



PHASE I PRELIMINARY RISK ASSESSMENT

**Land adjacent to Units off Reliance Street, Newton Heath,
Manchester**

July 2019

Prepared for
PMC Autos
Unit 9
Reliance St Industrial Estate
Manchester
M40 3AG

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APPENDICES

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EXECUTIVE SUMMARY

Site Address	The area of investigation is on the site at the Land adjacent to Units off Reliance Street, Newton Heath, Manchester, M40 3AG
Grid Reference	388134,400783
Site Area	0.0537Ha
Site Description	The site is located within Newton Heath, north east of Manchester; within Reliance Trading Estate. The area of investigation comprises a roughly rectangular shaped parcel of land to the north of Oldham Road A62 and east of Reliance Street. The main Site is oriented south west to north east with the majority of the boundary being surrounded by fencing with two entry gates to the north east and north west boundary and includes a small garage unit to the east of the open compound.
Site History	The oldest historical map of 1884 to 1880 identifies the site being open land until circa 1931 when it is part of a larger area identified as Timber Mill. Historic maps from 1952 suggest a building occupying the site which was no longer present by 1983. The site has remained open with a single shipping container to the east.
Adjacent Land	Surrounding land use is dominated by industrial and commercial land use.
Environmental Setting	Geology: Superficial deposits are shown to be Devensian Till underlain by bedrock of the Collyhurst Sandstone Formation. Hydrogeology: • Superficial Geology: Secondary A (undifferentiated) • Solid Geology: Principal within Bedrock. • No licensed groundwater abstraction within 500m of the Site. • No groundwater Source Protection Zones and potable water abstraction within 500m of the Site. Environmentally Sensitive Sites: The development Site is situated within 2km of: • 3No. entries of SSSI records, the nearest is 901m east as Rochdale Canal Section. • 3No record of Special Areas of Conservation (SAC the nearest is 901m east as Rochdale Canal Section. • 1No. Ancient Woodland, Boggart Hole Clough is located 1857m north west. • 2No. Local Nature Reserves are listed within 2km of the site, the nearest is Clayton Vale 1216m north west of the site. • The site is within a Nitrate Vulnerable Zone.
Mining, Excavation and Natural Cavities	The Site is not within a Development High Risk Area and has no mine entries on or near the site according to Coal Authority Interactive Mapping. The nearest historical Coal Mining information is recorded as unspecified mines and Collieries 987m north and 995m north respectively. There are no records of natural cavities, brine extraction, gypsum extraction, metalliferous, or clay mining on or within 1km of the site. The nearest historical surface ground working features is on the subject Site itself listed as a pond. There are no non-coal mining cavities or natural cavities listed. There are no entries for brine or gypsum extraction or tin or clay mining.

Flood Risk & Hydrology	Hydrology: The closest surface water course within 250m of the site is a canal approximately 220m south. There is an inland river not influenced by normal tidal actions approximately 300m to the north. Flood Risk: The site is not within a zone 2 and 3 floodplain and has a very low risk of flooding on the RoFRas rating. Groundwater has potential for clearwater flooding within the supernatural deposits and limited potential for groundwater flooding.
Ground Stability	There is negligible hazard of ground dissolution of soluble rocks and compressible deposits. There is a very low risk of shrink-swell clay, landslides, collapsible deposits and running sand.
Contamination	<u>On-site:</u> • The Site is not assigned as a Contaminated Site under the EPA 1990. • There is likely potential of ground contamination. <u>Off-site:</u> • Likely potential for off site sources of contamination
Ground Gas	The Site has historic development potentially resulting in ground gas and a history of potentially producing migrating ground gas via Made Ground and infilled land.
Initial Conceptual Site Model (CSM)	Human Health • Likely potential presence of ground contamination by PAHs, TPH in soil/surface gravel from historic land use on site. • Likely presence of ground gases from infilled and made ground associated with historic development of the site. • Off-site: • Potential migration of ground gas and contamination such as PAH's, PAH's, heavy metals and potential asbestos from historic development and activities in close vicinity to the site. • Controlled Waters The risks posed to surface water features, are considered low based on the potential for contamination migration pathways at source and the nature and distance of the receptor. Environmentally Sensitive Areas The risk posed to identified sensitive areas is moderate based on the identified contamination sources coupled with the distance, direction and relative heights between the source and the receptor.
Recommendations for Ground Investigation	• Exploratory Holes to obtain samples of ground material for chemical and geotechnical analysis including a ground gas and water monitoring program. • Measures to investigate for geotechnical and geo environmental purposes are recommended. • Potential remediation to remove/remediate potential contamination deposits are recommended.

