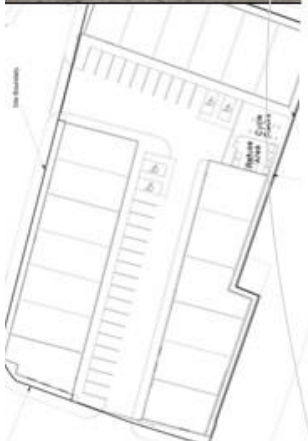




EARTH ENVIRONMENTAL
& GEOTECHNICAL

Asbestos Management Plan

Bradstone Road

Manchester

February 2024

On behalf of

Sital Holdings 1 Ltd

Earth Environmental & Geotechnical Ltd
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ASBESTOS MANAGEMENT PLAN

BRADSTONE ROAD

MANCHESTER

Report Ref: A2333/23/AMP

FEBRUARY 2024

Prepared on Behalf of:

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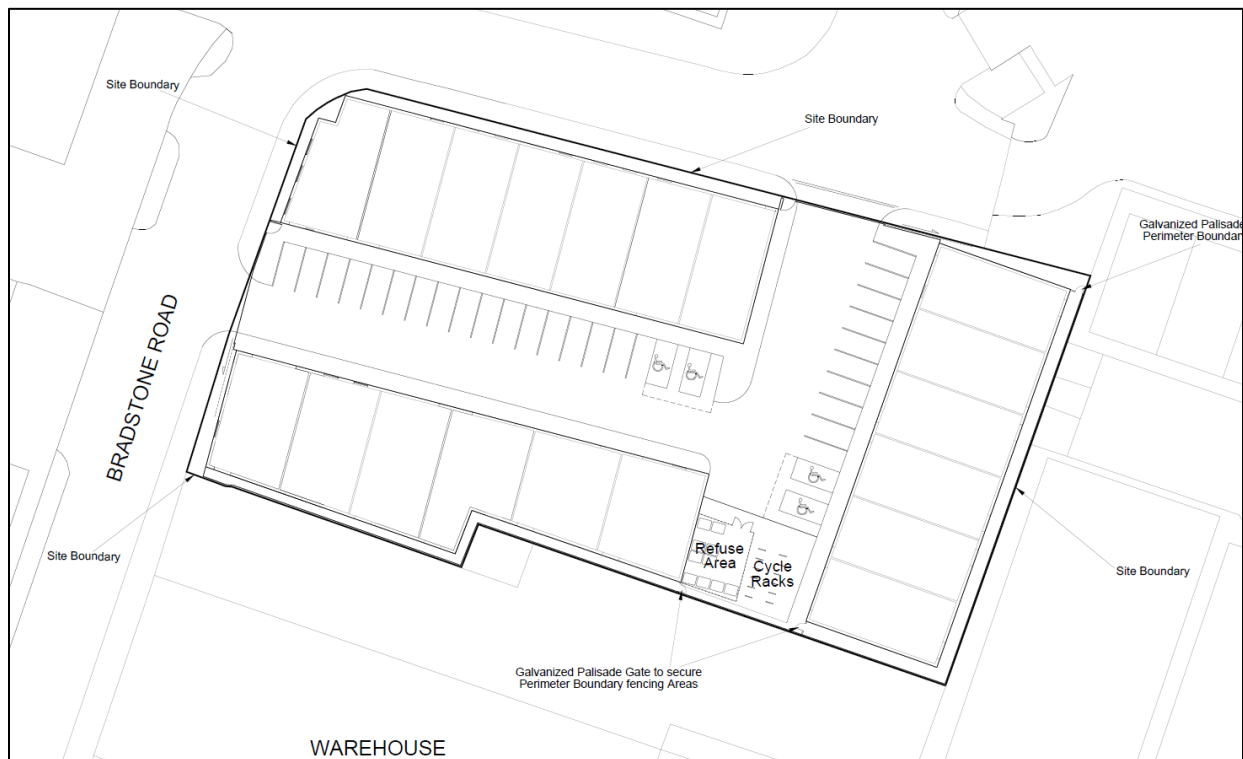
1.0 INTRODUCTION

Earth Environmental and Geotechnical Ltd (EEG Ltd) have been instructed by Sital Holdings 1 Ltd to prepare an Asbestos Management Plan for the proposed works off Bradstone Road in Cheetham Hill, Manchester.

Proposed Development

It is understood that the proposed scheme will involve the erection of 3no. three-storey buildings to form 19no. cash and carry units with associated storage. A proposed development plan is included below as Figure 1.

