Environmental
Geotechnical
Specialists

RGS

PHASE 4

VALIDATION REPORT

job number	C4182/25/E/8639
date	24.12.25
site address	672 Bradford Road, Birkenshaw Bradford West Yorkshire BD11 2EE
written by	R. Palmer
checked by	S. Hale
issued by	R. Palmer

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Phase 4: Validation Report of Remediation

Location:	672 Bradford Road Birkenshaw, Bradford, West Yorkshire, BD11 2EE		
For:	N Hall Construction Limited		
Report No.	C4182/25/E/8639	Report date:	December 2025

For and on behalf of **Rogers Geotechnical Services Ltd**

Rob Palmer MSc FGS ACIEH
Engineering Director

Steven Hale BSc FGS
Geo-environmental Engineer

1. Introduction

The land associated with 672 Bradford Road, Birkenshaw has now been developed by the construction of a pair of detached dwellings with gardens and parking. In order to fully discharge a planning condition relating to land contamination, a verification report has been produced to demonstrate that the required depth of cover has been achieved and that contamination levels of the soils used in the formation of the cover system are acceptable.

In accordance with your instructions we have undertaken testing of the imported material to validate that this is now suitable, and confirm that the pathway for contamination is broken. The following describes the work undertaken, presents the data obtained and discusses the findings in association with the proposed development.

2. Review of the Proposed Remediation Strategy

2.1 Summary of Contamination Risks

A Phase 2 Geo-environmental investigation was undertaken by Rogers Geotechnical Services in July 2024 (ref C4182/24/E/6783). The Phase 2 report concluded that the topsoil present at the site was generally contaminated by lead and PAHs, and therefore remediation would be required.

2.2 Remediation Strategy

As part of the part of a planning consent the below remediation strategy/scheme has been produced and agreed with Kirklees Council. The general layout of the site showing the proposed remediation strategy can be found within Appendix 1.

Post-submission of the original Phase 3 report, it became evident that a Restricted Activity Zone (RAZ) was in place in a section of the rear gardens due to a protected ash tree that was situated outside of the site boundary. This was required to provide a tree protection barriers. Typically 600mm of clean cover is required for a clean cover system, however due to the RAZ, this was not possible. Nonetheless, it became evident that only a thin capping of topsoil was present in this area, therefore it was agreed that under supervision, a 200mm cover of topsoil could be installed, albeit a geotextile was required to be placed beneath. It should also be noted that it was confirmed that the underlying natural material (clay) was clean and suitable for the intended end use, therefore if this material was encountered during any site scrape, then a capillary break would not be required as the contaminated material shall have been removed. For full details and all aspects of the remediation, the Remediation Statement letter C4182/24/E/CSM&RS dated 6th August 2025 should be reviewed.

2.3 Source of Material

For cover and containment systems, verification will normally depend upon the provision of defensible measurements, observations and records. The following table provides information in regards to the source and characteristics of the material used within the remediation process:

Table 1: Validation Sampling and Testing

Type of Material	Source of Material	Volume of Imported Material	No. Samples Required
Topsoil	PMW Quarries – Distributor Topsoil provided by Green-tech Ltd Suitable topsoil certificates supplied. Greenfield source applicable.	18580kg Approx 15m³	3
Quarried Stone	T.M Haulage & Excavation	15000kg Approx 8m³	1

Relevant soil certification is presented within Appendix 2.

3. Limitations

The recommendations made and opinions expressed in this report are based on the ground conditions revealed by the site works, together with an assessment of the site and of the laboratory test results. Whilst opinions may be expressed relating to sub-soil conditions in parts of the site not investigated, for example between investigatory positions, these are for guidance only and no liability can be accepted for their accuracy.

This report has been prepared in accordance with our understanding of current best practice. However, new information or legislation, or changes to best practice may necessitate revision of the report after the date of issue.

4. Site Inspections

Three site inspections were completed as follows:

- 21st October 2025 – samples collected of stockpiled imported material.
- 1st November 2025 – root and topsoil inspection in RAZ.
- 12th December 2025 – validation inspection pits in soft landscaped areas.

On the 21st October, topsoil and stone samples were collected from stockpiles. The chemical test specimens were retained in the appropriate air tight containers within cool boxes for onward transition to the laboratory.

As per the agreed Remediation Statement, an inspection was completed in the rear garden to assess the presence of tree roots and topsoil thickness. Tree root locations were confirmed by hand-digging, with the roots then exposed with lateral extent. Thereafter, a mini-excavator was utilised to remove the surrounding topsoil, exposing the underlying clay at depths of between 150mm and 200mm.

Thereafter, the remediation was completed and RGS were invited back to site on the 12th December to undertake validation inspection pits. The positions were excavated employing hand digging techniques in order to reveal the nature of the near surface soils and confirm the presence of a geotextile. It should be appreciated that material was taken away from site by Rand & Asquith in October and December 2025.

All photographs relating to the above inspections are presented in Appendix 3.

5. Laboratory Testing - Environmental

A suite of testing was conducted on samples from across the site and the following regime was undertaken.

Virgin Quarried Material Suite

- Standard metals/metalloids As, Cd, Cr, CrVI, Cu, Hg, Ni, Pb, Se, V, Zn
- Free CN-
- Organic content (Soil Organic Matter)

Greenfield soil Suite

- Standard metals/metalloids As, Cd, Cr, CrVI, Cu, Hg, Ni, Pb, Se, V, Zn
- Free CN-, PAH (16 USEPA)
- Asbestos Screen
- Organic content (Soil Organic Matter)

This testing was undertaken by Normec i2 Analytical Ltd and the results of all of the chemical testing are presented in Appendix 4 of this report.

