

GEO-ENVIRONMENTAL AUDIT

PHASE 2 SITE INVESTIGATIONS

PHASE 3 REMEDIATION STATEMENT

PROPOSED RESIDENTIAL DEVELOPMENT
TRUB ROAD
CASTLETON
ROCHDALE
OL11 2WH

Author:

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Client:

Newbuild Developments

Reference:

rep-tjba-newbuild-trub rd-phs 2_3env-130524.docx

Revision	Date	Reason
0	July 2025	Phase 2 Site Investigations & assessment.

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CONTENTS:

1.	Phase 2 – Site Investigation & Assessment.....	3
1.1.	Introduction.	3
1.2.	Proposed Development.....	3
1.3.	GeoCon Site Investigations Ltd - Phase I Preliminary Risk Assessment.	4
1.4.	Site Investigations.....	5
1.5.	Final Risk Assessment.....	6
1.6.	Final Conceptual Model.	8
2.	Phase 3 - Remediation Statement.....	10
2.1.	Basic Site Details.....	10
2.2.	Conceptual Model (Final) & Relevant Pollution Linkages.....	10
2.3.	Recommendations:.....	10
2.4.	Additional Notes.....	10
3.	Appendix A: Figures.....	12
3.1.	Location Plan.....	12
3.2.	Proposed Development.....	13
3.3.	Site Investigation Plan.....	14
3.4.	TJBA Trial Hol Logs.	15
3.5.	TJBA Soil Analysis.	21
3.6.	EnviroLab Ltd Certificates.....	22
4.	Appendix B: Photos.....	28
5.	Appendix C: Landmark Envirocheck & Environmental Plans.....	29

1. PHASE 2 – SITE INVESTIGATION & ASSESSMENT.

1.1. Introduction.

T. J. Booth Associates have been appointed by Newbuild Developments to undertake a Phase 2 & 3 Geo-environmental Audit for a proposed residential development at Trub Lane, Castleton Rochdale.

The Application Site is located on the main trunk road between Rochdale and Middleton, and is a vacant plot of land/green open space.

There is currently an approved planning application for residential development, reference No. 22/00254/FUL, for the: "Erection of 4No. dwellings and associated boundary treatments".

The decision notice was issued in September 2022, and included a condition (No.4) for environmental assessment of the site, as follows:

- 11 Prior to commencement of the development an investigation and risk assessment, in addition to any assessment provided with the planning application, must be completed to assess the nature and extent of any contamination on the site, whether or not it originates on the site. The investigation and risk assessment must be undertaken by competent persons and a written report of the findings must be produced and shall have been first submitted to and approved in writing by the Local Planning Authority before development commences. The report of the findings must include:
- i) a survey of the extent, scale and nature of contamination
 - ii) an assessment of the potential risks to:
 - human health,
 - property (existing or proposed) including buildings, crops, livestock, pets, woodland, and service lines and pipes,
 - adjoining land,
 - groundwaters and surface waters,
 - ecological systems,
 - archeological sites and ancient monuments;

iii) where unacceptable risks are identified, an appraisal of remedial options and proposal of the preferred option(s)

The development shall thereafter be carried out in full accordance with the duly approved remediation strategy and a verification report submitted to and approved in writing by the Local Planning Authority before any of the buildings hereby approved are first occupied.

T J Booth Associates were subsequently employed to undertake environmental assessment of the Site.

A previous preliminary risk assessment report was undertaken by the Geocon Site Investigations Ltd in September 2020, ref: L0396 IW (GSI1351) PI Report IS HA 170920.

This report provides a desk-based study & intrusive ground investigation based on current UK guidance for environmental investigation within the construction industry.

Principal to the assessment is the potential for contamination pollutant linkages via the Land Contamination Risk Management (LCRM) source-pathway-receptor methodology. Assessment of potential pollution linkages is primarily undertaken in strict accordance with BS 5930:2015, BS 10175:2011+A2:2017, CIRIA C665, and BS 8485:2015+A1:2019 et al.

1.2. Proposed Development.

The proposal is for redevelopment of the site for residential purposes.

The development will comprise the erection of 4 masonry terraced residential dwellings.

The dwellings will front onto Manchester Road, set back off the kerb with a small private access strip to each property.

There will be private soft landscaped gardens to the rear of the properties.

A shared private access driveway and parking will be accessible off Trub Road to the rear of the development.

1.3. GeoCon Site Investigations Ltd - Phase I Preliminary Risk Assessment.

As indicated in the introduction, a preliminary risk assessment report was undertaken by the Geocon Ltd.

The assessment produced a conceptual model to be considered for the site, which is tabulated below:

Table 5.1: Preliminary Conceptual Site Model and Potential Pollutant Linkages

Potential Sources	Contaminants of Concern	Potential Pathway	Potential Receptor	Likelihood	Severity	Pollutant Linkage	Risk Classification	Action / Mitigation
Made Ground both on site and within influencing distance of the site Current and former land uses both on site and within influencing distance of the site	Heavy metals, sulphates and inorganics PAH's Asbestos Mobile organic contamination SVOC's and VOC's	Ingestion Inhalation Dermal Contact	Human health animals and plants: Including current site users, future site users, neighbouring residents and constructions workers	Possible	High	Considered potentially active	Low to Moderate	Site investigation to confirm presence, type and extent of any contamination beneath the site.
Made Ground on site Current and former land uses on site	Heavy metals, sulphates and inorganics PAH's Leachable contamination	Lateral and vertical migration and leaching of contaminants into surface water bodies via permeable strata and features.	Local water courses and associated flora and fauna	Possible	High	Considered potentially active	Low	Site investigation to confirm presence, type and extent of any contamination beneath the site.
Made Ground on site Current and former land uses on site	Heavy metals, sulphates and inorganics PAH's Leachable contamination	Lateral and vertical migration and leaching of contaminants into local groundwater	Underlying Aquifer (Drinking water)	Unlikely	High	Considered inactive	Very low	No further action, however, if Made Ground or any visual or olfactory evidence of contamination is encountered on site then this risk will need to be reassessed.
Made Ground beneath the site Current and former site uses	Phytotoxic elements	Plant uptake	Plants and vegetation	Possible	Low	Considered potentially active	Low	Site investigation to confirm presence, type and extent of any contamination beneath the site.
Landfill sites Potentially infilled Land (ponds, quarries, reservoirs etc) Made Ground	Hazardous ground gases including CO ₂ , CH ₄ CO, H ₂ S Vapours	Inhalation	Human health animals and plants: Including current site users, future site users, neighbouring residents and constructions workers	Possible	High	Considered potentially active	Low to Moderate	Site investigation to install gas monitoring wells with subsequent monitoring in accordance with CIRIA 665 is carried out at the site.
Natural organic soils Coal mining (on and off-site sources)								
Landfill sites Potentially infilled Land (ponds, quarries, reservoirs etc) Made Ground Natural organic soils Coal mining (on and off-site sources)	Hazardous ground gases including CO ₂ , CH ₄ CO, H ₂ S Vapours	Explosion	Buildings	Possible	High	Considered potentially active	Low to Moderate	Site investigation to install gas monitoring wells with subsequent monitoring in accordance with CIRIA 665 is carried out at the site.

