand dug pits were excavated to inspect the cover system thickness, and 4no. in-situ soil samples were obtained and submitted for laboratory analysis.

5.3.4 The samples were analysed for the soil verification suite which includes heavy metals / metalloids, inorganics, phenols, speciated polycyclic aromatic hydrocarbons, petroleum hydrocarbons, volatile organic compounds (MTBE and BTEX) and an asbestos screen.

5.3.5 The laboratory results for Plots 1-5 indicate that the contaminant concentrations do not exceed the validation criteria values set out in the CampbellReith Remediation Strategy [4]. All front and rear gardens have also been installed with the specified 600mm clean cover system.

5.3.6 A standalone clean cover system verification report for Plots 1 – 5 is included within Appendix 4. The report includes a summary of CampbellReith site visit on 29th April 2026. The report also includes topsoil delivery/conveyance notes, hand dug pit logs and location plans, chemical testing certificates verifying the imported material, and photographs of the cover system installation.

5.3.7 Verification of the two remaining phases, including chemical validation of imported material and confirmation of cover system thickness, will be included within a future version of this report.

5.4 Gas / Vapour Protection Measures

5.4.1 Gas protection measures comprising a passive sub floor dispersal layer and validated gas resistant membrane were required as part of Remediation Strategy [4]. Independent inspection and verification of the membrane was undertaken by Construction Site Validation Services (CSVS).

5.4.2 Copies of CSVS verification reports are included in Appendix 5. These reports include inspection record sheets and photographs demonstrating that the gas resistant membrane and perimeter vents have been installed in accordance with current guidance. Photographs of the subfloor ventilation provided by the contractor have also been included.

5.4.3 The welded membrane seams were checked visually, by hand and by air lance testing. Any repairs required to the membrane were carried out during the inspection. The reports indicate that all plots on site passed the inspection, and that no additional inspection visits are required.

5.4.4 The JUTA gas resistant membrane and self-adhesive membrane (SAM) specifications are also provided in Appendix 5.

5.5 Specification for Services

5.5.1 Puriton barrier pipework was installed in areas of the site in order to mitigate the potential risk to potable water posed by concentrations of organic contaminants within soils at the site, following completion of a United Utilities pipeline risk assessment.

5.5.2 Written confirmation of the barrier pipe installation, the barrier pipe brochure and plan showing the barrier pipe locations have been provided by Hargreaves and are included in Appendix 6.

5.6 Waste Records

5.6.1 During ground works, waste soils arisings were removed from site by:

- W Maher and Sons Ltd (licence no. CBDU90617)

5.6.2 Churchill Enviro Ltd also confirmed that waste soil arisings impacted with Invasive Non-Native Plants were disposed of at:

- Fletcher Bank Quarry Landfill Site (permit no. EPR/GP3733FE)

5.6.3 A total of 25 loads of contaminated soils were removed between the 15th and 19th May 2025. The receiving facility is permitted to accept the waste, and the materials were received in accordance with the WSP01 – Acceptance of Waste Containing Invasive Non-Native Species R01.

5.6.4 Further details on the removal of soils impacted by Invasive Non-Native Plants are discussed in Section 5.1 above, with associated records from Churchill Enviro Ltd included in Appendix 2.

5.6.5 Example waste transfer notes from W Maher and Sons Ltd, together with Hargreaves waste documentation records showing the volume of waste soil arisings removed off-site are provided in Appendix 7.

6.0 CONCLUSIONS

6.1.1 In accordance with good practice in contaminated land management, a comprehensive site investigation and risk assessment has been completed for the site.

6.1.2 Based on the site investigation works undertaken, subsequent risk assessment and completion of the remediation works, the site is considered to present a low risk to statutory receptors from a land contamination perspective and is considered suitable for the new development which comprises eight bungalows, seven houses, ten cottage flats and eighteen apartments for supported living.

6.1.3 This report should be submitted to the Planning Officer at the Local Planning Authority to discharge planning condition 5 of planning application 71532 for Plots 1 – 5. As there are still outstanding verification records for imported materials and cover system installation in the remaining plots, these will be included in an updated version of this report.

6.1.4 This report should be included within the site's health and safety documentation.

LIMITATIONS

Environmental & Geotechnical Interpretative Reports

1. This report provides available factual data for the site obtained only from the sources described in the text and related to the site on the basis of the location information provided by the client.

2. Where any data or information supplied by the client or other external source, including that from previous studies, has been used, it has been assumed that the information is correct. No responsibility can be accepted by CampbellReith for inaccuracies within this data or information. In relation to historic maps the accuracy of maps cannot be guaranteed and it should be recognized that different conditions on site may have existed between and subsequent to the various map surveys.

3. This report is limited to those aspects of historical land use and enquiries related to environmental matters reported on and no liability is accepted for any other aspects. The opinions expressed cannot be absolute due to the limit of time and resources implicit within the agreed brief and the possibility of unrecorded previous uses of the site and adjacent land.

4. The material encountered and samples obtained during onsite investigations represent only a small proportion of the materials present on the site. There may be other conditions prevailing at the site which have not been revealed and which have therefore not been taken into account in this report. These risks can be minimised and reduced by additional investigations. If significant variations become evident, additional specialist advice should be sought to assess the implications of these few findings.

5. The generalised soil conditions described in the text are intended to convey trends in subsurface conditions. The boundaries between strata are approximate and have been developed on interpretations of the exploration locations and samples collected.

6. Water level and gas readings have been taken at times and under conditions stated on the exploration logs. It must be noted that fluctuations in the level of groundwater or gas may occur due to a variety of factors which may differ from those prevailing at the time the measurements were taken.

7. Please note that CampbellReith cannot accept any liability for observations or opinions expressed regarding the absence or presence of asbestos or on any product or waste that may contain asbestos. We recommend that an asbestos specialist, with appropriate professional indemnity insurance, is employed directly by the client in every case where asbestos may be present on the site or within the buildings or installations. Any comments made in this report with respect to asbestos, or asbestos containing materials, are only included to assist the client with the initial appraisal of the project and should not be relied upon in any way.

8. The findings and opinions expressed are relevant to those dates of the reported site work and should not be relied upon to represent conditions at substantially later dates.

9. This report is produced solely for the benefit of the client, and no liability is accepted for any reliance placed upon it by any other party unless specifically agreed in writing.



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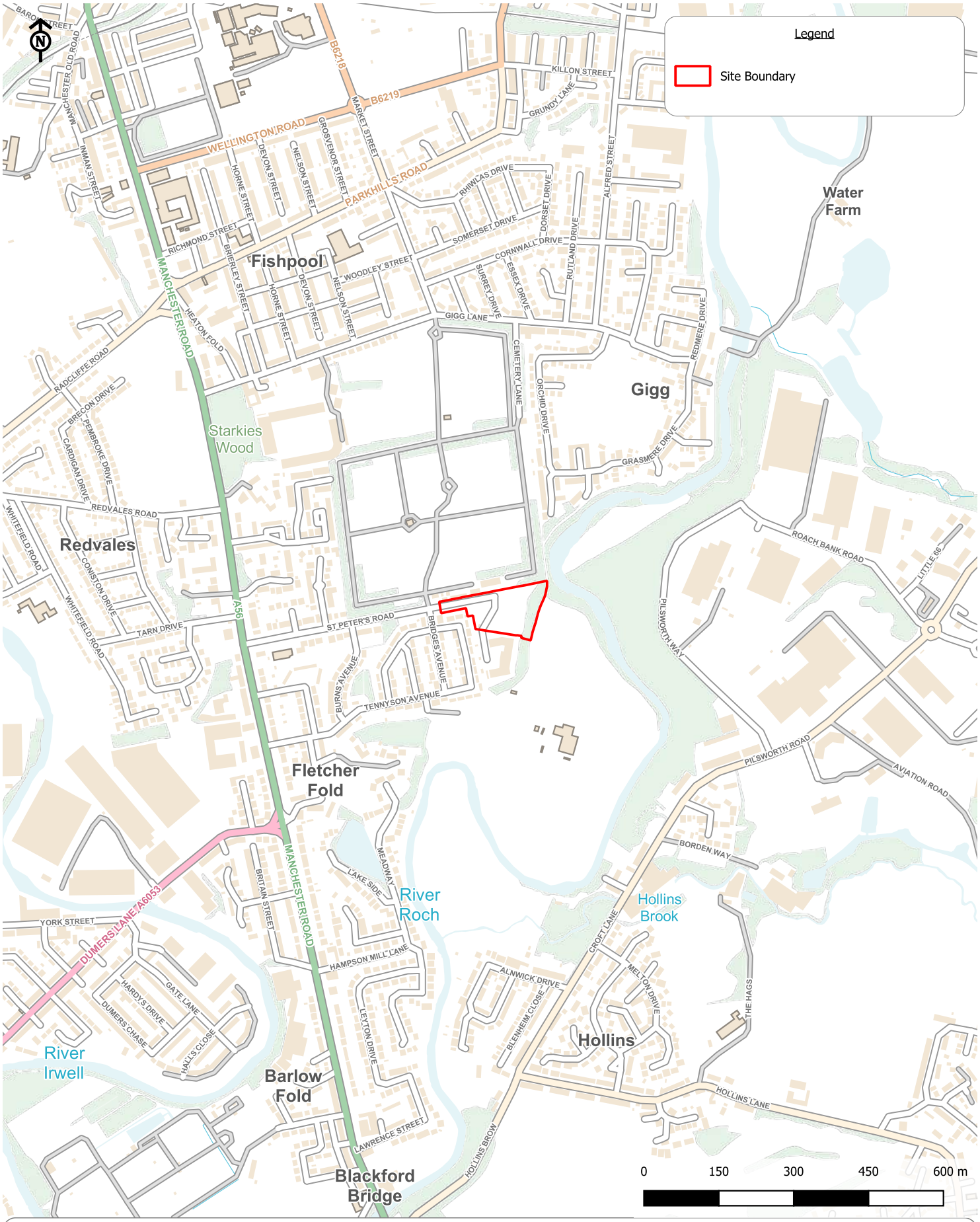
Appendix 1

Figures

Figure 1: Site Location

Figure 2: Site Redevelopment

Figure 3: Exploratory Hole Location Plan



Kemp Heaton Avenue, Bury

Client: Great Places Housing Group

Figure 1:
Site Location

Scale: 1:10000@A4
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Drg No - Status/Revision: 13753-CRH-XX-XX-FG-G-7035 - P1
File location: N:\13750 - 13999\13753 M - Kemp Heaton Avenue\Project_Workspaces\Verification Report (pdf in Outputs)
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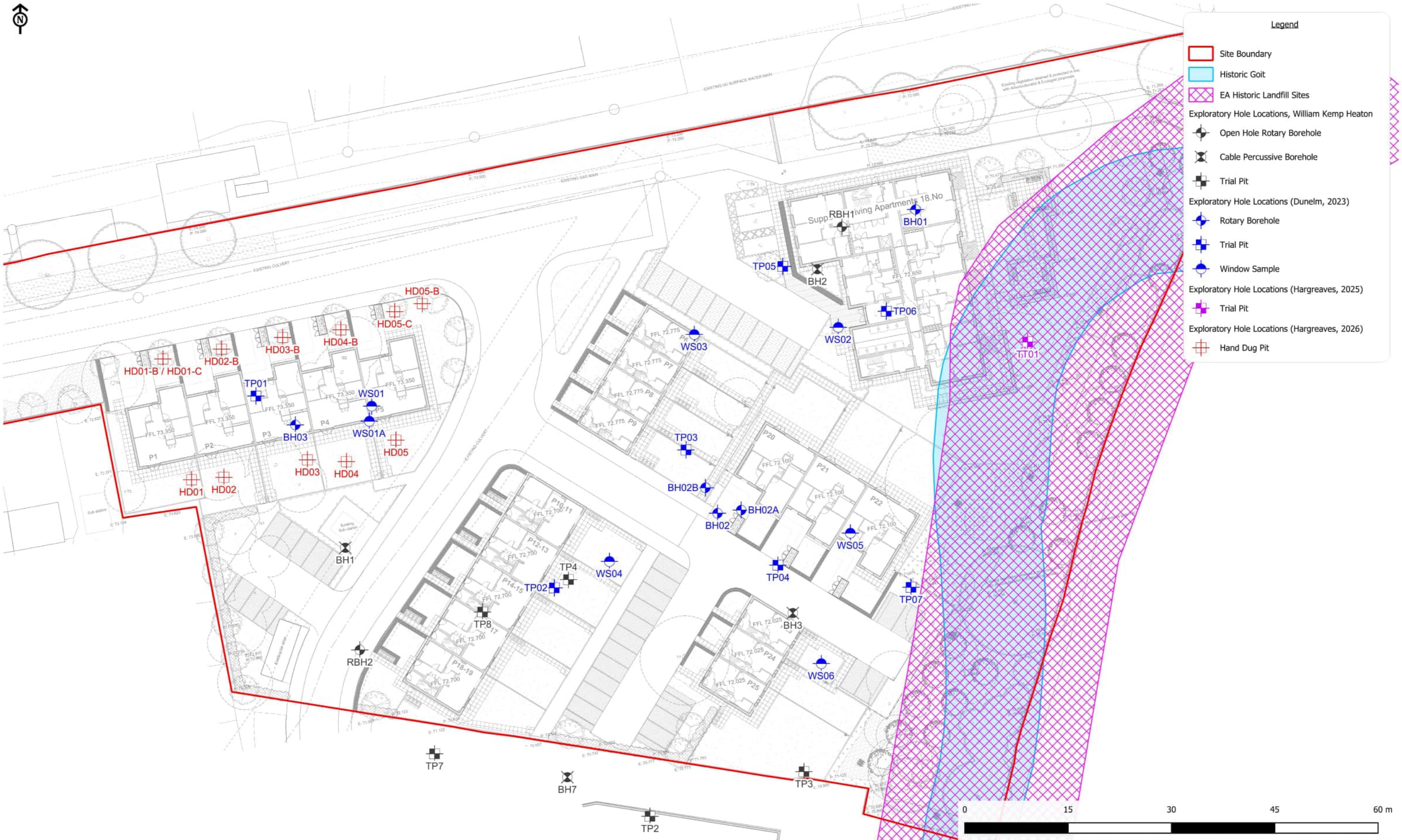
Client: Great Places Housing Group

Figure 2:
Site Redevelopment

Scale: 1:500@A3
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Saville Landscape Design - Landscape General Arrangements: 387-03-U (Apr 2025)
Job Number: 13753
Drawn by - Checked by: RLF - SM
Drg No - Status/Revision: 13753-CRH-XX-XX-FG-G-7036 - P1
File location: N:\13750 - 13999\13753 M - Kemp Heaton Avenue\Project_Workspaces\Verification Report (pdf in Outputs)
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Kemp Heaton Avenue, Bury

Client: Great Places Housing Group

Figure 3:
Exploratory Hole Location Plan

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Appendix 2

Watching Brief Records

Watching Brief Report – Invasive Non-Native Plants

Watching Brief Report – Formation Level Inspection

Email Correspondence with Hargreaves For the Watching Briefs

Watching Brief Report – Contaminated Material Removal

Project: Kemp Heaton Avenue, Bury

Site Address: Kemp Heaton Avenue, Bury. BL9 9RL

Client: Great Places Housing Association

Date of Works: 15th to 19th May 2025

Report Prepared by: Adam Crawshaw, Site Engineer, Hargreaves Contracting Limited

Report Date: 30 June 2025

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1. Introduction

This report outlines the findings and actions taken during a watching brief conducted in relation to the removal of contaminated material encountered during excavation works at the above-mentioned site. The watching brief was undertaken in accordance with the project's environmental strategy, statutory requirements, and the previously submitted Watching Brief Statement.

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2. Purpose of Watching Brief

The purpose of the watching brief was to:

- Monitor for visual and olfactory evidence of ground contamination.
- Ensure proper identification, handling, and segregation of contaminated materials.
- Oversee compliance with statutory waste management requirements.
- Document the safe removal and disposal of contaminated material off-site.

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3. Methodology

- Hargreaves Site Engineer attended the site throughout excavation activities in areas of concern.
- Excavated material was visually and olfactorily assessed.
- Potentially contaminated materials were segregated from general spoil.
- Samples were collected for laboratory analysis where deemed necessary.
- Contaminated materials were stored temporarily on an impermeable membrane and covered to control dust and runoff.
- Materials were transported off-site by licensed waste carriers to approved waste disposal facilities.

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4. Observations and Findings

- **Location of Contamination:** As identified on drawings – see Appendix C
- **Type of Contamination:** As identified in Appendix A
- **Extent of Contamination:** As identified on drawings – see Appendix C
- **Sampling & Testing:** As identified in Appendix A

---

5. Actions Taken

- Contaminated soils were safely excavated and separated from clean arisings.
- Stockpiling on-site followed best practice: impermeable membrane, covered, with appropriate signage.
- Dust suppression via [e.g., water misting] was used during excavation and loading.
- Waste was classified and coded per the European Waste Catalogue (EWC).
- Removed by [insert licensed carrier name] under Waste Carrier Licence No. [insert].
- Disposed of at [insert disposal facility name] under permit No. [insert].
- Waste Transfer Notes and Hazardous Waste Consignment Notes are included in **Appendix A**.

---

6. Health, Safety and Environmental Controls

- All operatives were briefed via site induction and a contamination-specific toolbox talk.
- Appropriate PPE was worn, including gloves, masks, and Tyvek suits where required.
- No incidents, injuries or near misses occurred during the watching brief period.
- No asbestos-containing materials were encountered [or “asbestos fragments were found and managed in accordance with relevant guidance”].

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7. Conclusions

- Contaminated material was successfully identified, segregated, and removed from site in full compliance with environmental regulations and site protocols.
- All waste was properly classified, recorded, and disposed of at licensed facilities.
- No further contaminated material was encountered beyond the identified area.
- The site is now cleared of the identified contamination to the satisfaction of current requirements.

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8. Appendices

- **Appendix A** – Waste Transfer Notes & Consignment Notes
- **Appendix B** – Photographic Records
- **Appendix C** – Site Drawings / Contamination Map

HARGREAVES
CONTRACTING EXCELLENCE

Appendix A

Waste Transfer Notes & Consignment Notes

Churchill Enviro Ltd

1 Eyebrook Road, Bowdon, Cheshire WA14 3LR

Tel 08000 121 777

enquiries@churchillenviro.com

Hargreaves Contracting
Unit 5 Rising Bridge Business Village
Blackburn Road
Accrignton
BB5 2AL

21st May 2025

Our Ref: LT01 210525 Invasive Species - 18807

Disposal of soils containing Invasive Non Native Plants – Marestail Ex. Kemp Heaton Avenue, Bury BL9 9GQ.

This letter confirms soils containing "Marestail" were removed from three identified locations from your site at Kemp Heaton Avenue, Bury, BL9 9GQ. A total of 25 loads of soils were removed between the 15th and 19th May 2025.

Soils were transferred between the via covered wagons to a designated area within:

Fletcher Bank Quarry Landfill Site

Fletcher Bank

Whalley Road

Bury

Ramsbottom

Lancashire

BL0 0DD

Permit Number – EPR/GP3733FE

The receiving facility is permitted to accept the waste and the materials were received in accordance with the WSP01 – Acceptance of Waste Containing Invasive Non Native Species R01, included as Appendix A.

Wastes were transferred under a “Season Ticket” with individual consignment notes for each load. Waste Transfer data in included as Appendix B.

Yours sincerely

Alex Clifford

Alex Clifford

Churchill Enviro Ltd

Churchill Enviro Ltd

1 Eyebrook Road, Bowdon, Cheshire WA14 3LR

Tel 08000 121 777

enquiries@churchillenviro.com

Acceptance and Handling of Wastes Containing Invasive Non Native Plants – Disposal at a Permitted Facility.

Waste Assessment and Acceptance

Prior to acceptance wastes must be subject to Waste Characterisation testing and subsequent Waste Classification.

The EWC code of wastes will be checked against any relevant available data provided (e.g. waste description, waste source or chemical testing) to confirm that the waste coding is correct. The waste enquiry procedure requires the following information to be gathered from any potential waste load prior to acceptance:

- Code according to the European Waste Catalogue;
- Source and origin of waste (e.g. site investigation reports, borehole logs);
- Information on the waste production process;
- Description of the waste treatment applied, or a statement of reasons why treatment is not considered necessary;
- Chemical analysis data on the composition of the waste (i.e. totals mg/kg) and the leaching behaviour (i.e. WAC) where necessary;
- The nature of the waste-i.e. smell, colour, physical form.
- Invasive Non Native Plants i.e. Japanese Knotweed

This data will be reviewed by a suitably qualified person to ensure that all sampling is representative of the source of the waste and an appraisal of the composition, including the likelihood of hazardous properties, will be undertaken.

The EWC and supporting data will be reviewed against the disposal site to ensure wastes can be accepted.

 Company Reg No. 5393456

Handing and Disposal of Waste

All such waste will be pre-booked at least one working day in advance in order to allow preparations for it's safe disposal to be made. An area sufficiently large to accommodate the estimated daily input of soils containing Invasive Non Native Plants (INNP) will be prepared by excavation.

This will allow for the soils containing INNO to be buried at least 5m away from any final flank or surface and at least 2m from any temporary flank and surface. All ACW deposited will be covered by at least 2 metres of uncontaminated soil by the end of the working day, such soils will be in place prior to acceptance of the first load each day and will be sourced from either incoming or site-dug inert waste.

The weighbridge operator will inform the machine operator/site supervisor by telephone prior to sending the vehicle to the working area and the machine operator/site supervisor will be in position to supervise the deposit of the waste and provide appropriate cover.

Biosecurity will be maintained in accordance with the appropriate guidance/code of practice.

Maher CN333557

W. MAHER & SONS LTD.
Rixton Old Hall, Manchester Road, Rixton, Warrington WA3 6EW
T: 0161 776 2200 E: enquiries@wmaherandsons.com

Bulk Excavation & Disposal • Ground Remediation
Quarried & Recycled Aggregates • Site Preparation

CONSIGNMENT NOTE

Customer: Hargreaves	Date: 15525
Loaded at: BURY	
Delivered to: TIP	
Driver: Steve D	Veh. Reg.: BXL
Tick ☐ 1 x 8 wh. load: Off Site	Material: INVASIVE Veg.
Tick ☐ 1 x 8 wh. load: Delivered	Material

Daywork / Sitework	Hours Worked		Travel Time		Total Hours	

Foreman or Agent's Signature: C. Barker

CONDITIONS OF SALE: It is essential that all written particulars entered above should be carefully checked by the consignee since this delivery note, once signed by the consignee, represents formal acceptance of the material in good order and condition and subsequent complaints cannot be accepted.
All complaints whether in respect of material or circumstances of delivery must be made to the driver of the vehicle and be confirmed in writing direct to the company immediately.
All materials and title to same remain the property of supplier until paid in full.

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Maher CN333559

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T: 0161 776 2200 E: enquiries@wmaherandsons.com

Bulk Excavation & Disposal • Ground Remediation
Quarried & Recycled Aggregates • Site Preparation

CONSIGNMENT NOTE

Customer: Hargreaves	Date: 15525
Loaded at: BURY	
Delivered to: TIP	
Driver: Steve D	Veh. Reg.: BXL
Tick ☐ 1 x 8 wh. load: Off Site	Material: INVASIVE Veg
Tick ☐ 1 x 8 wh. load: Delivered	Material

Daywork / Sitework	Hours Worked		Travel Time		Total Hours	

Foreman or Agent's Signature

CONDITIONS OF SALE: It is essential that all written particulars entered above should be carefully checked by the consignee since this delivery note, once signed by the consignee, represents formal acceptance of the material in good order and condition and subsequent complaints cannot be accepted.
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T: 0161 776 2200 E: enquiries@wmaherandsons.com

Bulk Excavation & Disposal • Ground Remediation
Quarried & Recycled Aggregates • Site Preparation

CONSIGNMENT NOTE

Customer: H Groves	Date: 15525
Loaded at: BURY	
Delivered to: TIP	
Driver: Steve D	Veh. Reg.: BXL
Tick ☐ 1 x 8 wh. load: Off Site	Material: Mix
Tick ☐ 1 x 8 wh. load: Delivered	Material

Daywork / Sitework	Hours Worked		Travel Time		Total Hours	

Foreman or Agent's Signature: C. Barker
INVASIVE VEG

CONDITIONS OF SALE: It is essential that all written particulars entered above should be carefully checked by the consignee since this delivery note, once signed by the consignee, represents formal acceptance of the material in good order and condition and subsequent complaints cannot be accepted.
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T: 0161 776 2200 E: enquiries@wmaherandsons.com

Bulk Excavation & Disposal • Ground Remediation
Quarried & Recycled Aggregates • Site Preparation

CONSIGNMENT NOTE

Customer: Hargreaves	Date: 15525
Loaded at: BURY	
Delivered to: TIP	
Driver: Steve D	Veh. Reg.: BXL
Tick ☑ 1 x 8 wh. load: Off Site	Material: INVASIVE Veg
Tick ☐ 1 x 8 wh. load: Delivered	Material

Daywork / Sitework	Hours Worked		Travel Time		Total Hours	

Foreman or Agent's Signature

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Maher CN333560

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T: 0161 776 2200 E: enquiries@wmaherandsons.com

Bulk Excavation & Disposal • Ground Remediation
Quarried & Recycled Aggregates • Site Preparation

CONSIGNMENT NOTE

Customer: Hargreaves	Date: 15525
Loaded at: BURY	
Delivered to: TIP	
Driver: Steve D	Veh. Reg.: BXL
Tick ☐ 1 x 8 wh. load: Off Site	Material: Mix INVasive Veg
Tick ☐ 1 x 8 wh. load: Delivered	Material

Daywork / Sitework	Hours Worked		Travel Time		Total Hours	

Foreman or Agent's Signature

CONDITIONS OF SALE: It is essential that all written particulars entered above should be carefully checked by the consignee since this delivery note, once signed by the consignee, represents formal acceptance of the material in good order and condition and subsequent complaints cannot be accepted.
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Maher CN 376269

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T: 0161 776 2200 E: enquiries@wmaherandsons.com

Bulk Excavation & Disposal • Ground Remediation
Quarried & Recycled Aggregates • Site Preparation

CONSIGNMENT NOTE

Customer: Hargreaves Date: 15/5/25
Loaded at:
Delivered to:
Driver: Veh. Reg.:
Tick ☐ 1 x 8 wh. load: Off Site Material
Tick ☐ 1 x 8 wh. load: Delivered Material
Daywork / Sitework | Hours Worked | Travel Time | Total Hours
Foreman or Agent's Signature

CONDITIONS OF SALE: It is essential that all written particulars entered above should be carefully checked by the consignee since this delivery note, once signed by the consignee, represents formal acceptance of the material in good order and condition and subsequent complaints cannot be accepted.
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Bulk Excavation & Disposal • Ground Remediation
Quarried & Recycled Aggregates • Site Preparation

CONSIGNMENT NOTE

Customer: Hargreaves Date: 15/5/25
Loaded at:
Delivered to:
Driver: Veh. Reg.:
Tick ☐ 1 x 8 wh. load: Off Site Material
Tick ☐ 1 x 8 wh. load: Delivered Material
Daywork / Sitework | Hours Worked | Travel Time | Total Hours
Foreman or Agent's Signature

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T: 0161 776 2200 E: enquiries@wmaherandsons.com

Bulk Excavation & Disposal • Ground Remediation
Quarried & Recycled Aggregates • Site Preparation

CONSIGNMENT NOTE

Customer: Hargreaves Date: 15/5/25
Loaded at: Heaton AV
Delivered to: FB
Driver: Veh. Reg.:
Tick ☐ 1 x 8 wh. load: Off Site Material
Tick ☐ 1 x 8 wh. load: Delivered Material
Daywork / Sitework | Hours Worked | Travel Time | Total Hours
Foreman or Agent's Signature

CONDITIONS OF SALE: It is essential that all written particulars entered above should be carefully checked by the consignee since this delivery note, once signed by the consignee, represents formal acceptance of the material in good order and condition and subsequent complaints cannot be accepted.
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Bulk Excavation & Disposal • Ground Remediation
Quarried & Recycled Aggregates • Site Preparation

CONSIGNMENT NOTE

Customer: Hargreaves Date: 15/5/25
Loaded at: Heaton AV
Delivered to: FB
Driver: Veh. Reg.:
Tick ☐ 1 x 8 wh. load: Off Site Material
Tick ☐ 1 x 8 wh. load: Delivered Material
Daywork / Sitework | Hours Worked | Travel Time | Total Hours
Foreman or Agent's Signature

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Bulk Excavation & Disposal • Ground Remediation
Quarried & Recycled Aggregates • Site Preparation

CONSIGNMENT NOTE

Customer: Hargreaves Date: 15/5/25
Loaded at:
Delivered to:
Driver: Veh. Reg.:
Tick ☐ 1 x 8 wh. load: Off Site Material
Tick ☐ 1 x 8 wh. load: Delivered Material
Daywork / Sitework | Hours Worked | Travel Time | Total Hours
Foreman or Agent's Signature

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Bulk Excavation & Disposal • Ground Remediation
Quarried & Recycled Aggregates • Site Preparation

CONSIGNMENT NOTE

Customer: Hargreaves Date: 15/5/25
Loaded at:
Delivered to:
Driver: Veh. Reg.:
Tick ☐ 1 x 8 wh. load: Off Site Material
Tick ☐ 1 x 8 wh. load: Delivered Material
Daywork / Sitework | Hours Worked | Travel Time | Total Hours
Foreman or Agent's Signature

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Bulk Excavation & Disposal • Ground Remediation
Quarried & Recycled Aggregates • Site Preparation

CONSIGNMENT NOTE

Customer: Hargreaves Date: 15/5/25
Loaded at:
Delivered to:
Driver: Veh. Reg.:
Tick ☐ 1 x 8 wh. load: Off Site Material
Tick ☐ 1 x 8 wh. load: Delivered Material
Daywork / Sitework | Hours Worked | Travel Time | Total Hours
Foreman or Agent's Signature

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T: 0161 776 2200 E: enquiries@wmaherandsons.com

Bulk Excavation & Disposal • Ground Remediation
Quarried & Recycled Aggregates • Site Preparation

CONSIGNMENT NOTE

Customer: Hargreaves Date: 15/5/25
Loaded at: Heaton AV
Delivered to: FB
Driver: Veh. Reg.:
Tick ☐ 1 x 8 wh. load: Off Site Material
Tick ☐ 1 x 8 wh. load: Delivered Material
Daywork / Sitework | Hours Worked | Travel Time | Total Hours
Foreman or Agent's Signature

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Maher CN 382198

W. MAHER & SONS LTD.
Rixton Old Hall, Manchester Road, Rixton, Warrington WA3 6EW
T: 0161 776 2200 E: enquiries@wmaherandsons.com

Bulk Excavation & Disposal • Ground Remediation
Quarried & Recycled Aggregates • Site Preparation

CONSIGNMENT NOTE

Customer: Hargreaves	Date: 15/5/25
Loaded at: Heaton Av	
Delivered to: FB	
Driver: Danny L	Veh. Reg.: TVC
Tick ☑ 1 x 8 wh. load: Off Site	Material: Invasive species
Tick ☐ 1 x 8 wh. load: Delivered	Material
Daywork / Sitework: Hours Worked	Travel Time: Total Hours
Foreman or Agent's Signature	

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Maher CN 398608

W. MAHER & SONS LTD.
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T: 0161 776 2200 E: enquiries@wmaherandsons.com

Bulk Excavation & Disposal • Ground Remediation
Quarried & Recycled Aggregates • Site Preparation

CONSIGNMENT NOTE

Customer: HARGREAVES	Date: 5.05.25
Loaded at: Bury	
Delivered to: FB	
Driver: Dan S.	Veh. Reg.: N22UWP
Tick ☐ 1 x 8 wh. load: Off Site	Material: INVASIVE SPECIES
Tick ☐ 1 x 8 wh. load: Delivered	Material: 1 x load
Daywork / Sitework: Hours Worked	Travel Time: Total Hours
Foreman or Agent's Signature	C Barker

CONDITIONS OF SALE: It is essential that all written particulars entered above should be carefully checked by the consignee since this delivery note, once signed by the consignee, represents formal acceptance of the material in good order and condition and subsequent complaints cannot be accepted.
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Maher CN 398610

W. MAHER & SONS LTD.
Rixton Old Hall, Manchester Road, Rixton, Warrington WA3 6EW
T: 0161 776 2200 E: enquiries@wmaherandsons.com

Bulk Excavation & Disposal • Ground Remediation
Quarried & Recycled Aggregates • Site Preparation

CONSIGNMENT NOTE

Customer: HARGREAVES	Date: 5.05.25
Loaded at: Bury	
Delivered to: FB	
Driver: Dan S.	Veh. Reg.: N22UWP
Tick ☐ 1 x 8 wh. load: Off Site	Material: INVASIVE SPECIES
Tick ☐ 1 x 8 wh. load: Delivered	Material: 1 x load
Daywork / Sitework: Hours Worked	Travel Time: Total Hours
Foreman or Agent's Signature	

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Maher CN 398612

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T: 0161 776 2200 E: enquiries@wmaherandsons.com

Bulk Excavation & Disposal • Ground Remediation
Quarried & Recycled Aggregates • Site Preparation

CONSIGNMENT NOTE

Customer: HARGREAVES	Date: 5.05.25
Loaded at: BURY	
Delivered to: FB	
Driver: Dan S	Veh. Reg.: N22UWP
Tick ☐ 1 x 8 wh. load: Off Site	Material: INVASIVE SPECIES
Tick ☐ 1 x 8 wh. load: Delivered	Material: 1 x load
Daywork / Sitework: Hours Worked	Travel Time: Total Hours
Foreman or Agent's Signature	

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Maher CN 382197

W. MAHER & SONS LTD.
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T: 0161 776 2200 E: enquiries@wmaherandsons.com

Bulk Excavation & Disposal • Ground Remediation
Quarried & Recycled Aggregates • Site Preparation

CONSIGNMENT NOTE

Customer: Hargreaves	Date: 15/5/25
Loaded at: Heaton Av	
Delivered to: FB	
Driver: Danny L	Veh. Reg.: TVC
Tick ☑ 1 x 8 wh. load: Off Site	Material: Invasive species
Tick ☐ 1 x 8 wh. load: Delivered	Material
Daywork / Sitework: Hours Worked	Travel Time: Total Hours
Foreman or Agent's Signature	

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Maher CN 382129

W. MAHER & SONS LTD.
Rixton Old Hall, Manchester Road, Rixton, Warrington WA3 6EW
T: 0161 776 2200 E: enquiries@wmaherandsons.com

Bulk Excavation & Disposal • Ground Remediation
Quarried & Recycled Aggregates • Site Preparation

CONSIGNMENT NOTE

Customer: HARGREAVES	Date: 5.05.25
Loaded at: Bury	
Delivered to: FB	
Driver: Dan S.	Veh. Reg.: N22UWP
Tick ☐ 1 x 8 wh. load: Off Site	Material: INVASIVE SPECIES
Tick ☐ 1 x 8 wh. load: Delivered	Material: 1 x load
Daywork / Sitework: Hours Worked	Travel Time: Total Hours
Foreman or Agent's Signature	

CONDITIONS OF SALE: It is essential that all written particulars entered above should be carefully checked by the consignee since this delivery note, once signed by the consignee, represents formal acceptance of the material in good order and condition and subsequent complaints cannot be accepted.
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Maher CN 398609

W. MAHER & SONS LTD.
Rixton Old Hall, Manchester Road, Rixton, Warrington WA3 6EW
T: 0161 776 2200 E: enquiries@wmaherandsons.com

Bulk Excavation & Disposal • Ground Remediation
Quarried & Recycled Aggregates • Site Preparation

CONSIGNMENT NOTE

Customer: HARGREAVES	Date: 5.05.25
Loaded at: Bury	
Delivered to: FB	
Driver: Dan S.	Veh. Reg.: N22UWP
Tick ☐ 1 x 8 wh. load: Off Site	Material: INVASIVE SPECIES
Tick ☐ 1 x 8 wh. load: Delivered	Material: 1 x load
Daywork / Sitework: Hours Worked	Travel Time: Total Hours
Foreman or Agent's Signature	C Barker

CONDITIONS OF SALE: It is essential that all written particulars entered above should be carefully checked by the consignee since this delivery note, once signed by the consignee, represents formal acceptance of the material in good order and condition and subsequent complaints cannot be accepted.
All complaints whether in respect of material or circumstances of delivery must be made to the driver of the vehicle and be confirmed in writing direct to the company immediately.
All materials and title to same remain the property of supplier until paid in full.

THIS IS NOT A WASTE TRANSFER NOTE | Form MAH/OD/16 V.06 04/19

Maher CN 398611

W. MAHER & SONS LTD.
Rixton Old Hall, Manchester Road, Rixton, Warrington WA3 6EW
T: 0161 776 2200 E: enquiries@wmaherandsons.com

Bulk Excavation & Disposal • Ground Remediation
Quarried & Recycled Aggregates • Site Preparation

CONSIGNMENT NOTE

Customer: HARGREAVES	Date: 5.05.25
Loaded at: Bury	
Delivered to: FB	
Driver: Dan S	Veh. Reg.: N22UWP
Tick ☐ 1 x 8 wh. load: Off Site	Material: INVASIVE SPECIES
Tick ☐ 1 x 8 wh. load: Delivered	Material: 1 x load
Daywork / Sitework: Hours Worked	Travel Time: Total Hours
Foreman or Agent's Signature	

CONDITIONS OF SALE: It is essential that all written particulars entered above should be carefully checked by the consignee since this delivery note, once signed by the consignee, represents formal acceptance of the material in good order and condition and subsequent complaints cannot be accepted.
All complaints whether in respect of material or circumstances of delivery must be made to the driver of the vehicle and be confirmed in writing direct to the company immediately.
All materials and title to same remain the property of supplier until paid in full.

