



INVESTIGATE



REMEDiate



REGENERATE



GROUND INVESTIGATION REPORT

**FOR
EVERY STREET,
MANCHESTER,
M4 7DQ**

**PREPARED FOR
McCAUL DEVELOPMENTS LIMITED**

**REPORT NO. 7741A
JANUARY 2024**

SUB SURFACE NORTH WEST LIMITED

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CONTENTS

1. INTRODUCTION	1.1 Site Location and Description
	1.2 Proposed Development and Purpose of the Ground Investigation
2. INVESTIGATION	2.1 Investigation Details
	2.2 Sub Surface Detail
3. SAMPLING AND TESTING	3.1 Sampling
	3.2 Laboratory Testing
4. APPRAISAL AND RECOMMENDATIONS	4.1 Comments on the Profile
	4.2 Contamination Considerations
	4.3 General
APPENDICES	Contamination Analysis results
	Mini Borehole Record sheets
	Figures

GROUND INVESTIGATION FOR EVERY STREET, MANCHESTER, M4 7DQ**CLIENT: McCAUL DEVELOPMENTS LIMITED****ENGINEER: CARPENTER FOUNDATIONS**

1. INTRODUCTION

This report has been prepared in accordance with an email, dated 15th December 2023, from the Client.

The brief was set out in our estimate, ref. E6852 and dated 11th December 2023, with amendments as the investigation proceeded and includes:

- 3 No. mini boreholes
- Contamination analysis
- Provision of an interpretative report on the above.

1.1 Site Location and Description

The site is located on Every Street, Manchester, M4 7DQ as indicated on Figure 1. The approximate National Grid Reference of the centre of the site is 385758, 398165.

As shown on Figure 2, the roughly rectangular shaped site is bounded to the north east and south east by Caterham Street, to the south west by Tutbury Street, and to the north west by Every Street. The site at the time of the investigation was partially developed with floor slabs laid for the proposed development.

1.2 Proposed Development and Purpose of the Ground Investigation

We understand that it is proposed to construct a block of residential units with communal and private garden areas and a residents car park, as shown on Figure 2. At the time of the investigation construction was underway at floor slab level.

A previous Phase II Ground Investigation was undertaken by WML Consulting in September 2019 ref. 7261G-WML-00-XX RP-G-0002. At that time a now demolished Rectory building was still present within the site. The ground investigation included a contamination assessment of the site prior to the Rectory building being demolished and therefore no contamination analysis has previously been undertaken within the footprint of the Rectory building.

The purpose of the investigation was to undertake contamination analysis and assessment within the building footprint in order to determine necessary precautions and/or remedial measures required for the proposed development and to ascertain the need for any further sampling and analysis.

2. INVESTIGATION

2.1 Investigation Details

Three mini boreholes were put down to a depth of 3.00 metres using a Dart Mini Sampling Rig fitted with windowless sample tubes of 86mm to 64mm diameter at the positions determined and set out by Sub Surface North West Limited, as shown on Figure 3. The samples were subsequently logged in accordance with BS.5930:2015+A1:2020 and the resulting Mini Borehole Records are appended. On completion the mini boreholes were backfilled with gravel as no installations were required.

2.2 Sub Surface Detail

Details of the strata encountered in the ground investigation are given on the appended Mini Borehole Records. The exploratory holes found Made Ground to depths of between 1.20 and 1.95 metres, overlying sands and gravels consisting of sandstone and quartz (possibly Made Ground) to depths of between 2.30 and 2.40 metres, overlying firm to stiff slightly gravelly clays to the depth of the mini boreholes. The depths of strata found were as follows:

TABLE 1 STRATA

Expl. Hole No.	Depth of Made Ground (m)	Depth of Granular Deposits (m)	Depth of Cohesive Deposits (m)	Depth of Hole (m)
M1	1.80	2.30	>3.00	3.00
M2	1.95	2.40	>3.00	3.00
M3	1.20	2.40	>3.00	3.00

M = Mini Borehole.

A general summary of the strata found is as follows:

2.2.1 Made Ground

Made Ground was found to depths of 1.80, 1.95 and 1.20 metres respectively. In M1 this comprised soft brown slightly gravelly sandy silty clay to a depth of 1.20 metres, overlying brown sandy very clayey fine to coarse gravel sized fragments of brick, concrete, stone and bitumen to a depth of 1.80 metres.