6. Discussion of Contamination Testing - Environmental

On the basis that the site comprises houses and the imported soils at the site has been used to provide clean cover in the garden and soft landscaping areas of the properties, the site can be classified as residential with plant uptake.

The results of the chemical testing undertaken on soil samples obtained during this investigation have been compared to the ATRISK soil screening values (SSVs) as compiled by WS Atkins plc. These values have been derived in such a way as to adhere to the principles within the revised CLEA model and include the most current release of the SGVs. A list of subscribers is provided within the website[1] and these include many local authorities.

A comparison of the results of the testing, together with the data given above, can be found within Appendix 5. These results indicate the following:

Table 2: Summary of Contamination Results

Sample Ref	Strata	Contaminants found to be exceeding SSVs (Residential with Plant Uptake)
Top01 (Stockpile)	Topsoil	None
Top02 (Stockpile)	Topsoil	None
Top03 (Stockpile)	Topsoil	None
Top04 (Stockpile)	Topsoil	None
Top05 (Stockpile)	Topsoil	None
Top06 (Stockpile)	Topsoil	None
Cap01 (Stockpile)	Stone	None

In view of the contamination testing results, it is concluded that the imported soils are suitable for the intended end use.

7. Strata Conditions

Subsequent to the up-filing operation within the garden and soft landscaping areas at the site, these areas were found to be capped by topsoil comprising dark brown, clayey silty gravelly organic sand overlying the natural clay. Indeed, the site scrape and creation of formation level had exposed the clay in all locations, thereby meaning the levels could be brought back up with topsoil. The topsoil composition matched that which was tested in October 2025. It should be noted that at the time of the validation inspection there had been a period of heavy rainfall, therefore the topsoil was saturated and the turf had yet to be placed. In general, the topsoil was found to vary in thickness, between 170mm and 300mm. The underlying clay (weathered rock) is then considered to represent a suitable subsoil.

[1] http://www.atrisksoil.co.uk/pages/general/subscribers.asp

In the rear garden area, a geotextile had been placed at circa 170mm to 200mm, which was observed to be overlying the natural clay. Topsoil was then suitably placed above.

In proposed hard-standing areas, stone had been placed. Moreover, in patio areas, the natural clay was exposed beneath.

8. Conclusion

Further to the photographic records, the excavations at the validation positions and the chemical testing, it is considered that all areas of the site have been suitably capped in order to protect end users from contamination at the site and no further action is required. Upmost care was taken within the RAZ to protect the tree and RGS are satisfied that appropriate measures were taken during the construction process. The imported material placed as a capping at the site has been obtained from a single supplier and comprises topsoil. This material will prove suitable as a growing medium and is compliant with BS3883 (2007) and is free from obvious contamination (i.e. visual or olfactory evidence) and unsuitable material (i.e. whole bricks, brick ties, timber or glass).

It is considered that the end users will be protected from ingestion or dermal contact with contaminated soil. No further action is required.

9. References

- Department for Environment, Food and Rural Affairs and the Environment Agency (2009) DEFRA Science Report – Final SC050021/SR2, *Human Health toxicological assessment of contaminants in soil*. Environment Agency, Bristol.

- Department for Environment, Food and Rural Affairs and the Environment Agency (2009) DEFRA Science Report – SC050021/SR3, *Updated technical background to the CLEA model*. Environment Agency, Bristol.

- WS Atkins plc, 2011, Soil Screening Values, Derived using CLEA v1.04 and January 2009 Guidance: SSVs derived using CLEA v1.04 for 6% SOM, Residential with home grown produce land use.

- *YALPAG Technical Guidance for Developers, Landowners and Consultants – Verification Requirements for Cover Systems V3.3* Appendix 1a, October 2016.

Appendix 1

Site Plan



Rogers Geotechnical Services Ltd	Job No:	Site:	Client:
Offices 1 & 2, Barncliffe Business Park, Near Bank, Shelley, Huddersfield,	C4182/25/E/8639	672 Bradford Rd	Nathan Hall

ground investigation | drilling & excavation | insitu testing
laboratory testing & gas monitoring | engineering consultancy
surveying & flood risk assessments | training, CPD & expert witness
... delivered using our own drilling rigs / crews / soils lab / engineers

Appendix 2

Topsoil Supplier Documents

T.M. HAULAGE & EXCAVATION LTD

Telephone - 01422 373249 Mobile - 07860246012
E-Mail - info@tmhaulage.co.uk

T.M. Haulage & Excavation LTD
NORTH DEAN BUSINESS PARK
STAINLAND ROAD
HALIFAX
HX4 8LR
TEL: 07860246012

Email:info@tmhaulage.co.uk

N Hall Construction Limited
Hill Top Farm
Whitehall Road East
Birkenshaw
Bradford
BD11 2LH

Invoice No	**13083**
Invoice Date	**20/10/2025**
Account Re	**HAL0003**

Customer Order number

Description	Unit Price	Net Amt	VAT %	VAT
20th Oct Ticket ref 44187				
40mm clean Ex Wentvalley - 672 Bradford Road 15T @ £23pt	345.00	345.00	20.00	69.00

