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Our Ref: P7893/Let Rep 1
Date: 24th March 2017

ESE Project Management
Little Hollins
Chapel-en-le-Frith,
High Peak
SK23 9UF

For the attention of Mr. R. Smith

Dear Roger,

Re: Site Investigation – Land off Simmondley Lane, Glossop

This summary letter report details the findings of the recent ground investigation and provides recommendations with regard to potential remediation requirements based on the available data. GRM's Standard Limitations of Reporting are provided in Appendix A of this summary report.

The site occupies a vacant plot of land covering an area of approximately 0.25Ha. Access to the site is from a shared drive to the east off Simmondley Lane located approximately 1.5km west of the centre of Glossop. The site had been recently stripped of vegetation and three Oak trees remain on-site. A site location and boundary plan is presented in Appendix B.

The site is bordered by houses along the northern and western boundaries, with Simmondley Lane to the east. Fields define the majority southern boundary with houses to the southeast.

The site is situated on the valley slope of a stream to the west of the site and as such the topography of the site slopes down from the southeast corner (circa 103m AOD) towards the northwest corner (circa 96m AOD).

The development proposals include two residential properties (bungalows) with gardens and associated infrastructure. A proposed development plan is presented in Appendix C.

Background Information
The Client instructed *Your*Environment (YE) to prepare a Stage I: Desktop Study and Risk Assessment Report, dated February 2017 (Ref: YE2894) which has been summarised below.

The geology is anticipated as Glacial Till superficial deposits underlain by Millstone Grit Group comprising sandstone, siltstone and mudstone.

The Environment Agency defined the Glacial Till as a Secondary (Undifferentiated) Aquifer and the Millstone Grit Group is classified as a Secondary A Aquifer.

A stream is noted beyond the western boundary of the site, flowing in a northerly direction.

The site is recorded not to be within a Flood Risk Zone.

Historically, the majority of the site has remained undeveloped dating from the 1880s to present. A small building was noted on eastern part of the site, from 1967 until 1994, the use of the building was unknown. The eastern part of the site is currently used as the access road into the site. Within the surrounding area a residential development is noted north and west of the site.

The earliest map dated 1880 showed a Mill Pond immediately west of the site associated with a local Cotton Mill and by the early 1960s the Mill Pond was no longer noted on the maps.

YE concluded that based upon the unknown use of building noted on-site and close proximity of the former Mill Pond, the risk from potential risk posed to end-users is *moderate*.

Summary of Investigatory Works
GRM attended the site on the 22nd March 2017, to undertake a limited ground investigation.

During the site visit, there was no evidence of the former Mill Pond having been infilled or encroaching the site. The topography of the area also showed that gardens and the level of the stream to west are lower than the current site levels.

Based upon the existing information and site visit we believe that the Mill pond was formed by an embankment engineered across the valley to create a dam and the flow was controlled by sluices on the downstream side. As the pond was no longer noted by the early 1960s it is assumed that the embankment dam and sluices were broken out and removed, which allowed the stream to return to the natural channel along the valley. By the early 1990s the stream has been channelled, partially covered and landscaped into the rear gardens of the houses beyond the western boundary.

Photographs of the site and stream are presented in Appendix D.

The investigation was designed to confirm ground conditions and assess the risk posed to end-users. The investigation was restricted due to the root protection zones of around the existing Oak trees, which have tree preservation orders on them and an existing drain recorded cutting across the site from northwest to southeast.

The GRM investigation included three trial holes, (TP1 to TP3) which were mechanically excavated to depths 2.5m below ground level (begl). TP1 and TP2 were targeted within the rear gardens of each proposed bungalow and TP3 was targeted within the proposed access road.

A copy of the Exploratory Hole Location Plan and the Logs are presented in Appendix E and F, respectively.

At the time of the investigation the surface topsoil was very soft underfoot due to heavy rain.

Ground Conditions
Topsoil
Topsoil at the surface of each trial pit was recorded as dark brown sandy gravelly clay with sandstone and mudstone gravels. Numerous roots and rootlets were noted. The topsoil ranged between 0.15m and 0.2m in thickness.

Reworked Natural
Reworked natural materials were recorded beneath the topsoil in TP1 from 0.2m as a ceramic land drain was noted at 1.1m begl. The material was recorded as soft to firm brown mottled orange and yellow silty sandy gravelly clay with sandstone and mudstone gravels.

Weathered Millstone Grit Group

Weathered Millstone Grit was encountered in all holes from depths of 0.15m (TP2) and 1.15m (TP1) to a maximum depth of 2.5m begl in each location, the full depth of the weathered strata was unproven due to the increased density of the strata and groundwater ingress.

The weathered Millstone Grit was found to be variable across the site with cohesive strata recorded in TP1 and TP3 to depths of 2.3m to 2.5m begl and comprised soft to firm, brown and orange brown mottled yellow silty sandy gravelly clay. Gravels comprised sandstone and mudstone.

Whilst, granular strata was recorded at the base of TP1 between 2.3 and 2.5m begl and throughout TP2 from 0.15m to 2.5m begl. The granular materials were encountered as brown mottled orange clayey gravelly sand to sandy gravel with sandstone and mudstone gravels. The strata was recorded as approximately medium dense and became denser with increased depth.

Groundwater

Groundwater ingress (between minor to medium ingress) was encountered through the base of TP2 and TP3 at depths of 2.5m begl

Ground Gas

The desk studies conceptual model determined that the historic Mill Pond to the west the area may have been backfilled and considered a potential off-site source of ground gases.

Following the site works and based upon the topography of the area and off-site development, no evidence of the former Mill Pond or infilled areas was identified, therefore the risk from ground gases is considered to be very low and gas precautions are considered not to be required.

