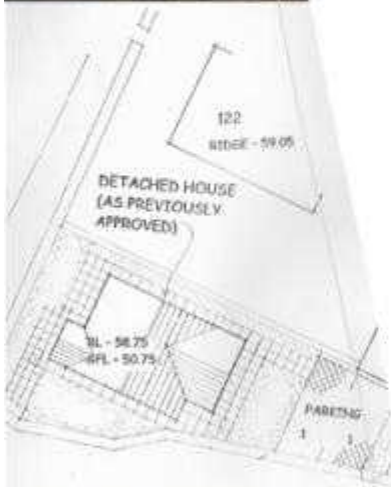




Earth Environmental
& Geotechnical

Phase 1 GeoEnvironmental Desk Study

120 Laund Road

Salendine Nook

November 2017

On behalf of

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120 LAUND ROAD

SALENDINE NOOK

PHASE I GEOENVIRONMENTALASSESSMENT

FOR

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Report No. A0697/17

November 2017

Report Title:	120 Laund Road, Salendine Nook, HD3 3TY Phase I GeoEnvironmentalAssessment
Report Reference:	A0697/17
Client:	Northern Design Partnership
Issue Date:	7thNovember 2017
Drafted By:	T Benson
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Objective

- 1.5 The purpose of the Phase 1 Report is to collate available geological and environmental data for the site (and its environment) to provide a preliminary geotechnical and geo-environmental appraisal, together with a site specific conceptual model. This enables a preliminary assessment of geo-environmental risks to be undertaken and, if necessary, provides information for the design of a Phase 2 Ground Investigation.
- 1.6 A Coal Mining Risk Assessment has previously been carried out for the site by Earth Environmental & Geotechnical (A0697/14/G/1).

Scope

- 1.7 The Phase 1 Environmental Desk Study comprises of a review of the following information sources, together with a walkover survey.
- British Geological Survey online maps.
 - Google Earth imagery.
 - Environment Agency online mapping data.
 - Historical Ordnance Survey maps.
 - The site and surrounding areas environmental, geological, and mining data presented in the site specific GroundSure Reports (Appendix 1).
 - Kirklees Council Planning Portal.

2.0 SITE LOCATION AND DESCRIPTION

- 2.1 The site is located approximately 900m east of junction 23 of the M62 motorway and approximately 4km to the northwest of Huddersfield.
- 2.2 The site comprises an existing property, 120 Laund Road, in the northwest of the site which is set back from Laund Road along a tarmac access road. The land around the property comprises a vacant area in the centre with some fly tipped material and an area of overgrown vegetation and mature trees in the southeast of the site.

Site Location

- 2.3 The National Grid Reference for the centre of the site is SE103182 (410379, 418266) at postcode HD3 3TY.
- 2.4 The site occupies an area of 0.25ha, and is approximately 70m long and 15m wide, with the exception of the access road.
- 2.5 A location plan is shown below as Figure 2.

Figure 2: Site Location Plan



- 2.6 Access is available directly from Laund Road to the west.

Site Utility Services

- 2.7 A site service plan has been not provided by the client. The status of services should be checked with the statutory providers prior to any development (including site investigation) commencing.

3.0 ENVIRONMENTAL SETTING

- 3.1 The geology of the site is covered by British Geological Survey (BGS) online data and the site specific GroundSure GeoInsight report (Appendix 1).
- 3.2 Environmental conditions are covered by Environment Agency (EA) and British Geological Survey (BGS) online data, and the site specific GroundSure EnviroInsight report (Appendix 1).

Geology

- 3.3 The BGS states that the site is not underlain by any artificial ground or superficial deposits.
- 3.4 The bedrock comprises Rough Rock (sandstone) in the west of the site and Pennine Lower Coal Measures (mudstone, siltstone and sandstone) in the east of the site.
- 3.5 The British Geological Survey 1:10,000 Sheet SE11NW also indicates the conjectured outcrop of a thin coal seam, the Pot Clay Coal seam is indicated in the western end of the site, near Laund Road. Another conjectured coal outcrop is shown close to the south eastern corner of the site. Strata dip at shallow angles (2°) to the east.
- 3.6 There are no records of landslip activity within 500m of the site.
- 3.7 There are no BGS public borehole records within 250m of the site. However, there are several borehole records from the British Geological Survey online database which were all drilled in 1967 for the construction of the M62 Motorway. The closest record is BH44 (SE11NW807), approximately 480m north, which indicates 0.3m of peat onto sandstone to 4.5m depth.
- 3.8 The site is in an area where the hazard rating is negligible, or very low for shrink-swell clays, landslides, compressible deposits, ground dissolution, running sands and collapsible deposits.
- 3.9 There are 3 no. estimated background soil chemistry records within 250m of the site; 2 no. of which are on site.

Ground Workings

- 3.10 There are 10 no. areas of historical surface ground workings features identified within 250m of the site boundary. The closest of which are 2 no. areas of unspecified ground workings directly to the north of the site, taken from 1890 to 1905 mapping.
- 3.11 The only current ground working feature identified within 250m of the site is the Lindley Moor Pottery quarry 96m southeast. The entry is listed as ceased.
- 3.12 There are no underground railway lines or other railway tunnels recorded within 250m of the site boundary.
- 3.13 There are no records of historical railway lines identified within 250m of the site.
- 3.14 There are no active railway lines records within 250m of the site boundary.