Posted
30 OCT 2025

Bank details:
Sort Code: 05-03-48
Account No: 30294676
Please quote the invoice number as the payment reference

PAYMENT TERMS: 30 DAYS NET MONTHLY FOR CREDIT ACCOUNT CUSTOMERS

VAT NO: 204115075

Total Net Amount	£	345.00
Carriage Net	£	0.00
Total Tax Amount	£	69.00
Invoice Total	£	414.00

REF: SIGPMWD

PMW Quarries .co.uk

Delivery POD Details

PMW Quarries
Holmfirth Road
Shepley
Huddersfield
West Yorkshire
HD8 8BB

Tel 01484 606213
E Mail accounts@pmwquarries.co.uk

SIC Code 08110
Waste Carrier No CBDU393392

Details

Collect From

Contact
Tel

Deliver To
N Hall Construction
672 Bradford Road
Birkenshaw
Bradford

BD11 2EE

Contact Nathan
Tel

Job 14050 **Con** 1 **Customer** MKM Building Supplies Ltd **Job Type** AGG

Reference 71/3008517 **Vehicle Reg** MV74 GYR

Collection Date 14/10/2025 **Delivery Date** 16/10/2025

Goods GT2 LANDSCAPE TOPSOIL

Weight 18580 **Collection Ref** 445068

Delivery Ref

Signature (obtained via signature capture)



Signed By
Nathan

Signed On 16/10/2025 **Signed At** 0904

Arrived On **Arrived At**

Departed On **Departed At**

Powered by HaulTech

REF: SIGPMWD

Delivery POD Details

PMW Quarries
Holmfirth Road
Shepley
Huddersfield
West Yorkshire
HD8 8BB

Tel 01484 606213
E Mail accounts@pmwquarries.co.uk

SIC Code 08110
Waste Carrier No CBDU393392

Details

Collect From

Contact
Tel

Deliver To
N Hall Construction
672 Bradford Road
Birkenshaw
Bradford

BD11 2EE

Contact Nathan
Tel

Job 14051 **Con** 1 **Customer** MKM Building Supplies Ltd **Job Type** AGG

Reference 71/3008517 **Vehicle Reg** A14 PMW

Collection Date 14/10/2025 **Delivery Date** 16/10/2025

Goods GT2 LANDSCAPE TOPSOIL

Weight 18780 **Collection Ref** 445068

Delivery Ref

Signature (obtained via signature capture)



Signed By
Nathon

Signed On 16/10/2025 **Signed At** 0909

Arrived On **Arrived At**

Departed On **Departed At**

Powered by HaulTech

REF: SIGPMWD

PMW Quarries .co.uk

Delivery POD Details

PMW Quarries
Holmfirth Road
Shepley
Huddersfield
West Yorkshire
HD8 8BB

Tel 01484 606213
E Mail accounts@pmwquarries.co.uk

SIC Code 08110
Waste Carrier No CBDU393392

Details

Collect From	Deliver To
	N Hall Construction 672 Bradford Road Birkenshaw Bradford BD11 2EE
Contact **Tel**	**Contact** Nathan **Tel**

Job 14052 **Con** 1 **Customer** MKM Building Supplies Ltd **Job Type** AGG

Reference 71/3008517 **Vehicle Reg** MV72 XWY

Collection Date 14/10/2025 **Delivery Date** 16/10/2025

Goods GT2 LANDSCAPE TOPSOIL

Weight 18560 **Collection Ref** 445068

Delivery Ref

Signature (obtained via signature capture)



Signed By
Nathan

Signed On
16/10/2025

Signed At
1350

Arrived On

Arrived At

Departed On

Departed At

Powered by HaulTech

TIM O'HARE ASSOCIATES
SOIL & LANDSCAPE CONSULTANCY

Mr Mark Wood
Green-tech Ltd
Rabbit Hill Park
Great North Road
Arkendale
Knaresborough
North Yorkshire HG5 0FF

7th March 2025
Our Ref: TOHA/25/1740/2/SS
Your Ref: PO 440041

Green-tech Ltd

Dear Sirs

Topsoil Analysis Report: Barnsdale Landscape Grade Topsoil

We have completed the analysis of the soil sample recently collected from site, referenced *Barnsdale Landscape Grade Topsoil* and have pleasure reporting our findings.

The purpose of the analysis was to determine the suitability of the sample for general landscape purposes (trees, shrubs, amenity grass). In addition, this sample has been assessed to determine its compliance with the requirements of the British Standard for Topsoil *(BS3882:2015 – Specification for topsoil and requirements for use – Table 1, Multipurpose Topsoil).*

This report presents the results of analysis for the sample collected on 20/02/2025, and it should be considered 'indicative' of the topsoil source. The report and results should therefore not be used by third parties as a means of verification or validation testing, especially after the topsoil has left the Green-tech Ltd site.

SAMPLING

The topsoil was examined and sampled at the Green-tech Ltd source at Barnsdale Bar Quarry on 20/02/2025 by Ross Friar of Tim O'Hare Associates LLP. A representative composite topsoil sample was collected in accordance with Section 5 (*Sampling of topsoil*) of the British Standard for Topsoil (*BS3882:2015 Specification for Topsoil*).

