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APPENDICES

Appendix 10.1 Desk Study and Preliminary Land Quality Risk Assessment, 2011

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GEOLOGY AND LAND QUALITY 10

INTRODUCTION

10.1 This Chapter presents information concerning geology, ground conditions and land quality (contamination) including a discussion of the potential risks to groundwater from previous fuel storage on the western portion of the site.

10.2 The application site's baseline conditions have been relied upon to establish the site's land quality in accordance with CLR 11 'Model Procedures for the Management of Land Contamination'. The procedures followed take account of the proposal to construct commercial buildings, re-introducing humans (i.e. workers) to the site after a number of years of dereliction. Various risk assessments consider the potential for existing ground conditions to damage new buildings, harm site users and pollute the wider environment. Mitigation measures are proposed where the potential for damage, harm or pollution is considered significant.

10.3 The land quality assessment is augmented with a discussion of the potential physical and chemical impacts of the proposed development on soils and near surface geological deposits via erosion, disaggregation, compaction and pollution. Appropriate mitigation measures are identified where predicted impacts during construction and operation are significant.

STUDY AREA

10.4 The application site is located off Overton Road approximately 2.5 miles north of the village of Micheldever, Hampshire and 750m north of Micheldever Station. The application site comprises 6 acres of a larger 32 acres of brownfield land previously used as rail sidings and a fuel storage depot. The study area considers the site itself and other relevant features. Generally these are within 250m of the site boundary, but on occasions when gross groundwater pollution is considered possible the study area may extend a distance of 2km.

METHODOLOGY

10.5 The general approach to the Environmental Impact Assessment (EIA) has been explained in Chapter 1 of this Environmental Statement (ES).

10.6 This section introduces the methodologies for the two types of impact assessment carried out in relation to land quality. The assessments ensure that all potential impacts involved in the creation of this development are considered.

10.7 Any potentially significant impacts raised in the assessments are considered and impacts or risks requiring mitigation measures are discussed.

Methodology – Land Quality Assessment

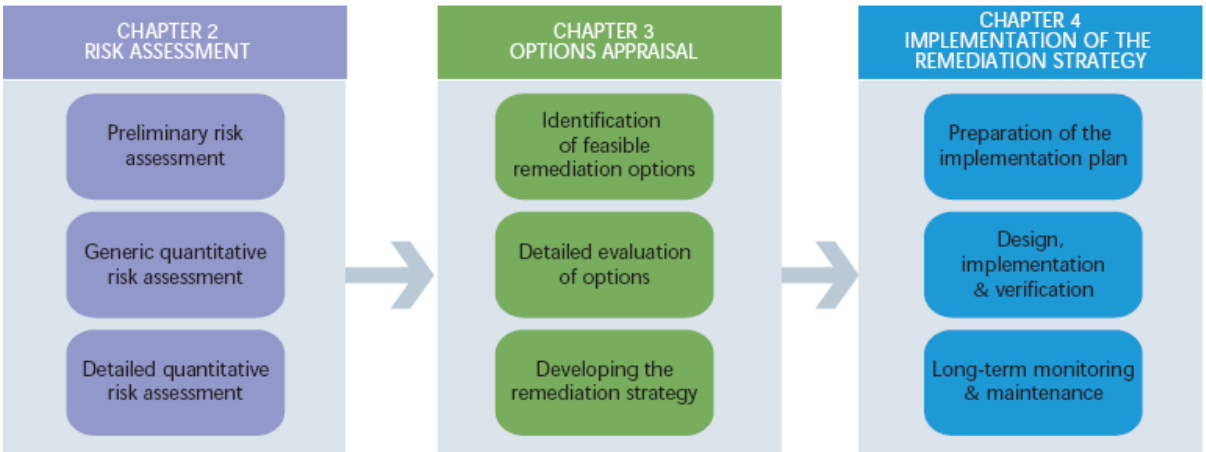
10.8 The first assessment, a land quality assessment, takes account of the proposal to construct commercial buildings and re-introduce humans (i.e. workers) to this site. The individual risk assessments consider the potential for existing ground conditions to damage new buildings, harm site users and pollute the wider environment.

