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Contaminated Land Phase One Desk Study for proposed residential dwelling on land at 21a Jagger Lane, Emley Moor, Huddersfield, Kirklees, HD8 9SY.

Prepared for

ADP Architecture and Design,
The Old Police Station,
16 Bridge Lane,
Holmfirth,
HD9 7AN.

April 2025

Summary

This report consists of a phase one contaminated land desk study produced in support of the discharge of a planning condition for a residential dwelling on land at 21A, Jagger Lane, Emley Moor, Huddersfield, Kirklees, HD8 9SY.

Following the site walkover and review of the available information a previous intrusive investigation and remediation of the site has been identified. Some remediation of the site has been historically been undertaken. However, the previous reports concluded that a clean cover system and protected mains water supply were required.

The desk study concludes that further investigations are required into the presence of shallow coal seams on site to determine whether they have been worked any mine gas is presence.

In addition, the previously recommended remediation measures of a clean cover system and protected mains water supplier are required. The cover system should however by at least 600mm deep in the garden amenity areas.

It is unclear whether this has been undertaken on this section of the site, although evidence of former foundations at surface level suggests otherwise.

The report further recommends that a watching brief is maintained throughout the construction of the new dwellings and any signs of potential contamination found are fully investigated, with appropriate remedial action taken as necessary.

Contents

Introduction

Martin Environmental Solutions has been commissioned, to carry out a phase one contaminated land desk study report in relation to a residential development on land at 21A, Jagger Lane, Emley Moor, Huddersfield, Kirklees, HD8 9SY.

Aims and Objectives of the report

The aims and objectives of this report are as follows:

- Assess the likelihood of contamination affecting the site,
- Identify any likely receptors to be affected by the potential contamination,
- Identify the pathways by which the receptors will be exposed to any potential contamination,
- Identify any areas where further investigation will be required.

Scope of works

This report has been written in line with the 'BS 10175: 2011+A2: 2017 Investigation of potentially contaminated sites – Code of Practice' and Land Contamination Risk Management (LCRM).

The scope of this report covers the phase one desk study only. It will look at relevant information on: -

- the history of the site and surrounding area,
- the current use of the site and surrounding area,
- the geology and hydrogeology of the area,

A site walk-over survey has been undertaken in addition to consultations with the existing site owner, to identify any potential contamination issues.

Evaluation of the above information will be used to construct an initial conceptual model as appropriate, with the identification of any additional investigations that may be required.

The Site:

Site Address: land at 21A, Jagger Lane, Emley Moor, Huddersfield, Kirklees, HD8 9SY.

Grid reference: 423010; 413149

An aerial photograph of the site is included in Figure 1.

Current Site use:

The site currently consists of an open area of land, roughly rectangular in shape and lies to the south of Jagger Lane. The property 21a Jagger Lane is to the immediate west of the site and the access to this property runs through the development site. Beyond the road to the north, to the east and south is open agricultural land.

Research

Details of Research

This report has been based on information gathered from a number of reputable sources, covering details:

- on the historic and current use of the site,
- any known waste disposal activities in the area,
- any regulated industrial activities within the vicinity of the site including recorded industrial accidents,
- on the geology, hydrogeology, hydrology of the area,
- identification of any environmentally sensitive sites,
- any natural hazards.

Principle sources of this information have been:

- environmental data from Groundsure Limited
- the Local Planning Authority,
- historic maps (Groundsure Ltd),
- site walk-over survey and discussion with the current owners.

Site History

Information on the historic uses of the site has been obtained from historic mapping information (Appendix 2), and environmental data from Groundsure Limited.