In M2 and M3 Made Ground comprised the concrete block floor slab to the proposed development to 0.10 metres, overlying a void space to 0.30 metres, overlying soft brown slightly gravelly to gravelly slightly sandy to sandy silty clay to a depth of 0.70 metres, overlying soft brown slightly gravelly to gravelly slightly sandy silty clay to depths of 1.95 and 1.20 metres depth.

2.2.2 Drift Deposits

Underlying the Made Ground granular deposits generally comprised brown silty fine to coarse sand and angular to subrounded fine to coarse sandstone and quartz gravel to depths of between 2.30 and 2.40 metres. This may represent a further layer of Made Ground or may be a layer of alluvial deposits related to the nearby River Medlock.

Underlying the granular deposits cohesive deposits generally comprised firm to stiff thinly laminated dark brown slightly gravelly silty clay to the depths of the boreholes.

2.2.3 Groundwater

No groundwater was encountered in the exploratory holes although it should be noted that they were only left open for a short period of time and groundwater levels and rates of inflow may be subject to seasonal and/ or climatic variations.

3. SAMPLING AND TESTING

3.1 Sampling

Continuous core and bulk disturbed samples were obtained for the strata encountered and were subjected to careful examination.

The samples will be retained for a period of one month after the issue of this report, for reference purposes, and then disposed of unless otherwise instructed.

3.3 Laboratory Testing

Contamination analyses have been performed on three soil samples to determine: pH and concentrations of sulphate, sulphide, cyanide, arsenic, boron (soluble), cadmium, chromium, hexavalent chromium, copper, lead, mercury, molybdenum, nickel, selenium, zinc, speciated total petroleum hydrocarbons (TPHs), the speciated polynuclear aromatic hydrocarbons (PAHs) suite, the benzene/ ethylbenzene/ toluene/ xylene (BTEX) suite and phenols. In addition three soil samples were subjected to an asbestos screen.

Where asbestos was detected by the screen, asbestos type and quantification was undertaken for one soil sample.

The results of the above analyses are appended.

4. APPRAISAL AND RECOMMENDATIONS

4.1 Comments on the Profile

At the outset it should be appreciated that only a small proportion of the area to be developed has been investigated and consequently the recommendations made and opinions expressed in this report can only be applied to such conditions as were encountered in the exploratory holes.

The exploratory holes indicate a nature and degree of similarity to the extent that we consider them likely to be representative of the natural ground conditions. However, no guarantee can be given.

The internet based British Geological Survey (BGS) Viewer indicates that the site is underlain by Made Ground (Undivided), overlying Devensian Till composed of Diamicton (poorly sorted gravelly, sandy, silty clays). There may be a layer of Alluvium composed of clay, silt, sand and gravel overlying the Till, due to the River Medlock around 95 metres to the east of the site. Given the above there is an indication that the geological formation will be similar beneath the site and the immediate surrounding area and hence some continuity might be assumed, but not guaranteed.

Due to the site having been previously developed, and the nature of Made Ground, localised variations in thickness and composition should be anticipated and hence interpolation or extrapolation from the exploratory holes to adjoining areas should only be undertaken with caution.

Details of the findings of the investigation are given on the appended Mini Borehole Records and a summary of the ground conditions is given in Section 2.2.

4.2 Contamination Considerations

WML Consulting have previously undertaken a Phase II Report, ref. 7261G-WML-00-XX RP-G-0002 and dated September 2019 and this Phase II ground investigation has been undertaken to provide a contamination risk assessment within the footprint of a previous Rectory now demolished on site. Construction of the proposed development has been started at floor slab level. Based upon the findings of the above additional sampling, analysis and assessment may be required.

It should be appreciated that the suite of determinants analysed for consists of a range of contaminants identified in the Conceptual Ground Model. However, the absence of any other specific contaminants cannot be guaranteed.

4.2.1 Assessment (Soil)

In order to provide an assessment of the presence of contamination three soil samples have been analysed for a suite of determinants and the results are appended.

Levels of the determinants have been compared against the most recently published guideline values. Contaminated Land: Applications in Real Environments (CL:AIRE) published guideline values in December 2009 to supplement previous guideline values. The Department for Environment, Food and Rural Affairs (DEFRA) published in March 2014 Category 4 Screening Levels (C4SLs) for arsenic, cadmium, lead, hexavalent chromium, benzo(a)pyrene and benzene. Land Quality Management Limited (LQM)/ Chartered Institute of Environmental Health (CIEH) then published Suitable for Use Levels (S4ULs) in November 2014, which largely superseded the previous guideline values. Updated S4ULs values for cadmium and phenols were published in July 2015 and for nickel in August 2015. The guideline values (S4ULs and occasionally C4SLs and CL:AIRE) are derived using the Environment Agency's CLEA Model and vary dependent upon the land use; allotment and residential use being the most sensitive and commercial/ industrial use being the least sensitive.