1.3.1. Conceptual Model Summary.

The primary risks to/from the development are considered to be associated with the following:

- Potential made ground beneath the site due to historic development, and the potential for contaminants to affect receptors such as human (health), controlled waters, and regional aquifers.
- There is also low to moderate risks associated with anthropogenic landfill both on and off the site, associated with sand & gravel pits 173m southeast, and a small private infilled pond to the 194m southwest.
- The report did note that radon was low, noting a risk of <1% of homes at or above the action level. However, since the report was authored, maps have been updated, and risk levels have changed.

1.4. Site Investigations.

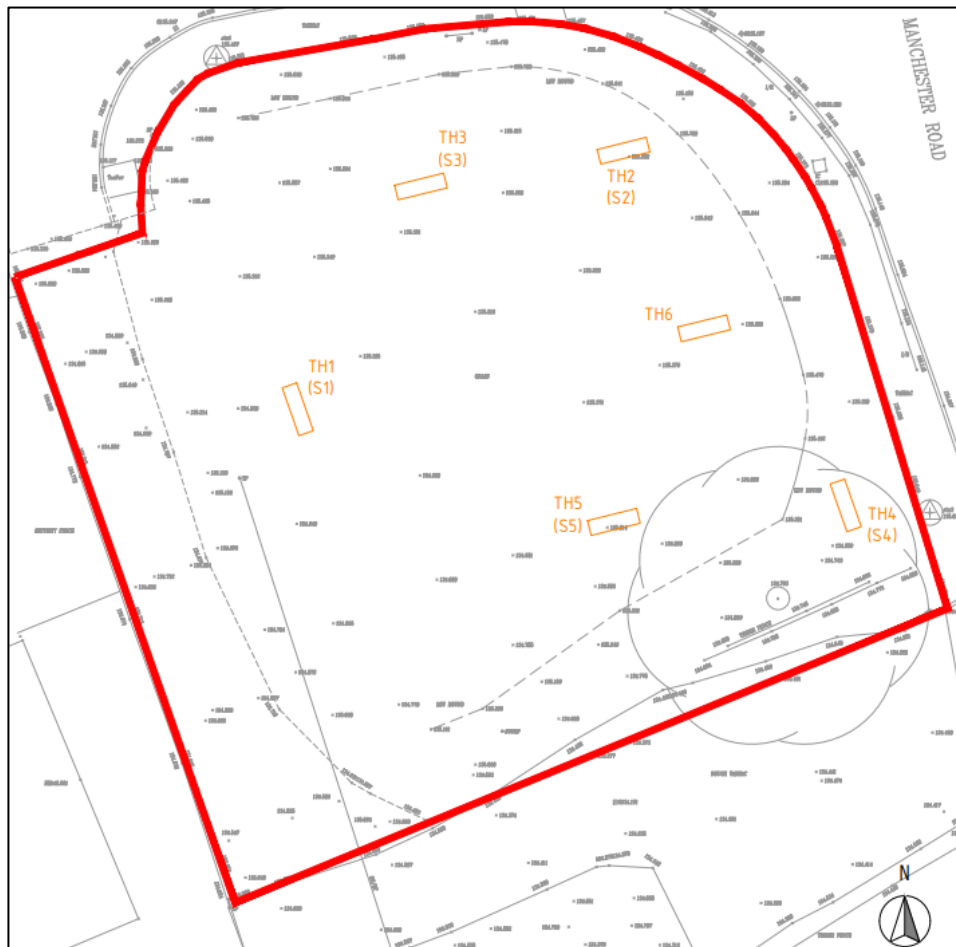
1.4.1. Investigation Summary.

Site investigations were undertaken on the 30th June 2025 by T J Booth Associates & Newbuild Development.

The investigations comprised:

- 6No trial holes (THs 1-6) to assess ground conditions for geotechnical design purposes,
- 5No. soil samples (S1-5) to assess chemical contamination for geoenvironmental purposes.

A site investigation excerpt is noted below (full plan in the Appendix):



Soil samples were taken in the upper made ground generally representative of the upper 600mm of made ground where encountered. Samples were sealed in 1kg white plastic snap top containers & amber jars & vials and sent to Envirolab Ltd to be tested for a range of common contaminants.

1.4.2. Ground Conditions.

Trial holes revealed a varied lithology, with general areas of shallow MADE GROUND of up to around 400mm to the rear of the site noted in trial holes TH1 & TH3, underlain by firm to stiff CLAY with SAND & GRAVEL lenses.

Closer to the front of the site, trial hole logs show alternating areas of shallow MADE GROUND on top of very stiff CLAY (TH2), areas of deeper brick fill assumed to be infilled cellars (TH4), and areas of the site which were noted between plots/foundation lines showing different depths of MADE GROUND/virgin material depending to each side of the trial holes (TH5 & 6).

Full trial hole logs can be found in the Appendix.

1.5. Final Risk Assessment.

1.5.1. Human Health Risk.

1.5.1.1. Shallow soil contamination.

The samples results have been assessed by TJ Booth Associates to common threshold comparison data for a residential end usage in the following order: Defra Category 4 Screening Levels (C4SLs) > LQM/CIEH (S4ULs) > EIC/AGS/CL:AIRE 2010.

Testing of upper site recorded only dibenz(ah)anthracene above residential target threshold values.

However, current guidance allows for a simplified risk assessment of PAH using benzo(a)pyrene as a surrogate marker for the carcinogenic risk of PAHs noted in soil, based on the toxicological benchmarks of the coal tar mixtures tested by Culp et al. (1998).

