



Your Environment

PHASE 2: SITE INVESTIGATION REPORT 3 ELM GROVE, HAYLING ISLAND, PO11 9EA

For Mr R. Hughes

Your Environment

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1.0 Introduction

YourEnvironment (YE) was instructed by Mr R. Hughes (Quote No: Q4776, Dated: May 10th 2018) to conduct a Site Investigation (SI) at a site located at 3 Elm Grove, Hayling Island, PO11 9EA.

The purpose of this report is to satisfy a particular planning condition, which has been attached to the redevelopment of the site by Havant Borough Council, reference number: APP/17/00610, condition 4.

We are content that as a result of the actual site investigation works and subsequent soil testing undertaken, as outlined within this report, we have comprehensively characterised the ground conditions and consequently the potential for contamination to exist on site. These works and ensuing assessment have been detailed in this report.

The information contained in this report is intended for the use of the named client (or their approved contractors). Should any part of this report be relied on by a third party, that party does so wholly at its own risk and YE disclaims any liability to such parties. Should the purposes for which the report is used, or the proposed use of the site change, this report may no longer be valid and further use of, or reliance upon the report in those circumstances shall be at the client's sole and own risk. 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. YE should in all such altered circumstances be commissioned to review and update this report accordingly.

2.0 Proposed Development

We understand current plans for the redevelopment of the site include:

- The erection of one building to be comprised of six (6no.) two-bedroom dwellings.

The proposed redevelopment plans for the site, at the time of issuing this report can be reviewed within **Appendix A**.

3.0 Site Information

3.1 Geology

The relevant British Geological Survey (BGS) online mapping information indicates that the site is underlain by superficial ground deposits comprised of River Terrace Deposits (sand, silt and clay). The site is underlain by bedrock geology composed of the Portsmouth Sand Member and Whitecliff Sand Member (undifferentiated sand).

3.2 Hydrogeology

The Environment Agency designate aquifers in accordance with the Water Framework Directive. These designations reflect not only the importance of aquifers in terms of groundwater as a resource (drinking water supply) but also their role in supporting surface water flows and wetlands ecosystems. The aquifer designation data is based on geological mapping provided by the British Geological Survey.

As a result of the superficial ground deposits on site, the aquifer is designated as being Secondary (A). This is defined as 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.

As a result of the bedrock geology on site, the aquifer is designated as being Secondary (A).

4.0 Fieldworks

4.1 Site Investigation

All SI works were completed on June 6th 2018 under the supervision of a Geo-Environmental Engineer from YE. In summary the investigation included:

- Four (4no.) hand excavated trial pits (TP01-TP04) were completed to a maximum depth of 1.00 metre below ground level (mbgl).
- The trial pits were logged with any groundwater conditions noted and representative soil samples removed in accordance with current guidelines.
- Soil samples were removed from shallow sub surface locations of 0.15, 0.30, 0.50, 0.70 and 1.00mbgl. Samples were subsequently placed in suitable containers including 1kg tubs and 250ml glass jars and placed in cool boxes with cool packs prior to storage within our *in-house* laboratory fridges and then subsequent forwarding to our designated laboratory for analysis.
- The trial pits were backfilled after excavation.

The positions of exploratory holes in relation to the existing site layout can be reviewed within **Appendix B**, with exploratory trial pit logs located in **Appendix C** and photographs taken during the SI in **Appendix D**.

5.0 Geology & Ground Conditions

The following ground conditions were encountered during the SI;

Made Ground – Encountered in all of the trial pits to a depth of 0.20mbgl and generally comprised of a grey gravelly SAND. Sand is fine. Gravels are fine to coarse of concrete, cement and mixed lithology.

River Terrace Deposits – Natural soils that we assume to belong to the underlying River Terrace Deposits were identified within all locations from 0.20mbgl to 1.00mbgl. These were described as orange-brown sandy SILT. Sand is fine.

6.0 Groundwater Conditions

Groundwater was not encountered in any of the trial pits during investigative works undertaken.

It should be noted that groundwater levels are dependent upon seasonal variations and can change after periods of prolonged rainfall or drought.

7.0 Visual and Olfactory Observations

Potential asbestos containing materials, in the form of corrugated cement, were observed in the north-western section of the site.