1.0 INTRODUCTION

Egniol Environmental Ltd were commissioned by Extensions NW Ltd to undertake a Phase I Preliminary Risk Assessment (PRA) of the Land adjacent to Units off Reliance Street, Newton Heath, Manchester, M40 3AG (central grid reference: 388134, 400783), located within the Manchester City Council Planning Authority.

The study will inform as part of two approved planning applications reference: 119669/FO/2018 (condition 13a) for the erection of a two-storey building to form 3 no. light industrial units (Class B1) of the site and 124560/FO/2019 (condition 7a) Erection of two storey building to form car repair garage at ground floor with ancillary office to the first floor (Class B2) following demolition of existing building, known as The Shed, Reliance Street Industrial Estate.

The objectives of this study are to:

- Review historical plans, geology, hydrogeology, site sensitivity, flood-plain issues, mining records and any local authority information available in order to complete a Desk Study in line with BS:5930 Code of Practice for ground Investigations;
- Describe the current environmental setting of the Site including photographs presented as Appendix 1;
- Provide an appraisal of potential environmental risks associated with contaminated ground for land acquisition and its future use.

This report provides factual information available during this appraisal, interpretation of the environmental data held on publicly available registers and other sources. Groundsure reports include the following data: Historical OS maps; BGS Geological Maps, Environmental & Hydrological; Waste; Hazardous Substances; Geological; Industrial Land-Use; Sensitive Land-Use; Historical Land-Use. The reports are enclosed in Appendix 2.

2.0 **SITE**

The site is located within Newton Heath, north east of Manchester; within Reliance Trading Estate. The area of investigation comprises a roughly rectangular shaped parcel of land to the north of Oldham Road A62 and east of Reliance Street. The main Site is oriented south west to north east with the boundary being surrounded by fencing with two entry gates to the north east and north west boundary and the adjacent shed to the east which is currently being used for automotive (repair garage) works.

The Site is surfaced with concrete which in some areas is in poor condition and areas of vegetation are sporadic around the fencing. The Site is relatively level and is currently unused, though has, until the time of writing report was being used as storage for apparel associated with the motor trade such as, a car shell, gas canisters, tires, a Royal Mail container and shipping container which was removed prior to January 2020.

The site is within an area dominated by industrial and commercial properties; including 'K9' a dog centre to the north, a Pound Stretcher to the north east, Dayton Motor Garage to the north east, Signs to signs to the east, an MOT centre to the south. 34No. entries on the current land uses map highlight the nearest potentially contaminative industrial site within 250m is TD Autocare located 5m to the south of the site.

Anecdotal information suggests the site is currently being cleared of all 'scrap' and the container will be removed in due course to allow for the development.