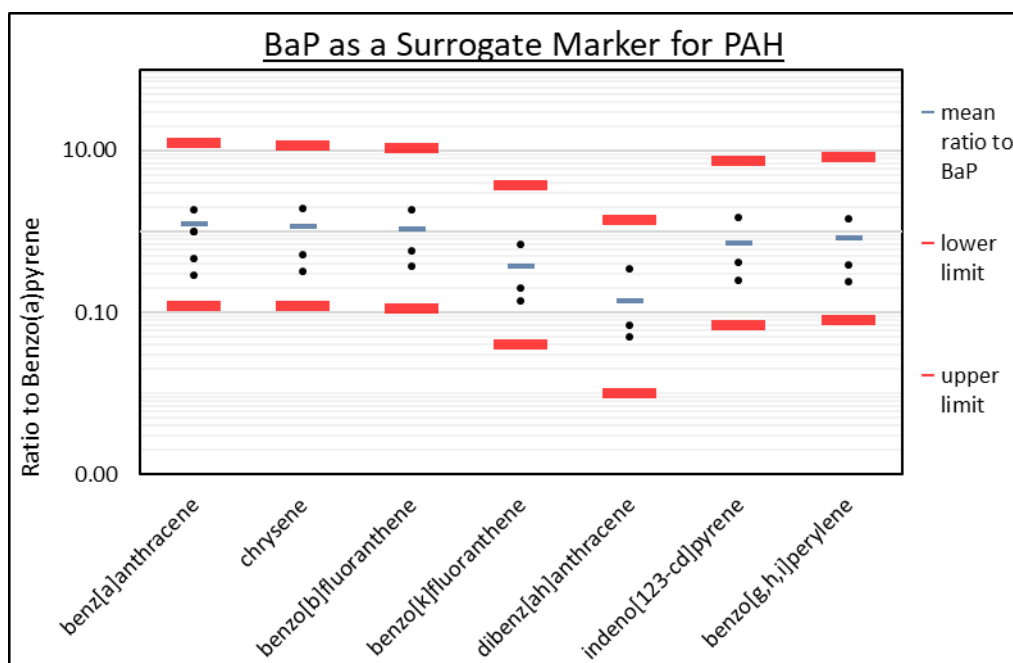
The simplified PAH risk assessment is subject to the ratios of genotoxic PAHs having a signature of not greater than an order of magnitude relative to benzo(a)pyrene in the coal tar mixtures used within the Culp et al. study.

If the risk assessment is adopted, and sample parameters fall within the coal tar PAH signature, benzo(a)pyrene may be used as a surrogate marker of PAH risk for some or all samples noted from the Site.

The assessment may be used for individual or groups of samples, although any samples with either benzo(a)pyrene (in particular) or other genotoxic PAHs recorded at or below the detection method LOD, may lead to erroneous results in the assessment.

Samples S1 was removed from the assessment (almost all determinands below the LOD for PAH). The remaining samples were plotted relative to benzo(a)pyrene and found to correspond with the Culp et al. coal tar signature, indicating that for the Application Site, benzo(a)pyrene could be used as a surrogate marker for PAH, see below graph:

genotoxic PAH	S2	S3	S5
benzo[a]anthracene	1.87	0.46	0.29
chrysene	1.93	0.52	0.32
benzo[b]fluoranthene	1.85	0.57	0.37
benzo[k]fluoranthene	0.68	0.20	0.14
dibenz[ah]anthracene	0.35	0.07	0.05
indeno[123-cd]pyrene	1.51	0.41	0.25
benzo[g,h,i]perylene	1.45	0.39	0.24
benzo[a]pyrene (BaP)	1.92	0.46	0.32



Given the benzo(a)pyrene results for all samples are below the relative C4SLs, then PAH risk from the Site is considered low, and the risk from existing site soils mitigated with respect to a residential end use setting.

Refer to TJ Booth Associates Soil Analysis Table and Chemtest Ltd sample certification in the appendix.

1.5.1.2. Ground Gas Risk.

1.5.1.2.1. Historic landfill & off-site infilled land.

The only historic landfill site is to the southeast but was filled after the construction of the motorway. The land that was infilled is approximately 260m away, and thus doesn't pose a risk of ground gas to the site.

It is also at higher elevation, and on the opposite side of the local watercourse, and thus against the hydraulic gradient which will further reduce pathways to migration. A further mitigating factor is that virgin CLAY was located under much of the Application Site which would further reduce contaminant pathways.

There was also a small pond 194m southwest noted in the risk assessment which was approximately 200m² in area (ie approximately the footprint of a small to medium size house). The pond is adjacent to a farmhouse which still exists, and is unlikely to have been filled with municipal type waste, capable of producing ground gas in enough quantity to pose a risk to development.

The risk from such small areas is not considered serious, especially with the mitigating factors regarding pathways as above.

The risk from off-site gas migration is considered mitigated.

1.5.1.2.2. On-site refuse tips/infilled ponds/infilled land.

General made ground on site is relatively thin, nominally around 500mm generally.

It is deeper in areas of former cellars etc, but the fill is localised, and comprises inert sand & gravel/cobble brick infill which poses no risk of ground gas.

The risk is considered mitigated.

1.5.1.2.3. Radon.

The initial PRA was undertaken in 2020. Since then, the UK radon maps have been updated.

Current risk for the area is that 1-3% of homes are above the action level.

No protection measures are required in the development.

1.5.1.2.4. Alluvium.

No pollutant linkage identified.

No alluvium in the local area.

1.5.1.3. Buildings & services.

1.5.1.3.1. Water pipes.

A sample was analysed for PSRAS chemicals and recorded all contaminants (hydrocarbons c6-10, c10-16, c16-40, BTEX & MTBE, VOCs/SVOCs, phenols, cresols and chlorinated phenols) below the action threshold for PE pipes.

Standard PE pipe will be suitable for the development.

1.5.1.3.2. Sulphate.

Sulphate encountered in the soil samples was low, DS1.

1.5.2. Controlled Waters Risk.

Where soil leachate or ground/surface water sampling is undertaken, samples are assessed by TJ Booth Associates to common threshold comparison data. Groundwater samples are generally compared against the drinking water standards (UK DWI 2016 & WHO 2022), and Environment Quality Standards for Freshwater (EQS). Surface water samples are primarily compared against the against the EQS.

1.5.2.1. Groundwater.

No elevated contaminants were noted in upper topsoil & no groundwater was noted.

There are no potable water abstractions nearby.

The risk to aquifers is considered to be low.

1.5.2.2. Watercourses.

The closest watercourse is nominally 100m south.

Risk is considered as low for the reasons given above.