Contamination Observations

No potential sources of contamination were observed during the fieldwork. Therefore it is considered the ground conditions on-site do not pose a significant risk to end-users or site workers during the construction of the proposed development.

Risk Assessment

A source of soil contamination has not been identified at the site and the former Mill Pond is not considered to be a potential off-site source of ground gases as there was no evidence of infilling and the stream was channelled beyond the western boundary. Therefore, it is considered that the potential risk posed to end-users is very low and no remedial works are proposed.

A copy of this report should be submitted to the Planning Department of the Local Authority/Local Authority EHO for review.

We trust this is suitable for you current requirements, should you require any further information or would like any clarification of the points raised above please do not hesitate to contact us.

Yours sincerely,
for GRM Development Solutions Ltd

Charlotte Taylor BSc (Hons) MIEnvSc
Senior Environmental Scientist

Richard Upton BSc (Hons) MSc MIEnvSc
(Director)

Appendix

Appendix A – General Appraisal Comments and Standard Limitations
Appendix B – Site Location and Boundary Plan
Appendix C – Proposed Development Plan
Appendix D – Site Photographs
Appendix E – Exploratory Hole Location Plan
Appendix F – Exploratory Hole Logs

APPENDIX A

GRM Development Solutions provides multi-disciplinary consultancy services, UK-wide:

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- Structural Engineering Services
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GENERAL APPRAISAL COMMENTS

i INFORMATION SOURCES

Where available the following sources have been used for the identification and assessment of potential ground hazards:

- Relevant British Standards
- British Geological Survey (BGS) Geology Map Scale 1:10,000 for local area
- British Geological Survey (BGS) Geology Map Scale 1:50,000/1:63,320
- BGS Memoir
- BGS Borehole Records
- Environment Agency Groundwater Vulnerability Maps
- Historical Ordnance Survey (OS) Maps
- Environmental Data Report
- Environment Agency Website: http://www.environment-agency.gov.uk/
- Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites, UKWIR, 2010.
- Coal Authority Records / Coal Mining Report
- DEFRA/Environment Agency Contaminated Land publications and DoE Industry Profiles
- BRE Guide BR211 (2007), 'Radon: Guidance on protective measures for new buildings'
- HPA-RPD-033 (2007), 'Indicative Atlas of Radon in England and Wales'
- NRPB Publication W26 (2002), 'Radon Atlas of England and Wales'
- CIRIA C665 'Assessing risks posed by hazardous ground gases to buildings'
- Other technical references used throughout this document are detailed in the text.

ii CONTAMINANTS OF CONCERN

The DoE Industry Profiles are normally used to assess likely contaminants from past land use and potential nearby industrial sources. For land uses where no profile is available, likely contaminants of concern are selected by GRM based on past experience of similar sites, a general screening suite of contaminants covered by CLEA and common contaminants from the Industry Profiles.

- Arsenic
- Cadmium
- Chromium
- Lead
- Mercury
- Selenium
- Copper
- Nickel
- Zinc
- Phenols
- cyanide (total)
- pH
- Water soluble sulphate
- PAH (polycyclic aromatic hydrocarbons)

Asbestos and PCBs are listed in the vast majority of profiles. PCBs are listed as the profiles expect electricity substations and switch boxes on all industrial sites. There is the potential for asbestos containing material to be mixed up with made ground, following any demolition works.

iii CONCEPTUAL MODEL METHODOLOGY

The consideration of contamination is based upon the principles of risk assessment, using the 'source-pathway-receptor' model in order to establish the presence, or potential presence, of a pollutant linkage.

To create a risk, contamination must have the potential to cause harm to susceptible targets or receptors such as humans, the water environment or the built environment. The potential for harm to occur requires three conditions to be satisfied to form a pollutant linkage:

- The presence of substances that may cause harm (SOURCE).
- The presence of a target which may be harmed (RECEPTOR).
- The existence of a plausible migration route between the source and the receptor (PATHWAY).

In the absence of a plausible pollutant linkage there is no risk. Where a potential linkage is identified in order for it not to pose a risk to the identified receptor it must be broken.

iv INTRUSIVE INVESTIGATION SAMPLING METHODOLOGY

The ground investigation (including fieldwork, sampling, monitoring and laboratory analyses) has been designed to identify and assess potential ground related problems and to allow cost effective solutions to be advised. It has been planned on the basis of the desk study, site inspection and the proposed development layout (where available). All fieldwork and soil descriptions were carried out in general accordance with relevant British Standards.

The exploratory holes have been positioned and advanced to depths to determine the general ground/groundwater/gas conditions below the site. A general grid pattern has been adopted, where possible, to provide sufficient information based on the current proposed layout scheme. Some holes have been targeted at particular hazards identified in the Phase I assessment. The resultant exploratory hole density is considered to be commensurate with the complexity of the site conditions and detail of information required for this phase of the investigation.

v GROUND GAS RISK ASSESSMENT METHODOLOGY

Gas monitoring programmes undertaken by GRM are designed to broadly comply with the recommendations outlined in CIRIA Report C665 'Assessing risks posed by hazardous ground gas to buildings' (2007).

To assess the risks posed by ground gases such as radon, carbon dioxide and methane, the relevant current guidance has been used. For radon the site has been assessed following the guidelines in 'Radon: guidance on protective measures for new dwellings (BR211: 2007)'. For methane and carbon dioxide the primary guidance document used to determine if protection measures are required is CIRIA Report C665 'Assessing risks posed by hazardous ground gases to buildings' (2007). This uses Gas Screening Values (GSVs), which are gas concentrations multiplied by borehole flow rate, along with additional limiting factors (such as maximum methane concentrations) to classify the gas regime of a site.

The guidance document includes two methods of characterising a site. The main method 'Situation A' is based on work by Wilson and Card and is used for all types of development except low rise housing that meets the assumptions of 'Situation B'. The 'Situation B' method proposed by Boyle and Witherington for the NHBC assumes all properties have pre-cast suspended floors (beam and block) with ventilated underfloor voids.