Tim O'Hare Associates LLP
Howbery Park Wallingford Oxfordshire OX10 8BA
T:01491 822653 E:info@toha.co.uk
www.toha.co.uk

Registered in England No. OC324049 Registered Office: The Innovation Centre, Howbery Park, Wallingford, Oxfordshire OX10 8BA



Plate 1: Stockpiled Barnsdale Landscape Grade Topsoil



Plate 2: Barnsdale Landscape Grade Topsoil

Visual Examination

The topsoil was stored in a small, loosely heaped stockpile on site.

The topsoil was described as a dark reddish brown (Munsell Colour 5 YR 3/3) slightly moist, friable, slghtly calcareous LOAMY SAND with a weakly developed, fine to medium granular structure. The soil was virtually stone-free and contained moderate proportion of organic fines and occasional woody fragments. No unusual odours, deleterious materials, roots or rhizomes of pernicious weeds were observed.

ANALYTICAL SCHEDULE

The sample was submitted to a UKAS and MCERTS accredited laboratory for a range of physical and chemical tests to confirm the composition and fertility of the soil, and the concentration of selected potential contaminants. The following parameters were determined:

- detailed particle size analysis (5 sands, silt, clay);
- stone content (2-20mm, 20-50mm, >50mm);
- pH and electrical conductivity values;
- exchangeable sodium percentage;
- major plant nutrients (N, P, K, Mg);
- organic matter content;
- C:N ratio;
- heavy metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Se, Zn, B);
- total cyanide and total (mono) phenols;
- aromatic and aliphatic TPH (C5-C35 banding);
- speciated PAHs (US EPA16 suite);
- benzene, toluene, ethylbenzene, xylene (BTEX);
- asbestos screen.

The results are presented on the attached Certificate of Analysis and an interpretation of the results is given below.

RESULTS OF ANALYSIS

***Detailed Particle Size Analysis and Stone* Content**

The sample fell into the *loamy sand* texture class. Further detailed particle size analysis found the sample to have a sufficiently narrow particle size distribution and a predominance of *fine sand* (0.05-0.15mm) and *medium sand* (0.25-0.50mm). This is usually ideal for topsoil in general landscape applications as reasonable porosity levels can be maintained in a consolidated state and the risk of particle interpacking is reduced. This type of grading therefore normally provides adequate water attenuation, drainage and aeration properties for general landscape applications.

The sample was virtually stone-free and as such, stones should not restrict the use of the soil for general landscape purposes.

pH and Electrical Conductivity Values

The sample was strongly alkaline in reaction (pH 8.4). This pH value would be considered suitable for general landscape purposes provided species with a wide pH tolerance or those known to prefer alkaline soils are selected for planting, turfing and seeding.

The electrical conductivity (salinity) value (water extract) was moderate, which indicates that soluble salts should not be present at levels that would be harmful to plants.

The electrical conductivity value by $CaSO_4$ extract (*BS3882* requirement) fell below the maximum specified value (3300 µS/cm) given in *BS3882:2015 – Table 1.*

Organic Matter and Fertility Status

The sample was adequate to well supplied with organic matter and all major plant nutrients.

The C:N ratio of the sample was acceptable for general landscape purposes.

Potential Contaminants

With reference to *BS3882:2015 - Table 1*: Notes 3 and 4, there is a requirement to confirm levels of potential contaminants in relation to the topsoil's proposed end use. This includes human health, environmental protection and metals considered toxic to plants. In the absence of site-specific assessment criteria, the concentrations that affect human health have been compared with the *residential with home grown produce* land use in the Suitable For Use Levels (S4ULs) presented in *The LQM/CIEH S4ULs for Human Health Risk Assessment* (2015) and the DEFRA SP1010: *Development of Category 4 Screening Levels* (C4SLs) *for Assessment of Land Affected by Contamination – Policy Companion Document* (2014).

Of the potential contaminants determined, none was found at levels that exceeded their guideline values.

Phytotoxic Contaminants

Of the phytotoxic (toxic to plants) contaminants determined (copper, nickel, zinc), none was found at levels that exceeded the maximum permissible levels specified in *BS3882:2015 – Table 1.*

CONCLUSION

The purpose of the analysis was to determine the suitability of the topsoil sample for general landscape purposes. The analysis has also been undertaken to determine the sample's compliance with the requirements of the British Standard for Topsoil *(BS3882:2015 – Specification for topsoil and requirements for use – Table 1, Multipurpose Topsoil).*

From the soil examination and subsequent laboratory analysis, the sample was described as a strongly alkaline, non-saline, slightly calcareous *loamy sand* with an adequate structure and very low stone content. The sample contained sufficient reserves of organic matter and all major plant nutrients. Of the potential contaminants determined, none exceeded their respective guideline values.

To conclude, based on our findings, the topsoil represented by this sample would be considered suitable for general landscape purposes (trees, shrubs and amenity grass), provided species with a wide pH tolerance or those known to prefer alkaline soils are selected and the physical condition of the soil is satisfactory.

The topsoil was also fully compliant with the requirements of the British Standard for Topsoil *(BS3882:2015 – Specification for Topsoil – Table 1, Multipurpose Topsoil).*

General Landscape Environments

Rootballed Trees

The most demanding planting environment is semi-mature, pit planted trees. Trees of this size and age have grown accustomed to optimum growing conditions in the nursery, and these need to be replicated when the rootballed or containerised tree is planted in the pit. In particular, aeration and drainage around the rootball are critical. Without these properties, trees will very quickly suffer and possibly die during their first few growing seasons after planting.

Shrubs

Containerised shrubs are generally more tolerant of a wider range of soil-types, and they require less topsoil to root into than trees. The topsoil would be suited to a range of shrubs typically used in commercial and domestic landscaping.