Mapping Year	Changes on Site	Changes off Site
1854	The site forms part of an open field	Jagger Lane runs to the north, A coal shaft is located in the field opposite the site, approximately 39m away, another is located ~400m to the southeast. A number of properties are dotted in the surrounding area, the nearest are West Field to the west on the corner of Jagger Ln and Westfield Ln, to the east at 'The Hut' the land to the east of the hut being marsh with a small pond shown .
1892-93	A building is shown to the south of the site associated with the wider disused brick works which extends to 21a Jagger Lane.	Three ponds are shown within the Brick Works, with ground works to the south west of the wider site under the existing house at 21a Jagger Lane. Speedwell Colliery is shown to the east 100m away with 2 shafts (one an air shaft) and two reservoirs at 200m distance. Another reservoir is shown 300m southeast of the site. The previously identified coal shafts are no longer shown.
1904-07	No Change	Old shafts are identified 600m northwest near the Beaumont Arms pub and to the southeast 600m away. The one opposite is again shown as an old shaft and No. 3 drift pit is present ~600m to the east. The brickworks (no longer labelled) now has two ponds shown.
1913	No Change	An above ground tank is present at 'The Hut' 90m east of the site. A drain is shown from the colliery to the pond to the north of the old brickworks site. The reservoir at the colliery have been joined together to form one slightly larger reservoir.

1932-38	No Change	A tank is identified at the colliery to the east.
1948	No Change	No Significant changes
1955	No Change	The colliery is disused
1961-63	No Change	No Significant Changes, colliery buildings have been taken down to the west.
1967	No Change	The colliery is disused
1979	The building on site is identified as a depot	A building has been erected at 21a Jagger Ln to the west, also identified as a depot.
1990-93		A disused tip is identified at the old colliery site to the west.
2001-03	No Change	No Significant changes
2010	No Change	No Significant changes
2024		
Aerial photos	By May 2016 the depot building has been demolished and the site cleared.	By 2015 the large depot building adjacent has been demolished. 2018 see the construction of 21a Jagger Lane.
Additional Research	The wider site was identified as a builder's yard, within historic planning Applications.	

Previous contaminated land reports have been produced covering the wider builders' merchants' site, (the development site and 21A Jagger Lane).

A phase I report by ALH Environmental Services dated February 2012, Appendix 6. This report included photographs of the site which identify the larger building on the adjacent plot as a concrete/Cementous sheeting steel framed building, while the smaller building on site was a brick built, slate roofed building. A fuel tank was also identified next to the larger building on the adjacent site. The report recommended further investigations.

A phase II investigation was undertaken by AC Environment Solutions in January 2015, Appendix 7 the investigation included 6 trail pits, with a number of samples tested on site for volatile vapours and 16 soil samples and 1 water sample sent for laboratory analysis.

Made ground was found in all trail pits including tarmac, old road scalping's, ash, bricks and hardcore to depth s down to 0.4m, below this still grey to orange natural clay. Hydrocarbon odours were identified around the former fuel tank on the adjacent site, where elevated levels of TPH were identified. This was the only location where elevated TPH was identified. However, a review of the trail pit locations places this are on the boundary between the existing and the proposed site. Elevated levels of Arsenic and PAHs were also identified on the development site.

Further intrusive investigation work was undertaken in May 2015, Appendix 8 on the development site, through the floor of the former brick-built building. These investigations identified no elevated levels of metals, TPH, or PAHs.

In November 2015, Appendix 9, further information was submitted regarding asbestos investigation and remediation of the site.

Asbestos of various forms was found across the site and the in buildings prior to their demolition in January 2015. This information details the identification of the asbestos, proposed remedial works, removal and waste consignment information.

The report also provides details on the remediation to remove the identified TPH, PAH and heavy metals.

The site was finally capped with a clean cover system of 0.35m and suitable barrier pipework for the mains water.

Data from the Coal Authority has also been found, this confirms the property as being in the zone of influence of 3 seams of coal at 40-150m depth, last worked in 1982. Coal is considered to be close to the surface and may have been worked at some point. The Coal Authority interactive mapping does not identify any coal outcrops within the immediate vicinity of the site or any past shallow coal workings it does however confirm the site as being in an area of probable shallow coal workings.