8.0 Contamination

8.1 Soil Testing

A total of eight (8no.) samples have been analysed by DETS Ltd in their UKAS and MCERTS accredited laboratory-testing facility in accordance with laboratory protocol.

The testing completed comprised of a focused suite comprised of heavy metals, speciated Total Petroleum Hydrocarbons (TPH CWG Aromatic/aliphatic split) and speciated Polycyclic Aromatic Hydrocarbons (PAH) including the more carcinogenic benzo(a)pyrene (BaP) and naphthalene, phenols, cyanide, BTEX & MTBE, soil organic matter (SOM) content, pH and sulphates. Samples taken from the Made Ground were additionally screened for asbestos.

The results of this laboratory testing have been compared to the Soil Guideline Values (SGVs) as well as the CIEH 'LQM' guideline values for inorganic and organic contaminants in soils. The proposed development of the site is intended to comprise of residential and therefore screening has been made against a land use of 'residential without homegrown produce'.

8.2 Selection of Screening Criteria

The on site receptors for the study site are considered to be:

- Construction workers (during redevelopment of the site only);
- Future maintenance workers (following redevelopment);
- Future end users and site visitors (following redevelopment); and
- Trespassers (during redevelopment).

No off site receptors for the site are identified due to the rural nature of the site.

Risks to construction workers during the redevelopment process will be mitigated by adhering to appropriate health and safety legislation, and the wearing of appropriate personal protective equipment (PPE). During redevelopment, the site will be securely fenced to prevent trespassers from accessing the site, and good site management practices will be implemented to mitigate exposure to off site receptors.

The potential pathways for contaminants within the soil to human health receptors following redevelopment are considered to be:

- Direct ingestion of soil and soil derived dust;
- Dermal contact with soil outside and soil derived dust inside;
- Inhalation of soil derived dust inside and outside; and
- Inhalation of soil derived vapours inside and outside.

The potential pathways for contaminants within the soil to off-site human health receptors following redevelopment are considered to be:

- Direct ingestion of soil and soil derived dust;
- Dermal contact with soil outside and soil derived dust inside;

- Inhalation of soil derived dust inside and outside; and
- Inhalation of soil derived vapours inside and outside if contamination within soil is able to migrate across the site boundary within.

In the first instance, the results of this laboratory testing have been compared to generic assessment criteria (GAC) for the residential with homegrown produce land use scenario. These incorporate the following pathways:

- Direct ingestion of soil and soil derived dust;
- Dermal contact with soil outside and soil derived dust inside;
- Inhalation of soil derived dust inside and outside; and
- Inhalation of soil derived vapours inside and outside.

Given that these incorporate a number of pathways that will not be relevant to the site following redevelopment, this is a highly conservative approach and exceedances will be discussed in this light.

Contaminants have been screened against revised LQM/CIEH S4UL criteria¹ where available. These GAC have been designed for use under planning, using Health Criteria Values based on minimal risk, and updated exposure parameters. The S4UL are intended to replace the previous LQM/CIEH GAC. The S4UL are based on the assumption of a sandy loam soil the 6% and 1% soil organic matter (SOM) criteria have been used, where available and appropriate, in the first instance. All soil samples were analysed for %SOM, the range was from 0.5-4.3%, and so this conservative approach is considered appropriate for initial screening.

Where no S4UL are available, the EIC/ AGS/ CL:AIRE/ GAC² have been used. The toxicological criteria within these are also based on minimal risk. It is recognised that these criteria have not recently been updated, and in particular, do not incorporate the slightly higher inhalation rates that have been used within the S4UL. However, given that they incorporate additional pathways, they are considered suitable for an initial screen. The EIC/ AGS/ CL:AIRE/ GAC are also based on a sandy loam soil and the 1% SOM criteria have been used in the first instance.

There is neither an S4UL nor a EIC/ AGS/ CL:AIRE/ GAC available for lead. In the absence of a GAC based on minimal risk, the C4SL for lead has been used. It is recognised that this is based on a “low level of toxicological concern” rather than on a minimal risk level. However, it is considered appropriate for use under planning, especially for a site where there will effectively be no pathways for inorganic metals following redevelopment.

All the GAC are based on a sandy loam soil. This is considered appropriate for use for initial screening. Although it is apparent from the laboratory soil descriptions, that the Made Ground, by its very nature is heterogeneous, and often has a significant sand/gravel component, especially at shallow depths, it is noted that many of the soil descriptions have a significant clay component at increasing depth.