For the purposes of assessment, as the proposed development is a residential block of units with both private and communal gardens, contamination analyses have been compared with the guideline values for a standard land use of residential with plant uptake (with homegrown produce).

The contamination analysis determined no elevated levels of the determinants analysed for when compared with the guideline values for a standard land use of residential with plant uptake (with homegrown produce). Guideline values for the assessment can be supplied directly to the Regulator, if requested.

An asbestos screen was undertaken on three soil samples and a minimal amount asbestos was detected in M2 between 0.30 and 0.70 metres depth. Analysis determined that chrysotile (white) asbestos was present as small fibre bundles. The level recorded was very low (<0.001% of the soil mass).

In addition to the above, an assessment of risk to personnel who will come into contact with on-site materials throughout the site has been undertaken.

4.2.2 Conclusions and Recommendations

Section 78a(2) of the Environmental Protection Act: 1990 as amended by the Contaminated Land (England) (Amendment) regulations 2012, and Section 86 of the Water Act 2003, defines CONTAMINATED LAND for the purposes of Part IIA as:

“any land which appears to the LOCAL AUTHORITY in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that:

- (a) SIGNIFICANT HARM is being caused or there is a SIGNIFICANT POSSIBILITY of such harm being caused; or
- (b) SIGNIFICANT POLLUTION OF CONTROLLED WATERS is being, or is likely to be, caused”

Before a LOCAL AUTHORITY can make the judgement that land appears to be CONTAMINATED LAND on the basis that SIGNIFICANT HARM is being caused, or that there is a SIGNIFICANT POSSIBILITY of such harm being caused, the LOCAL AUTHORITY must identify a SIGNIFICANT POLLUTANT LINKAGE. This means that each of the following has to be identified:

- (a) a CONTAMINANT;
- (b) a relevant RECEPTOR (defined as living organisms, ecological systems, controlled waters or property); and
- (c) a PATHWAY by means of which either:
 - (i) the CONTAMINANT is causing SIGNIFICANT HARM to that RECEPTOR, or
 - (ii) there is a SIGNIFICANT POSSIBILITY of such harm being caused by that CONTAMINANT to that RECEPTOR

It should be noted that the words in capitals have a legal definition within the legislation.

Without a clear identification of all three elements of the pollutant linkage, land cannot be identified as contaminated under the regime.

The National Planning Policy Framework states that, “after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990”. Therefore, the general principles detailed above apply to this assessment.

Our assessment, based on three soil samples, indicates that there are no contaminants requiring remediation and/or precautions to be taken for the proposed development.

A very low level of asbestos was detected in one sample taken from M2 at 0.30 to 0.70 metres depth. The recorded level of asbestos was <0.001% of the soil mass. Given this and that the area in question will be below the footprint of the proposed building we do not consider that this poses a significant risk to the site.

However, we recommend that a watching brief is implemented during the development process. If any visible asbestos containing material is identified, the works should be halted until further testing and analysis can be undertaken and the risk reassessed.

S4ULs, C4SLs and CL:AIRE assume long term contact with contamination and assess chronic health risk. The risk of short term acute exposure to site personnel is dealt with in the remit of the Health and Safety Executive under the Health and Safety at Work Act: 1974 and Regulations made under the Act, including the Control of Substances Hazardous to Health (COSHH) Regulations. The levels of contamination and risk to site personnel should be considered under the Construction Design and Management (CDM) Regulations at the planning stage and in the development of the designers and contractors Health and Safety Plans and Method Statements. The risk of contact with on-site soils should be minimised and the following precautions should be taken as a minimum requirement.

Site personnel involved in earthworks and excavations should wear gloves, overalls, and boots and smoking should be prohibited.

Earthworks undertaken during dry weather might generate dust and in this instance dust should be damped down and dust masks made available to site operatives. In addition stockpiled materials should be sheeted over to prevent excessive airborne dust being formed.

