TRADEBE, ENTERPRISE CLOSE, MEDWAY CITY ESTATE, ROCHESTER, ME2 4LY

Desk Study and Ground Investigation Report

Report Reference: R-129-003179

May 2024

Report for:

REPORT & VERSION CONTROL

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EXECUTIVE SUMMARY

Section	Summary Comments (only)
Site Location	TRADEBE, ENTERPRISE CLOSE, MEDWAY CITY ESTATE, ROCHESTER, ME2 4LY
Purpose & Scope	Mayer Environmental Ltd (Mayer) was commissioned by the client GRG to conduct a combined desk top study and ground investigation for due diligence purposes.
Site Description & **Future Use**	The site comprises one plot of land, located in the Medway City Estate, neighboured by commercial and industrial units. Currently the site houses a large warehouse, a small transport office, small transformer and outside bin storage and parking areas. The site is to continue in its current use as a clinical waste site.
Historical Summary	In summary, it appears the site has had a fairly simple development history. The site was initially included as an unspecified pit (1865) before progressing to include railway sidings (1896). By 1909 historic maps show that the railway sidings were abandoned, the land was left undeveloped until some point between 1981 and 1989 where two square buildings were developed on the North Eastern area of the plot and another Square building in the North West area. The North Western building is further labelled “works” without specification for 1991. From 1993 a permitted clinical waste transfer station has operated on the plot.
Geo-Environmental Setting	
Geology:	Geological records indicate that the site is underlain by Head Deposits, which overlies the combination of Lewes Nodular Chalk Formation, Seaford Chalk Formation and Newhaven Chalk formation. The Head Deposits consist of clay and silt.
Hydrogeology:	The Head Deposits have been classified by the Environment Agency as Unproductive Strata. The Lewes Nodular, Seaford and Newhaven Chalk Formations have been classified as Principal Aquifers.
Hydrology	The nearest surface water features are Whitewall Creek and River Medway approximately 330m North and 460m South West, respectively. Further to this, maps show that the River Medway also lays approximately 570m to South East.

Summary of GI Findings	
Site Works	Site work was undertaken from the 6th to the 7th March 2024.
Ground Conditions Encountered	Concrete was encountered across the site at all locations at generally 0.2m thick. Under one part of the building a thickness in excess of 1m was encountered. Underlying the concrete Made Ground was encountered in the majority of locations generally comprising gravelly sand with red brick. The chalk was present at all locations at a minimum depth of 0.4m bgl The base of the chalk was not proven in any area.
Conclusions	**Soils –** no significant levels of contaminants were identified within the samples analysed with regards to a continued commercial use. **Groundwater –** no groundwater was encountered during the ground investigation. **Asbestos –** no asbestos was identified within any of the samples screened.
Final Conceptual Site Model	No pollutant linkages were identified as being present on the site in its current operational state.
Conclusions	It is considered unlikely that the Clinical waste site that has been operating on the site has had any significant impact on the underlying ground conditions.
The Executive Summary is based on the information presented in the full report and does not form a full assessment of the available data. This summary is to be read in conjunction with the full report**.**	

1 INTRODUCTION

1.1 Background

Mayer was commissioned by the client GRG to conduct a combined desk top study and ground investigation for due diligence purposes for a site located at the Tradebe, Enterprise Close, Medway City Estate, Rochester, ME2 4LY.

1.2 Purpose & Scope

Mayer understand the site is currently operated by Tradebe as a clinical waste treatment facility, and GRG are looking at taking over the lease with a view to operating the site as a waste transfer station, reducing the focus on clinical waste and increasing the range of hazardous wastes accepted.

1.3 Provided Information

To inform the desk study reporting and gain an understanding of the environmental and historical setting of the site for contaminative purposes; an Enviro Insight report by Groundsure was requested. Also, the following documents were provided to Mayer by GRG for information.

TABLE 1.1 DOCUMENTS RECEIVED

Document / Report Title	Company Ref	Date
Groundsure Report	GS-5D2-KLK-4L7-7LH	January 2024
Ground Investigation (Evans & Langford)	-	February 1985

1.4 Summary of Previous Report

A site investigation undertaken by Evans and Langford for Medway Maritime Estate Ltd in 1985 was provided to Mayer by GRG.

The investigation comprised the excavation of ten trial holes to a maximum depth of 2.8m bgl to establish allowable bearing capacities, presumably for the building that is still present on the site. The investigation identified the presence of Head Deposits on the eastern part of the site with the chalk underlying. In the western part no Head Deposits were present and the trial holes were straight onto the chalk.

2 SITE DESCRIPTION

2.1 Site Location

The site comprises one plot of land, located in the Medway City Estate, neighboured by commercial and industrial units. It is approximately 460m North East and 570m North West of the River Medway, while also being 330m South West of Whitewall Creek. The location of the site and the approximate outline of the site area are shown on the plan below and also provided in Appendix A.

IMAGE 2.1 PLANS SHOWING THE LOCATION OF PLOT

2.2 Site Description

A site walkover visit was undertaken by Mayer on 29th February 2024. Photographs taken during the walkover are included in Appendix B.

TABLE 2.1 SUMMARY SITE CONDITIONS

Feature	Brief Description	
Access and Area	The Site is accessed by road from the West from Enterprise Close. A pedestrian gate is also present on the Western boundary further to the North.	
National Grid Reference	575004 169611. Post code ME2 4LY	
Topography	The site is generally flat.	
Land Use	Industrial- Permitted Clinical Waste Transfer Station	
Boundaries and Surroundings	The site comprises a large two storey warehouse, and a small transport office next to the site entrance on the western boundary, with the rest of the site covered by hardstanding. The warehouse houses offices and welfare facilities on the upper floor with the ground floor housing boilers and a stack in the northern part of the building and an incinerator in the southern half. Other areas of the warehouse are used as a bin wash and bin storage. The remainder of the site outside the building is used for bin storage in the northern area and wagon parking in the west and northern areas. A small transformer is located outside the northern part of the building, anticipated to be linked to the electrical substation on the site's western boundary. At the time of the site walkover, the site was in the process of being decommissioned and housed fewer bins and wagons than usual. However, the site appeared to be in good condition with a high level of housekeeping. A sealed drainage system is present on site with catch pits and a full retention interceptor prior to discharge to the pumping station and into foul sewer.	
Site Boundary	North	Chain link fence with some vegetation (hedges, shrubs and trees).
	East	Roughly 50% by the building wall with chain link fence and the remainder of chain link fence with minimal to no vegetation. The neighbouring area is made up of a carpark and multi business retail building including, food vendors, clothing store, computer store and other small retail units.
	South	The Southern boundary is comprised of chain link fence with about 75% bordering the wall of the neighbouring building and the remaining 25% a car park. The neighbouring building houses a specialist welding business and hose and Hydraulics company.
	West	The Western boundary is a mixture of chain link fence and vegetation, with gaps for pedestrian and traffic access. The first adjacent land use road with minimal on street parking restrictions. A substation and pumping station were also noted to be present on this boundary.

3 ENVIRONMENTAL SETTING

Information in this section is informed by the commissioned Groundsure report included in Appendix C.

3.1 Geological Setting

3.1.1 Geology

Geological records (British Geological Survey Map 1:50,000 sheet EW272 Chatham v4) shows no indication that any part of the site is underlain by Made Ground. With regard to superficial deposits the plot is underlain by Head Deposits comprising clay and silt. These deposits in turn are underlain by the Lewes Nodular, Seaford and Newhaven Chalk Formations.

