

## 4. Land Quality

### Introduction

- 4.1 The principle aim of this chapter is to identify any additional information on Land Quality that requires consideration since the original EIA submission (March 2014) and the previous EIA addendums (September 2014 and March 2019).
- 4.2 The original EIA submission (March 2014), assessed the land quality associated with the site and the wider area. As part of the original assessment, desk studies, site walkovers, and a targeted intrusive ground contamination assessment were undertaken followed by the completion of a Preliminary Risk Assessment (PRA) and a Generic Quantitative Risk Assessment (GQRA).
- 4.3 The key findings from the original 2014 assessment are as follows;
- Through the PRA a Conceptual Site Model (CSM) was created which identified areas of potential contamination on site. A number of potential issues were highlighted but the principal source of contamination for the site was due to historic activities on the quarry site and particularly the presence of fuel and other holding tanks within the site. A full GQRA was recommended which incorporated an intrusive ground contamination assessment; and
  - Samples (soil, water and gas) taken during the ground investigation were analysed for a range of determinants using appropriate Generic Assessment Criteria's (GACs). Following the completion of the GQRA, no significant pollutant linkages were identified. However, a number of appropriate mitigation measures were highlighted to further reduce the potential risks for contamination.
- 4.4 The 2014 addendum included further information in respect of land quality. This information was requested by NIEA and included;
- Copies of the original laboratory analysis sheets for soil and water samples; and
  - Justification for the locations of the trial pits during the targeted soil sampling, along with photographic evidence of these being undertaken in lieu of trial pit logs.
- 4.5 The 2019 addendum included:
- Details of an updated site walkover, undertaken in November 2018, which highlighted that blasting activity had occurred on two occasions since the 2014 site visit;
  - Assessment of risk of disturbing erionite - Site surveys and sample analysis did not detect the presence of erionite; and
  - An update of the screening Generic Assessment Criteria (GAC) values in line with updated screening values, for both soil and water samples and the rescreening of laboratory results. All samples remained below the GAC and the conclusions made in the original risk assessment remained valid.

- 4.6 The principle aim of this chapter is to revisit the methodologies and to identify any additional land uses or events (since the March 2014 assessment and subsequent addendums) which might lead to unacceptable risk to health and the environment (including controlled waters).
- 4.7 Any land quality issues identified (in addition to those examined in the 2014 and 2019 assessments) within or near the site, are described alongside the potential environmental impacts that may occur during construction and operational phase.
- 4.8 This addendum chapter should be considered along with the original 2014 assessment chapter and previous addendums.

### **Methodology**

- 4.9 Since 2019 the guidance supporting Contaminated Land assessments has been updated, although the key principles remain, i.e. Preliminary Risk Assessments (PRA), Conceptual Site Model (CSM) and Generic Quantitative Risk Assessment (GQRA). The assessment has been reviewed and is presented in keeping with the Land Contamination Risk Management (LCRM) guidance produced by the Environment Agency (EA) in October 2020, which supersedes the DEFRA and EA publication CLR 11 Model Procedures for the Management of Contaminated Land.
- 4.10 A review of baseline information related to land quality has been undertaken which has informed updates to the PRA and GQRA. This includes reviews of published information and updates to screening values for ground investigation results. A site verification walkover was also carried out on the 9<sup>th</sup> February 2023 to reaffirm the conditions of the application site. This verification exercise included discussions with a site representative to confirm what activities had occurred on site since previous assessments and site surveys.
- 4.11 A review has also taken place of the recently approved (14/03/2023) planning application (LA03/2022/0649/F) at the site for the “Erection of a replacement Coated Roadstone Plant and associated ancillary development to include bitumen storage tanks; aggregate and recycled asphalt pavement storage bays; hoppers; storage silos and conveyors” to determine awareness of potential future baseline at the site.
- 4.12 The information gathered has been used to update the existing CSM, to reassess any potential risks resulting from land quality on or surrounding the application site and to confirm if the findings of the 2014 and 2019 assessments remain valid.

### **Assessment**

#### Preliminary Risk Assessment

##### *Baseline Information*

- 4.13 During the site walkover (09/02/2023) it was noted that little had changed at the site since the 2018 site visit. Fly tipping was noted to have occurred along the access road entering the site and in the northern area of the main development as evidenced in Figure 4.1.

**Figure 4.1 Evidence of Fly Tipping**



4.14 Within the centre of the site road planings have been stored as evidenced in Figure 4.2 and a derelict building contained evidence of chemical spills as evidenced in Figure 4.3. The road planings are for use in highway aggregate and have been classified as recycled material for this use. These road planings are therefore not considered to be a contamination risk.