- 3.15 The site is not within 2km of the route of the High Speed 2 rail project, or within 500m of the route of the Crossrail 1 rail project.

Mining and Other Underground Workings

- 3.16 There are no records of historical mining within 1km of the site.
- 3.17 The site lies within a "Development High Risk Area". "Development High Risk Areas" are defined by the Coal Authority as locations where new developments need to demonstrate that they will be safe and stable taking full account of former coal mining activities.
- 3.18 There are no natural cavities recorded within 1km of the site.
- 3.19 There are 7 no. non-coal mining areas identified within 1km of the site. The closest of which refers to a mineral vein on site. The BGS states:

'Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered'

Of the remaining 6 no. features, 5 no. refer to sandstone Elland Flag Mines (sandstone) at 214m to 927m from the site, while a second mineral vein is recorded 340m west of the site.

- 3.20 There are no areas of gypsum extraction, tin, brine or clay mining within 1km of the site.
- 3.21 No underground historical working features have been identified within 500m of the site.
- 3.22 There are 16 no. current ground working features that have been identified within 1km of the site. The nearest is a ceased clay pit (Lindley Moor Pottery) located 96m south east of the site.

Radon Potential

- 3.23 The property/site is not within a Radon Affected Area; less than 1% of properties are above the Action Level. No radon protection measures are necessary.

Hydrogeology and Hydrology

- 3.24 The underlying bedrock at the site is classified by the Environment Agency (EA) as a Secondary (A) Aquifer. The BGS states:

Permeable layers 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. These are generally aquifers formerly classified as minor aquifers

- 3.25 The groundwater vulnerability and soil leaching potential on site has been given a soil vulnerability category HU for a Minor Aquifer with high leaching potential:

Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.

- 3.26 There are 6 no. surface water abstraction licences within 2km of the site. The nearest of which is 1.3km south, taken by Parkwood Mills Co Ltd and listed as historical.
- 3.27 There are 13 no. groundwater abstraction licences within 2km of the site. The nearest of which is 594m north, for general farming and domestic purposes, also listed as historical.
- 3.28 The closest potable water abstraction licence is located 1.3km south and is a historical record held by Yorkshire Water Services.
- 3.29 The west of the site lies within a Source Protection Zone 2 – Outer Catchment.
- 3.30 There are no river networks recorded within 500m of the site.
- 3.31 There are no unidentified surface water features within 250m of the site.
- 3.32 There are no biological or chemical river quality records within 1.5km of the site.

Landfill and Waste Management Activity

- 3.33 There is 1 no. Environment Agency / Natural Resource Wales registered landfill site within 2km of the site, located 969m north at Blackley Road, Blackley Elland.
- 3.34 There are 11 no. historic Environment Agency / Natural Resource Wales landfill sites within 2km of the site, the closest 999m east, Birchencliffe Tip which accepted industrial, commercial and household waste until December 1974.
- 3.35 There is 1 no. BGS / DoE non-operational landfill site within 2km of the site, located 1.4km east at Birchencliffe Hill Road, Huddersfield.
- 3.36 The nearest landfill site identified from local authority / historical mapping is located 536m southwest, a refuse tip identified from 1974 mapping. There are 13 no. landfill sites recorded within 2km.
- 3.37 There are 4 no. Environment Agency / Natural Resource Wales licensed waste sites within 2km of the site. The closest is 1.4km, a household, commercial and industrial waste landfill at Land/premises at South Lane, Elland.
- 3.38 There are no waste treatment, transfer or disposal sites identified within 2km of the site.

Industrial Land Use Information

- 3.39 There are 3no. records of current potentially contaminative land uses within 250m of the site. The closest is 212m south and is recorded as Huddersfield Upholstery. The remaining records refer to electrical substations.
- 3.40 There are 29no. records of historical potentially contaminative land uses within 250m of the site. The closest records refer to the unspecified ground workings 4-5m to the north of the site. The other records relate to potteries, unspecified mills, unspecified pits, unspecified works, tanks, old workhouses, unspecified commercial / industrial uses and cuttings.
- 3.41 There 10no. historical tanks identified within 500m of the site with the nearest tank located 90m south of the site.
- 3.42 There are 22no. historical energy features identified on historical mapping dated 1969 to 1996, all of which refer to electricity substations, the closest of which is located 231m northwest.
- 3.43 There is 1no. petrol or fuel sites within 500m of the site, Salendine Nook Service Station at New Hey Road, Salendine Nook, 465m south. The site is recorded as open and is currently operated by BP.
- 3.44 There are 4no. historical garages within 500m of the site identified from historical mapping dated between 1969 to 1989. The closest of these sites is a garage 436m south.
- 3.45 National Grid high voltage underground electricity transmission cables are not identified within 500m of the site.
- 3.46 There are no high-pressure gas transmission pipelines within 500m of the site.

Environmental Permits, Incidents and Registers

- 3.47 The Groundsure Report includes records of environmental permits, incidents and registers within 500m of the site, which are summarised in Table 1 overleaf.