Forestry Stock

Less demanding planting habitats include indigenous woodland planting, planted as small whips and feathered trees. The topsoil would be suitable for such planting environments.

Amenity Grass

This soil would be considered suitable for amenity grass seeding and turfing

Sports Pitches

This soil is suited for sports pitch construction given its high sand content. However, all materials to be used for sports pitch construction, including topsoil, should be carefully considered in relation to the required performance and standard of the sports pitch.

Domestic Gardens

The horticultural properties of the soil would be suitable for domestic garden applications. In addition, of the potential contaminants determined, none was found at levels that would be considered elevated. However, permissible levels for potential contaminants do vary from site to site. Therefore, the suitability of topsoil represented by this sample for any particular project or development should be confirmed by comparing the results against the site's specific assessment criteria.

Soil Handling Recommendations

It is important to maintain the physical condition of the soil and avoid structural damage during all phases of soil handling (e.g. stockpiling, respreading, cultivating, planting, seeding or turfing). As a consequence, soil handling operations should be carried out when soil is reasonably dry and non-plastic (friable) in consistency.

It is important to ensure that the soil is not unnecessarily compacted by trampling or trafficking by site machinery, and soil handling should be stopped during and after heavy rainfall and not continued until the soil is friable in consistency. If the soil is structurally damaged and compacted at any stage during the course of soiling or landscaping works, it should be cultivated appropriately to relieve the compaction and to restore the soil's structure prior to any planting, turfing or seeding.

Further details on soil handling are provided in Annex A of *BS3882:2015*.

We hope this report meets with your approval and provides the necessary information. Please do not hesitate to contact the undersigned if we can be of further assistance.

Yours faithfully

Ross Friar
MEnvSci
Soil Scientist

Aaron Cross
BSc MSc MISoilSci
Senior Soil Scientist

For & on behalf of Tim O'Hare Associates LLP

Green-tech Ltd

TIM O'HARE ASSOCIATES
SOIL & LANDSCAPE CONSULTANCY

Client:	**Green-tech Ltd**
Project	**Barnsdale Landscape Grade Topsoil**
Job:	**Topsoil Analysis - BS3882:2015**
Date:	**07/03/2025**
Job Ref No:	**TOHA/25/1740/2/SS**

Sample Reference			**Landscape Grade Topsoil**
		Accreditation	
Clay (<0.002mm)	%	UKAS	5
Silt (0.002-0.05mm)	%	UKAS	18
Very Fine Sand (0.05-0.15mm)	%	UKAS	16
Fine Sand (0.15-0.25mm)	%	UKAS	30
Medium Sand (0.25-0.50mm)	%	UKAS	26
Coarse Sand (0.50-1.0mm)	%	UKAS	3
Very Coarse Sand (1.0-2.0mm)	%	UKAS	2
Total Sand (0.05-2.0mm)	%	UKAS	77
Texture Class (UK Classification)	–	UKAS	LS
Stones (2-20mm)	% DW	GLP	1
Stones (20-50mm)	% DW	GLP	0
Stones (>50mm)	% DW	GLP	0
pH Value (1:2.5 water extract)	units	UKAS	8.4
Electrical Conductivity (1:2.5 water extract)	uS/cm	UKAS	947
Electrical Conductivity (1:2 $CaSO_4$ extract)	uS/cm	UKAS	2864
Exchangeable Sodium Percentage	%	UKAS	3.2
Organic Matter (LOI)	%	UKAS	3.4
Total Nitrogen (Dumas)	%	UKAS	0.19
C : N Ratio	ratio	UKAS	11
Extractable Phosphorus	mg/l	UKAS	56
Extractable Potassium	mg/l	UKAS	1145
Extractable Magnesium	mg/l	UKAS	216
Total Arsenic (As)	mg/kg	MCERTS	3
Total Cadmium (Cd)	mg/kg	MCERTS	0.3
Total Chromium (Cr)	mg/kg	MCERTS	6
Hexavalent Chromium (Cr VI)	mg/kg	MCERTS	< 1.8
Total Copper (Cu)	mg/kg	MCERTS	14
Total Lead (Pb)	mg/kg	MCERTS	12
Total Mercury (Hg)	mg/kg	MCERTS	< 0.3
Total Nickel (Ni)	mg/kg	MCERTS	5
Total Selenium (Se)	mg/kg	MCERTS	< 1.0
Total Zinc (Zn)	mg/kg	MCERTS	52
Water Soluble Boron (B)	mg/kg	MCERTS	1.6
Total Cyanide (CN)	mg/kg	MCERTS	< 1.0
Total (mono) Phenols	mg/kg	MCERTS	< 1.0
Naphthalene	mg/kg	MCERTS	< 0.05
Acenaphthylene	mg/kg	MCERTS	< 0.05
Acenaphthene	mg/kg	MCERTS	< 0.05
Fluorene	mg/kg	MCERTS	< 0.05
Phenanthrene	mg/kg	MCERTS	< 0.05
Anthracene	mg/kg	MCERTS	< 0.05
Fluoranthene	mg/kg	MCERTS	< 0.05
Pyrene	mg/kg	MCERTS	< 0.05
Benzo(a)anthracene	mg/kg	MCERTS	< 0.05
Chrysene	mg/kg	MCERTS	< 0.05
Benzo(b)fluoranthene	mg/kg	MCERTS	< 0.05
Benzo(k)fluoranthene	mg/kg	MCERTS	< 0.05
Benzo(a)pyrene	mg/kg	MCERTS	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	MCERTS	< 0.05
Dibenzo(a,h)anthracene	mg/kg	MCERTS	< 0.05
Benzo(g,h,i)perylene	mg/kg	MCERTS	< 0.05
Total PAHs (sum USEPA16)	mg/kg	MCERTS	< 0.80
Aliphatic TPH >C5 - C6	mg/kg	MCERTS	< 0.010
Aliphatic TPH >C6 - C8	mg/kg	MCERTS	< 0.010
Aliphatic TPH >C8 - C10	mg/kg	MCERTS	< 0.010
Aliphatic TPH >C10 - C12	mg/kg	MCERTS	< 1.0
Aliphatic TPH >C12 - C16	mg/kg	MCERTS	< 2.0
Aliphatic TPH >C16 - C21	mg/kg	MCERTS	< 8.0
Aliphatic TPH >C21 - C35	mg/kg	MCERTS	< 8.0
Aliphatic TPH (C5 - C35)	mg/kg	MCERTS	< 10
Aromatic TPH >C5 - C7	mg/kg	MCERTS	< 0.010
Aromatic TPH >C7 - C8	mg/kg	MCERTS	< 0.010
Aromatic TPH >C8 - C10	mg/kg	MCERTS	< 0.020
Aromatic TPH >C10 - C12	mg/kg	MCERTS	< 1.0
Aromatic TPH >C12 - C16	mg/kg	MCERTS	< 2.0
Aromatic TPH >C16 - C21	mg/kg	MCERTS	< 10
Aromatic TPH >C21 - C35	mg/kg	MCERTS	< 10
Aromatic TPH (C5 - C35)	mg/kg	MCERTS	< 10
Benzene	mg/kg	MCERTS	< 0.005
Toluene	mg/kg	MCERTS	< 0.005
Ethylbenzene	mg/kg	MCERTS	< 0.005
p & m-xylene	mg/kg	MCERTS	< 0.008
o-xylene	mg/kg	MCERTS	< 0.005
MTBE (Methyl Tertiary Butyl Ether)	mg/kg	MCERTS	< 0.005
Asbestos	ND/D	ISO 17025	Not-detected