Where flow is not recorded during the monitoring a default flow rate of 0.1l/hr will be used in the assessment to produce a positive result.

vi HUMAN HEALTH RISK ASSESSMENT METHODOLOGY

Guidance contained in the Environment Agency's CLEA Report has been used to assess the risks posed to human health.

For residential developments that include domestic gardens the default Tier 1 Assessment Criteria (TAC) for 'residential land with plant uptake' are used, i.e. a female with a start age class of one and an end age class of six. All pathways are considered including the consumption of home-grown vegetables.

For residential developments that do not include domestic gardens the default Tier 1 Assessment Criteria (TAC) for 'residential land without plant uptake' are used, i.e. a female with a start age class of

one and an end age class of six. All pathways are considered except the consumption of home-grown vegetables.

For commercial/industrial developments the default Tier 1 Assessment Criteria (TAC) for 'commercial/industrial' are used, i.e. a female with a start age class of sixteen and an end age class of eighteen. All pathways are considered except the consumption of home-grown vegetables.

The TAC used by GRM include Soil Guideline Values (SGV) published by the EA, values calculated by GRM using the CLEA v1.06 risk assessment and values and chemical data developed by LQM/CIEH. The TAC used in the assessment are selected based on the lowest site specific SOM values returned as part of the chemical analysis.

Where soil chemical analysis results are found to exceed the TAC, Site-Specific Risk Assessments may be undertaken using the CLEA v1.06 risk assessment software using the age classes and pathways described above.

vii RISK TO SITE WORKERS – GENERAL COMMENTS

The risks to site workers are similar to those posed to site end users, although likely to be less severe due to the site workers' shorter exposure to the identified contamination. However, site workers (particularly groundworkers) are more likely to come into direct contact with contaminated soils due to the nature of their work. On this basis ground and construction workers should be provided with basic Personal Protective Equipment based on the site's general health and safety risk assessment, but including as a minimum safety footwear, gloves and overalls.

A site specific risk assessment should be carried out for all hazards identified within the ground investigation in accordance with current health and safety legislation. This assessment should identify any measures required to further reduce risks i.e. providing further Personal Protective Equipment, welfare facilities and if necessary preventing access to certain areas.

Demolition and dismantling of existing structures on the site must be carried out to a safe and acceptable standard, in accordance with current UK guidance and best practice. Whilst not ground related, asbestos and hazardous substances surveys should be conducted prior to any demolition.

Any unusual colours, odours and suspicious ground should be reported immediately to site management and then GRM.

Whilst this appraisal has considered the long-term effects of contamination, GRM can also help during the formulation of Health and Safety documentation, if required.

viii CONTROLLED WATERS RISK ASSESSMENT METHODOLOGY

Where the desk study and fieldwork do not reveal a potential source of contamination no leachate or groundwater testing will be performed. Where a potential source is identified the testing will comprise leachate testing on the material considered most likely to pose a risk, groundwater testing will be undertaken if water is present at shallow depth.

The UK Drinking Water Standards (UKDWS) or Environmental Quality Standards (EQS) are usually adopted for comparison with the leachate/groundwater test results. When the most sensitive receptor is considered to be the an aquifer (groundwater) UKDWS will be adopted as the Initial Tier 1 screening values. Where the most sensitive receptor is a surface water feature the EQS values will be used as Initial Tier I Screening values.

ix CONSTRUCTION MATERIALS RISK ASSESSMENT METHODOLOGY

The 'screening levels' adopted for the assessment of risk to construction materials are taken from the following documents:

- UK Water Industry Research (UKWIR) Contamination thresholds for sub-surface water pipes, for the protection of buried pipes.
- Building Research Establishment (BRE) Special Digest SD1 (2005), 'Concrete in Aggressive Ground', for the protection of buried concrete.

x WASTE DISPOSAL AND SITE WASTE MANAGEMENT PLANS

Under current Waste Management Regulations, waste soil materials produced from the site will require characterisation to enable it to be disposed of correctly.

The chemical analysis results included in this report should be provided to the relevant landfill operators to establish the characterisation of the waste, confirm its suitability for landfill disposal and provide estimated costings. If material is classified as hazardous, then the site will need to be registered with the Environment Agency prior to the movement of the waste. Depending on the receiving landfill's current permit, further chemical analysis, incorporating Waste Acceptance Criteria (WAC) leachate analysis, may be required.

All materials removed from the site will be classified as 'waste' and therefore must be removed by a suitably licensed carrier of waste. This applies whether or not the waste is contaminated. All waste removed to landfill will attract Landfill Tax.

The developer/builder is likely to be classed as the waste producer and therefore, has a duty of care to ensure that all waste is disposed of appropriately. This includes ensuring the waste carrier is licensed and disposes of the waste to a suitably licensed landfill site. They are also required to keep a paper trail from 'cradle to grave' including copies of the waste disposal tickets.

Efficient materials management on site is recommended as it can lead to significant cost savings when compared to the traditional side casting or single stockpile of arisings. Likewise making the site as volume neutral as possible will reduce the costs of development.

Site Waste Management Plans allow better waste management practices, help to reduce the amount of waste produced and identify best environmental disposal options. Implementing a Site Waste Management Plan (SWMP) can reduce costs (increasing business profits) and maximise resource efficiency.

SWMPs are a legal requirement for all projects with an overall development cost of over £300k. GRM can assist in the production of SWMPs which comply with the Code of Practice and identify best environmental disposal options when dealing with waste.

xi GEOTECHNICAL ASSESSMENT GENERAL COMMENTS

Where finished floor levels of proposed structures have not been provided by the Client, then for the purposes of initial assessment, GRM will assume that finished levels will not vary appreciably from the existing ground levels. If the depths of any underground engineering works (i.e. sewers, pumping stations etc.) are unknown they will not be taken in to account in the assessment and it will be assumed that any such works will not compromise foundation or ground stability.