Table 1: Environmental Permits, Incidents and Registers

Historic IPC Authorisations	None
Part A (1) and IPPC Authorised Activities	None
Red List Discharge Consents	None
List 1 Dangerous Substances Inventory Sites	None
List 2 Dangerous Substances Inventory Sites	None
Part A (2) and Part B Activities and Enforcements	1
Category 3 or 4 Radioactive Substance Authorisations	None
Licensed Discharge Consents	None
Water Industry Referrals	None
Planning Hazardous Substance Consents and Enforcements	None
Dangerous or Hazardous (COMAH and NIHHS) Sites	None
National Incidents Recording System (Pollution Incidents), List 2	3
National Incidents Recording System (Pollution Incidents), List 1	None
Sites Determined as Contaminated Land under Part 2A EPA1990	None

3.48 The Part A (2) and Part B record refers to the unloading of petrol into storage at Salendine Nook Service Station, 451m south.

3.49 The closest list 2 pollution incident was recorded 442m northeast, associated with contaminated water (suspended solids). The incident resulted in a major impact to water (category 1) and had no impact on land and air (category 4).

Environmentally Sensitive Sites

3.50 There are 2 no. of Designated Ancient Woodland records as environmentally sensitive sites. The nearest Ancient Woodland record is located 1km southwest of the site.

3.51 There are 11 no. areas of green belt within 2km of the site. The closest of these is 401m northwest.

3.52 There are no other Designated Environmentally Sensitive Sites records within 2km of the study site.

Ecology

3.53 It should be noted that an ecological assessment of the site falls outside the brief of this report.

Archaeology

3.54 An archaeological assessment falls outside the brief of this report. Where considered necessary, advice should be sought from an archaeological specialist in this respect.

Potential Flood Risks

- 3.55 Detailed assessment of flood risks is outside the scope of this report. However, the site does not lie within an Environment Agency Zone 2 (Fluvial/Tidal Models) or a Zone 3 (Fluvial Models) floodplain. The highest risk of flooding from rivers and the sea on site is very low.
- 3.56 There are no flood defences, or areas benefitting from flood defences within 250m of the study site.
- 3.57 There are no areas used for flood storage within 250m of the study site.
- 3.58 According to the BGS there are areas within 50m of the site boundary that may be susceptible to clearwater flooding. The highest susceptibility to groundwater flooding is 'limited potential' for which the BGS confidence rating is low.

Previous Site Investigations

- 3.59 Earth Environmental & Geotechnical Ltd are unaware of any previous site investigations.

4.0 SITE HISTORY

- 4.1 The historical development of the site has been determined by reference to historical plans and Google Earth imagery. The reviewed historical plans comprise only readily available records and may be limited; however, the information available to date indicates that additional searches are unlikely to add to our understanding of the site. The earliest available historical mapping covering the site dates to 1854.
- 4.2 The site history is summarised in the Table 2 below.

Table 2: Summary of Site History

Date	Site	Surrounding Land Use
1854	The site comprises vacant fields and field boundaries with woodland in the west of the site	The surrounding land use comprises primarily open fields with very little development. Lindley Moor Pottery including buildings and pot ovens, 85m south. Ground workings possibly associated with the pottery, 70m south. Large plot of land annotated as Starkey's Allotment, 115m east. Old workhouse, 245m southeast. Reservoirs, 300m south.
1890-1892 and 1893	No significant change.	Ground workings approximately 5m to the north. Several unreferenced buildings and a well are present to the west of the site. Farm buildings and peat ponds, 230m north. Hill Grove farm buildings and well, 115m east. Laund Hill Farm, 260m southwest.
1905 and 1907	No significant changes other than a small unreferenced building in the centre of the site.	The ground workings to the south no longer present. Wells no longer annotated. Reservoirs no longer present.
1918-1919	Woodland no longer present in the west of the site. Small unreferenced building no longer present in the centre of the site. A larger building has been constructed in the northwest of the site. Another newly constructed building extends from offsite into the southwest of the site.	Ground workings to the north no longer present. Clay pit, 70m north. 2no. reservoirs possibly associated with Pottery, 85m and 165m south. Several chimneys are annotated within Lindley Moor Pottery.
1930, 1933, 1938 and 1948	Additional small building in the west of the site, extending offsite. Extension to the north of the larger building in the west of the site.	Residential dwellings constructed along Laund Road. Large residential development, 85m south.

	Building in the southwest of the site has been demolished.	
1955-1956, 1960, 1961 and 1963	Additional 3no. small unreferenced buildings in the east of the site.	Pond present within former clay pit. Lindley Moor Pottery annotated as Mill. The southernmost reservoir is no longer present while the northernmost reservoir is annotated as water. 2no. works buildings, 165m southeast. Ground workings, 175m southeast. Allotment Gardens, 180m south. Additional residential dwellings constructed along Laund Road.
19661-67 and 1966-1970	The large building in the northwest of the site demolished.	Mill annotated as Woollen Mill. Works buildings annotated as Foundry and Pottery. Allotments gardens to the south annotated as recreation ground. Allotment Gardens, 100m northwest. Well, 215m north.
1975, 1977, 1978	No significant change.	No significant change.
1975-1980, 1979 and 1980	No significant change.	Large residential development to the southeast of the site.
1985 and 1987	No significant change.	Reservoir, 90m south, no longer present. Starkey's Allotment no longer annotated.
1993	Building in the centre of the site demolished. Building erected in the northwest of the site.	Mill building to the south demolished.
2002, 2010	Building in the east of the site demolished.	No significant change.
2014	No significant change.	Pond and well to the north no longer present.
2017 Google Earth	No significant change.	Residential developments to the north and 220m northeast of the site.