1.6. Final Conceptual Model.

POLLUTANT RISK IDENTIFIER	SOURCE	CONTAMINANT TYPE	PATHWAY	RECEPTOR	POLLUTION LINKAGE	RISK	REMEDATION MEASURES
PL1	General contaminants in upper site soil/made ground, and effects on humans/animals/ecology as a receptor.	Metals, PAHs, inorganics, organics, asbestos.	Direct ingestion, aerial ingestion, dermal contact, drinking water. Crops.	Primarily human - Site construction operatives & future residential Site occupants. Pets. Ecological systems.	Soil sampling recorded contaminants below the threshold levels.	Low risk.	NO REMEDIATION REQUIRED.
PL2	Potential for mortars/plasters and associated effects on concrete.	Sulphates.	Contact with underground structures.	Building structures /concrete.	Soil sampling recorded low levels of sulphate.	Low risk.	NO REMEDIATION REQUIRED.
PL3	Potential historic use of hazardous PSRAS chemicals & effects on PE water pipes.	Hydrocarbons, BTEX & MTBE, VOCs/SVOCs, phenols, cresols and chlorinated phenols.	Contact with water pipes/services.	Water pipes/services & human/pet end users.	Soil sampling recorded contaminants below the threshold levels for PE pipes.	Low risk.	NO REMEDIATION REQUIRED.
PL4	Hydrocarbon contaminants in upper site soil/made ground, and effects on groundwater or watercourses as a receptor.	Potential hydrocarbons.	Groundwater via potential leaching and transport of potential contaminants.	Underlying aquifer or watercourse as a receptor.	Soil sampling recorded contaminants below threshold levels.	Very low risk.	NO REMEDIATION REQUIRED.
PL5	Geological ground gas from coal seams/workings.	CH ₄ , CO ₂ , other trace gases.	Diffusion through soil, substructures, aerial inhalation.	Human - future residential Site occupants. Explosion, suffocation.	No workings suspected in the local area & no credible pollutant linkage.	Very low risk.	NO REMEDIATION REQUIRED.
PL6	Geological ground gas, radon sources in Namurian deposits.	Rn.	Diffusion through soil, substructures, aerial inhalation.	Human - future residential Site occupants.	No credible pollutant linkage. The Groundsure data report is based on a refined site-specific risk analysis which has identified that the property is within a lower probability radon area (<1-3% of homes estimated to be at or above the action level). No radon protection measures are required.	Very low risk.	NO REMEDIATION REQUIRED.



PL7	Anthropogenic ground gas from historic/present landfill, infilled mill ponds.	CH ₄ , CO ₂ , other trace gases.	Diffusion through soil, substructures, aerial inhalation.	Human residential occupants. - future Site Explosion, suffocation.	Risk is not considered feasible. Sources either too distant or pathways not credible.	Low risk.	NO REMEDIATION REQUIRED.
PL8	Anthropogenic ground gas sources from alluvium.	CH ₄ , CO ₂ .	Diffusion through soil, substructures, aerial inhalation.	Human residential occupants. - future Site Explosion, suffocation.	No alluvial deposits noted beneath the Site. Source missing, no pollutant linkage.	Very low risk.	NO REMEDIATION REQUIRED.



2. PHASE 3 - REMEDIATION STATEMENT

2.1. Basic Site Details

Full details included in the Phase 2 Site Investigation Introduction & subsequent sections.

2.2. Conceptual Model (Final) & Relevant Pollution Linkages

No outstanding pollutant linkages. All are considered mitigated.

2.3. Recommendations:

2.3.1. Made ground/soil.

Upper made ground has been tested and found to be free from contamination.

While some of the made ground was sand & gravel with relict building material within it, and is not likely to be used to dress garden areas etc, much of the site comprised a slightly gravelly & silty topsoil, which is likely to have been imported to the site for landscaping when the former buildings were demolished historically.

This topsoil will be suitable for use in the proposed garden areas, and there should be enough to cover the areas to a suitable depth.

No specific cover depth is required.

2.3.2. Ground gas risk.

No ground gas risk was identified, and no protection measures are required in the development.

2.3.3. Potable water pipes.

Sampling for PSRAS chemical contaminants recorded levels below the threshold action level for PE pipes.

Standard PE pipe may be used on-site.

2.4. Additional Notes

This report should be submitted to the LPA for condition discharge prior to construction.

We trust that the above clear, but should you require further advice please contact the undersigned.



Signed.....

A handwritten signature in black ink, appearing to be 'D.S. Slattery'.

D.S. Slattery BSc (Hons).

T J Booth Associates.

Authorised...

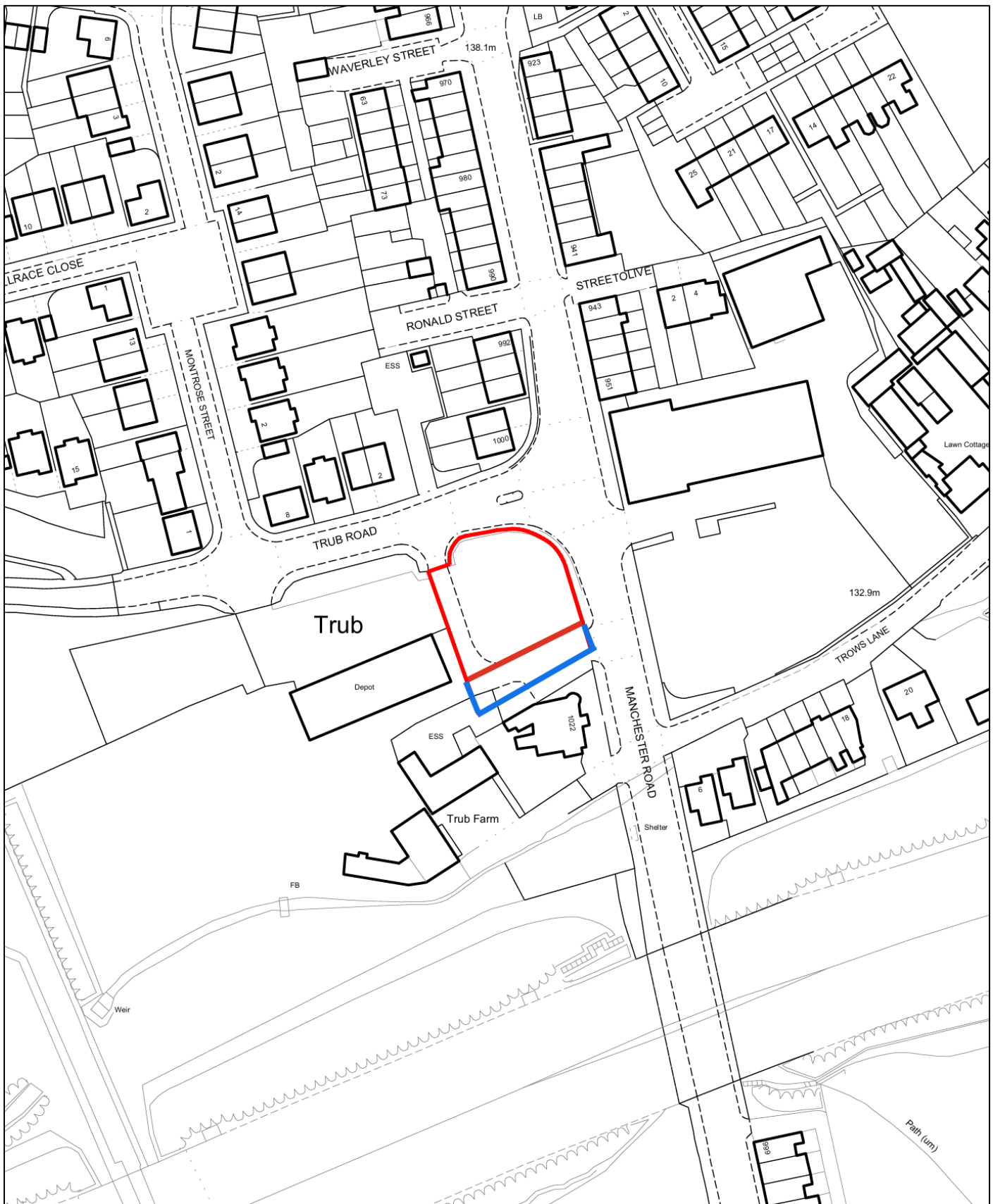
A handwritten signature in black ink, appearing to be 'T J Booth'.