Figure 1 Site Location

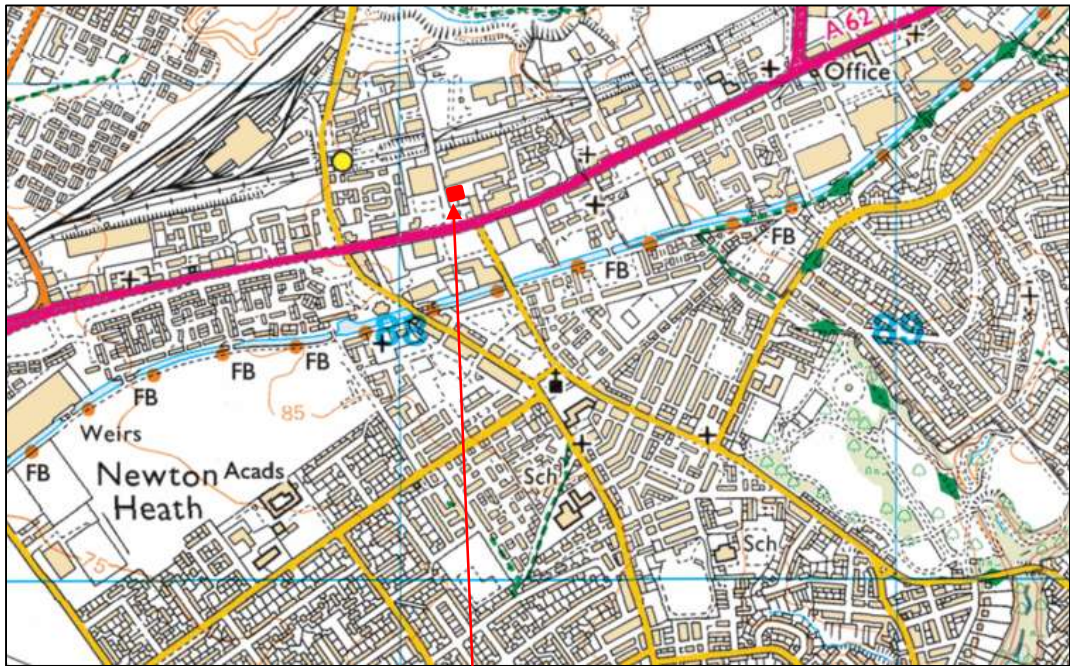
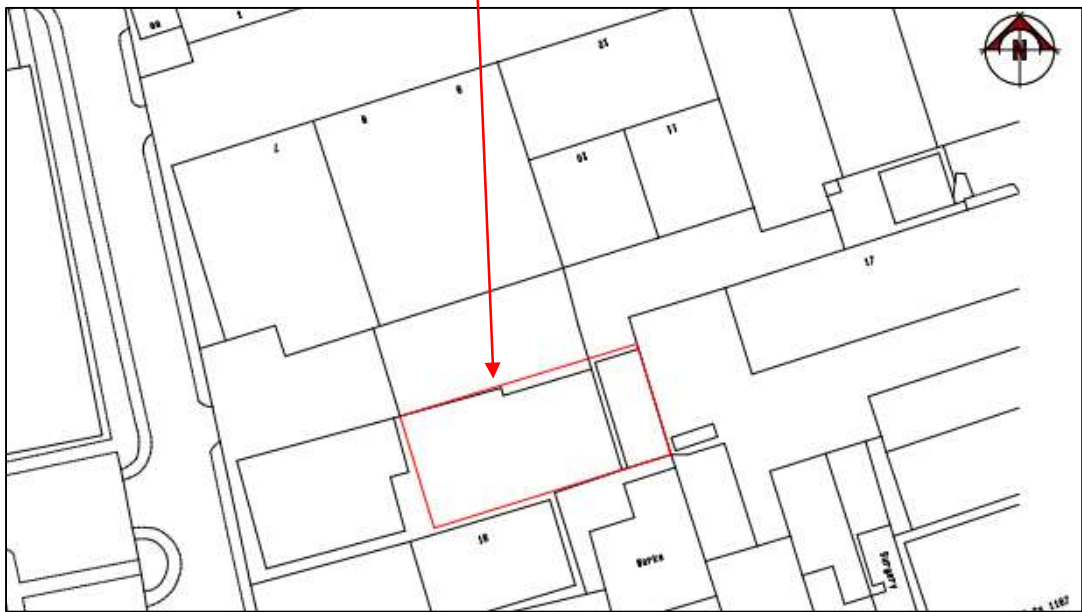


Figure 2 Location Plan



A brief summary of the salient points relating to the history of the Site is presented below. It is not the intention of this report to describe in detail all the changes that have occurred on or adjacent to the Site or its component areas, only those pertinent to the objectives of this investigation.