Borehole records held by BGS indicate one historic borehole record on site (ref TQ76NE/61), close to the current site entrance. The record is from 1979 and was used for a 'Proposed Development, Maritime Estate'. The borehole record shows the presence of topsoil to 0.3m bgl, underlain by Made Ground to 2.3m bgl, comprising sandy clay with weathered chalk underlying it (classified as possibly Made Ground). Underlying the Made Ground soft white weathered chalk fragments sin a clayey chalk matrix were recorded.

3.1.2 Estimated Background Soil Chemistry

Records of estimated background soil chemistry, as provided by GroundSure, are provided for the subject site. The values provided would not be considered an issue when considering the proposed end use of the site.

3.1.3 Ground Stability Hazards

Whilst not a geotechnical assessment, generally ground stability hazards are considered to be comparatively low potential risk.

TABLE 3.0 GROUND STABILITY HAZARDS

Hazard	Hazard Rating
Shrink Swell Clays	Low
Running Sands	Very Low - Moderate
Compressible Deposit	Very Low - Moderate
Collapsible Deposits	Negligible
Landslides	Very Low
Ground Dissolution	Negligible

3.1.4 Mining & Surface Ground Workings

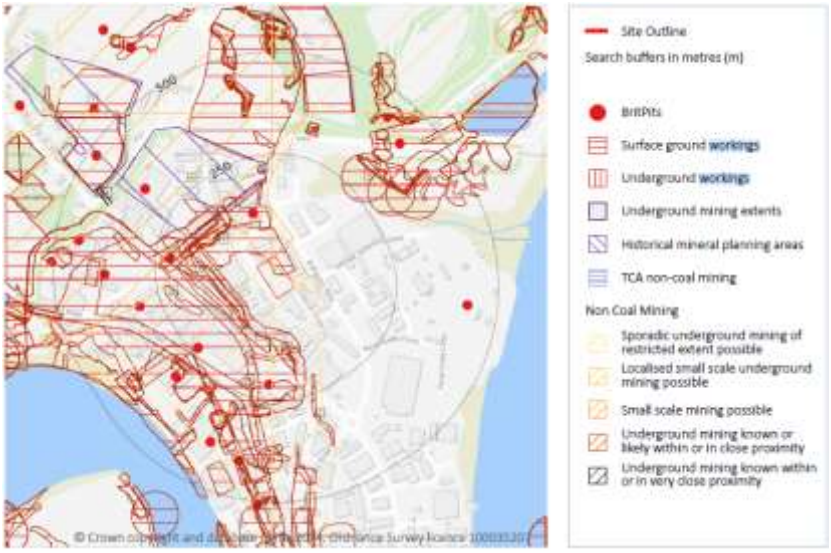
Information contained within the GroundSure report indicates the subject site is located in an area that is affected by both surface and underground mineral and non-coal mining workings.

British Pits (Britpits) notes 20 records within 500m of the site the closest being at 117m, 19 of these have ceased operation and are described as "Quarry, Sand Pit, Clay Pit or open cast Coal Site", the commodities listed are Chalk, Sandstone, Clay & Shale, and Marine Sand & Gravel. The active record is detailed as a wharf where mineral commodities are unloaded and stored.

One record exists of a surface ground working extending onto the northern-most section of the site, under the existing building. The record is for an "Unspecified pit" dated 1865. The report also indicates 36 other surface ground workings within 250m; these include other unspecified ground workings, unspecified heaps, cuttings, chalk pits, unspecified wharf, brick field and refuse heap.

Four records of Non-Coal mining are present on site, all for Chalk, however the potential for difficult ground conditions is low, and at a level where they need not be considered. All other records within 1000m are similarly not requiring consideration, with the exception of 1. These workings are predominantly of chalk with the exception of chalk/sandstone of at 757m from the site which is recorded as potentially having difficult ground conditions that should be considered.

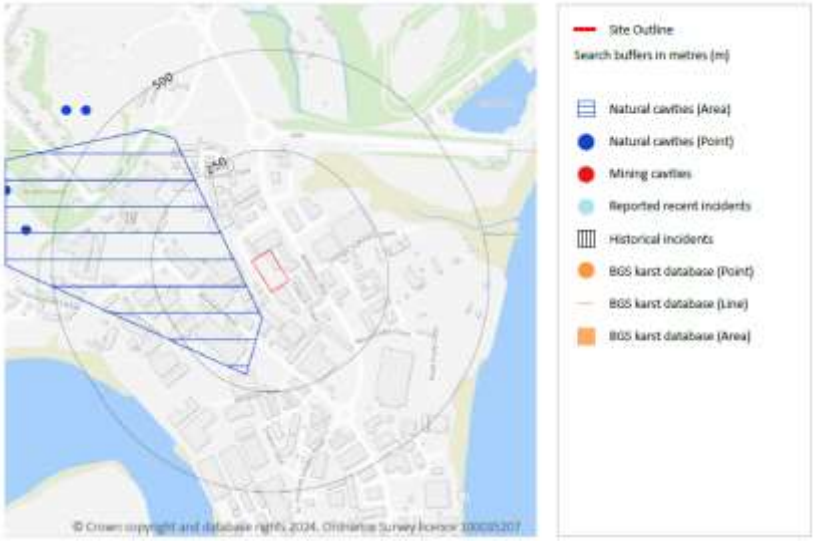
IMAGE 3.1.4 PLANS SHOWING THE LOCATION OF MINING AND GROUND WORKINGS



3.1.5 Natural Cavities

Information contained within the GroundSure report indicates that one set of natural cavities are located within 500m, which are recorded as natural solution pipes located 39m West of the site.

IMAGE 3.1.4 PLANS SHOWING THE LOCATION OF MINING AND GROUND WORKINGS



3.1.6 Radon Gas

The site is in a medium probability radon area covering two threshold ranging from 1% and 5% of homes above the action level. The British Geological Survey advises that basic radon protective measures are necessary in the construction of new dwellings.

3.2 Hydrogeology

The Head Deposits have been classified by the Environment Agency as Unproductive Strata. These are drift deposits with low permeability that have negligible significance for water supply or river water base flow.

The Lewes Nodular, Seaford and Newhaven Chalk Formations are classified as Principal Aquifers due to their high fracture permeability and their potential to provide a high level of water storage and support water supply / river base flow on a strategic scale.

In respect of groundwater vulnerability, the subject site overlies an area of Head Deposits, likely to have low vertical permeability. The leaching class of soils at the surface has been determined as intermediate, However, the site is detailed to have a hardstanding with surface drainage to attenuate the infiltration of any diffuse source pollution.

In the assessment of groundwater vulnerability, a number of factors need to be taken into account. These include geology, hydrogeology and soil type.

Information within the Enviro Insight report produced by GroundSure indicates that the subject site is overlying Unproductive strata (Head Deposits) with the surface soils having an intermediate leaching potential. The presence of the Head Deposits and hardstanding with surface drainage is likely to afford significant protection to the underlying Principal Aquifer in the bedrock.

RISK RATING	
Groundwater Vulnerability	Low

The risk rating is based on the site sensitivity assessment for the water environment as set out in Annex 2 of R&D 66 (NHBC). A summary of this assessment is included in Appendix D.

3.2.1 Source Protection Zones (SPZ)

The Enviro Insight report produced by GroundSure indicates there are no Source Protection Zones (SPZ) within 500m of the subject site.

3.2.2 Licensed Abstraction Points from Groundwater

The Enviro Insight report produced by GroundSure indicates there are no licensed abstraction points from groundwater within a 1000m radius of the subject site.

