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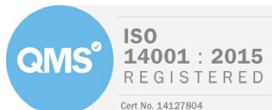


PHASE 4 VALIDATION REPORT

job number	C4477/25/E/8063	date	10.07.2025
site address	The Shears, 210 Halifax Road, Liversedge, West Yorkshire, WF15 6NR		
written by	S. Hale	checked by	R. Palmer
issued by	S. Hale		



Please consider the environment before printing this report.



<ENVIRONMENTAL> <GEOTECHNICAL>



Environmental
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Specialists

Rogers Geotechnical Services Ltd
Offices 1 & 2 Barncliffe Business Park, Near Bank, Shelley, Huddersfield, HD8 8LU
☎ 01484 604354 Company No. 5130864

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Phase 4: Validation Report of Remediation

Location:	The Shears 210 Halifax Road, Liversedge, West Yorkshire, WF15 6NR		
For:	Andrew Mitchell		
Consultants:	One 17 Architects & Interior Designers		
Report No.	C4477/25/E/8063	Report date:	July 2025

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

Steven Hale BSc FGS Geo-environmental Technician		Rob Palmer MSc FGS ACIEH Engineering Director	

1. Introduction

The land associated with the Shears, 210 Halifax Road has now been developed by the construction of a pair of detached dwellings and the conversion of existing public house to form one dwelling, along with associated garden areas and parking. The majority of the site is to comprise hard standing, however, the rear gardens of the new dwellings were constructed with soft landscaping.

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.

This report has been produced on the understanding that a Remediation Statement has been submitted and agreed with the local planning authority.

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 April 2025 (Ref: C4477/25/E/7515). This report concludes that the made ground can be classified as generally contaminated by lead, arsenic and PAHs and therefore remediation would be required.

2.2 Proposed Remediation Strategy

As part of the part of a planning consent a remediation strategy/scheme has been produced by Rogers Geotechnical Services in May 2025 (Ref: C4477/25/E/8004). The general layout of the site can be found within the site plan provided by the client which is presented in Appendix 1.

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. Transfer notes for the material imported to site are presented in Appendix 2.

Table 1: Validation Sampling and Testing			
Type of Material	Source of Material	Volume of imported Material	No. Samples Required
Topsoil	Manufactured - The topsoil was imported from Tommy Topsoil, Pine Trees Farm, Hubberton, Sowerby Bridge, Halifax, HX6 1NT.	32m ³	3 (The greater of a minimum of 3 or 1 per 250m ³ - SEE YALPAG)
Capillary Break	Quarried Stone - Type 1 Sub-base – Lightwater Quarries Ltd	9m ³	Minimum 1 per 500m ³

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. Fieldworks

The fieldworks were undertaken on the 24th June 2025 and included the investigation of the two positions shown on the site plan which is presented in Appendix 1 to this report. Appendix 3 of this report contains the photographs taken at the time of the fieldworks and the trial pit logs.

The positions were excavated employing hand digging techniques in order to reveal the nature of the near surface soils. The soils were logged on site in general accordance with BS5930: 2015 +A1:2020.

Samples were taken from the stockpiles present on site for chemical testing. The chemical test specimens were retained in the appropriate air tight containers within cool boxes for onward transition to the laboratory.

5. Strata Conditions

In accordance with the geology of the area, the succession has been shown to include the following:

Table 2: Generalised Strata Profile

Depth m below ground level to underside of layer	Strata Type	Positions Layer Revealed	Groundwater Strikes m below ground level
0.55	Topsoil (Dark brown, organic, silty, fine to coarse SAND).	All	None
0.75	Capillary Break (Cream, sandy, angular to sub-angular and fine to coarse GRAVEL of limestone)	All	None

'+' denotes that the strata extended below the termination depth of the investigated positions, thus the extent of the deposit is only proven to the depths indicated.