T J Booth BSc (Hons), C. Eng. C. Env. MICE.

T J Booth Associates.

3. APPENDIX A: FIGURES

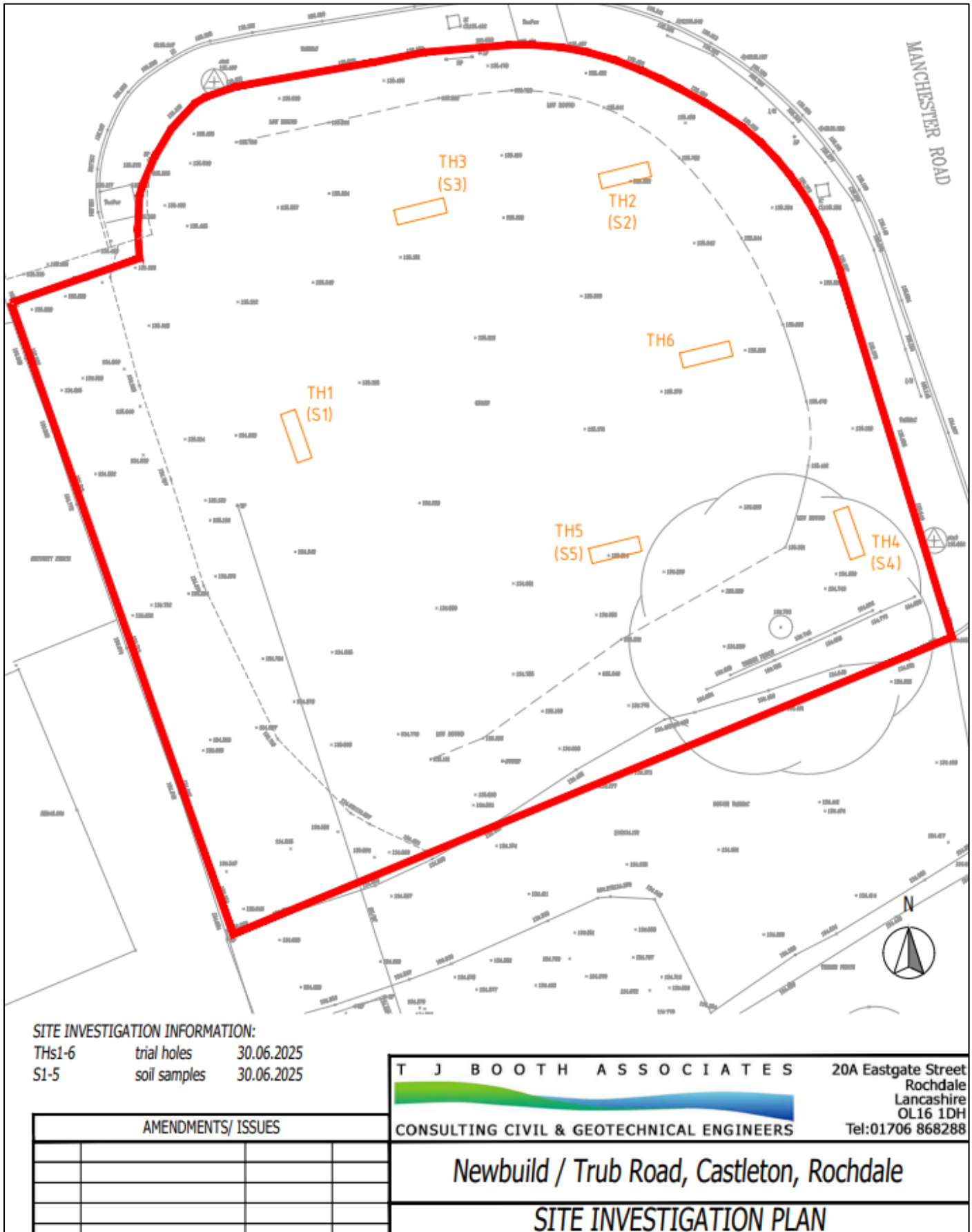
3.1. Location Plan



3.2. Proposed Development



3.3. Site Investigation Plan



3.4. TJBA Trial Hol Logs.

Trial pit reference TH1				Sheet 1 of 1
Water	Reduced Level (m)	Legend	Depth (m)	Description
	135.00			
	134.60	X X X X	(0.40) 0.40	Brown slightly gravelly very sandy silt MADE GROUND (topsoil). (S1)
	134.05	: o : o : o : o : o : o : o :	(0.55) 0.95	Medium dense light brown-orange silty SAND AND GRAVEL with occasional cobbles & boulders.
	133.50	: x : x : x : x : x : x : x :	(0.55) 1.50	Medium dense light brown-orange silty medium SAND
				Trial pit ends

Not shown to scale

Additional notes: No groundwater noted.