The mapping does not identify the site as within the zone of influence of any mine entries.

No consideration of ground gas was included within the previous investigations.

Regulatory Information

Relevant information obtained from the Groundsure report (Appendix 1) is summarised below.

No permitted activities that have been identified within 500m of the site as defined in the Environmental Permitting (England and Wales) Regulations 2016 or previous legislation.

Only one pollution incidents has been identified, located 88m to the west in November 2003 it had a minor impact on land from inert waste materials (flytipping).

No discharge consents are reported.

The only waste site identified is an historic landfill site located 464m north at Fletcher Park last recorded in 1983.

The above identified sites are unlikely to impact on the development site given the age and locations.

No current potentially contaminative sites have been.

Historical potentially contaminative land uses identified within 250m of the site include:

The historic depots on site

An unspecific heap 30 north in 1891, this was around the coal shaft identified from the mapping.

The colliery 51m west and associated refuse heap 67m and shaft 131m west.

The tank at 'The Hut' 74m east pond to the east of the site, which disappeared when the estate was built in the 1980's. With another at colliery 1242m west in 1948

Geology and Hydrogeology

Information from the British Geology Survey 1:50,000 mapping identifies the bedrock in the area as Pennine Lower Coal Measures Formation - Mudstone, Siltstone and Sandstone.

An inferred fault is identified on site.

The information obtained on the hydrogeology of the area identifies the site as having a Secondary A aquifer in the bedrock capable of supporting water supplies at a local

rather than strategic scale, and in some cases forming an important source of base flow to rivers.

Nine groundwater abstraction licenses have been identified, relating to four sites. The nearest 1498m southwest is a borehole linked to farming and domestic use at C& M Hall, the only other active site is located1890m southwest at TR & C Hall again for farming and domestic use.

Only one historic surface water abstraction license has been found 707m northeast.

The site is not located within a Source Protection Zone.

The Groundwater vulnerability is described as high in the surface bedrock layer.

Hydrology

The nearest watercourse is 247m, this is unlikely to be impact by the site given the distance and topography of the area.

The site is not within a floodplain, and the risk of flooding is classified as low.

Environmental Sensitivity

Five ancient woodlands are located within 2Km of the site. The nearest being 1329n southwest at Lightcliffe Wood, Epley Wood is 1336m northeast and Upper Owlers Wood 1420m southeast, the others are over 1700m away.

The South and West Yorkshire Green Belt includes the site as well as the surrounding area and the aera is located within a Nitrate Vulnerable Zone. No other Environmental Sensitive sites are identified.

The property is in an area identified as having less than 1% of properties above the action level of 200 Becquerel's per cubic metre, based on specific property search. Radon protection measures are not required in line with BR211.

No additional natural hazards have been identified & the site has very low/negligible risk of shrink swell, running sand, and compressible ground.

Coal mining activities have been identified in the area which is located within a coal mining area as identified by the Coal Authority.

A historic shaft is located 40m to the north, with the historic Speedwell colliery 160m west of the site. 374m east was Moor Head Coal Pits

Site Walkover

A site walkover was undertaken on the 1st April 2025 and confirmed much of what had already been identified from the information obtained on the site. The photographs in Appendix 3 provide some indication of the current layout and condition of the site.

The site is accessed from Jagger Lane to the north, via a shared driveway with 21a. Roughly rectangular in shape the site is bound by stone walls to all sides, although in a state of repair to the eastern boundary.

The site had been cleared with patches of vegetation growing through the soil. To the rear south of the site the foundation from the former building were evident with a concrete pad to the southwest corner.

No signs of contamination, discoloration or olfactory evidence, dead or dying vegetation were seen during the walkover.

The former excavations and site investigation trail holes have been filled.

However, given the presence of the former footings of the brick building at surface level it does not appear that, but has not been confirmed that, the recommended clean cover material(0.35m) following the previous investigations, has been placed over the site, although those reports do contain photographic evidence of excavation of contaminated areas which have been filled.