Dates	On-Site	Off-Site
1848 – 1938 {1908}	The oldest historical map of 1848 identifies the Site as part of a larger area of open land in the grounds of ‘The Cloughs’. Located to the north of an area of residential development the site is part of an area of potential agricultural land adjacent to the off-site Railway. {Site is shown to be part of a large (potential Clay) pit with the exception of a small area to the south.} Based on historic land use database derived from historic mapping; entries between 1906 and 1923 suggest a pond is located on the subject Site.	The Site is located within Newton Heath and forms part of a larger area of potential agricultural land use. Residential properties are located approximately 50m to the south. Heath Brewery and Barratt’s Cotton Mill is located approximately 150m to the south east. An electrical engineering works and reservoir are located approximately 150m to the south. Monsall Dye Works is located approximately 200m to the south. A reservoir and a Sawmill is located approximately 110m to the west with a travelling crane beyond. The Lancashire and Yorkshire Railway line is located approximately 80m to the north oriented south west to north east. Moston Brook pits are located approximately 250m to the north, beyond the Railway.
1931 - 1952	The Site is now part of a land use labelled Timber Yard, becoming Saw Mill and Joinery Works, however straddles the southern Site boundary. This small percentage of Site falls on a potential street to the south. The pond is no longer shown	A large building associated with the Timber Works that the Site lies within, is located directly to the north of Site. Monsall Dye Works is no longer present, though an unnamed Mill is located in its place. The wider site area has been heavily developed. Industrial and commercial activity has generally broadened in the local vicinity.
1952-1975	The Site is now occupied by a large building with which the site is part of as the Site straddles the building footprint as it extends to the east and south.	General increased development in the local area with mixed land use; residential, school, industrial and commercial. The mills surrounding the site are now identified as Works (north, east and west). The mill to the north becomes Timber Yard.

1975-1983	No significant change	The works to the north is still present however, the works to the west is being redeveloped and becomes warehouses
1983-1993	The site is no longer part of the larger building and appears unused.	Circa 1988 the Works to the north of the Site becomes Trading Estate and shows configuration shown at present. Mills in the local vicinity become Works.
1993 - present	A small unit is located on site oriented adjacent to the eastern boundary, identified as the shipping container in situ currently.	Shows current configuration with minor redevelopment.

Geology and Mining

Made Ground	Information represented on BGS mapping suggest that the nearest infilled ground is located 390m south west of the Site. Due to the historic development on Site there is potential for relatively shallow Made Ground to be present.
Superficial Geology	Superficial deposits are recorded as Devensian Till, Diamicton (permeable) on Site. Boreholes located to the north of site reference SD80SE407 suggests Made Ground is located to 1.60m bgl and is underlain by silty Clay interbedded with Sand deposits to circa 20m bgl.
Solid Geology	The site is shown to be underlain by the Collyhurst Sandstone Formation. Borehole records located at Heath Brewery, ref. SD80SE76 to the south east suggests that Sandstone is identified at circa 37m bgl.
Mining, Excavation and Natural Cavities	Although the Site is recorded to lie within a coal mining reporting area, the Site is not within a Development High Risk Area and has no mine entries on or near the site according to Coal Authority Interactive Mapping. The nearest historical Coal Mining information is recorded as unspecified mines and Collieries 987m north and 995m north respectively. There are no records of natural cavities, brine extraction, gypsum extraction, metalliferous, or clay mining on or within 1km of the site. 45No. entries for historical surface ground working features exist within 250m of the Site. Entries are duplicated and include; ponds, unspecified pits, cuttings, reservoir, unspecified ground workings, refuse destructor and canal. The nearest is on the subject Site itself listed as a pond.
Ground Stability	There is negligible hazard of ground dissolution of soluble rocks and compressible deposits. There is a very low risk of shrink-swell clay landslides, collapsible deposits and running sand.