All of the GAC assume unsaturated soils. However, the use of the GAC are considered to be conservative, because they assume a certain air-filled porosity and water-filled porosity.

¹ Nathanail et al. (2015) The LQM/CIEH S4ULs for Human Health Risk Assessment. Land Quality Press, 2015. Copyright Land Quality Management Limited reproduced with permission; Publication Number S4UL3495

² CL:AIRE (2010) The EIC/AGS/CL:AIRE Generic Assessment Criteria for Human Health Risk Assessment

The GAC also assume that no free phase product is present, and are not intended for use in this instance. No free product was observed within soils during the site investigation.

8.3 Soil Testing Results & Screening

All metals, PAHs, and TPH CWG analytes are presented in the following tables. Other potential contaminants of concern are only shown where there is at least one result exceeding the limit of detection. All of the soil contamination laboratory analytical results are presented within **Appendix E**.

Metalloids

Determinant	Min	Max	GAC	Number of exceedances
Arsenic	5	10	40*	0
Cadmium	<0.2	0.8	85*	0
Chromium (III)	19	28	910*	0
Chromium (VI)	<2	<2	6*	0
Copper	9	57	7100*	0
Lead	13	252	310*	0
Mercury	<1	<1	40* ^a	0
Nickel	11	24	180* ^b	0
Selenium	<3	<3	430*	0
Zinc	43	394	40000*	0
Total Phenols	<2	<2	420*	0
Total Cyanide	<2	<2	140*	0

Table 1: Metalloids Soil Exceedances

*LQM/CIEH GAC for Residential without Homegrown Produce land use scenario based on a sandy loam soil and 1% SOM.

- a) Based on the inorganic mercury GAC as the conceptual site model does not suggest that other forms of mercury are likely to be present on site.
- b) LQM issued an update to the nickel S4ULs in August 2015 and this has been taken into account.

➤ There were no exceedances for the metalloids screened.

Organics

Determinant	Min	Max	GAC	Number of exceedances
Naphthalene	<0.1	<0.1	5.6*	0
Acenaphthylene	<0.1	<0.1	2900*	0
Acenaphthene	<0.1	<0.1	3000*	0
Fluorene	<0.1	<0.1	2800*	0
Phenanthrene	<0.1	1.17	1300*	0
Anthracene	<0.1	0.16	31000*	0

Fluoranthene	<0.1	3.05	1500*	0
Pyrene	<0.1	2.41	3700*	0
Benzo(a)anthracene	<0.1	1.45	11*	0
Chrysene	<0.1	2.24	30*	0
Benzo(b)fluoranthene	<0.1	4.35	3.9*	1
Benzo(k)fluoranthene	<0.1	1.09	110*	0
Benzo(a)pyrene	<0.1	2.64	3.2*	0
Indeno(1,2,3-cd)pyrene	<0.1	2.19	45*	0
Dibenz(a,h)anthracene	<0.1	0.43	0.31*	1
Benzo(ghi)perylene	<0.1	1.85	360*	0

Table 2: PAH Soil Exceedances

- There are two exceedances noted from the screening undertaken on PAH congeners. These were both located within the Made Ground of TP03 at a depth of 0.15mbgl for benzo(b)fluoranthene at 4.35mg/kg (GAC of 3.9mg/kg) and dibenz(a,h)anthracene at 0.43mg/kg (GAC of 0.31mg/kg).

Determinant	Min	Max	GAC	Number of exceedances
Aliphatic >C5 - C6	< 0.01	< 0.01	42*	0
Aliphatic >C6 - C8	< 0.05	< 0.05	100*	0
Aliphatic >C8 - C10	< 2	< 2	27*	0
Aliphatic >C10 - C12	< 2	< 2	130*	0
Aliphatic >C12 - C16	< 3	< 3	1100*	0
Aliphatic >C16 - C21	< 3	< 3	65000*	0
Aliphatic >C21 - C34	< 10	< 10	65000*	0
Aromatic >C5 - C7	< 0.01	< 0.01	370*	0
Aromatic >C7 - C8	< 0.05	< 0.05	860*	0
Aromatic >C8 - C10	< 2	< 2	47*	0
Aromatic >C10 - C12	< 2	< 2	250*	0
Aromatic >C12 - C16	< 2	< 2	1800*	0
Aromatic >C16 - C21	< 3	14	1900*	0
Aromatic >C21 - C35	< 10	106	1900*	0