THIS IS NOT A WASTE TRANSFER NOTE | Form MAH/OD/16 V.06 04/19

Maher CN401568

W. MAHER & SONS LTD.
Rixton Old Hall, Manchester Road, Rixton, Warrington WA3 6EW
T: 0161 776 2200 E: enquiries@wmaherandsons.com

Bulk Excavation & Disposal • Ground Remediation
Quarried & Recycled Aggregates • Site Preparation

CONSIGNMENT NOTE

Customer: Hargreaves	Date: 16/5/25
Loaded at: Bury	
Delivered to: FB	
Driver: [illegible]	Veh. Reg.: TVO
Tick [✓] 1 x 8 wh. load: Off Site	Material: Muck
Tick [ ] 1 x 8 wh. load: Delivered	Material: [illegible]

Daywork / Sitework	Hours Worked		Travel Time		Total Hours	

Foreman or Agent's Signature: [signature]

CONDITIONS OF SALE: It is essential that all written particulars entered above should be carefully checked by the consignee since this delivery note, once signed by the consignee, represents formal acceptance of the material in good order and condition and subsequent complaints cannot be accepted.
All complaints whether in respect of material or circumstances of delivery must be made to the driver of the vehicle and be confirmed in writing direct to the company immediately.
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THIS IS NOT A WASTE TRANSFER NOTE | Form MAH/OD/16 V.06 04/19

Maher CN 376273

W. MAHER & SONS LTD.
Rixton Old Hall, Manchester Road, Rixton, Warrington WA3 6EW
T: 0161 776 2200 E: enquiries@wmaherandsons.com

Bulk Excavation & Disposal • Ground Remediation
Quarried & Recycled Aggregates • Site Preparation

CONSIGNMENT NOTE

Customer: Hargreaves	Date: 16/5/25
Loaded at: Bury FB	
Delivered to:	
Driver: DE	Veh. Reg.: RXP
Tick [✓] 1 x 8 wh. load: Off Site	Material: EVASIVE DWEETACIES
Tick [ ] 1 x 8 wh. load: Delivered	Material:

Daywork / Sitework	Hours Worked		Travel Time		Total Hours	

Foreman or Agent's Signature: [signature]

CONDITIONS OF SALE: It is essential that all written particulars entered above should be carefully checked by the consignee since this delivery note, once signed by the consignee, represents formal acceptance of the material in good order and condition and subsequent complaints cannot be accepted.
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THIS IS NOT A WASTE TRANSFER NOTE | Form MAH/OD/16 V.06 04/19

Maher CN402989

W. MAHER & SONS LTD.
Rixton Old Hall, Manchester Road, Rixton, Warrington WA3 6EW
T: 0161 776 2200 E: enquiries@wmaherandsons.com

Bulk Excavation & Disposal • Ground Remediation
Quarried & Recycled Aggregates • Site Preparation

CONSIGNMENT NOTE

Customer: HARGREAVES	Date: 19 5 25
Loaded at: BURY	
Delivered to: FB	
Driver: JAMIE	Veh. Reg.: CHF
Tick [✓] 1 x 8 wh. load: Off Site	Material: MUCK
Tick [ ] 1 x 8 wh. load: Delivered	Material: INVASIVE SPECIES

Daywork / Sitework	Hours Worked		Travel Time		Total Hours	

Foreman or Agent's Signature: [signature]

CONDITIONS OF SALE: It is essential that all written particulars entered above should be carefully checked by the consignee since this delivery note, once signed by the consignee, represents formal acceptance of the material in good order and condition and subsequent complaints cannot be accepted.
All complaints whether in respect of material or circumstances of delivery must be made to the driver of the vehicle and be confirmed in writing direct to the company immediately.
All materials and title to same remain the property of supplier until paid in full.

THIS IS NOT A WASTE TRANSFER NOTE | Form MAH/OD/16 V.06 04/19

Maher CN 398614

W. MAHER & SONS LTD.
Rixton Old Hall, Manchester Road, Rixton, Warrington WA3 6EW
T: 0161 776 2200 E: enquiries@wmaherandsons.com

Bulk Excavation & Disposal • Ground Remediation
Quarried & Recycled Aggregates • Site Preparation

CONSIGNMENT NOTE

Customer: HARGREAVES	Date: 5.05.25
Loaded at: BURY	
Delivered to: FB	
Driver: Dan S	Veh. Reg.: [illegible]
Tick [ ] 1 x 8 wh. load: Off Site	Material: INVASIVE SPECIES
Tick [ ] 1 x 8 wh. load: Delivered	Material: 1 x Load

Daywork / Sitework	Hours Worked		Travel Time		Total Hours	

Foreman or Agent's Signature: [signature]

CONDITIONS OF SALE: It is essential that all written particulars entered above should be carefully checked by the consignee since this delivery note, once signed by the consignee, represents formal acceptance of the material in good order and condition and subsequent complaints cannot be accepted.
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THIS IS NOT A WASTE TRANSFER NOTE | Form MAH/OD/16 V.06 04/19

HARGREAVES
CONTRACTING EXCELLENCE

Appendix B

Photographic Records


Maher




Maher


Maher





















Appendix C

Site Drawings / Contamination Map

Additional off-site Japanese knotweed

Additional off-site extensive Himalayan balsam

JK1

HB4

HB2

HB3

HB1

HT3

HT2

HT1

DV

DV/DNI

Supported Living Apartments 18.No

Site Entrance Proposals

KEY

Existing tree or vegetation to be retained & protected in line with Arboculturalist proposals

Existing tree or vegetation to be removed in line with Arboculturalist proposals

Tree
Selected Standard Tree, 10-12cm girth, 300-350cm high, set in soft landscaping with timber stake support/ underground anchor system

Tree
Extra Heavy Standard Tree, 14-16cm girth, 425-600cm high, set in soft landscaping with timber stake support/ underground anchor system

Concrete flag paving 600x600mm

Pedestrian Block Paving A - PRIVATE

Pedestrian Block Paving B - PUBLIC

Permeable paving eg Trailflex flexible porous paving Area to be hand dig construction only

Vehicular Carriageway Block paving A - HOMEZONE

Existing boundary fence/ wall retained

2.1m high timber fence comprising 1.8m close boarded panels , 0.3m concrete gravel board & concrete support posts

1.8m high timber fence comprising 1.2m close boarded panels ,0.3m trellis, 0.3m concrete gravel board & concrete support posts

1.2m high timber fence comprising 0.9m close boarded panels, 0.3m concrete gravel board & concrete support posts

2.0m high Acoustic fence

Welded mesh security fence

Gabion wall

Seat

Bollard

Bat box
Subject to ecologists recommendations

Bird Box
Subject to ecologists recommendations

Hedgehog gap
Subject to ecologists recommendations

Disclaimer :
Survey based on visual inspection of surface growth. JKSL hold no liability for areas not identified in initial investigation works.
Continued monitoring of site is recommended

site boundary

approximate extents of japanese knotweed

3m risk zone

approximate extents of himalayan balsam

approximate extents of horsetail

likely extents of proposed excavation

N

SURVEY ORIENTATED TO MAGNETIC NORTH

Rev	Description	Date	By	Chk
F	Boundary treatments amended to arc comments			
E	Boundary treatments amended, public footpath realigned, bin store added			
D	Amended further to engineers input			
C	Amended further to engineers input & LPA comments			
B	Boundary treatments amended to arc input, bollard, bin store indicated, tree planting amended accordingly			
J	Apartment amended, additional bollard added			
H	Apartment amended, additional bollard added			
G	Amended to arc comments			
F	Amended to arc comments & latest topo			
E	Amended to arc comments			
D	Amended to suit revised planning boundary			
C	Amended to arc comments & latest topo			
B	Amended to arc comments & latest topo			
A	Amended to arc comments & latest topo			
Rev	Description			

Saville LANDSC
Hatherlow House Romiley
T : 0161 406 7333
M : 07592 289193

CLIENT
Great Places Hou

PROJECT TITLE
Kemp Heaton Av

DRAWING TITLE
Landscape Ge

STATUS
PLANNING

SCALE 1:250 | SHEET SI A1

PROJECT NO. 387

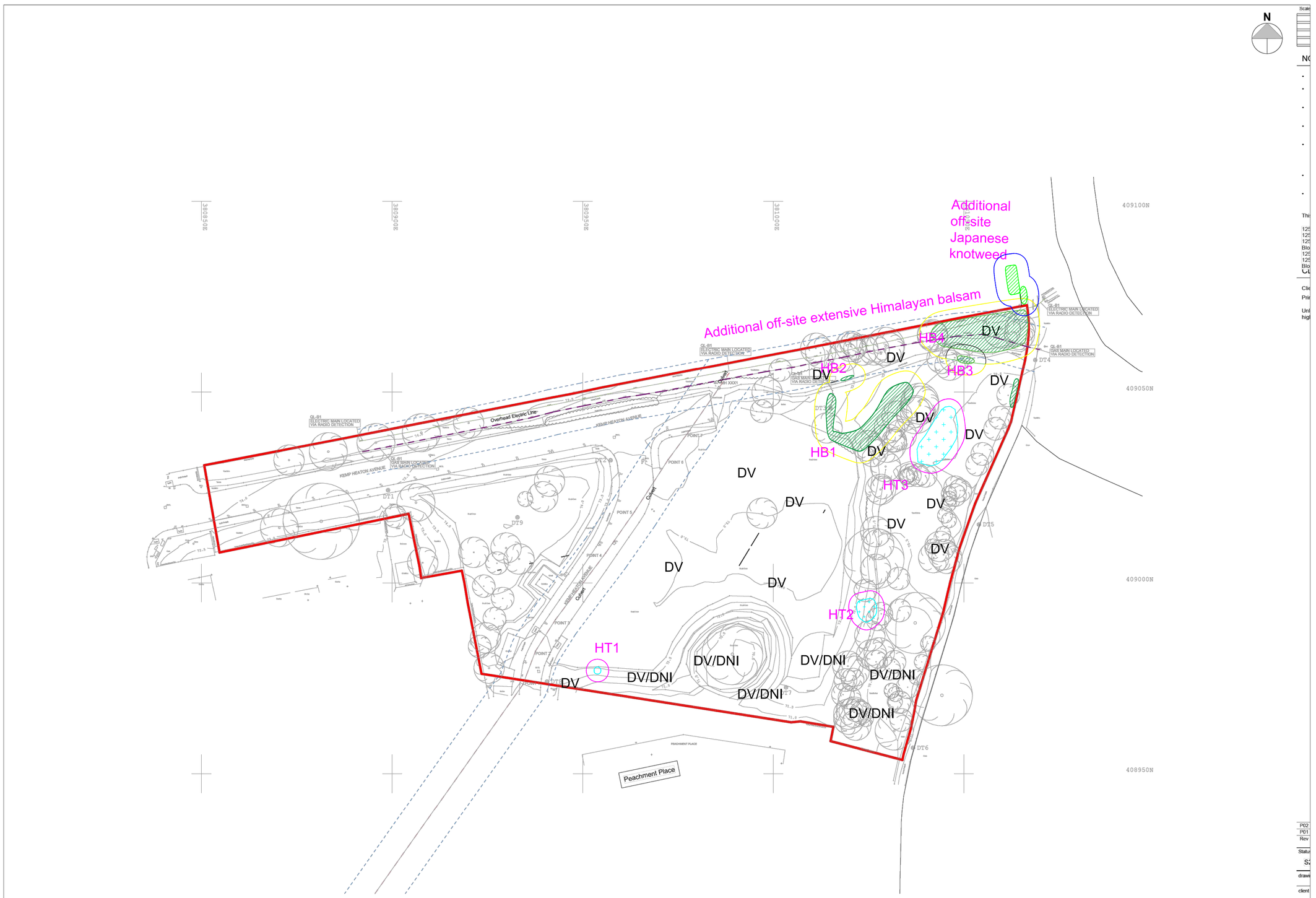
Client
Hargreaves Contracting Ltd

Contract
Kemp Heaton Avenue, Bury, BL9 9RN

Drawing
Impacts on development - anticipated extents of proposed excavation

Japanese Knotweed Solutions

Drawing No.	JK24-9907-01	Revision	/
Scales	NTS	Date	05-08-2024
Drawn	JEH	Checked	AD



Disclaimer :
Survey based on visual inspection of surface growth. JKSL hold no liability for areas not identified in initial investigation works. Continued monitoring of site is recommended

- site boundary
- approximate extents of japanese knotweed
- 3m risk zone
- approximate extents of himalayan balsam
- likely extents of Himalayan balsam seedbank
- approximate extents of horsetail
- likely extents of horsetail propagules

SURVEY ORIENTATED TO MAGNETIC NORTH

Rev	Description	Date	By	Chk

Client
Hargreaves Contracting Ltd

Contract
Kemp Heaton Avenue, Bury, BL9 9RN

Drawing
Invasive plant species location plan

Japanese Knotweed Solutions

Drawing No.	JK24-9907-02	Revision	/
Scales	NTS	Date	05-08-2024
Drawn	JEH	Checked	AD

Watching Brief Report – Inspection of Formation Levels

Project: Kemp Heaton Avenue, Bury

Site Address: Kemp Heaton Avenue, Bury. BL9 9RL

Client: Great Places Housing Association

Date of Works: 15th May 2025 to 31st July 2025

Report Prepared by: Adam Crawshaw, Site Engineer, Hargreaves Contracting Limited

Report Date: 31 July 2025

1. Introduction

This report outlines the findings and actions taken during a watching brief conducted in relation to inspection of formation levels. The watching brief was undertaken in accordance with the project's environmental strategy, statutory requirements, Campbell Reith Remediation Strategy

---

2. Purpose of Watching Brief

The purpose of the watching brief was to:

- Monitor for visual and olfactory evidence of ground contamination.
- Ensure proper identification, handling, and segregation of contaminated materials if found.
- Oversee compliance with statutory waste management requirements.
- Document the safe removal and disposal of contaminated material off-site. If found.

---

3. Methodology

- Hargreaves Site Engineer attended the site throughout excavation
- Excavated material was visually and olfactorily assessed.
- Potentially contaminated materials to be segregated from general spoil.
- Samples were collected for laboratory analysis where deemed necessary.
- Contaminated materials, where found, to be stored temporarily on an impermeable membrane and covered to control dust and runoff.
- Materials were transported off-site by licensed waste carriers to approved waste disposal facilities.

---

4. Observations and Findings

- **Location of Works:** As identified on drawing – see Appendix A

- **Type of Contamination:** None identified
- **Extent of Contamination:** None identified
- **Sampling & Testing:** Not Applicable. Testing undertaken pre-commencement

---

5. Actions Taken

- No contaminated soils were found. No further action required
- Foundation solution is driven precast piling, so risk of encountering contaminated materials is mitigated
- Property foundations are above formation level, , so risk of encountering contaminated materials is mitigated

---

6. Health, Safety and Environmental Controls

- All operatives were briefed via site induction and a contamination-specific toolbox talk.
- Appropriate PPE was worn, including gloves, masks, and Tyvek suits where required.
- No incidents, injuries or near misses occurred during the watching brief period.
- No asbestos-containing materials were encountered [or “asbestos fragments were found and managed in accordance with relevant guidance”].

---

7. Conclusions

- No contaminated material was observed during the excavations during bulk excavation deep drainage works and attenuation tank installation (e.g. stained or malodourous soils).
- The site is now cleared of the identified contamination to the satisfaction of current requirements.

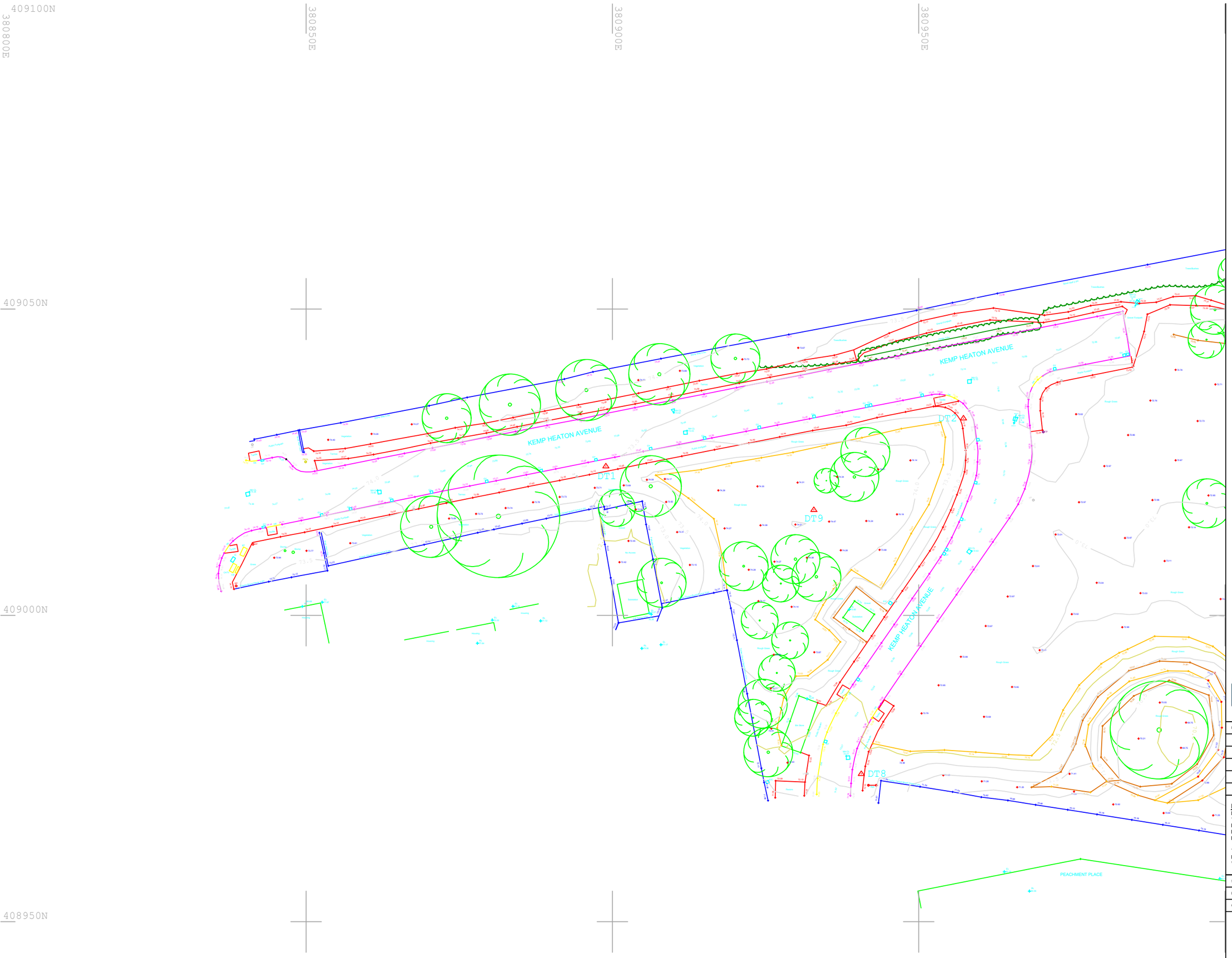
---

8. Appendices

- **Appendix A** – Site Drawing (2671T_Kemp_Heaton_Avenue_SU001 - Topo Survey)
- **Appendix B** – Photographic Records

Appendix A

2671T_Kemp_Heaton_Avenue_SU001 - Topo Survey



All levels related to OSGB36(15)

DT1	380898.9290	409024.3210	73.6750
DT2	380957.3060	409032.1455	73.1371
DT3	381015.0207	409045.7664	72.7857
DT4	381068.7122	409058.4632	70.7013
DT5	381053.9361	409015.3275	70.5534
DT6	381036.6488	408956.7852	70.5384
DT7	381003.3422	408972.6199	72.1254
DT8	380940.6208	408974.1097	72.2854
DT9	380932.8781	409017.2013	74.4906

- Buildings
- Beam
- Bridge
- Canopy
- Platform
- Tactile Strip
- Girder
- Walls
- Pillar
- Tunnel
- Drop Kerb
- Fence
- Gate
- Hedge
- Vegatation
- Path
- Channel
- Water
- Vegatation

Abbreviations

BB = Belisha Beacon
BD = Badger Set
BH = Bore hole
BT = BT Cover
CL = Cover Level
CP = Catch Pit
ER = Earth Rod
GY = Gulley
IC = Inspection Cover
IL = Invert Level
MH = Manhole
OLE = Overhead Line
RE = Rodding Eye
RWP = Rainwater Pipe
SOFF = Soffit level
SP = Sign Post
WV = Water valve
GV = Gas Valve
TL = Traffic Light
TLP = Trial Pit
TP = Telegraph Pole

EP = Electric Pole
ToW = Top of Wall
PBol = Bollard
LP = Lamp Post
RL = Ridge Level
EL = Eaves Level
MPG = Marker Post Gas

DYWIDAG

REV.	DATE	DESCRIPTION OF REVISION	DATE

DYWIDAG Ltd.
DATUM House
The Pavilions
Bridge Hall Lane
Bury
BL9 7NX

Tel. +44(0)161 797 5511
Fax.+44(0)161 797 5522
Web : www.dywidaggroup.com

SURVEYED BY	Peter Walsh	DATE	16/09/2021
DRAWN BY	Peter Walsh	DATE	20/09/2021
CHECKED BY	Ian Williamson	DATE	21/09/2021

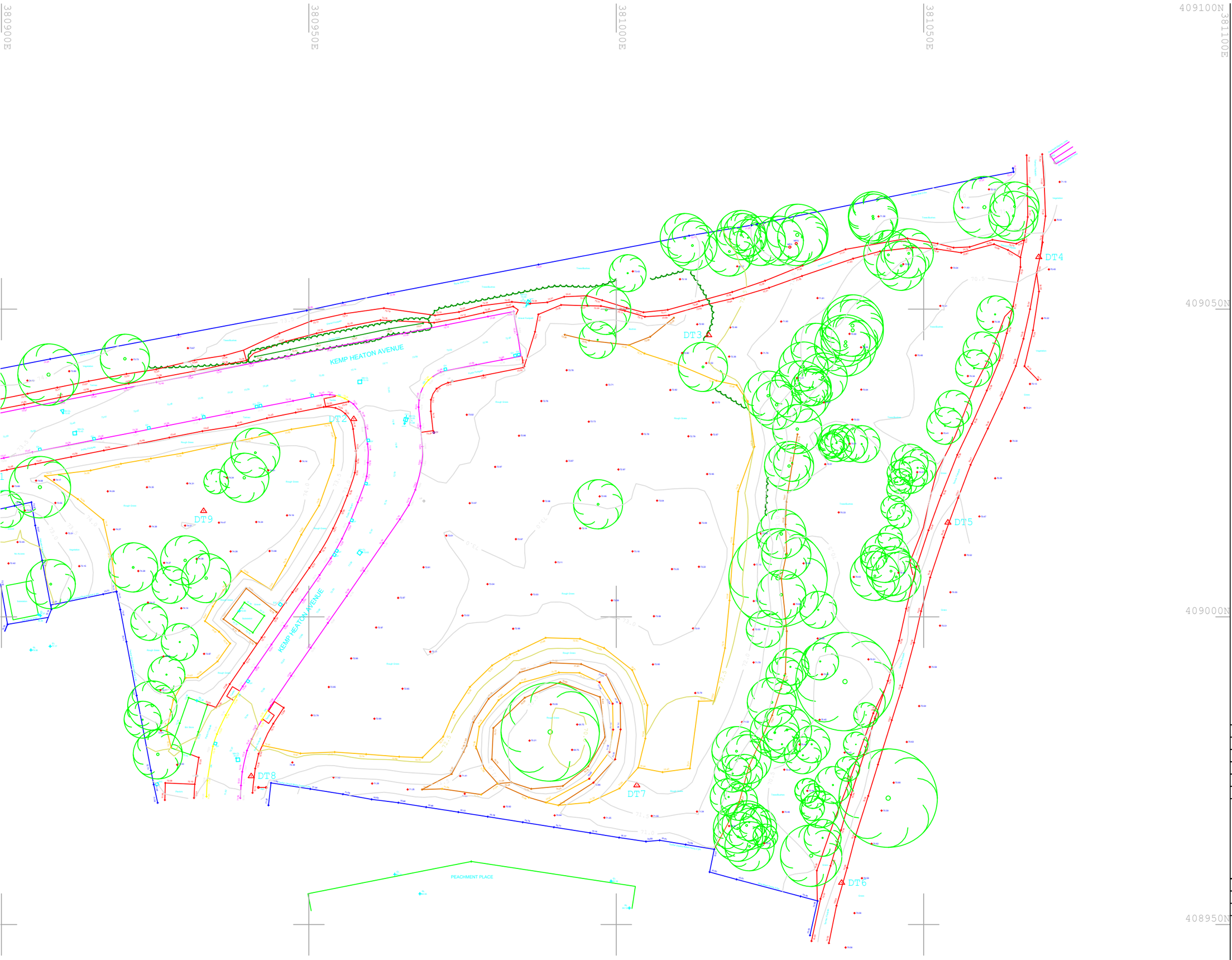
Topographical Survey

Kemp Heaton Avenue

Sheet 1 of 2

CampbellReith

SCALES	1:200	ORIGINAL - A0
PROJECT No.	2671T	
DRAWING No.	2671T_Kemp_Heaton_Avenue_SU001	



All levels related to OSGB36(15)

DT1	380898.9290	409024.3210	73.6750
DT2	380957.3060	409032.1455	73.1371
DT3	381015.0207	409045.7664	72.7857
DT4	381068.7122	409058.4632	70.7013
DT5	381053.9361	409015.3275	70.5534
DT6	381036.6488	408956.7852	70.5384
DT7	381003.3422	408972.6199	72.1254
DT8	380940.6208	408974.1097	72.2854
DT9	380932.8781	409017.2013	74.4906

- Buildings
- Beam
- Bridge
- Canopy
- Platform
- Tactile Strip
- Girder
- Walls
- Pillar
- Tunnel
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- Fence
- Gate
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- Vegatation
- Path
- Channel
- Water
- Vegetation

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EL = Eaves Level
MPG = Marker Post Gas

DYWIDAG

REV.	DATE	DESCRIPTION OF REVISION	DATE

DYWIDAG Ltd.
DATUM House
The Pavilions
Bridge Hall Lane
Bury
BL9 7NX

Tel. +44(0)161 797 5511
Fax.+44(0)161 797 5522
Web : www.dywidaggroup.com

SURVEYED BY	Peter Walsh	**DATE**	16/09/2021
DRAWN BY	Peter Walsh	**DATE**	20/09/2021
CHECKED BY	Ian Williamson	**DATE**	21/09/2021

Topographical Survey

Kemp Heaton Avenue

Sheet 2 of 2

CampbellReith

SCALES	1:200	**ORIGINAL - A0**
PROJECT No.	2671T	
DRAWING No.	2671T_Kemp_Heaton_Avenue_SU001	

HARGREAVES
CONTRACTING EXCELLENCE

Appendix B

Photographic Records








Maher












Maher











Shauna McLoughlin

From: Sam Clarke <sclarke@hargreavescontracting.com>
Sent: 07 July 2026 12:04
To: Shauna McLoughlin
Cc: jjohnson; Gavin Turner; Peter Kenny
Subject: RE: Kemp Heaton - Soil Validation

That's correct.

Cheers,

Sam

Sam Clarke MSc – Quantity Surveyor
Unit 5, Rising Bridge Business Village,
Blackburn Road, Accrington, BB5 2AL
T: 01204-365-300
M: 07483-426236
E: sclarke@hargreavescontracting.com
W: www.hargreavescontracting.com

From: Shauna McLoughlin <ShaunaMcLoughlin@campbellreith.com>
Sent: 07 July 2026 10:33
To: Sam Clarke <sclarke@hargreavescontracting.com>
Cc: jjohnson <JJohnson@hargreavescontracting.com>; Gavin Turner <gturner@hargreavescontracting.com>; Peter Kenny <PeterKenny@campbellreith.com>
Subject: RE: Kemp Heaton - Soil Validation

Hi Sam,

Thanks for providing further details on the Himalayan balsam treatment. I assume that the other impacted areas (HB1 – HB3) were cleared prior to redevelopment in those areas?

Kind regards
Shauna

Shauna McLoughlin
Senior Land Quality Scientist

10 Chapel Walks,
Manchester

M2 1HL

Tel +44 (0)161 819 3060
Mob +44 748 308 5676
www.campbellreith.com

From: Sam Clarke <sclarke@hargreavescontracting.com>
Sent: 06 July 2026 13:07
To: Shauna McLoughlin <ShaunaMcLoughlin@campbellreith.com>
Cc: jjohnson <JJohnson@hargreavescontracting.com>; Gavin Turner <gturner@hargreavescontracting.com>; Peter Kenny <PeterKenny@campbellreith.com>
Subject: RE: Kemp Heaton - Soil Validation

Hi Shauna,

We have an order now set up with a contractor for the invasive species treatment. Description of works as below;

Applying a Glyphosate based herbicide via Knapsack sprayer to potential re-growth (foliage) in areas HB4 only as shown on drawing JK24-9907-01. Glyphosate is a broad spectrum and non-selective herbicide, so may cause localised damage to surrounding plants. The herbicide will be applied via traditional Knapsack spray. Site operatives will do their upmost to prevent chemical drift from occurring, thus minimising the risk of surrounding vegetation being affected. Treatment visits to be undertaken during the following (precise dates subject to factors such as access, availability, growth patterns, weather conditions) –

Visits are May and July of 2026, 2027, 2028

Cheers,

Sam

Sam Clarke MSc – Quantity Surveyor
Unit 5, Rising Bridge Business Village,
Blackburn Road, Accrington, BB5 2AL
T: 01204-365-300
M: 07483-426236
E: sclarke@hargreavescontracting.com
W: www.hargreavescontracting.com

From: Shauna McLoughlin <ShaunaMcLoughlin@campbellreith.com>
Sent: 06 July 2026 13:02
To: Gavin Turner <gturner@hargreavescontracting.com>; Peter Kenny <PeterKenny@campbellreith.com>

Cc: jjohnson <JJohnson@hargreavescontracting.com>; Sam Clarke <sclarke@hargreavescontracting.com>
Subject: RE: Kemp Heaton - Soil Validation

Hi Gavin,

Thanks for the waste transfer notes and for confirming the removal of horsetail.

Do you have any further information on the removal and treatment of Himalayan Balsam and Japanese Knotweed as indicated on the invasive plant species location plan (attached)?

As discussed previously over the phone, please could you also provide further details on the materials selected for water pipes?

Kind regards
Shauna

Shauna McLoughlin
Senior Land Quality Scientist

10 Chapel Walks,
Manchester
M2 1HL

Tel +44 (0)161 819 3060
Mob +44 748 308 5676
www.campbellreith.com

From: Gavin Turner <gturner@hargreavescontracting.com>
Sent: 30 June 2026 10:09
To: Shauna McLoughlin <ShaunaMcLoughlin@campbellreith.com>; Peter Kenny <PeterKenny@campbellreith.com>
Cc: jjohnson <JJohnson@hargreavescontracting.com>; Sam Clarke <sclarke@hargreavescontracting.com>
Subject: RE: Kemp Heaton - Soil Validation

Hi Shauna,

I can confirm the Marestail was an administration issue and should have read horse tail.

Please find attached WTN.

Trust this is sufficient for the report issue.

Kind Regards

Gavin Turner

Gavin Turner MEng – Project Manager
Unit 5, Rising Bridge Business Village,
Blackburn Road, Accrington, BB5 2AL
T: 01204 365300 **M:** 07973 902261
E: gturner@hargreavescontracting.com
W: www.hargreavescontracting.com

From: Shauna McLoughlin <ShaunaMcLoughlin@campbellreith.com>
Sent: 19 June 2026 11:38
To: Gavin Turner <gturner@hargreavescontracting.com>; Peter Kenny <PeterKenny@campbellreith.com>
Cc: jjohnson <JJohnson@hargreavescontracting.com>; Sam Clarke <sclarke@hargreavescontracting.com>
Subject: RE: Kemp Heaton - Soil Validation

Hi Gavin,

To complete the site verification report we need all the information requested on the email below:

- Waste transfer notes – Please could you provide any additional waste transfer documentation for other materials removed from site? The email from 27/05/2026 with waste transfer notes are all for invasive species disposal
- The watching brief record includes a plan indicating the presence of Himalayan balsam, Horsetail and Japanese knotweed; however, the report only refers to the removal of soils contaminated with Marestail.
  Please can you confirm whether all invasive species have been appropriately treated and removed, and provide any associated reports or evidence?
- A UU pipeline risk assessment was undertaken which specified the use of barrier pipe. Please could you confirm the brand name/type of barrier pipe installed, along with confirmation of installation and any supporting photographic evidence?

Kind regards
Shauna

Shauna McLoughlin
Senior Land Quality Scientist

10 Chapel Walks,
Manchester
M2 1HL

Tel +44 (0)161 819 3060
Mob +44 748 308 5676
www.campbellreith.com

From: Gavin Turner <gturner@hargreavescontracting.com>
Sent: 18 June 2026 17:01

Shauna McLoughlin

From: Paul Whitelegg <pwhitelegg@hargreavescontracting.com>
Sent: 15 August 2025 12:13
To: Shauna McLoughlin; Peter Kenny
Cc: Chris Spencer; Ian Sharrocks; Michael McCartan; Jordan Collier
Subject: Re: Kemp Heaton, Bury - Remediation Close Out
Attachments: Watching Brief Report.pdf

Afternoon Shauna

Thanks for your email

Please find attached our watching brief report for the excavation formation level. (quite a large file, so hopefully it will come through - please confirm)

We have been in contact with UU and have been advised that we have no issues with using barrier pipe as proposed, and they require no further information

Regards

Paul

HARGREAVES
CONTRACTING EXCELLENCE

Paul Whitelegg – Commercial Manager
Unit 5, Rising Bridge Business Village,
Blackburn Road, Accrington, BB5 2AL
T: 01204-365300 **M:** 07779-457465
E: pwhitelegg@hargreavescontracting.com
W: www.hargreavescontracting.com

From: Shauna McLoughlin <ShaunaMcLoughlin@campbellreith.com>
Sent: 15 August 2025 10:14 AM
To: Paul Whitelegg <pwhitelegg@hargreavescontracting.com>; Peter Kenny <PeterKenny@campbellreith.com>
Cc: Chris Spencer <cspencer@hargreavescontracting.com>; Ian Sharrocks <isharrocks@hargreavescontracting.com>; Michael McCartan <mmccartan@hargreavescontracting.com>; Jordan Collier <jcollier@hargreavescontracting.com>
Subject: RE: Kemp Heaton, Bury - Remediation Close Out

Hi Paul,

Thank you for the watching brief report for the area affected with invasive species.

Please could you provide an update on the works? Have Hargreaves undertaken an inspection at excavation formation level yet, and could you provide a written statement and photographs confirming whether any ground contamination was observed during the excavations (e.g. stained or malodourous soils).

In addition, has there been any further discussions with UU regarding the use of a barrier pipe? We understand that a pipeline risk assessment is still required.

Kind regards

Shauna McLoughlin
Senior Environmental Scientist
To help protect your privacy, Microsoft Office prevented automatic download of this picture from the Internet.
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From: Paul Whitelegg <pwhitelegg@hargreavescontracting.com>
Sent: 11 August 2025 09:49
To: Peter Kenny <PeterKenny@campbellreith.com>; Shauna McLoughlin <ShaunaMcLoughlin@campbellreith.com>
Cc: Chris Spencer <cspencer@hargreavescontracting.com>; Ian Sharrocks <isharrocks@hargreavescontracting.com>; Michael McCartan <mmccartan@hargreavescontracting.com>; Jordan Collier <jcollier@hargreavescontracting.com>
Subject: Re: Kemp Heaton, Bury - Remediation Close Out

Morning Peter, Shauna

To update, please find attached our watching brief report, which hopefully will close off early action items

Can you please review and let us know if this is acceptable

Regards

Paul

HARGREAVES
CONTRACTING EXCELLENCE

Paul Whitelegg – Commercial Manager
Unit 5, Rising Bridge Business Village,
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From: Peter Kenny <PeterKenny@campbellreith.com>
Sent: 23 July 2025 2:57 PM
To: Paul Whitelegg <pwhitelegg@hargreavescontracting.com>; Shauna McLoughlin



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Appendix 3

Inspection of the Backfilled Goit

CampbellReith Site Visit Report

Photographs

Trial Pit Log

Chemical Testing Results

Appendices

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Inspection of the Backfilled Goit

Project	Kemp Heaton Avenue	Project No	13753
Author	Shauna McLoughlin	Date	23 June 2025
File Ref	13753-CRH-XX-XX-RP-LQ-Site Visit 1	Pages	1

1.1.1 An initial site visit was undertaken by CampbellReith on 23rd June for the verification of the remedial works at Kemp Heaton Avenue. The site visit was supervised by Gary Calderbank and Adam Cranshaw from Hargreaves. The following key observations were made:

- A large trial pit (TT01) was machine excavated into the backfilled goit/former landfill area by Hargreaves on the day of the site visit. The trial pit could not be extended further into a trench due to the piling mat.
- Predominantly cohesive Made Ground was encountered from ground level to 2.20m bgl, although concrete boulders and rebar were noted at 1.50m and 2.20m bgl. Beneath this was granular Made Ground comprising inert landfill materials to the base of the excavation at 3.30m bgl. No groundwater was encountered within the excavation. Further details are included within the exploratory hole log and shown in photographs 1 to 5.
- No evidence of putrescible or highly degradable material was observed in the former landfill, however a hydrocarbon odour was observed from 2.20m bgl. An organic odour was also noted in the shallow cohesive Made Ground. Inclusions of clinker, macadam, rare glass, plastic and metal were also observed.
- Soil samples were retrieved from the excavation at 0.60m and 2.20m depth for contamination testing. Samples were collected in plastic tubs for inorganic analysis, 30g glass jars for organic analysis and 60g vials for VOC analysis.
- As an initial screening exercise, total organic carbon (TOC) was scheduled on both samples to determine if the material poses a ground gas risk. 10kg bulk bags were also obtained for potential forensic total organic carbon (FTOC) testing, should it be required. An extended TPH CWG (up to C44) with BTEX suite was scheduled on the possible landfill material due to the hydrocarbon odour observed and potential vapour risk.
- An inspection of the overall site was also undertaken, this included walking over the development platform and the new access road. During the visit, sheet pile construction had commenced on the southern site boundary. No visual or olfactory evidence of contamination was noted on other areas of the site. Photographs 6 to 7 show the overall site.
- In addition, during the site visit, a copy of the waste transfer notes for materials disposed of off-site was presented to CampbellReith. A request for electronic copies was made for inclusion within the verification report.