**Figure 4.2 Storage of Road Planings**



**Figure 4.3 Derelict Building Containing Potential Chemical Spills**



- 4.15 A review of the recently approved (14/03/2023) planning application (LA03/2022/0649/F) at the site did not identify any additional information that would change the content of the CSM.
- 4.16 Based on this information, additional land quality concerns have been identified and are presented in Table 4.1. The CSM, Preliminary Assessment and Mitigation or Risk has also been updated and presented in Table 4.2.

**Table 4.1 Additional Land Quality Concerns within the Site and in the Surrounding Area**

| Description  | Reason(s) for Concern   | Potential Pollutants  |
|--|---|---|
| Application Site                                       |   |   |
| Fly Tipping  | Waste materials   | General household waste material.   |
| Derelict Building Containing potential chemical spills | Potential chemicals exiting building and infiltrating ground. | Industrial Lubricants and hydraulic oils. (Metals, petroleum hydrocarbons, semi-volatile organic compounds including polyaromatic hydrocarbons) |

**Table 4.2 Conceptual Site Model, Preliminary Assessment and Mitigation of Risk**

| Potential Source and Reason for Concern                | Potential Pathway(s) to Receptor                   | Potential Receptor  | Preliminary Risk Assessment and Mitigation of Relevant Source-Pathway-Linkage                        | Is further investigation required?   |
|--|--|---|--|--|
| <b>Application Site</b>                                |  |   |  |  |
| Fly Tipping  | Physical Risk                                      | Road users, site construction workers, site users, site visitors. | Nil to Tolerable risk – no obvious evidence of ground contamination but represents a physical hazard | No further investigation is recommended, however material should be removed and disposed of at earliest convenience to minimise any physical hazards.  |
| Derelict Building Containing potential chemical spills | Contact with, inhalation or ingestion of materials | Road users, site construction workers, site users, site visitors. | Nil to Tolerable risk – Site management aware of this and in process of remedying.                   | No further investigation is recommended, however material should be removed and disposed of at earliest convenience to minimise any potential hazards. |
|  | Fissure in Rock.                                   | Groundwater   | Nil to Tolerable risk – No spillages were observed outside building. Concrete slab/ floor is intact. | No further investigation is recommended, however material should be removed and disposed of at earliest convenience to minimise any potential hazards. |

## Review of Assessment Screening Values

### *Rock / Soil / Overburden Contamination*

- 4.17 Generic Assessment Criteria (GAC) used during the original GQRA and 2019 addendum included UK Soil Guideline Values (SGV's), the Atrisk Soil Screening Values (SSV's) and the CL:AIRE soil GAC. As part of this assessment the screening values have been updated to reflect changes in guideline values that have occurred since the initial screening process took place.
- 4.18 Since the 2019 addendum, Atkins SSVs have been revised using the updated Contaminated Land Exposure Assessment tool (CLEA v1.071). The update includes the library data sets from the Defra research project SP1010 (Development of Category 4 Screening Levels (C4SLs) for assessment of land affected by contamination). The C4SLs consist of cautious estimates of contaminant concentrations in soil that are still considered to present an acceptable level of risk.
- 4.19 Laboratory results for the soil samples all remained below the relevant updated GAC's (Appendix 4.1). Therefore, the conclusion drawn in the original GQRA and 2019 addendum remain valid.

### *Groundwater / Surface Water Contamination*

- 4.20 Water samples obtained from the site were originally analysed against:
- Atrisk' Water Screening Values (WSV);
  - Freshwater Environmental Quality Standards (EQS);
  - Drinking Water Standards (UK and World Health Organisation);
  - Private Water Supply Regulations (NI) 2009;
  - Freshwater Fisheries Directive (FFD) standards.
- 4.21 The 2019 addendum was updated to reflect changes in guideline values that have occurred since the initial screening process took place. Changes included updates to the Private Water Supply Regulations (2017) and updates to the EQS criteria.
- 4.22 Updated screening tables are located in Appendix 4.2 and include updates to the World Health Organisation Drinking Water Supply (DWS) values, UK DWS, Freshwater EQS (Annual Average) and Freshwater EQS (Maximum) . Laboratory results all remained below GAC for human health and controlled waters.

## **Conclusions**

- 4.23 As part of this re-assessment the CSM has been updated to account for additional land concerns. Additional risks have been classified as "Nil to Tolerable" in terms of fly tipping and materials contained within the derelict building.

4.24 Screening (generic assessment criteria) values for both the soil and water laboratory results have been reviewed and updated where applicable. All samples remain below relevant GAC protective of human health and controlled waters. The conclusions made in the original assessment and addendums remain valid ('Nil to Tolerable' risk).