MARTIN
ENVIRONMENTAL
SOLUTIONS

Contaminated Land Phase One Desk Study for proposed conversion of barn at Alston Old Hall Farm, Alston Lane, Longridge, PR3 3BN, to Residential accommodation.

Prepared for

PWA Planning Ltd
2 Lockside Office Park,
Lockside Road,
Preston,
PR2 2YS

January 2021

Summary

This report consists of a phase one contaminated land desk study produced in support of planning application for a conversion of a barn at Alston Old Hall Far Alston Lane, Longridge, PR3 3BN into residential accommodation.

Following the site walkover and review of the available information it has been concluded that no contamination exists of site which poses a significant risk of significant harm to the identified receptors either on site or in the immediate vicinity and the site is considered safe and suitable for the intended use.

On site there is potential for some contamination from the fuel tank on site, potential made ground and potential asbestos containing material have been identified. The risk is considered low at this stage and suitable recommendations for the removal of potentially asbestos containing material have been made. A visual examination of the ground below the fuel tank and the concrete slab are recommended with an intrusive investigation should any signs of potential contamination be identified.

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 proposed residential development at Alston Old Hall Far Alston Lane, Longridge, PR3 3BN.

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) which has recently replaced 'The Model Procedures for the Management of Land Contamination, CLR11'.

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: Alston Old Hall Far Alston Lane, Longridge, PR3 3BN.

Grid reference: 361268; 433607

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

Current Site use:

The site currently consists of a large barn and yard area with a small field to south covering an area of 0.29ha. The area is predominantly agricultural with the original farm house and barn (now residential) over 55m m to the west. Beyond the River Ribble.
with a car park opposite. To the west a car park serving an accountants and solicitors.

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
1849	The site forms part of a large field	The area is residential, the original farm marked as Alston Hall lies to the southwest 100m away and beyond the River Ribble. Alston Hall Wood lies approx. the same distance away to the west and a Boot Farm lies to the southeast approx. 250m away.
1892	No change	Few changes are shown in the area. The site is now Alston Old Hall, with an additional barn. Alston (new) Hall being built to the north 500m away. The field to the west is shown as sloping up from the road. An old clay pit is shown 250m to the northeast. This is present and overgrown today. A large pond still present today is shown on the edge of Alston (new) Hall to the northwest, 250m away.
1910-12	No Change	No Significant changes
1932	No Change	No Significant Changes
1951	No Change	No Significant Changes
1967-69	No Change	Three additional barns have been built to the west of the site. An Observatory is shown at the entrance to Alston Hall.
1992-93	The existing barn is shown on site.	No significant changes, The three barns to the west have been removed.
2001-present	No changes	No significant changes

Regulatory Information

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

There are no permitted activities has been identified within 500m of the site as defined in the Environmental Permitting (England and Wales) Regulations 2016 or previous legislation.

No pollution incidents have been identified in the surrounding area.

One discharge consent is at Alston Old Hall Farm for final/treated sewage into the River. The Environmental data suggests it is on site but no evidence was identified and it is more likely to be linked to the existing properties on site.

No landfill sites or waste activities have been identified in the area; however, 36 waste exemptions have been identified within 500m of the site. 31 of these relate to Alston Old Hall Farm, 14 located 87m west and 17 93m southwest. These related to the spreading of waste, sorting of waste, deposit of dreading waste, burning waste and treatment of waste wood and composting. The other sites relate to burning of waste at Boot Farm, 464m southeast, Alston Observatory 495m northwest, and the use of wase in construction on Alston Lane 495m Northwest (the observatory car park).

Given the distances and nature of the sites it is unlikely that the above sites will pose any risk to the development.

Only one current potentially contaminative site has been identified this being Alston Old Hall Farm 61m west involving the farming of animals. A gas pipeline has been identified 7m northeast of the site

Historical potentially contaminative land uses have been identified within 250m of the site from the purchased information; most of these have been identified from the historical mapping and include:

> On site ground workings/pit – this is slope of the land to the east of the site, nothing shown on site.

Geology and Hydrogeology

Information from the British Geology Survey 1:50,000 mapping identifies the bedrock in the area as Silsden Formation – Mudstone overlaid with River Terrace Deposits, 1 - Clay, Silt, Sand and Gravel.

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, with a Secondary A aquifer in the superficial layer.

A total of six groundwater abstraction licenses have been identified, five historical points located 1294m east, 1391m east, 1785m southwest and one active site located 1785m southwest for general farming and domestic use.

No surface water abstraction licenses are identified.