3.2.3 Pollution Incidents to Groundwater

There have been no reported pollution incidents to ground water within 500m of the subject site.

3.2.4 Discharge Consents to Groundwater

No records of discharge consents to groundwater were found within 500m of the site.

3.3 Hydrology

3.3.1 Surface Water Features

The hydrology map within the GroundSure report indicates that the closest surface water feature is located 125m to the North. The site is located within a loop of the River Medway which is located to the East, South and West of the site, at a distance of 400m at its closest point.

3.3.2 Flooding

The site is classified within the Risk of Flooding from Rivers and Seas (RoFRaS) models by the Environment Agency as at low risk of flooding from rivers taking into account flood defences and their condition. This classification indicates that potentially there is less than 1 in 100 but greater than 1 in 1000 chance of flooding in any given year.

No historical flood events have been recorded within 250m of the site.

With regard to surface water flooding, some areas of the site are shown to have a highest risk of 1 in 250 year 0.3m -1.0m of flooding due to extreme rainfall events.

With regard to groundwater flooding, the northern part of the site is at a high risk of flooding. This occurs when the water table rises above the ground surface or within underground structures such as basements or cellars.

3.3.3 Discharge Consents to Surface Water/Soakaway

The GroundSure report indicates twenty six surface water/soakaway discharge consents within a 500m search radius of the subject site. The table below summarises those records within 300m of the site.

TABLE 3.1 SUMMARY OF DESIGNATED ENVIRONMENTALLY SENSITIVE SITES

Distance From Site (m)	Direction From Site	Address	Further Details
204	SW	Drainage from Metal Recycling Site (Mayer Parry Recycling Ltd), ME2 4DZ	Trade discharge (Site drainage) into land. Issued in 1996, varied in 2012. Still active. (2 records)
296-298	NE	Whitewall Creek WWTW, ME2 4UZ	Sewage Discharges – Final/Treated Effluent – Water Company to Whitewall Creek. Issued 2006, modified 2009, 2010, 2018. Still active (6 records)

3.3.4 Licensed Abstraction Points from Surface Water

No records of surface water abstractions have been identified within 500m of the site.

3.3.5 Pollution Incidents to Surface Water

No reported pollution incidents to surface water are recorded within 500m of the subject site.

3.3.6 Surface Water Risk Assessment

In the assessment of surface water vulnerability, a number of factors need to be taken into account. These include proximity and quality of the watercourse and potential transmission of pollutants via groundwater to the watercourse.

The closest surface water course is located 125m North of the site. The site is located on a loop of the Rive Medway with the river present to the East, South and West at a distance of 400m at its closest point. Due to the low permeability of the underlying superficial deposits, and presence of hardstanding, there is unlikely to be significant potential for base flow to local water courses.

RISK RATING	
Surface Water Vulnerability	Low

The risk rating is based on site sensitivity assessment for the water environment as set out in Annex 2 of R&D 66 (NHBC). A summary of this assessment is included in Appendix D.

3.4 Environmentally Sensitive Areas

3.4.1 Designated Environmentally Sensitive Sites

The Enviro Insight report produced by GroundSure, using Natural England data, has identified a number of Designated Environmentally Sensitive Sites (DESS) within a 2000m search radius of the subject site. The table below summarises the information. Four Site of Special Scientific Interest (SSSIs) are noted

but all are greater than 1500m from the site. 28 no. Marine Conversation Zones are identified and those within 500m of the site are detailed in the table below.

TABLE 3.3 SUMMARY OF DESIGNATED ENVIRONMENTALLY SENSITIVE SITES

Distance From Site (m)	Direction From Site	DESS	Further Details
167	NE	Marine Conservation Zone (Zones 1 & 2)	Medway Estuary
425	SW	Marine Conservation Zone (Zones 1 & 2)	Medway Estuary

3.4.2 Nitrate Vulnerable Zones

The Enviro Insight report produced by GroundSure, using DEFRA data, has identified two Nitrate Vulnerable Zones within 1000m of the subject site. One of these is located on site for the North Beck Drain. These are areas considered to be at risk from agricultural nitrate pollution.

4 HISTORICAL AND INDUSTRIAL SETTING

4.1 Site History

Published historical County Series maps and previous Ordnance Survey plans have been consulted to evaluate previous development on the site, and its surroundings, that may affect the site. A summary is included in Table 3 and the historical plans are included in Appendix C (from the Groundsure Report, Jan 2024).

Please note that due to the gaps between publication dates, potentially contaminative / significant developments may have appeared and disappeared without appearing on any map edition. Also, distances are approximate.

TABLE 4.0 SUMMARY OF HISTORICAL PLANS & KEY FEATURES

Edition & Scale	Main Features Onsite	Offsite
County Series 1:2,500 1867, 1898 **County Series Town Plan 1:500 1867** **County Series 1:10,560 1862-1865, 1888, 1895-1896**	On the earliest map editions the site is shown to be an area of open land with a section of a possible clay pit running across the northernmost corner. The site stays this way until the map of 1895-1896 where a tramway is shown to cut across the southern end of the site, running from a tramway that runs north to south to the east of the site.	The earliest map editions show the surrounding land to the north, west and south is shown as open land. To the east marshland and mudflats with many water channels associated with Whitewall Creek and the River Medway are shown. Approximately 300m to the north east the Whitewall Cement Works and a brick field are shown. The brick field is no longer shown by the map of 1895-1896. 300m to the south west Frindsbury Lime Works is shown fronting onto the river with a cement works to the south of it. On the other side of the river to the lime works,

		a Gas Works is shown, approximately 600m from the site. The map edition from 1895-1896 also shows a chalk pit to the south west of the site at a distance of approximately 250m. The Lime Works is now shown as a series of different cement works with the cements works to the south of this, expanded in size.
County Series 1:2,500 1909, 1932, 1952, 1953, 1961-1963, 1967, 1968-1973, 1974, 1981 **County Series 1:10,560 1907, 1931, 1931-1933, 1938, 1939, 1955, 1966-1970, 1973-1975, 1975-1979**	The map of 1907 shows that the tramway is no longer shown and the strip of land where it was located on site, is now shown as rough pasture leading to a cutting (off site). The remainder of the site is still shown as open land.	There is little change to the surrounding area until the map of 1931-1933 which shows the cement works to the south west now labelled as a shipbuilding yard and wharf. The chalk pit is shown as disused and covered by rough pasture. The Whitewall Cement Works is shown as disused and by 1955 Is shown as a works of unknown use with four tanks on site. By 1966-1970 it is labelled as a sewage works. The map of 1955 also shows another works 500m to the east of the site for the first time. By the map of 1966-1970 two more works have sprung up to the east at distances of approximately 250m and 300m. A mineral railway is shown to run from the wharf to the south west to these three works and beyond. By the map of 1973-1975 further works and warehouses have appeared to the east and south, along Whitewall Road, which is likely to be the start of the industrial estate that the site is currently a part of. The majority of the buildings are labelled as works and warehouses but the closest buildings are labelled as a portable building factory and shipbuilding yard. A small electrical substation is shown 200m to the south for the first time.
National Grid 1:1,250 1987-1989, 1991-1992, 1991-1993, 1991-1994, 1994, **Landline 1:1,250 2003,** **National Grid 1:10,000 1989-1992, 2001, 2010, 2024**	The map edition from 1987-1989 shows the site with buildings for the first time with two square buildings located in the north east corner and a small square building adjacent to the west of them. The buildings are shown to be part of a site that houses the same area as the site boundary today. The site is labelled as a works from 1991-1992. The maps from 2003 onwards are of limited detail but between 2010 and 2024 the building on site looks to have been extended in length to the south.	The maps from 1987-1989 and 1989-1992 shows the site to be surrounded on all sides by buildings labelled as works and warehouses. A small electrical substation is shown adjacent to the northern boundary for the first time and is still in place today. 100m to the south east a scrap yard is shown for the first time which is still present today. At a distance of 750m to the south east, two electrical substations are shown for the first time. The layout of the immediate surrounding area shows little change until the current day, with the current industrial estate appearing to absorb the wharves and warehouses to the south west. The most recent map editions provide minimal detail but the gas works on the other side of the river are seen to disappear between 2001 and 2010.