4.3 Selected extracts from historical maps and aerial photographs are presented overleaf.

Figure 3: OS Map Extract 1893



Figure 4: OS Map Extract 1930

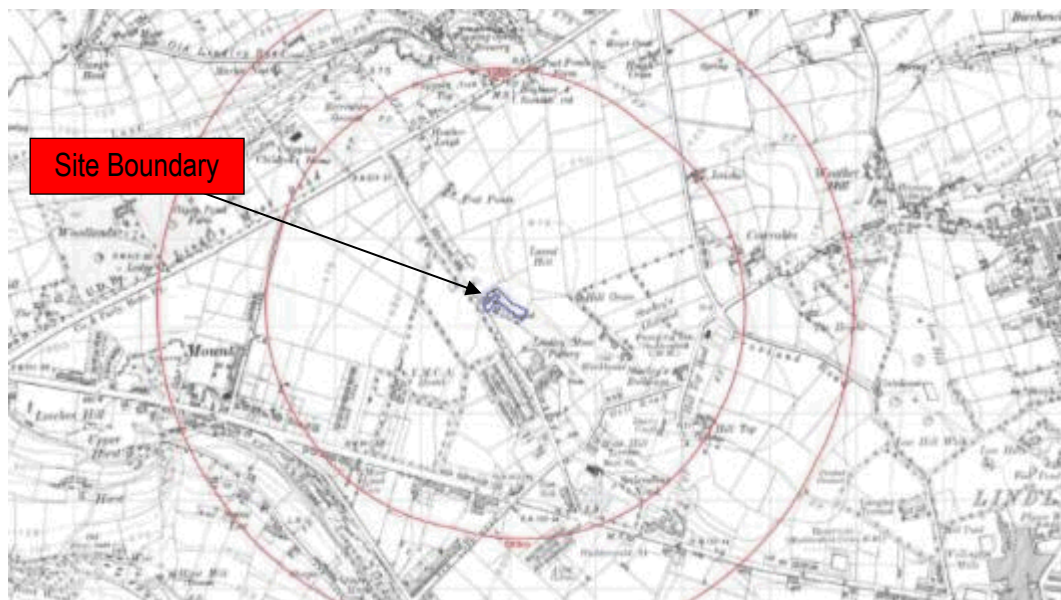


Figure 5: OS Map Extract 1987

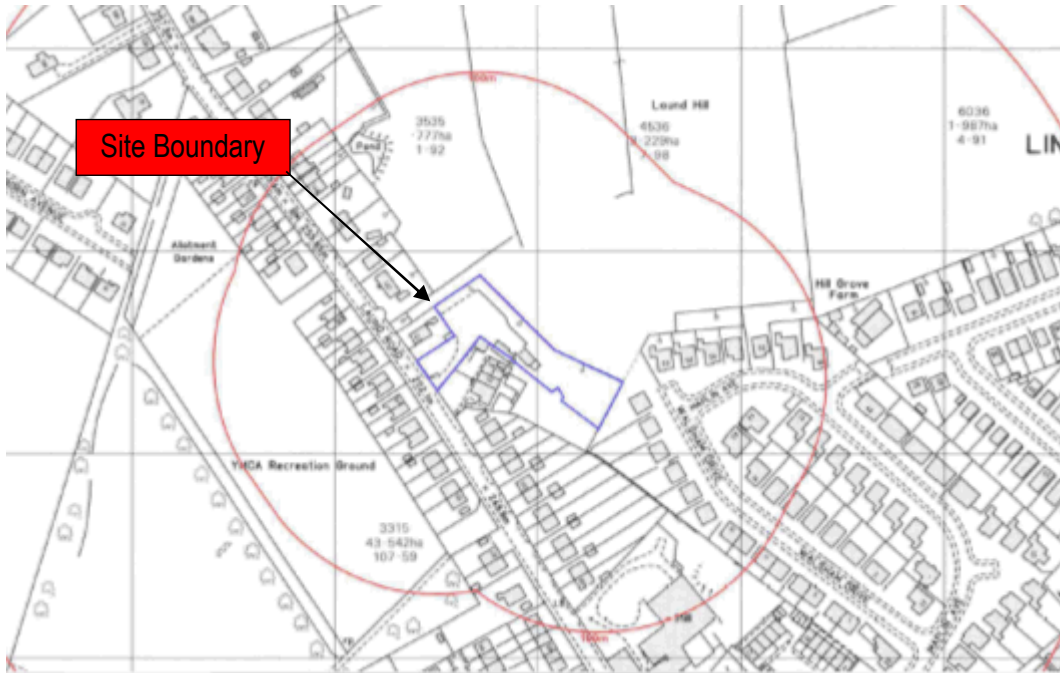


Figure 6: Google Earth Aerial Photo 2017



5.0 WALKOVER SURVEY

- 5.1 A walkover survey was completed on the 1st November 2017. The photographs and notes from the survey are appended to this report as Appendix 2 and Appendix 3 respectively.
- 5.2 The site is currently occupied and consists of a residential dwelling with a domestic garage and private gardens in the northwest of the site, an access road comprising poor condition tarmac leads from Laund Road in the west and an area of overgrown vegetation and mature trees is present in the east. The site is bounded by low rise dry walls and hedges to the west and north, a retaining wall to the east and mature trees to the southeast.
- 5.3 Several small piles of flytipped material are present to the southeast of the residential dwelling, the piles were observed to contain; plasterboard, wood, empty gas canisters, glass bottles, metal and plastic.
- 5.4 A low rise brick wall is present in the east of the site and is likely the remains of the former building identified from the historical mapping.
- 5.5 The site is directly accessed from Laund Road to the west of the site.
- 5.6 The extreme east of the site could not be accessed due to the thick nature of the overgrown vegetation.
- 5.7 No evidence of suspected asbestos containing materials was encountered within the site during the walkover, however suspected asbestos containing cement was identified on buildings adjacent to the south of the site.
- 5.8 There are no tanks, electrical substation or transformers located on site.
- 5.9 Drains were observed in the west of the site, leading from Laund Road to the residential dwelling.

6.0 PRELIMINARY CONTAMINATION RISK ASSESSMENT

Introduction

- 6.1 The following paragraphs outline a Preliminary Risk Assessment (PRA) for the site as defined by DEFRA and the EA Model Procedures for the Management of Land Contamination, CLR11 (2004).
- 6.2 The table in Paragraph 6.4 provides a Preliminary Conceptual Model (PCM) which defines the site in terms of a potential pollution linkage, that is, whether a pathway exists between a contamination source and a sensitive environmental receptor (Source-Pathway-Receptor relationship).
- 6.3 The table considers whether a pollution linkage is potentially present and provides a preliminary qualitative assessment of risk based on the information currently available. Where a possible linkage is identified, it does not necessarily mean that a significant risk exists, but indicates that further information is required through appropriate site investigation to substantiate the conceptual model.
- 6.4 The PCM/PRA is based on a proposed residential end use.

Table 3: Preliminary Conceptual Model

Source	Pathway	Receptor	Linkage	Comment
Possible contamination sources have been identified for the site including historic development and demolition. Therefore, the likelihood of significant ground contamination sources being present at the site is considered MEDIUM .	Direct contact, ingestion of soil, dermal contact, dust exposure pathways.	Current Site Users	Possible	Potential sources of contamination have been identified, considering the current land use, the risk to current site users via direct exposure is MEDIUM .
		Adjacent land users	Unlikely	The risk is considered LOW , although usual dust control measures should be implemented as part of good site working practices during construction.