Should it be necessary for groundwater to be pumped from on-site excavations the groundwater should be sampled and analysed and the groundwater analysis should be submitted to the appropriate waste water authority with a request for a discharge consent. Following receipt of a discharge consent groundwater is likely to be discharged to a sewer or to an off-site licensed discharge point.

4.3 General

It should be noted that when developing a “brownfield site” a phased investigation should be undertaken in order that each phase informs the next. A typical phased investigation comprises the following:

- Phase I: desk study report
- Phase II: ground investigation with report
- Phase III: remediation statement report
- Phase IV: validation with report.

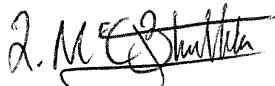
In the preparation of this report no consideration has been given to:

- the historical, geological, mining and/ or environmental setting of the site
 - the foundations and excavations
 - the possible effects of any mineral extraction, including coal, and geological faulting in the solid strata beneath the site
 - the possible presence of ground gas
 - flora and fauna
- as this was outside our brief.

We recommend that consultation should be undertaken with, and the written approval obtained from, the Local Authority Environmental Health Officer, the Local Authority Building Control Officer and the Coal Authority prior to commencing development.

We trust that this report fulfils your present requirements but if you have any queries or we can be of further assistance please contact the undersigned or Ms Anna Marsden at our Preston office.

SUB SURFACE CONSULTANTS LIMITED
REPORT No. 7741A
JANUARY 2024



L. A. W. McCall - Bhakta B.Sc.(Hons.)
Geotechnical Engineer
For and on behalf of
Sub Surface Consultants Limited



D. C. Marsden M.Eng.(Hons.), C.Eng., M.I.C.E.
Senior Geotechnical Engineer
For and on behalf of
Sub Surface Consultants Limited

CONTAMINATION ANALYSIS RESULTS



Certificate of Analysis

Certificate Number 23-30233

Issued: 10-Jan-24

Client Sub Surface Laboratories Ltd
3 Peel Street
Preston
Lancashire
PR2 2QS

Our Reference 23-30233

Client Reference 7741A

Order No (not supplied)

Contract Title EVERY STREET, MANCHESTER

Description 3 Soil samples.

Date Received 22-Dec-23

Date Started 22-Dec-23

Date Completed 10-Jan-24

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in black ink, appearing to read "K. Bridgewood".

Kirk Bridgewood
General Manager



2139

Summary of Chemical Analysis

Soil Samples

Our Ref 23-30233

Client Ref 7741A

Contract Title EVERY STREET, MANCHESTER

Lab No	2281647	2281648	2281649
Sample ID	M1	M2	M3
Depth	0.00-0.50	0.30-0.70	0.30-0.70
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	19/12/2023	19/12/2023	19/12/2023
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Asbestos Quantification	DETSC 1102	0.001	%		< 0.001	
Preparation						
Moisture Content	DETSC 1004	0.1	%	13	12	15
Metals						
Arsenic	DETSC 2301#	0.2	mg/kg	9.4	6.7	7.3
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.5	0.6	0.7
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.2	0.2
Chromium	DETSC 2301#	0.15	mg/kg	14	14	14
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	24	22	45
Lead	DETSC 2301#	0.3	mg/kg	37	64	34
Mercury	DETSC 2325#	0.05	mg/kg	0.10	0.12	0.08
Molybdenum	DETSC 2301#	0.4	mg/kg	1.2	1.2	1.1
Nickel	DETSC 2301#	1	mg/kg	11	12	12
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	46	49	55
Inorganics						
pH	DETSC 2008#		pH	10.2	8.7	9.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	0.1	0.1
Sulphide	DETSC 2024*	10	mg/kg	60	12	28
Sulphate as SO ₄ , Total	DETSC 2321#	0.01	%	0.21	0.18	0.17
Petroleum Hydrocarbons						
C5-C10 Gasoline Range Organics (GRO): HS_1D_Total	DETSC 3321*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
C10-C24 Diesel Range Organics (DRO): EH_1D_Total	DETSC 3311#	10	mg/kg	< 10	16	16
EPH (C10-C40): EH_1D_Total	DETSC 3311#	10	mg/kg	18	220	65
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
m+p Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
o Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01	< 0.01
C24-C40 Lube Oil Range Organics (LORO): EH_1D_Total	DETSC 3311#	10	mg/kg	14	200	49
PAHs						
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	0.1	0.2	0.3
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis Soil Samples