Should the development proposals or finished levels be different from these assumptions then the comments/recommendations in the Geotechnical Assessment may require revising.

It should be noted that the results of window sampling and/or cable percussive boreholes may not give a true indication of a soils actual engineering properties (i.e. stability, mass structure etc). GRM consider that that prior to development trial pitting should be undertaken to confirm the recommendations in the Geotechnical Assessment.

xii GEOTECHNICAL ASSESSMENT – ENGINEERING GROUND TREATMENT

Near surface soils have the potential to be disturbed by weathering and site traffic. Precautions should always be taken to avoid this, as excessive disturbance may leads to more onerous floor slab designs, road cap thickness and increased amounts of off site disposal etc.

Near surface soils may need treatment or reinforcing to allow safe movement of construction plant and labour. An assessment by the contractor should be undertaken once the type of machinery/plant needed to complete the development is known.

xiii GEOTECHNICAL ASSESSMENT – EXCAVATIONS

Excavation instability (over-break) can result in damage to existing services or structures (e.g. foundations, roads or boundary walls/fences) both on and off-site, as well as increased foundation concrete costs. In order to minimise this, all excavations deeper than 1.2m deep (or any excavation within 1.5m of any existing structure or service) should be supported. Full support should be provided to the full depth of all near vertically sided excavations in made ground, soft and very soft clays and granular soils. A reduction to intermediate support should be acceptable within firm and stiffer natural clays.

Wherever possible, man entry into excavations should be prevented; however, where this is not possible, entry to, and time spent in, excavations should be kept to a minimum.

The build program should be tailored to reflect the impact that deep excavations through potentially unstable strata can have on adjacent properties, so that they are not undermined.

All excavations on site should be in accordance with HSE guidelines and stability should be practically maintained at all times. Reference should be made to HSE construction information sheet No. 8 (Revision 1) 'Safety in Excavations'.

Care should be taken to ensure that falls from excavation faces do not adversely affect the integrity of foundation concrete.

If contaminated water enters excavations it should be removed and transported to an appropriate treatment facility by a suitably licensed carrier before construction begins.

xiv GEOTECHNICAL ASSESSMENT – SUBSTRUCTURES

Where practicable, existing buried construction should be fully removed; however, if this is not practicable all new foundations should be carried down to fully penetrate it and it should be broken well away from all new structures.

There may be existing structures and/or infrastructure in close proximity to the proposed development. New build foundations may be constructed next to pavements with existing underground services beneath them, or excavations may be required near existing footings associated with adjacent properties. These potential hazards need to be taken into consideration when designing foundations and the groundworker needs to be made aware of their potential impact during the redevelopment works. Foundations close to existing underground services or buildings may require alternative foundation techniques (such as piling) to protect the integrity of these structures.

The contractor for the works should carry them out in such a fashion so as to not cause excessive overbreak, concrete usage or undermine existing buildings/roads/ services that are to be retained.

xv GEOTECHNICAL ASSESSMENT – SOAKAWAYS

Soakaway testing in trial pits by GRM is broadly carried out in accordance with BRE 365 (1991). The testing comprises the excavation of a test pit to a suitable depth, and the placement of water into the pit. The level of water present is then monitored over time. For borehole installations, the permeability testing (falling head/rising head) is undertaken in accordance with BS5930.

If it is decided to proceed with the use of soakaway drainage, then the following general points should be noted:

- Soakaways should not be placed so that water can be discharged through potentially contaminated made ground.
- The Environment Agency may require soakaways to be sealed systems such that only roof run off falls to soakaway.
- Interceptors are likely to be required for soakaways for highway drainage. The adopting authority for the highways should be consulted at the earliest opportunity regarding the use of soakaways for highways drainage.
- Consideration of site levels and slopes should be taken into account during the design.

- The construction of all soakaways should be in accordance with the current building regulations.
- Soakaways should not be placed within 5m of a proposed building.
- Placement of soakaways needs to be considered so as to avoid ponding of water down slope.
- The base of a soakaway should not be below the highest recorded water level.
- The Environment Agency prefer 1m of dry soil to be present between the base of a soakaway and the water table to provide attenuation for contamination.

xvi GEOTECHNICAL ASSESSMENT – FOUNDATIONS

If soft or hard spots are encountered during foundation excavation then they should be replaced with suitably compacted material or the footings deepened to suitable strata, to avoid differential settlement.

If strata of differing bearing character (e.g. sand and clay) are encountered at foundation levels within the excavations for a single plot then the excavation depths should be altered as appropriate to ensure the foundations rest on a single stratum, or strata that will not induce differential settlement. Where this is impractical then GRM should be contacted to assess a reinforced concrete detail or an alternative foundation solution (e.g. piles or vibro-replacement).

NOTES ON LIMITATIONS

General

GRM Development Solutions Limited has prepared this report solely for the use of the Client and those parties with whom a warranty agreement had been executed, or with whom an assignment had been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from GRM Development Solutions Limited; a charge may be levied against such approval.

GRM Development Solutions Limited accepts no responsibility or liability for:

a) the consequences of this document being used for any purpose or project other than for which it was commissioned, and

b) the consequences of this document being used by any third party with whom an agreement has not been executed.

Phase I Environmental Audits/ Desk Studies

The work undertaken to provide the basis of this report comprised a study of available documented information from a variety of sources (including the Client), together with (where appropriate) a brief walk over inspection of the site and meetings and discussions with relevant authorities and other interested parties. The opinions given in this report have been dictated by the finite data on which they are based and are relevant only to the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. Should additional information become available which may affect the opinions expressed in this report, GRM Development Solutions Limited reserves the right to review such information and as considered necessary and appropriate to modify the opinions accordingly. It should be noted that any risks identified in a Phase 1 report are perceived risks based on the information reviewed; actual risks can only be assessed following a physical investigation of the site.