Table 3: TPH CWG Aliphatic/Aromatic Soil Exceedances

* LQM/CIEH GAC Residential without Homegrown Produce land use scenario based on a sandy loam soil and 1% SOM. It is noted that the LQM/CIEH S4UL guidance recommends an additive approach for the TPH fraction, so that a hazard index approach is used. Based on a preliminary conservative comparison of maximum concentrations to S4ULs, no forward modelling is necessary to prove that this would still result in no exceedances at the site.

- There are no exceedances for TPH CWG congeners within the samples tested.

Determinant	Min	Max	GAC	Number of exceedances
Benzene	<2	<2	380*	0
Toluene	<5	<5	880000*	0
Ethylbenzene	<2	<2	83000*	0
p & m-xylene	<2	<2	79000*	0
o-xylene	<2	<2	79000*	0
MTBE	<5	<5	49000*	0

Table 4: BTEX and MTBE Soil Exceedances

- BTEX/MTBE screening returned a negative result for any congeners, all of which were below the Limit of Detection (LoD).
- Asbestos was encountered within the Made Ground of one of the samples screened, that being from TP02 at 0.15mbgl, for chrysotile within a cement matrix.

The soil contamination laboratory certificates can be reviewed within **Appendix E**.

9.0 Site Investigation Findings

9.1 Risks to Human Health

With the exception of the limited depth of Made Ground identified, no other visual and/or olfactory evidence of potential contamination was noted within any soils encountered during the SI works undertaken.

One of the selected soil samples from the SI which were submitted for a range of inorganic and organic analyses was returned with concentrations above the guidance values when compared to 'residential without homegrown produce', which was in TP03 at a depth of 0.15mbgl for benzo(b)fluoranthene at 4.35mg/kg (GAC of 3.9mg/kg) and dibenz(a,h)anthracene at 0.43mg/kg (GAC of 0.31mg/kg). Also, asbestos was encountered in one of the samples screened, that being from TP02 at 0.15mbgl for chrysotile.

Having reviewed the redevelopment plans, the entire site is to be covered in hardstanding. This would act as a capping layer, inhibiting contact between the identified exceedances and any future inhabitant.

The remaining samples returned concentrations below the available SGVs and LQM guidance values for each determinant which were adopted as Generic Assessment Criteria (GAC) within YE's risk assessment for the site.

9.2 Risks to Plants and Wildlife

A negligible risk has been attributed given the concentrations of phytotoxic contaminants below elevated concentrations often below the limit of detection returned and the lack of soft landscaping areas within the proposed redevelopment plans.

9.3 Risks to Site Workers

Precautions should be taken to minimise exposure of site workers during ground works through the implementation of site safety procedures and the use of suitable personal protective equipment (PPE). Such precautions should include, but not be limited to:

- Personal hygiene, washing and changing procedures;
- Availability of site welfare;
- Provision of PPE appropriate to the task; and
- Daily safety briefings and tool box talks.

All site works will be undertaken in accordance with the guidelines prepared by the Health and Safety Executive (1991) and all work will be carried out in accordance with the Principal Contractor's Health and Safety Plan.

10.0 Updated Conceptual Site Model and Risk Assessment

The Conceptual Site Model has been re-formulated based upon the results from the SI in accordance with BS10175:2015. It aims to provide information regarding the sources of contamination and the pathways in which contamination can migrate to a vulnerable receptor, all of which need to be present for there to be a risk. This is in relation to the proposed end use being classified as 'Residential without Homegrown Produce'. The assessment of the off site sources has been formulated based on information available from Groundsure and DEFRA databases. The following linkages have been identified:

Contaminant Source	Pathways	Receptor	Potential Severity	Probability of Risk	Level of Risk	Justification
On Site: Made Ground soils on site possibly containing elevated metals, other inorganics such as TPH, PAH.	Ingestion, dermal contact, inhalation of dusts/vapours	Future end users and site visitors	Medium	Likely	Low	A moderate risk would be considered, due to the identified exceedances of benzo(b)fluoranthene and dibenz(a,h)anthracene in the shallow soil. However, the site is proposed to be covered entirely in concrete, which would act as a capping layer, prohibiting contact with the identified contamination in the subsurface and future inhabitants.
		Construction Workers	Medium	Likely	Moderate	Construction workers are likely to come into direct contact with soils during groundworks. Safe working practices should be implemented and appropriate personal protective equipment (PPE) should be used to mitigate any potential risk from contact with soils and shallow/perched groundwater.
	Leaching through soils and migration via groundwater or soil pore moisture	Controlled Waters	Mild	Low Likelihood	Low	A low risk is considered despite the localised exceedances of benzo(b)fluoranthene and dibenz(a,h)anthracene in the shallow soil. This is due to the marginal nature of the exceedances encountered during the site investigation. Additionally, the site is recorded as having a Secondary (A) Aquifer within the superficial and bedrock geology.
	Permeation of plastic water pipes	Construction materials, future end users and site visitors	Medium	Likely	Low	Made Ground was identified to a maximum depth of 0.20mbgl, however its composition and depth varies, and this must be taken into consideration, therefore a barrier pipe is recommended. Provision of water supply pipes and connectors formed from proprietary "barrier pipe" materials (eg polyethylene-aluminium-polyethylene) may be required by the water supply company.
On site: Phytotoxic Contamination.	Uptake	Plant and Wildlife	Mild	Low Likelihood	Negligible	A negligible risk has been assessed given the lack of soft landscaping areas on the proposed plans.
On Site: Asbestos at/near ground surface in	Inhalation of fibres in airborne dust	Future end users and site visitors	High	Low Likelihood	Moderate	Screening has revealed asbestos to be present within one of the samples analysed from exploratory holes undertaken, that being TP02 at 0.15mbgl.

Made Ground soils.							It cannot be guaranteed that asbestos is not present within the soils across surrounding the site.
		Construction Workers	High	Low Likelihood	Moderate		Asbestos fibres have been identified in the samples returned from laboratory analysis. Therefore, safe working practices should be implemented and appropriate personal protective equipment (PPE) should be used to mitigate any potential risk from asbestos in soils.
On Site: Ground Gases (CH ₄ , CO ₂).	Gas migration and build up within buildings (explosion/asphyxiation risk)	Future end users and building structures.	High	Moderate Likelihood	Low		Current guidance indicates that Made Ground is generally classified as low risk in terms of potential for gas generation. It should be further noted that the depth and composition of Made Ground is known to be highly variable, with the returned trial pit logs suggesting that Made Ground is to a maximum depth of 0.20mbgl.
Off Site: Made Ground soils possibly containing elevated metals.	Leaching through soils and migration via groundwater or soil pore moisture	Future end users and site visitors	Mild	Low Likelihood	Low		Given the marginal and localised nature of the identified exceedances, it is unlikely to have arisen from an off site source.
	Inhalation of vapours	Future end users and site visitors	Medium	Low Likelihood	Low		A low level of risk is assessed due to the lack of volatile contaminants encountered.
Off Site: Ground Gases (CH ₄ , CO ₂ , H ₂ S) from off site Made Ground.	Gas migration and build up within buildings (explosion/asphyxiation risk)	Future end users and building structures.	High	Low Likelihood	Low		A low risk is assessed due to the lack of proximal landfills sites.

Table 5: Updated Conceptual Site Model and Risk Assessment

11.0 Recommendations

The following recommendations are based on the results of chemical laboratory testing to date.

The following recommendations made do not constitute a formal remediation strategy and/or validation report. A remediation strategy should be agreed with the relevant local authority prior to such works commencing and/or the production of a validation report.

11.1 Soils

One of the selected soil samples from the SI which were submitted for a range of inorganic and organic analyses was returned with concentrations above the guidance values when compared to 'residential without homegrown produce', which was in TP03 at a depth of 0.15mbgl for benzo(b)fluoranthene at 4.35mg/kg (GAC of 3.9mg/kg) and dibenz(a,h)anthracene at 0.43mg/kg (GAC of 0.31mg/kg). Also, asbestos was encountered in one of the samples screened, that being from TP02 at 0.15mbgl for chrysotile.