LS = LOAMY SAND

Visual Examination

The topsoil was described as a dark reddish brown (Munsell Colour 5 YR 3/3) slightly moist, friable, slghtly calcareous LOAMY SAND with a weakly developed, fine to medium granular structure. The soil was virtually stone-free and contained moderate proportion of organic fines and occasional woody fragments. No unusual odours, deleterious materials, roots or rhizomes of pernicious weeds were observed.

Ross Friar
MEnvSci
Soil Scientist

Results of analysis should be read in conjunction with the report they were issued with

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Green-tech Ltd

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No 21950

RAND & ASQUITH

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New and Reclaimed Stone Sales

The Stone Yard, Halifax Road, Brighouse Hd6 2PL

Tel:01484 719263 01274 687128 (evenings). Fax: 01484 401420

VAT Reg. No: 427 4162 60. Company Reg. No: 1972949

Name..... Tm .....

Address.....

.....

20/10/25

Description	Tonnes	Price	£	p
muck tip				

Received by Cash/Cheque for the stone listed above of which I am the rightful owner, or on behalf of the rightful owner with his knowledge and consent

THE SUM OF £.....

SIGNED .....

Reg No. .....

Thank You
Your Business is Appreciated

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VAT Reg. No: 427 4162 60. Company Reg. No: 1972949

Name..... Tm .....

Address.....

.....

20/10/25

Description	Tonnes	Price	£	p
muck tip				

Received by Cash/Cheque for the stone listed above of which I am the rightful owner, or on behalf of the rightful owner with his knowledge and consent

THE SUM OF £.....

SIGNED .....

Reg No. .....

Thank You
Your Business is Appreciated

Appendix 3

Site Photographs



Photo 1: 01.11.25. Trench excavated by hand adjacent to the boundary and ash tree.



Photo 2: 01.11.25 Significant tree roots identified in the trench, assumed to be associated with ash tree.



Photo 3: 01.11.25 Roots were then further excavated to assess lateral extent. Thereafter all topsoil was removed to reveal the natural strata beneath. This was to be the formation level upon which a membrane/geotextile would be placed.



Photo 4: 21.10.25 Imported stone stockpile. Samples collected for testing prior to distribution.



Photo 5: 21.10.25 Imported topsoil stockpile. Samples collected for testing prior to distribution site wide.



Photo 6: 03.11.25 Placement of membrane/geotextile in RAZ post-root identification and topsoil removal.



Photo 7: 12.12.25 Topsoil placed above membrane. 180mm placed to bring back up to original level.



Photo 8: 21.10.25 Topsoil area at front of development. Picture taken prior to sunrise during a very wet period.



Photo 9: 21.10.25 Topsoil between 250mm and 300mm in thickness, placed on natural clay beneath.



Photo 10: 03.11.25 Photo showing placement of topsoil in RAZ. Patio (semi-permanent) placed on clay.



Photo 11: 12.12.25 Topsoil placement at side of property. Topsoil 200mm thickness, placed on natural clay beneath.