4.2 Unexploded Ordnance

A search of the online Zetica Unexploded Ordnance (UXO) risk maps was undertaken for the site and the risk of UXO was determined as high with further action required. A Preliminary Risk Assessment was initially commissioned to be undertaken by UXO specialists 6 Alpha Associates which identified that a detailed UXO threat and risk assessment should be undertaken for the site. This further assessment was undertaken by 6 Alpha Associates and the risk rating was determined as Low with no further action required.

For full details of the assessments please refer to Appendix E.

4.3 Past Land Use

4.3.1 Historical Tank Database

The Enviro insight report produced by GroundSure reported five historical tanks within a 250m search radius of the subject site, with a further 58 no. within 500m of the site.

The table below summarises the five records within 250m of the site.

TABLE 4.1 SUMMARY OF HISTORIC TANK RECORDS

Distance From Site (m)	Direction From Site	Dates Present	Further Details
117	W	1996	Unspecified Tank
118	W	1989-1991	Unspecified Tank
184	SW	1987-1992	Unspecified Tank
185	SW	1993	Unspecified Tank
195	W	1981-1996	Unspecified Tank

4.3.2 Historical Garage, Petrol and Fuel Site Database

No records of historical garage, petrol and fuel sites were noted within 500m of the site.

4.3.3 Historical Energy Features

The Groundsure report identifies eighteen historical energy features within 500m of the site. All of the features are listed as electrical substations.

The table below summarises the five records within 250m of the site.

TABLE 4.2 SUMMARY OF HISTORIC ENERGY FEATURES

Distance From Site (m)	Direction From Site	Dates Present	Further Details
13	NW	1987-1996	Electrical Substation
103	E	1991-1996	Electrical Substation
106	W	1991-1996	Electrical Substation
214	S	1952-1967	Electrical Substation
250	NW	1991	Electrical Substation

4.4 Waste and Landfill

4.4.1 Active or Recent Landfill Sites

Environment Agency records indicate the presence of two recent or active landfills within 500m of the site. The closest is located 372m to the south west for a recent landfill taking non-biodegradable waste. The status is recorded as expired and was operated by Crescent Marine Services Ltd. The second record is located 411m to the south west for an active inert landfill operated by Downland Trading (Kent) Ltd.

4.4.2 Historic Landfill Sites

Environment Agency records indicate that two historic landfills are located within 100m of the site. The closest is located 70m to the east and is recorded as an inert landfill operated by Brevmoor Ltd. (in liquidation) with the license issued in 1992 with no surrender date recorded. The second record is located 97m to the east for an inert landfill. No other information is recorded for this landfill.

Historical Waste Sites

The GroundSure report indicates records of 24 no. historical waste sites within 500m of the subject site with three located within 50m and a further 15 no between 50 and 250m.

The table below summarises the historical waste sites located within 100m of the subject site.

TABLE 4.3 SUMMARY OF HISTORIC WASTE SITES

Distance From Site (m)	Direction From Site	Dates Present	Further Details
48	S	1987 (2 records)	Scrap Yard
49	NW	03/04/2018	Historic planning application for extension to waste management building (recorded as Tradeable)
77	S	1987, 1988 (2 records)	Scrap Yard

Distance From Site (m)	Direction From Site	Dates Present	Further Details
82	S	1991	Scrap Yard
93	S	1987, 1992 (4 records)	Scrap Yard

4.4.3 Licensed Waste Facilities

The Groundsure report records 24 no. licensed waste sites within 500m of the subject site with eight of these within 150m. Six records refer to the operations on site with Polkacrest and Sita UK listed as previously holding the Waste Management license prior to TradeBe. The site is recorded as a clinical waste transfer station.

Two records are located 48m to the south of the site for another Clinical Waste Transfer Site operated by Parkerdell Refining Ltd.

To the south, one record is noted 110m to the south for a metal recycling site operated by EMR Ltd.

4.5 Current Industrial Land Use

4.5.1 Current Potentially Contaminative Industrial Sites

The Groundsure report identifies 79 no. records of current potentially contaminative industrial sites within 250m of the subject site. One record is located on site for an Electricity Sub Station. The table below summarises those records within 100m that would be considered to be a significant potential risk if not managed properly.

TABLE 4.4 SUMMARY OF CURRENT INDUSTRIAL SITES

Distance From Site (m)	Direction From Site	Company	Further Details
11 & 28	NW	AJ Autogas	Vehicle repair, testing and servicing
11	NW	BMW Service Centre	Vehicle repair, testing and servicing
18	NW	-	Electrical Substation
46	S	AM Hazell	Metalworkers including blacksmiths
56	W	Unknown	Factory
98	W	-	Electrical Substation

In addition, one active petrol station is recorded 241m to the north and operated by CO-OP.

4.5.2 Licensed Industrial Facilities Part A(1)

The Groundsure report records 22 no. records within 500m of installations regulated under the Environmental Permitting (England & Wales) Regulations 2016 for the release of substances to the environment.

Six records relate to on site activities including temporary storage of haz waste and disposal or recovery of hazardous waste involving physico-chemical treatment. A further fifteen superseded records are recorded as 48m to the south but are considered to be relevant to the subject site as all have Polkacrest or Sita UK as the listed operators for a clinical waste treatment facility.

4.5.3 List 1 & 2 Dangerous Substances

The Groundsure report lists no records for List 1 substances and two records for List 2 Substances. Both records are located 150m to the north (one active and one non-active) with authorised substances recorded as iron and pH for release to the Medway Estuary by Rochester upon Medway County Council.

4.5.4 Pollution Incidents – EA

The GroundSure Reports indicates ten records of pollution records within 500m of the subject site. The most recent was recorded in December 2003. None of the incidents were recorded as having a significant impact on land or water.

5 PRELIMINARY CONCEPTUAL MODEL

The risk assessment process is one that develops as more information becomes available to the risk assessor. Potential sources of contamination, exposure pathways and sensitive receptors are identified and placed in to the context of a conceptual site model.

At this stage of the risk assessment, the aim is to:

- Determine the sources of potential contamination and to identify specific potential contaminants of concern.
- Identify where these potential contaminants may reside – soils, ground or surface waters, ground gases etc.
- Identify possible target receptors and their relative sensitivity to these contaminants if exposed.
- Identify and characterise potential contaminant migration pathways to determine whether a linkage exists.
- Create a conceptual model for the site displaying the potential sources – pathways – targets identified placing them in to context to demonstrate how the site may present a risk.

The conceptual site model is a dynamic representation of the site, to be refined and developed at each stage of the site investigation process. It is also to be used to direct and inform future investigation by highlighting areas requiring further investigation or eliminating those considered to be of insignificant or acceptable risk.