Figure 1: Proposed Development Plan



Background

The following available report has previously been prepared for the site by Earth Environmental & Geotechnical Ltd and should be read in conjunction with this Asbestos Management Plan:

- Earth Environmental & Geotechnical Ltd Phase II GeoEnvironmental Investigation, (reference A2333/18, dated 23rd January 2018).

The GeoEnvironmental Investigation conducted by EEG Ltd (reference: A2333/18, January 2018) identified asbestos within the Made Ground soils at four locations across the development area.

An Asbestos Management Plan (AMP) is therefore required for the proposed site works to protect construction workers and site neighbours from the risks associated with airborne asbestos fibres during the construction phase and enabling works. The site works will involve soil stripping, excavations for foundations and drainage emplacement and general soil movement within the areas in which asbestos has been identified.

The site investigation did not encounter any other contaminant concentrations in exceedance of the screening criteria relevant to a commercial end use.

2.0 ADDITIONAL INVESTIGATION

An additional investigation was carried out on the 15th December 2023 to collect further samples for asbestos identification and quantification in areas not previously accessible during the original report.

Scope of Works

Eight windowless sampling boreholes (designated WS201 to WS208) were sunk to a maximum depth of 1.50m below existing ground level to retrieve samples for environmental testing.

Four samples were recovered of stockpiled material from the southeast of the site.

Exploratory hole locations were selected prior to the site works by the EEG Ltd based on the proposed development.

Each exploratory location was scanned using a Cable Avoidance Tool (CAT) in order to locate unrecorded underground services, and the exploratory locations were repositioned if necessary.

On completion, samples recovered from the site were taken to specialist laboratories for chemical testing.

Soil samples were recovered in 250g glass amber jars and 1kg plastic tubs. If collection was not possible the same day, then samples were stored in the sample storage fridge at the EEG offices below 4°C.

Samples were tracked using appropriate Chain of Custody forms provided by DETS.

All site investigation work was supervised full time by a representative of EEG. The logging of soils and rocks has been carried out in accordance with BS5930(2015+A1:2020) except where superseded by the soil and rock description methodology in BS EN14688-1(2002), BS EN 14688-2(2004) and BS EN 14689-1(2003).

All sampling locations were surveyed by use of a hand-held Trimble R1 GPS instrument that is capable of surveying to an accuracy of less than 10mm depending on satellite coverage, proximity to trees and building structures.

Ground Conditions

The sequence of strata encountered beneath the site was as follows:

- **Made Ground** – was encountered in all exploratory holes to a maximum depth of 1.10m bgl, comprising:
 - Sandy gravel of brick, concrete, glass, and sandstone.
 - Sandy gravelly clay containing gravel of brick and concrete.

- **Clay** – was encountered in all the additional exploratory boreholes, with the exception of WS207, to a maximum depth of 1.50m bgl, comprising:
 - Brown slightly sandy clay.