Phase II Environmental Audits (Contamination Investigations)

The investigation of the site has been carried out to provide sufficient information concerning the type and degree of contamination, ground and groundwater conditions to allow a reasonable risk assessment to be made. The objectives of the investigation have been limited to establishing the risks associated with potential human targets, building materials, and controlled waters.

The amount of exploratory work and chemical testing undertaken has necessarily been restricted by the short timescale available, and the locations of exploratory holes have been restricted to the areas unoccupied by the building(s) on the site and by buried services. A more comprehensive investigation may be required if the site is to be redeveloped as, in addition to risk assessment, a number of important engineering and environmental issues need to be resolved.

For these reasons if costs have been included in relation to site remediation these must be considered as provisional only and must, in any event, be confirmed by a commercial adviser.

The exploratory holes undertaken, which investigate only a small volume of the ground in relation to the size of the site, can only provide a general indication of site conditions. Whilst exploratory testing is intended to gain an accurate representation of the site, the very nature of sampling and testing is such that it cannot ensure that all localised conditions are detected

The risk assessment and opinions provided take in to consideration, inter alia, currently available guidance relating to acceptable contamination concentrations; no liability can be accepted for the retrospective effects of any future changes or amendments to these values.

Phase II Geo-environmental Investigations (Combined Geotechnical and Contamination Investigations)

The investigation of the site has been carried out to provide sufficient information concerning the type and degree of contamination, geotechnical characteristics, and ground and groundwater conditions to provide a reasonable assessment of the environment risks together with engineering and development implications. If costs have been included in relation to site development a commercial adviser must confirm these.

The exploratory holes undertaken, which investigate only a small volume of the ground in relation to the size of the site, can only provide a general indication of site conditions. The opinions provided and recommendations given in this report are based on the ground conditions apparent at the site for each of the exploratory holes. There may be exceptional ground conditions elsewhere on the site which have not been disclosed by this investigation and which have therefore not been taken into account in this report.

The comments made on groundwater conditions are based on observations made at the time the site work was conducted. It should be noted that groundwater levels will vary owing to seasonal, tidal and weather related effects.

The scope of the investigation was selected on the basis of the specific development proposed by the Client and may be inappropriate to another form of development or scheme.

The risk assessment and opinions provided take in to consideration, inter alia, currently available guidance relating to acceptable contamination concentrations; no liability can be accepted for the retrospective effects of any future changes or amendments to these values.

APPENDIX B

GRM Development Solutions provides multi-disciplinary consultancy services, UK-wide:

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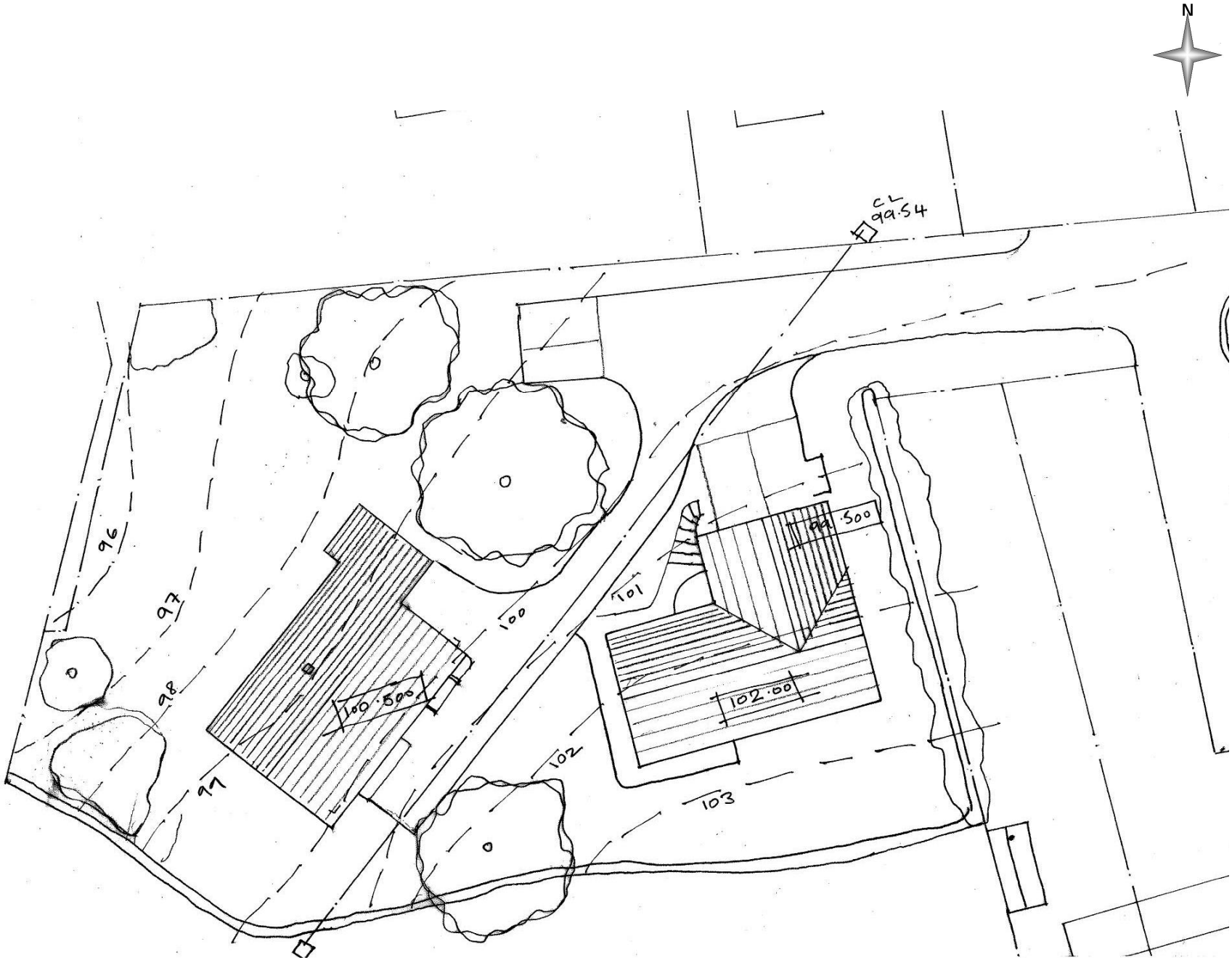