		Future land users	Possible	Potential sources of contamination have been identified including historic onsite demolition. Considering the proposed residential end use, the risk to future site users via direct exposure is MEDIUM .
		Construction Workers	Unlikely	Assuming appropriate Health and Safety measures are adopted during the works, a LOW preliminary risk to construction workers is identified.
	Root uptake.	Ecology	Unlikely	Potential sources of contamination have been identified. Considering the proposed residential end use with private garden areas the risk to planting and ecology is LOW .



The likelihood of significant soluble and/or liquid and therefore mobile contaminants occurring at the site due to its past use is generally considered to be low. In addition, significant spillages / leaks are not anticipated from the existing domestic garage. Therefore, the likelihood of significant sources of soluble and/or liquid and therefore mobile contaminants occurring at the site is considered LOW.	Direct downward migration through leaching and/or mobile liquids.	Groundwater	Unlikely	Significant sources of localised mobile contaminants are not identified. Considering the anticipated absence of significant superficial deposits, migration of contaminants, if present, towards the underlying Aquifer is possible however the associated risk is considered LOW .
	Off-site migration in groundwater or surface water flow.	Surface water	Unlikely	Considering the absence of surface water courses in the immediate vicinity, the perceived risk is LOW .
		Groundwater / surface water abstractions	Unlikely	Potential sources of localised mobile contaminants have not been identified. Considering the distance of the closest abstraction point, the associated risk is considered LOW .
		Adjacent Properties	Unlikely	Potential sources of localised mobile contaminants have not been identified. Considering the anticipated absence of significant superficial deposits, migration of contaminants, if present, is possible however the associated risk is considered LOW .
		Ecology	Unlikely	No significant ecological receptors are identified, the risk to ecology is therefore considered LOW .
The likelihood of significant volatile contaminants occurring at the site is considered LOW.	Inhalation of harmful vapours (indoor and outdoor airspaces)	Current Site Users	Unlikely	The site is currently occupied by the land owner. The risk associated with current site users is considered to be LOW .
		Future site Users	Unlikely	Potential sources of localised volatile contaminants have not been identified. The proposed residential use represents sensitive receptors. The risk associated with future site users is considered to be LOW .
		Adjacent Properties	Unlikely	Potential sources of localised volatile contaminants have not been identified and therefore the risk is considered LOW .
Several areas of potentially infilled ground have been identified within 250m of the site, including ground workings, ponds and reservoirs. Therefore the likelihood of degradable materials with the potential to generate hazardous ground gas is	Emissions from the ground collecting in confined spaces and excavations	Construction/ services maintenance workers	Unlikely	Considering the potential for exposure the preliminary risk is LOW .
	Migration of gases on/off site and collecting in confined spaces on/off site.	Adjoining site users	Possible	There are several residential dwellings in the vicinity of the site. Therefore, the potential risk to adjoining site users associated is considered MEDIUM .