6. Laboratory Testing - Environmental

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

Manufactured Soil Suite

- Standard metals/metalloids As, Cd, Cr, CrVI, Cu, Hg, Ni, Pb, Se, V, Zn
- Free CN-, PAH (16 USEPA), TPH (CWG banded), Phenols
- Asbestos
- pH, total/soluble SO₄²⁻, Organic content (Soil Organic Matter)

Hardcore Suite

- Standard metals/metalloids As, Cd, Cr, CrVI, Cu, Hg, Ni, Pb, Se, V, Zn
- Free CN-, PAH (16 USEPA)
- Asbestos Screen
- pH, total/soluble SO₄²⁻, Organic content (Soil Organic Matter)

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

7. Discussion of Ground Conditions - Environmental

The site has been developed by the construction of a pair of detached dwellings and the conversion of existing public house to form one dwelling, along with associated garden areas and parking. Consequently, the site may be classified as residential with plant uptake.

7.1 Discussion of Test Results

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. With respect to the results it should be appreciated that the soil organic matter (SOM) content for the samples tested was found to range between 0.5% and 11.0%. On this basis, it is considered that the screening values associated with 6% SOM should be adopted. 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 website¹ 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 4. These results indicate the following:

Table 3: Summary of Contamination Results

Location	Depth (m)	Contaminants found to be exceeding SSVs (Residential without Plant Uptake)
Stockpile 1	N/A	None.
Stockpile 1	N/A	None.
Stockpile 1	N/A	None.
Stockpile 2	N/A	None.

Concentrations of Chromium, Mercury, Cyanide (Free), and petroleum hydrocarbons (aromatic C5 to C21 and aromatic C5 to C21) were below the detection limits for the tests. Detectable levels of all other contaminants were recorded, but these fell below the associated Atrisk Soil Screening Values. In addition, the asbestos screen found no asbestos detected.

On the basis of the above the material tested may be considered as uncontaminated and suitable for the site end-use.

¹ <http://www.atrisksoil.co.uk/pages/general/subscribers.asp>

8. Discussion of Ground Conditions – Validation Requirements

8.1 Validation of Clean Cover

It is concluded that the imported material being placed as a capping at the site has been obtained from a single supplier and comprises topsoil (brown organic silty sand). This material will prove suitable as a growing medium and is free from obvious contamination (i.e. visual or olfactory evidence) and unsuitable material (i.e. whole bricks, brick ties, timber or glass).

Further to the photographic records, the excavations at the validation positions and the chemical testing, it is considered that garden and soft landscaping areas at the site have been filled with in excess of 0.5m of topsoil suitable for the site use. Moreover, it is understood, and observed from the upper surface, that 0.2m of granular material forming a capillary break is present underlaying the topsoil.

As a consequence, it is apparent that 0.6m of clean cover has been placed above the made ground within the garden and soft landscaped areas around the properties at the site. Therefore, the made ground and the contamination within it have been enclosed, put beyond end-users dig range and capped by a capillary break which will inhibit the down migration of root growth. As a consequence, it is considered that the risk to garden plants, end-users from dermal contact with the soil and end-users and neighbours from the inhalation of dust, ingestion of soil or dust and the ingestion of contaminated fruit and vegetables is mitigated and may be considered as low.

On the basis of the information provided above it is concluded that a sufficient thickness of clean cover has been placed within the soft landscaped areas. It is considered that the end users will be protected from ingestion or dermal contact with contaminated soil. No further action is required.

9. 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.

10. 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

Halifax Road

Notes:



Rogers Geotechnical Services Ltd

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Business Park,
Near Bank,
Shelley,
Huddersfield,
HD8 8LU

Telephone: 0843 50 66 87
www.rogersgeotech.co.uk

Client:

Andrew Mitchell

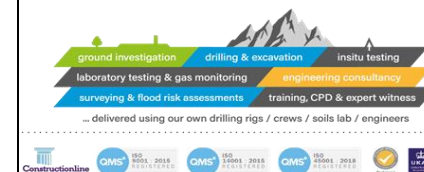
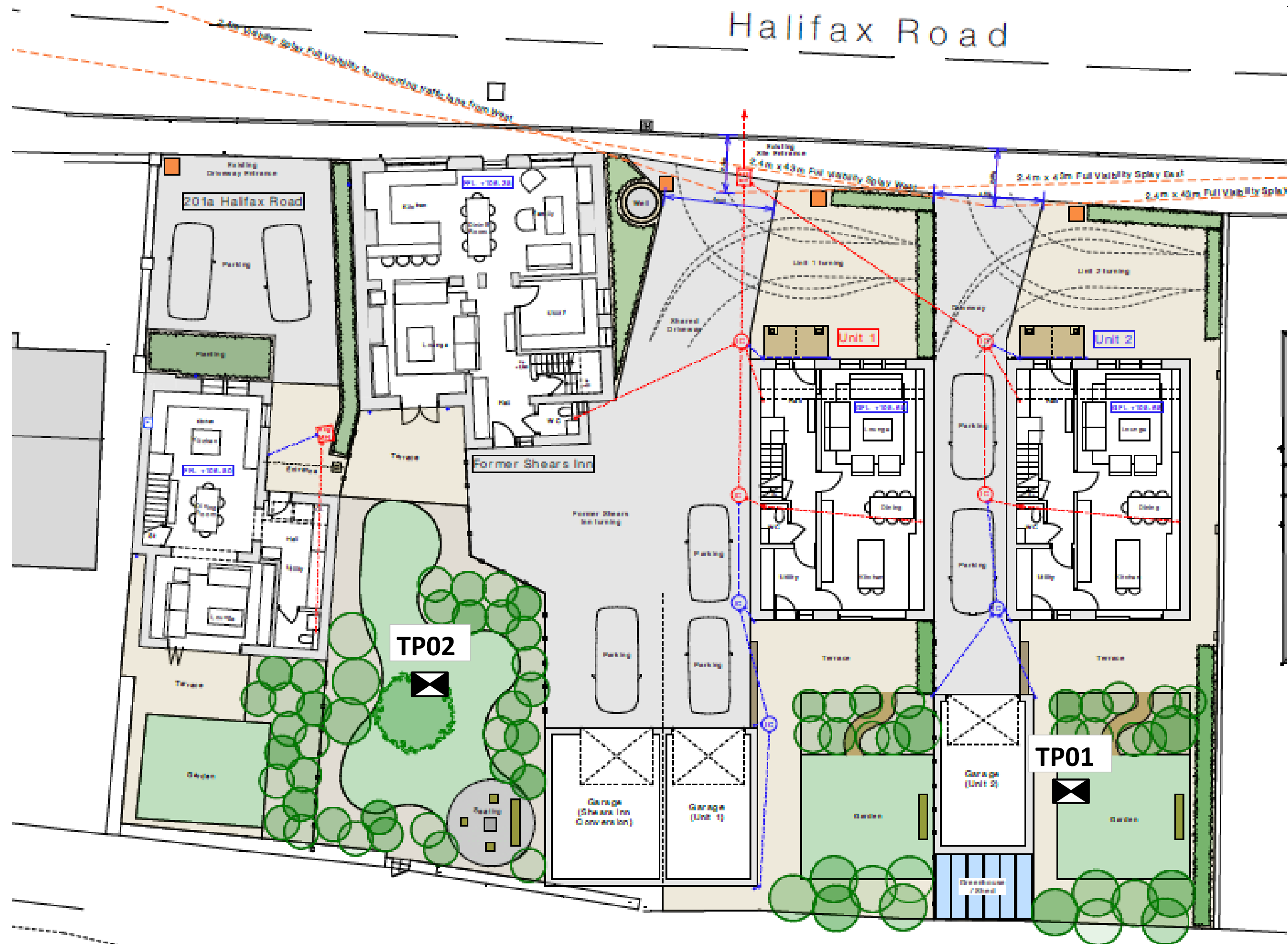
Job Number:

C4477/25/E/8063

Project Details:

The Shears, Liversedge

Scale: Not to scale - reference only



Appendix 2

Transfer Notes

LIGHTWATER QUARRIES LIMITED
Potgate Quarry, North Stainley,
RIPON, HG4 3JN
Tel: 01765 635435/01765 635436 Fax: 01765 635413