Trial pit reference TH2

Sheet 1 of 1

Water	Reduced Level (m)	Legend	Depth (m)	Description
	135.55			
	135.30	X X X X	(0.25) 0.25	Brown sand & gravel MADE GROUND. Gravel is brick, stone, slate & MOT. (S2)
	134.95	X - X - - X - X -	(0.35) 0.60	Very stiff dark brown-black clayey MADE GROUND
	134.15	- - - - - - - - - - - - - - - - - - - -	(0.80) 1.40	Very stiff brown-grey mottled sandy CLAY
				Trial pit ends

Not shown to scale

Additional notes: No groundwater noted.



Trial pit reference TH3

Sheet 1 of 1

Water	Reduced Level (m)	Legend	Depth (m)	Description
	135.45			
	135.05	X X X X	(0.40) 0.40	Brown slightly gravelly very sandy silt MADE GROUND (topsoil). (S3)
		- -	(1.05)	Very stiff brown-grey mottled sandy CLAY
	134.00	- - - - -	1.45	
				Trial pit ends

Not shown to scale

Additional notes: No groundwater noted.



Trial pit reference TH4

Sheet 1 of 1

Water	Reduced Level (m)	Legend	Depth (m)	Description
	135.00			
	134.70	X X X X	(0.30) 0.30	Brown sand & gravel MADE GROUND (topsoil). Occasional brick, stone, slate etc.
		X X X X X X X X X X X X X X X X	(1.90)	Very loose brown-red sand & gravel MADE GROUND with abundant cobble sized brick (brick infill). Sand & gravel is brick, plaster, mortar, slate, etc. (S4)
	132.80	X X	2.20	
				Trial pit ends

Not shown to scale

Additional notes: No groundwater noted.



Trial pit reference TH5

Sheet 1 of 1

Water	Reduced Level (m)	Legend	Depth (m)	Description
	135.01			
	134.21	X X X X X X X X	(0.80) 0.80	Dark brown-black sand & gravel MADE GROUND (S5). Relict foundation noted to east side of TH. Former cobbles noted to approx 800mm depth on west side (old alleyway?).
	133.61	X X X X X X	(0.60) 1.40	Stiff brown gravelly clay MADE GROUND. Gravel is brick, stone, slate, mortar, coal & ash.
	133.21	- - - - - -	(0.40) 1.80	Firm brown slightly sandy slightly gravelly CLAY becoming clayey SAND at bottom.
				Trial pit ends

Not shown to scale

Additional notes: No groundwater noted.



Trial pit reference TH6

Sheet 1 of 1

Water	Reduced Level (m)	Legend	Depth (m)	Description
	135.30			
	135.00	X X X X	(0.30) 0.30	Brown sand & gravel MADE GROUND (topsoil).
	134.00	X X X X X X X X	(1.00) 1.30	Loose to medium dense red-brown sand & gravel MADE GROUND. Relict foundations noted through the centre of TH in east-west & north-south alignment.
	133.90	- - - - -	1.40	Firm brown sandy CLAY
				Trial pit ends

Not shown to scale

Additional notes: No groundwater noted.



3.5. TJBA Soil Analysis.

CLIENT/SITE:		Newbuild Developments - Trub Road, Castleton, Rochdale						
SAMPLE TYPE:		SOILS						
SAMPLING DATE:		30.06.2025						
Contaminant		No	Max	Mean	t 95	RESIDENTIAL (with or without plant uptake)		
						Pass/Fail	Comment	
METAL	Arsenic	4	1	1	1	37	PASS	
METAL	Cadmium	4	1	1	1	22	PASS	
METAL	Chromium as Cr(III)	4	55	27.25	50.35	910	PASS	
METAL	Chromium as Cr(VI)	4	1	1	1	21	PASS	
METAL	Copper	4	50	34	49.1	2400	PASS	
METAL	Lead	4	93	59.5	90	200	PASS	
METAL	Mercury (inorganic)	4	0.17	0.17	0.17	40	PASS	
METAL	Nickel	4	19	12.75	18.4	130	PASS	
METAL	Selenium	4	1	1	1	250	PASS	
METAL	Zinc as Zn	4	103	75.5	99.4	3700	PASS	
INORGANIC	Cyanide (Total)	4	1	1	1	34	PASS	
INORGANIC	Sulphate (Total) as SO4	4	0.061	0.04325	0.0583	0.24	PASS	
INORGANIC	Sulphide	4	5	5	5	250	PASS	
INORGANIC	pH	4	8.19	7.8375	8.1765	6 to 8	ALKALINE	
INORGANIC	Sulphur (Elemental)	4	29	11.25	25.55	100	PASS	
INORGANIC	Asbestos Identification	4	0	0	0	0	PASS	
ORGANIC	SOM	5	6	5.3	6			
PAH	acenaphthene	4	0.31	0.1	0.2725	1100	PASS	
PAH	acenaphthylene	4	0.03	0.015	0.027	920	PASS	
PAH	anthracene	4	0.49	0.165	0.43	11000	PASS	
PAH	benzo[a]anthracene	4	1.87	0.665	1.6585	13	PASS	
PAH	benzo[a]pyrene (BaP)	4	1.92	0.685	1.701	5	PASS	
PAH	benzo[b]fluoranthene	4	1.85	0.72	1.658	3.7	PASS	
PAH	benzo[g,h,i]perylene	4	1.45	0.535	1.291	350	PASS	
PAH	benzo[k]fluoranthene	4	0.68	0.2725	0.608	100	PASS	
PAH	chrysene	4	1.93	0.7075	1.7185	27	PASS	
PAH	dibenz[ah]anthracene	4	0.35	0.1275	0.308	0.3	FURTHER ACTION	BaP surrogate marker OK
PAH	fluoranthene	4	4.3	1.4625	3.793	890	PASS	
PAH	fluorene	4	0.2	0.0675	0.176	860	PASS	
PAH	indeno[123-cd]pyrene	4	1.51	0.5575	1.345	41	PASS	
PAH	naphthalene	4	0.07	0.04	0.064	13	PASS	
PAH	phenanthrene	4	2.28	0.76	2.0085	440	PASS	
PAH	pyrene	4	3.8	1.3	3.3575	2000	PASS	
FUEL	aliphatic EC 5-6	1	0	0	0	160	PASS	
FUEL	aliphatic EC 6-8	1	0	0	0	530	PASS	
FUEL	aliphatic EC 8-10	1	0	0	0	150	PASS	
FUEL	aliphatic EC 10-12	1	8	8	8	760	PASS	
FUEL	aliphatic EC 12-16	1	8	8	8	4300	PASS	
FUEL	aliphatic EC 16-35	1	388	388	388	110000	PASS	
FUEL	aliphatic EC 35-44	1	388	388	388	110000	PASS	
FUEL	aromatic EC 5-7,Benzene	1	0	0	0	300	PASS	
FUEL	aromatic EC 7-8,Toluene	1	0	0	0	660	PASS	
FUEL	aromatic EC 8-10	1	0	0	0	190	PASS	
FUEL	aromatic EC 10-12	1	8	8	8	380	PASS	
FUEL	aromatic EC 12-16	1	8	8	8	660	PASS	
FUEL	aromatic EC 21-35	1	388	388	388	1700	PASS	
FUEL	aromatic EC 35-44	1	388	388	388	1700	PASS	
BTEX (VOC)	benzene (EC 6.5)	1	0.01	0.01	0.01	0.87	PASS	
BTEX (VOC)	toluene (EC 7.58)	1	0.01	0.01	0.01	660	PASS	
BTEX (VOC)	ethylbenzene (EC 8.5)	1	0.01	0.01	0.01	260	PASS	
BTEX (VOC)	m-xylene (EC ~8.6)	1	0.01	0.01	0.01	320	PASS	
BTEX (VOC)	p-xylene (EC ~8.6)	1	0.01	0.01	0.01	310	PASS	
BTEX (VOC)	o-xylene (EC ~8.6)	1	0.01	0.01	0.01	330	PASS	
BTEX (VOC)	MTBE (methyl tert-butyl ether)	1	0.01	0.01	0.01	160	PASS	
PHENOLS AND CHLOROPHENOLS (SVOC)	Phenol	5	0.2	0.18	0.2	380	PASS	
PHENOLS AND CHLOROPHENOLS (SVOC)	Chlorophenol	1	0.1	0.1	0.1	4.5	PASS	
PHENOLS AND CHLOROPHENOLS (SVOC)	Pentachlorophenol	1	0.1	0.1	0.1	1.2	PASS	
PHENOLS AND CHLOROPHENOLS (SVOC)	Total Cresols (2-Methylphenol, 3-methylphenol)	1	0.1	0.1	0.1	400	PASS	