Photograph 1: Trial pit excavation (TT01) of backfilled goit/former landfill area, facing south



Photograph 2: Trial pit excavation (TT01) of backfilled goit/former landfill area, facing north



Photograph 3: Excavated spoil from TT01 with concrete and brick, facing southeast



Photograph 4: Excavated spoil from TT01 with concrete, brick and bituminous material, facing northeast



Photograph 5: Possible landfill materials in TT01



Photograph 6: Development platform on the edge of TT01

Kemp Heaton Avenue

Client: Hargreaves

Site Inspection: 23rd June 2025
Photographs 1 – 6

Job Number:	13215
Date:	29/10/2021
Drawn by:	SRB
Checked by:	SRB
Drg No:	GIS001
Status/Revision:	A
File location:	J:\13000-13249\13215 - Royal Brompton Hospital\Docs\CR Docs\Reports\Verification\Appendix B
Revision History:	A, First Issue, 29/10/21, SRB;

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Photograph 7: Development platform, facing east



Photograph 8: Development platform, facing west



Photograph 9: Sheet pile construction on the southern boundary



Photograph 10: New access road construction

Kemp Heaton Avenue

Client: Hargreaves

Site Inspection: 22nd June 2025
Photographs 7 – 10

Job Number:	13215
Date:	29/10/2021
Drawn by:	SRB
Checked by:	SRB
Drg No:	GIS001
Status/Revision:	A
File location:	J:\13000-13249\13215 - Royal Brompton Hospital\Docs\CR Docs\Reports\Verification\Appendix B
Revision History:	A, First Issue, 29/10/21, SRB;

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Trial Pit / Trench Description

CampbellReith consulting engineers

Project: Kemp Heaton Avenue			Project No.13753		
Described by: Shauna McLoughlin			Trial Pit No.TT01		
Date: 23/06/25			Sheet No. 1		
Samples and Tests			Strata		
Depth (m)	Type & No	Results	Depth (m)	Code	Description
0.50	B and ES		GL - 2.20	102	Greyish brown slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to coarse of sandstone, rare brick, pottery and metal fragments. Slight organic odour (MADE GROUND). Occasional concrete rebar at 1.50m (north face) Concrete boulders at 2.10m (northeast corner).
2.20	B and ES		2.20 – 3.30	102	Dark brown slightly clayey sandy GRAVEL. Gravel is subangular to subrounded fine to coarse of sandstone, brick, concrete, clinker, macadam, rare glass, plastic, metal and tile. Occasional pockets of clay. Medium cobble content of brick and concrete. Hydrocarbon odour (POSSIBLE LANDFILL MATERIAL). High cobble content of bituminous material at 2.20m (southwest corner).

Groundwater Observations: Not Encountered	Length of Face A	4.40	m	A D B C
	Width of Face B	2.20	m	
	Remarks: Approximate GPS coordinates: 381039,409027.			
Stability: Unstable				
Weather: Overcast, windy, occasional rain				
Sample Type: U Undisturbed, P Piston, D Disturbed, B Bulk, W Water, ES Environmental Soil Sample EW Environmental Water Sample	Loggers's Signature: SM			

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i2 Analytical Ltd.
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Analytical Report Number : 25-033607

Replaces Analytical Report Number: 25-033607, issue no. 1
Client references/information amended.
Sample Date Added For All Samples as per clients Request

Project / Site name:	Kemp Heaton Avenue	**Samples received on:**	24/06/2025
Your job number:	13753	**Samples instructed on/ Analysis started on:**	25/06/2025
Your order number:	13753	**Analysis completed by:**	06/07/2025
Report Issue Number:	2	**Report issued on:**	07/07/2025
Samples Analysed:	2 soil samples		

Signed:

Arslaan Saleem
Customer Service Advisor
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

Excel copies of reports are only valid when accompanied by this PDF certificate.

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 25-033607
Project / Site name: Kemp Heaton Avenue
Your Order No: 13753

Lab Sample Number				594145	594146
Sample Reference				TT01	TT01
Sample Number				None Supplied	None Supplied
Water Matrix				N/A	N/A
Depth (m)				2.2	0.6
Date Sampled				23/06/2025	23/06/2025
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Test Limit of detection**	**Test Accreditation Status**		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	8.7	29
Total mass of sample received	kg	0.1	NONE	1.3	1.3
General Inorganics					
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	3	4.2
Petroleum Hydrocarbons					
TPHCWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	-
TPHCWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	-
TPHCWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	-
TPHCWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	1.3	-
TPHCWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	17	-
TPHCWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	48	-
TPHCWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	400	-
TPHCWG - Aliphatic >EC35 - EC44 $_{EH\_CU\_1D\_AL}$	mg/kg	8.4	NONE	160	-
TPHCWG - Aliphatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	470	-
TPHCWG - Aliphatic >EC5 - EC44 $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	630	-
TPHCWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	< 0.010	-
TPHCWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	< 0.010	-
TPHCWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.02	MCERTS	< 0.020	-
TPHCWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	-
TPHCWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	26	-
TPHCWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	150	-
TPHCWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	790	-
TPHCWG - Aromatic >EC35 - EC44 $_{EH\_CU\_1D\_AR}$	mg/kg	8.4	NONE	410	-
TPHCWG - Aromatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	970	-
TPHCWG - Aromatic >EC5 - EC44 $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	1400	-
VOCs					
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	-
Benzene	µg/kg	5	MCERTS	< 5.0	-
Toluene	µg/kg	5	MCERTS	< 5.0	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	-
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number : 25-033607
Project / Site name: Kemp Heaton Avenue

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
594145	TT01	None Supplied	2.2	Brown clay and loam with gravel and vegetation
594146	TT01	None Supplied	0.6	Brown clay and loam with gravel and vegetation

Analytical Report Number : 25-033607
Project / Site name: Kemp Heaton Avenue

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088-PL	D/W	MCERTS
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.
The result for sum should be interpreted with caution



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Appendix 4

Imported Material and Clean Cover System Records

Clean Cover System Validation Report
(Plots 1- 5)

Appendices

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Clean Cover System Validation (Plots 1-5)

Project	Kemp Heaton Avenue	Project No	13753
Author	Shauna McLoughlin	Date	22 May 2026
File Ref	13753-CRH-XX-XX-RP-LQ-Site Visit 2	Pages	4

1.1 Background

1.1.1 A site visit was undertaken by CampbellReith on 29th April 2026 to carry out validation sampling of the imported material and confirm the clean cover system depths in Plots 1 – 5, Kemp Heaton Avenue, Bury. The site visit was supervised by Gavin Turner of Hargreaves Contracting Limited.

1.1.2 During the ground investigation, no contaminant exceedances were encountered within the vicinity of Plots 1 – 5, however site won materials were considered unsuitable for use in the near surface environment in private gardens due to the presence of Made Ground. Therefore, placement of at least 600mm of clean soils was specified in the Remediation Strategy as a precautionary measure.

1.2 Imported Material

1.2.1 Hargreaves confirmed that 100 tonnes (approx. 77m^3) of topsoil was imported and 160 tonnes (approx. 100m^3) of subsoil was imported for placement in the soft landscaped gardens of Plots 1 to 5. The topsoil supplier was Finch Aggregates (Grade 1 Topsoil BS3882 - 10mm Screened) and the subsoil supplier was Braidwood. The conveyance note for the topsoil is included in Appendix A. Electronic proof of delivery was also provided for the subsoil.

1.2.2 At the time of the visit, topsoil and subsoil had been installed in the rear gardens of Plots 1 to 5, and in the front garden of Plot 5 only. Therefore, a total of 6no. hand dug pits were excavated in the front and rear gardens to inspect the clean cover system installed during the first phase of works. A plan showing the location of the hand dug inspection pits is provided in Appendix B and the logs are provided in Appendix C.

1.2.3 The topsoil material was generally described as a dark brown slightly silty, slightly gravelly, sandy TOPSOIL. Gravel is subangular to rounded of sandstone and mudstone. Sand is fine to medium.

1.2.4 The subsoil material was generally described as a light orangish brown slightly silty, slightly gravelly fine to coarse SAND. Gravel is rounded to subrounded fine of sandstone and quartz. Rare subrounded cobbles of sandstone were also noted in the rear gardens of Plot 2 (HD02) and Plot 5 (HD05-A).

1.2.5 The imported topsoil and subsoil that were observed during the site visit were seen to be free of any deleterious materials and suspected asbestos containing materials (ACMs). At the base of the cover system was MOT type subbase formed of gravel.

1.3 Soil Validation Sampling

1.3.1 In accordance with the Remediation Strategy, a total of 4no. in-situ samples were obtained from the soft landscaped gardens and submitted for analysis. Samples were retrieved from the hand dug pits in the rear gardens of Plot 2 (HD02), Plot 3 (HD03) and Plot 4 (HD04), and the front garden of Plot 5 (HD05-B).

1.3.2 There were no chemical testing certificates provided for the topsoil and subsoil prior to placement. However, Hargreaves confirmed with the supplier that they could comply with the soil assessment criteria within the Remediation Strategy in advance of importing the material. In addition, the in-situ soil samples are sufficient to verify the volume of material imported, which is stated in the Remediation Strategy as 1 sample / test for every 50m^3, one test per material source, or no less than three in total (whichever is the greater).

1.3.3 The 4no. in-situ soil samples were collected in 500g plastic tubs, 180ml asbestos tubs, 60g glass jars, and 30g VOC jars for chemical analysis by i2 Analytical Ltd, a UKAS accredited and MCERTS accredited laboratory. The samples were couriered to the laboratory within 24 hours of sampling, along with the Chain of Custody information.

1.3.4 The samples were analysed for the soil verification suite which includes heavy metals / metalloids, inorganics, phenols, speciated polycyclic aromatic hydrocarbons, petroleum hydrocarbons, volatile organic compounds (MTBE and BTEX) and an asbestos screen. A summary of the results is provided in Table 1.0 below.

Table 1.0 Contaminant Concentrations – Garden Validation Samples Plots 1 - 5

SUBSTANCE	HD02 0.10m	HD03 0.30m	HD04 0.15m	HD05-B 0.20m	VALIDATION CRITERIA (mg/kg)
Metals and cyanide					
Arsenic	4.7	3.9	5	3.9	37[A]
Beryllium	0.24	0.35	0.36	0.36	1.7[A]
Cadmium	< 0.2	< 0.2	< 0.2	< 0.2	22[B]
Chromium (Total)	7.5	10	11	12	910[A]
Copper	79	15	22	13	200[D]
Inorganic Mercury (Total)	< 0.3	< 0.3	< 0.3	< 0.3	42[A]
Selenium	< 1.0	< 1.0	< 1.0	< 1.0	270[A]
Nickel	7.6	11	9.5	12	110[D]
Lead	19	6.8	36	4.7	200[B]
Vanadium	9.3	12	13	13	480[A]
Zinc	33	23	40	22	300[D]
Cyanide (Total)	< 1.0	< 1.0	< 1.0	< 1.0	24[C]
Asbestos					
Asbestos	Not-detected	Not-detected	Not-detected	Not-detected	<0.001%
Asbestos containing material	-	-	-	-	not present
BTEX					
Benzene	< 5.0	< 5.0	< 5.0	< 5.0	0.20[A]
Toluene	< 5.0	< 5.0	< 5.0	< 5.0	160[A]
Ethylbenzene	< 5.0	< 5.0	< 5.0	< 5.0	50[A]
Xylene (total)	< 8.0	< 8.0	< 8.0	< 8.0	59[A]

SUBSTANCE		HD02 0.10m	HD03 0.30m	HD04 0.15m	HD05-B 0.20m	VALIDATION CRITERIA (mg/kg)
Phenolics						
Phenol (total)		< 1.0	< 1.0	< 1.0	< 1.0	130[A]
Polycyclic Aromatic Hydrocarbons						
Naphthalene		< 0.05	< 0.05	< 0.05	< 0.05	2.3[A]
Acenaphthylene		< 0.05	< 0.05	< 0.05	< 0.05	190[A]
Acenaphthene		0.09	< 0.05	< 0.05	< 0.05	230[A]
Fluorene		0.06	< 0.05	< 0.05	< 0.05	180[A]
Phenanthrene		0.68	0.09	0.1	< 0.05	100[A]
Anthracene		0.26	< 0.05	< 0.05	< 0.05	2,600[A]
Fluoranthene		1.4	0.19	0.23	< 0.05	310[A]
Pyrene		1.1	0.17	0.22	< 0.05	670[A]
Chrysene		0.5	0.09	0.14	< 0.05	16[A]
Benzo(a)anthracene		0.48	0.08	0.13	< 0.05	7.4[A]
Benzo(b)fluoranthene		0.45	0.09	0.18	< 0.05	2.6[A]
Benzo(k)fluoranthene		0.27	< 0.05	0.1	< 0.05	78[A]
Benzo(a)pyrene		0.41	0.07	0.15	< 0.05	5.0[A]
Indeno(123-cd)pyrene		0.2	< 0.05	0.08	< 0.05	28[A]
Benzo(ghi)perylene		0.24	< 0.05	0.09	< 0.05	320[A]
Dibenzo(ah)anthracene		< 0.05	< 0.05	< 0.05	< 0.05	0.2[A]
Total Petroleum Hydrocarbons						
TPH	EC>5-10	< 0.02	< 0.02	< 0.02	< 0.02	27[E]
	EC>10-12	< 2.0	< 2.0	< 2.0	< 2.0	81[E]
	EC>12-16	< 4.0	< 4.0	< 4.0	< 4.0	160[E]
	EC>16-21	< 10	< 10	< 10	< 10	290[E]
	EC>21-40	< 10	< 10	17	< 10	1,100[E]

All values above assume 1% Soil Organic Matter (SOM). [A]S4UL for Residential end use with p/u. [B]C4SL for Residential end use with p/u. [C]SoBRA Acute Risk GAC. [D]BS3882:2015 Topsoil Requirements (assuming pH>7.0). [E] S4UL for Residential end use using lowest value for aliphatic/aromatic hydrocarbon fraction.

1.3.5 The laboratory results summarised in the table above indicate that contaminant concentrations do not exceed the validation criteria values set out in the CampbellReith's Remediation Strategy. The chemical test certificate (report no. 26-023059-1) with the full results is provided in Appendix D.

1.4 Clean Cover System Thickness

1.4.1 During CampbellReith's site visit on 29th April 2026, 6no. hand dug pits were excavated to inspect the thickness of the clean cover system installed during the first phase of works. The cover system thickness installed in the rear gardens of Plots 1 – 5 was reported to be 600mm. The topsoil had a minimum depth of 150mm (HD02) and a maximum depth of 300mm (HD01) on the inspected plots.

1.4.2 However, the cover system thickness in the front garden of Plot 5 (HD05-B) was only 450mm. This was because Hargreaves considered the front gardens to be communal soft landscaping and not private. Hargreaves were requested by CampbellReith to add additional topsoil to bring the cover system up to the 600mm, as specified for private gardens in the Remediation Strategy.

1.4.3 Following the initial visit, a further 5no. hand dug pits were excavated in the front gardens of Plots 1 – 5 on 15th May 2026. However, the cover system thickness in the front garden of Plot 1 (HD01-B) was only 450mm. Again, Hargreaves were requested by CampbellReith to add additional topsoil to bring the cover system up to the required 600mm.

1.4.4 On the 18th May 2026, another hand dug pit was excavated in the front garden of Plot 1. Hargreaves confirmed that all front and rear gardens have now been installed with the specified 600mm clean cover.

1.4.5 Photographs of all the hand dug pits in the front and rear gardens of Plots 1 – 5 are provided in Appendix E. All email correspondence regarded the imported material and cover system installation is included in Appendix F.

1.5 Conclusions

1.5.1 Based on the verification testing of the imported material and the final thickness of the clean cover system, CampbellReith conclude that the remediation works in Plots 1 – 5 have been carried out in general accordance with the Remediation Strategy.

Appendices

Appendix A – Topsoil Conveyance Notes

Appendix B – Hand Dug Pit Location Plan

Appendix C – Hand Dug Pit Logs

Appendix D – Chemical Testing Results

Appendix E – Cover System Photographs

Appendix F – Email Correspondence

Conveyance Note

6 Trident Park, Trident Way, Blackburn, BB1 3NU

Customer	CS (Civils & Groundworks) Limited
Depot	Drapers

Delivery Date
22-Apr-2026

Delivery Address
Kemp Heaton Avenue, Bury BL9 9GQ

Ticket No.	91731
Finch Order No.	47275
Customer Order No	58644
Haulier	Mr. S Higham
Vehicle Reg	SH16 HAM

Product Description
Grade 1 Topsoil BS3882 - 10mm Screened

Gross Weight (Kg)	32,000
Tare Weight (Kg)	12,000
Net Weight (Kg) / Loads	20,000

Time Arrived Onsite	8:50
Time Finished Onsite	8:50
Waiting Time (Minutes)	

Waiting time will be charged per hour 15 minutes after arrival on site.

It is the customers responsibility to provide adequate site access. Neither the company or the driver can be held responsible for damages whilst under the customers instruction. The drivers decision as to the safety of the delivery point will be final.

Goods signed for / on behalf of the customer subject to our standard terms and conditions.

Printed Name	**Signature**
Simon	

Conveyance Note

6 Trident Park, Trident Way, Blackburn, BB1 3NU

Customer	CS (Civils & Groundworks) Limited
Depot	Drapers

Delivery Date
22-Apr-2026

Delivery Address
Kemp Heaton Avenue, Bury BL9 9GQ

Ticket No.	91781
Finch Order No.	47275
Customer Order No	58644
Haulier	Hargreaves Haulage (Coppull) Limited
Vehicle Reg	PN22 GHH

Product Description
Grade 1 Topsoil BS3882 - 10mm Screened

Gross Weight (Kg)	31,900
Tare Weight (Kg)	11,900
Net Weight (Kg) / Loads	20,000

Time Arrived Onsite	7:55
Time Finished Onsite	8:15
Waiting Time (Minutes)	20

Waiting time will be charged per hour 15 minutes after arrival on site.

It is the customers responsibility to provide adequate site access. Neither the company or the driver can be held responsible for damages whilst under the customers instruction. The drivers decision as to the safety of the delivery point will be final.

Goods signed for / on behalf of the customer subject to our standard terms and conditions.

Printed Name	**Signature**
Simon Jackson	

Conveyance Note

6 Trident Park, Trident Way, Blackburn, BB1 3NU

Customer	CS (Civils & Groundworks) Limited
Depot	Drapers

Delivery Date
24-Apr-2026

Delivery Address
Kemp Heaton Avenue, Bury BL9 9GQ

Ticket No.	92464
Finch Order No.	47594
Customer Order No	58716
Haulier	M O'Keefe Haulage Limited
Vehicle Reg	PN75CJZ

Product Description
Grade 1 Topsoil BS3882 - 10mm Screened

Gross Weight (Kg)	32,060
Tare Weight (Kg)	12,000
Net Weight (Kg) / Loads	20,060

Time Arrived Onsite	9:48
Time Finished Onsite	9:56
Waiting Time (Minutes)	8

Waiting time will be charged per hour 15 minutes after arrival on site.

It is the customers responsibility to provide adequate site access. Neither the company or the driver can be held responsible for damages whilst under the customers instruction. The drivers decision as to the safety of the delivery point will be final.

Goods signed for / on behalf of the customer subject to our standard terms and conditions.

Printed Name	**Signature**
Leighton	

Conveyance Note

6 Trident Park, Trident Way, Blackburn, BB1 3NU

Customer	CS (Civils & Groundworks) Limited
Depot	Drapers

Delivery Date
24-Apr-2026

Delivery Address
Kemp Heaton Avenue, Bury BL9 9GQ

Ticket No.	92474
Finch Order No.	47594
Customer Order No	58716
Haulier	M O'Keefe Haulage Limited
Vehicle Reg	PN69BKE

Product Description
Grade 1 Topsoil BS3882 - 10mm Screened

Gross Weight (Kg)	32,000
Tare Weight (Kg)	12,000
Net Weight (Kg) / Loads	20,000

Time Arrived Onsite	8:59
Time Finished Onsite	8:59
Waiting Time (Minutes)	

Waiting time will be charged per hour 15 minutes after arrival on site.

It is the customers responsibility to provide adequate site access. Neither the company or the driver can be held responsible for damages whilst under the customers instruction. The drivers decision as to the safety of the delivery point will be final.

Goods signed for / on behalf of the customer subject to our standard terms and conditions.

Printed Name	**Signature**
Alex	

Conveyance Note

6 Trident Park, Trident Way, Blackburn, BB1 3NU

Customer	CS (Civils & Groundworks) Limited
Depot	Drapers

Delivery Date
29-Apr-2026

Delivery Address
Kemp Heaton Avenue, Bury BL9 9GQ

Ticket No.	93399
Finch Order No.	48060
Customer Order No	58802
Haulier	K Garlick Ltd
Vehicle Reg	J66 LHF

Product Description
Grade 1 Topsoil BS3882 - 10mm Screened

Gross Weight (Kg)	32,000
Tare Weight (Kg)	12,000
Net Weight (Kg) / Loads	20,000

Time Arrived Onsite	14:16
Time Finished Onsite	14:16
Waiting Time (Minutes)	

Waiting time will be charged per hour 15 minutes after arrival on site.

It is the customers responsibility to provide adequate site access. Neither the company or the driver can be held responsible for damages whilst under the customers instruction. The drivers decision as to the safety of the delivery point will be final.

Goods signed for / on behalf of the customer subject to our standard terms and conditions.

Printed Name	**Signature**
Callum	

Conveyance Note

6 Trident Park, Trident Way, Blackburn, BB1 3NU

Customer	CS (Civils & Groundworks) Limited
Depot	Drapers

Delivery Date
05-May-2026

Delivery Address
Kemp Heaton Avenue, Bury BL9 9GQ

Ticket No.	93790
Finch Order No.	48282
Customer Order No	58852
Haulier	Hargreaves Haulage (Coppull) Limited
Vehicle Reg	PN70 CZA

Product Description
Grade 1 Topsoil BS3882 - 10mm Screened

Gross Weight (Kg)	32,000
Tare Weight (Kg)	11,960
Net Weight (Kg) / Loads	20,040

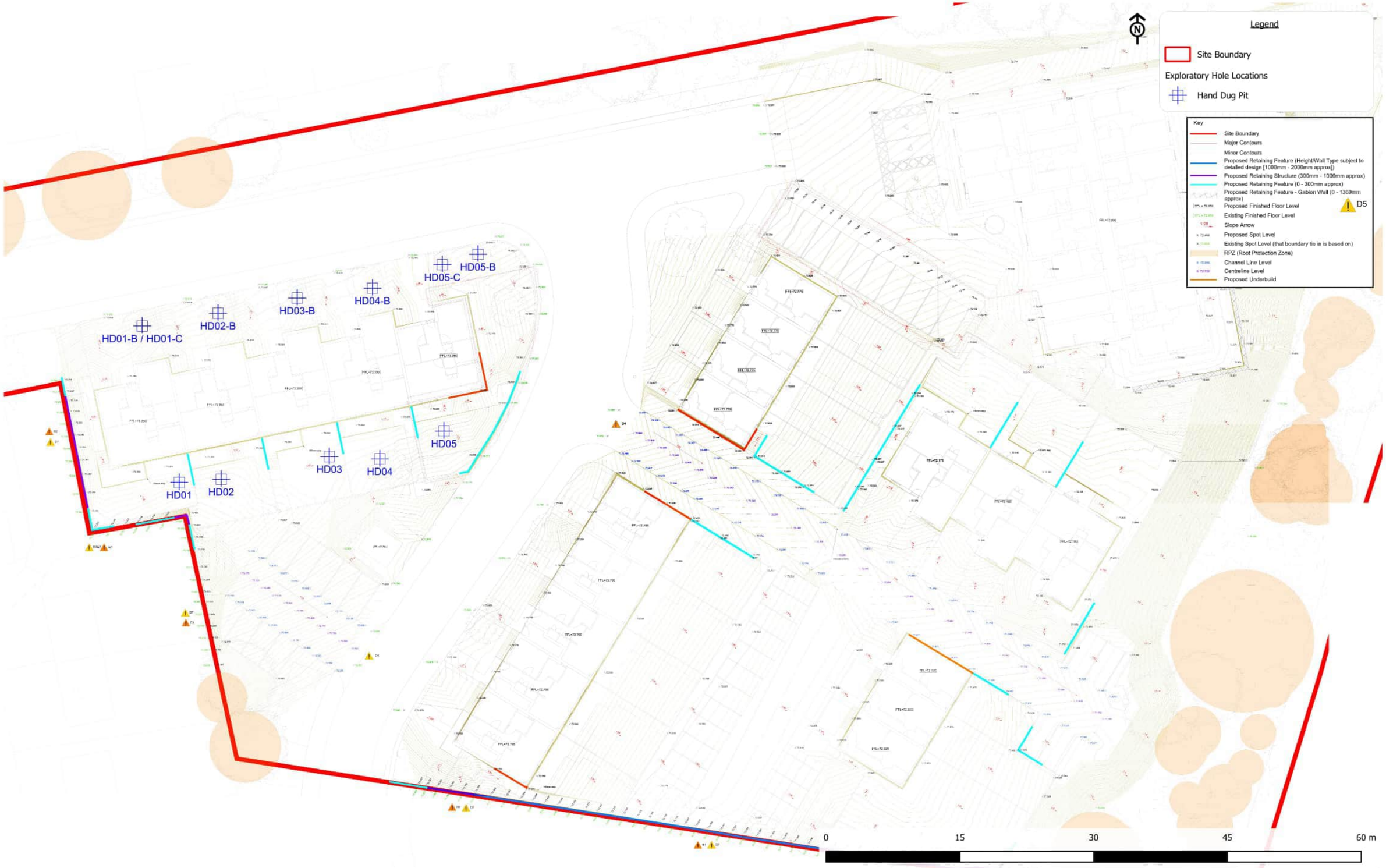
Time Arrived Onsite	7:43
Time Finished Onsite	8:07
Waiting Time (Minutes)	24

Waiting time will be charged per hour 15 minutes after arrival on site.

It is the customers responsibility to provide adequate site access. Neither the company or the driver can be held responsible for damages whilst under the customers instruction. The drivers decision as to the safety of the delivery point will be final.

Goods signed for / on behalf of the customer subject to our standard terms and conditions.

Printed Name	**Signature**
Callum	



Kemp Heaton Avenue, Bury

Client: Great Places Housing Group

Hand Dug Pit Locations and Proposed Levels Strategy

Scale:	1:400@A3
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CampbellReith - 13753-CRH-ZZ-XX-DR-C-5600-C2 (Jun 2025)	
Job Number:	13753
Drawn by - Checked by:	RLF - SM
Drg No - Status/Revision:	13753-CRH-XX-XX-FG-G-7034 - P1
File location:	N:\13750 - 13999\13753 M - Kemp Heaton Avenue\Project_Workspaces\Verification Report (pdf in Outputs)
Date (Revision History):	21/05/2026 (P1, First Issue, 21/05/26, RLF)

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www.campbellreith.com

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Hand Dug Pit Description

CampbellReith consulting engineers

Project: Kemp Heaton Avenue, Bury			Project No.13753		
Described by: Shauna McLoughlin			Trial Pit No. HD01		
Date: 29/04/26			Sheet No. 1		
Samples and Tests			Strata		
Depth (m)	Type & No	Results	Depth (m)	Code	Description
			GL – 0.30	101	Dark brown slightly silty, slightly gravelly, sandy TOPSOIL. Gravel is subangular to rounded of sandstone and mudstone. Sand is fine to medium.
			0.30 – 0.60	102	MADE GROUND: Light orangish brown slightly silty, slightly gravelly fine to coarse SAND. Gravel is rounded to subrounded fine of sandstone and quartz.

Groundwater Observations: Not Encountered	Remarks: – Plot 1 Rear Garden Approximate GPS coordinates: 380918, 409010.	
Stability: Stable		
Weather: Clear and sunny, light wind		
Sample Type: U Undisturbed, P Piston, D Disturbed, B Bulk, W Water, ES Environmental Soil Sample EW Environmental Water Sample	Loggers's Signature: SM	

Hand Dug Pit Description

CampbellReith consulting engineers

Project: Kemp Heaton Avenue, Bury			Project No.13753		
Described by: Shauna McLoughlin			Trial Pit No. HD02		
Date: 29/04/26			Sheet No. 2		
Samples and Tests			Strata		
Depth (m)	Type & No	Results	Depth (m)	Code	Description
0.10	ES		GL – 0.15	101	Dark brown slightly silty, gravelly, sandy TOPSOIL. Gravel is subangular to rounded of sandstone and mudstone. Sand is fine to medium.
			0.15 – 0.60	102	MADE GROUND: Light orangish brown slightly silty, slightly gravelly fine to coarse SAND. Gravel is rounded to subrounded fine of sandstone, quartz and rare brick fragment. Very low cobble content of rounded to subrounded sandstone.

Groundwater Observations: Not Encountered	Remarks: – Plot 2 Rear Garden Approximate GPS coordinates: 380923, 409010.	
Stability: Stable		
Weather: Clear and sunny, light wind		
Sample Type: U Undisturbed, P Piston, D Disturbed, B Bulk, W Water, ES Environmental Soil Sample EW Environmental Water Sample	Loggers's Signature: SM	

Hand Dug Pit Description

CampbellReith consulting engineers

Project: Kemp Heaton Avenue, Bury			Project No.13753		
Described by: Shauna McLoughlin			Trial Pit No. HD03		
Date: 29/04/26			Sheet No. 3		
Samples and Tests			Strata		
Depth (m)	Type & No	Results	Depth (m)	Code	Description
			GL – 0.29	101	Dark brown slightly silty, slightly gravelly, sandy TOPSOIL. Gravel is subangular to rounded of sandstone and mudstone. Sand is fine to medium.
0.30	ES		0.29 – 0.60	102	MADE GROUND: Light orangish brown slightly silty, slightly gravelly fine to coarse SAND. Gravel is rounded to subrounded fine of sandstone, quartz and rare pottery fragment.

Groundwater Observations: Not Encountered	Remarks: – Plot 3 Rear Garden Approximate GPS coordinates: 380935, 409012.	
Stability: Stable		
Weather: Clear and sunny, light wind		
Sample Type: U Undisturbed, P Piston, D Disturbed, B Bulk, W Water, ES Environmental Soil Sample EW Environmental Water Sample	Loggers's Signature: SM	

Hand Dug Pit Description

CampbellReith consulting engineers

Project: Kemp Heaton Avenue, Bury			Project No.13753		
Described by: Shauna McLoughlin			Trial Pit No. HD04		
Date: 29/04/26			Sheet No. 4		
Samples and Tests			Strata		
Depth (m)	Type & No	Results	Depth (m)	Code	Description
0.15	ES		GL – 0.22	101	Dark brown slightly silty, slightly gravelly, sandy TOPSOIL. Gravel is subangular to rounded of sandstone and mudstone. Sand is fine to medium.
			0.22 – 0.60	102	MADE GROUND: Light orangish brown slightly silty, gravelly fine to coarse SAND. Gravel is rounded to subrounded fine of sandstone and quartz.

Groundwater Observations: Not Encountered	Remarks: – Plot 4 Rear Garden Approximate GPS coordinates: 380940, 409012.	
Stability: Stable		
Weather: Clear and sunny, light wind		
Sample Type: U Undisturbed, P Piston, D Disturbed, B Bulk, W Water, ES Environmental Soil Sample EW Environmental Water Sample	Loggers's Signature: SM	

Hand Dug Pit Description

CampbellReith consulting engineers

Project: Kemp Heaton Avenue, Bury			Project No.13753		
Described by: Shauna McLoughlin			Trial Pit No. HD05		
Date: 29/04/26			Sheet No. 5		
Samples and Tests			Strata		
Depth (m)	Type & No	Results	Depth (m)	Code	Description
			GL – 0.20	101	Dark brown slightly silty, slightly gravelly, sandy TOPSOIL. Gravel is subangular to rounded of sandstone and mudstone. Sand is fine to medium.
			0.20 – 0.60	102	MADE GROUND: Light orangish brown slightly silty, slightly gravelly fine to coarse SAND. Gravel is rounded to subrounded fine of sandstone and quartz.

Groundwater Observations: Not Encountered	Remarks: – Plot 5 Rear Garden Approximate GPS coordinates: 380947, 409015.	
Stability: Stable		
Weather: Clear and sunny, light wind		
Sample Type: U Undisturbed, P Piston, D Disturbed, B Bulk, W Water, ES Environmental Soil Sample EW Environmental Water Sample	Loggers's Signature: SM	

Hand Dug Pit Description

CampbellReith consulting engineers

Project: Kemp Heaton Avenue, Bury			Project No.13753		
Described by: Shauna McLoughlin			Trial Pit No. HD05-B		
Date: 29/04/26			Sheet No. 6		
Samples and Tests			Strata		
Depth (m)	Type & No	Results	Depth (m)	Code	Description
			GL – 0.15	101	Dark brown slightly silty, slightly gravelly, sandy TOPSOIL. Gravel is subangular to rounded of sandstone and mudstone. Sand is fine to medium.
0.20	ES		0.15 – 0.45	102	MADE GROUND: Light orangish brown slightly silty, slightly gravelly fine to coarse SAND. Gravel is rounded to subrounded fine of sandstone and quartz.

Groundwater Observations: Not Encountered	Remarks: – Plot 5 Front Garden – Insufficient cover thickness Approximate GPS coordinates: 380951, 409035.	
Stability: Stable		
Weather: Clear and sunny, light wind		
Sample Type: U Undisturbed, P Piston, D Disturbed, B Bulk, W Water, ES Environmental Soil Sample EW Environmental Water Sample	Loggers's Signature: SM	

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e: info-i2analytical@normecgroup.com

Analytical Report Number : 26-023059

Project / Site name:	Kemp Heaton Avenue	**Samples received on:**	30/04/2026
Your job number:	13753	**Samples instructed on/ Analysis started on:**	01/05/2026
Your order number:	13753 SM	**Analysis completed by:**	14/05/2026
Report Issue Number:	1	**Report issued on:**	14/05/2026
Samples Analysed:	4 soil samples		

Signed:

Rachel Chappell
Key Account Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

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Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 26-023059
Project / Site name: Kemp Heaton Avenue
Your Order No: 13753 SM

Lab Sample Number				906701	906702	906703	906704
Sample Reference				HD02	HD03	HD04	HD05-B
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				0.10	0.30	0.15	0.20
Date Sampled				29/04/2026	29/04/2026	29/04/2026	29/04/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status				
Mass of stone >10mm	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	8.9	7.8	15	6.7
Total mass of sample received	kg	0.1	NONE	1.9	2	1.8	2
Asbestos							
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	CAD	CAD	CAD	CAD
Analysis completed	N/A	N/A	N/A	14/05/2026	14/05/2026	14/05/2026	14/05/2026
General Inorganics							
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Organic Matter (automated)	%	0.1	MCERTS	3	0.6	5.4	0.2
Total Phenols							
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs							
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.09	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.06	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.68	0.09	0.1	< 0.05
Anthracene	mg/kg	0.05	MCERTS	0.26	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	1.4	0.19	0.23	< 0.05
Pyrene	mg/kg	0.05	MCERTS	1.1	0.17	0.22	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.48	0.08	0.13	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.5	0.09	0.14	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.45	0.09	0.18	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.27	< 0.05	0.1	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.41	0.07	0.15	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.2	< 0.05	0.08	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.24	< 0.05	0.09	< 0.05
Total PAH							
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	6.2	< 0.80	1.42	< 0.80
Heavy Metals / Metalloids							
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	4.7	3.9	5	3.9
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.24	0.35	0.36	0.36
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	7.5	10	11	12
Copper (aqua regia extractable)	mg/kg	1	MCERTS	79	15	22	13
Lead (aqua regia extractable)	mg/kg	1	MCERTS	19	6.8	36	4.7
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	7.6	11	9.5	12
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	9.3	12	13	13
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	33	23	40	22

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 26-023059
Project / Site name: Kemp Heaton Avenue
Your Order No: 13753 SM

Lab Sample Number				906701	906702	906703	906704
Sample Reference				HD02	HD03	HD04	HD05-B
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				0.10	0.30	0.15	0.20
Date Sampled				29/04/2026	29/04/2026	29/04/2026	29/04/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status				
Petroleum Hydrocarbons							
TPH (>EC6 - EC8) HS_1D_TOTAL	mg/kg	0.01	MCERTS	< 0.01	< 0.01	< 0.01	< 0.01
TPH (>EC8 - EC10) HS_1D_TOTAL	mg/kg	0.02	MCERTS	< 0.02	< 0.02	< 0.02	< 0.02
TPH (>EC10 - EC12) EH_CU_1D_TOTAL	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0
TPH (>EC12 - EC16) EH_CU_1D_TOTAL	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0
TPH (>EC16 - EC21) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10
TPH (>EC21 - EC40) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	< 10	< 10	17	< 10
TPH Total >EC6 - EC40 EH_CU+HS_1D_TOTAL	mg/kg	10	NONE	< 10	< 10	19	< 10
Petroleum Range Organics (EC6 - EC10) HS_1D_TOTAL	mg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
TPH (EC10 - EC40) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	< 10	< 10	19	< 10
VOCs							
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number : 26-023059
Project / Site name: Kemp Heaton Avenue

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
906701	HD02	None Supplied	0.1	Brown loam and sand with gravel and vegetation
906702	HD03	None Supplied	0.3	Brown sand with gravel
906703	HD04	None Supplied	0.15	Brown loam and sand
906704	HD05-B	None Supplied	0.2	Brown sand with gravel and vegetation

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Analytical Report Number : 26-023059
Project / Site name: Kemp Heaton Avenue

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Moisture Content (Wet Weight)	Moisture content (% wet weight), determined gravimetrically (up to 30°C)	In-house-procedure based on BS EN 12880:2000	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons by GC-FID in soil	Determination of total petroleum hydrocarbons in soil by GC-FID	In-house method	L076B	D	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil (Summed Bands)	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS (Summed Bands).	Calculation	L076B/L088-PL	D/W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total petroleum hydrocarbons by HS-GC-MS in soil	Determination of total petroleum hydrocarbons in soil by HS-GC/MS	In-house method	L088-PL	W	MCERTS

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number : 26-023059
Project / Site name: Kemp Heaton Avenue

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.
The result for sum should be interpreted with caution

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The results included within the report are representative of the samples submitted for analysis.