The conceptual site model contains the following three elements:

- **Source** - probable or actual contaminants their nature and location.

- **Receptor**– existing and, within reason, foreseeable targets upon which the source may impact these may be either on or off site.
- **Pathway –** means by which the source and the receptor may come in to contact.

Where a **source – pathway – receptor** pollutant linkage is envisaged, an estimation of the risk posed by this linkage can be made. Should any one of the three elements be absent, then there is no risk.

5.1 Significant Geo-Environmental Findings

The underlying site geology comprises Head Deposits, overlying the Lewes Nodular, Seaford and Newhaven Chalk Formations. Made Ground is not considered to be present. The Head Deposits comprise silt and clay.

The Head Deposits have been classified by the Environment Agency as Unproductive Strata. The Chalk Formations has been classified as Principal Aquifers.

With regards to surface water, the closest surface water course is located 125m to the north of the site.

With regards to the subject site, there has been a fairly simple history of development. The site had no significant development until it housed the site layout as seen today and was likely developed 1980s/1990s. Prior to this the site housed a section of a clay pit in the 1800s and part of a tramway in the late 1800s. In the surrounding area the industrial estate that the site is part of was developed from the 1980s onwards.

5.2 Potentially Contaminative Uses

Table 5.0 summarises the main potential sources of contamination that may currently affect the site from former processes on and around the site. Note, due to the significant number of potential sources due to the site's industrial setting, only those within close proximity to the site, or those that are considered to be significant sources, are considered here.

TABLE 5.0 POTENTIAL SOURCES OF CONTAMINATION

Potentially Contaminative Land Use	Associated contaminants	Probability of Risk
On-site		
Current – Clinical waste Transfer Site	Metals, sharps, polyaromatic hydrocarbons (PAHs), solvents, petroleum hydrocarbons, asbestos	**Low to moderate risk**. The site is concreted and is likely to be managed well.
Current – Electrical Substation located on site boundary	Polychlirinated biphenyls (PCBs), petroleum hydrcocarbons	**Low to moderate risk** as the site is concreted.
Historic - Clay pit (part of site) late 1800s	Metals, sharps, PAHs, petroleum hydrocarbons, putrescible materials (gas generation)	**Low risk** due to the age and size of the pit.

Historic - Tramway across late 1800s and early 1900s.	PAHs, petroleum hydrocarbons, metals, solvents	**Low risk** due to age of feature. .
Within 300m of Site		
Current - Industrial estate surrounding site . Closest industries to the subject site include vehcile repair shops, metalworks and factories	Metals, PAHs, petroleum hydrocarbons, asbestos, solvents, PCBs	**Moderate to high risk** due to proximity of industrie and quality of management of these businesses is unknown.
Current – Scrap Yard present 100m to the south. Present from the 1980s	Metals, PAHs, petroleum hydrocarbons, asbestos, solvents, PCBs	**Moderate risk** due to proximity
Historic – Inert landfills 70m and 97m to east in 1990s –	Ground gas, leachate	**Low to moderate** risk due to distance from site and age - landfills recorded as inert. In addition, no evidence of them evident on historic maps indicating they were small operations.
Historic – Unspecified Tanks located 117-195m from site to west and south west. Present in 1980s and 1990s	Petroleum hydrocarbons, solvents	**Low to Moderate risk** due to distance and age
Histroic – chalk pit loacted 250m south west in late 1800s	Ground gas, leachate	**Low Risk** due to age of feature and distance from site.
Historic - Cement/Lime Works 300m north east and south west. Present between late 1800s and 1930s.	Petroleum hydrocarbons, PAHs, metals, acidic and alkaline waste.	**Low risk** due to age of works and distance from site.

5.3 Potential Exposure Pathways

TABLE 5.1 POTENTIAL PATHWAYS

Exposure Pathway	Qualifying Comments
Direct contact – Contact with exposed skin or eyes with soil, dusts (in or outdoors) or water (in or out doors).	Direct contact to skin and eyes considered unlikely as the site is currently covered by hardstanding and there are no plans to change this. The potential for contact with potentially contaminated groundwater is unlikely due to the presence of hardstanding even

	though a potential risk of groundwater flooding has been identified in the northern part of the site.
Ingestion – Consumption of soils, dust (in or outdoors) water (in or outdoors)	Ingestion considered unlikely due to presence of hardstanding.
Inhalation – Inhalation of soil dust, fibres or vapours, gases (in and outdoors)	Ingestion considered unlikely due to presence of hardstanding.
Soil leaching – Water soluble contaminants leaching through soil to impact on groundwaters and surface waters and potentially contacting human receptors (lateral/ vertical migration via the saturated/unsaturated zone)	Soil leaching considered possible but unlikely due to the nature of the Head Deposits underlying the site. Lateral and vertical migration of water within these silts and clays is unconsidered unlikely. However, it should be noted that the Head Deposits do not cover the entire industrial estate and in some areas no superficial deposits are present above the Chalk Formations.
Structures / Services – Migration of ground gases or mobile contaminants along service runs or site structures	Migration of ground gases or mobile contaminants may be possible within the development if these contaminants are identified as present.

5.4 Potential Receptors

TABLE 5.2 POTENTIAL RECEPTORS FOR FUTURE USE

Receptor	Qualifying Comments
Site users	There is considered to be a minimal risk to site users from any potential contaminants in the ground due to the presence of the hardstanding across the site.
Site neighbours – industrial	Potential risk not considered significant due to low likelihood of lateral migration through anticipated clay and silt deposits and presence of hardstanding across neighbouring sites.
Groundwater – Unproductive Strata overlying Principal Aquifer.	Low risk due to presence of Head Deposits affording protection to underlying Chalk Formations.
Surface water	No surface water courses within close proximity.
Ecology	No ecologically sensitive sites within close proximity to site.

Buried services – water mains, power or other below ground services	Potential risk to proposed site structures if contaminated ground present.
Ground workers	Potential risk of contact with contaminated soils during any proposed development in future if the hardstanding is removed.

5.5 Initial Conceptual Site Model

The following table details the potential sources, pathways and receptors present and determines if a contaminant linkage is potentially present. Any potential contaminant sources identified as negligible or low risk in section 5.2 are not included as they are not considered potentially significant. **Note that the conceptual model below is based on the subject site continuing in its current use. If this changes the model will need to be revised.**

Potential Source	Identified Pathways	Receptors	Consequence	Probability	Risk Rating	Comments on Linkage Significance
On-site						
Current: **Clinical Waste Transfer Site –** Metals, sharps, PAHs, TPH, asbestos, solvents **Electrical Substation –** PCBs, TPH	• Direct Contact • Ingestion • Inhalation	• Site users – current and future	Medium	Unlikely	**Low risk**	The site is covered by hardstanding with no direct access to the underlying ground.
	• Direct Contact • Ingestion • Inhalation (Vapours/fibres)	• Groundworkers	Medium	Likely	**Moderate Risk**	Groundworkers on site would suggest that development works are being undertaken and the concrete has been removed.
	• Soil leaching	• Groundwater • Site neighbours	Mild	Low likelihood	**Low Risk**	Soil leaching considered unlikely due to presence of clays and silts and presence of hardstanding.
		• Site structures • Buried services	Medium	Low Likelihood	**Moderate/ Low Risk**	Any contaminants present on site have the potential to impact on proposed site structures in contact with the underlying soils and buried services.
Off-site						
Current – Industrial Estate surrounding site Metals, PAHs, TPH, asbestos, solvents, PCBs	• Soil leaching	• Site users • Groundworkers	Mild	Low Likelihood	**Low Risk**	Any contaminants leaching on site are unlikely to impact on site users due to the nature of the Head Deposits underlying the area. However, it should be noted that Head Deposits are not present across the whole area covered by the industrial estate.
		• Groundwater • Site structured • Buried Services	Medium	Low Likelihood	**Moderate/ Low Risk**	