Ticket No. DPOT/0081506
Loaded 28/04/25 06:00
Loaded at Gebdykes
Delivery 28/04/25 06:00
Customer Myers Building Supplies Ltd
Cus O/N 429940
Site Address THE SHEARS PUB, LIVERSEEDGE
201 HALIFAX ROAD
LIVERSEEDGE

Site Phone WF15 6NR 07793 744909
Site Contact ALICK

Directions
W3W

Product		Weight (Tonnes)
TYPE 1 SUB - BASE CL803 (Gebdykes)		Gross: 31.84
		Tare: 11.64
		Net: 20.20
Reg No PX71LPL	ALL LOADS MUST BE SHEETED	
Driver		
Lightwater Quarries Ltd		
TICK BOX ON ALL THREE TICKETS		WAITING TIME
Waiting Time		On Site
Returned Load		Off Site
		Net Time

This vehicle may leave the hard road on your instructions and at the driver's discretion provided you accept responsibility for any damage to your own or third parties property or personnel. The company cannot accept responsibility once the vehicle has left the public highway

SIGNED Please sign below to accept any liabilities

LIGHTWATER
QUARRIES

SIGNED
CUSTOMER

PRINT
NAME

Conforms to WEIGHTS AND MEASURES



Tommy Topsoil
Pine Trees Farm
Hubberton
Sowerby Bridge
HX6 1NT

Tel: 01422 831112
sales@tommytopsoil.com
www.tommytopsoil.com

INVOICE

Mr Mark Town

Delivery to:

Sheards Inn
Halifax Road
Liversage
WF15 6NR

mark@townkitchens.com

O/No: Mark Town

VAT NO: 183970725

Invoice Date: 20th June 2025

Invoice No: 158734

Qty	Item	VAT	Price	Total
16	m3 Sandy Topsoil	T1	Total £1,098.00	£915.00
		T0 T1		£915.00
			VAT on T1 @ 20%	£183.00
			Total	£1,098.00

PAID IN FULL THANK YOU

BACS Details

Yorkshire Bank plc
Account Name: Daisy Lea Poultry Farm Ltd
AC: 36036060 Sort Code: 05 09 24



Tommy Topsoil
Pine Trees Farm
Hubberton
Sowerby Bridge
HX6 1NT

Tel: 01422 831112
sales@tommytopsoil.com
www.tommytopsoil.com

INVOICE

Mr Mark Town

Delivery to:

Sheards Inn
Halifax Road
Liversage
WF15 6NR

mark@townkitchens.com

O/No: Mark Town

VAT NO: 183970725

Invoice Date: 23rd June 2025

Invoice No: 158745

Qty	Item	VAT	Price	Total
16	m3 Sandy Topsoil	T1	Total £1,098.00	£915.00
		T0 T1		£915.00
			VAT on T1 @ 20%	£183.00
			Total	£1,098.00

PAID IN FULL THANK YOU

BACS Details

Yorkshire Bank plc
Account Name: Daisy Lea Poultry Farm Ltd
AC: 36036060 Sort Code: 05 09 24

Appendix 3

Site Photographs and Trial Pit Records



Photo 1: TP01



Photo 2: TP02



Photo 3: Capillary break



Photo 4: Topsoil stockpile



Rogers Geotechnical Services Ltd

Offices 1 & 2, Barncliffe Business Park,
Near Bank, Shelley,
Huddersfield,

Job No:

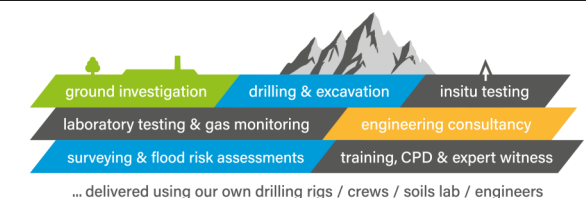
C4477/25/E/8063

Site:

The Shears,
210 Halifax Road,
Liversedge,
West Yorkshire,
WF15 6NR

Client:

Andrew Mitchell





Appendix 4

Laboratory Testing - Environmental

Rogers Geotechnical Services Ltd
Offices 1&2 Barncliffe Business Pk
Near Bank, Shelley
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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: reception@i2analytical.com

Analytical Report Number : 25-033800

Project / Site name:	The Shears	Samples received on:	25/06/2025
Your job number:	C4477	Samples instructed on/ Analysis started on:	25/06/2025
Your order number:		Analysis completed by:	04/07/2025
Report Issue Number:	1	Report issued on:	04/07/2025
Samples Analysed:	4 soil samples		

Signed:

Joanna Wawrzeczko
Senior Reporting Specialist
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.

Analytical Report Number: 25-033800

Project / Site name: The Shears

Lab Sample Number	595096	595097	595098	595099
Sample Reference	Stockpile 1	Stockpile 1	Stockpile 1	Stockpile 2
Sample Number	ES1	ES2	ES3	ES4
Water Matrix	N/A	N/A	N/A	N/A
Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled	24/06/2025	24/06/2025	24/06/2025	24/06/2025
Time Taken	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	35.9
Moisture Content	%	0.01	NONE	29	29	28	14
Total mass of sample received	kg	0.1	NONE	1.2	0.8	0.9	0.7

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	MJN	MJN	MJN	MJN
Analysis completed	N/A	N/A	N/A	02/07/2025	02/07/2025	02/07/2025	02/07/2025

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	7.9	7.7	7.8	9.2
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO ₄	%	0.005	MCERTS	0.773	0.859	1.18	0.05
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	8000	6800	13000	50
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	4020	3390	6340	-
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	-	-	-	24.9
Organic Matter (automated)	%	0.1	MCERTS	11	10	10	0.5

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
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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	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.2	0.26	0.15	0.08
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.06	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.4	0.4	0.32	0.25
Pyrene	mg/kg	0.05	MCERTS	0.35	0.35	0.29	0.28
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.17	0.19	0.15	0.22
Chrysene	mg/kg	0.05	MCERTS	0.2	0.2	0.18	0.23
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.26	0.28	0.24	0.42
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.11	0.11	0.11	0.21
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.19	0.24	0.17	0.39
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.13	0.15	0.13	0.23
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.06
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.11	0.08	0.06	0.08

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	2.12	2.32	1.80	2.45
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Analytical Report Number: 25-033800

Project / Site name: The Shears

Lab Sample Number				595096	595097	595098	595099
Sample Reference				Stockpile 1	Stockpile 1	Stockpile 1	Stockpile 2
Sample Number				ES1	ES2	ES3	ES4
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				24/06/2025	24/06/2025	24/06/2025	24/06/2025
Time Taken				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	3.9	2.8	5	1.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.3	< 0.2	0.3	0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	11	11	13	3.8
Copper (aqua regia extractable)	mg/kg	1	MCERTS	31	36	39	4.9
Lead (aqua regia extractable)	mg/kg	1	MCERTS	38	23	46	18
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	9.5	5.6	10	3
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	1.2	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	12	7.2	13	6.3
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	130	130	140	45

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	-
TPHCWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	-
TPHCWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	-
TPHCWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
TPHCWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	-
TPHCWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	-
TPHCWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	MCERTS	49	35	41	-
TPHCWG - Aliphatic >EC5 - EC35 EH_CU+HS_1D_AL	mg/kg	10	NONE	49	35	41	-

TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	-
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	-
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	-
TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	-
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	< 10	< 10	< 10	-
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	28	22	25	-
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	28	22	25	-

Petroleum Range Organics (EC6 - EC10) HS_1D_TOTAL	mg/kg	1	ISO 17025	-	-	-	< 1.0
TPH (EC10 - EC25) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	-	-	-	< 10
TPH (EC25 - EC40) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	-	-	-	< 10

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-

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

Analytical Report Number : 25-033800

Project / Site name: The Shears

* 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 *
595096	Stockpile 1	ES1	None Supplied	Brown loam and sand with gravel and vegetation
595097	Stockpile 1	ES2	None Supplied	Brown loam and sand with gravel and vegetation
595098	Stockpile 1	ES3	None Supplied	Brown loam and sand with gravel and vegetation
595099	Stockpile 2	ES4	None Supplied	Brown sand with gravel and stones