Photograph 1: Imported material installed in the rear gardens of Plots 1 - 5



Photograph 20: Excavated topsoil and subsoil in rear garden of Plot 1 (HD01)



Photograph 3: Hand dug pit in rear garden of Plot 1 (HD01) showing 600mm cover system



Photograph 4: Hand dug pit in rear garden of Plot 2 (HD02) showing 600mm cover system



Photograph 5: Hand dug pit in rear garden of Plot 3 (HD03) showing 600mm cover system



Photograph 6: Hand dug pit in rear garden of Plot 4 (HD04) showing 600mm cover system



Photograph 7: Hand dug pit in rear garden of Plot 5 (HD05) showing 600mm cover system



Photograph 8: Hand dug pit in front garden of Plot 5 (HD05-B) showing insufficient depth of cover

Kemp Heaton Avenue, Bury

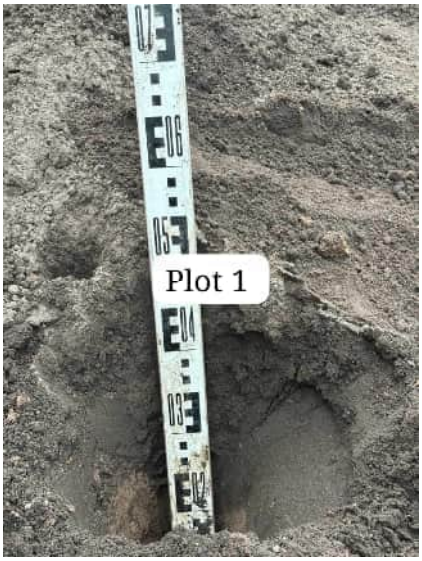
Site Visit – Clean Cover System Plots 1 – 5 on 29th April 2026
Photographs 1 - 8

Client: Hargreaves

Job Number:	13753
Date:	21/05/2026
Drawn by:	SM
Checked by:	SM
Drg No:	GIS002
Status/Revision:	A
File location:	J:\13750-13999\13753 - Kemp Heaton Avenue\Docs\CR Docs\Reports\Verification\Appendix 4 Cover System
Revision History:	A, First Issue, 21/05/2026, SM;

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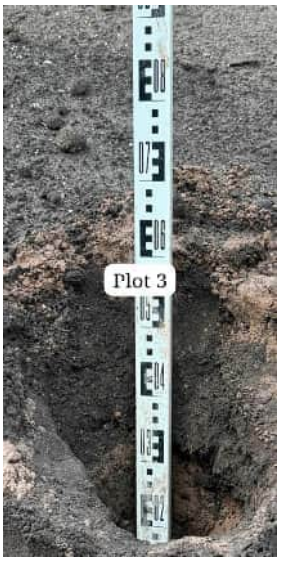
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Photograph 9: Hand dug pit in front garden of Plot 1 (HD01-B) showing insufficient depth of cover



Photograph 10: Hand dug pit in front garden of Plot 2 (HD02-B) showing 600mm cover system



Photograph 11: Hand dug pit in front garden of Plot 3 (HD03-B) showing 600mm cover system



Photograph 12: Hand dug pit in front garden of Plot 4 (HD04-B) showing 600mm cover system



Photograph 13: Second hand dug pit in front garden of Plot 5 (HD05-C) showing 600mm cover system



Photograph 14: Second hand dug pit in front garden of Plot 1 (HD01-C) showing 600mm cover system

Kemp Heaton Avenue, Bury

Client: Hargreaves

Clean Cover System Plots 1 – 5 on 15th and 18th May 2026
Photographs 9 - 14

Job Number:	13753
Date:	21/05/2026
Drawn by:	SM
Checked by:	SM
Drg No:	GIS002
Status/Revision:	A
File location:	J:\13750-13999\13753 - Kemp Heaton Avenue\Docs\CR Docs\Reports\Verification\Appendix 4 Cover System
Revision History:	A, First Issue, 21/05/2026, SM;

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Shauna McLoughlin

From: Gavin Turner <gturner@hargreavescontracting.com>
Sent: 19 May 2026 15:36
To: Shauna McLoughlin; Peter Kenny
Cc: jjohnson; Sam Clarke
Subject: RE: Kemp Heaton - Soil Validation

Follow Up Flag: Follow up
Flag Status: Completed

Hi Shauna,

I can confirm that the gardens have been installed with 600 cover.

Kind Regards

Gavin Turner

HARGREAVES
CONTRACTING EXCELLENCE

Gavin Turner MEng – Project Manager
Unit 5, Rising Bridge Business Village,
Blackburn Road, Accrington, BB5 2AL
T: 01204 365300 **M:** 07973 902261
E: gturner@hargreavescontracting.com
W: www.hargreavescontracting.com

From: Shauna McLoughlin <ShaunaMcLoughlin@campbellreith.com>
Sent: 19 May 2026 14:32
To: Gavin Turner <gturner@hargreavescontracting.com>; Peter Kenny <PeterKenny@campbellreith.com>
Cc: jjohnson <JJohnson@hargreavescontracting.com>; Sam Clarke <sclarke@hargreavescontracting.com>
Subject: RE: Kemp Heaton - Soil Validation

Hi Gavin,

Thanks for the additional information. I have reviewed the chemical testing results and can confirm there were no contaminant exceedances in the imported material, which is good news.

Could you please confirm in writing that the front gardens in Plots 1 – 5 have now been installed with the required 600mm cover system so we can finalise the first phase of the verification report.

Kind regards
Shauna

Shauna McLoughlin
Senior Land Quality Scientist



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From: Gavin Turner <gturner@hargreavescontracting.com>
Sent: 18 May 2026 15:44
To: Shauna McLoughlin <ShaunaMcLoughlin@campbellreith.com>; Peter Kenny <PeterKenny@campbellreith.com>
Cc: jjohnson <JJohnson@hargreavescontracting.com>; Sam Clarke <sclarke@hargreavescontracting.com>
Subject: RE: Kemp Heaton - Soil Validation

Hi Shauna,

I've asked the guys to check plot 1 image attached.

Locations as follows and marked on the plan with red circles.

Plot 5 ///mouth.region.skills
Plot 4 ///fired.amber.limp
Plot 3 ///owners.clap.riders
Plot 2 ///sling.purple.cover
Plot 1 ///punch.lofts.food

Kind Regards

Gavin Turner

HARGREAVES
CONTRACTING EXCELLENCE

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T: 01204 365300 **M:** 07973 902261
E: gturner@hargreavescontracting.com
W: www.hargreavescontracting.com

From: Shauna McLoughlin <ShaunaMcLoughlin@campbellreith.com>
Sent: 18 May 2026 14:51
To: Gavin Turner <gturner@hargreavescontracting.com>; Peter Kenny <PeterKenny@campbellreith.com>
Cc: jjohnson <JJohnson@hargreavescontracting.com>; Sam Clarke <sclarke@hargreavescontracting.com>
Subject: RE: Kemp Heaton - Soil Validation

Hi Gavin,

Can you please confirm the cover system thickness installed in the front gardens of Plot 1 – 5. It looks from the photographs that the depth in Plot 1 is still only 450mm.

Please could you also plot the hand dug pit locations on the plan attached or provide the what3words/GPS coordinates.

Kind regards
Shauna

Shauna McLoughlin
Senior Land Quality Scientist
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From: Shauna McLoughlin
Sent: 15 May 2026 15:49
To: 'Gavin Turner' <gturner@hargreavescontracting.com>; Peter Kenny <peterkenny@campbellreith.com>
Cc: jjohnson <JJohnson@hargreavescontracting.com>; Sam Clarke <sclarke@hargreavescontracting.com>
Subject: RE: Kemp Heaton - Soil Validation

Hi Gavin,

Thanks for the additional information.

Confirmation of chemical suitability prior to import was specified in the Remediation Strategy. Hopefully if we continue to take sufficient samples on site and we provide as much information on the material as possible the CLO should accept.

Please could you provide a description of the imported material source and type, including whether it is manufactured, greenfield, or brownfield derived (screened)?

Kind regards
Shauna

From: Gavin Turner <gturner@hargreavescontracting.com>
Sent: 15 May 2026 13:43
To: Shauna McLoughlin <ShaunaMcLoughlin@campbellreith.com>; Peter Kenny <PeterKenny@campbellreith.com>
Cc: jjohnson <JJohnson@hargreavescontracting.com>; Sam Clarke <sclarke@hargreavescontracting.com>
Subject: RE: Kemp Heaton - Soil Validation

Hi Shauna,

Please find attached topsoil tickets & images of front gardens.

No we didn't get any chemical testing. Is it required or is the onsite samples you took sufficient?

Kind Regards

Gavin Turner

HARGREAVES
CONTRACTING EXCELLENCE

Gavin Turner MEng – Project Manager
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Blackburn Road, Accrington, BB5 2AL
T: 01204 365300 **M:** 07973 902261
E: gturner@hargreavescontracting.com
W: www.hargreavescontracting.com

From: Shauna McLoughlin <ShaunaMcLoughlin@campbellreith.com>
Sent: 15 May 2026 11:32
To: Gavin Turner <gturner@hargreavescontracting.com>; Peter Kenny <PeterKenny@campbellreith.com>
Cc: jjohnson <JJohnson@hargreavescontracting.com>; Sam Clarke <sclarke@hargreavescontracting.com>
Subject: RE: Kemp Heaton - Soil Validation

Hi Gavin,

Did you receive any chemical testing certificates from the topsoil/subsoil supplier prior to import?

I know we have checked the results for a few certificates, but these are not relevant to the soils imported to site.

Please could you also email me a copy of the delivery note to include within the verification report?

Kind regards
Shauna

Shauna McLoughlin
Senior Land Quality Scientist
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From: Shauna McLoughlin
Sent: 14 May 2026 12:50
To: 'Gavin Turner' <gturner@hargreavescontracting.com>; Peter Kenny <peterkenny@campbellreith.com>

Cc: jjohnson <JJohnson@hargreavescontracting.com>; Sam Clarke <sclarke@hargreavescontracting.com>
Subject: RE: Kemp Heaton - Soil Validation

Hi Gavin,

I've chased the lab for the chemical testing results, and we should have them by the end of today.

Do you have any photographs showing the depth of the topsoil in the front gardens for plots 1-5 as they were not complete during the visit and one was shallower than the required depth.

Given the outstanding information, it is looking like next week for issue of the Verification Report for the first phase (plots 1-5).

Kind regards
Shauna

From: Gavin Turner <gturner@hargreavescontracting.com>
Sent: 12 May 2026 16:05
To: Shauna McLoughlin <ShaunaMcLoughlin@campbellreith.com>; Peter Kenny <PeterKenny@campbellreith.com>
Cc: jjohnson <JJohnson@hargreavescontracting.com>; Sam Clarke <sclarke@hargreavescontracting.com>
Subject: RE: Kemp Heaton - Soil Validation

Hi Shauna,

When do you think we will have the REM Start (1st part) ready for submission for close out?

Kind Regards

Gavin Turner

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Gavin Turner MEng – Project Manager
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T: 01204 365300 **M:** 07973 902261
E: gturner@hargreavescontracting.com
W: www.hargreavescontracting.com

From: Shauna McLoughlin <ShaunaMcLoughlin@campbellreith.com>
Sent: 01 May 2026 15:16
To: Gavin Turner <gturner@hargreavescontracting.com>; Peter Kenny <PeterKenny@campbellreith.com>
Cc: jjohnson <JJohnson@hargreavescontracting.com>; Sam Clarke <sclarke@hargreavescontracting.com>
Subject: RE: Kemp Heaton - Soil Validation

Thanks Gavin, the testing has been scheduled with the lab.

Kind regards

Shauna

Shauna McLoughlin
Senior Land Quality Scientist
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From: Gavin Turner <gturner@hargreavescontracting.com>
Sent: 30 April 2026 14:39
To: Shauna McLoughlin <ShaunaMcLoughlin@campbellreith.com>; Peter Kenny <PeterKenny@campbellreith.com>
Cc: jjohnson <JJohnson@hargreavescontracting.com>; Sam Clarke <sclarke@hargreavescontracting.com>
Subject: RE: Kemp Heaton - Soil Validation

Hi Shauna,

Please proceed.

Kind Regards

Gavin Turner

HARGREAVES
CONTRACTING EXCELLENCE
Gavin Turner MEng – Project Manager
Unit 5, Rising Bridge Business Village,
Blackburn Road, Accrington, BB5 2AL
T: 01204 365300 **M:** 07973 902261
E: gturner@hargreavescontracting.com
W: www.hargreavescontracting.com

From: Shauna McLoughlin <ShaunaMcLoughlin@campbellreith.com>
Sent: 30 April 2026 11:09
To: Gavin Turner <gturner@hargreavescontracting.com>; Peter Kenny <PeterKenny@campbellreith.com>
Cc: jjohnson <JJohnson@hargreavescontracting.com>; Sam Clarke <sclarke@hargreavescontracting.com>
Subject: RE: Kemp Heaton - Soil Validation

Hi Gavin,

Thanks for confirming.

Based on the approximate volume of material imported to Plots 1 – 5, there are four soil samples required for validation testing.

This estimate is based on the following imported quantities: Topsoil - 5 x 20-tonne loads and Subsoil - 8 x 20-tonnes loads.

The laboratory chemical testing fees for the four samples are £537.60 + VAT.

Please could you confirm that you are happy to proceed with these fees so that I can schedule the testing with the laboratory?

Kind regards
Shauna

Shauna McLoughlin
Senior Land Quality Scientist
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From: Gavin Turner <gturner@hargreavescontracting.com>
Sent: 29 April 2026 15:45
To: Shauna McLoughlin <ShaunaMcLoughlin@campbellreith.com>; Peter Kenny <PeterKenny@campbellreith.com>
Cc: jjohnson <JJohnson@hargreavescontracting.com>; Sam Clarke <sclarke@hargreavescontracting.com>
Subject: RE: Kemp Heaton - Soil Validation

Hi Shauna,

The view was that as they were not front gardens they were unlikely to be used as a high risk.

For ease ill get them to re grade to 600 cover.

Ill get the delivery tickets sent over.

Kind Regards

Gavin Turner

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E: gturner@hargreavescontracting.com
W: www.hargreavescontracting.com

From: Shauna McLoughlin <ShaunaMcLoughlin@campbellreith.com>
Sent: 29 April 2026 15:39
To: Gavin Turner <gturner@hargreavescontracting.com>; Peter Kenny <PeterKenny@campbellreith.com>
Cc: jjohnson <JJohnson@hargreavescontracting.com>; Sam Clarke <sclarke@hargreavescontracting.com>
Subject: RE: Kemp Heaton - Soil Validation

Hi Gavin,

I have double checked our Remediation Strategy, and the cover system thickness should be as follows:

- Placement of at least 450mm soft cover system of chemically validated soils in areas of communal soft landscaping directly overlying Made Ground soils;
- Placement of at least 600mm soft cover system of chemically validated soils in private gardens directly overlying Made Ground soils;

I noticed the front garden in Plot 5 was only 450mm, do you want me to contact the Contaminated Land Officer to confirm if this is acceptable? Or will you be adding further topsoil/subsoil to bring the cover system up to the specified 600m?

Also, please could you email a copy of the delivery tickets for the topsoil/subsoil and let me know if this is greenfield or manufactured. Did you receive any chemical certificates prior to import?

Kind regards
Shauna
Shauna McLoughlin
Senior Land Quality Scientist
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From: Shauna McLoughlin
Sent: 28 April 2026 09:54
To: 'Gavin Turner' <gturner@hargreavescontracting.com>; Peter Kenny <peterkenny@campbellreith.com>
Cc: jjohnson <JJohnson@hargreavescontracting.com>; Sam Clarke <sclarke@hargreavescontracting.com>
Subject: RE: Kemp Heaton - Soil Validation

Hi Gavin,

Ok thanks, I will be on site tomorrow for 8.30am.

Kind regards

Shauna

From: Gavin Turner <gturner@hargreavescontracting.com>
Sent: 27 April 2026 15:11
To: Shauna McLoughlin <ShaunaMcLoughlin@campbellreith.com>; Peter Kenny <PeterKenny@campbellreith.com>
Cc: jjohnson <JJohnson@hargreavescontracting.com>; Sam Clarke <sclarke@hargreavescontracting.com>
Subject: RE: Kemp Heaton - Soil Validation

Hi Shauna,

Ill confirm the supplier.

We sent them the Rem Strat and they said they could comply with all the constraints within.

I guess ultimately your tests will validate that statement.
‘
Yes we will have a groundworker available.

Kind Regards

Gavin Turner

HARGREAVES
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E: gturner@hargreavescontracting.com
W: www.hargreavescontracting.com

From: Shauna McLoughlin <ShaunaMcLoughlin@campbellreith.com>
Sent: 27 April 2026 14:57
To: Gavin Turner <gturner@hargreavescontracting.com>; Peter Kenny <PeterKenny@campbellreith.com>
Cc: jjohnson <JJohnson@hargreavescontracting.com>; Sam Clarke <sclarke@hargreavescontracting.com>
Subject: RE: Kemp Heaton - Soil Validation

Hi Gavin,

I plan to visit site on Wednesday morning to undertake the validation sampling.

Can you please confirm whether a groundworker will be available on site to dig some inspection pits so that the thickness of the installed capping layer in both the front and rear gardens can be verified?

Also, can you confirm whether the source of the imported topsoil and subsoil remains the same? I recall there was an issue with the laboratory limits of detection in the previous lab report, was this resolved?

Kind regards

Shauna

Shauna McLoughlin
Senior Land Quality Scientist
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From: Gavin Turner <gturner@hargreavescontracting.com>
Sent: 27 April 2026 07:48
To: Peter Kenny <PeterKenny@campbellreith.com>
Cc: jjohnson <JJohnson@hargreavescontracting.com>; Sam Clarke <sclarke@hargreavescontracting.com>; Shauna McLoughlin <ShaunaMcLoughlin@campbellreith.com>
Subject: RE: Kemp Heaton - Soil Validation

Hi Peter,

Hope you are well. Did you manage to book the validation for this week?

Kind Regards

Gavin Turner

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Gavin Turner MEng – Project Manager
Unit 5, Rising Bridge Business Village,
Blackburn Road, Accrington, BB5 2AL
T: 01204 365300 **M:** 07973 902261
E: gturner@hargreavescontracting.com
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From: Gavin Turner
Sent: 20 April 2026 10:03
To: Peter Kenny <peterkenny@campbellreith.com>
Cc: jjohnson <JJohnson@hargreavescontracting.com>; Sam Clarke <sclarke@hargreavescontracting.com>; Shauna McLoughlin <shaunamcloughlin@campbellreith.com>
Subject: Kemp Heaton - Soil Validation

Hi Peter,

Thanks for your time on the phone just.

Please find attached the gas validation certs. Trust these are acceptable

As discussed we need to close out the validation report in 3 phases (plots 1-5, remainder of the site (excluding apartments) and then final completion).

Please could you arrange for testing of the bungalows (1-5) area on **29/4/26.** We would then need your validation report back ASAP for submission to the council for closure.

If you could please confirm if you require sleeves installing or would want to dig the test holes randomly on site?

For confirmation we WILL NOT be installing a separation membrane as this is not highlighted in the remediation strategy.

Kind Regards

Gavin Turner

HARGREAVES
CONTRACTING EXCELLENCE

Gavin Turner MEng – Project Manager
Unit 5, Rising Bridge Business Village,
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Appendix 5

Gas Protection Measures Installation Records

CSVS Ground Gas Resistant Membrane Inspection Record Sheets and Photographs

JUTA GP1 Proprietary Gas Resistant Damp Proof Membrane Technical Data Sheet

JUTA GP1 SAM Gas Protection Self-Adhesive Membrane Technical Data Sheet

Email Correspondence from Hargreaves on Gas Protection Measures

GROUND GAS RESISTANT MEMBRANE INSPECTION RECORD SHEET

CSVS
Construction Site Validation Services

Floor 1
15 Oxford Court
Manchester
M2 3WQ

Tel: 07890312692
Email: pspeakman@csvs.ltd
Web: www.csvs.ltd

Project:	KEMP HEATON AVE, CS CIVILS
Project No:	107
Plot No. Inspected:	PLOT BUNGALOW BLOCK B1
Date of inspection:	15.10.25
Inspected by:	PSP

INSPECTED ITEM	YES/NO	COMMENTS	PHOTOGRAPHED YES / NO
Identification Identify that the correct membrane has been used, including sealing / jointing tape and pre-formed components e.g. tophats, corners.	Y	JUTA GP1. JUTA Self Adhesive membrane (SAM)	Y
General Condition Inspect the general condition of the membrane for rips, tears and punctures.	Y	Very Good condition, membrane installed by specialist D&D Lining Services who were subcontracted in by the Contractor CS Civils. Several patches were needed where post installation constructoin works had caused damage.	Y
Jointing Check that all jointing has been carried out to the manufacturer's specification.	Y	The JUTA GP1 membrane was jointed by means of heat hand welding and twin seam mechanical welding. Welded to a good standard. Seams checked by visual, by hand and by air lance. Four areas of audible discrepancy were rewelded and passed.	Y
Installation Check that the membrane has been installed correctly across cavities, including correct jointing in these areas.	Y	Cavity coverage was good, Corner detailing was good,	Y
Top Hat Installation Check that top hats have been correctly installed around service entries, including jubilee clip around pipe and correct lapping and jointing to membrane at base.	Y	Service penetrations installed to a good standard. Fixed using JUTA GP SAM. All penetrations tested by hand for secureness.	Y
Vent Installation Check that vents have been installed around the perimeter of the building in sufficient number and in the correct locations, including inspecting the condition i.e. not blocked or otherwise restricted.	Y	Perimeter vents were available for inspection. Perimeter vents also visible on the Contractors subfloor photographs.	N
Pressure Relief / Passive Venting Check the presence of a vented void / pressure relief pathway, including measuring that this is of a sufficient depth and not been filled or otherwise compromised. Check that internal sleeper walls are also vented to provide adequate flow-through within the void so that none of the walls are blocking off unvented sections within the void.	Y	>150mm clear void with vent pipes through two faces of the terraced dwellings A photograph of Bungalow Block B1 subfloor ventilation was submitted by the Contractor as part of the substructure construction.	N

This Plot has PASSED inspection.

Additional inspection visit IS NOT required for this plot.

Engineer: ……Paul Speakman…… **Signed: .**





Figure 1 -- General View Across Bungalow Block B1 during subfloor construction note Perimeter vents



Figure 2 – Depth of subfloor void



Figure 3 – General overview immediately before verification

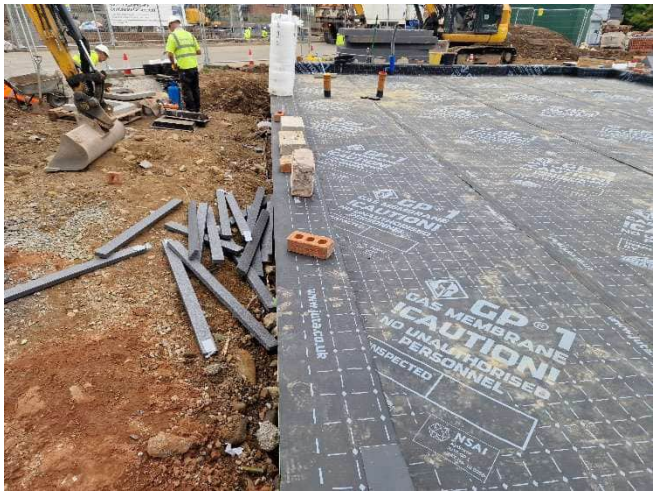


Figure 4 – Cavities were well covered

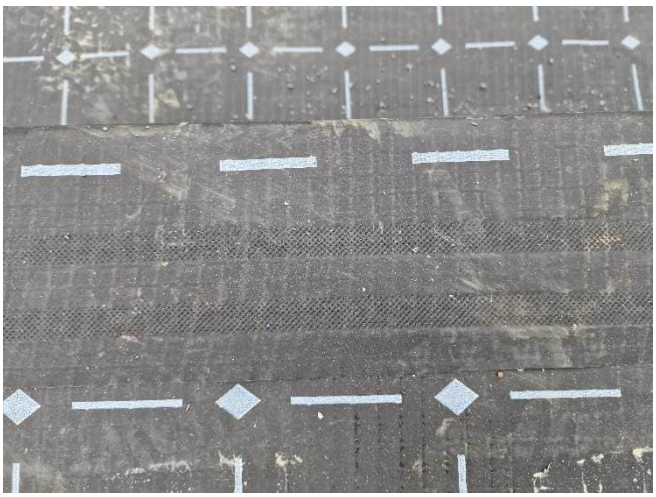


Figure 5 – Mechanical twin seam welding has been used

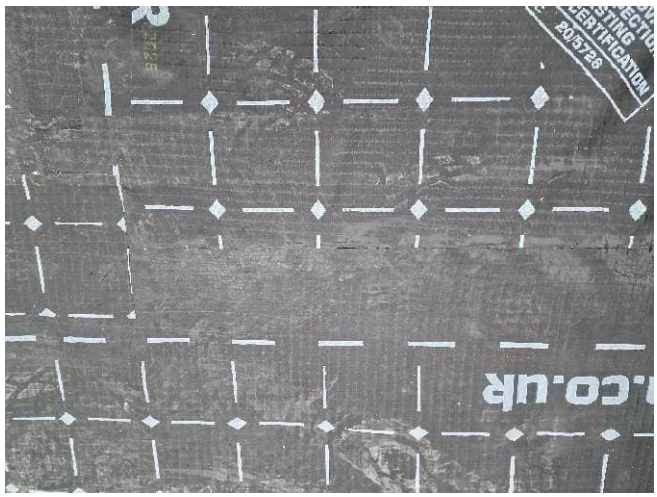


Figure 6 – Hand held seam welding was used at the perimeter where the twin seam welder would not fit.

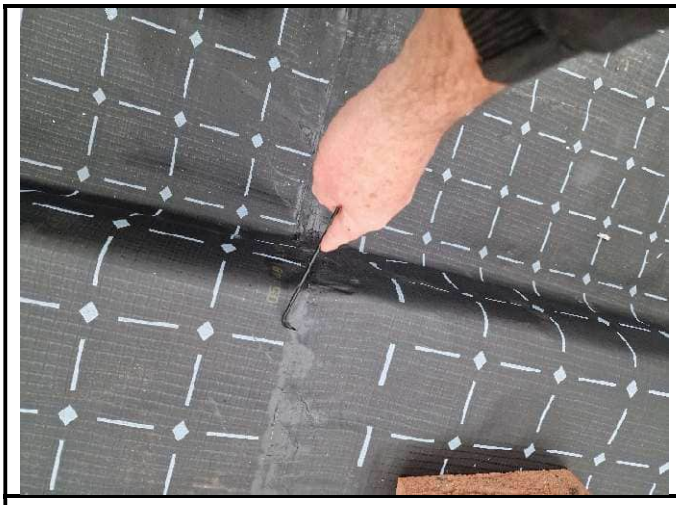


Figure 7 -- Hand welded seam areas were checked using a picking tool, then checked with the air lance.



Figure 8 -- Corners detailed and sealed with JUTA GP1 Self adhesive Membrane to a good standard



Fig 9 -- Service penetrations sealed to a good standard using JUTA GP SAM.



Fig 10 - Service penetrations sealed to a good standard using JUTA GP SAM.

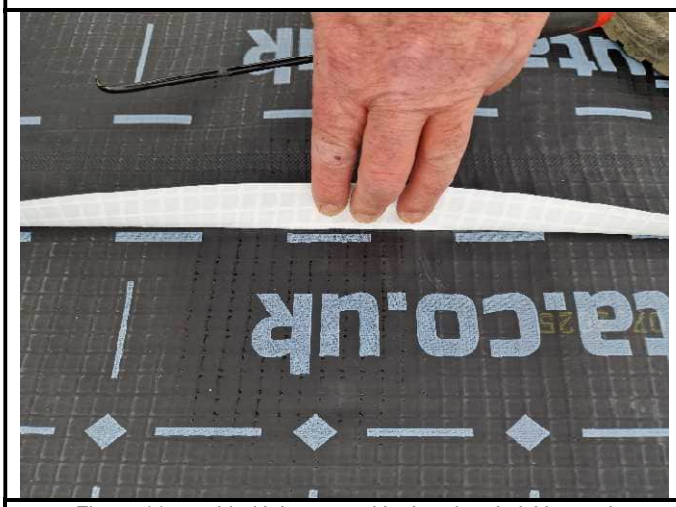


Figure 11 – welded joints tested by hand and picking tool



Figure 12 – corners and nibs detailed well



Figure 13 – Audible discrepancy in seam highlighted by testing with air lance, this area was re-welded and passed



Figure 14 – Audible discrepancy in seam highlighted by testing with air lance, this area was re-welded and passed



Figure 15 – Small hole identified 3mm diameter repaired by over patching



Figure 16 – Small holes identified circa 3mm diameter repaired by over patching



Figure 17 – Installer aplied patches, also cavity well covered

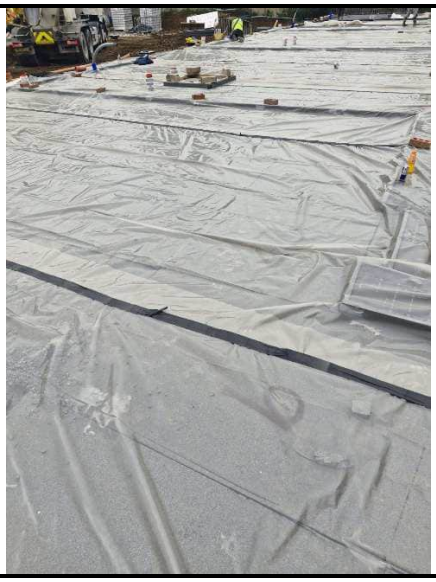


Figure 18 – Upper separation visqueen placed on top of insulation

GROUND GAS RESISTANT MEMBRANE INSPECTION RECORD SHEET

CSVS
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Project:	KEMP HEATON AVE, CS CIVILS
Project No:	107
Plot No. Inspected:	HOUSE BLOCK 1
Date of inspection:	12.01.26
Inspected by:	PSP

INSPECTED ITEM	YES/NO	COMMENTS	PHOTOGRAPHED YES / NO
Identification Identify that the correct membrane has been used, including sealing / jointing tape and pre-formed components e.g. tophats, corners.	Y	JUTA GP1. JUTA Self Adhesive membrane (SAM)	Y
General Condition Inspect the general condition of the membrane for rips, tears and punctures.	Y	Good condition, membrane installed by specialist D&D Lining Services who were subcontracted in by the Contractor CS Civils. A handful of patches were needed where damage was identified during inspection. D&D on site during inspection.	Y
Jointing Check that all jointing has been carried out to the manufacturer's specification.	Y	The JUTA GP1 membrane seams were jointed by means of heat hand welding and twin seam mechanical welding. Welded to a good standard. Seams checked by visual, by hand and by air lance, areas of audible discrepancy were rewelded or patched and passed.	Y
Installation Check that the membrane has been installed correctly across cavities, including correct jointing in these areas.	Y	Cavity coverage was good, Corner detailing was good,	Y
Top Hat Installation Check that top hats have been correctly installed around service entries, including jubilee clip around pipe and correct lapping and jointing to membrane at base.	Y	Service penetrations installed to a very good standard. Fixed using JUTA GP SAM. All penetrations physically tested to ensure stability.	Y
Vent Installation Check that vents have been installed around the perimeter of the building in sufficient number and in the correct locations, including inspecting the condition i.e. not blocked or otherwise restricted.	Y	Perimeter vents were available for inspection. Perimeter vents also visible on the Contractors subfloor photographs.	N
Pressure Relief / Passive Venting Check the presence of a vented void / pressure relief pathway, including measuring that this is of a sufficient depth and not been filled or otherwise compromised. Check that internal sleeper walls are also vented to provide adequate flow-through within the void so that none of the walls are blocking off unvented sections within the void.	Y	>150mm clear void with vent pipes through two faces of this terrace of houses. A photograph of House Block 1 subfloor ventilation was submitted by the Contractor as part of the substructure construction.	N

Houseblock No 1 has PASSED verification and inspection of the ground gas protection system.

Additional inspection visit IS NOT required for these plots.

Engineer: ……Paul Speakman…… **Signed: .**





Figure 1 – Beams being placed note the depth of void and prepared base



Figure 2 – View under beams, greater then 150mm



Figure 3 – Overiew of plot to be inspected



Figure 4 – Cavities and erimeters well covered



Figure 5 – Water being removed from the plot to enable verification.



Figure 6 – Plots clean and ready to inspect



Figure 7 -- Service Penetrations were installed to a good standard.



Figure 8 -- Service Penetrations were installed to a good standard.



Fig 9 -- Corners were sealed to a good standard using JUTA GP SAM.



Fig 10 - Corners were sealed to a good standard using JUTA GP SAM.



Figure 11 – Two areas of damage identified during inspection



Figure 12 – Damaged areas patched with Self Adhesive Membrane (SAM)



Figure 13 Seams bonded by hand heat welding to a good standard



Figure 14 – Seams bonded by mechanical twin seam welding to a good standard.

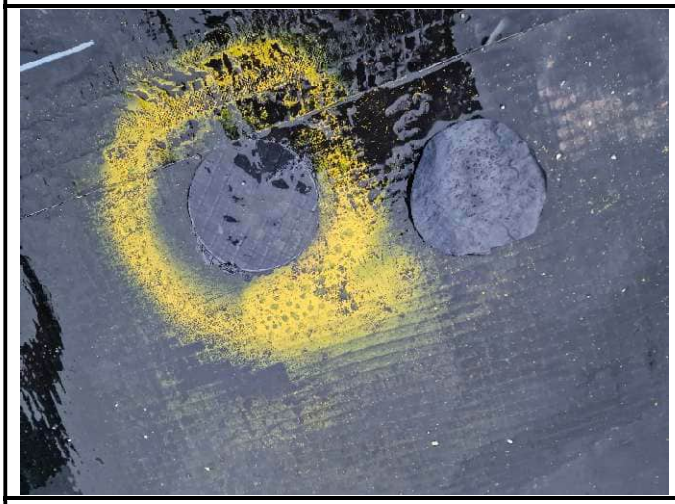


Figure 15 – Area of identified damage repaired by over patching



Figure 16 – Area of identified damage being repaired by over patching



Figure 17 – Perimeter Vents in place



Figure 18 – Membrane of House Block 1 complete and passed.