Conclusions

Potential Contaminants

Following a review of the information gathered on the history of the site and the surrounding area and following the site walkover, a previous investigation of the site has been reviewed which confirms some remediation of the site was undertaken previously, with photographic evidence of excavations. This work also recommended a clean cover system and protected mains water supply to the site, although it is unclear whether the clean cover was installed.

The site is also located on an old brick works although the previous investigation found no sign of any filled ground. While identified tips in the area are linked to the historic mining activities and are of such an age that even if putrescible waste were present it is unlikely that any gas would still be produced. Coupled with the identified stiff natural clay ground gas from these sources is not considered to be a significant issue.

Significant coal mining has also been identified in the area, although this report does not constitute a coal risk assessment a review of available information has been made. The site lies in the zone of influence from deep coal mining at between 40-150m depth and in an area of probable shallow coal seams which may have been worked. Nearby coal workings and mine entries are sufficiently distant not to impact on the site directly.

No other sources of contamination have been identified on or off site likely to pose a significant possibility of significant harm to the identified receptors.

Receptors and Pathways

Potential receptors which may be affected by any unknown contamination on site will include:

- Construction workers who are likely to be affected by any potential contamination as they will initially be working in the ground and are likely to be the ones who unearth any potential contaminants.
- Future users of the site, including residents, staff and visitors to the site. For the purpose of evaluating any effects from any contamination found during any intrusive investigation future users/visitors to the site should be regarded as the 0-6-year-old female child.
- Any building on site e.g., foundations which may be attacked by any contaminants in the ground or services.

- The underlying groundwater which may be contaminated by migrating pollutants present on the site. There is also the potential for further pollution of the groundwater or the watercourse from disturbing any potential contaminants on site.

The pathways by which these receptors may be exposed to any unforeseen potential contamination will include:

Construction workers

- Inhalation, of gases or vapours released during ground work or fine particles.
- Ingestion of the contaminants, principally from cross contamination with contaminated soil and inadequate hand washing before smoking and eating.
- Absorption through the skin following contact with contaminated soil.

Future users and visitors

- Inhalations of gas/vapours or fibres, particularly if these are allowed to enter the new structures through the ground and build up in an enclosed area.
- Ingestion of contaminants, through the ingestion of contaminated soil from the garden area via direct contact, e.g., playing in the garden.
- Absorption of contaminants from dermal contact with contaminated soil.

Buildings

Contaminants on site have the potential to affect the foundations to the new building or the services supplying it.

Watercourses

As discussed above, if they exist on site, there is a potential for any contaminants to migrate through the ground into the groundwater and aquifer or via run-off into the watercourse.

Neighbouring sites

If present on site contaminates have the potential to migrate to neighbouring sites through ground water or air blown transfer.

Conceptual Model

The table represents a basic conceptual model. It highlights the potential sources of pollutants identified from the gathered information, and potential pathways in which any contaminants could reach the identified receptors.

Pathway	Description	Identified sources	Receptor at risk	Probability	Consequence	Risk
1	Run off and seepage into groundwater from any spillages	-	Watercourse/ Environment	Unlikely	Mild	Low
2	Migration of gases into the building.	Coal Mining	Future users	Low likelihood	Severe	Moderate
3	Inhalation of gases/ vapours outside	Coal Mining	Construction workers/future users	Low likelihood	Mild	Low
4	Inhalation of fine particles	Historic use of the site	Construction workers/future users	Low likelihood	Medium	Moderate/ low
5	Direct ingestion of contaminated soil	Historic use of the site	Construction workers	Low likelihood	Medium	Moderate/ low
6	In-direct ingestion of contaminated soil	Historic use of the site	Future users	Likely	Medium	Moderate
7	Absorption via direct dermal contact with contaminated soil	Historic use of the site	Construction workers/future users	Low likelihood	Mild	Low