Quarrying	There are no entries for quarrying within 250m of the site, however entries for current ground workings include 8No. entries for ground workings within 1km of the Site; the nearest is 425m north recorded as Williams Road sand pit which has ceased activities as an opencast coal site.
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Hydrology and Hydrogeology

Watercourses	The closest surface water course within 250m of the site is a canal approximately 220m south. There is an inland river not influenced by normal tidal actions approximately 300m to the north.
Flood Risk	The site is not within a zone 2 and 3 floodplain and has a very low risk of flooding on the RoFRas rating. Groundwater has potential for clearwater flooding within the supernatural deposits and limited potential for groundwater flooding.
Groundwater Classification	Superficial Geology: Secondary (undifferentiated) Solid Geology: Principal. On site indicates major aquifer/high leaching potential (HU vulnerability category).
Source Protection Zones	None recorded within 500m.
Springs / Wells	None recorded on or immediately adjacent to the Site.
Licensed Surface Water Abstractions	None recorded.
Licensed Groundwater Abstractions	3No records within 2km of the Site. The nearest license is 1594m south east for secondary category – a historical entry for Manchester Abattoir, this point is recorded as both entries and are historical. The following two entries relate to the same location 1853m south west at Hanson Quarry Products Europe Ltd.
Licensed Potable Abstractions	None recorded within 2000m.
Licensed Discharge Consents	1No. recorded within 500m. A historic entry for the refuse treatment/transfer station is recorded as miscellaneous discharges to surface water at Moston Brook located 336m north of the Site.
Pollution Incidents	14No. pollution incidents recorded within 500m recorded the nearest is 87m north west as Category 4 (no impact) to water – as atmospheric pollutants and effects.

Landfill and Waste Management

Landfill Records	There are 19No. records of Landfills from Historical landfill site records within 1500m of the Site: the nearest is 211m north east, surrendered environmentally permitting regulations at Land off Reliance Street.
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Other Waste Sites	2No. records for non-operational landfill and other waste sites. The nearest is 784m north east of the Site. 50No. records on the Local Authority and historical mapping, landfill and other waste sites. The nearest is 378, south west at Briscoe Lane Landfill. 36No. entries on the waste treatment, transfer or disposal sites. The nearest is 103m south east recorded as a scrap yard. 27No records of Environment Agency /Natural resources waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites. The nearest is 127m south east as metal recycling site at Rothwell Street.
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Environmental Licenses, Permits and Registers

Historical IPC Authorisations	None recorded within 500m
Part A (1) and IPPC Authorised Activities	12No. recorded within 500m (the nearest 193m north, disposal of hazardous waste (involving physiochemical treatment)).
Red List Discharge Consents (potentially harmful discharges to controlled waters)	None recorded within 500m.
List 1 and List 2 Dangerous Substances Inventory Sites	None recorded within 500m.
Part A (2) and Part B Activities	6No. recorded within 500m the nearest is 95m south east as petrol vapour recovery.
Records of Category 3-4 Radioactive Substances Authorisations	None recorded within 500m.
Records of COMAH & NIHHS sites within 500m of the study site	None recorded within 500m.

Radon

The Groundsure report assesses radon risk using data supplied by the Health Protection Agency (now Public Health England) along with BRE Document 'BR 211 - Radon: Guidance on the Protective Measures for New Dwellings'.

The Site is not in a Radon affected area, as less than 1% of properties are above the action level. Therefore, no radon protection measures are considered necessary.

Sensitive Land Uses

The development Site is situated within 2km of 3No. entries of SSSI records, the nearest is 901m east as Rochdale Canal Section. 3No record of Special Areas of Conservation (SAC the nearest is 901m east as Rochdale Canal Section. 1No. Ancient Woodland, Boggart Hole Clough is located 1857m north west. 2No. Local Nature Reserves are listed within 2km of the site, the nearest

is Clayton Vale 1216m north west of the site. The site is within a Nitrate Vulnerable Zone. There are no other records of designated environmentally sensitive sites.

4.0 **CONCEPTUAL SITE MODEL**

Risk to human health or environmental receptors is based on an assessment of one or more source-pathway-receptor linkages. The 'source' is any substance which has the potential to cause significant harm to a relevant receptor and the 'pathway' is any route by which contamination may travel to impact on a 'receptor'.

The Conceptual Site Model (CSM) summarises the principal contaminant sources, pathways and receptors for the Site and the likelihood of the existence of a pollutant linkage. The assessment is based on a presumed end use of a Commercial Land Use.