GROUND GAS RESISTANT MEMBRANE INSPECTION RECORD SHEET

Project:	KEMP HEATON AVE, CS CIVILS
Project No:	107
Plot No. Inspected:	COTTAGE FLATS
Date of inspection:	03.12.25
Inspected by:	PSP

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15 Oxford Court
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Web: www.csvs.ltd

INSPECTED ITEM	YES/NO	COMMENTS	PHOTOGRAPHED YES / NO
Identification Identify that the correct membrane has been used, including sealing / jointing tape and pre-formed components e.g. tophats, corners.	Y	JUTA GP1. JUTA Self Adhesive membrane (SAM)	Y
General Condition Inspect the general condition of the membrane for rips, tears and punctures.	Y	Good condition, membrane installed by specialist D&D Lining Services who were subcontracted in by the Contractor CS Civils. Several patches were needed where damage was identified during inspection.	Y
Jointing Check that all jointing has been carried out to the manufacturer's specification.	Y	The JUTA GP1 membrane was jointed by means of heat hand welding and twin seam mechanical welding. Welded to a good standard. Seams checked by visual, by hand and by air lance, areas of audible discrepancy were rewelded and passed.	Y
Installation Check that the membrane has been installed correctly across cavities, including correct jointing in these areas.	Y	Cavity coverage was good, Corner detailing was good,	Y
Top Hat Installation Check that top hats have been correctly installed around service entries, including jubilee clip around pipe and correct lapping and jointing to membrane at base.	Y	Service penetrations installed to a good standard. Fixed using JUTA GP SAM. All penetrations physically tested to ensure stability.	Y
Vent Installation Check that vents have been installed around the perimeter of the building in sufficient number and in the correct locations, including inspecting the condition i.e. not blocked or otherwise restricted.	Y	Perimeter vents were available for inspection. Perimeter vents also visible on the Contractors subfloor photographs.	N
Pressure Relief / Passive Venting Check the presence of a vented void / pressure relief pathway, including measuring that this is of a sufficient depth and not been filled or otherwise compromised. Check that internal sleeper walls are also vented to provide adequate flow-through within the void so that none of the walls are blocking off unvented sections within the void.	Y	>150mm clear void with vent pipes through two faces of this terrace of cottage flats. A photograph of Apartment Block subfloor ventilation was submitted by the Contractor as part of the substructure construction.	N

The Cottage Flats have PASSED verification and inspection of the ground gas protection system.

Additional inspection visit IS NOT required for these plots.

Engineer: ……Paul Speakman…… **Signed: .**





Figure 1 -- Substructure showing perimeter vents and through ventilation, prepared substrate also visible



Figure 2 – Depth of void, note through vent behind



Figure 3 – Depth of void,note



Figure 4 – View of plots before Verification



Figure 5 – Water removal and cleaning of the plots before verification



Figure 6 -- Service Penetrations were installed to a good standard.



Figure 8 -- Service Penetrations were installed to a good standard.



Fig 8 -- Corners were sealed to a good standard using JUTA GP SAM.

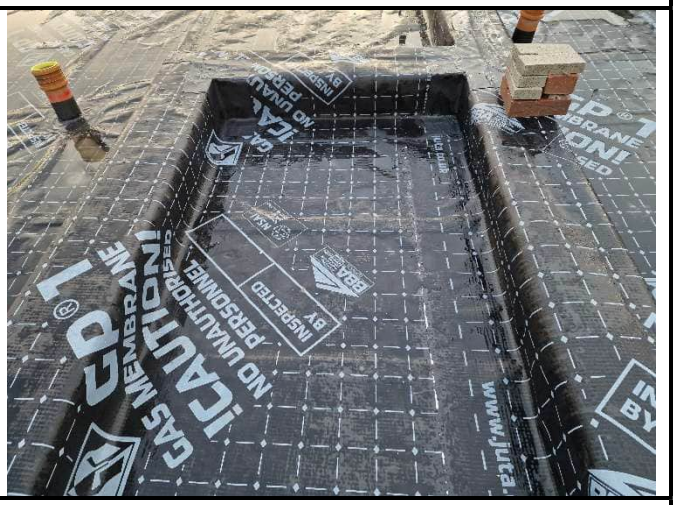


Fig 9 - Entrance vestibule area showing good corner sealing.



Figure 10 – Corner sealed well with service pemetration also sealed well.



Figure 11 – Perimeters all covered by membrane

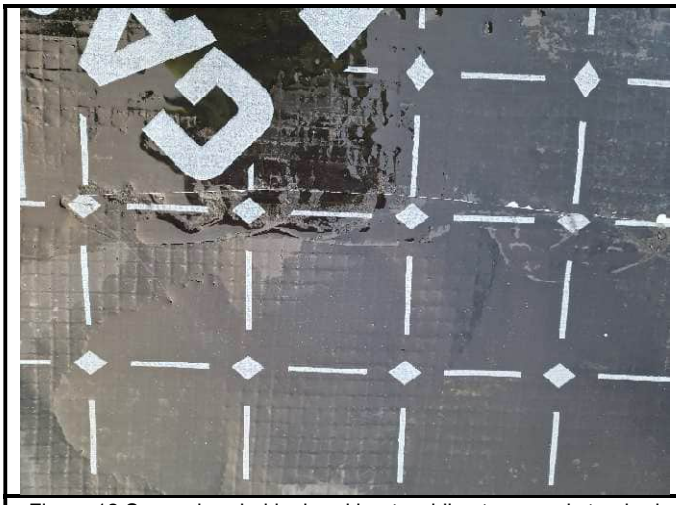


Figure 12 Seams bonded by hand heat welding to a good standard



Figure 13 – Seams bonded by hand heat welding to a good standard.



Figure 14 – Seams bonded by mechanical twin seam welding to a good standard



Figure 15 – Insulation is added as verification proceeds down the block.



Figure 16 – Perimeter Vents in place



Figure 17 – Perimeter Vents in place.

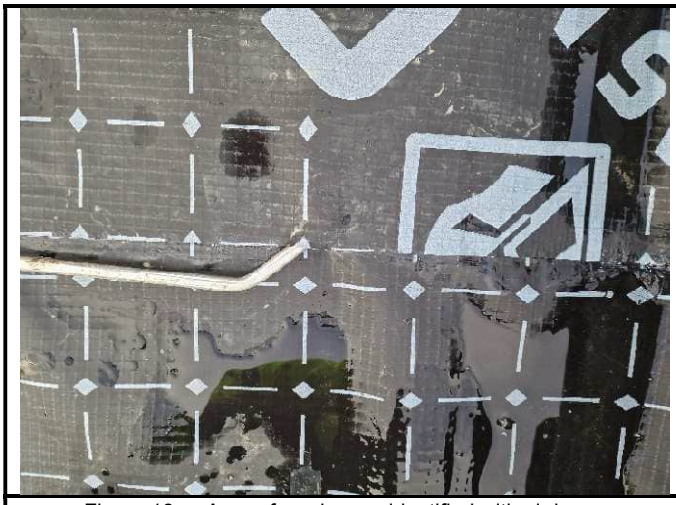


Figure 18 -- Area of weakseam identified with air lance



Figure 19 -- Area in Figure 18 overpatched by DD Lining on site



Figure 20 -- Area of weak seam repaired by over patching



Figure 21 -- Area of weak seam repaired by over patching



Figure 22 – Seam behind service penetration was incomplete, this was marked and then repaired by DD Lining.



Figure 23 -- Area of seam un-welded at perimeter outer skin, this was re heated and bonded, then patched



Figure 24 -- Final threshold completed by DD Lining



Figure 25 -- Cottage Flats opposite view from Figure 4, Verification is complete PASSED.

GROUND GAS RESISTANT MEMBRANE INSPECTION RECORD SHEET

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Project:	KEMP HEATON AVE, CS CIVILS
Project No:	107
Plot No. Inspected:	PLOT BUNGALOW BLOCK 2
Date of inspection:	31.10.25
Inspected by:	PSP

INSPECTED ITEM	YES/NO	COMMENTS	PHOTOGRAPHED YES / NO
Identification Identify that the correct membrane has been used, including sealing / jointing tape and pre-formed components e.g. tophats, corners.	Y	JUTA GP1. JUTA Self Adhesive membrane (SAM)	Y
General Condition Inspect the general condition of the membrane for rips, tears and punctures.	Y	Very Good condition, membrane installed by specialist D&D Lining Services who were subcontracted in by the Contractor CS Civils. 4 patches were needed where damage was identified during inspection.	Y
Jointing Check that all jointing has been carried out to the manufacturer's specification.	Y	The JUTA GP1 membrane was jointed by means of heat hand welding and twin seam mechanical welding. Welded to a good standard. Seams checked by visual, by hand and by air lance. Three areas of audible discrepancy were rewelded and passed.	Y
Installation Check that the membrane has been installed correctly across cavities, including correct jointing in these areas.	Y	Cavity coverage was good, Corner detailing was good,	Y
Top Hat Installation Check that top hats have been correctly installed around service entries, including jubilee clip around pipe and correct lapping and jointing to membrane at base.	Y	Service penetrations installed to a good standard. Fixed using JUTA GP SAM. All penetrations physically tested to ensure stability.	Y
Vent Installation Check that vents have been installed around the perimeter of the building in sufficient number and in the correct locations, including inspecting the condition i.e. not blocked or otherwise restricted.	Y	Perimeter vents were available for inspection. Perimeter vents also visible on the Contractors subfloor photographs.	N
Pressure Relief / Passive Venting Check the presence of a vented void / pressure relief pathway, including measuring that this is of a sufficient depth and not been filled or otherwise compromised. Check that internal sleeper walls are also vented to provide adequate flow-through within the void so that none of the walls are blocking off unvented sections within the void.	Y	>150mm clear void with vent pipes through two faces of the terraced dwellings A photograph of Bungalow Block 2 subfloor ventilation was submitted by the Contractor as part of the substructure construction.	N

Bungalow Plot 2 --- has PASSED inspection.

Additional inspection visit IS NOT required for this plot.

Engineer: ……Paul Speakman…… **Signed: .**





Figure 1 -- General View Across Bungalow Block 2 during subfloor construction note Perimeter vents



Figure 2 – Depth of subfloor void



Figure 3 – General overview immediately before verification



Figure 4 – Cavities were well covered and service penetration well sealed



Figure 5 – Mechanical twin seam welding has been used. Welds were to a very good standard



Figure 6 – Some areas required hand held seam welding where the twin seam welder would not fit. Welded to a good standard



Figure 7 -- Service Penetrations were installed to a good standard.



Figure 8 -- Service Penetrations were installed to a good standard.



Fig 9 -- Corners were sealed to a good standard using JUTA GP SAM.



Fig 10 - Corners were sealed to a good standard using JUTA GP SAM.



Figure 11 – Corners were sealed to a good standard using JUTA GP SAM.



Figure 12 – View across party wall



Figure 13 Small hole identified 3mm diameter



Figure 14 – small hole in Gigure 13 repaired by patching.



Figure 15 – Small hole identified and marked



Figure 16 – Damage in Figure 15 repaired by overpatching



Figure 17 – Cavities well covered



Figure 18 – Opposite View of Bungalow Block 2. Verification is complete and PASSED.

GROUND GAS RESISTANT MEMBRANE INSPECTION RECORD SHEET

CSVS
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Project:	KEMP HEATON AVE, CS CIVILS
Project No:	107
Plot No. Inspected:	PLOT HOUSEBLOCK H2
Date of inspection:	15.10.25
Inspected by:	PSP

INSPECTED ITEM	YES/NO	COMMENTS	PHOTOGRAPHED YES / NO
Identification Identify that the correct membrane has been used, including sealing / jointing tape and pre-formed components e.g. tophats, corners.	Y	JUTA GP1. JUTA Self Adhesive membrane (SAM)	Y
General Condition Inspect the general condition of the membrane for rips, tears and punctures.	Y	Very Good condition, membrane installed by specialist D&D Lining Services who were subcontracted in by the Contractor CS Civils. No repairs needed due to damage, the membrane was clean and non trafficked, as laid.	Y
Jointing Check that all jointing has been carried out to the manufacturer's specification.	Y	The JUTA GP1 membrane was jointed by means of heat hand welding and twin seam mechanical welding. Welded to a good standard. Seams checked by visual, by hand and by air lance. Three areas of audible discrepancy were over patched as a repair	Y
Installation Check that the membrane has been installed correctly across cavities, including correct jointing in these areas.	Y	Cavity coverage was good, Corner detailing was good	Y
Top Hat Installation Check that top hats have been correctly installed around service entries, including jubilee clip around pipe and correct lapping and jointing to membrane at base.	Y	Service penetrations installed to a good standard. Fixed using JUTA GP SAM. All penetrations tested for secureness by physically being manhandled.	Y
Vent Installation Check that vents have been installed around the perimeter of the building in sufficient number and in the correct locations, including inspecting the condition i.e. not blocked or otherwise restricted.	Y	Perimeter vents were available for inspection. Perimeter vents also visible alongwith through ventilation on the Contractors subfloor photographs.	N
Pressure Relief / Passive Venting Check the presence of a vented void / pressure relief pathway, including measuring that this is of a sufficient depth and not been filled or otherwise compromised. Check that internal sleeper walls are also vented to provide adequate flow-through within the void so that none of the walls are blocking off unvented sections within the void.	Y	>150mm clear void with vent pipes through two faces of the terraced dwellings Photographs of Houseblock H2 subfloor construction was taken by the Contractor.	N

This Plot has PASSED inspection.

Additional inspection visit IS NOT required for this plot.

Engineer: ……Paul Speakman…… **Signed: .**





Figure 1 -- General View Across Houseplot H2 during subfloor construction note Perimeter Vents a sleeper walls to accept the beams



Figure 2 – Void depth demonstrated during beam placement



Figure 3 – General overview immediately before verification



Figure 4 – Cavities were well covered



Figure 5 – Mechanical twin seam welding has been used



Figure 6 – Hand held welded seam being checked with a hand held picking tool, these areas are at the end of the twin seam run.



Figure 7 -- Corners detailed and sealed with JUTA GP1 Self adhesive Membrane to a good standard

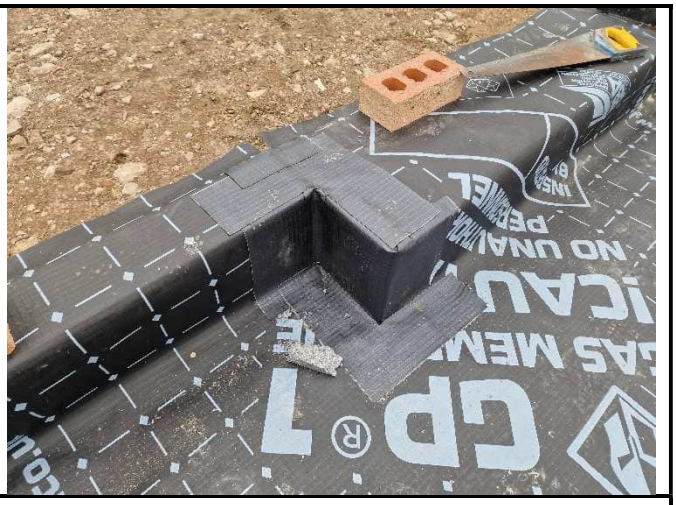


Figure 8 -- Corners detailed and sealed with JUTA GP1 Self adhesive Membrane to a good standard



Fig 9 -- Service penetrations sealed to a good standard using JUTA GP SAM.



Fig 10 - Service penetrations sealed to a good standard using JUTA GP SAM.



Figure 11 – perimeter vents in place, note compressor and air lance



Figure 12 – perimeter vents in place



Figure 13 – Audible discrepancy in seam highlighted bytesting with air lance



Figure 14 – Area identified in Figure 13 repaired by overpatching with JUTA GP1 SAM



Figure 15 – Audible discrepancy in seam highlighted bytesting with air lance



Figure 16 – Area identified in Figure 15 repaired by overpatching with JUTA GP1 SAM

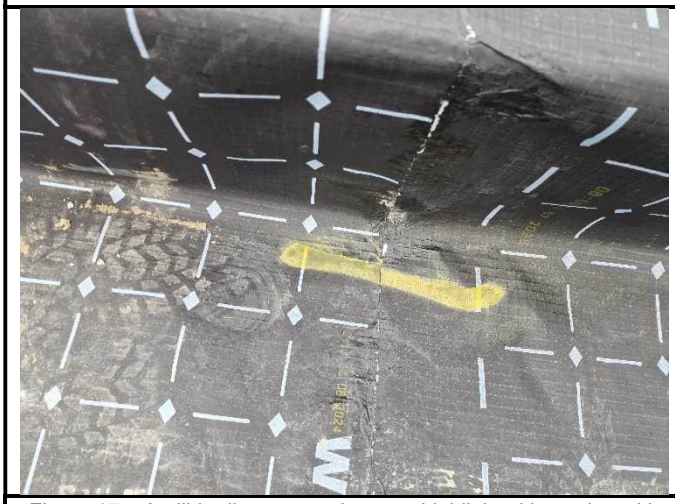


Figure 17 – Audible discrepancy in seam highlighted bytesting with air lance



Figure 18 – Area identified in Figure 17 repaired by overpatching with JUTA GP1 SAM



Figure 19 – Insulation ready to protect verified membrane



Figure 20 -- Opposite view of completed PASSED membrane of Houseblock H2.

GROUND GAS RESISTANT MEMBRANE INSPECTION RECORD SHEET

CSVS
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Web: www.csvs.ltd

Project:	KEMP HEATON AVE, CS CIVILS
Project No:	107
Plot No. Inspected:	APARTMENT BLOCK
Date of inspection:	27TH & 28TH NOVEMBER 2025
Inspected by:	PSP

INSPECTED ITEM	YES/NO	COMMENTS	PHOTOGRAPHED YES / NO
Identification Identify that the correct membrane has been used, including sealing / jointing tape and pre-formed components e.g. tophats, corners.	Y	JUTA GP1. JUTA Self Adhesive membrane (SAM)	Y
General Condition Inspect the general condition of the membrane for rips, tears and punctures.	Y	Good condition, membrane installed by specialist D&D Lining Services who were subcontracted in by the Contractor CS Civils. Patch repairs were completed where damage was identified during inspection.	Y
Jointing Check that all jointing has been carried out to the manufacturer's specification.	Y	The JUTA GP1 membrane was jointed by means of heat hand welding and twin seam mechanical welding. Welded to a good standard. Seams checked by visual, by hand and by air lance. Areas of audible discrepancy were rewelded, patched and passed.	Y
Installation Check that the membrane has been installed correctly across cavities, including correct jointing in these areas.	Y	Cavity coverage was good, Corner detailing was good,	Y
Top Hat Installation Check that top hats have been correctly installed around service entries, including jubilee clip around pipe and correct lapping and jointing to membrane at base.	Y	Service penetrations installed to a good standard. Fixed using JUTA GP SAM. All penetrations physically tested to ensure stability.	Y
Vent Installation Check that vents have been installed around the perimeter of the building in sufficient number and in the correct locations, including inspecting the condition i.e. not blocked or otherwise restricted.	Y	Perimeter vents were available for inspection. Perimeter vents also visible on the Contractors subfloor photographs.	N
Pressure Relief / Passive Venting Check the presence of a vented void / pressure relief pathway, including measuring that this is of a sufficient depth and not been filled or otherwise compromised. Check that internal sleeper walls are also vented to provide adequate flow-through within the void so that none of the walls are blocking off unvented sections within the void.	Y	>150mm clear void with through ventilation A photograph of Apartment Block subfloor ventilation was submitted by the Contractor as part of the substructure construction.	N

The Apartment Block --- has PASSED inspection.

Additional inspection visit IS NOT required for this plot.

Engineer: ……Paul Speakman…… **Signed: .**





Figure 1 -- General View Across Apartment Block during subfloor construction note Perimeter vents and through vents. Photo supplied by CS Civils



Figure 2 – Depth of subfloor void



Figure 3 – General overview immediately before verification



Figure 4 – Cavities were well covered.



Figure 5 – Cavities were well covered



Figure 6 – View across rooms to rear elevation



Figure 7 -- Service Penetrations were installed to a good standard.



Figure 8 -- Service Penetrations were installed to a good standard.



Fig 9 -- Corners were sealed to a good standard using JUTA GP SAM.



Fig 10 - Masonry nib sealed to a good standard using JUTA GP SAM.



Figure 11 – Corners were sealed to a good standard using JUTA GP SAM.



Figure 12 – View along central corridor



Figure 13 – Steels within perimeter structure sealed wellmall hole identified 3mm diameter



Figure 14 – Corner detailed and sealed well.

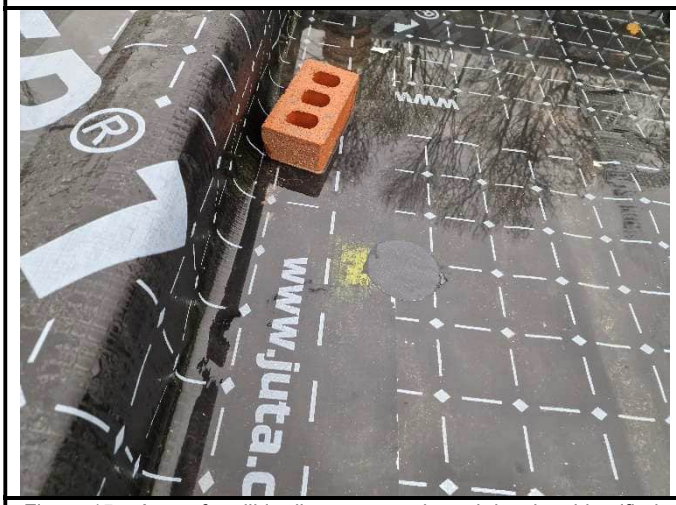


Figure 15 – Area of audible discrepancy when air lancing, identified, marked up and repaired by DD Lining.



Figure 16 – Are where JUTA SAM needed to be re-bonded and over patched.



Figure 17 – Patch added to hand welded seam where area was identified by air lance.



Figure 18 – View of dividing wall between two apartments, well sealed.



Figure 19 – Hand heat welding seal to a good standard

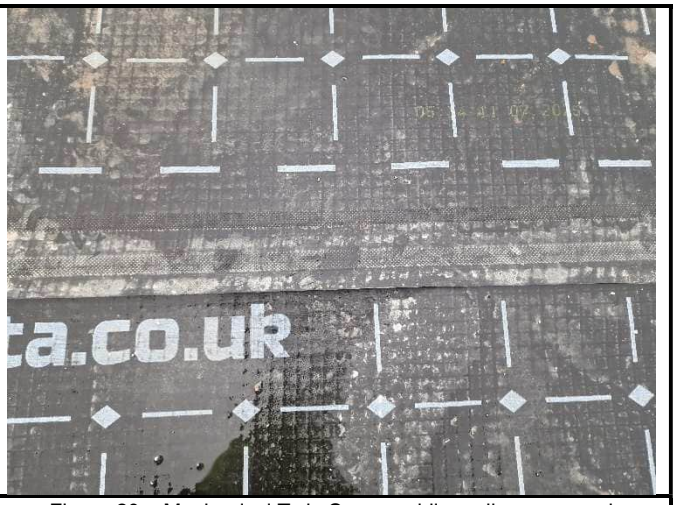


Figure 20 – Mechanical Twin Seam welding, all a very good standard.



Figure 21 -- Internal corner detailed well



Figure 22 -- Internal steelwork sealed well



Figure 23 - View across into site, note blue hose for air lance



Figure 24 – View along corridor



Figure 25 -- Small area of damage, repaired by overpatching

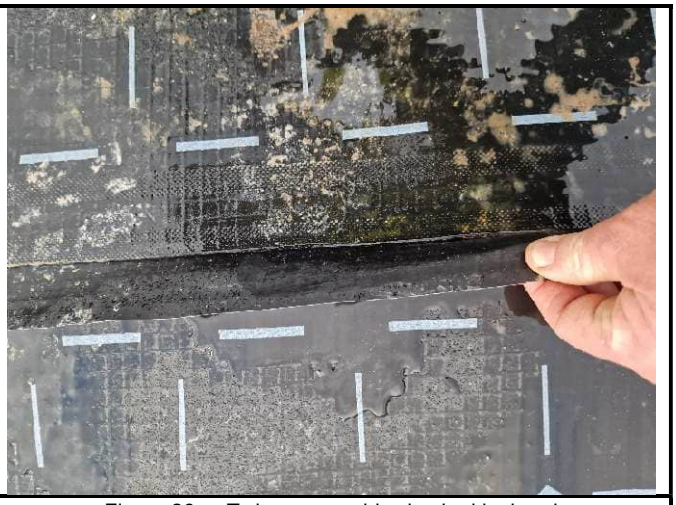


Figure 26 -- Twin seam welds checked by hand



Figure 27 -- Service penetrations sealed well



Figure 28 -- Perimeter vents in place and clear.



Figure 29 -- Perimeter Vents in place, note Insulation installed immediately after area released during verification



Figure 30 -- Perimeter Vents in place

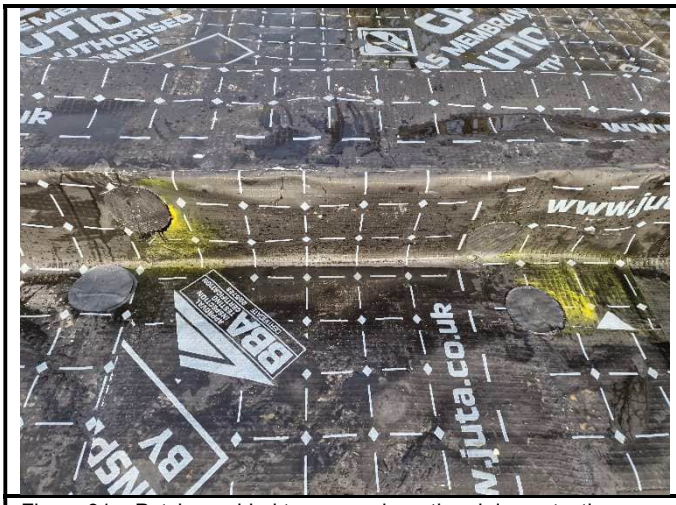


Figure 31 – Patches added to areas where the air lance testing gave an audible difference.

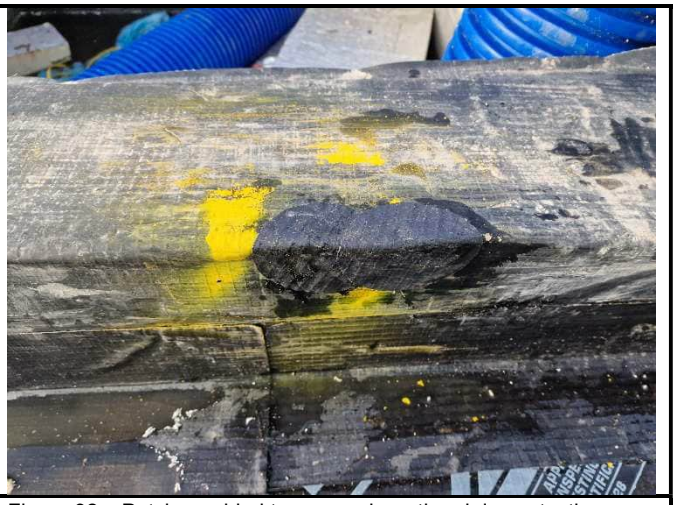


Figure 32 – Patches added to areas where the air lance testing gave an audible difference



Figure 33 -- General view showing all nibs and doorways all checked with airlance



Figure 34 -- Service Penetrations sealed well PASSED



Figure 35 – General view into final area to be verified



Figure 36 - Opposite view of Apartment Block, partially insulated, Verification complete, PASSED

GROUND GAS PROTECTION
GP®1 TECHNICAL DATA SHEET

JUTA | TITANTECH®



GP®1

GP®1 proprietary gas resistant damp proof membrane (DPM) is a multi-layer, low density polyethylene membrane, reinforced with a polypropylene reinforcing grid with an integral aluminium foil. GP®1 is specifically designed and manufactured to perform as a methane, carbon dioxide, radon, ground gas, air & moisture protection system.

Thickness	0.6 mm
Width	Various m
Length	Various m
Weight	370 g/m²

TITANTECH®
For developers of brownfield and contaminated sites the TITANTECH® family of products represent a major step forward in safeguarding projects against gaseous and chemical contamination.

Handling
Roll weights can be in excess of 20 kg and hence appropriate care and equipment is required for unloading and handling.

Storage
Rolls of GP®1 should be stored on stable/level ground and stacked not more than five rolls high, with no other material stacked on top. The rolls can be stored outdoors when packaged, but should be protected from exposure to UV.

Installation
GP®1 should be installed in accordance with the product installation guidelines, and in accordance with BS 8485:2015.

Certifications

BBA APPROVAL INSPECTION TESTING CERTIFICATION CERTIFICATE 20/5705

Please Scan

CE UK CA UK NI

Rev 2024

GROUND GAS PROTECTION
GP®1 TECHNICAL DATA SHEET

GP®1

Feature	Characteristics	Test Method	GP®1
Physical Properties	Thickness	EN 1849-2	0.6 mm
	Thickness - between Scrim	BS EN ISO 9863-1:2016	0.4 mm
	Width	EN 1849-2	Various m
	Length	EN 1849-2	Various m
	Weight	EN 1849-2	370 g/m^2
Hydraulic Press	Water Column	EN 20811	> 300
	Resistance to Water Penetration	EN 13967, EN 1928	Pass
	Water Tightness	EN 11296, EN 1367, EN 1928	Pass
Mechanical Properties	Resistance to Static Load	EN 12730-B	20 kg
	Tensile Strength (MD)	EN 12311-1	600 N/50mm
	Tensile Strength (CMD)	EN 12311-1	480 N/50mm
	Tensile Elongation (MD)	EN 12310-1	20%
	Tensile Elongation (CMD)	EN 12310-1	20%
	Puncture Resistance	EN 12236	1.25 kN
	Resistance to Tearing (Nail Shank) MD	EN 12310-1	330 N
	Resistance to Tearing (Nail Shank) CMD	EN 12310-1	400 N
Durability and Chemical Resistance	Transmission Rate of Volatile Liquids - Diesel	ISO 6179:2010 (B)	0.246 g/m^2/h
	Transmission Rate of Volatile Liquids - Xylene	ISO 6179:2010 (B)	0.571 g/m^2/h
	Transmission Rate of Volatile Liquids - Toluene	ISO 6179:2010 (B)	0.583 g/m^2/h
	Transmission Rate of Volatile Liquids - Petrol	ISO 6179:2010 (B)	0.135 g/m^2/h
Gas Permeability	Methane Permeability	BS EN ISO 15105-1	< 0.09 ml/m^2/day/atm
	Carbon Dioxide Permeability	BS EN ISO 15105-1	< 0.09 ml/m^2/day/atm
	Radon Permeability	K124/02/95	8.0 x 10^{-15} m^2/s
	Hydrogen Sulphide Permeability	BS EN ISO 15105-1	< 0.1 ml/m^2/day/atm
Compliance and Certification	CE Mark - EN13967:2012 (A1 2017)		
	NHBC Standards Compliant		
	Conforms to BS 8485:2015 + A1 2019		
	BBA Certified - Certificate No. 20/5728		

JUTA UK

Please contact JUTA UK Directly for more information on GP®1

Jointing and Sealing

It is recommended GP®1 be heat welded where possible, with welding carried out by competent personnel with suitable qualifications in accordance with best practice, and guidance contained within BS 8485:2015.

Accessory Products

- GP®1 Starter Band
- GP® Tape
- GP® Self Adhesive Membrane
- GP® Primer
- GP® Top Hats and Preformed Corners
- GP® Protection Fleece
- GP® Void Vent (24/40mm)

GROUND GAS PROTECTION
GP®1 SAM
TECHNICAL DATA SHEET

JUTA | TITANTECH®



GP®1 SAM

GP®1 SAM, gas protection self adhesive membrane, is a bituminous gas proof and water proof sheet, composed of self-adhesive SBS polymer modified bitumen incorporating GP®1 with an upper surface finish of black reinforced LDPE, and a lower surface finish of siliconized release film. GP®1 SAM is used for the gas/ waterproofing of underground structures where harmful ground gasses are anticipated, and as a self adhesive accessory to GP®1.

Thickness	1.2 mm
Width	0.9 m or 0.3 m
Length	20 m
Weight	1100 g/m²

TITANTECH®
For developers of brownfield and contaminated sites the TITANTECH® family of products represent a major step forward in safeguarding projects against gaseous and chemical contamination.

Handling
Roll weights can be in excess of 20 kg (approx 33 kg/roll) and hence appropriate care and equipment is required for unloading and handling. This product is non-toxic nor flammable.

Storage
Rolls of GP®1 SAM should be stored on in a cool, dry place, and be protected from exposure to rain, sun, heat and cold temperatures prior to installation. Exposure to sunlight for extended period of time could cause difficulty with removal of the release film.

Certifications

BBA APPROVAL INSPECTION CERTIFICATION CERTIFICATE 22/6078

Please Scan

CE UK CA UK NI

Rev 2024

GROUND GAS PROTECTION
GP®1 SAM
TECHNICAL DATA SHEET

GP®1 SAM

Feature	Characteristics	Test Method	GP®1 SAM
Physical Properties	Thickness	EN 1849-2	1.2 mm
	Width	EN 1849-2	0.9 or 0.3 m
	Length	EN 1849-2	20 m
	Weight	EN 1849-2	1100 g/m²
Hydraulic Press	Water Tightness	EN 1928	Pass
	Water Vapour Transmission	EN 1931	0.013 g/m²/day
Mechanical Properties	Tensile Strength (MD/CMD)	EN 12311-2 (A)	>380 N/50mm
	Elongation (MD/CMD)	EN 12311-2 (A)	> 12 %
	Resistance to Static Load	EN 12370	20 kg
	Joint Strength	EN 12317-2	> 30 N
	Durability and Water Tightness (Ageing and Chemicals) 60 kPa	EN 1847	Pass
	Resistance to Nail Tear (MD/CMD)	EN 12310-1	> 270 N
	Resistance to Fire	EN 13501	E - Euro Class
Gas Permeability	Methane Permeability	EN ISO 15105-1	< 0.68 ml/m²/day/atm
	Carbon Dioxide Permeability	EN ISO 15105-1	< 2.81 ml/m²/day/atm
	Radon Permeability	K124/02/95	8.0 x 10^{-15} m²/S
Compliance and Certification	CE Mark - EN13967:2012 + A1:2017 Type (A/T)		
	BS 8485:2015 Compliant (Methane and Carbon Dioxide Barrier)		

JUTA UK

Please contact JUTA UK Directly for more information on GP®1 SAM

Installation

GP®1 SAM should be installed in accordance with the product installation guidelines, and in accordance with BS 8485:2015, and/or BS 8102:2009.

It is recommended that GP®1 SAM is not applied in temperatures below 10°C, in colder weather the material can be warmed slightly to aid adhesion.

Accessory Products

- GP® Primer
- GP® Protection Board
- GP® Protection Fleece

Shauna McLoughlin

From:	Gavin Turner <gturner@hargreavescontracting.com>
Sent:	20 April 2026 10:03
To:	Peter Kenny
Cc:	jjohnson; Sam Clarke; Shauna McLoughlin
Subject:	Kemp Heaton - Soil Validation
Attachments:	Kemp Heaton Gas Membrane Validation.zip

Hi Peter,

Thanks for your time on the phone just.

Please find attached the gas validation certs. Trust these are acceptable

As discussed we need to close out the validation report in 3 phases (plots 1-5, remainder of the site (excluding apartments) and then final completion).

Please could you arrange for testing of the bungalows (1-5) area on **29/4/26.** We would then need your validation report back ASAP for submission to the council for closure.

If you could please confirm if you require sleeves installing or would want to dig the test holes randomly on site?

For confirmation we WILL NOT be installing a separation membrane as this is not highlighted in the remediation strategy.

Kind Regards

Gavin Turner

HARGREAVES
CONTRACTING EXCELLENCE

Gavin Turner MEng – Project Manager
Unit 5, Rising Bridge Business Village,
Blackburn Road, Accrington, BB5 2AL
T: 01204 365300 **M:** 07973 902261
E: gturner@hargreavescontracting.com
W: www.hargreavescontracting.com



CampbellReith
consulting engineers

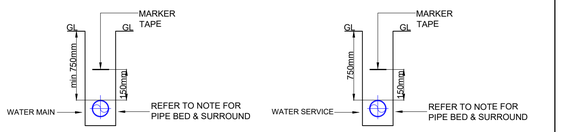
Appendix 6

Potable Pipework Confirmation

Water Construction Plan

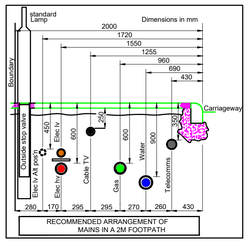
Puriton Barrier Piper Brochure

Email Correspondence from Hargreaves on Pipe Selection



MAIN SECTION DETAIL
ROADWAY & FOOTWAY

SERVICE SECTION DETAIL
ROADWAY & FOOTWAY



NOTES

- WATER SERVICE ROUTES MUST FOLLOW A PREDICTABLE SERVICE ROUTE AND MUST BE CLEAR OF ANY PLANTING WHICH COULD CAUSE DAMAGE OR WILL IMPEDE ITS FUTURE MAINTENANCE.