		CONSEQUENCE			
		Severe	Medium	Mild	Minor
PROBABILITY	High Likelihood	Very High Risk	High Risk	Moderate Risk	Moderate / Low Risk
	Likely	High Risk	Moderate Risk	Moderate / Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate / Low Risk	Low Risk	Very low Risk
	Unlikely	Moderate / Low Risk	Low Risk	Very low Risk	Very low Risk

Recommendations

As a result of the investigation into the historical use of the site and surrounding area the following recommendations are made:

- A coal risk assessment and if required investigation is undertaken to determine the presence of worked shallow seams and potential for mine gas to exist likely to impact on the site.
- Confirmation of a clean cover system be confirmed following the previous site work. An additional cover system of at least 600mm is provided within the garden amenity spaces. Ideally with a no dig/warning layer below.
- All new services to the development to be installed within clean trenches and backfilled with clean imported material.
- Barrier pipework is used for new mains water supplies to prevent potential contamination.
- Transfer notes for all excavated and removed material and transfer notes for all imported material to be kept and provided.
- A verification report to be produced to confirm the level of clean material within garden amenity areas.
- Imported material should be tested for the presence of contamination at a rate of 1 sample for every 50m^3 from brown field sites and 1sample every 100m^3 from green field sites with a minimum of three samples from each site.

It is further recommended that a watching brief is maintained throughout the construction of the new building and any signs of potential contamination found are fully investigated, with appropriate remedial action taken as necessary and the local planning authority informed of the findings.