Potential Source	Identified Pathways	Receptors	Consequence	Probability	Risk Rating	Comments on Linkage Significance
Current: Scrap Yard Located 100m to the south. Metals, PAHs, TPH, asbestos, solvents, PCBs	• Soil leaching	• Site users • Groundworkers	Medium	Low Likelihood	**Moderate / Low Risk**	The potential risk for this source will depend on management of the scrap yard. There are minimal Head Deposits between the scrap yard and subject site but the distance and other industries in between will afford some protection from any potential contaminants.
		• Groundwater • Site structured • Buried Services	Medium	Low Likelihood	**Moderate / Low Risk**	
Historic Inert Landfills <100m to the east. Ground gas, leachate	• Structures/ Services	• Site users	Medium	Unlikely	**Low Risk**	Any potential ground gases are unlikely to impact on the site users due to the hardstanding present. In addition, no underground basements or confined spaces are present on the site.
	• Soil Leaching	• Groundwater	Mild	Low Likelihood	**Low Risk**	Any leachates present from the landfills are likely to flow away from the site towards the River Medway.
Historic – Unspecfied Tanks 100-200m W and SW (1980s and 1990s) TPH, Solvents	• Soil Leaching	• Site users • Groundworkers	Medium	Low Likelihood	**Moderate / Low Risk**	The potential risk for this source will depend on the condition, location and content of these historic tanks and if they were decommissioned. . There are minimal Head Deposits between the western and south western areas and the subject site but the distance and other industries in between will afford some protection from any potential contaminants
		• Groundwater • Site structured • Buried Services	Medium	Low Likelihood	**Moderate / Low Risk**	

Based on the initial conceptual site model an environmental risk assessment has been undertaken. Where a pollution linkage has been identified, a qualitative classification of the consequence and probability is undertaken to determine the risk. The simple risk classification matrix provided in Annex 4 of R&D 66 (NHBC) helps provide consistency in the decision making process. The risk classification for each pollution linkage is used to determine the overall associated risk rating for the site. Each risk classification also helps inform the scope of further investigations if required.

6 GROUND INVESTIGATION

6.1 Site Works & Methodology

The work has been done to provide information for environmental purposes only.

Prior to any work being undertaken an underground utilities search was undertaken for the site. In addition, services were scanned for at all exploratory hole locations. Locations of the exploratory holes are marked on the site plan included in Appendix A. Logs and installation details are included in Appendix F. Utility plans are included in Appendix H.

The ground investigation was undertaken between 6th and 7th March 2024.

Soil samples were collected in accordance with the laboratory requirements for analysis, appropriately commensurate with BS 10175: 2011+A1:2013.

The locations of the window sampler locations were restricted by operations on site and vehicle movement. Where possible, the trial locations from the site investigation in 1985 were replicated. Although no chemical testing was undertaken on the soils in this report, no evidence of contamination was visually identified. Therefore, any visual presence of contamination identified in this investigation, where previous locations have been replicated, has the potential to be to be caused by on site operations.

The following tables summarise the rationale for exploratory points and details of those undertaken.

TABLE 6.0 GROUND INVESTIGATION

Exploratory Holes	Depth (m bgl)	Method	Purpose	Notes / Installations
WS01	2m bgl	Window Sampling	In vicinity of original TH6 location. Close to transformer.	Backfilled with arisings on completion and re-concreted.
WS02	2m bgl	Window Sampling	Close to bunded tank and interceptor.	
WS03	2m bgl	Window Sampling	In vicinity of original TH9 location.	
WS04	2m bgl	Window Sampling	In vicinity of original TH2 & TH3 locations.	
WS05	2m bgl	Window Sampling	In vicinity of original TH10 location.	
WS06	1m bgl	Window Sampling	Inside the building	Concrete encountered to 1m depth and unable to continue drilling any further.

Exploratory Holes	Depth (m bgl)	Method	Purpose	Notes / Installations
WS07	1m bgl	Window Sampling	To obtain good spread across the site	Backfilled with arisings on completion and re-concreted.
WS08	1m bgl	Window sampling	Within building, close to boilers and stack	

6.2 Strata Encountered

Soils were logged in accordance with BS5930, logs and cross sections are included in Appendix F and Appendix G and a summary is included in the following tables.

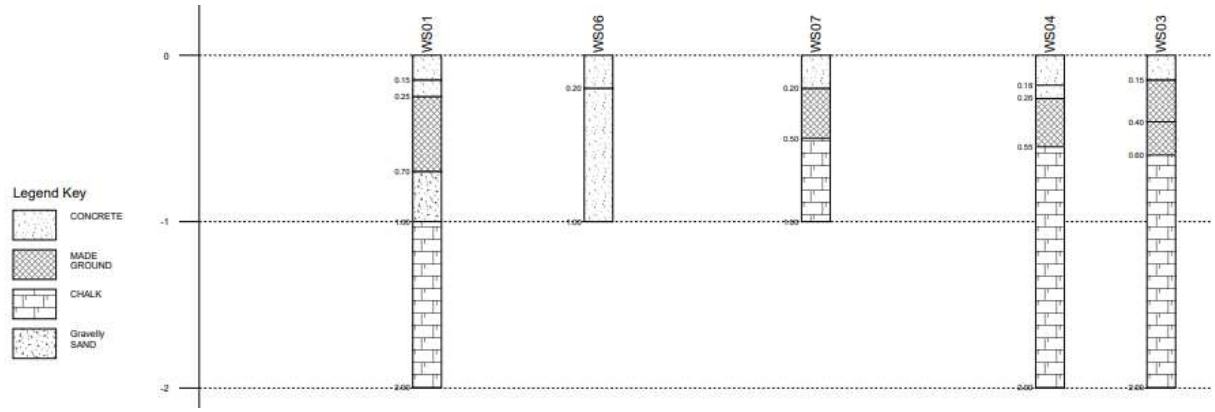
TABLE 6.2 SUMMARY OF STRATA ENCOUNTERED

Strata	General Description	Depth to Top (m bgl)	Depth to Base (max) (m bgl)	Max Thickness (m bgl)
Concrete	Generally 0.2m thick across the site apart from underneath building	Surface	1	1
Made Ground	Gravelly sand with red brick, flint	0.15 - 0.26	0.6	0.45
Reworked Chalk	White clayey chalk with occasional flint fragments. (WS01 only)	0.25	0.7	0.45
Sand	Gravelly sand with flints (WS01 only)	0.7	1	0.3
Chalk	White chalk with orange and light grey mottling. Occasional flints noted.	0.4 - 1,	N/A	Base not proven

Made Ground was encountered in most locations across the site. The Chalk was present at all locations underlying the Made Ground or Sand (WS01 only).

The cross section below shows the consistency of the ground conditions with only WS01 differing slightly in the northern area of the site.

SECTION 1 PLOT C CROSS SECTION RUNNING NORTH EAST TO SOUTH WEST



6.3 Site Observations

From the ground investigation undertaken, no visual or olfactory evidence of contamination was identified.

Typically, contamination that can be apparent from visual or olfactory evidence includes (but not exclusively) organics / hydrocarbons, sulphurous materials, metals, free cyanides and cemented asbestos fragments.