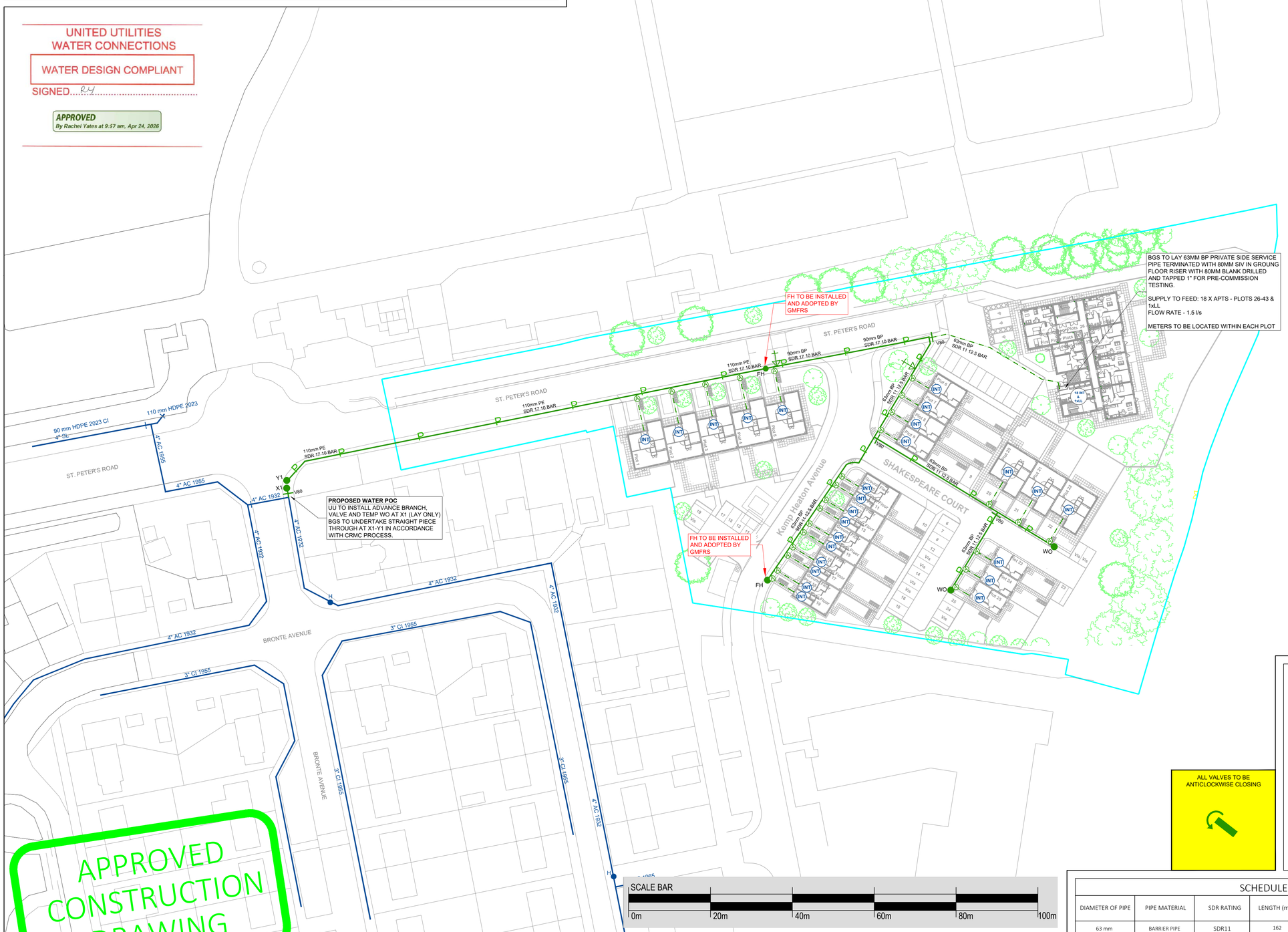
- SERVICE PIPE DESIGN AND INSTALLATION SHALL BE IN ACCORDANCE WITH UU DESIGN & CONSTRUCTION SPECIFICATION.

UNITED UTILITIES
WATER CONNECTIONS

WATER DESIGN COMPLIANT

SIGNED... RY

APPROVED
By Rachel Yates at 9:57 am, Apr 24, 2026



APPROVED CONSTRUCTION DRAWING

EXCAVATION WIDTHS, PIPE BED & SURROUND THICKNESS									
DIAMETER OF MAIN	63mm	90mm	110mm	160mm	200mm	225mm	250mm	300mm	315mm
NOMINAL EXCAVATION WIDTH	350mm	400mm	400mm	500mm	600mm	600mm	600mm	600mm	600mm
PIPE BED AND SURROUND (COMPACTED)	50mm	75mm	75mm	100mm	100mm	150mm	150mm	150mm	150mm

LEGEND

- EXISTING MAIN
- MAIN TO BE ABANDONED
- PROPOSED MAIN
- PROPOSED COMMUNICATION PIPE
- PROPOSED SUPPLY PIPE
- PROPOSED DUCT
- VALVE
- DIAMETER CHANGE
- POINT OF DELIVERY WITH BOUNDARY BOX
- POINT OF DELIVERY WITH AMR METER
- FIRE HYDRANT / WASH OUT
- AMR INTERNAL METER (IN MULTI OCCUPANCY PREMISE WITH INTERNAL METERS)
- AMR INTERNAL METER
- AMR WALL MOUNTED METER BOX
- AMR IN WALL METER BOX
- BOUNDARY METER BOX

SCHEDULE

DIAMETER OF PIPE	PIPE MATERIAL	SDR RATING	LENGTH (m)	NUMBER OF FITTINGS			
				SV's	WO's	AV's	TEE's
63 mm	BARRIER PIPE	SDR11	162	3	3	-	-
90 mm	BARRIER PIPE	SDR17	47	-	-	-	-
110 mm	PE	SDR17	126	1	-	-	-
160 mm	BARRIER PIPE	SDR17	-	-	-	-	-
250 mm	BARRIER PIPE	SDR17	-	-	-	-	-
		TOTAL	335	4	3	-	-

NOTES:

GENERAL
1. THIS DRAWING IS FOR PLANNING PURPOSES. CONSULT ALL UTILITY PLANS BEFORE ANY EXCAVATIONS.
2. THIS DRAWING DOES NOT INTEND TO IDENTIFY THE EXACT POSITION OF THE EXISTING APPARATUS. LOCATION OF THE EXISTING APPARATUS MUST IN ALL CASES BE IDENTIFIED BY CONSULTING THE RELEVANT NETWORK OWNERS IN THE AREA.

SERVICE CONNECTIONS
ALL STANDARD SIZE SERVICE CONNECTION PIBPWORK TO BE 25mm DIAMETER UNLESS STATED OTHERWISE.

METERING DETAILS
IT IS UU POLICY TO FIT AMR METERS UNLESS AGREED AND SPECIFIED OTHERWISE. METER LOCATIONS WILL BE INTERNAL WITHIN THE BUILDING OR WITHIN THE WALLS OF THE BUILDING. STANDARD SIZE HOUSEHOLD METERS WILL BE 15MM DIAMETER UNLESS AGREED AND SPECIFIED OTHERWISE.

CONTESTABLE WORKS
ALL MAINS AND SERVICES TO BE INSTALLED BY BGS.
BGS TO UNDERTAKE STRAIGHT PIECE TOUGH AT X1-Y1 IN ACCORDANCE WITH CRMC PROCESS.

NON-CONTESTABLE WORKS
UU TO INSTALL ADVANCED BRANCH, VALVE AND TEMP WO AT X1 (LAY ONLY).

CONNECTIONS OFF EXISTING MAINS
N/A

CONNECTIONS OFF NEW MAINS
PLOTS 1 TO 43 TOTAL 43 PLOTS AND 1 X LANDLORD SUPPLY TO BE INSTALLED BY BGS.

METERS
METERS TO PLOT 1 TO 43 AND 1 X LANDLORD SUPPLY, TOTAL 44 METERS TO BE INSTALLED BY BGS.

FIRE HYDRANTS
2x FHs REQUIRED AS PER GMFRS RESPONSE - 1X WO TO BE RATINED AS FIRE HYDRANNT OS PLOT 19, 1X FH TO BE INSTALLED OS PLOT 5.

HYDRANTS/WASHOUTS
ALL WASHOUT HYDRANTS AND FIRE HYDRANTS SHALL BE THROUGH BORE TYPE.

CONTAMINATED LAND
AS THE SITE HAS BEEN SHOWN TO HAVE A DEGREE OF CONTAMINATION PRESENT, OUR PROPOSALS INVOLVE THE LAYING OF MAINS & SERVICES IN USING AN APPROVED BARRIER PIPE SYSTEM WHICH WILL PROTECT WATER SUPPLIES FROM INGRESS OF SUCH CONTAMINANTS. ALL PIPES AND FITTINGS TO BE INSTALLED BY UU AND SLO/DEVELOPER MUST BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATION TO FORM A COMPLETE APPROVED BARRIER PIPE SYSTEM.

EXTERNAL CONTROL FOR INTERNAL METERS - CONTAMINATED LAND
THE DEVELOPER MUST INSTALL A WRAS APPROVED METER BOX FOR THE EXTERNAL CONTROL WHICH MUST BE SUITABLE FOR USE IN CONTAMINATED LAND. WHERE A MULTIPORT CONTROL IS REQUIRED FOR MULTI-OCCUPANCY PREMISES A WRAS APPROVED GUN METAL MANIFOLD SHOULD BE USED AND INSTALLED IN A PURPOSE BUILT (BRICK/PRE-CAST) CHAMBER SUITABLE FOR USE IN CONTAMINATED LAND. ALL INSTALLATIONS MUST BE IN ACCORDANCE WITH UU WATER METERING POLICY AND THE MANUFACTURERS INSTRUCTIONS.

SURFACE WATER ARRANGEMENTS
SURFACE WATER WILL ENTER A UU ASSET.

WATER REGS COMPLIANCE
BGS CONSTRUCTION DEPARTMENT TO ARRANGE ANY NECESSARY UU REGULATIONS BY LAWS INSBPCTION WHILE SERVICE LAYING IN PROGRESS. ALLOW THREE WORKING DAYS FOR UU TO ATTEND.

SEWERAGE DETAILS
PLOTS 1 TO 43, TOTAL 43 PLOTS AND 1 X LANDLORD SUPPLY TO BE CONNECTED TO UU FOUL AND SURFACE WATER SEWERS.

REV:	DESCRIPTION:	BY:	STATUS:	DATE:
05	NOTE "LAY ONLY" ADDED TO POC AND NOTES. CONNECTION TO THE APARTMENT BLOCK AMENDED AS A SUPPLY PIPE. ALL METERS AMENDED TO INTERNAL METERS. THE NOTE ABOUT 100L PPPD REMOVED FROM NOTES	OP	APP.	07/04/26
04	MATERIAL FOR 110MM MAINS AMENDED TO PE	OP	UNAPP.	23/03/26
03	NOTE REGARDING METER LOCATIONS FOR THE APARTMENTS HAS BEEN AMENDED	OP	UNAPP.	19/03/26
02	PLAN FOR APARTMENT BLOCK UPDATED. 63MM COMMUNICATION PIPE RELOCATED. 2XFH's ADDED	OP	UNAPP.	19/03/26
01	63MM COMMUNICATION PIPE RELOCATED, FLOW RATE FOR APARTMENT BLOCK ADDED	OP	UNAPP.	24/02/26
00	DRAFT 1	OP	UNAPP.	22/01/26

UU REFERENCE:
UU:09179374

SLP DESIGNER:
WILLIAM HAYES

CAD OPERATOR:
OLENA POSMITNA

OS REFERENCE:
E:380977, N:409015

DEVELOPER DETAILS:
HARGREAVES CONTRACTING LTD
UNIT 5, RISING BRIDGE BUSINESS VILLAGE
BLACKBURN ROAD, ACCRINGTON
BB5 2AL

SLP:
BGS UTILITIES
LOVELL HOUSE
412 THE QUADRANT
WARRINGTON
WA3 6FW

BGS Utilities

SITE:
KEMP HEATON AVENUE
BURY
BL9 9RB

TITLE:
WATER CONSTRUCTION PLAN

DRAWN:	CHECKED:	DATE:	SCALE AT A1:
OP	WH	02/02/26	1:500

DRAWING NO: BGS-SRN3514
REVISION: 05

PURITON® BARRIER PIPE AND FITTINGS SYSTEM

RADIUS Systems

Protecting drinking water through contaminated land







NOV 2021



PROTECTING OUR DRINKING WATER WITH PURITON®

BUILDING NEW HOMES ON BROWNFIELD SITES

The push for the regeneration of land or premises - previously used for farming, industrial or commercial purposes - into housing, has been encouraged since 1998. These new developments, built on derelict or contaminated land, were promoted to protect the green belt, minimise urban sprawl and make better use of those disused areas.

With governments promoting the regeneration of brownfield sites for new homes, there is a need for a new polyethylene pipeline solution, that will ensure the protection of our drinking water against soil contaminants commonly found in brownfield sites.

Designed for new or replacement potable water supply, Puriton® is an engineered barrier pipe and fittings system.

Puriton® provides a cutting-edge solution for the distribution of drinking water which safeguards potable water against soil contaminants by incorporating permeation resistance with flexibility.

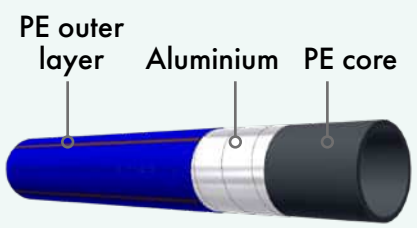
PURITON® BARRIER PIPE

The 21st century pipe system for contaminated land.

With its multi-layer composite structure, Radius Systems Puriton® pipe brings together the unique flexibility of polyethylene (PE) with the exceptional barrier properties of aluminium (Al), giving you the assurance of a durable pipe solution for the safe distribution of drinking water through contaminated land.

Lightweight, flexible, corrosion resistant and easy to install our Puriton® pipe is joined using our range of approved mechanical, Redman™ or electrofusion fittings as well as the butt-fusion technique for Puriton® pipe 90mm and above, without the need to post-wrap the finished joint.

Puriton® pipe structure



Puriton® is joined using the following methods as specified in BS8588 certificate KM672956

- Puriton® plastic mechanical fittings
- Redman™ fittings
- Puriton® electrofusion fittings
- Puriton® gunmetal tapping tees
- Butt-fusion in accordance with WIS 4-32-08 (see Radius Systems installation guidance page 52)

Features and Benefits

- Multi-layer pipe construction PE-Al-PE
- Full barrier pipe system
- Combines the flexibility of polyethylene with the barrier properties of aluminium
- Safeguards drinking water quality
- Easy to handle, flexible and lightweight
- End load resistant system
- Installation cost savings - no requirement for thrust blocks
- No requirement to post-wrap the joints
- Suitable for new and replacement drinking water supply systems
- Brown stripes denote a multi-layer pipe construction

Approvals

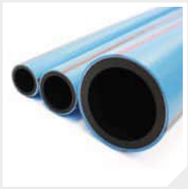
- Approved under regulation 31 of the Water Supply (Water Quality) Regulations 2000 for pipe diameters 90 to 180mm (Approval number DWI 56.4.1112)
- WRAS approved material PE80 for pipe diameters 25 to 63mm (Approval number 1610528)
- BS 8588:2017 approval for pipe diameters 25 to 180mm (Approval number KM 672956)

WRAS APPROVED MATERIAL

bsi. KM 672956

Nominal diameter mm	Materials	SDR	Pressure rating bar	Core pipe external diameter mm	Core pipe wall thickness mm	Internal diameter mm	Overall external diameter mm	Pipe weight Kg/m	Pipe length m	Product code
25	PE80/Al	11	12.5	25.0 - 25.3	2.3 - 2.7	19.6 - 20.7	27.0 - 27.6	0.3	50	XQ2528
32	PE80/Al	11	12.5	32.0 - 32.3	3.0 - 3.4	25.2 - 26.3	34.0 - 34.6	0.5	50	XQ2535
63	PE80/Al	11	12.5	63.0 - 63.4	5.8 - 6.5	50.0 - 51.8	64.8 - 65.8	1.5	6 25 50 100	XQ2568 XQ2570 XQ2571 XQ2572

Puriton® service pipe



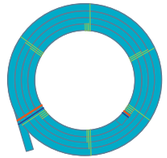
Available in diameters 25 to 63 mm, our Puriton® service pipe is manufactured from a black PE80 core, an aluminium barrier layer and a light blue PE80 outer layer with brown stripes.

Our Puriton® service pipes are available in coils and also in straight lengths for the 63 mm pipe.

To ensure that the barrier properties of the system are maintained, only Puriton® fittings should be used to connect Puriton® pipe. The use of non Puriton® fittings may compromise the barrier properties of the Puriton® system. For more information see page 49.

Nominal diameter mm	SDR	Pressure rating bar	Coil inner diameter mm	Coil outer diameter mm	Coil width mm	Coil banding sequence	Coil length m	Coil weight Kg
25	11	12.5	800	930	175	-	50	14.5
32	11	12.5	800	930	175	-	50	22.0
63	11	12.5	1275 1275 1275	1510 1815 1815	221 208 310	●	25 50 100	36.3 72.5 145.0

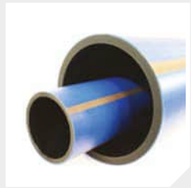
Puriton® service pipe coil dimensions



Pipe weights are for lifting and handling purposes. They are calculated on a per metre length and are based on a maximum diameter and pipe wall thickness.

Pipe weights are for lifting and handling purposes. They are calculated on a per metre length and are based on a maximum diameter and pipe wall thickness.

Puriton® mains pipe

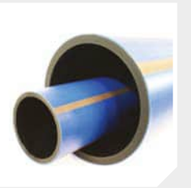


Available in diameters 90 to 180 mm in SDR 11 and 17, our Puriton® mains pipe is manufactured with a black PE100 core, an aluminium barrier layer and a dark blue PE100 outer layer with brown stripes. A wide range pipes of pipe diameters are manufactured in lengths to suit the design requirements of your project.

Nominal diameter mm	Materials	SDR	Pressure rating bar	Core pipe external diameter mm	Core pipe wall thickness mm	Internal diameter mm	Overall external diameter mm	Pipe weight Kg/m	Pipe length m	Product code
90	PE100/Al	11	16	90.0 - 90.6	8.2 - 9.2	71.6 - 74.2	92.2 - 93.8	2.8	6 12 50 100	XQ0125 XQ0126 XQ0128 XQ0129
90	PE100/Al	17	10	90.0 - 90.6	5.4 - 6.1	77.8 - 79.8	92.2 - 93.8	2.1	6 12 50 100	XQ0143 XQ0145 XQ0146 XQ0147
110	PE100/Al	11	16	110.0 - 110.7	10.0 - 11.1	87.8 - 90.7	112.2 - 113.9	3.9	6 12 50 100	XQ0233 XQ0235 XQ0236 XQ0237
110	PE100/Al	17	10	110.0 - 110.7	6.6 - 7.4	95.2 - 97.5	112.2 - 113.9	2.9	6 12 50 100	XQ0251 XQ0253 XQ0254 XQ0255
125	PE100/Al	11	16	125.0 - 125.8	11.4 - 12.7	99.6 - 103.0	127.2 - 129.0	5.0	6 12 50 100	XQ0287 XQ0289 XQ0290 XQ0291

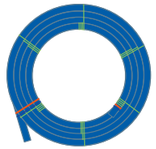
Nominal diameter mm	Materials	SDR	Pressure rating bar	Core pipe external diameter mm	Core pipe wall thickness mm	Internal diameter mm	Overall external diameter mm	Pipe weight Kg/m	Pipe length m	Product code
125	PE100/Al	17	10	125.0 - 125.8	7.4 - 8.3	108.4 - 111.0	127.2 - 129.0	3.6	6 12 50 100	XQ0305 XQ0307 XQ0308 XQ0309
160	PE100/Al	11	16	160.0 - 161.0	14.6 - 16.2	127.6 - 131.8	162.2 - 164.2	8.0	6 12 50 100	XQ0458 XQ0460 XQ0461 XQ0462
160	PE100/Al	17	10	160.0 - 161.0	9.5 - 10.6	138.8 - 142.0	162.2 - 164.2	5.7	6 12 50 100	XQ0476 XQ0478 XQ0479 XQ0480
180	PE100/Al	11	16	180.0 - 181.1	16.4 - 18.2	143.6 - 148.3	182.2 - 184.3	9.9	6 12 50 100	XQ0530 XQ0532 XQ0534 XQ0535
180	PE100/Al	17	10	180.0 - 181.1	10.7 - 11.9	156.2 - 159.7	182.2 - 184.3	7.1	6 12 50 100	XQ0550 XQ0552 XQ0554 XQ0555

Puriton® mains pipe



To ensure that the barrier properties of the system are maintained, only Puriton® fittings should be used to connect Puriton® pipe. The use of non Puriton® fittings may compromise the barrier properties of the Puriton® system. For more information *see page 49.*

Puriton® mains pipe coil dimensions



Coiled pipes are supplied safely secured with pipe banding for ease of transportation and loading into suitable coil trailers, ready for safe dispensing on the site of works. Please release the pipe from the coils using industry best practice safety procedures

Pipe weights are for lifting and handling purposes. They are calculated on a per metre length and are based on a maximum diameter and pipe wall thickness.

Nominal diameter mm	SDR	Pressure rating bar	Coil length m	Coil inner diameter mm	Coil outer diameter mm	Coil width mm	Coil banding sequence	Coil weight Kg
90	11 11	16 16	50 100	1800 1800	2220 2440	320 410	●	137.9 275.7
90	17 17	10 10	50 100	2500 2500	2930 3000	320 410	●	102.7 205.4
110	11 11	16 16	50 100	2500 2500	3000 3200	400 500	●	197.1 394.1
110	17 17	10 10	50 100	2500 2500	3000 3200	400 500	●	145.7 291.4
125	11 11	16 16	50 100	2500 2500	3000 3200	450 600	●	251.0 502.0
125	17 17	10 10	50 100	2500 2500	3000 3200	450 600	●	181.6 363.1
160	11 11	16 16	50 100	3000 3000	3590 3850	530 700	●	397.6 795.2
160	17 17	10 10	50 100	3000 3000	3590 3850	530 700	●	284.4 568.8
180	11 11	16 16	50 100	3000 3000	3800 4000	630 800	●	496.3 992.6
180	17 17	10 10	50 100	3000 3000	3800 4000	630 800	●	353.0 706.0



MECHANICAL FITTINGS FOR PURITON® SERVICE PIPE

Fast and effective pipeline connection.

Quick and easy to install, our range of Puriton® mechanical fittings for service pipes are manufactured from polypropylene and supplied with integral inserts, grip rings and O-ring seals for maximum contamination protection.

The joint is easy to make with no requirement for pipe surface preparation and no need to post-wrap the joint after installation.

To validate the permeation resistance of the Puriton® system components, tests have been undertaken on a representative range of fittings, in accordance with the requirements of BS 8588, giving you confidence of a full barrier pipe and fitting system.



Features and Benefits

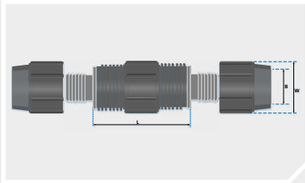
- Specially designed fittings for Puriton® service pipe
- Manufactured from tough and durable polypropylene
- Simple installation process
- Captive O-rings for leak free joints
- No pipe preparation required
- No requirement for wrapping completed joints
- Extensive product range
- Adapters for transition to standard BSP thread sizes

Approvals

- WRAS approved product (Approval number 1702333)
- Our Puriton® plastic mechanical fittings are a jointing method specified in BS8588 certificate KM672956

Couplers

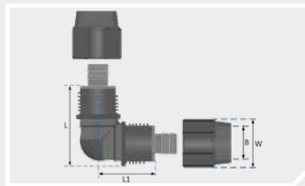




Diameter mm	B mm	W mm	L mm	Weight Kg	Product code
25	28.0	53.0	85.0	0.12	XR5244
32	36	63.0	96.0	0.20	XR5245
63	67.0	112.0	140.0	1.00	XR5251

90° elbows



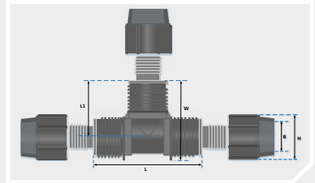


Diameter mm	B mm	W mm	L mm	L1 mm	Weight Kg	Product code
25	28.0	53.0	84.0	59.0	0.13	XR5249
32	36	63.0	96.0	69.0	0.21	XR5250
63	67.0	112.0	162.0	106.0	1.10	XR5252

Diameter mm	B mm	W mm	L mm	L1 mm	H mm	Weight Kg	Product code
25	28.0	84.0	116.0	57.0	53.0	0.17	XR5247
32	36	100.0	137.0	69.0	63.0	0.27	XR5248
63	67.0	158.0	204.0	102.0	112.0	1.40	XR5253

Equal tees

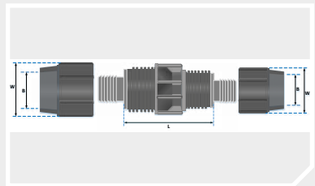




Diameter mm	B mm	W mm	L mm	Weight Kg	Product code
32 x 25	36 x 28.0	63.0 x 53.0	89.0	0.12	XR5246
63 x 25	67.0 x 28.0	112.0 x 53.0	125.0	0.19	XR5257
63 x 32	67.0 x 35.8	112.0 x 63.0	128.0	0.90	XR5254

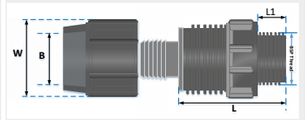
Reducers





Male adaptors

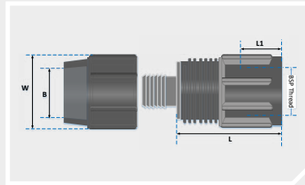




Diameter mm	B mm	W mm	L mm	L1 mm	Weight Kg	Product code
25 x ¾"	28.0	53.0	75.0	18.0	0.8	XR5235
32 x ¾"	36	63.0	81.0	18.0	0.14	XR5236
32 x 1"	36	63.0	83.0	20.0	0.14	XR5237
63 x 1½"	67.0	112.0	109.0	21.0	0.50	XR5258
63 x 2"	67.0	112.0	122.0	27.0	0.50	XR5259

Female adaptors



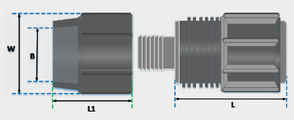


Diameter mm	B mm	W mm	L mm	L1 mm	Weight Kg	Product code
25 x ¾"	28.0	53.0	67.5	12.0	0.07	XR5240
32 x ¾"	35.8	63.0	70.0	19.0	0.13	XR5241
32 x 1"	35.8	63.0	65.0	14.0	0.13	XR5242
63 x 2"	67.0	112.0	103.0	30.0	0.45	XR5260

End caps

Diameter mm	B mm	W mm	L mm	L1 mm	Weight Kg	Product code
25	28.0	53.0	87.0	46.0	0.08	XR5261
32	35.0	63.0	98.0	51.0	0.12	XR5262





C ring wrenches

Diameter mm	Product code
25-32	XR4998
63	XR4999



To ensure that the barrier properties of the system are maintained, only Puriton® fittings should be used to connect Puriton® pipe. The use of non Puriton® fittings may compromise the barrier properties of the Puriton® system. For more information see page 49.

REDMAN™ FITTINGS FOR PURITON® MAINS PIPE

The innovative jointing solution for Puriton® barrier pipe

Radius Systems' Redman™ fittings are a unique jointing solution to quickly and easily connect our Puriton® barrier pipe to deliver complete protection to drinking water when installed in brownfield sites. Simple to install with little pipe preparation, the Redman™ joint can be made in all weather conditions, even with water in the pipeline.

Available in diameters 63 to 180mm, our Redman™ fittings offer a robust, leak-free jointing solution. The joint is made by simply pressurising the outer shell of the fitting using a dedicated hydraulic pump; and once made, the Redman™ fitting provides a 'fit and forget', end-load-bearing and corrosion resistant joining solution.



Features and Benefits

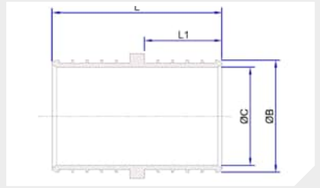
- Quick and easy to install
- Simple site-tolerant manual hydraulic pump for pressurisation
- No nuts, bolts or rubber seals
- A fit-and-forget jointing system
- Minimal pipe preparation required for jointing
- Ideal for pipe repair - can be installed in wet and submerged conditions
- End-load bearing jointing system
- Excellent chemical resistance
- Coated for increased corrosion protection
- Protects drinking / potable water in brownfield sites
- Biodegradable hydraulic oil used for joint pressurisation
- Rilsan® coated insert for the safe conveyance of potable water
- In house quality control pressure test carried out on all outer shells

Approvals

- WRAS approved product (Approval Number 1811317)
- KIWA UK approved product in compliance with UK Water Supply Regulations (certificate number 1811712)
- WRAS approved materials in contact with drinking water (Approval Number1910523)
- Our Redman™ fittings are a jointing method specified in BS8588 certificate KM672956

Couplers

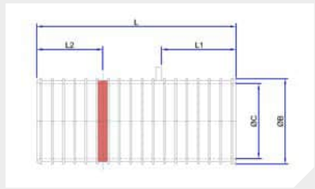




Nominal diameter mm	SDR	Insert dimensions mm				Weight kg	Product code
		L	ØB	ØC	L1		
63	11	82	50	43	36	1.9	RE0001
90	11	116	70	61	53	3.9	RE0002
110	11	141	86	74	60	6.6	RE0003
125	11	160	98	86	70	8.1	RE0004
180	11	210	142	125	95	17.4	RE0008
90	17	116	76	67	53	3.9	RE0009
110	17	141	94	81	60	6.6	RE0010
125	17	160	107	95	70	8.2	RE0005
160	17	180	137	122	80	12.4	RE0007
180	17	210	155	137	95	17.6	RE0047

Repair couplers

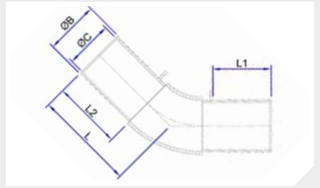




Nominal diameter mm	SDR	Insert dimensions mm					Weight kg	Product code
		L	ØB	ØC	L1	L2		
63	11	126	50	43	37	40	2.6	RE0065
90	11	178	70	61	56	59	4.1	RE0064
110	11	203	86	74	65	67	6.6	RE0066
90	17	178	76	67	56	59	4.2	RE0067
110	17	203	94	81	65	67	6.7	RE0069
125	17	236	107	95	75	78	8.3	RE0071
160	17	269	137	122	82	85	13.6	RE0078
180	17	319	155	137	107	110	18.2	RE0080

45° elbows

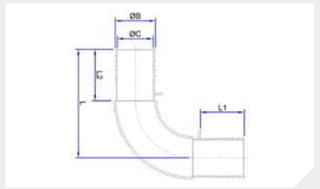




Nominal diameter mm	SDR	Insert dimensions mm					Weight kg	Product code
		L	ØB	ØC	L1	L2		
63	11	143	50	43	94	115	3.9	RE0032
90	11	169	70	61	103	124	6.6	RE0033
110	11	189	86	74	117	138	11.3	RE0035
90	17	169	76	67	103	124	6.7	RE0034
110	17	189	94	81	117	138	11.4	RE0036
125	17	202	107	95	117	138	12.7	RE0038
160	17	247	137	122	142	167	21.5	RE0040
180	17	272	155	137	164	192	27.8	RE0045

90° elbows



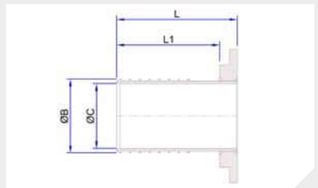


Nominal diameter mm	SDR	Insert dimensions mm					Weight kg	Product code
		L	ØB	ØC	L1	L2		
63	11	172	50	43	94	115	4.2	RE0011
90	11	219	70	61	103	124	7.3	RE0012
110	11	252	86	74	117	138	12.3	RE0014
90	17	219	76	67	103	124	7.4	RE0013
110	17	252	94	81	117	138	12.4	RE0015
125	17	290	107	95	117	138	15.1	RE0017
160	17	357	137	122	142	167	23.6	RE0019
180	17	382	155	137	164	192	30.8	RE0021

Nominal diameter mm	SDR	Insert dimensions mm				Number of bolt holes	Backing ring OD mm	Flange PCD mm	Weight kg	Product code
		L	ØB	ØC	L1					
63 x DN50	11	115	50	43	97	4	165	125	3.9	RE0073
63 x DN80	11	115	50	43	97	8	200	160	5.1	RE0083
90 x DN80	11	124	70	61	106	8	200	160	6.2	RE0074
110 x DN100	11	138	86	74	120	8	220	180	8.5	RE0076
125 x DN100	11	138	98	86	120	8	220	180	9.1	RE0084
180 x DN150	11	192	142	125	170	8	285	240	18.4	RE0087
90 x DN80	17	124	76	67	106	8	200	160	6.3	RE0075
110 x DN100	17	138	94	81	120	8	220	180	8.5	RE0077
125 x DN100	17	138	107	95	120	8	220	180	9.1	RE0079
160 x DN150	17	167	137	122	145	8	285	240	15.4	RE0081
180 x DN150	17	192	155	137	170	8	285	240	18.4	RE0089

Flange adaptors

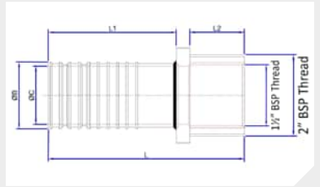




- Flange drilling BS EN1092 - NP16. Supplied with galvanised iron backing ring
- Nuts, bolts, washers and gaskets not supplied

Nominal diameter mm	SDR	Insert dimensions mm					Weight kg	Product code
		L	ØB	ØC	L1	L2		
63 x 1 ½"BSPF / 2" BSPM	11	144	49	43	94	40	2.4	RE0123





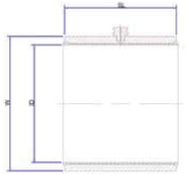
Adaptors

To ensure that the barrier properties of the system are maintained, only Puriton® fittings should be used to connect Puriton® pipe. The use of non Puriton® fittings may compromise the barrier properties of the Puriton® system. For more information see page 49.

Fitting type	Outer shell nominal diameter	63 mm	90 mm	110 mm	125 mm	160 mm	180 mm
Elbows Flanges	SL. Overall length	102	111	125	125	150	172
	W. Outside diameter	86	114	135	150	188	209
	ID. Internal diameter	67	95	115	131	166	188
Couplers	SL. Overall length	102	136	161	180	200	230
	W. Outside diameter	86	114	135	150	188	209
	ID. Internal diameter	67	95	115	131	166	188
Repair couplers	SL. Overall length	147	66	75	85	92	117
	W. Outside diameter	86	114	135	150	188	209
	ID. Internal diameter	67	95	115	131	166	188

Outer shell dimensions





- Oil material safety data sheet available on request
- 2No MSDS data sheets for the oil available on the website
- Outer shells are not sold separately

Product description	Product code
Redman™ hydraulic pump*	XR0211
Biodegradable hydraulic oil for the Redman™ pump - 5 litre container**	XR0212

Redman™ hydraulic pump & oil



*Pump may differ from the one pictured

**Safety data sheets for the pressurisation biodegradable hydraulic oil and the quality control oil are available on our website at www.radius-systems.com.

Quality control oil is used during our in-house integrity pressure test carried out on all Redman™ shells. A residual amount of oil may still remain in the shells when the fittings are packaged and may seep out during installation.

ELECTROFUSION FITTINGS FOR PURITON® MAINS PIPE

High quality fitting solution

Manufactured from high strength PE100 material, our electrofusion fittings have been specifically designed for ease of assembly, maximum heat transfer and optimum efficiency during the construction of a pipeline network.

Ideal for joining our Puriton® pipe, our range of electrofusion fittings requires a 2-pass pipe surface preparation process. This ensures a high quality, leak-free fully welded system, without the need to post-wrap the joint.

To validate the permeation resistance of the Puriton® system components, tests have been undertaken on a representative range of fittings, in accordance with the requirements of BS 8588, giving you confidence of a full barrier pipe and fitting system.



Features and Benefits

- Manufactured from high strength polyethylene (PE100)
- Exposed wire technology for maximum heat transfer during the fusion process
- Simultaneous socket fusion for all fittings
- Barcode technology - for automatic temperature compensating fusion times and fitting traceability
- Manual fusion times on the body of the fitting
- Corrosion resistant
- End-load bearing jointing system
- No additional wrapping required
- Fully welded barrier pipe system
- 2-pass pipe surface preparation for high quality jointing
- 40V electrofusion fitting

Approvals

- BS EN12201-3 KM597648
- Manufactured from WRAS approved materials
- DVGW GW 335-B2
- MPA Darmstadt K1597 / 12.2014
- IIP Certification of Conformity to EN12201-3
- Our Puriton® electrofusion fittings are a jointing method specified in BS8588 certificate KM672956

WRAS APPROVED MATERIAL

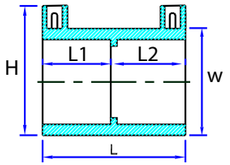
bsi. KM 597648

DVGW DV-8601BN0126 DV-8601BN0127 DV-8611BN0627

Pipe preparation is mandatory when joining our Puriton® pipe with electrofusion fittings. Please refer to the guidance within this brochure to ensure that the correct equipment is used to carry out the 2-pass pipe surface preparation process.