Figure 1 – Aerial Photograph

Figure 2 – Proposed Plan

Appendix 1 – Groundsure Data

Appendix 2 – Historical Mapping

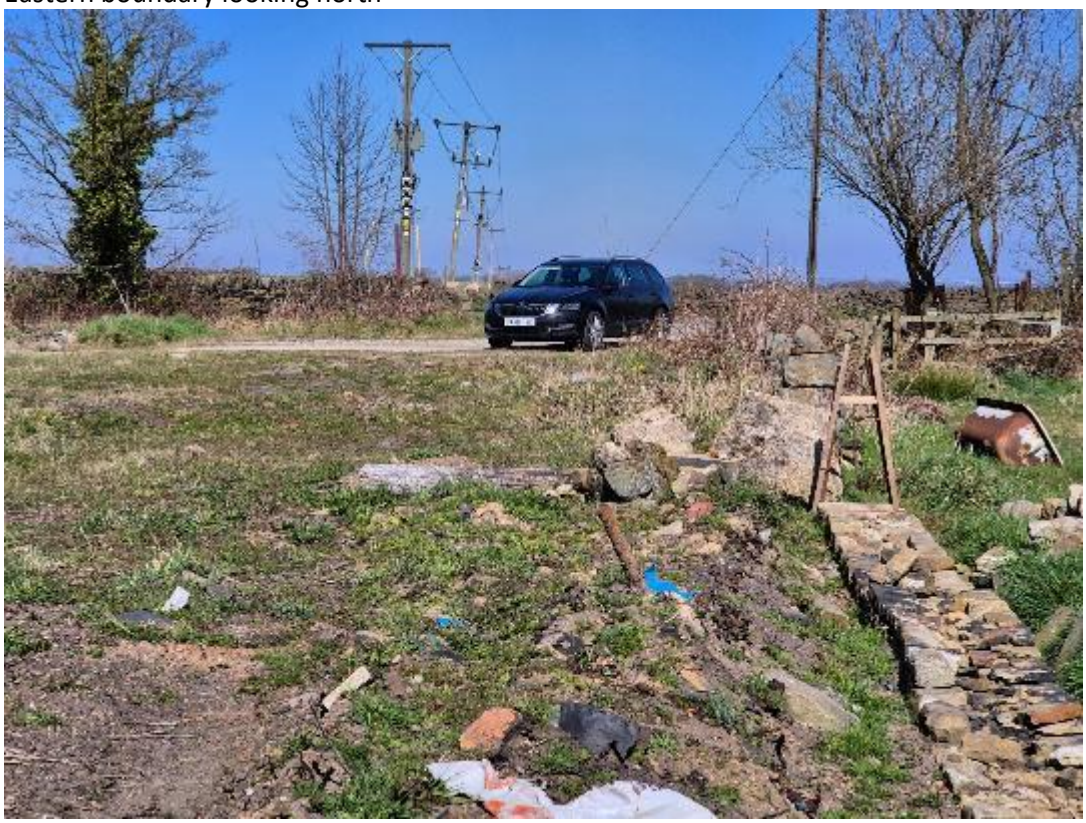
Appendix 3 – Site Walkover Photographs

Northern boundary looking west

Then east

Eastern boundary looking south

Eastern boundary looking north



Looking across the site northeast to southwest

Southern boundary looking west then east

Western boundary looking south

Then north

View across the site southeast to northwest

View across the site northwest to southeast

Driveway to 21A looking east

View from north to south

Appendix 4 – Conceptual Model Risk Assessment

A Preliminary Risk Assessment is usually undertaken as part of a desk study, outlines potential risks posed by potential contamination to all receptors by defining plausible "pollution linkages" and developing a preliminary conceptual model (PCM).

The purpose of this model is to define all possible complete pollution linkages, where the requisite source – pathway – target elements are present, and these elements being defined as:

- a contaminant (source) is a hazardous substance or agent, present at levels that have the potential to cause harm or damage a receptor
- a pathway is the means by or through which a contaminant comes into contact with, or otherwise affects, the receptor
- a receptor (target) is an entity (human being, aquatic environment, flora and fauna etc) that is vulnerable to the adverse effects of the contaminant

This relationship is termed a "pollution linkage". It should be recognised that for a health or environmental risk to exist, all three elements of the relationship or linkage must be present, i.e.

- if there is no contaminant, or contaminant present at levels below those considered to be harmful or damaging to a receptor, then there can be no adverse effect on a receptor
- if there is no receptor present that can be adversely affected by a contaminant, no harm or damage can arise
- even where both a contaminant and a receptor are present, no harm or damage will occur if there is no pathway by or through which a linkage between the two can be established

The absence of one or more of each component (source, pathway, receptor) would prevent a pollutant linkage being established and there would be no significant environmental risk.

Consequence of Risk

CLASSIFICATION	DEFINITION	EXAMPLES
Severe	Highly elevated concentrations likely to result in "significant harm" to human health as defined by the EPA 1990, Part 2A, if exposure occurs. Equivalent to EA Category 1 pollution incident including persistent and/or extensive effects on water quality; leading to closure of a potable abstraction point; major impact on amenity value or major damage to agriculture or commerce. Short term risk of pollution of sensitive (H1/H2) water resource. Major damage to aquatic or other ecosystems, which is likely to result in a substantial adverse change in its functioning or harm to a species of special interest that endangers the long-term maintenance of the population. A short-term risk to a particular ecosystem, or organism forming part of such ecosystem. Catastrophic damage to crops, buildings or property.	Significant harm to humans is defined in circular 01/2006 as death, disease, serious injury, genetic mutation, birth defects or the impairment of reproductive functions. Major fish kill in surface water from large spillage of contaminants from site. Highly elevated concentrations of List I and II substances present in groundwater close to small potable abstraction (high sensitivity). Explosion, causing building collapse (can also equate to immediate human health risk if buildings are occupied).
Medium	Elevated concentrations which could result in "significant harm" or "significant possibility of significant harm" to human health as defined by the EPA 1990, Part 2A if exposure occurs. Equivalent to EA Category 2 pollution incident including significant effect on water quality; notification required to abstractors; reduction in amenity value or significant damage to agriculture or commerce. Pollution of a highly sensitive (H1/H2) water resource. Significant damage/change to aquatic or other ecosystems, which may result in a substantial adverse change in its functioning or harm to a species of special interest that may endanger the long-term maintenance of the population. Significant damage to crops, buildings or property.	Significant harm to humans is defined in circular 01/2006 as death, disease, serious injury, genetic mutation, birth defects or the impairment of reproductive functions. Damage to building rendering it unsafe to occupy e.g. foundation damage resulting in instability. Ingress of contaminants through plastic potable water pipes.
Mild	Exposure to human health unlikely to lead to "significant harm". Equivalent to EA Category 3 pollution incident including minimal or short-lived effect on water quality; marginal effect on amenity value, agriculture or commerce. Pollution of moderately sensitive (M1/M2) water resources. Minor or short-lived damage to aquatic or other ecosystems, which is unlikely to result in a substantial adverse change in its functioning or harm to a species of special interest that would endanger the long-term maintenance of the population.	Exposure could lead to slight short-term effects (e.g. mild skin rash). Surface spalling of concrete.