6.3.1 Soils

Representative samples of the Made Ground and natural soils were submitted for chemical analysis at a NAMAS / UKAS accredited laboratory with MCERTS certificates (where available) for analytes.

TABLE 6.3 SUMMARY OF SOIL ANALYSIS

Soil Analysis Suite	Made Ground	Natural Sands / Chalk
ME2	7	3
Asbestos	4	2
TPH CWG	7	2
PCB	2	1
SVOC / VOC	7	3

6.3.2 Groundwater

Groundwater was not identified at any location during the ground investigation.

7 SOIL ANALYSIS

Soil chemical analysis results are included in Appendix I, undertaken by Chemtest. The following sections provide the assessment and comparison against relevant screening values of the chemical analysis undertaken.

7.1 Interpretation of Soil Analysis Data

Comments on the significance of the testing results and our recommendations are based on Mayer Guidelines for the Assessment of Soil Quality and current UK good practice. Further information on this is included in Appendix J.

7.2 General

The following analytes have been assessed in accordance with good practice and respective guidance.

7.2.1 Asbestos in Soils

Asbestos was not identified in any of the samples screened.

7.2.2 pH

The soil pH values within the samples of the Made Ground were noted to be strongly alkaline (pH values between 8.3 and 11). The samples from the natural materials were also alkaline (pH values from 9-9.5).

7.2.3 Sulphur & Sulphides

From the sampling and analysis undertaken, concentrations of total sulphur and sulphides detected within the soil samples were not considered significant.

7.3 Human Health Risk Assessment Explanation

Contaminant linkages for human health have been risk assessed by comparing the reported soil laboratory results to Tier 1 Screening Values. Following the rationale of Land Contamination Risk Management (LCRM) guidance, Environment Agency, October 2020 (formerly CLR11), this Tier 2 assessment uses soil screening values for the Contaminated Land Exposure Assessment (CLEA) land end use relevant to commercial end use, commensurate to the continued land use of the site.

Soil screening values used are the Soil Guideline Values (SGVs) to assess the long term exposure of chemicals in soil to human health, generic assessment criteria (GAC) from CLEA; with updates from more recent Category 4 Screening level (C4SL) and Suitable for Use Levels (S4UL) from CIEH / LQM used where applicable, (for simplicity all are referred to as GAC).

For the statistical computations of the chemical analysis, where less than the detection limits (e.g. <0.01) has been reported to enable the statistical calculations, the detection limit has been chosen (e.g. for <0.01, the value 0.01 used for the statistics). This enables a reasonable conservative value for the statistics generated.

The background behind the statistical tests is included in Appendix E. The tests have been undertaken using excel-based spreadsheet calculations.

7.3.1 Metals / Metalloids

TABLE 7.0 METALS – MADE GROUND

Parameter	Units	No of Samples Analysed	Minimum Conc.	Maximum Conc.	Mean	95th %ile	Tier 1 Screening Values		No. of Exceedances	
							S4UL	C4SL	S4UL	C4SL
Arsenic	mg/kg	7	8.1	20	14.16	18.5	640	640	0	0
Boron	mg/kg	7	0.51	3.2	1.32	2.6	240000	-	0	-
Cadmium	mg/kg	7	<0.1	0.18	0.12	0.171	190	410	0	0
Chromium	mg/kg	7	11	81	35.86	69.3	8600	-	0	-
Chromium VI	mg/kg	7	<0.5	0.57	0.51	0.549	-	-	-	-
Copper	mg/kg	7	7.4	69	40.20	66	68000	-	0	-
Lead	mg/kg	7	10	110	67.14	110	-	2330	-	0
Mercury	mg/kg	7	<0.05	0.25	0.13	0.229	1100	-	0	-
Nickel	mg/kg	7	13	44	26.71	42.5	980	-	0	-
Selenium	mg/kg	7	<0.25	0.61	0.39	0.556	12000	-	0	-
Zinc	mg/kg	7	23	150	85.86	138	730000	-	0	-
Cyanide	mg/kg	7	<0.5	<0.5	<0.5	<0.5	-	-	-	-

No significant levels of metals were identified within any of the samples analysed from the Made Ground.

TABLE 7.1 METALS – NATURAL GROUND

Parameter	Units	No of Samples Analysed	Minimum Conc.	Maximum Conc.	Mean	95th %ile	Tier 1 Screening Values		No. of Exceedances	
							S4UL	C4SL	S4UL	C4SL
Arsenic	mg/kg	3	1.6	12	5.87	11.2	640	640	0	0
Boron	mg/kg	3	<0.4	<0.4	<0.4	<0.4	240000	-	0	-
Cadmium	mg/kg	3	<0.1	<0.1	<0.1	<0.1	190	410	0	0
Chromium	mg/kg	3	4.8	13	8.17	12.37	8600	-	0	-
Chromium VI	mg/kg	3	<0.5	<0.5	<0.5	<0.5	-	-	-	-
Copper	mg/kg	3	5.8	11	7.83	10.57	68000	-	0	-
Lead	mg/kg	3	8.3	14	11.43	13.8	-	2330	-	0
Mercury	mg/kg	3	<0.05	<0.05	<0.05	<0.05	1100	-	0	-
Nickel	mg/kg	3	6	14	10.33	13.7	980	-	0	-
Selenium	mg/kg	3	<0.25	0.25	0.25	0.25	12000	-	0	-
Zinc	mg/kg	3	22	31	25.67	30.3	730000	-	0	-
Cyanide	mg/kg	3	<0.5	<0.5	<0.5	<0.5	-	-	-	-

No significant levels of metals were identified within any of the samples from the natural ground.

7.3.2 Phenols

Phenols were below the limit of detection or only present at very low levels (<0.10mg/kg) in all of the soil samples analysed, from both the Made Ground and natural ground.

7.3.3 Polychlorinated Biphenyls (PCB's)

PCBs were recorded below the limit of detection (LOD) in all samples analysed.

7.3.4 Poly Aromatic Hydrocarbons

TABLE 7.2 PAHS – MADE GROUND (2.5% SOM BASED ON SITE DATA)

Parameter	Units	No of Samples Analysed	Minimum Conc.	Maximum Conc.	Mean	95th %ile	Tier 1 Screening Values		No. of Exceedances	
							S4UL	C4SL	S4UL	C4SL
Naphthalene	mg/kg	7	<0.1	0.47	0.24	0.467	460	-	0	-
Acenaphthylene	mg/kg	7	<0.1	0.76	0.45	0.73	97000	-	0	-
Acenaphthene	mg/kg	7	<0.1	1.6	0.51	1.3	97000	-	0	-
Fluorene	mg/kg	7	<0.1	1.9	0.80	1.69	68000	-	0	-
Phenanthrene	mg/kg	7	<0.1	10	5.21	9.64	22000	-	0	-
Anthracene	mg/kg	7	<0.1	3.6	1.65	3.33	540000	-	0	-
Fluoranthene	mg/kg	7	<0.1	14	8.16	13.1	23000	-	0	-
Pyrene	mg/kg	7	<0.1	16	8.71	14.8	54000	-	0	-
Benzo(a)Anthracene	mg/kg	7	<0.1	6	4.11	6	170	-	0	-
Chrysene	mg/kg	7	<0.1	6.2	3.67	5.78	350	-	0	-
Benzo(b)Fluoranthene	mg/kg	7	<0.1	7.6	5.03	7.45	44	-	0	-
Benzo(k)Fluoranthene	mg/kg	7	<0.1	3.1	2.03	3.01	1200	-	0	-
Benzo(a)Pyrene	mg/kg	7	<0.1	5.3	3.67	5.27	35	77	0	0
Indeno(123-cd)Pyrene	mg/kg	7	<0.1	3.4	2.34	3.37	510	-	0	-
Dibenzo(ah)Anthracene	mg/kg	7	<0.1	1.9	1.11	1.81	3.6	-	0	-
Benzo(ghi)Perylene	mg/kg	7	<0.1	4	2.63	3.91	4000	-	0	-
PAH(total)	mg/kg	7	<2	85	50.57	78.7	-	-	-	-

No significant levels of PAHs were identified within any of the samples analysed from the Made Ground.