In accordance with Environment Agency, CLR 11 (2004), Defra guidance: Land Contamination: Risk Management (LCRM) framework and BSI 10175 (Code of Practice for Investigation of Potentially Contaminated Land), EEL have developed the initial CSM to identify potential contamination sources, migration pathways and receptors within the study area. These include the following:

Source	Pathway	Receptor	Probability	Consequence	Risk	Comment
Potential for Made Ground	Dermal contact, ingestion and inhalation of soils dust.	Current Site Users	Low Likelihood	Moderate	Low risk	The risk to current site users from potential Made Ground is considered to be MODERATE . There is the low risk potential for current site users to come into contact with the materials potentially present as the site is completely covered in hardstanding, all be it in poor condition in some areas.
		Adjacent land users	Unlikely	Moderate	Low risk	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	Low Likelihood	Moderate	Low risk	The current proposal is for the development of 3 commercial units. The risk to future site users via direct exposure is therefore considered to be LOW . This assessment is based on the sensitivity of the receptor and the potential for contamination to be present beneath the assessment site.
		Construction Workers	Low Likelihood	Moderate	Low/ Moderate risk	Construction workers are likely to be exposed to Made Ground materials during construction works and potentially impacted hydrocarbon impacted Made Ground. Should any remediation be required any potential contamination would be disturbed. Although exposure duration will be short-term appropriate health and safety measures should be adopted (in line with CDM and other relevant health and safety guidance) if so, a LOW / MODERATE risk to construction workers is anticipated.
Potential for hydrocarbon contamination from historic land use	Downward vertical migration of leachate within the Made Ground to shallow	Groundwater within the tidal flats or Kinnerton Sandstone Member	Low Likelihood	Moderate	Moderate risk	The superficial and bedrock materials beneath site both have a high permeability, therefore there is a potential for contamination within Made Ground deposits to migrate vertically through leaching, particularly in the event of potentially hydrocarbon impacted soils. The risk to groundwater within the

Source	Pathway	Receptor	Probability	Consequence	Risk	Comment
	groundwater or principal aquifer					underlying Collyhurst Sandstone Formation is therefore considered MODERATE .
	Vertical or lateral migration of ground gas associated with Made Ground / hydrocarbons.	Current Site Users	Low Likelihood	Moderate	Low/ moderate risk	The risk to current site users from ground gas generated by the presence of made ground and the potential for vapours generated from potential hydrocarbons is considered LOW . There is the potential for made ground and hydrocarbons to be present beneath the assessment site, however it is anticipated that potential contaminants associated with historic use are relatively localised and potentially capped vertically by cohesive superficial deposits.
		Adjacent land users	Low Likelihood	Moderate	Low risk	The risk to adjacent users from ground gas generated by the presence of made ground or vapours from the hydrocarbons is considered LOW . There is the potential for made ground to be present beneath the assessment site. The materials on site are likely to be limited in lateral contamination therefore reducing the risk to adjacent land users.
Potential for asbestos within Made Ground soils		Future land users	Low Likelihood	Moderate	Low moderate risk	The risk to future site users from ground gas generated by the presence of made ground, hydrocarbons and/or potential asbestos is considered LOW . There is the potential for made ground, ACM's to be present beneath the assessment site and as such would require further recommendations to reduce or negate the risk for future users. As the long term use is intended to be commercial end use and any potential for contamination would have been dealt with during the redevelopment the long term risk would likely be reduced to low.

Source	Pathway	Receptor	Probability	Consequence	Risk	Comment
		Construction Workers	Low Likelihood	Moderate	Moderate risk	The risk to construction works from ground gas generated by the presence of made ground, hydrocarbon vapours and potential asbestos is considered MODERATE . There is the potential for made ground to be present beneath the assessment site, however it is anticipated that the materials would undergo remediation under a suitable strategy prior to future construction thus reducing the risk classification to low.

5.0 PRELIMINARY RISK ASSESSMENT

5.1 Risk Classification

The significance of the potential source-pathway-receptor linkages identified in the CSM can be assessed using the following criteria:

- Low risk – not likely to cause significant harm to human health or controlled waters. Remedial measures are not likely to be required;
- Moderate risk – it is possible that significant harm to human health or controlled waters could occur depending on site specific circumstances. Remedial measures may be required to mitigate potential risks;
- High risk – it is likely that significant harm to human health or controlled waters will occur unless appropriate remedial measures are incorporated into the development.