MEDIUM.		Current/future site users	Possible	The proposed residential end use represents sensitive receptors, given the areas of potentially infilled ground identified within 250m of the site, the potential risk is considered MEDIUM .
Chemicals which could prove aggressive to construction materials may be present on site. LOW	Direct contact	Construction concrete, plastic water pipes.	Unlikely	Risks to construction materials can be identified via site investigation prior to the proposed construction works. The perceived risk is considered LOW .

Preliminary Risk Assessment

- 6.5 The proposed residential end use, comprising residential properties and the underlying Secondary A Aquifers represent sensitive receptors.
- 6.6 Considering the proposed end use of residential dwellings with private gardens, a medium risk to end users via direct contact and hazardous ground gas has been identified given the historic land use and viable sources of ground gas identified.
- 6.7 The potential pollution linkages with regards to volatile and mobile contamination are considered unlikely and preliminary risks generally assessed as low.

7.0 CONCLUSIONS AND RECOMMENDATIONS

- 7.1 The site lies within a primarily residential area with several buildings having been present since 1905 mapping. Historical development as well as made ground associated with historical demolition and groundworks represent potential sources of contamination.
- 7.2 The potential pollution linkages are considered unlikely to possible with preliminary risks generally assessed as low to medium. As a result, there is a medium risk to the proposed residential end use from potential made ground at the site and hazardous ground gas.
- 7.3 Superficial deposits are not mapped for the site. However, the bedrock comprises Rough Rock (sandstone) in the west of the site and Pennine Lower Coal Measures (mudstone, siltstone and sandstone) in the east of the site. A marine band and a thin coal seam are expected to subcrop in the west of the site.
- 7.4 The site lies within a coal mining 'Development High Risk Area'. A separate Coal Mining Risk Assessment has been carried out by Earth Environmental & Geotechnical (A0697/14).

Recommendations

- 7.5 No further recommendations are required in order to discharge Condition 12 and this report should be sent to the local authority in order to discharge the relevant planning condition.
- 7.6 However, based on the findings of the desk study and the preliminary conceptual model, an intrusive investigation will be required in order to investigate the potential pollutant linkages further, as per Condition 13.

APPENDIX 1

GROUNDSURE REPORTS

APPENDIX 2

SITE PHOTOGRAPHS

Earth Environmental & Geotechnical Ltd Tel: 0161 975 6088 Email: info@earthenvironmental.co.uk Web: www.earthenvironmental.co.uk	SITE PHOTOGRAPHS 
Job No.: A0697/17	Site: 120 Laund Road, Salendine Nook
Plate 1 Laund Road, adjacent to the west of the site.	Plate 2 Access Road in the west of the site, facing northeast.
	
Date: 1st November 2017	Date: 1st November 2017
Plate 3 Adjacent residential dwellings, facing northeast.	Plate 4 Residential dwelling and private gardens in the northwest of the site.
	
Date: 1st November 2017	Date: 1st November 2017

Earth Environmental & Geotechnical Ltd Tel: 0161 975 6088 Email: info@earthenvironmental.co.uk Web: www.earthenvironmental.co.uk	SITE PHOTOGRAPHS 
Job No.: A0697/17	Site: 120 Laund Road, Salendine Nook
Plate 5 Domestic garage adjoining the eastern façade of the residential dwelling.	Plate 6 Rear of the residential dwelling, facing north.
	
Date: 1st November 2017	Date: 1st November 2017
Plate 7 Domestic garage with suspected asbestos containing cement sheeting adjacent to the west of the site.	Plate 8 Flytipped materials and hardstood concrete pad in the centre of the site.
	
Date: 1st November 2017	Date: 1st November 2017

Earth Environmental & Geotechnical Ltd Tel: 0161 975 6088 Email: info@earthenvironmental.co.uk Web: www.earthenvironmental.co.uk	SITE PHOTOGRAPHS 
Job No.: A0697/17	Site: 120 Laund Road, Salendine Nook
Plate 9 Low rise brick wall in the southeast of the site.	Plate 10 Retaining wall along the eastern boundary and adjacent open farmland.
	
Date: 1st November 2017	Date: 1st November 2017
Plate 11 Overgrown vegetation and mature trees in the southeast of the site.	Plate 12 Looking north across the north of the site.
	