10.9 The methods by which consultants assess land quality are detailed in various guidance documents. The overarching guidance document is Contaminated Land Report 11 (CLR11) entitled "Model Procedures for the Management of Land Contamination". The Model Procedures are intended to assist all those involved in dealing with land contamination, including landowners, developers, professional advisors, regulatory bodies and financial providers. The technical approach presented in the Model Procedures is designed to be applicable to a range of non-regulatory and regulatory contexts that includes:

- development or redevelopment of land under the planning regime;
- regulatory intervention under Part IIA of the Environment Protection Act 1990;
- voluntary investigation and remediation; and
- managing potential liabilities of those responsible for individual sites or a portfolio of sites.

10.10 The Model Procedures are split into three stages: risk assessment, options appraisal and remediation. Each stage can be sub-divided as shown below:

Extract from p. 17 CLR 11



10.11 The first stage, Risk Assessment, is an essential component in achieving effective management of the risks from land contamination. Risk assessment for chemical contamination can be a highly detailed process as there are a range of specific technical approaches for different contaminants and circumstances. As shown above, the risk assessment stage is itself subdivided or tiered; assessors apply each tier in turn. Higher tiers require the assessment of more detailed information.

10.12 This section of the Environmental Statement relies on risk assessments in the form of:

- A Desk Study and Preliminary Land Quality Risk Assessment (PLQRA) carried out in 2011 (Appendix 10.1).

10.13 Any feasible remediation options should form part of a remediation strategy and implementation plan following completion of appropriate ground investigations.

Methodology – Development Impact Assessment

10.14 The second assessment, the Development Impact Assessment, discusses the potential impacts of the proposed development on soils and near surface geological deposits via erosion, disaggregation, compaction and pollution. The assessment considers impacts during construction and operation of the development. Appropriate mitigation measures are identified where predicted impacts during construction and operation are significant. It has not been possible to quantify these effects, and so qualitative assessments have been carried out based on available knowledge and professional judgement.

CONSULTATION

10.15 To date the only regulatory consultation with respect to Land Quality has been part of a Scoping Opinion Request to Hampshire County Council. The response (dated 30 April 2012) to this request indicated that the proposed development should take account of the presence of buried fuel storage tanks under part of the site.

IMPLICATIONS OF LEGISLATION, POLICY AND GUIDANCE

Regulatory Context

10.16 Other parts of this document discuss the national, regional and local policies relevant to the proposed development. This section, however, points the reader towards legislation and policies relevant to the redevelopment of brownfield land or developments on land affected by contamination.

The Contaminated Land Regime

10.17 On 1st April 2000 a statutory regime came into force in England to help deal with the substantial legacy of contaminated land by providing an improved system for the identification and remediation of contaminated land, it is often referred to as “Part IIA”. Part IIA was introduced into the Environmental Protection Act 1990 by the Environment Act 1995, it was accompanied by Regulations and Statutory Guidance contained in DETR Circular 02/2000 Contaminated Land which was replaced by Circular 01/2006 (which introduced radioactive contamination to the contaminated land regime), and is now replaced by Contaminated Land Statutory Guidance published by Defra in April 2012 (which is the first wholesale review of the guidance and removes radioactivity whilst introducing new concepts). Part IIA included the first statutory definition of "contaminated land".

10.18 For the purposes of Part IIA, contaminated land is defined as:

- "any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on, or under the land that:
- significant harm is being caused or there is a significant possibility of such harm being caused; or
- pollution of controlled waters is being, or is likely to be caused".

10.19 The definitions in Part IIA and the technical guidance developed to support it assist regulators and land owners by reducing uncertainties and setting out procedures which allow their professional advisors to make robust and defensible decisions regarding the acceptability of risks to human health and the wider environment from ground contamination. The approach is based upon the principles of risk assessment, including the concept of a contaminant, a receptor and a pathway, which, if combined, form a pollutant linkage or, from April 2012, a contaminant linkage. Where risks are unacceptable, the procedures lead to remedial options appraisals (i.e. mitigation measures) and remedial works.