Identified Asbestos

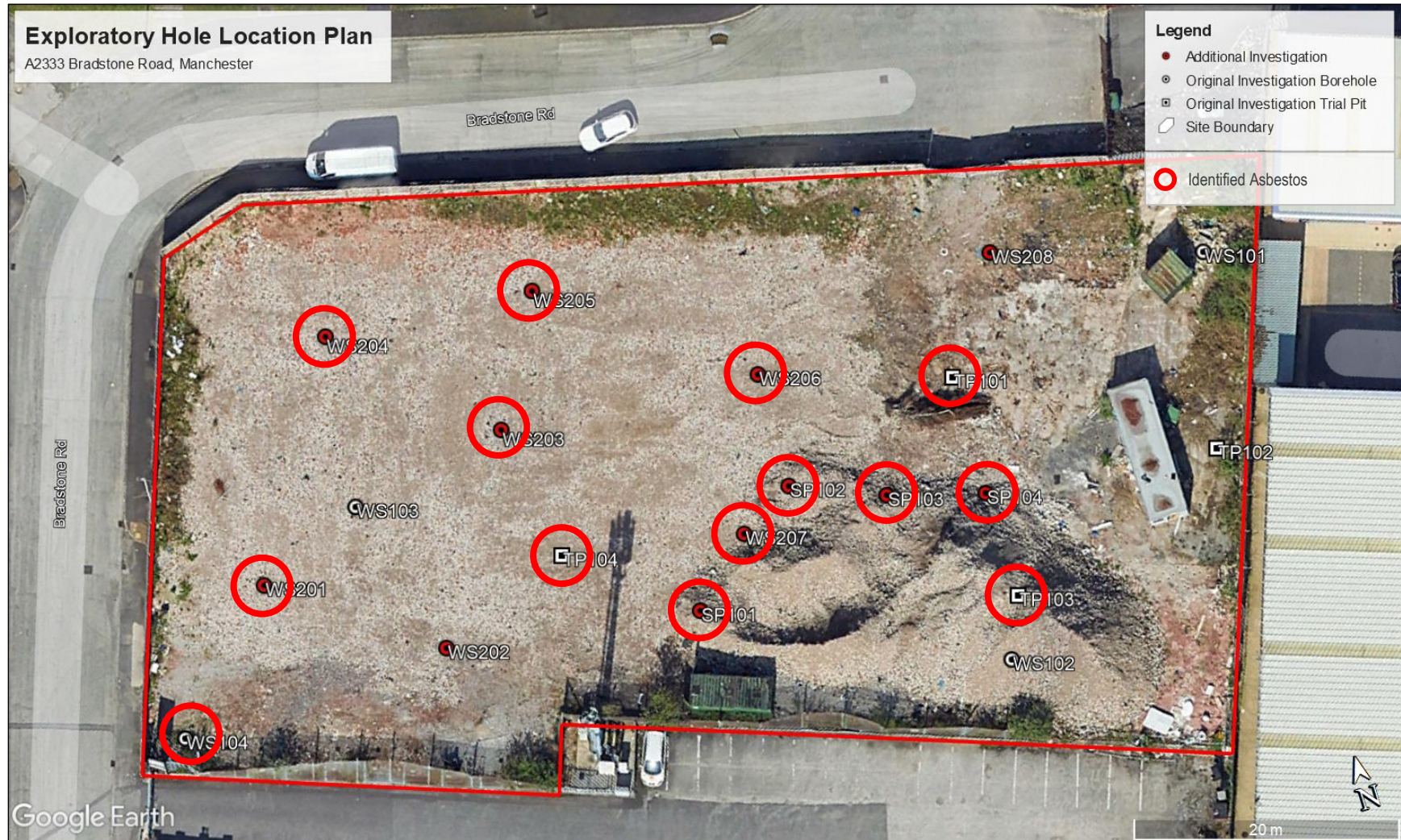
During the course of both site investigations, asbestos was identified at multiple locations across the site. The details of the asbestos encountered are summarised in Table 1 below.

Table 1: Summary of Encountered Asbestos

Location	Depth (m)	Sample Matrix	Asbestos Type	Asbestos Quantification
WS104	1.00-1.30	Loose fibres in soil	Chrysotile	-
TP101	0.20-0.50	Loose fibres in soil	Chrysotile	-
TP103	0.60-0.90	Loose fibres in soil	Chrysotile	-
TP104	0.30-0.60	Loose fibres in soil	Chrysotile	-
SP101	0.10	Present as bundles	Chrysotile & Amosite	0.002
SP102	0.05	Present as visible and microscopic bundles	Chrysotile & Amosite	0.094
SP103	0.10	Present as bundles	Chrysotile & Amosite	< 0.001
SP104	0.05	Present as bundles	Chrysotile	0.003
WS201	0.50	Present as bundles	Chrysotile	0.007
WS203	0.45	Present as bundles	Chrysotile	0.010
WS204	0.10	Present as bundles	Chrysotile & Amosite	< 0.001
WS205	0.60	Present as bundles and in microscopic insulation fragments	Chrysotile & Amosite	0.255
WS206	0.30	Present as bundles	Chrysotile	< 0.001
WS207	0.75	Present as bundles	Chrysotile	< 0.001

A plan showing the location of the encountered asbestos is presented as Figure 2 (overleaf).

Figure 2: Exploratory Hole Location Plan & Asbestos Plan



Although there is no published threshold value for asbestos in soils, the laboratory limit of detection (LOD) level of 0.001% is often used as a level above which it is considered possible that asbestos fibres may become airborne, when disturbed.

Full results of the chemical testing and asbestos quantification from the ground investigation are presented in Appendix B.

There is a high probability that asbestos containing materials (ACM) will also be present away from and in between sampling locations. There is therefore potential for release of free fibres during construction activities, an Asbestos Management Plan (AMP) is required to protect construction workers and site neighbours from the risks associated with airborne asbestos fibres during construction and enabling works.