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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
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES	In-house method	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	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 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
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
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
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
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088-PL	D/W	MCERTS

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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 petroleum hydrocarbons by HS-GC-MS in soil	Determination of total petroleum hydrocarbons in soil by HS-GC-MS	In-house method	L129-PL	W	ISO 17025

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



Rogers Geotechnical Services: Soil Screening Values Comparison Sheet



Rogers Geotechnical Services Ltd: Soil Screening Value (SSV) Comparison Sheet															
Job Number	C4477/25/E/8063			<div>A = WS Atkins PLC, Atrisk Soil Screening Values. A+ = Values updated June 2017. A* = Atrisk's SSV is lower than 12'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.</div> <div><div>KEY</div><div><div></div>Exceeds SSV</div><div><div></div>Exceeds 2017, Below 2015</div><div><div></div>Below limit of detection (LOD)</div></div> <div></div>											
Job Name	The Shears														
Date	09.07.2025			Sample Location	Stockpile 1	Stockpile 1	Stockpile 1	Stockpile 2							
Client	Andrew Mitchell			Depth Top	N/A	N/A	N/A	N/A							
				Depth Base											
Determinand	Units	Ref	LOD	Residential With Plant Uptake 6%											
				Atrisk 2015 (No Free Product)	Atrisk 2017										
Cadmium	mg/kg	C	0.2		22.1	0.30	< 0.2	0.30	0.20						
Chromium (Hexavalent)	mg/kg	B/C	1.8	20.5	3.62	< 1.8	< 1.8	< 1.8	< 1.8						
Copper	mg/kg	A+	1.0		4790	31.00	36.00	39.00	4.90						
Mercury	mg/kg	A/D	0.3		15.8	< 0.3	< 0.3	< 0.3	< 0.3						
Nickel	mg/kg	A+	1.0		136	9.50	5.60	10.00	3.00						
Lead	mg/kg	C	1.0		200	38.00	23.00	46.00	18.00						
Zinc	mg/kg	A+	1.0		20300	130.00	130.00	140.00	45.00						
Vanadium	mg/kg	A+	1.0		138	12.00	7.20	13.00	6.30						
Arsenic	mg/kg	C	1.0		37	3.90	2.80	5.00	1.60						
Selenium	mg/kg	A	1.0		375	1.20	< 1.0	< 1.0	< 1.0						
Cyanide (Free)	mg/kg	A	1.0		34	< 1.0	< 1.0	< 1.0	< 1.0						
Total Phenols	mg/kg	A	1.0		1200	< 1.0	< 1.0	< 1.0							
Naphthalene	mg/kg	A+	0.05		12.2	< 0.05	< 0.05	< 0.05	< 0.05						
Acenaphthylene	mg/kg		0.05			< 0.05	< 0.05	< 0.05	< 0.05						
Acenaphthene	mg/kg	A+	0.05		2760	< 0.05	< 0.05	< 0.05	< 0.05						
Fluorene	mg/kg	A+	0.05		2610	< 0.05	< 0.05	< 0.05	< 0.05						
Phenanthrene	mg/kg		0.05			0.20	0.26	0.15	0.08						
Anthracene	mg/kg	A+	0.05		26200	< 0.05	0.06	< 0.05	< 0.05						
Fluoranthene	mg/kg	A+	0.05		2980	0.40	0.40	0.32	0.25						
Pyrene	mg/kg	A+	0.05		2120	0.35	0.35	0.29	0.28						
Benzo[a]anthracene	mg/kg	A	0.05		8.54	0.17	0.19	0.15	0.22						
Chrysene	mg/kg	A	0.05	927	2.64	0.20	0.20	0.18	0.23						
Benzo[b]fluoranthene	mg/kg	A	0.05	9.86	7.29	0.26	0.28	0.24	0.42						
Benzo[k]fluoranthene	mg/kg	A	0.05	100	4.12	0.11	0.11	0.11	0.21						
Benzo[a]pyrene	mg/kg	B/C	0.05	5	0.998	0.19	0.24	0.17	0.39						
Indeno(1,2,3-c,d)Pyrene	mg/kg	A*	0.05	9.75	0.368	0.13	0.15	0.13	0.23						
Dibenz(a,h)Anthracene	mg/kg	A	0.05	4.95	2.05	< 0.05	< 0.05	< 0.05	0.06						
Benzo[g,h,i]perylene	mg/kg	A	0.05	103	0.112	0.11	0.08	0.06	0.08						
Total Of 16 PAH's	mg/kg		0.8			2.12	2.32	1.80	2.45						
Aliphatic TPH >C5-C6	mg/kg	A+	0.01		369	< 0.010	< 0.010	< 0.010							
Aliphatic TPH >C6-C8	mg/kg	A+	0.01	1240	768	< 0.010	< 0.010	< 0.010							
Aliphatic TPH >C8-C10	mg/kg	A+	0.01		204	< 0.010	< 0.010	< 0.010							
Aliphatic TPH >C10-C12	mg/kg	A+	1.0	1180	297	< 1.0	< 1.0	< 1.0							
Aliphatic TPH >C12-C16	mg/kg	A+	2.0	4130	125	< 2.0	< 2.0	< 2.0							
Aliphatic TPH >C16-C21	mg/kg	A+	8.0		210100	< 8.0	< 8.0	< 8.0							
Aliphatic TPH >C21-C35	mg/kg	A+	8.0		210100	49.00	35.00	41.00							
Aliphatic TPH >C35-C44	mg/kg		10.0												
Total Aliphatic Hydrocarbons	mg/kg		10.0												
Aromatic TPH >C5-C7	mg/kg	A+	0.01		0.871	< 0.010	< 0.010	< 0.010							
Aromatic TPH >C7-C8	mg/kg	A+	0.01		780	< 0.010	< 0.010	< 0.010							
Aromatic TPH >C8-C10	mg/kg	A+	0.02		232	< 0.020	< 0.020	< 0.020							