10.20 Although the Part IIA regime deals with contaminated land, its use is largely restricted to grossly polluted sites, derelict land and sites which are in use, but which are suspected to be causing harm to their users – the sites are assessed on the basis of their current use.

National Planning Policy

10.21 Annex 2 of PPS23 entitled Planning and Pollution Control advised on the circumstances when it might have been be appropriate for local planning authorities to grant planning permission for developments on land affected by contamination. Its replacement, the National Planning Policy Framework (NPPF) of March 2012 has a core aim to:

- encourage the effective use of land by reusing land that has been previously developed (brownfield land), provided that it is not of high environmental value.

10.22 In common with Annex 2, the new NPPF says the planning system should contribute to and enhance the natural and local environment by:

- preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability; and
- remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

10.23 The NPPF encourages the beneficial re-use of brownfield land provided it is not of high environmental value. It also indicates the requirement that the land should be suitable for its new use. Where necessary land should be remediated to ensure its suitability for use and as a minimum should not be capable of being determined under Part IIA of the Environmental Protection Act, 1990.

Planning Controls

10.24 Part IIA is not directed to assessing risks in relation to future use of land that would require a specific grant of planning permission; this is primarily a task for the planning system. Consequently, for planning purposes, the assessment of risks arising from contamination and remediation requirements should be considered on the basis of a site's current use and proposed new use. In most other respects, however, the underlying approach to identifying and dealing with risk, and the overall policy objective of safeguarding human health and the environment, are similar.

10.25 Where development is proposed, the developer is responsible for preventing the development from contributing to or being put at unacceptable risk from unacceptable levels of soil or water pollution or land instability, and remediating / mitigating derelict / contaminated and unstable land, where appropriate. The developer is thus responsible for determining whether land is suitable for a particular development or can be made so by remedial action. In particular, the developer should carry out an adequate investigation to inform a risk assessment to determine:

- whether the land in question is already affected by contamination through source - pathway - receptor pollutant linkages and how those linkages are represented in a conceptual model;
- whether the development proposed will create new linkages, e.g. new pathways by which existing contaminants might reach existing or proposed receptors and whether it will introduce new vulnerable receptors; and
- what action is needed to break those linkages and avoid new ones, deal with any unacceptable risks and enable safe development and future occupancy of the site and neighbouring land.

10.26 Generally, local authorities manage developers' actions by imposing planning conditions. Typical conditions were provided in November 2004 within Annex 2 of Planning Policy Statement 23 (PPS23) entitled "Development on Land Affected by Contamination", these conditions were augmented by Model Planning Conditions circulated by DCLG to all Chief Planning Officers on 30th May 2008, but now both are replaced by the NPPF.

10.27 Typically, planning conditions would require a risk assessment based upon site investigation data, the development and implementation of a remediation scheme and, potentially future monitoring and maintenance schemes.

10.28 In this instance, the Environmental Statement will highlight environmental issues of concern and allow the formulation of site-specific planning conditions by the Local Planning Authority.

EXISTING ENVIRONMENT

Sources of Information

10.29 The baseline conditions laid out below are drawn from widely available published materials, previous technical reports relating to the subject site and adjacent sites, and recent ground investigations. A previous technical report is referenced within Appendix 10.1.

Baseline: Geology

10.30 The application site is to the east of the rail sidings located north of Micheldever Station. The application site is boarded to the north and west by roads (A303 and Overton Road, respectively) and to the south further brownfield land associated with the fuel depot.

10.31 British Geological Survey (BGS) mapping suggests that no superficial deposits (glacial tills, alluvium, etc) are likely to be present in the vicinity of the site. The solid geology comprises Chalk - Lewis Nodular Chalk Formation, Seaford Chalk Formation and Newhaven Chalk Formation (undifferentiated). Records for a borehole drilled in 1938 to 114m depth located approx. 60m south of the site revealed the ground conditions comprised:

- 'Very hard' chalk with flints to the full depth of the borehole.
- Groundwater was confirmed at a rest level of 90 feet below ground level – approx. 27m.
- Pump tests suggested that only low abstraction rates could be sustained.