Date: 1st November 2017	Date: 1st November 2017

Figure 10 Site Walkover Photo Locations



APPENDIX 3

SITE WALKOVER NOTES

WALK OVER SURVEY REPORT

Site: 120 Laund Road

Date: 1st November 2017

Job No: A0697

Undertaken By: Thomas Benson

Purpose of Site Walkover:

- 1) Provide further information for the Desk Study Report;
- 2) Identify potential contamination sources, pathways and receptors;
- 3) Identify geotechnical features and potential geohazards;

Desk Study features checked during site visit	Feature and Information required	Present	Description / Comments
Site Setting	Description required for: Town/Country/Suburb Setting Industrial/Residential/Retail Usage Current Site use (if undertaking security and access to the site)		Mixed: Primarily residential properties with agricultural land to the northeast Residential dwelling with associated private gardens and domestic garages in the northwest, with open land and flytipped material in the centre and overgrown vegetation and mature trees in the southeast. Occupied. The site is accessed directly from Laund Road to the west.
Evidence of Past Activities	Are there: Any relevant street names in area? Features or relics which indicate past history?	~~Yes~~/No Yes/~~No~~	Low rise brick wall in the east of the site, in the area of the previously demolished building identified from historic mapping.
Geographic Setting	Description required for: Low lying flood plain/dry valley/rolling hills etc.		
Ground Conditions	Is there any evidence of: Mining, Mine entries Subsidence Landslip/slope erosion Former investigation works	~~Yes~~/No ~~Yes~~/No ~~Yes~~/No	

Desk Study features checked during site visit	Feature and Information required	Present	Description / Comments
Topography	Description required for: Are there apparent differences between site and surrounding area? (If yes describe the presence of retaining walls, and slopes). Is there evidence of Made Ground / Fill on site?	Yes/~~No~~ ~~Yes~~/No	The site is relatively flat, the farmland to the northwest of the site is higher in elevation while the residential dwellings to the west are lower.
Site Boundaries and Neighbours	Description required for: Type of boundary demarcation (if any) on each side of site, usage of adjacent land and name of industrial/commercial occupiers. Note any adjacent features such as water course and other potentially environmentally sensitive uses (residential, school, infirmary, SSSI etc)		The site is bounded by low rise dry walls and hedges to the west and north, a retaining wall to the east and mature trees to the southeast..
Vegetation	Is there any vegetation/trees on or close to side (if yes describe locations, type, maturity, etc) Is there any evidence of poor health / distress?	Yes/~~No~~ ~~Yes~~/No	Several mature trees among the overgrown vegetation in the southeast of the site.
Ground Surface	Are there areas of hardstanding and estimate the split between hard and soft cover (If yes describe locations, types and conditions). Is the any evidence of any spillages or staining?	Yes/~~No~~ ~~Yes~~/No	The access road leading from Laund Road comprises poor condition tarmacadam while a small concrete slab / pad is present directly to the east of the residential dwelling.

Desk Study features checked during site visit	Feature and Information required	Present	Description / Comments
Site Drainage	Are there any drain covers / soakaways (if yes describe locations)	Yes/ ~~No~~	Drain covers observed leading from Laund Road to the residential dwelling.
	Are there any outfalls/water courses on site (note the condition of water courses in open water courses, discolouration, odour, eutrophication, oily sheen, gas bubbling water, clear or cloudy)	~~Yes~~ /No	
	Where a watercourse runs alongside or crosses a site are there any differences in visible water quality upstream and downstream of the site?	~~Yes~~ /No	
Electrical Equipment	Are there any electricity sub stations on or adjacent to the site? Are there any electrical transformers, capacitors, pylons etc on site?	~~Yes~~ /No	
Buildings	Is there any evidence of asbestos construction materials e.g. roofing, insulation materials.	Yes/ ~~No~~	No evidence of asbestos containing materials were identified onsite, however a small shed with suspected asbestos cement sheeting was identified directly to the west of the site.
	Do any buildings have basements?	~~Yes~~ /No	
	Do any buildings have a boiler room (if yes, describe fuel type and storage arrangements)?	~~Yes~~ /No	
Landfilling	Is there any evidence of gas protection measures (gas membrane, gravel-filled trenches, venting pipes, etc)?	~~Yes~~ /No	
Process Air Emissions	Point Source: Are there any stacks / vents / cooling towers / abatement equipment?	~~Yes~~ /No	A small stockpile of material is present to the east of the residential dwelling, plasterboard, wood, empty gas canisters, glass bottles, metal and plastic.
	Fugitive Source: is there any stockpiled material / windblown dust / vapour process?	Yes/ ~~No~~	

Desk Study features checked during site visit	Feature and Information required	Present	Description / Comments
Storage of fuels & Chemicals	Are there any drums / containers (if yes, describe quantity, full /empty, stored on hard standing / soft landscaping, bunding)? Are there any above ground fuel tanks (if yes, describe locations, volumes, how many, bunding, used / disused, condition?) Is there any evidence of underground fuel tanks (fuel pumps, covers, vent pipes, how many and how large, fill point, used / disused, and condition)?	Yes/~~No~~ ~~Yes~~/No ~~Yes~~/No	Several empty gas cannisters were identified among the flytipped material.
Accidents	In the event of a large spillage would runoff affect any vulnerable watercourse/culverts? Are emergency procedures / equipment in place?	~~Yes~~/No ~~Yes~~/No	
Waste	Are there any waste skips present on site? Are waste storage facilities adequate? Is there any litter/fly tipped material?	~~Yes~~/No N/A Yes/~~No~~	As previously discussed.
Atmospheric	Are there any fumes, odours originating from site or affecting site from neighbouring sites?	~~Yes~~ /No	
Access / Further Investigations	If a Phase 2 Investigation is likely to be required, describe any access problems including headroom where relevant, services, overhead cables, restricted access areas, confined spaces, trafficked areas, etc that are likely to affect investigation scope/techniques. Identify possible site office and storage locations. Identify possible water supply	~~Yes~~/No ~~Yes~~/No	The overgrown vegetation would require removal or thinning down prior to any site investigation. Tap on the exterior of the residential dwelling.