	Significant damage to crops, buildings, structures and services ("significant harm" as defined in Circular 1/2006).	
Minor	No measurable effect on humans. Equivalent to insubstantial pollution incident with no observed effect on water quality or ecosystems. Repairable effects of damage to buildings, structures and services. Pollution of low sensitive (L1/L2) water resource. Harm, although not necessarily significant harm, which may result in a financial loss, or expenditure to resolve. Non-permanent health effects to human health (easily prevented by means such as personal protective clothing etc). Easily repairable effects of damage to buildings, structures and services.	The loss of plants in a landscaping scheme. Discoloration of concrete.

Probability of Risk Occurring

CLASSIFICATION	DEFINITION	EXAMPLES
High Likelihood	There is pollutant linkage and an event would appear very likely in the short-term and almost inevitable over the long-term, or there is evidence at the receptor of harm or pollution.	a) Elevated concentrations of toxic contaminants are present in soils in the top 0.5m in a residential garden. b) Ground/groundwater contamination could be present from chemical works, containing a number of USTs, having been in operation on the same site for over 50 years.
Likely	There is pollutant linkage and all the elements are present and in the right place which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short-term and likely over the long-term.	a) Elevated concentrations of toxic contaminants are present in soils at depths of 0.5-1.0m in a residential garden, or the top 0.5m in public open space. b) Ground/groundwater contamination could be present from an industrial site containing a UST present between 1970 and 1990. The tank is known to be single skin. There is no evidence of leakage although there are no records of integrity tests.
Low Likelihood	There is pollutant linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a long period such an event would take place, and is less likely in the shorter term.	a) Elevated concentrations of toxic contaminants are present in soils at depths >1m in a residential garden, or 0.5-1.0m in public open space. b) Ground/groundwater contamination could be present on a light industrial unit constructed in the 1990s containing a UST in operation over the last 10 years – the tank is double skinned but there is no integrity testing or evidence of leakage.
Unlikely	There is pollutant linkage but circumstances are such that it is improbable that an event would occur even in the very long-term.	a) Elevated concentrations of toxic contaminants are present below hardstanding. b) Light industrial unit <10 yrs old containing a double skinned UST with annual integrity testing results available.

Calculation of Risk

		CONSEQUENCE			
		Severe	Medium	Mild	Minor
PROBABILITY	High Likelihood	Very High Risk	High Risk	Moderate Risk	Moderate / Low Risk
	Likely	High Risk	Moderate Risk	Moderate / Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate / Low Risk	Low Risk	Very low Risk
	Unlikely	Moderate / Low Risk	Low Risk	Very low Risk	Very low Risk

Appendix 5 Report limitations and exclusions

Basis of Risk Assessment

The methods used follow a risk-based approach with the potential risk assessed using the 'Source – pathway – receptor pollution linkage concept.

