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REMEDIATION METHOD STATEMENT



LAND AT 328 TO 336 STOCKPORT ROAD, LONGSIGHT

REPORT REF: BEK-18469-3 (Rev B) March 2020

Report Prepared for

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Project Quality Assurance Information Sheet

REMEDIATION METHOD STATEMENT

Land at 328 to 336 Stockport Road, Longsight, Manchester

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Rev	Date	Issue / Comment	Prepared	Checked
A	24 June 29020	Garden/Landscape Capping requirement added	D Emmott	M Buckley
B	8 July 2020	Address LA comments re sampling frequency. Added UKWIR Risk Assessment findings	D Emmott	M Buckley

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1. INTRODUCTION

1.1 BEK Enviro Limited (BEK) has been commissioned by SRL Manchester Limited to prepare a method statement for the remediation works required at the land located at 330-336 Stockport Road, Longsight, Manchester (hereafter referred to as 'the site').

1.2 The site is located at 330-336 Stockport Road on the intersection with Plymouth Grove West, Longsight, and is approximately 3 km south-east of Manchester. Access to the site is from a locked gate off Stockport Road.

1.3 The site is formed by a roughly rectangular shaped plot of land of approximately 3,000 m2 (0.3 hectares) and contains a highly modified three storey building, currently vacant and dilapidated. Access to the building is via a single storey warehouse extension. Access to the building is via a single door at the front of the building or roller shutter door to the side of the two storey warehouse extension. The ground floor is concrete throughout the main building and within the extensions.

1.4 Planning permission has been granted for the construction of a 6 storey apartment block. The proposed layout of the site is shown on Leach Rhodes Walker Drawing No 7891_L(001)14A entitled 'Coloured Ground Floor Plan', a copy of which is presented in Appendix A.

1.5 The site has been subject to previous investigation by BEK, the details of which are summarised in Section 2.

2. PREVIOUS SITE INVESTIGATION

2.0.1 The site has been subjected to previous site investigation and contamination assessment, the details of which are provided within the following reports:

- BEK - Preliminary Risk Assessment for Land at 328 to 336 Stockport Road, Longsight. Report Ref: BEK-18469-1 (Rev B) February 2019
- BEK – Site Investigation & Ground Assessment report for Land at 328 to 336 Stockport Road, Longsight. Report Ref: BEK-18469-2 (Rev B) August 2019

2.0.2 The Site Investigation & Contamination Assessment prepared by BEK (Report Ref: BEK-18469-2 dated April 2019) formed the basis for the remediation works required at the site. The above reports should be read in conjunction with this report.

2.1 BEK Summary

2.1.1 The site investigation carried out by BEK has been designed to provide indicative information for the ground conditions across the site with respect to the quantitative assessment of the potential risks associated with contamination and ground gas, as identified in the Preliminary Risk Assessment (PRA).

2.1.2 The site investigation works comprised the excavation of 5 trial pits and the drilling of 5 window sampler boreholes, 3 cable percussion boreholes and a rotary borehole across the site. Representative soil samples were recovered for chemical and geotechnical laboratory analysis.

2.1.3 The site investigation encountered made ground across the site varying in depth from 0.7 m (Window Sample No WS5) to 2.3 m (Cable & Percussive No CP3). The predominant made ground subtype was described as 'soft to firm dark brown/black sandy gravelly clay with brick'. It is possible that the made ground is associated with the infilling a former basements associated with the former buildings on site. However, thick made ground of similar description is noted on site in areas outside the location of the former buildings.

2.1.4 The natural strata beneath the made ground generally comprised of sandy gravelly clay that generally becomes stiffer with depth. A layer of dense gravelly sand was identified within Cable Percussive No CP3 at a depth of 12.8 to 14.75 m below ground level.

2.1.5 Made ground samples recovered from site investigation have been tested for a wide range of contaminants in accordance with the recommendations outlined within the PRA and based on the observations made during the site investigation. The chemical test results have been compared to relevant generic assessment criteria to identify potential contaminants of concern.

2.1.6 Based on the contamination assessment herein and with respect to the redevelopment of the site for residential use without gardens, the made ground contains elevated concentrations of lead and several PAH compounds (benzo(a)anthracene), chrysene, benzo(a)pyrene, dibenzo(ah)anthracene and benzo(b)fluoranthene).

2.1.7 The potential risks to human health are summarised in the table below:

Receptor	Contaminants of Concern	Strata	Significant Pathway	Secondary Pathway
Human Health	Lead	Made Ground	Ingestion of soil and indoor dust	
	PAH Compounds (except naphthalene)			

Table 1: Summary of Active Risk Pathways

2.1.8 Potential risks to service pipes are considered to be low but advice should be sought from the water supply provider.