5.2 Risk to Human Health

There is insufficient information to ascertain the presence and potential level of ground contamination on site. Given the nature of the history of the site and the presence of made ground, the preliminary risk from these potential contamination sources is **Low to Moderate**.

5.3 Risk to Groundwater

The Site is recorded to be underlain by superficial deposits of Devensian Till supporting a Secondary A (undifferentiated), the bedrock deposits which supports a Principal aquifer and thus offers Limited protection from potential mobile contaminants. Also, given its development history it is considered that the risk of contamination to the underlying groundwater is **Moderate**.

5.4 Risk to Surface Waters

The risks posed to surface water features, are considered **low** based on the potential for contamination migration pathways at source and the nature and distance of the receptor.

5.5 Risks to Buildings, Foundations and Services

Any potential future redevelopment of the Site will include the construction of new foundations, which are primarily affected by sulphate concentrations. Given the limited number of identified contamination sources, it is considered that the risk to future building foundations is **Moderate**.

Services may be affected by the presence of any aggressive contaminants which may corrode or penetrate services. Water supply pipes can be susceptible to penetration by hydrocarbons which may then affect the quality of the water supply. Given the potential sources of contamination identified, it is considered likely that the risk to services is **Moderate**.

6.0 **RECOMMENDATIONS**

6.1 In order to confirm the CSM and ascertain the environmental risks, the following works are recommended prior to redevelopment:

- Full intrusive ground investigation to assess the shallow ground conditions, including a program of ground gas and groundwater monitoring and obtain samples for laboratory analysis for geotechnical and environmental outputs.
- Laboratory chemical testing of soils to confirm or otherwise the findings of the Conceptual Site Model and enable a generic quantitative risk and geotechnical assessment to be carried out.
- Factual and interpretative reporting, providing recommendations for the future development.

6.2 The final Risk Assessment report should be submitted to the Planning Department of the Local Authority for comment and approval.

APPENDICES

Appendix 1 Photographic Record

Appendix 2 Groundsure Reports

Appendix 1

Photographic Record



Plate 1: General view of access road into Reliance Trading Estate



Plate 2: View, facing south into the Site access gate



Plate 3: Second Site access gate located in the north east boundary



Plate 4: View facing north west to north east; scrap metal, car shell, Royal Mail Trailer and container located in the east of Site



Plate 5: View facing west to east, shipping container with car and associated accoutrement

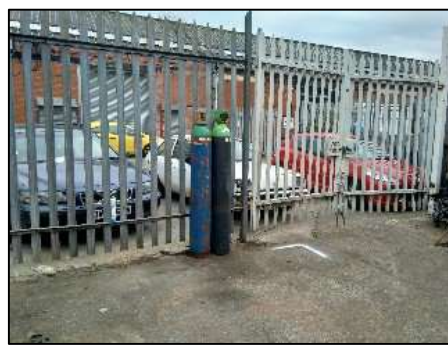


Plate 6: 2No. Gas containers Helium and Argon Mix (content quantity unknown) located to the north east of Site before second access gate.



Plate 7: View of the north east corner



Plate 8: View from east to west



Plate 9: View inside the Shed adjacent to the open compound in the east



Plate 10: View inside the Shed facing south west

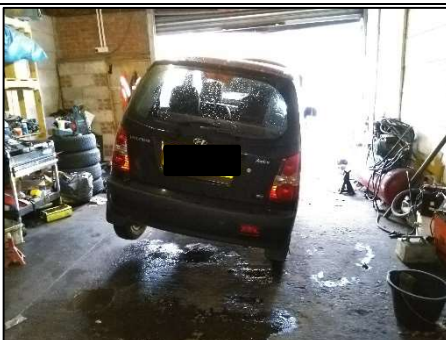


Plate 11: View inside the Shed facing North



Plate 12: View of external area of the Shed

Appendix 2

Groundsure Reports