Desk Study features checked during site visit	Feature and Information required	Present	Description / Comments
Site Environs	Are there any local features that could have a harmful influence e.g. landfill, industrial processes, railway land?	~~Yes~~ /No	
	Are there any sensitive water features/courses near to the site?	~~Yes~~ /No	
Local Knowledge / Anecdotal Evidence			
Site Dimensions	Describe shape of Site in plan and measure dimensions.		An irregular parcel of land 70m long and 15m wide, with the exception of the access road.

APPENDIX4

REPORT LIMITATIONS

LIMITATIONS

This contract was completed by Earth Environmental & Geotechnical Ltd on the basis of a defined programme and scope of works and terms and conditions agreed with the client. This report was compiled with all reasonable skill, and care, bearing in mind the project objectives, the agreed scope of works, the prevailing site conditions, the budget and staff resources allocated to the project.

Other than that expressly contained in the above paragraph, Earth Environmental & Geotechnical Ltd provides no other representation or warranty whether express or implied, is made in relation to the services. Unless otherwise agreed this report has been prepared exclusively for the use and reliance of the client in accordance with generally accepted consulting practices and for the intended purposes as stated in the agreement under which this work was completed. This report may not be relied upon, or transferred to, by any other party without the written agreement of a Director of Earth Environmental & Geotechnical Ltd.

If a third party relies on this report, it does so wholly at its own and sole risk and Earth Environmental & Geotechnical Ltd disclaims any liability to such parties.

It is Earth Environmental & Geotechnical Ltd understanding that this report is to be used for the purpose described in the introduction to the report. That purpose was an important factor in determining the scope and level of the services. Should the purpose for which the report is used, or the proposed use of the site change, this report will no longer be valid and any further use of, or reliance upon the report in those circumstances by the client without Earth Environmental & Geotechnical Ltd review and advice shall be at the client's sole and own risk.

The report was written in 2017 and should be read in light of any subsequent changes in legislation, statutory requirements and industry best practices. Ground conditions can also change over time and further investigations or assessment should be made if there is any significant delay in acting on the findings of this report. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of Earth Environmental & Geotechnical Ltd. In the absence of such written advice of Earth Environmental & Geotechnical Ltd, reliance on the report in the future shall be at the client's own and sole risk. Should Earth Environmental & Geotechnical Ltd be requested to review the report in the future, Earth Environmental & Geotechnical Ltd shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between Earth Environmental & Geotechnical Ltd and the client.

The observations and conclusions described in this report are based solely upon the services that were provided pursuant to the agreement between the client and Earth Environmental & Geotechnical Ltd. Earth Environmental & Geotechnical Ltd has not performed any observations, investigations, studies or testing not specifically set out or mentioned within this report.

Earth Environmental & Geotechnical Ltd is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, Earth Environmental & Geotechnical Ltd did not seek to evaluate the presence on or off the site of electromagnetic fields, lead paint, radon gas or other radioactive materials.

The services are based upon Earth Environmental & Geotechnical Ltd observations of existing physical conditions at the site gained from a walkover survey of the site together with Earth Environmental & Geotechnical Ltd interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. The findings and recommendations contained in this report are based in part upon information provided by third parties, and whilst Earth Environmental & Geotechnical Ltd have no reason to doubt the accuracy and that it has been provided in full from those it was requested from, the items relied on have not been verified.

No responsibility can be accepted for errors within third party items presented in this report. Further Earth Environmental & Geotechnical Ltd was not authorised and did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the services. Earth Environmental & Geotechnical Ltd is not liable for any inaccurate information, misrepresentation of data or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to Earth Environmental & Geotechnical Ltd and including the doing of any independent investigation of the information provided to Earth Environmental & Geotechnical Ltd save as otherwise provided in the terms of the contract between the client and Earth Environmental & Geotechnical Ltd.

Where field investigations have been carried out these have been restricted to a level of detail required to achieve the stated objectives of the work. Ground conditions can also be variable and as investigation excavations only allow examination of the ground at discrete locations. The potential exists for ground conditions to be encountered which are different to those considered in this report. The extent of the limited area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition, chemical analysis was carried out for a limited number of parameters [as stipulated in the contract between the client and Earth Environmental & Geotechnical Ltd] based on an understanding of the available operational and historical information, and it should not be inferred that other chemical species are not present.

The groundwater conditions entered on the exploratory hole records are those observed at the time of investigation. The normal speed of investigation usually does not permit the recording of an equilibrium water level for any one water strike. Moreover, groundwater levels are subject to seasonal variation or changes in local drainage conditions and higher groundwater levels may occur at other times of the year than were recorded during this investigation.

Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan, but is (are) used to present the general relative locations of features on, and surrounding, the site.