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NOTES:

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CLIENT:

ESE Project Management

PROJECT:

Land off Simmondley Lane, Glossop

TITLE:

Proposed Development Plan

SCALE@SIZE :	ISSUE:
NTS	FINAL
DESIGN/DRAWN by :	DATE:
PROJECT No:	DRAWING No:
P7893	

APPENDIX C

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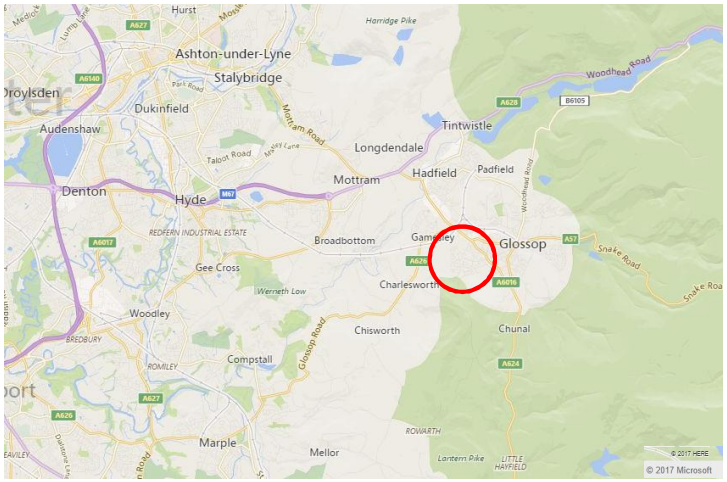