Rogers Geotechnical Services: Soil Screening Values Comparison Sheet



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Job Number	C4477/25/E/8063			<p>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.</p>									
Job Name	The Shears			<p>KEY</p> <p> Exceeds SSV</p> <p> Exceeds 2017, Below 2015</p> <p> Below limit of detection (LOD)</p>									
Date	09.07.2025			Sample Location	Stockpile 1	Stockpile 1	Stockpile 1	Stockpile 2					
Client	Andrew Mitchell			Depth Top	N/A	N/A	N/A	N/A					
				Depth Base									
Determinand	Units	Ref	LOD	Residential With Plant Uptake 6%									
Aromatic TPH >C10-C12	mg/kg	A+	1.0		468	< 1.0	< 1.0	< 1.0					
Aromatic TPH >C12-C16	mg/kg	A+	2.0	830	830	< 2.0	< 2.0	< 2.0					
Aromatic TPH >C16-C21	mg/kg	A+	10.0		1040	< 10	< 10	< 10					
Aromatic TPH >C21-C35	mg/kg	A+	10.0		1710	28.00	22.00	25.00					
Aromatic TPH >C35-C44	mg/kg		10.0										
Total Aromatic Hydrocarbons	mg/kg		10.0										
Total Petroleum Hydrocarbons	mg/kg		10.0										
pH			N/A			7.90	7.70	7.80	9.20				
Sulphate (2:1 Water Soluble) as SO4	g/l		0.00125			4.020	3.390	6.340	0.025				
ACM Type			N/A			Not detected	Not detected	Not detected	Not detected				
Asbestos Identification	%												
ACM Detection Stage			N/A										
Moisture	%		0.01			29.00	29.00	28.00	14.00				
Soil Colour			N/A										
Other Material			N/A										
Soil Texture			N/A										
Sulphate (Total)	%		0.005										
Organic Matter	%		0.1			11.00	10.00	10.00	0.50				