10.32 The western portion of the application site is known to comprise a number of redundant fuel storage tanks encased in concrete and it is proposed as part of the development that these will be purged and infilled with foam concrete.

Baseline: Mining and Quarrying

10.33 The application site lies within an area that has seen some quarrying/underground mining activity for chalk in the form of small chalk pits, but none has been identified close to or within the site boundaries. The fuel storage tanks appear likely to have been constructed following the removal of chalk from the hillside adjacent to the railway line.

Baseline: Land Quality

10.34 The land quality baseline has been established by a review of the site's history and available environmental information. A preliminary land quality risk assessment was first carried out in 2011 (Appendix 10.1) confirming the presence of a former fuel storage facility in the western portion of the site which extends onto land to the south of the application site. This fuel storage facility has been identified as dating from the Second World War, but has been redundant for some time. The precise nature of the storage facility under part of the application site is unclear, but anecdotal information indicates the tanks are buried within concrete and review of available historic Ordnance Survey mapping would suggest they were constructed after first excavating the natural ground to the level of the adjacent railway infrastructure, construction of the tanks and placement of a thin veneer of chalk spoil on the 'roof' of the structure. However, no specific information is available with respect to the size and construction of tanks under part of the application site and land to the south.

10.35 Review of mapping information for the application site indicates the fuel storage site was rail fed and the distribution tanks from the rail sidings are located off site to the west, except where they enter the area of the storage tanks under the site. Fuel from the facility appears to have been distributed by road as road tanker loading gantries are located some distance to the south of the application site.

10.36 No other potentially contaminative activities have been identified at the application site following the initial review of ground conditions.

10.37 Review of the general topographic and hydrogeological gradients (specifically the Hydrogeological Map for Hampshire and Isle of Wight) for the application site area would suggest that groundwater flow beneath the site would be towards the south west and groundwater could be approx. 50m below ground level.

10.38 Groundwater data for a well located some 60m south of the application site would suggest groundwater could be of the order of 37m below ground level (the application site is located at an approx. 10m higher elevation than the borehole location), but this depth measurement dates from 1938 and groundwater levels could be much reduced as a result of greater rates of groundwater abstraction since that time and groundwater could be of the order of 50m below ground level.

10.39 The railway sidings and tanker loading gantries are therefore considered to be downgradient of the application site.

DO NOTHING SCENARIO

10.40 It is highly unlikely that the geological conditions of the site would change in the near future should the proposed development not proceed. Similarly, land quality in terms of soils chemistry is unlikely to change.

IMPACT IDENTIFICATION

Potential Impacts and their Significance

10.41 The following sections explore the potential impact generated by redevelopment at the application site and, via reference to the preliminary risk assessment, establish whether or not those impacts are significant. Significant impacts are judged to warrant mitigation.

10.42 Paragraphs 10.43-10.53 examine the impact of the land upon the development, whilst paragraphs 10.54-10.59 predict the impacts of the development upon the land. This approach ensures that all potential impacts involved in the creation of this development are considered. Paragraphs 10.60-10.70 detail the mitigation measures which will be required to avoid, offset or reduce any significant adverse effects.

Impacts of the Land upon the Development

10.43 The Preliminary Land Quality Risk Assessment report (Appendix 10.1) indicates that the development site has the potential to be contaminated from the use of the western portion of the application site as a fuel storage depot (petrol, diesel, etc), but it should be noted that the storage tanks are encased within concrete as far as is known. The presence of fuel storage tanks presents a potential source of

petroleum vapour risk to development over the tanks and also a potential risk to groundwater within the chalk under the site. However, it should be noted that fuel infrastructure associated with the depot facility is present off site. Given the potential for risks impacting new buildings and human health, further investigation is considered necessary as part of the recommended future ground investigation works.