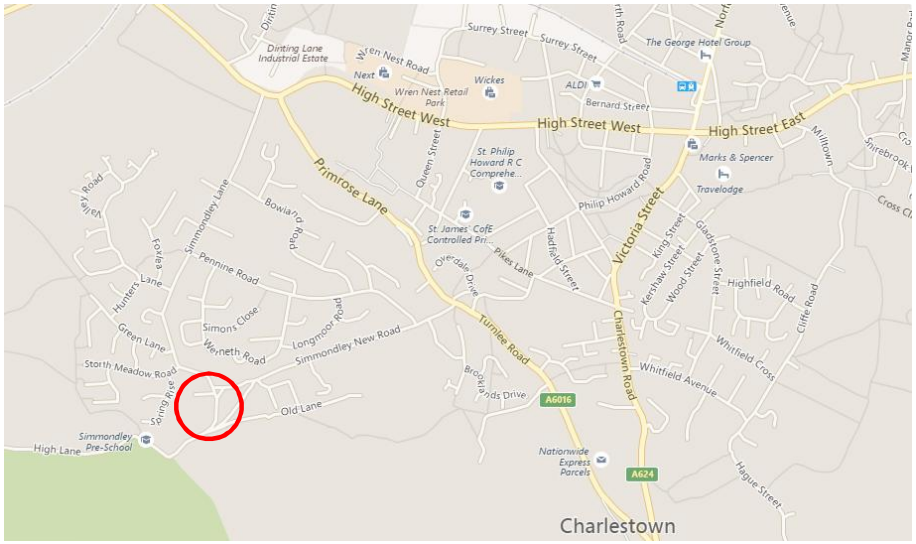

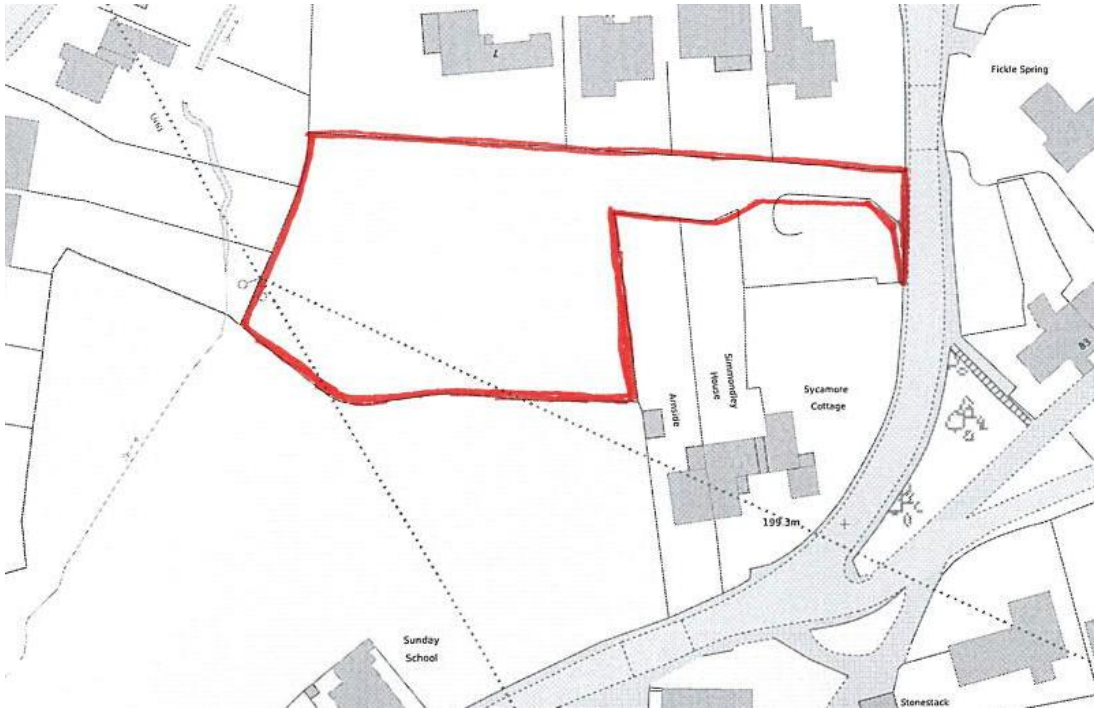

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NOTES:

Approximate Site Location

Approximate Site Boundary

Approximate Postcode – SK13 6LT

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CLIENT:

ESE Project Management

PROJECT:

Land off Simmondley Lane, Glossop

TITLE:

Site Location and Boundary Plan

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PROJECT No: P7893	DRAWING No:

APPENDIX D

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Photograph 1 – Site view towards southeast

Photograph 2 – Site view looking west

Photograph 3 – Site view looking northeast

DO NOT SCALE

NOTES:

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mail@grm-uk.com www.grm-uk.com

CLIENT:

ESE Project Management

PROJECT:

Land off Simmondley Lane, Glossop

TITLE:

General Site Photographs

SCALE@SIZE :	ISSUE:
NTS	
DESIGN/DRAWN by :	DATE:
PROJECT No:	DRAWING No:
P7893	

Photograph 4 – Valley and stream southwest

Photograph 5 – Stream channelled through rear gardens beyond western site boundary

DO NOT SCALE

NOTES:

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General Site Photographs

SCALE@SIZE :	ISSUE:
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P7893	

APPENDIX E

GRM Development Solutions provides multi-disciplinary consultancy services, UK-wide:

- Geotechnical and Geo-environmental Services
- Civil and Infrastructure Services
- Structural Engineering Services
- Construction Management
- Site Services

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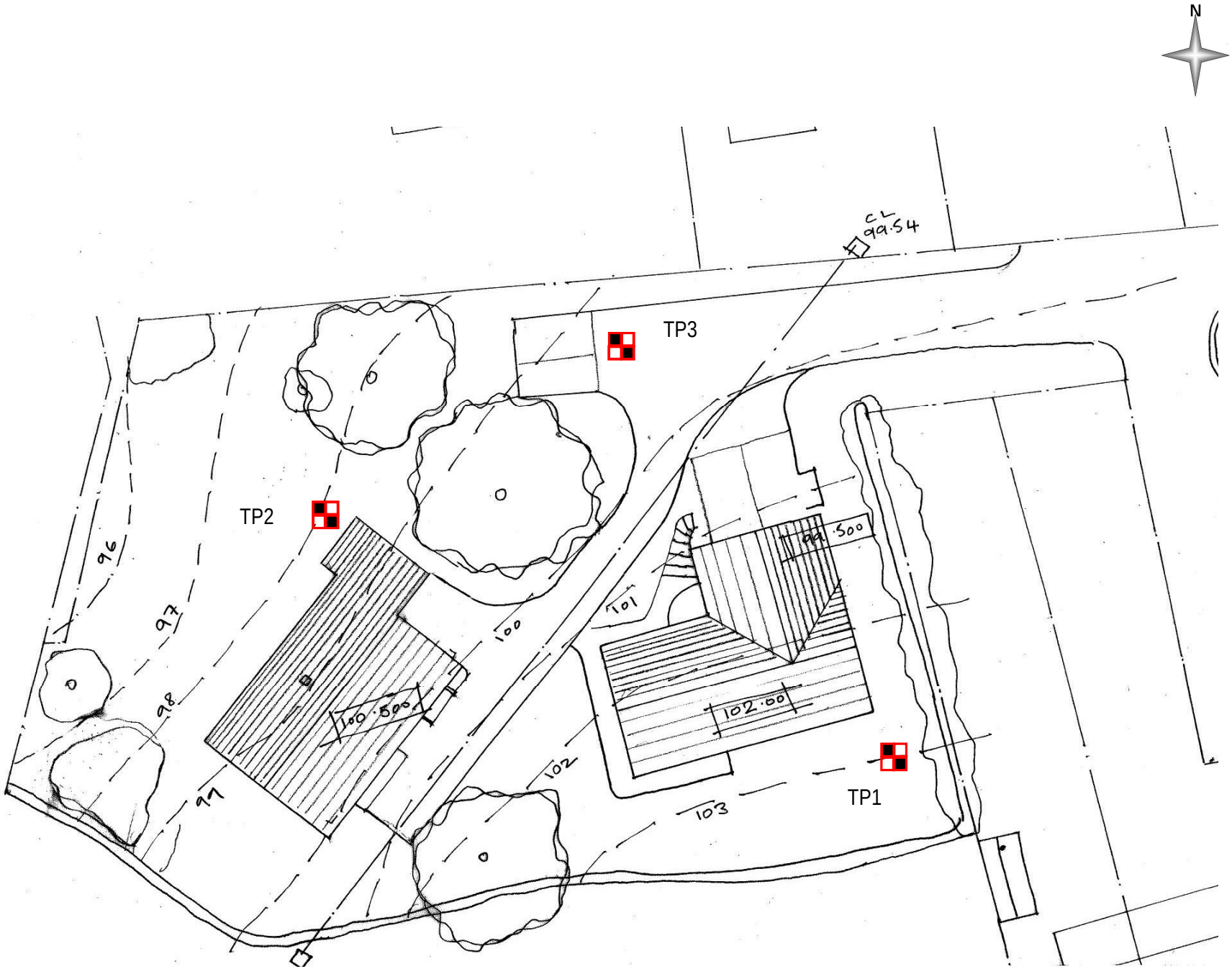