Comments Key

Asbestos: A=amosite (brown), CH=chrysotile (white), CR=crocidolite (blue)

3.6. Envirolab Ltd Certificates



Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 25/07092
Issue Number: 1
Date: 17 July, 2025

Client: T J Booth Associates
20a East Gate Street
Rochdale
Rochdale
Greater Manchester
UK
OL16 1DH

Project Manager: Daniel Slattery
Project Name: Newbuild - Trub Rd, Rochdale
Project Ref: N/A
Order No: N/A
Date Samples Received: 01/07/25
Date Instructions Received: 02/07/25
Date Analysis Completed: 17/07/25

Approved by:

Danielle Brierley
Client Services Supervisor





Envirolab Job Number: 25/07092

Client Project Name: Newbuild - Trub Rd, Rochdale

Client Project Ref: N/A

Lab Sample ID	25/07092/1	25/07092/2	25/07092/3	25/07092/4	25/07092/5			
Client Sample No	S1	S2	S3	S4	S5			
Client Sample ID	TH1	TH2	TH3	TH4	TH5			
Depth to Top	0.00	0.00	0.00	0.00	0.00			
Depth To Bottom	0.40	0.25	0.40	0.70	0.60			
Date Sampled	30-Jun-25	30-Jun-25	30-Jun-25	30-Jun-25	30-Jun-25			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	4AE	4ABE	4AE	4ABE	4ABE			
							Units	Limit of Detection
% Stones >10mm _A	<0.1	<0.1	<0.1	9.2	14.6		% w/w	0.1
pH _D ^{MS}	7.23	7.83	8.19	-	8.10		pH	0.01
Sulphate (acid soluble) _D ^{MS}	290	430	610	-	400		mg/kg	200
Cyanide (total) _A ^{MS}	<1	<1	<1	-	<1		mg/kg	1
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2	-	<0.2		mg/kg	0.2
Sulphide _A	<5	<5	<5	-	<5		mg/kg	5
Sulphur (elemental) _D ^{MS}	<5	<5	6	-	29		mg/kg	5
Organic Matter _D ^{MS}	4.14	9.97	8.93	-	22.2		% w/w	0.14
Arsenic _D ^{MS}	2	5	9	-	9		mg/kg	1
Boron (water soluble) _D ^{MS}	<1.0	<1.0	<1.0	-	<1.0		mg/kg	1
Cadmium _D	<1.0	<1.0	<1.0	-	<1.0		mg/kg	1
Copper _D ^{MS}	16	26	50	-	44		mg/kg	1
Chromium _D ^{MS}	11	24	55	-	19		mg/kg	1
Chromium (hexavalent) _D	<1	<1	<1	-	<1		mg/kg	1
Lead _D ^{MS}	27	45	93	-	73		mg/kg	1
Mercury _D	<0.17	<0.17	<0.17	-	<0.17		mg/kg	0.17
Nickel _D ^{MS}	8	9	15	-	19		mg/kg	1
Selenium _D ^{MS}	<1	<1	<1	-	<1		mg/kg	1
Zinc _D ^{MS}	52	68	103	-	79		mg/kg	1
BTEX and MTBE Total _A	-	-	-	<0.01	-		mg/kg	0.01
VOC Total _A	-	-	-	<250	-		µg/kg	10
Cresol & Chlorinated Phenol Total _A	-	-	-	<100	-		µg/kg	100
Phenols Total (from SVOC) _A	-	-	-	<100	-		µg/kg	100
SVOC Total (excl. PAH/Phenols/Cresols and Chlorophenols) _A	-	-	-	692	-		µg/kg	100