Harm to Human Health & Groundwater from Soil Based Contaminants

10.44 The historical site development poses a number of somewhat unusual conditions on the site; namely the potential for petroleum hydrocarbon contamination to be present, but the encasement of the storage tanks in concrete would suggest the risks to the proposed development from soil contamination would be minimal.

10.45 The eastern portion of the site has remained undeveloped from review of available historic maps and the depth to groundwater would suggest the potential for shallow soil contaminants that poses an unacceptable threat to the human health is minimal in this area.

10.46 The site is recorded as being located over Zone III (Total) Source Protection Zone for a groundwater abstraction located approx. 5km west of the application site at Upper Bullington. The threats to groundwater quality are therefore noted from the former fuel storage facility.

10.47 The suspected hydrogeological gradient would suggest the greater risks from petroleum hydrocarbon contamination lie under land to the west and south west of the application site and may be associated with offsite fuel infrastructure such as loading gantries and distribution pipes.

Damage to Proposed Buildings / Structures from Hazardous Vapour

10.48 No formal assessment of the potential for petroleum vapour risk at the application site has been undertaken to date.

10.49 It will therefore be necessary to secure by planning condition an appropriate level of assessment as part of the planned investigation of the site at a future date.

10.50 Dependent upon the results of ground investigations, it may be necessary to implement a programme of remediation to address petroleum vapours and/or install proprietary vapour protection membranes within buildings. Such approaches are well established within the UK and it is not envisaged that petroleum vapour contamination, if present, at the application site will materially affect the viability of the proposed scheme.

Health Risks from Exposure to Ground Vapour

10.51 No formal assessment of the potential for petroleum vapour risk at the application site has been undertaken to date.

10.52 It will therefore be necessary to secure by planning condition an appropriate level of assessment as part of the planned investigation of the site at a future date.

10.53 Should unacceptable vapour concentrations be detected at the application site, then established approaches exist for remediation of the contamination and/or installation of proprietary vapour protection membranes within buildings to protect human health. Risks from petroleum vapours for external areas of the development are not thought likely to be significant, but assessment of this issue would need to form part of the programme of investigations at the site.

Impacts of the Development upon the Land

10.54 The development impact assessment discusses the potential impacts of the proposed development on soils and near surface geological deposits via erosion, disaggregation, compaction and pollution. The assessment considers impacts during construction and operation of the proposed development.

10.55 During the construction phase it is envisaged that the main impact will be removal and redistribution of in-situ natural soils and Made Ground during potential remedial works, excavation of the foundations, and construction of the development as a whole. Such mass movement of soil, including topsoil, has an impact on vegetation and can result in increased erosion via wind and water. Stockpiles which may be part of the temporary works are particularly prone to erosion. The adverse effects leading from soil erosion are nutrient loss and loss of fine soil particles, both of which could affect local watercourses by increasing turbidity and siltation and raising nutrient concentrations – however in this case there are no local surface waters[1].

10.56 Disaggregation is a term describing the mixing of soils when disturbed by excavation. This impact changes the physical and chemical composition of the soil, which can later cause problems when re-establishing vegetation or when contaminants from one soil are released into others. Again this impact would generally occur during the construction stage.

10.57 Large earthworks projects, such as that expected at this site, also tend to cause compaction of soil; again this occurs predominantly during the construction phase. The consequence of vehicle movements compacting soil is to reduce the ability of plants to form roots and reduction of the capacity for water infiltration. Hardening of the soil surface can lead to increased runoff, erosion and surface water ponding.

10.58 Contamination of the soil can lead to pollution of controlled waters. Introduction of construction plant and material has the potential, if poorly controlled, to contaminate soils by the uncontrolled release of solid and liquid compounds associated with vehicles (e.g. oils, fuels, de-icing salts, etc).

[1] The potential impacts on surface water and groundwater quality are presented in Table 10.1.