DO NOT SCALE

NOTES:

TP1 Trial Pit

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CLIENT:

ESE Project Management

PROJECT:

Land off Simmondley Lane, Glossop

TITLE:

Exploratory Hole Location Plan

SCALE@SIZE :	ISSUE:
NTS	
DESIGN/DRAWN by :	DATE:
PROJECT No:	DRAWING No:
P7893	

APPENDIX F

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Trial Pit Log

Trial Pit No TP1
Sheet 1 of 1

Site Name: Simmondley Lane, Glossop

Ground Level (mAOD)

Client: ESE Project Management

GRM Project Ref: P7893

Coordinates E N

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.10 - 0.20	ES		0.20			Dark brown slightly sandy gravelly CLAY. Gravel is angular fine to medium of sandstone and mudstone with numerous roots and rootlets. Wet. TOPSOIL
	0.50	D					Soft to firm brown mottled orange and yellow silty sandy gravelly CLAY. Gravel is angular fine to coarse and rare cobbles of sandstone and mudstone. REWORKED NATURAL
	1.20	D		1.15			*Ceramic land drain, dry.* Soft to firm brown mottled orange silty sandy gravelly CLAY. Gravel is angular fine to coarse of sandstone and mudstone. WEATHERED MILLSTONE GRIT GROUP
	2.30	ES		2.30			Approximately medium dense to dense brown mottled dark brown slightly clayey sandy GRAVEL. Gravel is angular to sub-rounded fine to coarse of sandstone. WEATHERED MILLSTONE GRIT GROUP
	2.50	D		2.40 2.50			Approximately dense orange brown slightly clayey sandy GRAVEL. Gravel is angular to sub-angular fine to coarse with cobbles of sandstone. WEATHERED MILLSTONE GRIT GROUP End of Pit at 2.50m

1 2 3 4 5

Date Excavated: 22/03/2017
Date Backfilled: 22/03/2017
Shoring: None.
Stability: Stable
Plant Used: JCB 3CX
Logged by: CT

Groundwater Observations:
No groundwater encountered.

Trial Pit Dimensions (m):
0.60 × 2.30

Reason for termination of Trial Pit:
Terminated on dense sand and gravel.

General Remarks:

Strata consistencies/densities determined by observation only

Version: FINAL

Scale: 1:31

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Trial Pit Log

Trial Pit No TP2
Sheet 1 of 1

Site Name: Simmondley Lane, Glossop

Ground Level (mAOD)

Client: ESE Project Management

GRM Project Ref: P7893

Coordinates E N

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.10 - 0.15	ES		0.15			Dark brown sandy slightly gravelly CLAY. Gravel is angular to sub-rounded fine to coarse of sandstone with numerous roots and rootlets. Wet. TOPSOIL
	0.40 - 0.50	D					Approximately medium dense brown mottled orange clayey gravelly SAND. Gravel is angular to sub-rounded fine to coarse of sandstone and mudstone. Becoming very gravelly with cobbles at depth. WEATHERED MILLSTONE GRIT GROUP
	1.40 - 1.50	D		1.40			Approximately medium dense becoming dense with depth brown mottled orange and yellow gravelly SAND. Gravel is angular to sub-angular fine to coarse of sandstone and mudstone. WEATHERED MILLSTONE GRIT GROUP
▼	2.50	D		2.50			End of Pit at 2.50m

1 2 3 4 5

Date Excavated: 22/03/2017
Date Backfilled: 22/03/2017
Shoring: None.
Stability: Stable.
Plant Used: JCB 3CX
Logged by: CT

Groundwater Observations:
Slow groundwater seepage through base

Trial Pit Dimensions (m):
0.60 × 2.30

Reason for termination of Trial Pit:
Terminated on dense sand and gravel.

General Remarks:

Strata consistencies/densities determined by observation only

Version: FINAL

Scale: 1:31

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Trial Pit Log

Trial Pit No TP3
Sheet 1 of 1

Site Name: Simmondley Lane, Glossop

Ground Level (mAOD)

Client: ESE Project Management

GRM Project Ref: P7893

Coordinates E N

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.10 - 0.20	ES		0.20			Dark brown sandy gravelly CLAY. Gravel is angular fine to medium angular to sub-angular fine to coarse of sandstone, brick and occasional mudstone with numerous roots and rootlets. Wet. TOPSOIL
	0.30 - 0.40	D		0.50			Soft to firm orange brown mottled grey and yellow silty sandy CLAY. WEATHERED MILLSTONE GRIT GROUP
	1.00	D					Soft to firm orange brown sandy gravelly CLAY. Gravel is angular to sub-angular fine to coarse with cobbles of sandstone and mudstone. WEATHERED MILLSTONE GRIT GROUP
				1.60			Firm orange brown silty sandy gravelly CLAY. Gravel is angular to sub-angular fine to coarse with cobbles of sandstone and mudstone. WEATHERED MILLSTONE GRIT GROUP
	2.00	D					
▼	2.50	D		2.50			End of Pit at 2.50m

1
2
3
4
5

Date Excavated: 22/03/2017
Date Backfilled: 22/03/2017
Shoring: None.
Stability: Stable
Plant Used: JCB 3CX
Logged by: CT

Groundwater Observations:
Moderate groundwater seepage through base.

Trial Pit Dimensions (m):
0.60 × 2.00

Reason for termination of Trial Pit:
Terminated due to groundwater ingress.

General Remarks:

Strata consistencies/densities determined by observation only

Version: FINAL

Scale: 1:31