Couplers

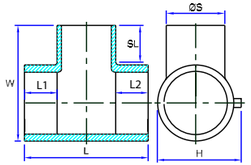




Nominal diameter mm	Dimensions mm					Fitting weight kg	Fuse time sec	Cool time min	Product code
	H	L	L1	L2	W				
90	131	125	62	62	109	0.39	90	10	WA0210
110	152	161	79	79	132	0.72	130	13	WA0211
125	168	157	77	77	151	0.88	120	15	WA0212
160	209	186	92	92	195	1.81	300	22	WA0214
180	229	207	102	102	215	2.25	220	12	WA0215

Equal tees - spigot off-take

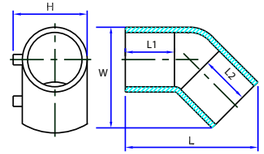




Nom dia mm	Dimensions mm							Fitting weight kg	Fuse time sec	Cool time min	Product code
	H	L	L1	L2	ØS	SL	W				
90	131	200	63	63	90	85	206	0.83	90	9	WA2210
110	155	251	80	80	110	135	282	1.85	180	13	WA2211
125	169	247	73	73	125	95	256	1.89	120	10	WA2212
160	217	342	101	101	160	110	350	4.39	300	21	WA2214
180	240	362	106	106	180	130	371	6.21	280	19	WA2215

45° elbows

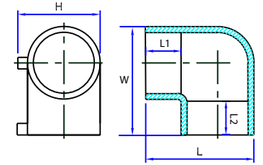




Nominal diameter mm	Dimensions mm					Fitting weight kg	Fuse time sec	Cool time min	Product code
	H	L	L1	L2	W				
90	132	222	77	77	176	0.82	80	9	WA3318
110	152	243	80	80	201	1.17	180	14	WA3319
125	175	269	82	82	228	1.84	90	7	WA3320
160	216	326	100	100	280	3.31	300	21	WA3322
180	240	350	101	101	308	4.11	260	16	WA3323

90° elbows

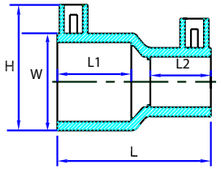




Nominal diameter mm	Dimensions mm					Fitting weight kg	Fuse time sec	Cool time min	Product code
	H	L	L1	L2	W				
90	133	195	77	77	195	0.98	80	9	WA3347
110	154	218	80	80	218	1.39	180	14	WA3348
125	178	246	82	82	246	2.14	90	7	WA3349
160	217	307	100	100	307	3.86	300	21	WA3351
180	240	329	101	101	329	5.16	260	16	WA3352

Reducers





Nominal diameter mm	Dimensions mm					Fitting weight kg	Fuse time sec	Cool time min	Product code
	H	L	L1	L2	W				
110 x 90	154	188	86	79	136	0.84	120	10	WA4286
125 x 90	170	180	89	75	155	1.04	120	18	WA4289
125 x 110	177	169	85	76	158	1.38	140	12	WA4291
160 x 110	218	231	96	85	197	1.84	180	18	WA4294
180 x 125	231	200	93	79	216	1.90	280	24	WA4297

To ensure that the barrier properties of the system are maintained, only Puriton® fittings should be used to connect Puriton® pipe. The use of non Puriton® fittings may compromise the barrier properties of the Puriton® system. For more information see page 49.



RADIUS SYSTEMS APPROVED JOINING METHODS

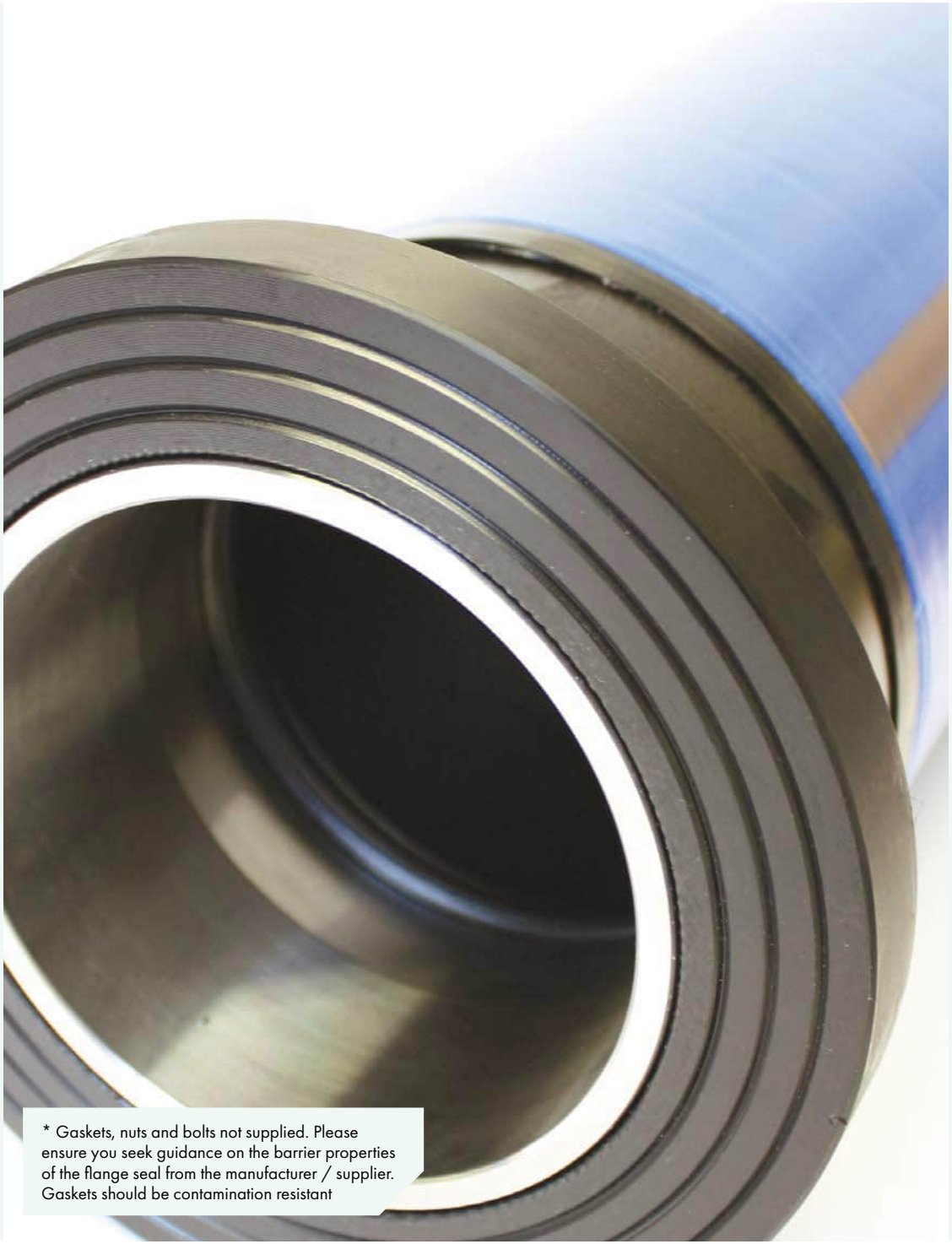
FLANGE ADAPTORS FOR PURITON® SERVICE AND MAINS PIPE

Metallic flange or valve connection for Puriton® barrier pipe

Specifically developed to maintain continuous protection to drinking water within our Puriton® pipeline system, our flange adaptors are designed to connect our Puriton® system to metallic flanged components.

Manufactured from a PE flange, factory-welded to a length of Puriton® barrier pipe, our flange adaptors are supplied with backing rings designed with mating dimensions, in accordance with BS EN1092-NP16, to ensure a trouble-free, direct connection to common flanges. In addition, our backing rings are supplied with Rilsan® coating for maximum corrosion protection*.

Our range of Redman™ flange adaptors offer an alternative solution to our PE flange connections, available in diameters from 63 to 180 mm. Please refer to page 14 for our full range.



* Gaskets, nuts and bolts not supplied. Please ensure you seek guidance on the barrier properties of the flange seal from the manufacturer / supplier. Gaskets should be contamination resistant

Features and Benefits

- Quick and easy connection using electrofusion or butt-fusion jointing
- Unique stainless steel insert to provide barrier properties when connected to metallic components
- Manufactured from Puriton® barrier pipe and stub flange assembly
- Specific Puriton® flange to maintain barrier properties when connecting metallic flange components
- Can be joined using electrofusion, butt fusion or Redman™ jointing
- Flanges sized for suitability of connecting to our range of Puriton pipes: Ensures a continuous PE pipeline to the point of pipeline termination:

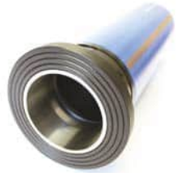
Approvals

- Factory pupped in accordance with WIS 4-32-08
- Puriton® pipe component approved to BS8588
- PE flange approved to BS EN-12201/3
- Backing ring mating dimensions to BS EN1092-NP16

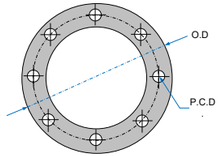
bsi.
KM 672956

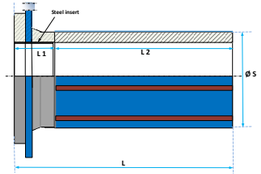
Diameter mm ODxDN	SDR	Flange x backing ring thickness mm	Total length mm	Flange part length mm	Pipe stub length mm	Backing Ring mm		No. of Holes	Bolt torque (Nm)	Weight Kg	Product code
		W	L	L1	L2	PCD	OD				
63 x 80	11	22	410	60	350	160	200	8	30	2.4	XR0290
90 x 80	11	23	395	45	350	160	200	8	30	3.7	XR0291
110 x 100	11	30	425	75	350	180	220	8	40	4.6	XR0310
125 x 100	11	37	425	75	350	180	220	8	40	5.0	XR0311
160 x 150	11	37	440	90	350	240	285	8	70	7.7	XR0312
180 x 150	11	42	530	80	350	240	285	8	70	9.0	XR0313
90 x 80	17	23	395	45	350	160	200	8	30	3.2	XR0300
110 x 100	17	30	425	75	350	180	220	8	40	4.0	XR0303
125 x 100	17	37	425	75	350	180	220	8	40	4.3	XR0301
160 x 150	17	37	440	90	350	240	285	8	70	6.7	XR0304
180 x 150	17	42	530	80	350	240	285	8	70	7.4	XR0302

Flange adaptors



To ensure that the barrier properties of the system are maintained, only Puriton® fittings should be used to connect Puriton® pipe. The use of non Puriton® fittings may compromise the barrier properties of the Puriton® system. For more information see page 49.





A FULLY PROTECTIVE BARRIER PIPE SYSTEM



CONNECTIONS FOR PURITON® SERVICE AND MAINS PIPE

Simple, time-saving connections for Puriton® barrier pipe

Radius Systems offer a dedicated range of ferrule adaptors and gun metal tapping tees, specifically designed to carry out connections to Puriton® barrier pipe.

For a safe mains to service pipe connection, our tapping tees incorporate a unique sleeve, which, as part of the tapping operation, is 'swaged' into the pipe wall, sealing the aluminium barrier layer from contact with the water supply.

To validate the permeation resistance of the Puriton® system components, tests have been undertaken on a representative range of fittings, in accordance with the requirements of BS 8588, giving you confidence of a full barrier pipe and fitting system.



Features and Benefits

- Corrosion resistant gunmetal tapping tees for robust connection to Puriton® barrier pipe
- Suitable for both SDR11 & SDR17 pipes
- Quick and easy bolted installation with O-ring seal at stack base
- Mechanical compression outlet to facilitate service pipe connection
- Easy commissioning process
- Cutter with sleeve technology to maintain protection to drinking water

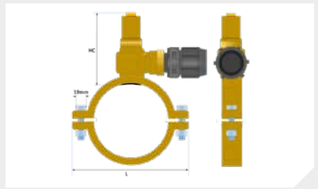
Approvals

- KIWA UK approved product in compliance with UK Water Supply Regulations (Certificate Number 1707717)
- Our Puriton® gunmetal tapping tees are a jointing method specified in BS8588 certificate KM672956

Diameter mm	L mm	W mm	HC mm	SL mm	Weight kg	Product code
63 x 25	126	54	96	33	1.40	XR5111
90 x 25	153	54	96	33	1.41	XR5112
110 x 25	173	54	96	33	1.41	XR5113
125 x 25	188	54	96	33	1.42	XR5114
160 x 25	223	54	96	33	1.42	XR5115
180 x 25	243	54	96	33	1.43	XR5116
63 x 32	126	64	98	33	1.41	XR5117
90 x 32	153	64	98	33	1.42	XR5118
110 x 32	173	64	98	33	1.42	XR5119
125 x 32	188	64	98	33	1.43	XR5120
160 x 32	223	64	98	33	1.43	XR5121
180 x 32	243	64	98	33	1.44	XR5122

Tapping tees





Maximum operating pressure 12.5 bar

To ensure that the barrier properties of the system are maintained, only Puriton® fittings should be used to connect Puriton® pipe. The use of non Puriton® fittings may compromise the barrier properties of the Puriton® system. For more information see page 49.

Diameter mm	Product code
25 x ¾"	XR5055



Ferrule adaptors

For Puriton® service pipe connection to ductile or cast iron water pipelines

Description	Product code
3/8" T key for SDR 11	XR0220
3/8" T Key for SDR 17	XR0215



Tapping tee T key

*T Key product supplied may differ from the one pictured



PRODUCT GUIDANCE

Coil banding for safe handling & dispensing



Minimum recommended personal protection equipment (PPE)

- Always wear the minimum PPE or the recommended PPE as identified by the risk assessment.
- Restrict the work area to essential personnel only.
- Always dispense coils from a coil dispenser.
- Take care when cutting the straps to release the pipe.
- Always ensure the tail ends of the coil are released in a restrained and controlled manner.
- Only use a suitable round-nosed cutting tool to cut the strap to prevent the pipe from being damaged.
- Never cut all of the restraining straps at once. Only cut the number of straps to allow the required pipe length to be dispensed.
- Ensure the tail ends of a part used coil are secured before transporting it from the site.
- Do not transport coiled pipes containing water.

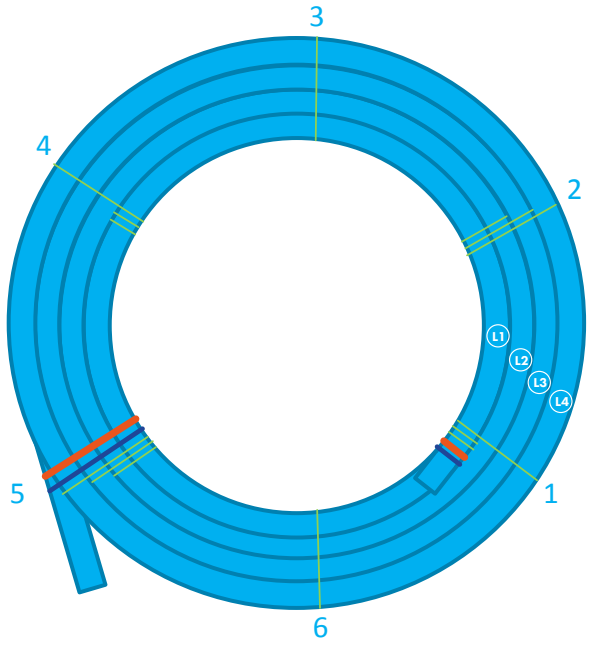
When pipes are packaged into coils, Radius Systems use specialist straps, fitted at different positions around the turns and layers of pipe that form the coils. Coils in diameters 63 to 180 mm contain a considerable amount of stored energy, which could potentially cause injury to personnel, if the coils are not handled and dispensed correctly.

When the coil is ready to be dispensed, the straps are removed in sequence, ensuring that the energy contained in the coil is released in a controlled and safe manner, allowing the safe handling and dispensing of coils (See diagrams opposite).

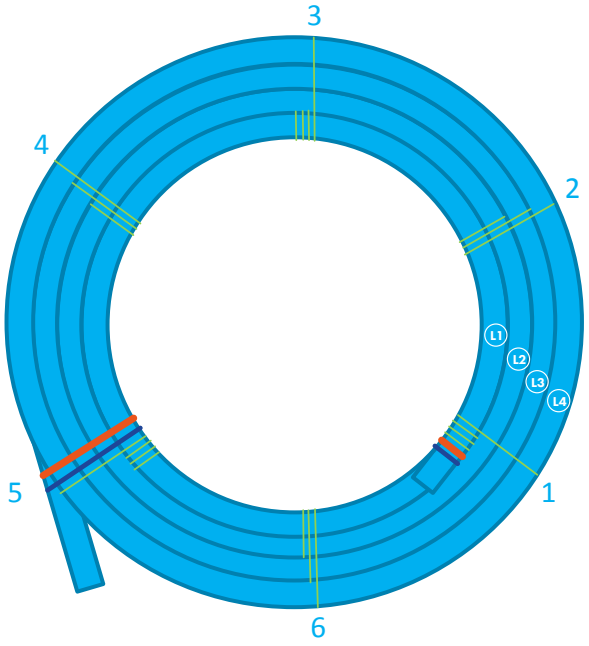
To ensure a safe working environment during the installation of pipe coils, these should only be dispensed from specially designed coil dispensers, supplied by a reputable manufacturer.

Radius Systems recommend that personnel involved in the handing and dispensing of pipe coils are adequately trained for this operation. Courses in the safe and correct handling and dispensing of pipe coils are available from industry bodies.

For coils with inner diameter ≤ 1.8 m



For coils with inner diameter ≥ 2.5 m



Welded polyester strap

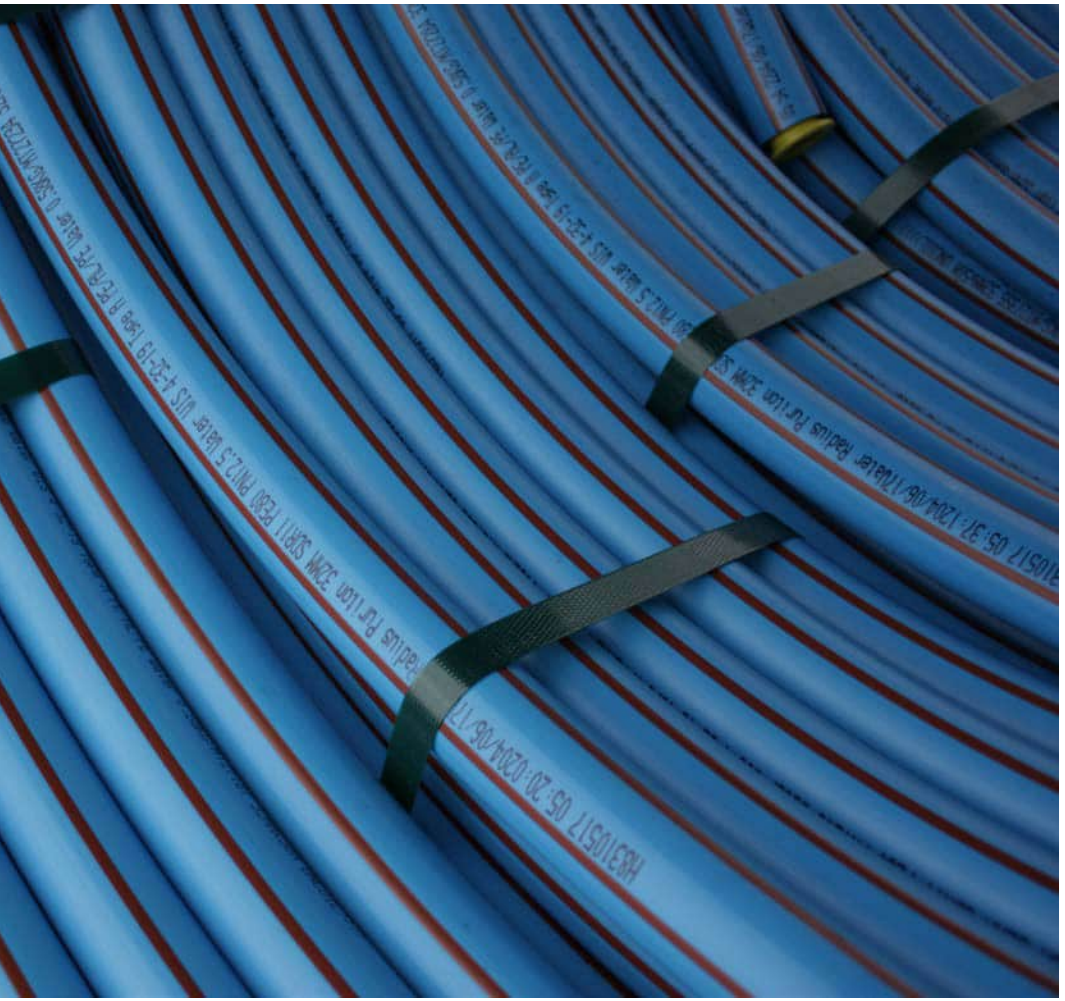
Steel security band

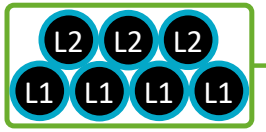
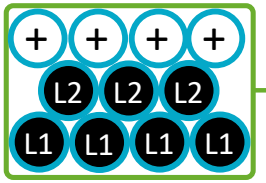
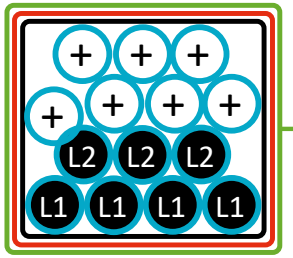
Coil length & caution tape

Illustrations showing the banding positions on a 4 layer coil

Coil banding
Banding position for coils 63 to 180 mm

Coils will consist of a minimum of 2 layers and the number of layers and turns in a coil will depend on its length and may exceed the ones shown below. If the coil consists of only 2 layers, the banding sequence for the 'Final layer' applies to the coil.



	• Coil internal diameter ≤ 1.8 m	• Coil internal diameter ≥ 2.5 m
Layer 1 (L1)		
	Steel security band* and length & caution tape are applied around turns T1 & T2 of layer 1 (L1) Position 1	Steel security band* and length & caution tape are applied around turns T1 & T2 of layer 1 (L1) Position 1
	Not applicable	Polyester strap around turns T1 & T2 of L1 Positions 1, 3 & 5
	Polyester strap around turns T1, T2 & T3 of L1 Positions 1 & 4	Polyester strap around turns T1, T2 & T3 of L1 Positions 1, 3 & 5
	Additional turns on L1 follow the same banding sequence as above	Additional turns on L1 follow the same banding sequence as above
Additional layers		
	Once layer 2 (L2) is completed Polyester straps are applied around L1 and L2 Positions 2 & 5	Once layer 2 (L2) is completed Polyester straps are applied around L1 and L2 Positions 2, 4 & 6
	Additional layers follow the same banding sequence as above	Additional layers follow the same banding sequence as above
Final layer		
	Steel security band* and coil length & caution tape are applied to the coil end. Polyester straps are applied at all positions.	Steel security band* and coil length & caution tape are applied to the coil end. Polyester straps are applied at all positions.

* Steel security bands are applied to coils 75 mm and above.
Coil length + caution tape applied to 75mm+

Jointing safety and best practice



Minimum recommended personal protection equipment (PPE)

Recommended best practice for all jointing methods

- PPE MUST be worn during the whole jointing process
- Make sure the pipe surface to be joined is clean from dirt or debris and protect the joint from contaminants where possible
- Re-round the pipe to correct the ovality where required
- Use the correct tools as specified
- Remove and dispose of all pipe shavings or scrapings responsibly – as part of good housekeeping

Electrofusion

Before carrying out an electrofusion joint

- The inside and outside of the pipe must be completely dry
- Visually check all electrical components including the generator, electrofusion control box and all cables to ensure that they are in good working order and fit for use. Follow the supplier's recommendations
- Do not use the electrofusion fitting if the electrical terminal connections are damaged

After carrying out an electrofusion joint

- The fitting will remain hot to the touch beyond the prescribed cool time



Butt-fusion

- Only use approved fully automatic butt-fusion equipment and follow Radius Systems Puriton® and Industry Best Guidance when joining pipes
- Ensure that the print-line on the two pipes are in line to minimise pipe misalignment
- To minimise contamination of the joint, the butt-fusion operation should be carried out in a suitable welding shelter

Redman™ Fittings

- A calibrated Redman™ hydraulic pump must be used for pressurisation of the joint
- The pump must be filled with the recommended Biodegradable hydraulic oil for pressurisation
- Operate the pump at a safe distance away from the joint, using the full length of the hose
- Do not touch the fitting or the pipe during the pressurisation and de-pressurisation processes
- Material safety data sheets are available on the Radius Systems website



Jointing methods guidance

The Puriton® pipe system has been developed for ease of jointing with a range of fittings specifically designed to suit the pipe type. Minimal pipe surface preparation is required when using our mechanical or Redman™ fittings. However, pipe surface preparation is mandatory when joining Puriton® pipe using the electrofusion or butt-fusion techniques.

Pipe jointing methods and pipe surface preparation requirements

Pipe diameter (mm)		25	32	63	90	110	125	160	180
Mechanical compression fittings	SDR 11	●	●	●					
Redman™ hydraulic fittings	SDR 11			●	●	●	●	●	●
	SDR 17			●	●	●	●	●	●
Electrofusion	SDR 11 SDR 17				●	●	●	●	●
Butt-fusion	SDR 11 SDR 17				●	●	●	●	●
Gunmetal tapping tee	SDR 11 SDR 17			●	●	●	●	●	●

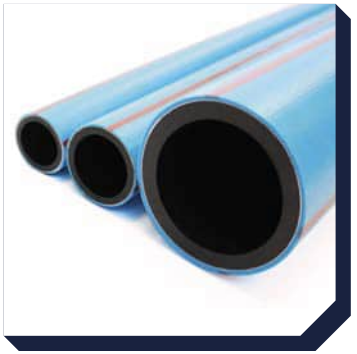
● No pipe surface preparation required. Ensure the pipe outer surface is clean and free from damage

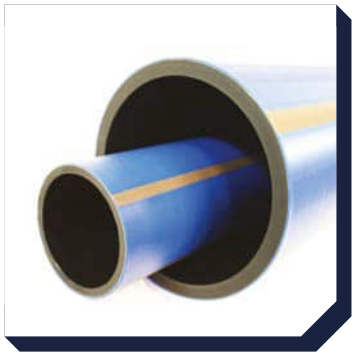
● Pipe surface preparation mandatory

Connecting Puriton® to an existing pipeline or an alternative pipeline components

To ensure that the barrier properties of the system are maintained, only Puriton® fittings should be used to connect Puriton® pipe. The use of non Puriton® fittings may compromise the barrier properties of the Puriton® system.

When connecting Puriton® to an existing pipeline or an alternative pipeline component, it is important to ensure that the barrier properties of the system are maintained*. Radius Systems recommend that connections and terminations to and from the Puriton® system are made using approved Puriton® fittings:





For Puriton® pipes in diameters 25, 32 and 63mm

- Radius Systems recommend the use of their range of BSP threaded adaptors from the Puriton® mechanical fittings range

For Puriton® pipes in diameters 63mm and above

- Radius Systems recommend the use of their range of Puriton® flange adaptors, with the option of either Redman™ flange adaptors or polyethylene stub flange assemblies.

*** Please seek guidance on the barrier properties of the existing pipeline or alternative pipeline components.**

Jointing overview - pipe surface preparation tools

Rotary pipe surface preparation tools for electrofusion and butt-fusion jointing

Pipe surface preparation is mandatory when joining Puriton® pipe in diameters 90 to 180 mm using the electrofusion or butt-fusion jointing techniques. Dedicated equipment has been designed to locally remove the outer polyethylene and aluminium barrier layers.



- In partnership with tooling suppliers, Radius Systems have developed their 2-pass rotary pipe preparation process.
- The 2-pass process fully removes the aluminium and outer PE Layers
- When completed correctly the PE core pipe surface is free from contamination and provides a pristine surface for electrofusion or butt-fusion jointing
- Pipe preparation is minimised to the depth of the electrofusion socket to maximise the barrier properties of the pipe



Puriton® first pass scraping blade with distinctive profiled head and 'domino' spot for identification. A standard blade is used for the second pass

This equipment is available for sale or hire from the suppliers below:

Caldervale Technology
www.caldertech.co.uk

Sunbelt Rentals
www.sunbeltrentals.co.uk

Hy-Ram
www.hyram.com

MCA-Fusion Hire
www.mcafusionhire.co.uk

Jointing overview - electrofusion

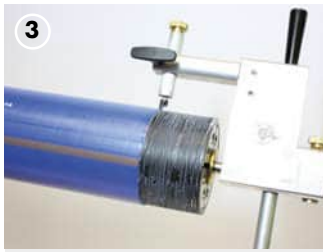
Pipe preparation is mandatory before carrying out an electrofusion joint. A 2-pass pipe surface preparation process is required for jointing Puriton® pipes.



Ensure the pipe surface is clean and free from damage. Re-round if necessary. **Measure and mark the fitting insertion depth on the pipe.**



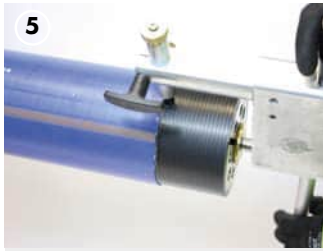
First pass
Select the correct size tooling and 'domino' spot cutting blade and carry out the first pass of the pipe surface preparation.



Rotate the tool anti-clockwise to remove the outer PE and aluminium layers up to the fitting insertion depth mark.



Second pass
Select the standard pipe preparation blade to carry out the second pass of the pipe surface preparation.



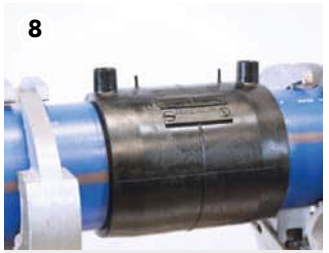
Rotate the tool continuously in an anti-clockwise direction. This will remove a continuous layer of polyethylene swarf. Please keep the environment clean, by removing all pipe shavings and offcuts and dispose of them responsibly.



Place the fitting on the pipe end as shown. To avoid contamination, keep the fitting in its packaging until you are ready to insert the second pipe



Repeat the pipe surface preparation for the second pipe to be joined and fully insert into the fitting.



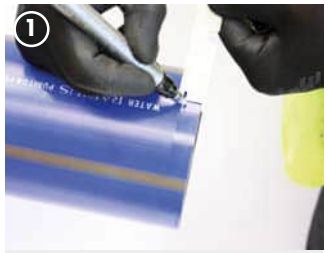
Fit alignment clamps and follow industry best practice to fuse the fitting. There is no requirement to wrap the finished joint.

Important note
The pipe's prepared surface should be equal to the socket insertion depth.

DO NOT scrape beyond the fitting's socket insertion depth.

Jointing overview - butt-fusion

Pipe preparation is mandatory before carrying out a butt-fusion joint. A 2-pass pipe surface preparation process is required for jointing Puriton® pipes.



Ensure the pipe surface is clean and free from damage. Re-round if necessary. Mark the minimum pipe preparation distance using the Puriton® butt-fusion gauge*.



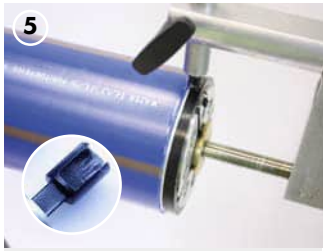
First pass
Select the correct size tooling and 'domino' spot cutting blade and carry out the first pass of the pipe surface preparation.



Rotate the tool anti-clockwise, to remove the outer PE and aluminium layers up to depth mark.



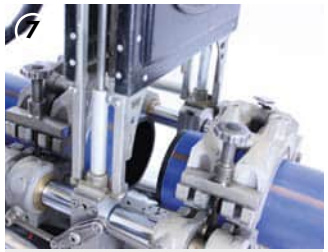
Second pass
Select the standard pipe preparation blade to carry out the second pass of the pipe surface preparation.



Rotate the tool continuously in an anti-clockwise direction. This will remove a continuous layer of polyethylene swarf. Please keep the environment clean, by removing all pipe shavings and offcuts and dispose of them responsibly.



Check the correct pipe surface distance using the Puriton® butt-fusion gauge. Prepare the second pipe following steps 1 to 5.



Follow the water industry standard butt-fusion procedure. Program the butt-fusion unit with the correct pipe parameters.



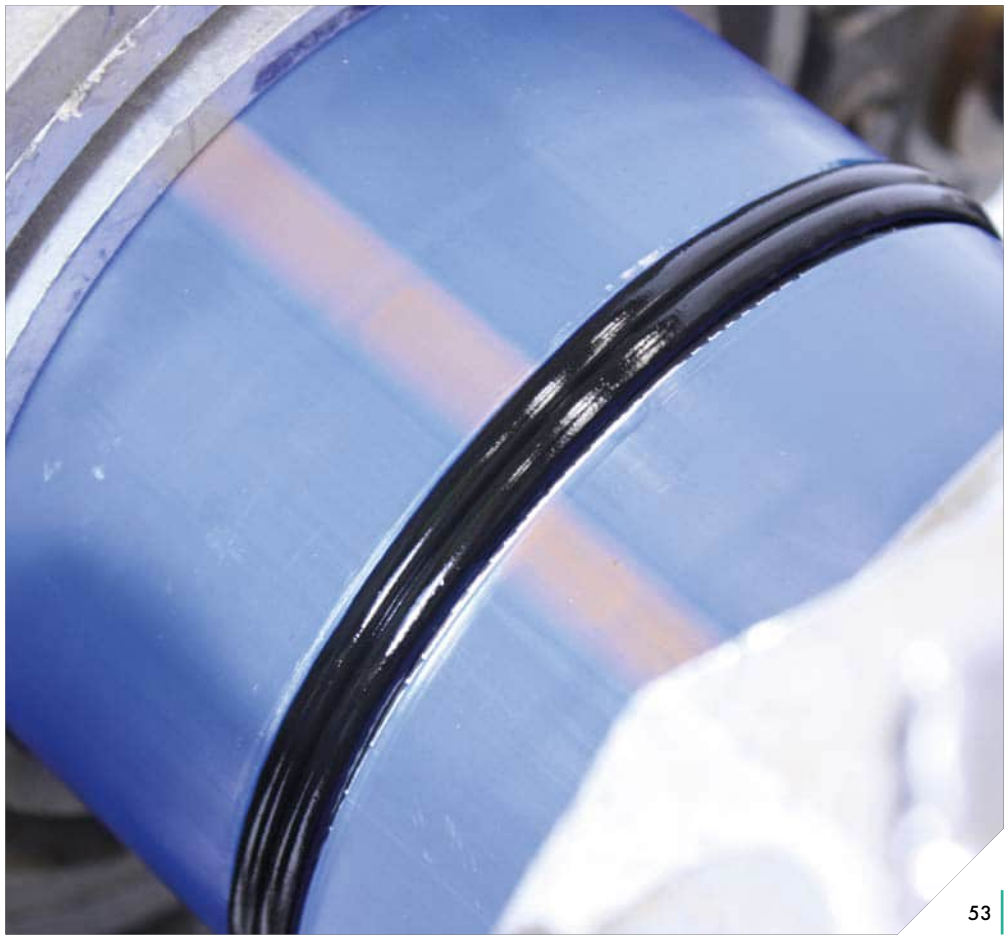
Finished joint. Remove the external bead and perform a bend back test to assess the joint quality. There is no requirement to wrap the finished joint.

*Please contact Radius Systems for more information

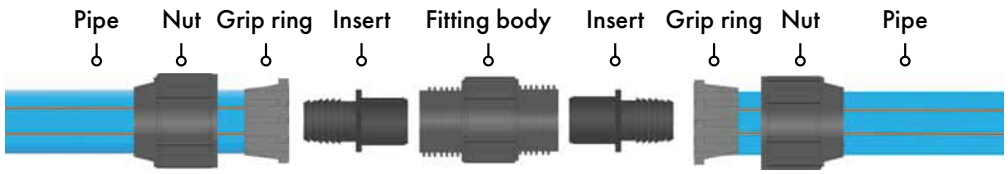
Minimum pipe preparation distance

Butt fusion guidance without Radius Systems pipe preparation gauges, the table below provides measurements to enable correct pipe preparation prior to butt fusion welding.

Nominal pipe O.D. mm	Skin removal tolerance ±1mm	Exposed core pipe length after trim ±1mm	Final bead width tolerance min - max
90	11	7	8 - 18
110	11	7	9 - 16
125	13	8	9 - 16
160	14	9	9 - 16
180	15	10	10 - 17



Jointing overview - mechanical fittings





Ensure the pipe is cut square and is damage free. Re-round if necessary. Slide the nut and grip ring on the pipe.



Using a rubber mallet, gently tap the insert fully into the pipe end.



Push the pipe with the insert fully into the body of the fitting.



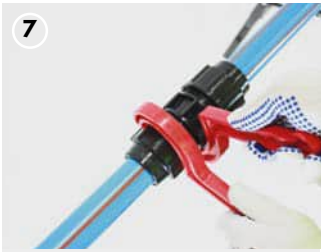
Slide the grip ring so it is flush with the pipe insert.



Hand tighten the nut onto the body of the fitting.



Repeat steps 1 to 5 for the second pipe to be joined.



Using C ring wrenches fully tighten the nuts onto the body of the fitting.



The joint is complete. Carry out a water industry approved joint pressure test to check for leak-tightness. There is no requirement to wrap the finished joint.

Jointing overview - Redman™ coupler



Mark half the insert length on both pipe ends. Slide the outer shell over the pipe and fit the insert inside the pipe up to the centre stop



Push the second pipe fully over the insert up to the centre stop



Slide the shell across the pipes so it is positioned between the marks. The joint is ready to be pressurised. Follow the joint pressurisation procedure on page 58*.