Our Ref 23-30233

Client Ref 7741A

Contract Title EVERY STREET, MANCHESTER

Lab No	2281647	2281648	2281649
Sample ID	M1	M2	M3
Depth	0.00-0.50	0.30-0.70	0.30-0.70
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	19/12/2023	19/12/2023	19/12/2023
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Fluoranthene	DETSC 3301	0.1	mg/kg	0.3	0.7	0.6
Pyrene	DETSC 3301	0.1	mg/kg	0.3	0.6	0.5
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	0.4	0.4
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	0.3	0.3
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	0.2	0.2
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	0.1	0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	0.3	0.3
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	0.3	0.4
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	0.2	0.2
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	0.2	0.3
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	3.6	3.5
Phenols						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3

Summary of Asbestos Analysis Soil Samples

Our Ref 23-30233

Client Ref 7741A

Contract Title EVERY STREET, MANCHESTER

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2281647	M1 0.00-0.50	SOIL	NAD	none	Pierce Booth
2281648	M2 0.30-0.70	SOIL	Chrysotile	Chrysotile present as small fibre bundles	Pierce Booth
2281649	M3 0.30-0.70	SOIL	NAD	none	Pierce Booth

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Summary of Asbestos Quantification Analysis

Soil Samples

Our Ref 23-30233

Client Ref 7741A

Contract Title EVERY STREET, MANCHESTER

Lab No	2281648
Sample ID	M2
Depth	0.30-0.70
Other ID	
Sample Type	
Sampling Date	19/12/2023
Sampling Time	

Test	Method	Units	
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na

Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	892.19
ACMs present*		type	
Mass of ACM in sample		g	
% ACM by mass		%	
% asbestos in ACM		%	
% asbestos in sample		%	

Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na
% Chrysotile bundles in sample		Mass %	<0.001

Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na
% Chrysotile fibres in sample		Mass %	na

Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na
Chrysotile fibres		Fibres/g	na

* Denotes test or material description outside of UKAS accreditation.
 % asbestos in Asbestos Containing Materials (ACMs) is determined by
 by reference to HSG 264.
 Recommended sample size for quantification is approximately 1kg
 # denotes deviating sample

Information in Support of the Analytical Results

Our Ref 23-30233
 Client Ref 7741A
 Contract EVERY STREET, MANCHESTER

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2281647	M1 0.00-0.50 SOIL	19/12/23	GJ 250ml, GJ 60ml, PT 1L		
2281648	M2 0.30-0.70 SOIL	19/12/23	GJ 250ml, GJ 60ml, PT 1L		
2281649	M3 0.30-0.70 SOIL	19/12/23	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

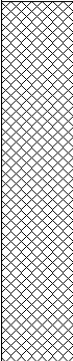
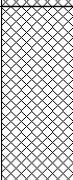
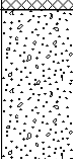
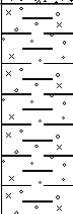
List of HWOL Acronyms and Operators

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det	Acronym
C5-C10 Gasoline Range Organics (GRO)	HS_1D_Total
C10-C24 Diesel Range Organics (DRO)	EH_1D_Total
EPH (C10-C40)	EH_1D_Total
C24-C40 Lube Oil Range Organics (LO)	EH_1D_Total

End of Report

MINI BOREHOLE RECORD SHEETS

 SUB SURFACE SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907							Site EVERY STREET, MANCHESTER, M4 7DQ		Borehole Number M1
Boring Method MINI PERCUSSIVE		Casing Diameter		Ground Level (mOD)		Client MCCAUL DEVELOPMENTS LIMITED		Job Number 7741A	
		Location AS PLAN		Dates 19/12/2023		Engineer CARPENTER FOUNDATIONS		Sheet 1/1	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-0.50	B						MADE GROUND : soft brown slightly gravelly sandy silty clay. Gravel sized fragments are fine to coarse stone and brick.		
0.50-1.20	B					(1.20)			
1.20-2.00	C			1.20m to 2.00m - 87% Recovery		1.20	MADE GROUND : brown sandy very clayey fine to coarse gravel sized fragments of brick, concrete, stone and bitumen.		
						(0.60)			
						1.80			
2.00-3.00	C			2.00m to 3.00m - 100% Recovery		(0.50)	Brown silty slightly clayey fine to coarse SAND and angular to subrounded fine to coarse sandstone and quartz GRAVEL (possible Made Ground).		
						2.30			
						(0.70)	Firm to stiff thinly laminated dark brown slightly gravelly silty CLAY with occasional thin bands of sand between laminae. Gravel is subrounded to rounded fine to medium sandstone and siltstone.		
						3.00			
				19/12/2023: DRY			Complete at 3.00m		
Remarks Hand dug inspection pit from GL to 1.20m to check for services Core diameter: 86mm to 2.00m and 64mm to 3.00m On completion backfilled with gravel.								Scale (approx) 1:25	Logged By LMB/HB
								Figure No. 7741A.M1	