Appendix 4

Laboratory Testing - Chemical

Rogers Geotechnical Services Ltd
Offices 1&2 Barncliffe Business Pk
Near Bank, Shelley
Huddersfield
West Yorkshire
HD8 8LU

t: 01484 604354

e: harry.letch@rogersgeotech.co.uk

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: info-i2analytical@normecgroup.com

Analytical Report Number : 25-057362

Project / Site name:	672 Bradford Road, Birkenshaw	**Samples received on:**	22/10/2025
Your job number:	C4182-25-E-8639	**Samples instructed on/ Analysis started on:**	22/10/2025
Your order number:		**Analysis completed by:**	29/10/2025
Report Issue Number:	1	**Report issued on:**	29/10/2025
Samples Analysed:	7 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: 25-057362
Project / Site name: 672 Bradford Road, Birkenshaw

Lab Sample Number				725291	725292	725293	725294	725295
Sample Reference				Top01	Top02	Top03	Top04	Top05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.00	0.00	0.00	0.00	0.00
Date Sampled				21/10/2025	21/10/2025	21/10/2025	21/10/2025	21/10/2025
Time Taken				None Supplied	None Supplied	None Supplied	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	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	15	16	13	14	16
Total mass of sample received	kg	0.1	NONE	1.4	1.5	1.2	1.2	1.4
Asbestos								
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	MJN	MJN	MJN	MJN	MJN
Analysis completed	N/A	N/A	N/A	29/10/2025	29/10/2025	29/10/2025	29/10/2025	29/10/2025
General Inorganics								
pH (L099)	pH Units	N/A	MCERTS	8.1	8.2	8.1	8.2	8.2
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	150	160	160	150	130
Water Soluble SO_4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	77.1	80.2	80	73.8	67
Organic Matter (automated)	%	0.1	MCERTS	3.3	3	3.8	3.5	4.2
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.05	0.06
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.06
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80

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

Analytical Report Number: 25-057362
Project / Site name: 672 Bradford Road, Birkenshaw

Lab Sample Number				725291	725292	725293	725294	725295
Sample Reference				Top01	Top02	Top03	Top04	Top05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.00	0.00	0.00	0.00	0.00
Date Sampled				21/10/2025	21/10/2025	21/10/2025	21/10/2025	21/10/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	2.7	3.1	2.9	2.5	2.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	U/S *U/S g	U/S *U/S g	U/S *U/S g	U/S *U/S g	U/S *U/S g
Chromium (VI) by IC	mg/kg	1.8	NONE	< 1.80	< 1.80	< 1.80	< 1.80	< 1.80
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	5.8	10	6	6.3	6.1
Copper (aqua regia extractable)	mg/kg	1	MCERTS	18	16	16	15	15
Lead (aqua regia extractable)	mg/kg	1	MCERTS	18	17	17	15	16
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	5.9	7.8	7.6	6.6	5.8
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	7	7.9	7	6.6	6.8
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	49	52	47	46	46

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: 25-057362
Project / Site name: 672 Bradford Road, Birkenshaw

Lab Sample Number				725296	725297
Sample Reference				Top06	Cap01
Sample Number				None Supplied	None Supplied
Water Matrix				N/A	N/A
Depth (m)				0.00	0.00
Date Sampled				21/10/2025	21/10/2025
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	14	6.1
Total mass of sample received	kg	0.1	NONE	1.2	1.2

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	MJN	-
Analysis completed	N/A	N/A	N/A	29/10/2025	-

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8.2	9.3
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	140	-
Water Soluble SO_4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	71.4	-
Organic Matter (automated)	%	0.1	MCERTS	4.1	< 0.1

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	-
Fluoranthene	mg/kg	0.05	MCERTS	0.06	-
Pyrene	mg/kg	0.05	MCERTS	0.06	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	-
Chrysene	mg/kg	0.05	MCERTS	0.06	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.19	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.12	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.06	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	-

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

Analytical Report Number: 25-057362
Project / Site name: 672 Bradford Road, Birkenshaw

Lab Sample Number				725296	725297
Sample Reference				Top06	Cap01
Sample Number				None Supplied	None Supplied
Water Matrix				N/A	N/A
Depth (m)				0.00	0.00
Date Sampled				21/10/2025	21/10/2025
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		
Heavy Metals / Metalloids					
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	2.7	< 1.0
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	U/S [*U/S g]	< 1.8
Chromium (VI) by IC	mg/kg	1.8	NONE	< 1.80	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	8.3	1.6
Copper (aqua regia extractable)	mg/kg	1	MCERTS	61	5.5
Lead (aqua regia extractable)	mg/kg	1	MCERTS	18	< 1.0
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	6.6	1.6
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	1.3
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	8.4	2.5
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	51	7.9

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

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Analytical Report Number : 25-057362
Project / Site name: 672 Bradford Road, Birkenshaw

* 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 *
725291	Top01	None Supplied	0	Brown sand with vegetation
725292	Top02	None Supplied	0	Brown sand with vegetation
725293	Top03	None Supplied	0	Brown sand with vegetation
725294	Top04	None Supplied	0	Brown sand with vegetation
725295	Top05	None Supplied	0	Brown loam with gravel and vegetation
725296	Top06	None Supplied	0	Brown loam with gravel and vegetation
725297	Cap01	None Supplied	0	Non Soil. [*9]

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Analytical Report Number : 25-057362
Project / Site name: 672 Bradford Road, Birkenshaw

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	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
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
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Cr(VI) in soils by Ion chromatography	Determination of hexavalent chromium in alkaline soil extract by use of ion chromatography with spectrophotometric detection	In-house method	L130B	W	NONE
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
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080-PL	W	MCERTS
Free cyanide in soil	Determination of free 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
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	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

*U/S g- Unsuitable for analysis due to high colour intensity.