Limitations and Exceptions of this Report

This report was undertaken for at the request of ADP Architecture Design and as such should not be entrusted to any third party without written permission of ***Martin Environmental Solutions***. No other third parties may rely upon or reproduce the contents of this report without the written permission of ***Martin Environmental Solutions***. If any unauthorised third party comes into possession of this report, they rely on it at their own risk and the authors do not owe them any duty of care or skill.

This report has been compiled from a number of sources, within the time constraints of the programme, which ***Martin Environmental Solutions*** believes to be trustworthy. However, ***Martin Environmental Solutions*** is unable to guarantee the accuracy of information provided by third parties.

The findings and opinions provided in this document are made in good faith and are based on data provided by third parties (Groundsure, Environment Agency, The Coal Authority, and Regulatory Bodies) and the report should be read in conjunction with the limitations on the document control form. The accuracy of map extracts cannot be guaranteed and it should be recognised that different conditions on /adjacent to the site may have existed between and subsequent to the various map surveys.

This report is prepared and written in the context of the purposes stated above and should not be used in a different context. Furthermore, new information, improved practices and legislation may necessitate an alteration to this report in whole or in part after its submission.

The conclusions and recommendations of this report are based on the development described, for any other development the report may require revision.

All of the comments and opinions contained in this report, including any conclusions, are based on the information obtained by ***Martin Environmental Solutions***. The conclusions

drawn by ***Martin Environmental Solutions*** could therefore differ if the information obtained is found to be misrepresentative, inaccurate, or misleading. ***Martin Environmental Solutions*** reserves the right to amend their conclusions and recommendations in the light of further information that may become available.

The report should be read in its entirety, including all associated drawings and appendices.

Martin Environmental Solutions cannot be held responsible for any misinterpretations arising from the use of extracts that are taken out of context.

This report does not comprise a geotechnical assessment of the strata underlying the site.

Any borehole data from the British Geological Survey sources is included on the following basis: 'The British Geological Survey accept no responsibility for omissions or misinterpretations of the data from their Data Bank as this may be old or obtained from non-BGS sources and may not represent current interpretation'.

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Any risks identified in a Phase I Desk Study Report are perceived risks. Actual risks can only be assessed following a physical investigation of the site.

The findings of this report are based on finite information obtained from research and consultations. Martin Environmental Solutions cannot guarantee the reliability of all such information and the searches should not be considered exhaustive. The findings of the report may need to be reviewed as any future exploratory investigations progress and in the event that additional archive information becomes available.

Notwithstanding the findings of this study (and any subsequent investigations), if any indication of contaminated soil (visual or olfactory) is encountered at any stage of the development further investigation may be required.

Arboricultural Survey and advice on arboricultural issues are considered to be outside the scope of this report except for their effect on the foundations to the proposed buildings.

Where identification of any species is made, especially invasive plants such as Japanese Knotweed, Himalayan Balsam or Giant Hogweed, this should only be considered as a preliminary assessment and subject to confirmation by a professional Arboriculturist. Martin Environmental Solutions takes no responsibility for failing to identify, or the incorrect identification of, any tree or plant species on site.

Our investigations exclude surveys to identify the presence or indeed absence of asbestos in buildings/infrastructure on site. If asbestos is suspected to be present, we recommend specialists in the identification and control / disposal of asbestos are appointed prior to commencement of any works on site or, if appropriate, purchase of the site. The presence of asbestos on site may have considerable effects on the cost / timescale in developing the site. There is good guidance in relation to Asbestos available on the Health and Safety Executive (HSE) web site.

Whilst a site walkover has been undertaken as part of this report, the survey does not constitute either an asbestos or structural survey and all areas of the site may not have been visited / inspected.

Appendix 6 – Previous Phase I report February 2012

Appendix 7 – Previous Phase II report January 2015

Appendix 8 – Supplementary Report to Phase II investigation January 2015 & Remediation Plan

Appendix 9 – Supplementary Report – Further Investigation and Verification of Remediation measures November 2015.