S S SUB SURFACE SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907							Site EVERY STREET, MANCHESTER, M4 7DQ		Borehole Number M2		
Boring Method MINI PERCUSSIVE		Casing Diameter			Ground Level (mOD)		Client MCCAUL DEVELOPMENTS LIMITED		Job Number 7741A		
		Location AS PLAN			Dates 19/12/2023		Engineer CARPENTER FOUNDATIONS		Sheet 1/1		
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water		
0.30-0.70	B			1.20m to 2.00m - 62% Recovery		(0.10)	MADE GROUND: CONCRETE BLOCK	VOID VOID VOID			
						0.10	MADE GROUND: VOID				
(0.20)											
0.30	MADE GROUND : soft brown slightly gravelly sandy silty clay. Gravel sized fragments are fine to coarse stone and brick.										
(0.40)											
0.70-1.20	B					0.70	MADE GROUND : soft brown gravelly slightly sandy silty clay. Gravel sized fragments are fine to coarse concrete, stone and brick.				
1.20-2.00	C										
2.00-3.00	C						2.00m to 3.00m - 100% Recovery	1.95		Brown silty fine to coarse SAND and subangular to subrounded fine to coarse sandstone and quartz GRAVEL (possible Made Ground). ...below 2.00m : clayey.	
				(0.45)							
				2.40		Firm to stiff thinly laminated dark brown slightly gravelly silty CLAY. Gravel is subangular to rounded fine to coarse sandstone, siltstone and mudstone.					
				(0.60)							
		19/12/2023:DRY	3.00	Complete at 3.00m							
Remarks Hand dug inspection pit from GL to 1.20m to check for services Core diameter: 86mm to 2.00m and 64mm to 3.00m On completion backfilled with gravel								Scale (approx) 1:25	Logged By LMB/HB		
								Figure No. 7741A.M2			

S S SUB SURFACE SITE INVESTIGATION, GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907							Site EVERY STREET, MANCHESTER, M4 7DQ		Borehole Number M3	
Boring Method MINI PERCUSSIVE		Casing Diameter			Ground Level (mOD)		Client MCCAUL DEVELOPMENTS LIMITED		Job Number 7741A	
		Location AS PLAN			Dates 19/12/2023		Engineer CARPENTER FOUNDATIONS		Sheet 1/1	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
0.30-0.70	B			1.20m to 2.00m - 100% Recovery		(0.10)	MADE GROUND: CONCRETE BLOCK	VOID VOID VOID		
						(0.20)	MADE GROUND: VOID			
0.30	MADE GROUND : soft brown gravelly slightly sandy silty clay. Gravel sized fragments are fine to coarse stone, concrete, wood and brick.									
(0.40)										
0.70-1.20	B					0.70	MADE GROUND : soft brown slightly gravelly slightly sandy silty clay. Gravel sized fragments are fine to medium stone, concrete, and brick.			
						(0.50)				
1.20-2.00	C			1.20		Brown very gravelly silty fine to coarse SAND. Gravel is angular to rounded fine to coarse sandstone and quartz. (possible Made Ground).				
				(1.20)						
2.00-3.00	C			2.00m to 3.00m - 100% Recovery		19/12/2023:DRY	3.00	...below 2.00m : gravelly		Firm to stiff thinly laminated dark brown slightly gravelly silty CLAY. Gravel is subrounded to rounded fine to medium sandstone, siltstone and mudstone.
								2.40		
								(0.60)		
								Complete at 3.00m		

Remarks

Hand dug inspection pit from GL to 1.20m to check for services
Core diameter: 86mm to 2.00m and 64mm to 3.00m
On completion backfilled with gravel.