The site is not located within a Source Protection Zone.

The Groundwater vulnerability is described as intermediate within the surface layer, medium in the superficial layer and low in the bedrock. Soils in which pollutants are unlikely to penetrate the soil layer.

Hydrology

There are a number of watercourses surrounding the site, flowing towards the River Ribble in the south/southwest. The nearest point is located 56m west of the site and runs through the farm. Another stream is located 172m east.

The site is not within a floodplain, and the risk of flooding is classified as low. There is a risk that the entrance drive may suffer from a 1 in 30-year flood from surface water.

Environmental Sensitivity

One Sites of Special Scientific Interest (SSSI) is identified 1833m west at Red Scar and Tun Brook Woods, along with 18 ancient woodlands. The nearest being Alston Wood located 102m northwest of the site and the next 619m northeast at Stubbins Wood. The Liverpool Manchester Greenbelt is also located 388m west of the site.

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.

There are no mining activities identified in the area.

Site Walkover

A site walkover was undertaken on the 13th January 2021, and confirmed much of what had already been identified from the purchased information. The photographs in Appendix 3 provide some indication of the current layout and condition of the site.

The site is accessed from the main lane to the south of the site, the site and surrounding land is fairly flat with a dip towards the lane along the southern boundary. The site is covered to the west by a concrete slab, with fields to the southern boundary and eastern section. The area is still currently used as an active farm.

The existing barn is constructed from a metal frame with concrete block and wood slate walls and Cementous corrugated roof. The internal floor forms part of the concrete slab and is in a good condition with no cracks.

The barn is used for storage, housing animals and an elevated double skinned fuel tank is present, no signs or any history of leaks are present. The owner confirms no issues with the tank.

There was no sign, visual or olfactory contamination of any distressed, or dying vegetation or other contamination sources identified during the walkover survey.

Conclusions

Following the site walk-over survey there are no contaminants identified off site that are likely to present a significant possibility of significant harm to any identified receptor.

On site the roofing material to the barn may contain asbestos fibres, a fuel tank is present within barn, although there is no history or signs of a leak and the majority of the site is covered by a concrete hardstanding, below which made ground may be present.

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 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 adults.
- 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 landscaping areas.
- 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, 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

Any contamination on site has the potential to migrate off site and effect neighbouring land.

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	Likelihood
1	Run off and seepage into groundwater from any spillages	Fuel tank	Watercourse/ Environment	Low
2	Migration of gases into the building.	-	Future users	V. Low
3	Inhalation of gases/ vapours outside	-	Construction workers/future users	V. Low
4	Inhalation of fine particles	Made ground, asbestos fibres	Construction workers	Low
5	Direct ingestion of contaminated soil	Made ground,	Construction workers	Low
6	In-direct ingestion of contaminated soil	Made Ground,	Future users	Low
7	Absorption via direct dermal contact with contaminated soil	Made ground,	Construction workers	Low

Recommendations

As a result of the investigation into the historical use of the site and surrounding area no sources of contamination have been identified, which present a significant possibility of significant harm to the any of the identified receptors.

However, the roof to the barn may contain asbestos fibres and unless proven to the contrary needs to be treated as such. Once carefully and appropriately removed the remaining hardstanding should be cleaned to remove and fragments that may remain before the any further work is undertaken.

There is no evidence of any spillage from the on-site elevated fuel tank, however a watching brief is recommended during the removal of the tank and any disturbance of the concrete base. Should any evidence be uncovered of a leak and contamination, work must stop and samples taken for analysis and consideration of the potential adverse impact on future users.

The is a potential that there is made ground under the concrete slab, during any disturbance of the slab should made ground be identified, that is not obviously clean virgin stone at the time of construction then further investigations are required to ensure there is no adverse risk to the future users of the site.

It is further recommended that a watching brief is maintained throughout the development works 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

Appendix 1 – Groundsure Data

Appendix 2 – Historic Maps

Appendix 3 – Walkover Photographs

Entrance to the site from Alston Lane, and southern boundary

The western boundary

Southern field

Northern Boundary & kennel

The northern side of the building

The eastern side of the building

Inside the barn

The eastern end of the barn and field

Elevated Fuel tank

Appendix 4 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 PWA Planning Ltd 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'.

The copyright in this report and other plans and documents prepared by ***Martin Environmental Solutions*** is owned by them and no such report; plan or document may be reproduced, published or adapted without their written consent.

Complete copies of this report may be made and distributed by the Client as an expedient way in dealing with matters related to its commission.

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.