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

Analytical Report Number : 25-057362
Project / Site name: 672 Bradford Road, Birkenshaw

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

*g - Unaccredited sample matrix.

Analytical Report Number : 25-057362
Project / Site name: 672 Bradford Road, Birkenshaw

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container/Insufficient material provided c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
Top01	N/A	S	725291	b	Cr(VI) in soils by Ion chromatography	L130B	b
Top02	N/A	S	725292	b	Cr(VI) in soils by Ion chromatography	L130B	b
Top03	N/A	S	725293	b	Cr(VI) in soils by Ion chromatography	L130B	b
Top04	N/A	S	725294	b	Cr(VI) in soils by Ion chromatography	L130B	b
Top05	N/A	S	725295	b	Cr(VI) in soils by Ion chromatography	L130B	b
Top06	N/A	S	725296	b	Cr(VI) in soils by Ion chromatography	L130B	b

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

Appendix 5

Contamination Analyses

Rogers Geotechnical Services: Soil Screening Values Comparison Sheet

Rogers Geotechnical Services Ltd: Soil Screening Value (SSV) Comparison Sheet

Job Number	C4182/25/E
Job Name	672 Bradford Rd, Birkenshaw
Date	22.12.25
Client	Nathan Hal

A = WS Atkins PLC, Atrisk Soil Screening Values.
A+ = Values updated June 2017.
A* = Atrisk's SSV is lower than i2's detectable limit for this compound.
B = health criterion values, which are available from toxicological reviews published in the C4SL project methodology report.
C = Category 4 Screening Levels (C4SLs) based on 6% soil organic matter.
D = Value provided is based on Methyl Mercury. Should elemental mercury be observed or a source be known then a limit of 102 should be used.

KEY
- Exceeds SSV
- Exceeds 2017, Below 2015
- Below limit of detection (LOD)

Determinand	Units	Ref	LOD	Residential Without Plant Uptake 1%		Sample Location	Top01	Top02	Top03	Top04	Top05	Top06	Cap01			
				Atrisk 2015 (No Free Product	Atrisk 2017	Depth Top										
						Depth Base										
Cadmium	mg/kg	C	0.2		149		0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2			
Chromium (Hexavalent)	mg/kg	B/C	1.8	20.5	3.62		< 1.80	< 1.80	< 1.80	< 1.80	< 1.80	< 1.80				
Copper	mg/kg	A+	1.0		9060		18	16	16	15	15	61	5.5			
Mercury	mg/kg	A/D	0.3		10		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3			
Nickel	mg/kg	A+	1.0		188		5.9	7.8	7.6	6.6	5.8	6.6	1.6			
Lead	mg/kg	C	1.0		313		18	17	17	15	16	18	< 1.0			
Zinc	mg/kg	A+	1.0		47000		49	52	47	46	46	51	7.9			
Vanadium	mg/kg	A+	1.0		357		7	7.9	7	6.6	6.8	8.4	2.5			
Arsenic	mg/kg	C	1.0		39.9		2.7	3.1	2.9	2.5	2.6	2.7	< 1.0			
Selenium	mg/kg	A	1.0		595		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.3			
Cyanide (Free)	mg/kg	A	1.0		34		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0			
Naphthalene	mg/kg	A+	0.05		0.851		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05				
Acenaphthylene	mg/kg		0.05				< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05				
Acenaphthene	mg/kg	A+	0.05	2680	156		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05				
Fluorene	mg/kg	A+	0.05	3260	124		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05				
Phenanthrene	mg/kg		0.05				< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05				
Anthracene	mg/kg	A+	0.05	34300	3.48		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05				
Fluoranthene	mg/kg	A+	0.05		4880		< 0.05	< 0.05	< 0.05	0.05	0.06	0.06				
Pyrene	mg/kg	A+	0.05		3650		< 0.05	< 0.05	< 0.05	< 0.05	0.06	0.06				
Benzo[a]anthracene	mg/kg	A	0.05	5.42	1.71		< 0.05	< 0.05	< 0.05	0.05	< 0.05	< 0.05				
Chrysene	mg/kg	A	0.05	852	0.44		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06				
Benzo[b]fluoranthene	mg/kg	A	0.05	9.68	1.22		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.19				
Benzo[k]fluoranthene	mg/kg	A	0.05	99.7	0.686		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05				
Benzo[a]pyrene	mg/kg	B/C	0.05	5.33	2.17		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.12				
Indeno(1,2,3-c,d)Pyrene	mg/kg	A*	0.05	9.53	0.0614		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06				
Dibenz(a,h)Anthracene	mg/kg	A	0.05	0.949	0.00393		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05				
Benzo[g,h,i]perylene	mg/kg	A	0.05	102	0.0187		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05				
Total Of 16 PAH's	mg/kg		0.8													
pH			N/A				**8.1**	8.2	**8.1**	8.2	8.2	8.2	**9.3**			
Sulphate (2:1 Water Soluble) as SO4	g/l		0.00125				77.1	**80.2**	80	73.8	**67**	71.4				
Asbestos Identification	%						Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected			
Organic Matter	%		0.1				3.3	**3**	3.8	3.5	**4.2**	4.1	< 0.1			