Scale (approx)

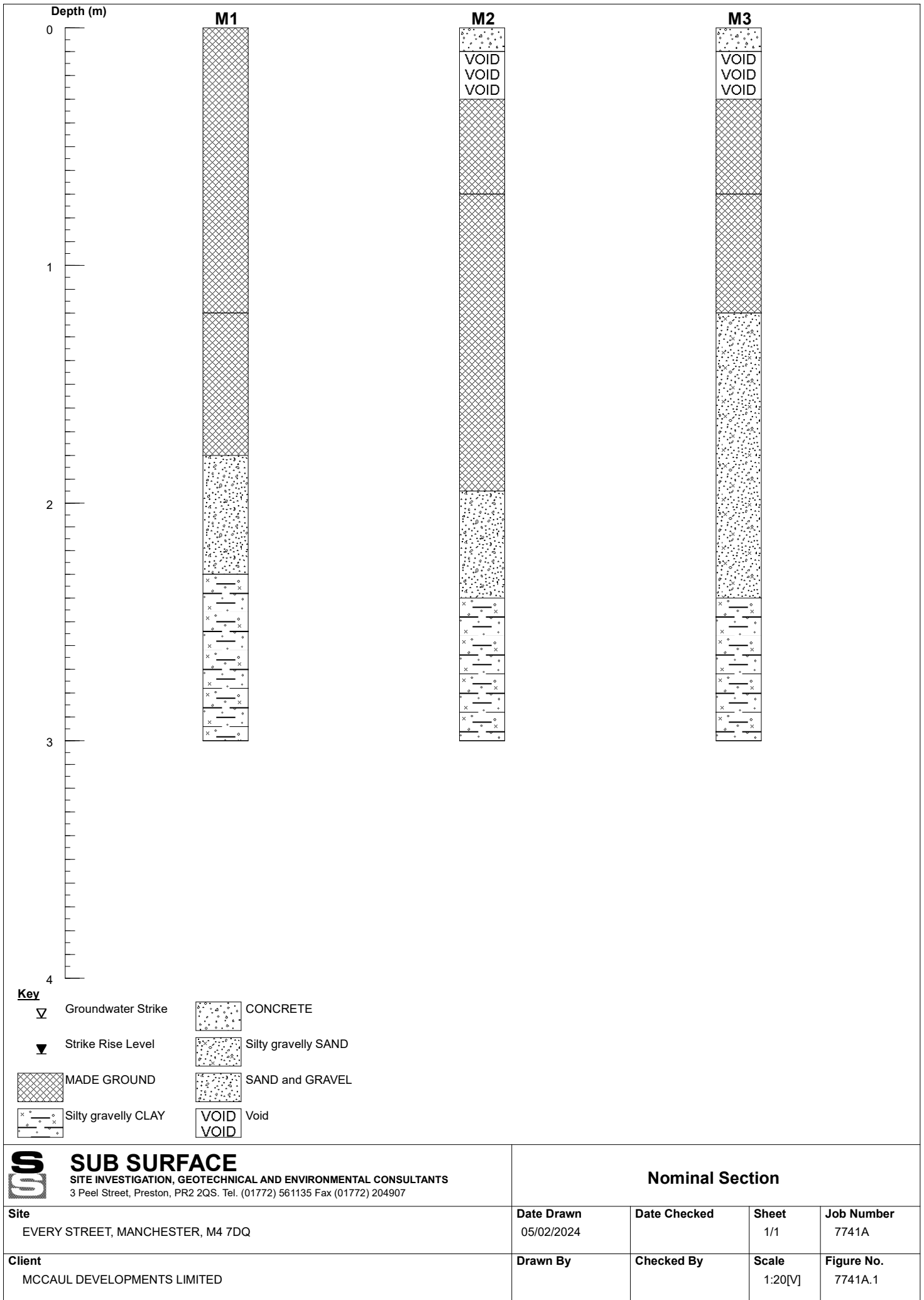
1:25

Logged By

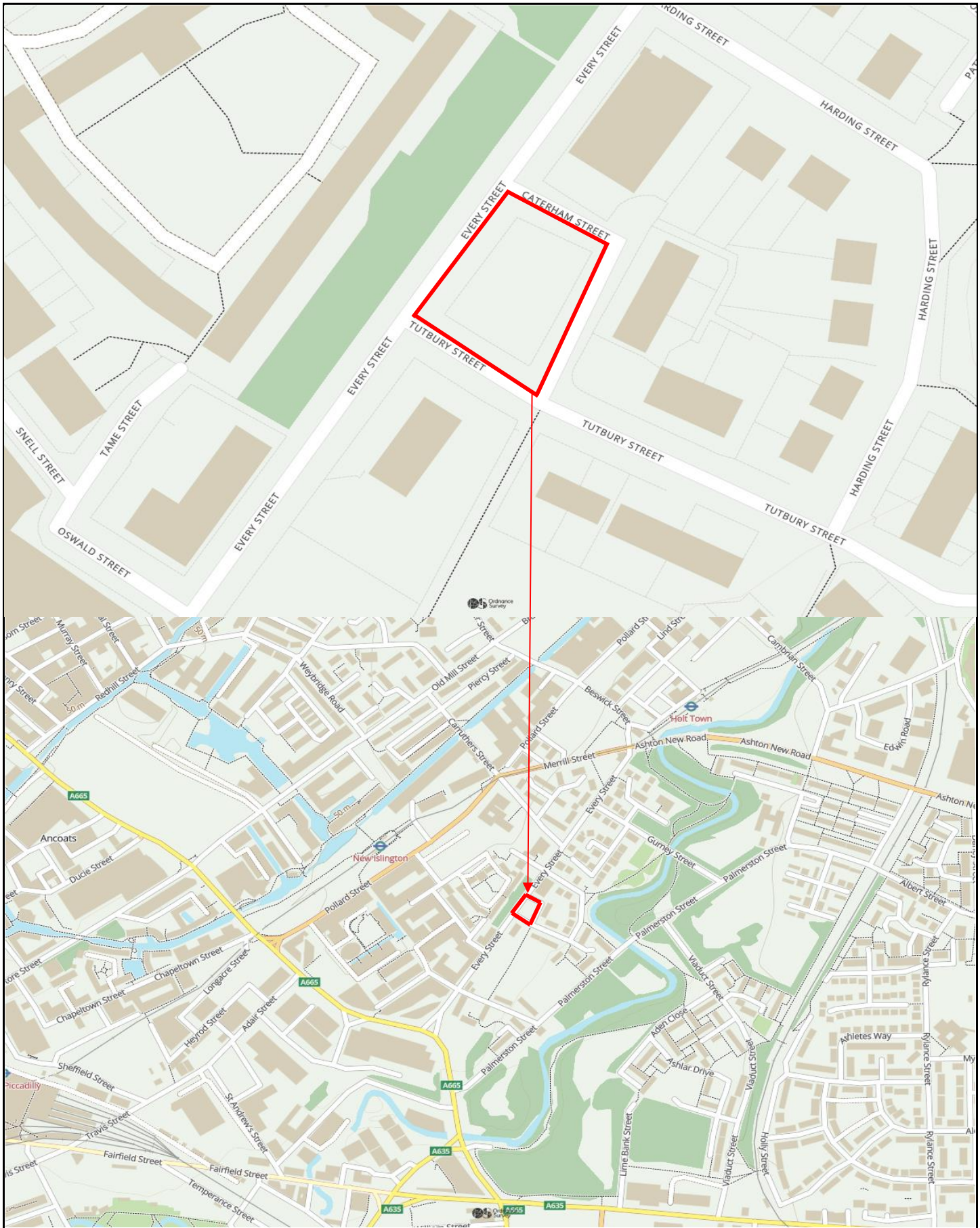
LMB/HB

Figure No.

7741A.M3



FIGURES



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 SUB SURFACE SITE INVESTIGATION AND SPECIALIST GEOTECHNICAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907	General Site Location			
Site MACDERMID CANNING LTD, CALE LANE, ASPULL, WIGAN	Date Drawn 30-Sep-22	Date Checked	Orientation 	Job No. 7300A
Client HPC HOMES LTD	Drawn By LMB	Checked By	Scale —	Figure No. 1



SUB SURFACE SITE INVESTIGATION AND SPECIALIST GEOTECHNICAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907		Proposed Development Plan			
Site	MACDERMID CANNING LTD, CALE LANE, ASPULL, WIGAN	Date Drawn	Date Checked	Orientation	Job No.
		30-Sep-22			7300A
Client	HPC HOMES LTD	Drawn By	Checked By	Scale	Figure No.
		LMB		—	2



 SUB SURFACE SITE INVESTIGATION AND SPECIALIST GEOTECHNICAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907		Exploratory Hole Location Plan			
Site MACDERMID CANNING LTD, CALE LANE, ASPULL, WIGAN		Date Drawn 30-Sep-22	Date Checked	Orientation 	Job No. 7300A
Client HPC HOMES LTD		Drawn By LMB	Checked By	Scale —	Figure No. 3