However, the extensive coverage of hardstanding in the proposed development would act as a capping layer, inhibiting contact between the identified exceedances and the future inhabitants.

11.2 Watching Brief and Discovery Strategy

A watching brief should be maintained by the Main Contractor at all times during the groundworks stage. Should any unforeseen contamination, such as oils or soils/groundwater with an unusual colour or odour, be encountered during groundworks then the following procedure should be implemented:

- Work to cease in that area to prevent exposure to ground workers and potential contaminants being spread around;
- Notify a Geo-Environmental Consultant, to attend site and sample material;
- Notify the Environmental Health Department / Contaminated Land Officer(s) of the local planning authority.

If the nature and extent of the contamination is unmanageable under the procedure set out above, then a suitable management, mitigation or remediation procedure will be agreed with the CLO. However, this is considered unlikely at this particular site.

11.3 Services

If new services will be installed as part of the redevelopment of the site we would recommend the local water board be contacted to determine their specification for the type of pipework which should be used on this site.

All services and in particular potable water supply pipework should comprise of material that is resistant to attack and degradation to chemical attack.

Further information can be found within the published guidance for the '*Selection of Water Supply Pipes to be used in Brownfield Sites*', issued in January 2011 by the UK Water Industry Research (UKWIR), this supersedes the Water Regulations Advisory Scheme (WRAS)

Information and Guidance Note – ‘*Laying Pipes in Contaminated Land*’ which has been withdrawn.

11.4 Surface Water

It should be noted that the Environment Agency does not recommend that soakaways be placed within Made Ground, potentially contaminative land or in ground previously identified as contaminated.

11.5 Management of Asbestos in Soil

Asbestos screening/identification analysis was completed on soil samples taken as part of the SI's completed, and identified loose fibres.

As the current proposals are to demolish all existing structures and erect one single story dwelling and are likely to involve removing the Made Ground material, a specialist Asbestos Consultant should be contacted to complete further testing of the area. If asbestos fibres are present, quantification analysis will be required to ensure that material is correctly classified for waste disposal purposes. However, we envisage that the following procedure should be implemented, once testing has been completed, and approved by a specialist Asbestos Consultant in advance of ground works commencing:

- Precautions should be taken during groundworks to minimise the risk of fibre release, and cemented asbestos should be hand picked where possible to prevent it being broken up by machine excavators;
- It will be necessary to wet the sides/bases of the excavations, particularly in dry weather conditions, to reduce risk of fibre release;
- Ground workers should employ the use of appropriate PPE to prevent potential exposure to asbestos;
- The cemented asbestos should be double bagged, marked and sealed prior to disposal to a covered skip;
- Off-site transport and disposal of cemented asbestos should be completed by a licensed contractor.

A watching brief should be maintained in accordance with the recommendations in Section 11.2. If additional areas of cemented asbestos are encountered, they can be managed in accordance with the above procedure. If further asbestos fibres are suspected, or friable Asbestos Containing Materials are encountered then works should stop, the area should be damped down and a specialist Asbestos Consultant contacted.

12.0 Limitations

This report has been prepared by YE with all reasonable skill, care and diligence. The work undertaken to provide the basis of this report comprised a study of available documented information from a variety of sources, together with a site walkover inspection of the site.

The opinions given in this report have been dictated by the finite data on which they are based and are relevant only to the purpose for which the report was commissioned.

Information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data with respect to site conditions. Should additional information become available which may influence the opinion expressed in this report, YE

reserves the right to review such information and, if warranted, to alter the opinions accordingly.

It should be noted that any risks identified in this report are perceived risks based on the information reviewed; actual risks can only be assessed following a physical investigation of the site. This report is an environmental stage 1 report and does not consider the geotechnical implications for the site, its redevelopment and proposed future use. Further advice should be sought on geotechnical investigation requirements for the proposed development.

The 'vicinity' of the site for the purposes of the report, is defined as locations situated within an approximate 250m radius of the site, although certain source of contamination and/or sensitive targets further than 250m of site have also been included.

The recommendations contained in this report represent our professional opinions. These opinions were arrived at in accordance with currently accepted industry practices at this time and as such are not guarantee that the sites are free of hazardous, or potentially hazardous materials, or conditions.

This report has been prepared solely for the use of the named client, and may not be relied upon by other parties without written consent from YE. YE disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the work.