Jointing overview - Redman™ elbow



Mark the shell length on both pipe ends. Slide the shells over the pipe ends



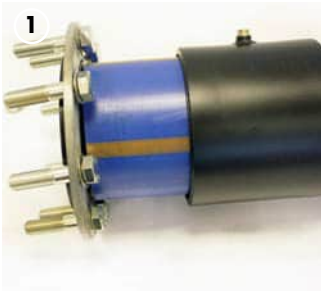
Push the pipes up to the stops on the insert



Slide the shells up to the insert stops. The joints are ready to be pressurised. Follow the joint pressurisation procedure on page 58*.

*Only use the recommended Redman hydraulic pump when pressurising the Redman fitting. Ensure the pump is calibrated and in good condition. Ensure the pump unit is full with the recommended biodegradable oil before starting the jointing process

Jointing overview - Redman™ stub flange





Important: when constructing a Redman™ flange adaptor joint, ensure the bolts (with washers) are assembled through the backing ring, as shown in 1, before making the joint. The final position of the Redman™ shell must allow clearance for bolt tightening, as seen in 2.

Jointing overview - Redman™ Repair coupler jointing overview for tie-ins and pipe repair

1



1. Cut out the damaged pipe section and cut a repair section as per the table of dimensions below (Table 1).
2. Lay out the fittings and mark the shell length on all pipe ends

For 63 mm pipeline repair
Only 1 long shell per joint is used
Follow step 1 above and mark a distance of 50 mm on all pipe ends

2



1. Position the shells over the pipe.
2. Push the long section of the inserts inside the repair section up to the pipe stops.
3. Ensure the shells are positioned up to the pipe ends

For 63 mm pipeline repair
Position the shells on the existing pipes, then follow step 2 above

3



1. Position the repair section centrally between the 2 existing pipe ends.
2. Slide the 2 inserts across and centralise between the pipes on each side.
3. Ensure the exposed insert section is between the peg and the brown tape.
4. The joints are ready to be pressurised. Follow the joint pressurisation procedure on page 58*.

For 63 mm pipeline repair
Follow steps 1 and 2 above. The profiled inserts must be positioned into the pipe ends. Slide the shell in position centrally between the marks (see coupler jointing instructions).

*Only use the recommended Redman hydraulic pump when pressurising the Redman fitting. Ensure the pump is calibrated and in good condition. Ensure the pump unit is full with the recommended biodegradable oil before starting the jointing process

Table 1 [Pipe repair length] = [Pipe cut-out length] - [X value]

Pipe Diameter	Minimum cut-out length	'X' value
63 mm	300 mm	94 mm
90 mm	420 mm	126 mm
110 mm	460 mm	144 mm
125 mm	540 mm	166 mm
160 mm	620 mm	204 mm
180 mm	740 mm	228 mm

Example - 90 mm pipe

Cut-out length = 500 mm
'X' value = 126 mm
Repair length
= [Cut-out length] - [X value]
= (500 mm - 126 mm)
= 374 mm



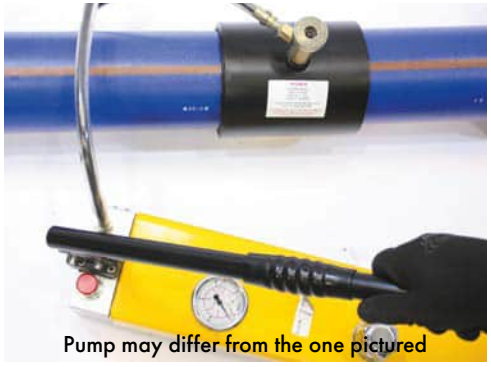
One of the benefits of the Puriton repair fittings is their suitability for tie-in joints. Tie-in joints are used when two pipes installed at opposing ends need to be joined at the position where they meet or overlap to form one pipeline.

The Redman™ repair shells should first be positioned over the two pipes to be joined. The insert can then be inserted into one pipe spigot, while the second pipe is cut to length, with some allowance (refer to the insert dimension, L2 in the Redman repair fitting's dimension table) to allow installer to slide the insert into the spigot of the second pipe. Slide and position the repair shells on the pipe ends before carrying out the joint pressurisation.

Jointing overview - Redman™ Joint pressurisation - procedure for all Redman™ fittings

Only use the Redman™ pump when pressurising the Redman™ fitting. To ensure the pump is calibrated and regularly maintained





Pump may differ from the one pictured

Please be aware that Redman™ fittings will contain a residual volume of oil from the manufacturing quality control pressurisation test*.

1. Loosen the thumb wheel on the connector and slide the connector onto the fitting nipple. Re-tighten the thumb wheel. Caution: do not attempt to remove the fitting's pressurisation nipple whilst the fitting is pressurised
2. Operate the pump until the pressure reaches 260 bar. The relief valve will engage to prevent over-pressurisation
3. Allow the pressure to settle for 20 seconds and re-pressurise to 260 bar
4. Repeat the pressurisation for a third time
5. The joint is now complete
6. After 1 minute, de-pressurise the pump by pressing and holding the red button beside the pump handle
7. Ensure that the pressure gauge stabilises at zero before attempting to remove the pump connection from the fitting. Depress the red button to remove the connector removal process
8. Loosen the thumb wheel on the connector and slide it off the fitting's nipple. Be cautious of any oil leakage

* Safety data sheet for quality control oil available on the website

Safety data sheet Biodegradable hydraulic oil for pressurisation available on request

Redman™ fitting pressurisation oil use

Fitting diameter	Number of fittings pressurised per 1 litre of Redman™ oil*
63 mm	15 - 20
90 mm	8 - 10
110 mm	5 - 7
125 mm	3 - 5
160 mm	1 - 2
180 mm	1

* Figures are for guidance only.

Hydraulic pumps and recommended hydraulic oil are available direct from Radius Systems.

For further guidance on jointing our Redman™ fittings range, please contact Radius Systems
t: +44 (0) 1773 811112



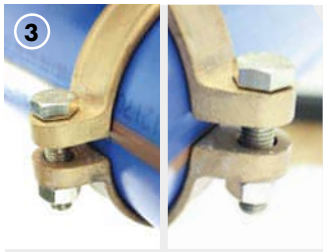
Jointing overview - tapping tees



Ensure the pipe surface is clean and free from damage and re-round the pipe where required. Place the O-ring seal into the recess of the tapping tee base and place the fitting onto the main.



Equally tighten the nuts on both sides of the tapping tee.



Ensure the distances between the 'lugs' are identical and parallel on both sides.



Carry out the service pipe connection to the tapping tee outlet, following the jointing overview in this brochure.

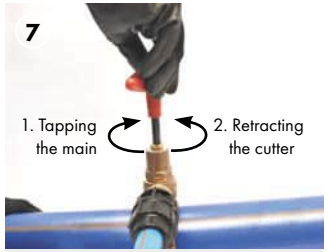


Using C ring wrenches fully tighten the nuts onto the tapping tee outlet.

Carry out a water industry approved joint pressure test to check for leak-tightness.



Using a 3/8" T key, remove the tapping tee dust cap and seal.



1. Tapping the main
Use a hexagonal 3/8" T key and turn in a clockwise direction. The cutter must come to a definite stop.

2. Retracting the cutter
Turn the T key in an anti-clockwise direction. The cutter will come to a definite stop at the top of the tapping tee stack



Replace the dust cap and tighten. The connection is complete. Visually check for leak-tightness. There is no requirement to wrap the finished joint.





Why are there 2 different polyethylene pipe materials used within the range of Puriton® pipes?

To maintain the current industry convention that PE80 materials are used for small diameter service pipes and PE100 materials are used for mains pipes:

- Puriton® pipes in diameters 25, 32 and 63 mm are manufactured from a PE80 black core and a PE80 light blue outer
- Puriton® pipes in diameters 90 to 180 mm are manufactured from a PE100 black core and a PE100 dark blue outer.

When referring to barrier pipe systems, what does the term 'Type A' refer to?

Radius Systems' Puriton® pipe is a multi-layer composite structure 'Type A' pipe, as defined in British Standard BS 8588 ('Polyethylene pressure pipe with an aluminium layer and associated fittings for potable water supply in contaminated land').

'Type A' Puriton® pipes are multi-layer pipes, where the black PE core is designed to accommodate the internal pressure and where the aluminium layer and the outer PE layer are respectively, the barrier and protection layers. Both outer layers do not contribute to the pipe's overall pressure rating.

The introduction of BS 8588 outlines the material and mechanical performance requirements for barrier pipe systems. Importantly, it also specifies their capability to protect the water quality when installed as part of a potable water supply system in contaminated ground. One of the key performance tests required by BS 8588 is the pipe system's resistance to the permeation of soil contaminants. Radius Systems' products evaluated in accordance with the permeation requirements, have been successfully tested without the need for external protective wrapping of the joint.

Are the dimensions of Puriton® pipes the same as those of conventional SDR11 and SDR17 pipes?

The dimensions of the Puriton black core pipe meet the requirements of BS EN12201 (SDR11 & SDR17), both the aluminimum and protective outer polyethylene layer are additional protective layers which increase the overall wall thickness and pipe outer diameter

What are the pressure ratings of Puriton® pipes?

Puriton® pipe maximum operating pressures:

- PE80 SDR11 service pipe 25 to 63 mm: 12.5 bar
- PE100 SDR11 mains pipe 90 to 180 mm: 16 bar
- PE100 SDR17 mains pipe 90 to 180 mm: 10 bar

Where can I find detailed jointing instructions for the system?

Jointing instructions in PDF format and videos are available to download from the Radius Systems' website: www.radius-systems.com.

The jointing instructions for the mechanical

fittings, Redman™ fittings and the tapping tees are also included in the fittings' packaging.

How do I connect 90 mm Puriton® pipe to 63 mm Puriton® pipe?

63 mm and 90 mm Puriton® pipes are joined together using 63 x DN80 and 90 x DN80 Redman™ flange adaptors.

When I have made a joint or connection onto Puriton® pipe using Puriton® fittings and following Radius Systems' Puriton® jointing guidance, do I need to wrap the joint with an additional aluminium or protective barrier tape?

Once the joint is made, there is no requirement to wrap the Puriton® joint with additional aluminium or protective barrier tape.

Radius Systems have evaluated their Puriton® jointing system without the use of additional aluminium or protective barrier tape.

Can I use fittings from other manufacturers with Puriton® pipe?

Radius Systems only recommend the use of Puriton® fittings with Puriton® pipe, to ensure that the barrier properties of the Puriton® system are maintained. The use of non Puriton® fittings may compromise the barrier properties of the system.

Follow guidance on page 29 within this brochure

What are the recommended installation techniques for Puriton® pipe?

Puriton® pipe is typically installed using the open-cut technique. However, alternative techniques like 'slip lining' and 'horizontal directional drilling' can be used. Particular care must be taken to ensure that the outer polyethylene layer is not damaged to an extent that the aluminium barrier is exposed. This will compromise the barrier properties of the pipe.

When installing a Puriton® pipe, what should I do if the outer polyethylene layer becomes damaged and the aluminium layer is exposed?

To maintain the integrity of the aluminium layer and the barrier properties of the system, we recommend that the damaged section of the pipe is removed and replaced with undamaged pipe.

Do I need to use a PTFE thread tape for the male threaded connection when using mechanical fittings and the Redman™ 63 x 1½" BSPF/2" BSPM fitting?

To ensure that the system is leak-tight, only WRAS approved PTFE thread tape should be used.

Is the pressure applied to make a Redman™ fitting joint dependent on the fitting size?

No, all Redman™ shells irrespective of size, should be pressurised to 260 bar to make the joint.

How do I know if the correct pressure has been applied to the Redman™ fitting?

All Redman™ pumps are set to 260 bar pressure. The Redman™ pump should be operated in a continuous process until it reaches the required pressure indicated on the gauge. When 260 bar is reached, there is a pressure relief valve that will activate to prevent over pressurisation of the joint. The instructions contained in this brochure detail that the pump process should be carried out 3 times, to ensure the correct pressure has been applied.

When making a Redman™ joint, is there a problem if oil leaks from the connector?

There should be no leakage from the connector during pressurisation. A small oil leak is not problematic as long as the correct joint pressure is achieved.

It is recommended that if the connector is leaking, cease pumping and take the following actions: de-pressurise the outer shell by pressing the pressure release button (red); examine the connector for any problem, report if a problem is found. Re-make the connection if no fault is found.

If the connector continues to leak during pressurisation, report the problem.

What advantages does Redman™ jointing have over other jointing methods?

Redman™ fittings are a robust mechanical alternative to other fittings. There is no requirement for pipe surface preparation and they are not reliant on a clean and dry environment. Joints can be made if the pipes are submerged in water, which makes the Redman™ fitting suitable for difficult repair situations.

Why is there a requirement to use an insert with Redman™ fittings?

The Redman™ jointing process uses a compression technique to lock the PE pipe in place. The outer shell contracts radially reducing the internal diameter of the shell which compresses the pipe onto the Redman™ fittings insert. The ribs formed on the pipe provide an increased grip which gives the joint its end load resistant strength.

Is it possible to join SDR17 to SDR11 pipe with a Redman™ fitting?

No, Redman™ fittings come with a single insert for a single pipe thickness. They can only be used if the SDR of the pipes to be joined are identical.

When making a Redman™ joint where should I stand relative to the fitting?

The Redman™ jointing process is a high pressure process. Radius Systems recommend that during the fitting pressurisation process, the operator stands at a safe distance away from the pump, using the full length of the hose. Do not hold the fitting or the pressurisation connection during the pressurisation process. Do not remove the pump hose connector from the fitting before the full jointing process is complete and the pump pressure relief valve is depressed. Ensure that the pump pressure

gauge registers zero pressure before the connector is removed from the fitting.

Can I use an alternative fluid to pressurise the Redman™ fitting?

No. Only use Redman™ Biodegradable Hydraulic Oil with Redman™ fittings. MSDS data sheets available on the website

Can I mix and match shell and insert types?

No the outer shell and insert are designed to be used together. Shells from one fitting should not be used with another fitting type.

After the fitting has been pressurised and the joint made, oil weeps from the fitting, causing loss of pressure in the fitting. Is this classed as a failure? – Do I need to top up the fitting's pressure?

No. Once the joint is correctly made, the pressure within the Redman™ fitting will naturally subside, this is normal. There is no requirement to repeatedly pressurise the fitting once the full jointing procedure is complete and the joint is made.

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e: Sales@radius-systems.com

Technical support:
t: +44 (0)1773 811112
e: Techsupport@radius-systems.com





Radius Systems are a market leader in the innovation and manufacture of plastic pipe systems for the utilities and construction industries. With extensive research and development at the heart of our products and systems, we take care of the entire pipe life cycle - from design and manufacture through to installation, repair and rehabilitation. We strive to improve industry practices, with good health and safety policies at the forefront of our philosophy of 'getting it right first time'. Our continuous customer inspired research and development, combined with successful customer partnerships represent our total dedication to the plastic piping industry.

- **Manufacturing facilities**
  With 2 production sites in the UK, we have complete control over quality and the ability to meet our customers' expectations.

- **Innovative approach**
  We are leaders in our field with a history of research and new product development. Practicality, durability and adaptability are all high on our agenda to meet our clients' needs.

- **Flexible product and service provision**
  Our comprehensive range of services is designed to fit the variable demands of our clients' developments in pipes, fittings, training and support services.

- **Reliability and safety**
  With 50 years experience in pipe design and manufacture, our clients know that they can count on us to meet not just their product and service needs, but also their delivery and safety requirements.

- **Great customer service**
  We have a dedicated Customer Services team to answer queries from our customers in the UK and overseas. Our service is not just about the delivery of products - contact our team if you have a product or installation enquiry or a post-delivery query.

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www.radius-systems.com

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As part of the Radius Systems program of continuous improvement, we reserve the right to amend the content of this publication without notice. The information supplied in this document is correct at the time of publication.

Shauna McLoughlin

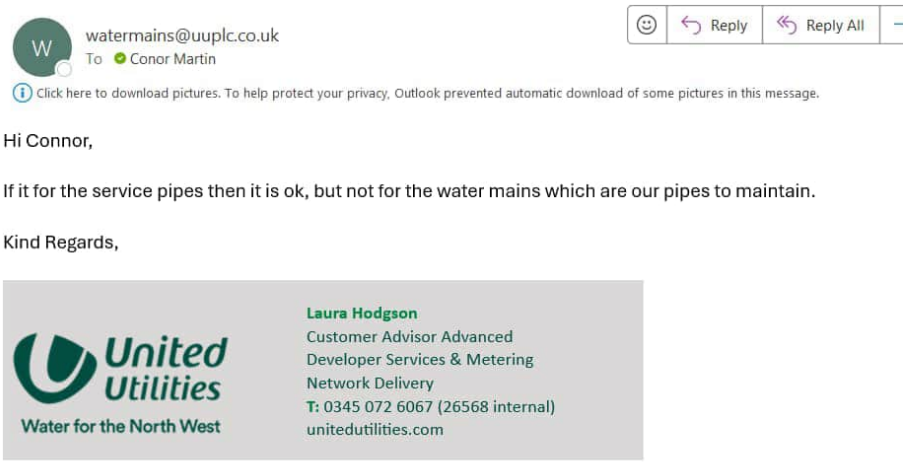
From: Gavin Turner <gturner@hargreavescontracting.com>
Sent: 11 March 2026 16:33
To: Peter Kenny
Cc: Jordan Collier; Shauna McLoughlin
Subject: RE: 13753 Kemp Heaton Avenue, Bury
Attachments: Kemp-Heaton_-_Drawings (2).zip

Hi Peter,

Yes your understanding is correct regarding the submission of the UURA.

I attach the contours plan with final levels for your attention.

Below is an extract of the correspondence form UU regarding acceptance of barrier pipe to the plots only.



watermains@uuplc.co.uk
To Conor Martin

Reply | Reply All

Click here to download pictures. To help protect your privacy, Outlook prevented automatic download of some pictures in this message.

Hi Connor,

If it for the service pipes then it is ok, but not for the water mains which are our pipes to maintain.

Kind Regards,

United Utilities
Water for the North West

Laura Hodgson
Customer Advisor Advanced
Developer Services & Metering
Network Delivery
T: 0345 072 6067 (26568 internal)
unitedutilities.com

Water will be as per UU standard with 750mm cover.

Trust the above is acceptable.

Kind Regards

Gavin Turner

HARGREAVES
CONTRACTING EXCELLENCE

Gavin Turner MEng – Project Manager
Unit 5, Rising Bridge Business Village,
Blackburn Road, Accrington, BB5 2AL
T: 01204 365300 **M:** 07973 902261
E: gturner@hargreavescontracting.com
W: www.hargreavescontracting.com

From: Peter Kenny <PeterKenny@campbellreith.com>
Sent: 11 March 2026 10:30
To: Gavin Turner <gturner@hargreavescontracting.com>
Cc: Jordan Collier <jcollier@hargreavescontracting.com>; Shauna McLoughlin <ShaunaMcLoughlin@campbellreith.com>
Subject: 13753 Kemp Heaton Avenue, Bury

Hi Gavin,

Good to speak earlier.

Just following up to confirm my understanding – we are to undertake the UU Pipeline Selection Risk Assessment pro-forma using existing soils chemical test data from the previous ground investigation.

We will prepare a short technical note to accompany the UU form, detailing the findings of the previous GI and this will include a drawing overlaying the proposed pipeline routes with the previous GI locations.

Information required from Hargreaves includes:

- Current / "as built" topo survey so that we can cross reference soil sample depths and Made Ground depths from the previous GI to the current site conditions (i.e. to confirm if we have any test data at the correct locations / depths)
- Any previous UU correspondence
- Confirmation of proposed depths of water pipes

In terms of programme, we will be able to look at this early next week with the aim of having it issued to you by Friday 20th March, so that it can then be forwarded on to UU.

I can confirm that our previous fee proposed from Jan 2025 is still applicable - £2,250 (exc. VAT).

If you can please confirm our understanding of the above is acceptable that would be appreciated.

Kind regards
Peter

Peter Kenny
Associate

To help protect your privacy, Microsoft Office prevented automatic download of this picture from the Internet.

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M2 1HL

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Mob +44 7973 961 668
www.campbellreith.com

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As this e-mail has been transmitted over a public network the accuracy, completeness and virus status of the transmitted information is not secure and cannot be guaranteed. If verification is required please telephone the sender of the email.

Shauna McLoughlin

From:	Gavin Turner <gturner@hargreavescontracting.com>
Sent:	06 July 2026 16:06
To:	Shauna McLoughlin; Peter Kenny
Cc:	jjohnson; Sam Clarke
Subject:	RE: Kemp Heaton - Soil Validation
Attachments:	Puriton-Brochure.pdf; BGS-SRN3514_ WATER CONSTRUCTION PLAN Rev.05 (1).pdf
Follow Up Flag:	Follow up
Flag Status:	Completed

Hi Shauna,

Please find attached barrier pipe brochure and drawing detailing where this was needed.

Kind Regards

Gavin Turner

HARGREAVES
CONTRACTING EXCELLENCE

Gavin Turner MEng – Project Manager
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Blackburn Road, Accrington, BB5 2AL
T: 01204 365300 **M:** 07973 902261
E: gturner@hargreavescontracting.com
W: www.hargreavescontracting.com

From: Shauna McLoughlin <ShaunaMcLoughlin@campbellreith.com>
Sent: 06 July 2026 13:02
To: Gavin Turner <gturner@hargreavescontracting.com>; Peter Kenny <PeterKenny@campbellreith.com>
Cc: jjohnson <JJohnson@hargreavescontracting.com>; Sam Clarke <sclarke@hargreavescontracting.com>
Subject: RE: Kemp Heaton - Soil Validation

Hi Gavin,

Thanks for the waste transfer notes and for confirming the removal of horsetail.

Do you have any further information on the removal and treatment of Himalayan Balsam and Japanese Knotweed as indicated on the invasive plant species location plan (attached)?

As discussed previously over the phone, please could you also provide further details on the materials selected for water pipes?



CampbellReith
consulting engineers

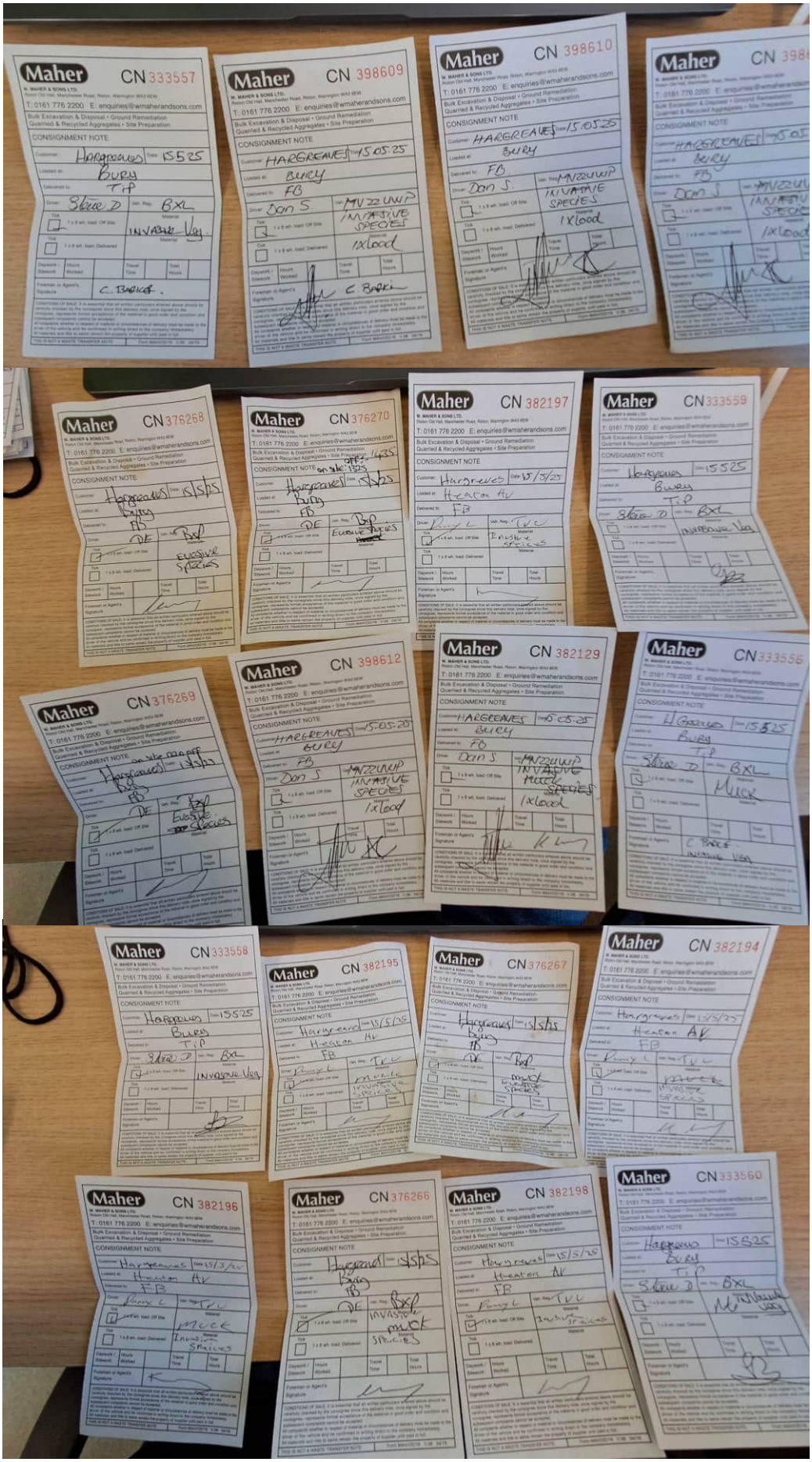
Appendix 7

Selected Waste Records

W Maher and Sons Ltd Waste Transfer Notes

Hargreaves Waste Records

Email Correspondence from Hargreaves on Waste Removal


Maher
CN 333557
CN 398609
CN 398610
CN 376268
CN 376270
CN 382197
CN 333559
CN 376269
CN 398612
CN 382129
CN 333556
CN 333558
CN 382195
CN 376267
CN 382194
CN 382196
CN 376266
CN 382198
CN 333560


Maher
CN 404329
CN 401588
CN 376286
CN 398631
CN 402159
CN 398636
CN 376291
CN 401593
CN 401590
CN 398633
CN 376288
CN 402160
CN 404330
CN 398632
CN 401589
CN 376287
CN 398635
CN 402162
CN 398634
CN 376289
CN 401591
CN 402161
CN 404331
CONSIGNMENT NOTE
Bulk Excavation & Disposal • Ground Remediation
Quarried & Recycled Aggregates • Site Preparation
T: 0161 776 2200 E: enquiries@wmaherandsons.com
CN 401151
CN 401144
CN 383705
CN 383706
CN 404067
CN 404119
CN 404118
CN 383703
CN 386058
CN 404066
CN 408007
CN 404123
CN 404071
CN 386063
CN 401153
CN 383707
CN 386062
CN 383708
CN 386064
CN 404073
CN 404121
CN 401154
CN 404124
CN 398642
CN 376297
CN 404341
CN 404337
CN 404335
CN 404336
CN 401599
CN 376300
CN 376299
CN 398644
CN 404340
CN 398643
CN 401600
CN 404339
CN 376298
CN 386051

Kemp Heaton

Cart Away Records

Mahers

INVASIVE SPECIES

No	Date	Ticket No.		Haulage Company	Comment
1	15.05.25	333558		MAHER	INVASIVE SPECIES
2	15.05.25	382195		MAHER	INVASIVE SPECIES
3	15.05.25	376267		MAHER	INVASIVE SPECIES
4	15.05.25	382194		MAHER	INVASIVE SPECIES
5	15.05.25	382196		MAHER	INVASIVE SPECIES
6	15.05.25	376266		MAHER	INVASIVE SPECIES
7	15.05.25	333560		MAHER	INVASIVE SPECIES
8	15.05.25	382198		MAHER	INVASIVE SPECIES
9	15.05.25	376268		MAHER	INVASIVE SPECIES
10	15.05.25	376270		MAHER	INVASIVE SPECIES
11	15.05.25	382197		MAHER	INVASIVE SPECIES
12	15.05.25	333559		MAHER	INVASIVE SPECIES
13	15.05.25	376269		MAHER	INVASIVE SPECIES
14	15.05.25	398612		MAHER	INVASIVE SPECIES
15	15.05.25	382129		MAHER	INVASIVE SPECIES
16	15.05.25	333556		MAHER	INVASIVE SPECIES
17	15.05.25	333557		MAHER	INVASIVE SPECIES
18	15.05.25	398609		MAHER	INVASIVE SPECIES
19	15.05.25	398610		MAHER	INVASIVE SPECIES
20	15.05.25	398661		MAHER	INVASIVE SPECIES
21	16.05.25	376273		MAHER	INVASIVE SPECIES
22	16.05.25	398614		MAHER	INVASIVE SPECIES
23	16.05.25	401568		MAHER'	INVASIVE SPECIES
			0.00	nr	

Kemp Heaton

Cart Away Records **M3**

Mahers 7822.5

No	Date	Ticket No.	Wagon	Haulage Company	Comment
1	16.05.25	398617	20.00	MAHER	Muck away
2	16.05.25	398618	20.00	MAHER	Muck away
3	16.05.25	398615	20.00	MAHER	Muck away
4	16.05.25	401571	20.00	MAHER	Muck away
5	16.05.25	401570	20.00	MAHER	Muck away
6	16.05.25	398619	20.00	MAHER	Muck away
7	16.05.25	376278	20.00	MAHER	Muck away
8	16.05.25	401572	20.00	MAHER	Muck away
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10	16.05.25	398616	20.00	MAHER	Muck away
11	16.05.25	376275	20.00	MAHER	Muck away
12	16.05.25	376274	20.00	MAHER	Muck away
13	16.05.25	376276	20.00	MAHER	Muck away
14	16.05.25	401569	20.00	MAHER	Muck away
15	19.05.25	398621	20.00	MAHER	Muck away
16	19.05.25	398622	20.00	MAHER	Muck away
17	19.05.25	404322	20.00	MAHER	Muck away
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21	19.05.25	404325	20.00	MAHER	Muck away
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23	19.05.25	402991	20.00	MAHER	Muck away
24	19.05.25	333572	20.00	MAHER	Muck away
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38	19.05.25	333569	20.00	MAHER	Muck away
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41	19.05.25	376281	20.00	MAHER	Muck away

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	16.06.25	383308	20.00				
	16.06.25	402352	20.00				
	16.06.25	383302	20.00				
	16.06.25	404146	20.00				
	16.06.25	406886	20.00				
	17.06.25	406899	20.00				

	17.06.25	407108	20.00
	17.06.25	401274	20.00
	17.06.25	383316	20.00
	17.06.25	47543	30.00
	17.06.25	82831	30.00
	17.06.25	47541	30.00
	17.06.25	84903	30.00
	17.06.25	84904	30.00
	17.06.25	82832	30.00
	17.06.25	82833	30.00
	17.06.25	82835	30.00
	17.06.25	82834	30.00
	17.06.25	47545	30.00
	17.06.25	47544	30.00
	17.06.25	47542	30.00
	17.06.25	84905	30.00
	17.06.25	84906	30.00
	17.06.25	84907	30.00
	17.06.25	84902	30.00
	17.06.25	47540	30.00
	17.06.25	82830	30.00
	18.06.25	383322	20.00
	18.06.25	383323	20.00
	18.06.25	383955	20.00
	18.06.25	383954	20.00
	18.06.25	383953	20.00
	18.06.25	383320	20.00
	18.06.25	383319	20.00
	18.06.25	383952	20.00
	18.06.25	383317	20.00
	18.06.25	407112	20.00
	18.06.25	407114	20.00
	18.06.25	407113	20.00
	18.06.25	407115	20.00
	18.06.25	407116	20.00
	18.06.25	407117	20.00
	18.06.25	407119	20.00
	18.06.25	383958	20.00
	18.06.25	383957	20.00
	18.06.25	383956	20.00
	18.06.25	383324	20.00
	18.06.25	85656	30.00
	18.06.25	82841	30.00
	18.06.25	85655	30.00
	18.06.25	84913	30.00
	18.06.25	82840	30.00
	18.06.25	84912	30.00
	18.06.25	85654	30.00
	18.06.25	84911	30.00
	18.06.25	82839	30.00

	18.06.25	82838	30.00				
	18.06.25	82837	30.00				
	18.06.25	85653	30.00				
	18.06.25	85652	30.00				
	18.06.25	84910	30.00				
	18.06.25	84909	30.00				
	18.06.25	82836	30.00				
	18.06.25	85651	30.00				
	18.06.25	84908	30.00				
	19.06.25	383968	20.00				
	19.06.25	383963	20.00				
	19.06.25	383964	20.00				
	19.06.25	383965	20.00				
	19.06.25	383966	20.00				
	19.06.25	407128	20.00				
	19.06.25	407129	20.00				
	19.06.25	383332	20.00				
			10430.00	nr			

Shauna McLoughlin

From: Gavin Turner <gturner@hargreavescontracting.com>
Sent: 27 May 2026 11:40
To: Shauna McLoughlin; Peter Kenny
Cc: jjohnson; Sam Clarke
Subject: RE: Kemp Heaton - Soil Validation
Attachments: 15.05.25 A.jpg; 15.05.25.B.jpg; 15.05.25.C.jpg

Hi Shauna,

Please see attached. This is what I can find at the moment.

Are these sufficient?

Kind Regards

Gavin Turner

HARGREAVES
CONTRACTING EXCELLENCE

Gavin Turner MEng – Project Manager
Unit 5, Rising Bridge Business Village,
Blackburn Road, Accrington, BB5 2AL
T: 01204 365300 **M:** 07973 902261
E: gturner@hargreavescontracting.com
W: www.hargreavescontracting.com

From: Shauna McLoughlin <ShaunaMcLoughlin@campbellreith.com>
Sent: 22 May 2026 15:14
To: Gavin Turner <gturner@hargreavescontracting.com>; Peter Kenny <PeterKenny@campbellreith.com>
Cc: jjohnson <JJohnson@hargreavescontracting.com>; Sam Clarke <sclarke@hargreavescontracting.com>
Subject: RE: Kemp Heaton - Soil Validation

Hi Gavin,

Please find attached the verification report for the clean cover system in Plots 1 -5. This will be inserted into the appendices of the main verification report once completed.

There are just a few things outstanding in the main verification report. If possible, please could you provide further information on the following:

- Waste transfer notes – currently I have a copy of the WTN for the soils contaminated with Marestail. Please could you provide any additional waste transfer documentation for other materials removed from site?
- The watching brief record includes a plan indicating the presence of Himalayan balsam, Horsetail and Japanese knotweed; however, the report only refers to the removal of soils contaminated with Marestail.

Please can you confirm whether all invasive species have been appropriately treated and removed, and provide any associated reports or evidence?

- A UU pipeline risk assessment was undertaken which specified the use of barrier pipe. Please could you confirm the brand name/type of barrier pipe installed, along with confirmation of installation and any supporting photographic evidence?

Kind regards
Shauna

Shauna McLoughlin
Senior Land Quality Scientist
To help protect your privacy, Microsoft Office prevented automatic download of this picture from the Internet.
10 Chapel Walks,
Manchester
M2 1HL

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Mob +44 748 308 5676
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From: Gavin Turner <gturner@hargreavescontracting.com>
Sent: 20 May 2026 16:33
To: Shauna McLoughlin <ShaunaMcLoughlin@campbellreith.com>; Peter Kenny <PeterKenny@campbellreith.com>
Cc: jjohnson <JJohnson@hargreavescontracting.com>; Sam Clarke <sclarke@hargreavescontracting.com>
Subject: RE: Kemp Heaton - Soil Validation

Hi Shauna,

When do you think you will be in a position to release the first section of the remediation strategy?

Kind Regards

Gavin Turner

HARGREAVES
CONTRACTING EXCELLENCE
Gavin Turner MEng – Project Manager
Unit 5, Rising Bridge Business Village,
Blackburn Road, Accrington, BB5 2AL
T: 01204 365300 **M:** 07973 902261
E: gturner@hargreavescontracting.com
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From: Gavin Turner
Sent: 19 May 2026 15:36
To: 'Shauna McLoughlin' <ShaunaMcLoughlin@campbellreith.com>; Peter Kenny <PeterKenny@campbellreith.com>

Shauna McLoughlin

From:	Gavin Turner <gturner@hargreavescontracting.com>
Sent:	30 June 2026 10:09
To:	Shauna McLoughlin; Peter Kenny
Cc:	jjohnson; Sam Clarke
Subject:	RE: Kemp Heaton - Soil Validation
Attachments:	Muck away records.zip
Follow Up Flag:	Follow up
Flag Status:	Completed

Hi Shauna,

I can confirm the Marestail was an administration issue and should have read horse tail.

Please find attached WTN.

Trust this is sufficient for the report issue.

Kind Regards

Gavin Turner

HARGREAVES
CONTRACTING EXCELLENCE

Gavin Turner MEng – Project Manager
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Blackburn Road, Accrington, BB5 2AL
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E: gturner@hargreavescontracting.com
W: www.hargreavescontracting.com

From: Shauna McLoughlin <ShaunaMcLoughlin@campbellreith.com>
Sent: 19 June 2026 11:38
To: Gavin Turner <gturner@hargreavescontracting.com>; Peter Kenny <PeterKenny@campbellreith.com>
Cc: jjohnson <JJohnson@hargreavescontracting.com>; Sam Clarke <sclarke@hargreavescontracting.com>
Subject: RE: Kemp Heaton - Soil Validation

Hi Gavin,

To complete the site verification report we need all the information requested on the email below:

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VAT No 974 8892 43