Table 10-1
Potential Impact on Land from Redevelopment

	Potential Impact	Spatial and Temporal Impact	Sensitivity of Receptor	Magnitude of Effect	Significance of Impact	Mitigation Required?
Soils and near surface geological deposits	Adverse - Contamination of soils during construction by mishandling of hazardous construction materials (e.g. cement), construction wastes and other hazardous materials associated with construction including fuels.	Local Short Term	High	High	Moderate	Yes
	Adverse - Erosion of soils and unvegetated areas during construction.	Local Short Term	Low	Medium	Moderate / Minor	Yes
	Adverse - Compaction of haul roads and land to be built upon during construction.	Local Short term	Low	Low	Minor	Yes
	Adverse - Disaggregation of soils during construction.	Local Short term	Low	Low	Minor	Yes
	Adverse - Erosion of soils and unvegetated areas during operation of development.	Local Medium to Long Term	Low	Low	Minor	Yes

10.59 Table 10-1 has been used to determine the significance of the effects predicted above. The assessment of adverse impacts indicates minor to moderately significant impacts in both the construction and operational stages of the development without mitigation measures. Moderately significant impacts may arise should soils be contaminated during construction by mishandling of hazardous construction materials, construction wastes or fuels.

MITIGATION MEASURES

10.60 One of the main aims of the ES is to develop mitigation measures to avoid, offset or reduce the significant adverse effects of a project. These measures can relate to any of the three key phases of the project: design, construction or operation.

Mitigation of the Impacts of the Land upon the Development

Protecting Human Health & Groundwater

10.61 At present there is no site specific data relating to soil and groundwater quality. It will therefore be necessary to obtain such information as part of any pre-commencement ground investigations at the application site, which could be secured by planning condition. These investigations will serve several purposes, namely; to obtain information in relation to the shallow and deeper soil quality at the

site, to obtain information on groundwater quality under the site, to obtain information in relation to petroleum vapour risks associated with soil and groundwater at the site, to obtain information for use in geotechnical assessment of the foundation and paved areas design and to facilitate soils handling either on or off site as part of the development.

10.62 Depending upon the results of ground investigations, it may be necessary to implement a programme of soil/groundwater remediation and/or to incorporate appropriate protection measures within buildings to protect building integrity and human health. Such measures could include soil excavation, groundwater treatment, vapour extraction, installation of impermeable barriers within buildings or a combination of approaches. Although it could be that the actual contamination conditions at the application site are not sufficient to warrant such a level of intervention.

Protecting Human Health & Buildings

10.63 The presence of former fuel storage tanks under part of the site indicates further assessment of the potential risks to buildings and their occupants will be required. This requirement is particularly relevant as the current development layout shows the main building layout over the area of the former tanks.

10.64 However, it is considered unlikely that the safety and integrity of the proposed development will be compromised by the presence of the former fuel tanks in the western area of the application site, although it is acknowledged that the inclusion of appropriate vapour protection measures may be appropriate within buildings.

10.65 It is therefore considered that appropriate mitigation could be secured by the use of suitably worded planning conditions.

Mitigation of the Potential Impacts of the Development upon the Land

10.66 The Development Impact Assessment predicted minor to moderately significant impacts upon the ground during both the construction and operational stages of the development if mitigation measures were not employed.

10.67 Typical mitigation measures are presented in Table 10-2. The measures either reduce the likelihood of an event occurring, or reduce the magnitude of the consequences if the event does occur. Briefly, the mitigation measures include:

Institute procedures for the storage and handling of:

- all hazardous materials;
- construction wastes; and
- fuels.

Ensure that:

- spill response kits are provided;
- vegetation is removed only if required;
- the extent to which large areas of bare soil are expose to the wind is minimised;
- stockpiles are grassed or covered to prevent erosion;

- soil is excavated in order of horizons and each soil-type is kept in separate piles;
- water is directed away from slopes using a surface water drainage system;
- siltation traps are installed in watercourses/ditches, if necessary;
- wide tyres / tracks are fitted to construction plant;
- the site road network is limited to a few main tracks; and that
- compacted areas are tilled once activities have ceased.