The Asbestos Management Plan will outline methods to significantly reduce the risk from asbestos i.e., removal of visible fragments (if present), dust suppression measures and reassurance air monitoring (if necessary). The remediation contractor should employ or train site managers in the identification of ACM and deploy the control measures detailed within this Management Plan should any ACMs be identified anywhere on site.

The guidance within this Management Plan should therefore be followed during **all** associated site works.

Objectives

Mechanical excavation of soils containing Asbestos will cause disturbance and possible release of free fibres, therefore the works should be planned, controlled, and reviewed in accordance with the AMP in order to minimise the potential risk to workers and members of the public.

This detailed Asbestos Management Plan will incorporate the following:

- Monitoring requirements for works;
- Emergency protocols and actions in the event of unexpected contamination or exceedance of imposed trigger limits;
- Programme of on-site training to ensure all ground workers are adequately trained in asbestos awareness and appropriate mitigation measures;
- Detailed methodology for the excavation of potentially asbestos impacted soils and redepositing in a safe controlled manner, including on-site dust suppressant;
- Specification of on-site asbestos air monitoring (HSG248) to demonstrate the levels of control as detailed within the site-specific method statement are completely protective of human health; and
- Schedule for on-site validation protocols to demonstrate the method statement has been successfully implemented.

In addition, the works will be monitored to provide supporting evidence to the working methodologies and to demonstrate that public and civil liabilities are not put at risk.

3.0 ASBESTOS RISK ASSESSMENT

Site Setting

The site is located to the north of Manchester City Centre, approximately 630m northeast of Bury New Road. The approximate National Grid Reference for the centre of the site is SD84034 00079 (384034, 400079), at postcode M8 8WA.

The site is a near rectangular shaped parcel of land currently accessible via Bradstone Road to the north. The site is currently a vacant plot of land primarily covered by demolition rubble with a large stockpile of rubble in the southeast corner. The immediate surrounding area comprises predominantly a mixture of commercial and industrial units.

A site location plan is shown as Figure 3, below.

Figure 3: Site Location Plan



General Qualitative Risk Assessment

Asbestos is predominantly a hazard to human health through the inhalation of airborne fibrous crystals less than 10 microns in size (PM10). Fibres of this size may enter the lungs, causing disease and cancer (Mesothelioma). Where asbestos is bound within a solid matrix that cannot easily release particles of PM10 size, or is clumped together into large particles, or is fixed within soils by adhesion to other matter and water (and thus cannot easily be inhaled / ingested), then it presents a significantly lower hazard.

Classification of Works

In accordance with Asbestos in Soil and Made Ground good practice site guide CIRIA 765 2017 guidance, the works are Non-Notifiable Non-Licensed Work under CAR 2012.

Site Specific Semi-Quantitative Risk Assessment

A semi-quantitative risk assessment has been carried out as a decision support tool to aid in the categorisation of work activities in accordance with the CAR 2012 regulations. Due to the different types of asbestos encountered across the site, the model was run for the 'Worst Case' scenario.

Table 2: Hazard Factors

Variable	Setting	Score
ACM Type	Loose Fibrous Asbestos Debris	3
Degree of Bonding?	Friable ACM or ACM with fibres not linked in any matrix (free dispersed fibres/fibre bundles)	4
Extent of degradation of ACMs at outset of work	Disaggregated (dominated by loose fibre bundles)	4
Distribution of Visible Asbestos Across Affected Area	Occasional/random occurrences of visible ACMs	1
Asbestos Fibre Type	Mainly chrysotile and trace amphibole	1
Total		13
Hazard Ranking		Medium

Table 3: Exposure Factors

Variable	Setting	Score
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Large Quantities >0.1%wt/wt	4
Respirable fibre index for source material	Medium	3
Activity type and effect on deterioration of ACMs	Moderate disturbance, slight deterioration expected	3
Best description of primary host material matrix	Made Ground – recycled aggregate, track ballast	4
Total		14
Exposure Ranking		Medium
Combined hazard & exposure ranking		Medium

Pathway and Receptor Sensitivity

Table 4: Groundworkers

Variable	Setting	Score
Receptor Category	Construction	N/A
Duration of Exposure	> 1hr <10 hr daily exposure (e.g., part-time to full time occupational / extended daily recreational exposure)	3
Receptor Age	Adult (>24 and <60)	1
Total		4
Receptor Ranking		Low
Distance from Source	In or within 10m of area of disturbance	4
Depth to Impacted Material	Material buried at shallow depth, potential to be disturbed by excavation	D
Pathway Ranking		Medium
Combined hazard, exposure, and receptor ranking		Medium