2.1.9 Risks to concrete are considered to be low and a concrete classification of DS-1 AC-1s will be suitable.

2.1.10 No risks to the environment or to controlled waters have been identified.

2.1.11 The gas risk assessment has confirmed that risks from ground gas are negligible.

3. REMEDIATION STRATEGY

3.1 General

3.1.1 Although contaminants of concern have been identified these are only potential risks if they are to be located in soft landscaping areas.

3.1.2 However, as the majority of the site will either be capped with a buildings or hard standing roads/car parking surfacing surrounding the building, potential risks are considered to be negligible and no specific remediation measures are required in these areas. However, there are some small areas of private gardens and soft landscaping and remediation works be required in these areas.

3.1.3 There are also some basic remediation requirements that will need to be adhered to as detailed in this Section.

3.2 Garden/Landscape Remediation

3.2.1 To remove the potential risks to human health, all garden and soft landscaped areas will either require all the made ground to be removed or the made ground will need to be capped off with a minimum of 600 mm of clean capping soils. The capping soils will need to be placed on a geotextile membrane or a stone capillary break layer. Removal of any made ground should be validated along with the suitability of the sub/topsoil for use in the gardens.

3.2.2 There will be a requirement to import suitable topsoil/subsoil for use in the landscape/garden areas of the development. The suitability of the sub/topsoil and any other material imported to the site should be independently validated.

3.2.3 The details pertaining to the independent validation of material to be imported to the site are outlined within Section 4 of this report.

3.3 Construction Workers

3.3.1 It is recommended that construction personnel involved with direct contact with the soils at the site use appropriate PPE equipment (i.e. boots, gloves and overalls) together with hygiene facilities in accordance with general health and safety guidelines. The successful remediation/site works contractor should undertake a suitable risk assessment to confirm the appropriate level of PPE.

3.3.2 Groundworkers will remain vigilant during ground excavations for the presence (or suspected presence) of contamination. If visual or olfactory evidence of contamination is encountered then works should cease and specialist advice sought.

3.3.3 A copy of all reports relating to the site should be included in the site Health and Safety File and site workers should be made fully aware of the site setting.

3.4 Concrete Mix Design

3.4.1 Risks to concrete are considered to be low and concrete classification of DS-1 and the ACEC Class as AC-1s.

3.5 Utilities

3.5.1 The UK WIR Risk Assessment has been completed by BEK. The assessment confirms that standard PE pipes will be suitable for the site.

3.6 Unexpected Areas of Ground Contamination

3.6.1 Previous site investigation provides information for the indicative ground conditions across the site.

3.6.2 However, if any area of suspect material is encountered during the development of the site (ie that do not conform to the anticipated ground conditions), appropriate action will be taken. This will initially include the cessation of work in the area of concern and information BEK, who will attend site and carry out further assessment.

3.6.3 As a minimum BEK will notify the local authority and prevent any additional work in the area pending further assessment which may include sampling, testing and risk assessment.

3.7 Waste Soils

3.7.1 Excavated soils can be re-used on site subject to compliance with the Materials Management Plan or the Permit Exemptions that will need to be put in place to manage soils movement/re-use.

3.7.2 Any material recovered from the site and designated for off-site disposal should be disposed of in accordance with appropriate legislation and regulations, including the Duty of Care Regulations.

3.7.3 Waste transfer notes should be kept on site and made available on request.

4. SUPERVISION & VALIDATION

4.1 Supervision of Works

4.1.1 The works will be supervised by BEK who will ensure the following verification procedures are adopted:

(i) Liaison with the appointed groundwork Contractor

(ii) Inspection and supervision of the works

(iii) Collection of samples and co-ordination of laboratory testing

4.1.2 The local authority will be formally notified prior to commencement of the works and may attend site during the site remediation, as necessary.

4.1.3 The remediation areas will be checked and verified by the Engineer at key stages during the works, including:

(i) Following removal of asbestos fragments from surface

(ii) Prior to and following placement of the approved capping system

(iii) Recover of validation samples, as required.

4.2 Capping Material

4.3.1 It will be necessary to import sub/topsoil for use in the gardens and landscaped areas and all imported soils should be sourced locally if possible. The soils will be placed on a geo-membrane to act as a marker layer and prevent mixing.

4.3.2 To confirm the suitability of the sub/topsoil it will be necessary to recover representative samples for chemical testing and assessment.

4.3.3 We recommend that as a minimum this will consist of a minimum of 3 samples from each source of topsoil and subsoil.