Envirolab Job Number: 25/07092

Client Project Name: Newbuild - Trub Rd, Rochdale

Client Project Ref: N/A

Lab Sample ID	25/07092/1	25/07092/2	25/07092/3	25/07092/4	25/07092/5			Units	Limit of Detection	Method ref
Client Sample No	S1	S2	S3	S4	S5					
Client Sample ID	TH1	TH2	TH3	TH4	TH5					
Depth to Top	0.00	0.00	0.00	0.00	0.00					
Depth To Bottom	0.40	0.25	0.40	0.70	0.60					
Date Sampled	30-Jun-25	30-Jun-25	30-Jun-25	30-Jun-25	30-Jun-25					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL					
Sample Matrix Code	4AE	4ABE	4AE	4ABE	4ABE					
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	NAD	NAD	NAD	-	NAD					A-T-045
Asbestos Matrix (visual) ₀	-	-	-	-	-					A-T-045
Asbestos Matrix (microscope) ₀	-	-	-	-	-					A-T-045
Asbestos ACM - Suitable for Water Absorption Test? ₀	N/A	N/A	N/A	-	N/A					A-T-045



Envirolab Job Number: 25/07092

Client Project Name: Newbuild - Trub Rd, Rochdale

Client Project Ref: N/A

Lab Sample ID	25/07092/1	25/07092/2	25/07092/3	25/07092/4	25/07092/5			Units	Limit of Detection	Method ref
Client Sample No	S1	S2	S3	S4	S5					
Client Sample ID	TH1	TH2	TH3	TH4	TH5					
Depth to Top	0.00	0.00	0.00	0.00	0.00					
Depth To Bottom	0.40	0.25	0.40	0.70	0.60					
Date Sampled	30-Jun-25	30-Jun-25	30-Jun-25	30-Jun-25	30-Jun-25					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL					
Sample Matrix Code	4AE	4ABE	4AE	4ABE	4ABE					
PAH-16MS										
Acenaphthene ^{MS}	<0.01	0.31	0.06	-	0.02			mg/kg	0.01	A-T-019s
Acenaphthylene ^{MS}	<0.01	0.03	<0.01	-	<0.01			mg/kg	0.01	A-T-019s
Anthracene ^{MS}	<0.02	0.49	0.09	-	0.06			mg/kg	0.02	A-T-019s
Benzo(a)anthracene ^{MS}	<0.04	1.87	0.46	-	0.29			mg/kg	0.04	A-T-019s
Benzo(a)pyrene ^{MS}	<0.04	1.92	0.46	-	0.32			mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene ^{MS}	0.09	1.85	0.57	-	0.37			mg/kg	0.05	A-T-019s
Benzo(ghi)perylene ^{MS}	0.06	1.45	0.39	-	0.24			mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene ^{MS}	<0.07	0.68	0.20	-	0.14			mg/kg	0.07	A-T-019s
Chrysene ^{MS}	<0.06	1.93	0.52	-	0.32			mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene ^{MS}	<0.04	0.35	0.07	-	0.05			mg/kg	0.04	A-T-019s
Fluoranthene ^{MS}	<0.08	4.30	0.92	-	0.55			mg/kg	0.08	A-T-019s
Fluorene ^{MS}	<0.01	0.20	0.04	-	0.02			mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene ^{MS}	0.06	1.51	0.41	-	0.25			mg/kg	0.03	A-T-019s
Naphthalene ^{MS}	<0.03	0.07	<0.03	-	<0.03			mg/kg	0.03	A-T-019s
Phenanthrene ^{MS}	<0.03	2.28	0.47	-	0.26			mg/kg	0.03	A-T-019s
Pyrene ^{MS}	<0.07	3.80	0.85	-	0.48			mg/kg	0.07	A-T-019s
Total PAH-16MS ^{MS}	0.21	23	5.51	-	3.37			mg/kg	0.01	A-T-019s
TPH Banded 17										
>C5-10 _A	-	-	-	<5	-			mg/kg	5	A-T-007s
>C10-C16 ^{MS}	-	-	-	8	-			mg/kg	1	A-T-007s
>C16-C40 ^{MS}	-	-	-	388	-			mg/kg	1	A-T-007s
Total TPH Banded 17 _A	-	-	-	396	-			mg/kg	5	A-T-007s



Report Notes

General

- This report shall not be reproduced, except in full, without written approval from Envirolab.
- The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
- The results reported herein relate only to the material supplied to the laboratory.
- The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
- Analytical results reflect the quality of the sample at the time of analysis only.
- Opinions and Interpretations expressed are outside our scope of accreditation.
- A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
- If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
- Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "A"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs

Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.

Soil Chemical Analysis:

All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:

For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:

EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.



Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: T J Booth Associates, 20a East Gate Street, Rochdale, Rochdale, Greater Manchester, UK, OL16 1DH
Project: Newbuild - Trub Rd, Rochdale
Clients Project No: N/A

Project No: 25/07092
Date Received: 02/07/2025 (am)
Cool Box Temperatures (°C): 15.9

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Page 6 of 7



Envirolab Analysis Dates

Lab Sample ID	25/07092/1	25/07092/2	25/07092/3	25/07092/4	25/07092/5
Client Sample No	S1	S2	S3	S4	S5
Client Sample ID/Depth	TH1 0.00-0.40m	TH2 0.00-0.25m	TH3 0.00-0.40m	TH4 0.00-0.70m	TH5 0.00-0.60m
Date Sampled	30/06/25	30/06/25	30/06/25	30/06/25	30/06/25
A-T-006s				14/07/2025	
A-T-007s				08/07/2025	
A-T-019s	10/07/2025	10/07/2025	10/07/2025		10/07/2025
A-T-022s				14/07/2025	
A-T-024s	15/07/2025	15/07/2025	15/07/2025		15/07/2025
A-T-027s	15/07/2025	15/07/2025	15/07/2025		15/07/2025
A-T-028s	15/07/2025	15/07/2025	15/07/2025		15/07/2025
A-T-029s	15/07/2025	15/07/2025	15/07/2025		15/07/2025
A-T-031s	16/07/2025	16/07/2025	16/07/2025		16/07/2025
A-T-032s	17/07/2025	17/07/2025	17/07/2025		17/07/2025
A-T-040s	15/07/2025	15/07/2025	15/07/2025		15/07/2025
A-T-042sTCN	08/07/2025	08/07/2025	08/07/2025		08/07/2025
A-T-043-s	08/07/2025	08/07/2025	08/07/2025		08/07/2025
A-T-044	15/07/2025	15/07/2025	15/07/2025	15/07/2025	15/07/2025
A-T-045	03/07/2025	03/07/2025	03/07/2025		03/07/2025
A-T-050s	08/07/2025	08/07/2025	08/07/2025		08/07/2025
A-T-052s				09/07/2025	

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

Page 7 of 7

4. APPENDIX B: PHOTOS



5. APPENDIX C: LANDMARK ENVIROCHECK & ENVIRONMENTAL PLANS