Table 5: Public & Adjacent Commercial Neighbours

Variable	Setting	Score
Receptor Category	Commercial/industrial	N/A
Duration of Exposure	< 1 hour in any single day (e.g., frequent but short exposure event)	1
Receptor Age	Adult (>24 and <60)	1
Total		2
Receptor Ranking		Very Low
Distance from Source	In or within 10m of area of disturbance	4
Depth to Impacted Material	Material buried at shallow depth, potential to be disturbed by excavation	D
Pathway Ranking		Medium
Combined hazard, exposure, and receptor ranking		Low

Overall Risk Assessment

The asbestos encountered at the site has been quantified as up to 0.255% (Chrysotile & Amosite).

There is potential risk for release of Asbestos fibres into the air following disturbance of the material as part of the proposed works. Once airborne, the fibres could impact upon construction workers or site neighbours.

Table 6: Risk Assessment Outputs*

Control Measures	Requirement
Probable Licensing Status	Non-Licensed Work
RPE	EN140 type with P3 filter half mask
Dust Suppression	Localised mechanical dust suppression
Hygiene/Decontamination	Localised and enhanced personal decontamination facilities.

*Guide only; suitability of control measures is to be dynamically assessed as the job progresses.

Based on the above JIWG assessment in accordance with CAR2012, the overall risk is concluded at this stage to be **LOW to MEDIUM**.

4.0 ASBESTOS CONTROL MEASURES

Where asbestos is present, the duty holder (in this case the Principal Contractor), has a statutory legal responsibility to have a written Asbestos Management Plan, this should be compiled to make personnel who are to work on the site aware of the presence of asbestos.

Prior to works commencing the following protocols will be adopted:

- Induction of all operatives that will be involved with the proposed works to include a brief outline of works within the site area;
- Tool box talks will be undertaken to highlight risk from ACMs and working methods will be designed to mitigate risks. Toolbox talks will be undertaken regularly to re-communicate the procedures to all operatives;
- All operatives involved with earth movement will have basic asbestos awareness training;
- Assessment and recording of prevailing weather conditions including wind direction;
- In addition, the site induction should specifically address the presence of asbestos fibres in the ground, the PPE and RPE requirements as well as the control measures that are in place on site.

In addition to normal good practice precautions, the presence of asbestos within the ground will require a safe system of work to be set up on site to deal with the asbestos risk. This will include but is not necessarily be limited to:

- The provision of appropriate PPE and RPE;
- Reassurance air monitoring;
- Avoid unnecessary/prolonged exposure of asbestos impacted soils;
- Damping down of soils with water spray to prevent dust generation during ground breaking exercises;
- Sheeting of exposed soils by a geotextile and working clean cover;
- Careful segregation of stockpiles on site;
- Regular damping down of stockpiles;
- Sheeting of stockpiles;
- Defining transport routes;
- Cleaning down of machinery in designated areas;
- Decontamination unit for ground workers;
- The use of qualified personnel where required.

Stockpiling

Any excess impacted soil generated will be transported to a dedicated stockpile zone. The dedicated impacted stockpile zone will be located away from any other stockpiles of clean materials (to prevent cross contamination) and the boundary lines, placed on an impermeable membrane, and covered.

Dust Control

Localised dampening down will be undertaken either manually or using dedicated water bowsers.

When using a water bowser, a good water supply would be required (ideally a stand pipe within or near the site boundary). Water bowzers should be refilled daily to ensure there is dampening down available for the next day. Should the stand pipe be unavailable then additional water storage tanks will be delivered and filled from an outside water source.

Dampening down should be supervised to prevent any uncontrolled water run-off, which may subsequently dry out and become dusty at a location away from the site itself.

Reassurance Air Monitoring

Based on the results of the sampling, it is considered **unlikely** that the Asbestos Control Limit of 0.1fibres/cm³ over a continuous 4-hour period would be exceeded (as set out in CAR 2012).

However, given the site setting, it may be prudent to carry out reassurance air monitoring during the excavation works ensure the control limit is not exceeded as an extra precaution.

It is the responsibility of the Principal Contractor to assess the likelihood of exceeding the control limits during any given activity and to ensure that mitigation measures are in place to ensure the Asbestos Control Limit is not exceeded.