TABLE 7.3 PAHS – NATURAL CLAY (2.5% SOM BASED ON SITE DATA)

Parameter	Units	No of Samples Analysed	Minimum Conc.	Maximum Conc.	Mean	95th %ile	Tier 1 Screening Values		No. of Exceedances	
							S4UL	C4SL	S4UL	C4SL
Naphthalene	mg/kg	3	<0.1	<0.1	<0.1	<0.1	460	-	0	-
Acenaphthylene	mg/kg	3	<0.1	<0.1	<0.1	<0.1	97000	-	0	-
Acenaphthene	mg/kg	3	<0.1	<0.1	<0.1	<0.1	97000	-	0	-
Fluorene	mg/kg	3	<0.1	<0.1	<0.1	<0.1	68000	-	0	-
Phenanthrene	mg/kg	3	<0.1	0.11	0.10	0.109	22000	-	0	-
Anthracene	mg/kg	3	<0.1	<0.1	<0.1	<0.1	540000	-	0	-
Fluoranthene	mg/kg	3	<0.1	0.24	0.15	0.226	23000	-	0	-
Pyrene	mg/kg	3	<0.1	0.21	0.14	0.199	54000	-	0	-
Benzo(a)Anthracene	mg/kg	3	<0.1	<0.1	<0.1	<0.1	170	-	0	-
Chrysene	mg/kg	3	<0.1	<0.1	<0.1	<0.1	350	-	0	-
Benzo(b)Fluoranthene	mg/kg	3	<0.1	<0.1	<0.1	<0.1	44	-	0	-
Benzo(k)Fluoranthene	mg/kg	3	<0.1	<0.1	<0.1	<0.1	1200	-	0	-
Benzo(a)Pyrene	mg/kg	3	<0.1	<0.1	<0.1	<0.1	35	77	0	0
Indeno(123-cd)Pyrene	mg/kg	3	<0.1	<0.1	<0.1	<0.1	510	-	0	-
Dibenzo(ah)Anthracene	mg/kg	3	<0.1	<0.1	<0.1	<0.1	3.6	-	0	-
Benzo(ghi)Perylene	mg/kg	3	<0.1	<0.1	<0.1	<0.1	4000	-	0	-
PAH(total)	mg/kg	3	<2	<2	<2	<2	-	-	-	-

PAHs in the natural clay sampled from did not exceed the relevant GAC screening values.

7.3.5 Petroleum Hydrocarbons

The data provided is based on the findings of the TPH Criteria Working Group (TPH CWG). TPH CWG analysis involves the samples to be subjected to a column clean up to extract both the aromatic and aliphatic fractions, which are then quantified. The clean-up also removes any plant-derived materials.

None of the speciated and fractionated hydrocarbon band concentrations within both the Made Ground and Natural Clay samples were shown to be above their respective GACs. In addition none of the levels recorded were in excess of the solubility saturation limits, indicating that free product is unlikely to be present.

7.3.6 Semi Volatile Organic Compounds (SVOCs) & Volatile Organic Compounds (VOCs)

From the sampling and analysis undertaken, no SVOC or VOC concentrations were in excess of their respective GACs in the samples analysed from both the Made Ground and Natural Ground.

8 GEO-ENVIRONMENTAL CONCLUSIONS

In summary, from the ground investigation undertaken the site is considered suitable for an industrial development, with no significant levels of contaminants identified as being present within both the Made Ground and natural ground. Therefore it is considered that the site's current operations have not impacted on the underlying ground conditions.

9 RISK ASSESSMENT & CONCEPTUAL SITE MODEL

Completing the risk assessment process requires that the potential pollutant linkages be re-assessed from the proposed conceptual model within Section 5.

With respect to the site, the results of analysis indicate that there is no significant contamination within the soils on site.

As no significant levels of contaminants are present, it is considered that no pollutant linkages previously identified within the CSM are present.

10 REPORT LIMITATIONS

10.1 Site Specific Comments

Only minimal investigation has been undertaken beneath the building due to the thickness of the concrete encountered.

10.2 General

This report presents our observations, borehole logs, laboratory results and interpretation of these logs, observations and results from the ground investigation undertaken between dates 6th and 7th March 2024. The scope of works was agreed with GRG prior to the ground investigation being carried out and, on this basis, Mayer Environmental have used reasonable skill, care and diligence in its design. Although every reasonable effort has been made to gather relevant information, all potential environmental constraints or liabilities associated with the site may not have been revealed.

On any site, and in particular on sites of potentially contaminative previous uses, ground conditions can change rapidly over short distances and there may be variability in ground conditions between exploratory positions. Ground conditions between exploratory points are inferred. It should be noted that investigation beneath building footprints has not been possible. No responsibility can therefore be accepted for varying ground conditions, between exploratory points, not revealed during the ground investigation.

No assessment has been undertaken for the presence of radioactive substances or unexploded ordnance, unless stated otherwise.

Third party information has been used in good faith and taken at face value. Mayer Environmental cannot guarantee the accuracy or completeness of Third Party information. It is assumed that previous reports provided have been assigned to the Client and can be relied upon. Should this not be the case, Mayer Environmental should be informed, as additional work may be required.

Site assessments can range from limited observations to extensive investigations, and testing. The degree of uncertainty in interpreting a site's environmental condition will depend upon the budget and scope of work authorised by the client. Some degree of uncertainty will always exist.

Chemical analysis was formulated to comply with land / groundwater quality assessment for Part 2A, Environmental Protection Act, 1990 (as amended) assessment. Analysis was not formulated to comply with drinking water supply requirements; unless stated otherwise.

The phrase 'suitable for use' is in keeping with the terminology used in planning designation and does not imply any specific warranty or guarantee.

This report may identify risks to site workers, including those during demolition, maintenance and redevelopment. Guidance on occupational health and safety issues is beyond the brief and scope of this report and appropriate advice should be sought by the client.

Please note that notwithstanding any site observations, including the presence or otherwise of archaeology; flora / fauna, including invasive weeds e.g. Japanese Knotweed, and / or asbestos-containing materials, this report does not comprise a formal survey and expert survey(s) / advice should be sought.

The recommendations in this report assume that ground levels will remain as those during the investigation, unless stated otherwise. If re-profiling is undertaken, then the conclusions and recommendations made may need re-evaluating. Any site boundary line on plans does not imply legal ownership of land.

This report has been prepared solely for the benefit of our client, GRG, for the purpose as outlined above. New site information, changes in practice / guidance or new legislation may require revised interpretation of the report, subsequent to its issue.

No warranty is offered to any third party and no responsibility or liability will be accepted for any loss or damage in the event that this report is relied upon, either in its entirety or in part, by a third party or used in circumstances for which it was not originally intended. This report shall not be transferred to or relied upon by any other party without express written permission of Mayer Environmental Ltd.

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