Table 10-2
Assessment of the Residual Significance of Potential Impacts upon Soils and near surface Geological Deposits

Potential Impact	Significance of Impact	Mitigation Measures	Sensitivity of Receptor	Magnitude of effect when mitigated	Residual Significance of Impact
Adverse - Contamination of soils during construction by mishandling of hazardous construction materials (e.g. cement), construction wastes and other hazardous materials associated with construction including fuels.	Moderate	- Institute procedures for the storage and handling of all hazardous materials. - Institute the procedures for storage and handling of all construction wastes e.g. from impermeable surfaces across areas where waste will be stockpiled. - Institute procedures and facilities for the re-fuelling of vehicles and storage of fuels and make spill response kits available.	Moderate to high	Low to medium	Minor
Adverse - Erosion of soils and unvegetated areas during construction.	Moderate / Minor	- Limited removal of vegetation and re-establishment of vegetation on bare areas as soon as possible. - Create shallow gradients and avoid steep slopes where possible. - Direct water away from slopes using a surface water drainage system where practical. - Avoid creating large areas of bare soil exposed to the wind and use wind breaks where possible. -Install siltation traps in any local watercourses/ditches	Low	Low	Minor
Adverse - Compaction of haul roads and land to be built upon during construction.	Minor	- Use wide tyres / tracks on construction plant. - Limit the site road network to a few main tracks. - Till compacted areas once activities have ceased.	Low	Low	Minor

Potential Impact	Significance of Impact	Mitigation Measures	Sensitivity of Receptor	Magnitude of effect when mitigated	Residual Significance of Impact
Adverse - Disaggregation of soils during construction.	Minor	-Excavate soils in order of horizons and keep each horizon in separate piles. - If piles are to be stored for any length of time they may need to be grassed over and covered to prevent erosion. - Ensure that Made Ground materials are not mixed with natural soils or imported fills.	Low	Low	Minor
Adverse - Erosion of soils and unvegetated areas during operation of development.	Minor	- Maintain vegetation across unsurfaced areas. - Direct water away from slopes using a surface water drainage system. - Install siltation traps in local watercourses/ditches	Low	Low	Minor

Significance of the Residual Impacts from the Proposed Site

Significance of the Impacts of the Land upon the Development Post-Mitigation

10.68 At present detailed recommendations cannot be made to mitigate the potential risks identified during redevelopment of the site. However, appropriate systems of remediation and/or mitigation (i.e. using the planned approach of stabilisation of the tanks following purging and cleaning and infilling with foam concrete) exist which, if implemented appropriately, will result in land quality suitable for the proposed development which would also be protective of groundwater resources – in short there would be a low residual impact.

Significance of the Impacts of the Development upon the Land Post-Mitigation

10.69 The development impact assessment predicted minor to moderately significant impacts upon the ground during both the construction and operational stages of the development if mitigation measures were not employed.

10.70 Implementation of the mitigation measures described above in Table 10-2 would lead to a 'minor' residual significance rating.

CONCLUSION

10.71 The baseline conditions detailed above are drawn from widely available published materials and a previous technical report completed by SLR. It is acknowledged that as part of any planning permission further detailed ground investigations will be required before a remediation strategy for the site can be finalised.

10.72 Two forms of assessment have been carried out. The first, a land quality assessment, takes account of the proposal to construct commercial buildings and the likely impact of contamination identified at the site on humans, the built environment and Controlled Waters, followed by measures to mitigate the risks to these receptors. The second, the Development Impact Assessment discusses the potential impacts of the proposed development on soils and near surface geological deposits via erosion, disaggregation, compaction and pollution. Appropriate mitigation measures are identified where predicted impacts during construction are significant.

10.73 With respect to geology, ground conditions and land quality it is concluded that, should appropriate mitigation measures be implemented (following completion of ground investigations and development/implementation of a remediation strategy), there will be no significant residual impacts or cumulative effects associated with the proposed redevelopment.