Further details for air monitoring procedures are provided in Section 5.

Asbestos Waste

All PPE/RPE and decontamination materials (rags, boot brushes etc) should be placed in asbestos waste bags and disposed of as asbestos waste.

5.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

There is a requirement for asbestos specific PPE and Respiratory Protective Equipment (RPE). Reference should be made to HSE EM6 for details regarding using and maintaining non-disposable RPE.

The following PPE methodology is required:

Overalls

- Disposable overalls. Type 5 (BS EN ISO 13982-1) are suitable. Cotton overalls hold dust and need specialist laundering and are therefore not suitable;
- Use oversized overalls to prevent ripping at the seams;
- If the cuffs are loose, seal them with tape;
- Avoid wearing a long-sleeved shirt, which may be difficult to cover properly;
- Wear the overall legs over footwear (avoid laced footwear);
- Wear overall hood over the RPE straps.

Gloves

- If you wear protective gloves, use single-use disposable gloves. If you must use latex gloves, use only 'low protein powder-free' gloves.

Boots

- Boots without laces should be worn. These are easier to clean.

Respiratory Protective Equipment

- Half mask respirator (to standard EN140) with P3 filter
- This equipment should be suitable for most short-duration non-licensed work and workers should select a make and size that fits them (face fit tests and face fit checks to be carried out);
- This equipment is not suitable for people with beards or stubble – hooded respirators are required for these situations;
- The equipment is also unsuitable for long periods of continuous use; you need power-assisted equipment for such situations.

A de-contamination area should be provided prior to the works commencing for the site operatives that will be present within the working area. This requires a dedicated entry and exit point to the asbestos working zone, boot washing facility, red bags to place used suits into prior to leaving the de-contamination area. No personnel must enter the asbestos working zone without PPE and no personnel wearing PPE must leave the asbestos zone until all PPE is disposed of.

Further details are provided in the following section (Personal Decontamination) and will also be provided during the toolbox talks.

6.0 ASBESTOS AIR MONITORING

Based on the findings of the site investigation, reassurance air monitoring is **NOT** considered to be a requirement during the excavation works, providing dust suppression methods are implemented correctly.

However, if carried out, asbestos monitoring works should be conducted in accordance with, but not limited to, the following HSE legislation and guidance:

- Health & Safety at Work Act 1974;
- The Control of Asbestos Regulations 2012;
- Approved Code of Practice L143 “Work with materials containing asbestos”;
- Management of Health and Safety at Work Regulations 1999;
- HSE Guidance Note HSG248 ‘Asbestos, the analysts guide to sampling and analysis’; and,
- HSE Guidance Note HSG247 ‘Asbestos: The licensed contractors’ guide’.

Reassurance Air Monitoring Procedures

Boundary Monitoring

Boundary monitoring would comprise static air monitoring pumps located along the boundary downwind of the active working area. This will allow for a comprehensive assessment of the presence of any airborne fibres which may be transported to the site’s boundary.

Consideration will be given to the use of Dust Deposition Gauges at the site boundary to monitor PM10 (Particulate Matter 10 micron) emissions for the site. Such monitoring will assist in the assessment of off-site dust emissions and ensure that should any statutory nuisance complaints arise the Client/Principal contractor are able to demonstrate that they have not been negligent in their legislative obligations for the works.

The monitoring protocol will be based on a nuisance risk not a health-based risk, in accordance with Environment Agency Technical Guidance Document M17-monitoring of particulate material in ambient air around waste facilities.

There is no official air quality criterion for dust avoidance, however a custom practice limit of 200mg/m²/day is used for measurement with dust deposition gauges.

Working Area

A series of static air monitoring pumps would be clustered both upwind, downwind and crosswind of the active working area, which would be defined by the analyst and consultant at the start of each monitoring occasion.

An air pump with a flowrate up to 16litres/minute, battery or mains powered fitted with a calibrated automatic timer would be used.

Personal Monitoring

Personal monitoring pumps would be worn by selective ground workers involved within the active working area.

Personal sampling pumps with a flow rate of 1litres/minute and battery operated would be used.

Results

The samples would be analysed by a UKAS accredited laboratory, and the results would be delivered to the Resident Engineer who will then follow the correct site procedure.

In the event of an elevated result (>0.01 fibres/ml) the contractor will be advised to stop work and seek the cause and take all necessary actions.