4.3.4 The following testing frequency recommendations are presented in the MCC guidance and should be adhered to with respect to soils imported into the site:

Intended End-Use	SOURCE/ORIGIN OF FILL MATERIAL			
	GREENFIELD	REMEDIATED	BROWNFIELD	UNKNOWN
GARDENS	1:200m^3	1:100m^3	1:50m^3	1:50m^3
SOFT-LANDSCAPING	1:200m^3	1:150m^3	1:150m^3	1:150m^3
OTHER	1:200m^3	1:200m^3	1:200m^3	1:200m^3

4.3.5 It will also be necessary to carry out routine inspection and sampling during the importation process in order to confirm the material is consistent with the source testing and assessment. The visual inspection shall ensure that the soil is visually suitable for use and does not contain any deleterious material (ie glass, plastic, brick, concrete etc).

4.3.6 Material to be used in the capping system (including the formation level subsoil) should be (as a minimum) tested for the following to MCERTS standard:

Arsenic	Zinc
Cadmium	Cyanide
Chromium	Phenols
Copper	Sulphate
Lead	Speciated PAHs
Nickel	Total Organic Carbon
Mercury	Asbestos Screen

Table 1: Test Schedule for Soils to be Used in Capping System

4.3.7 Following assessment of the source of the material, it may be necessary to test for additional determinands.

4.3.8 The assessment criteria for the determinands to be tested for are presented in Table 2.

4.3 Assessment Criteria

4.3.1 The following table provides a list of assessment criteria for assessing suitability of material to be used within the capping system.

4.3.2 The criteria have been sourced from the LQM/CIEH Suitable 4 Use Level (S4UL). In addition, the category 4 Screening Level (C4SL) for lead has been used and the Atkins ATRISKSOIL screening level for cyanide has been used.

Contaminant of Concern	Assessment Criteria (mg/kg)
Arsenic	37
Cadmium	26
Chromium (total)	910
Copper	2400
Lead	200
Mercury	40
Nickel	180
Selenium	250
Zinc	3700
Cyanide	41
Acenaphthene	210
Acenaphthylene	170
Anthracene	2400
Benzo(a)anthracene	7.2
Benzo(a)pyrene	5
Benzo(b)fluoranthene	2.6
Benzo(ghi)perylene	320
Benzo(k)fluoranthene	77
Chrysene	15
Dibenzo(ah)anthracene	0.24
Fluoranthene	280
Fluorene	170
Indeno(1,2,3-cd)pyrene	27
Naphthalene	2.3
Phenanthrene	95
Pyrene	620
Asbestos	N.A.D

Table 2: Assessment Criteria for Imported Sub/Topsoil

4.4 Assessment of Chemical Test Results

4.4.1 BEK will be responsible for the assessment of all chemical test results to determine suitability of material to be used on site.

4.4.2 The assessment will be undertaken in accordance with current UK policy and as agreed with the local authority.

4.4.3 All chemical test results will be presented in the Completion Report.

4.5 Thickness Control

4.5.1 The verification of the capping thickness will be done by the excavation of trial holes in each garden and representative locations in the landscaped areas. Alternatively it may be possible to place a measuring pipe in each garden prior to placement of the cap. This can then be dipped and a capping thickness relative to previous ground level be determined.

4.5.2 In either case, the Engineer may take other measurements as required to verify the works have been carried out in accordance with the Method Statement.

4.5.3 The presence of a geotextile membrane or a stone capillary break layer underlying the clean capping must be proven.

4.6 Unexpected Area of Ground Contamination

4.6.1 As stated previously within this report the site has been subject to previous site investigation and as such, indicative ground conditions are known.

4.6.2 However if “any area of suspect material are encountered during the development of the site (i.e. that do not conform to the anticipated ground conditions)” appropriate action will be taken. This will initially include the cessation of work in the area of concern and information BEK, who will attend site and carry out further assessment.

4.6.3 As a minimum BEK will notify the local authority and prevent any additional work in the area pending further assessment which may include sampling, testing and risk assessment.

5. REPORTING

5.1 On completion of the remediation and mitigation works, BEK will prepare a Completion Report.

5.2 The Completion Report will describe the works undertaken in order to satisfactorily demonstrate that the works have been completed successfully and will include the following:

(i) A description of works undertaken

(ii) Record of any unforeseen contamination encountered during the works

(iii) Record of placement of the geotextile membrane or capillary break layer at the base of the clean capping in the gardens/landscaped areas

(iv) Records of any material imported into the site for use in the garden/landscaped areas (if required)

(v) Validation samples recovered and tested

(vi) Assessment of the chemical test results

(vii) Photographs

APPENDIX A

Drawings



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7891 STOCKPORT ROAD : COLOURED GROUND FLOOR PLAN

Scale: **1:200@A2** Auth By: **CJG** Drawn By: **KM** Date: **22.05.19** Dwg No: **7891_L(00)14B**

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