7.0 UNEXPECTED ASBESTOS CONTAMINATION

Emergency Response Procedures

The following procedure will be adopted should an unknown quantity or type of Asbestos be discovered on site, which is not detailed in the SI report or the asbestos location plan, or if an uncontrolled release of asbestos occurs unexpectedly during the works.

- Warn anybody who may be affected;
- Exclude from the area anyone not needed to deal with the release;
- Report the finding to the site manager;
- Identify the cause of the uncontrolled release;
- Regain adequate control as soon as possible (by wetting down, covering, and vacating the area);
- Make sure anyone in the work area affected who is not wearing personal protective equipment (PPE), including respiratory protective equipment (RPE), leaves the affected area immediately.
- Minimise the spread of asbestos by ensuring they are suitably decontaminated;
- Decontaminate anyone who is contaminated with dust and debris;
- Ensure rags, clothing or PPE is decontaminated or disposed of as contaminated waste;
- A competent and qualified person should undertake an appropriate risk assessment for the control and handling of the material and the location of the asbestos will be recorded.

The flowchart overleaf (taken from HSE EM1) outlines the key procedures summarised above (for guidance only).

Personal Decontamination

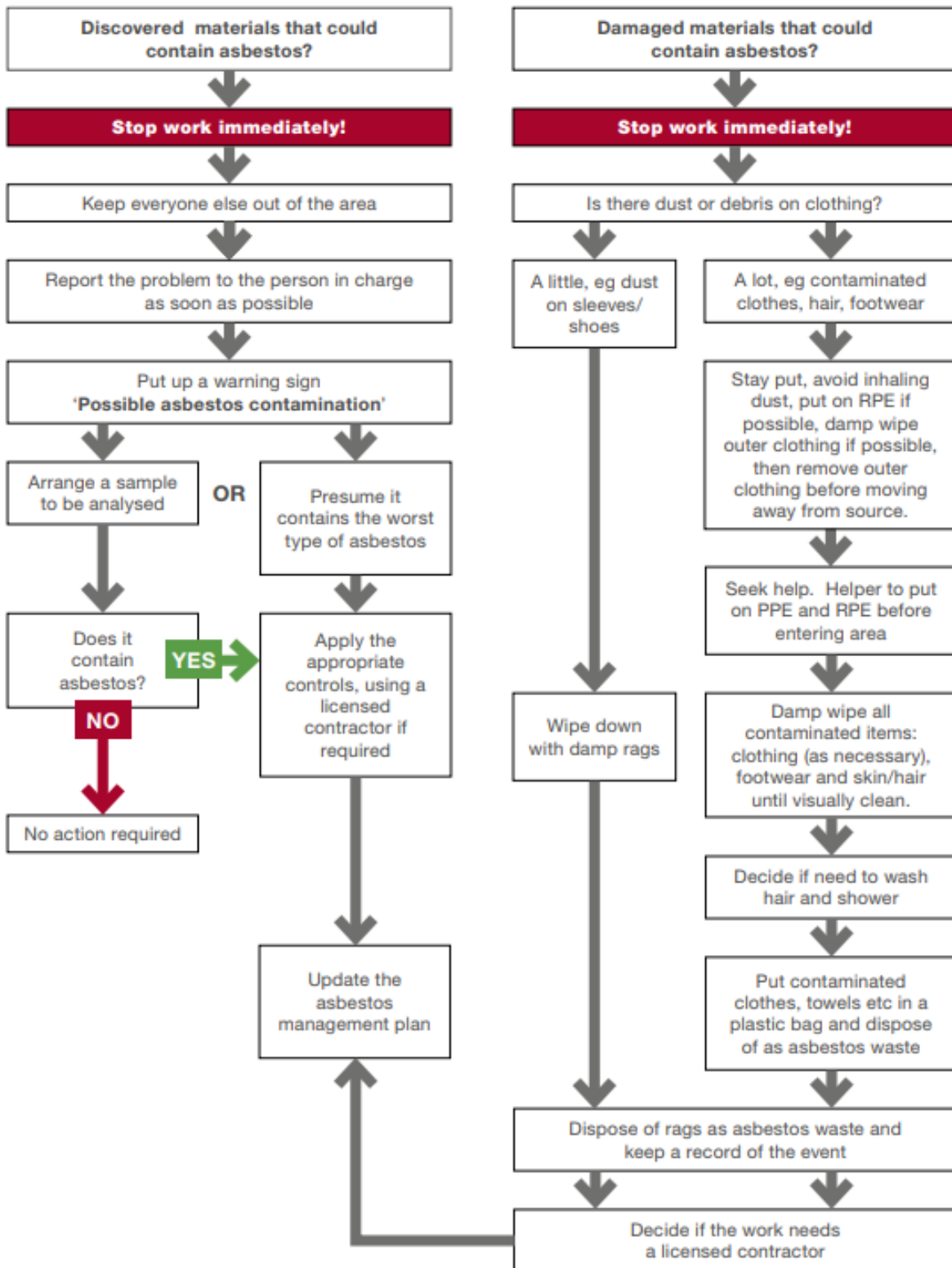
A suitable location for personal decontamination should be considered as part of the planning before the job commences. Other people should be excluded from the decontamination area during personal decontamination.

- Clean your boots with damp rags.
- Otherwise, use damp rags in a gentle 'patting' action to clean overalls. Rubbing can disturb fibres.
- Peel off disposable overalls so they are inside when removed.
- Place in suitable asbestos waste bag.
- Finally, remove and dispose of RPE and tape the bag closed.

Use damp rags to clean the washing facilities at the end of the job. Clean the facilities daily if the job lasts more than one day. Inspect the facilities visually once the job is finished.

Further information regarding personal decontamination can be found in HSE EM8.

Flow chart



8.0 RECORD KEEPING AND VERIFICATION

Record Keeping

During the earthworks and subsequent remediation phase, the following records should be kept:

- Summary of site activities, including material movements;
- Summary of any actions undertaken or deviations from proposed methodology;
- Fibre suppressant methods employed by the contractor, if any;
- Weather and dust observations;
- Air monitoring data (if required);
- Observations on ground conditions, including any unexpected asbestos contamination;
- A summary of any sampling undertaken.

Any updates to the risk assessments undertaken and changes to the control procedures should also be recorded and approved by a qualified person.

APPENDIX A

REGULATORY FRAMEWORK

REGULATORY FRAMEWORK

The regulatory framework surrounding asbestos in soil in the United Kingdom is “vague” and guidance is often outdated and of limited use for risk assessment purposes.

The Control of Asbestos Regulations 2012 applies to all work with asbestos including working with asbestos contaminated soils; however, such work is not referred to in either Asbestos: The Contractor’s Guide (for licensed work) or Asbestos Essentials (for non-licensed work).

Most asbestos guidance published by the HSE relates to occupational exposure and Health & Safety legislation and is therefore not directly applicable to asbestos in soils.

The most recent UK contaminated land guidance dealing specifically with asbestos is the ICRL Guidance Note 64/85 “Asbestos on Contaminated Sites 1990”. Unfortunately, this guidance is of limited use, as it is particularly poor on risk assessment and much of the legislation referred to is outdated.

As stated, ICRL Guidance Note 64/85 gives very little detail in assessing risk but does state that factors to be considered should include: amount and form of asbestos, location of site (relative to housing, schools etc), present use of the land, ease of public access and the proposed future land use. The document further states: *The Environmental Health Department of the relevant local authority should be consulted on the need for, and form of, any immediate action required to minimise risks to public health.*

The guidance suggests that if discrete pieces of Asbestos Containing Materials (ACMs) are present, the area should be treated as “contaminated.” If no discrete ACMs are present; test the soil for asbestos fibres with a limit of detection (LOD) of <0.001% wt.

The value of 0.001% wt as a “clearance level” is derived from research by Addison *et al*, at the Institute of Occupational Medicine in 1988. This was further developed in the HSE publication “HSE Contract Research Report No 83/96 Development and Validation of an Analytical Method to Determine the Amount of Asbestos in Soils and Loose Aggregates”.

It should be noted that these publications are not risk based and that asbestos cannot be assessed using CLEA or any other standard exposure assessment tool. These tools assume the concentration (%wt) of contaminant in soil is related to risk, this is not true for asbestos. Risk is associated with the likelihood of asbestos fibres becoming airborne from the soil and this depends on a great number of factors including the nature of the asbestos (bound or unbound), nature of the soil (cohesive or granular), moisture content of soil, weather conditions, extent of disturbance etc.

New guidance on asbestos in contaminated land is currently being developed in the United Kingdom, based on the risk assessment approaches developed in the Netherlands and the USA. The Environment Agency and Health and Safety Laboratory are collaborating to: *“develop cost-effective methods for the analysis of asbestos in soils which support the development of relevant measurable assessment criteria which can be used for site-specific risk assessment.”*

APPENDIX B

CHEMICAL TESTING RESULTS