

# ENVIRONMENTAL IMPACT ASSESSMENT REPORT

VOLUME 2: MAIN REPORT

For the proposed development at:

Powersknock,

Kilmeaden,

County Waterford.

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## 1.0 INTRODUCTION

TBEB Ltd., the applicant, propose to restore a small disused quarry of some 3.26ha, to agricultural lands at Powersknock, Kilmeaden, Co Waterford. The development will consist of the importation of some 270,000m<sup>3</sup> of Article 27 (as defined by European communities (Waste Directive) Regulations 2011) uncontaminated soil and stone as a non -waste by -product over a five-year period to restore the quarry to agricultural lands where:

- The further use of the soil and stone is certain and will be used to recontour the quarry and develop the agricultural lands;
- The soil and stone can be used directly without further processing
- The soil and stone will be an integral part of a production process i.e. soil will be excavated, moved to facilitate site development in accordance with Article 27 by a material producer or with the expressed written consent of a material producer and will be notifiable to the EPA as a by – product prior to its use on the lands.
- The proposed further use of the soil and stone fulfils all relevant product, environmental and health protection requirements for the specific use and will not lead to overall adverse environmental or human health impacts.

This chapter of the EIAR introduces the proposed development and describes the procedures involved in preparing the EIAR.



**Figure 1.1: Aerial view of the proposed development site showing area of quarry**

## 1.1 APPLICANT

The applicant is TBEB Ltd. a construction company specialising in the construction of roads and motorways, based in Cappawhite, County Tipperary. The company is the landowner of the disused quarry.

## 1.2 OUTLINE OF PROPOSED DEVELOPMENT

The proposed development relates to the restoration to agricultural use of a shallow disused quarry at the lands.

In accordance with developments in waste policy and the circular economy, TBEB Ltd. propose to use soil and stone which has been classified as a by-product in accordance with the requirements of Article 27 of the European Communities (Waste Directive) Regulations 2011, S.I. No. 126 of 2011. A series of protocols for the classification and registration of such materials will be developed as part of the development. The restoration will be undertaken on an ongoing, progressive basis. The only materials required to backfill and restore the former quarry are inert soil, stone and rock classified as Article 27 byproducts. It is considered that the principal sources of such material over the lifetime of the proposed development will be construction sites in county Waterford.

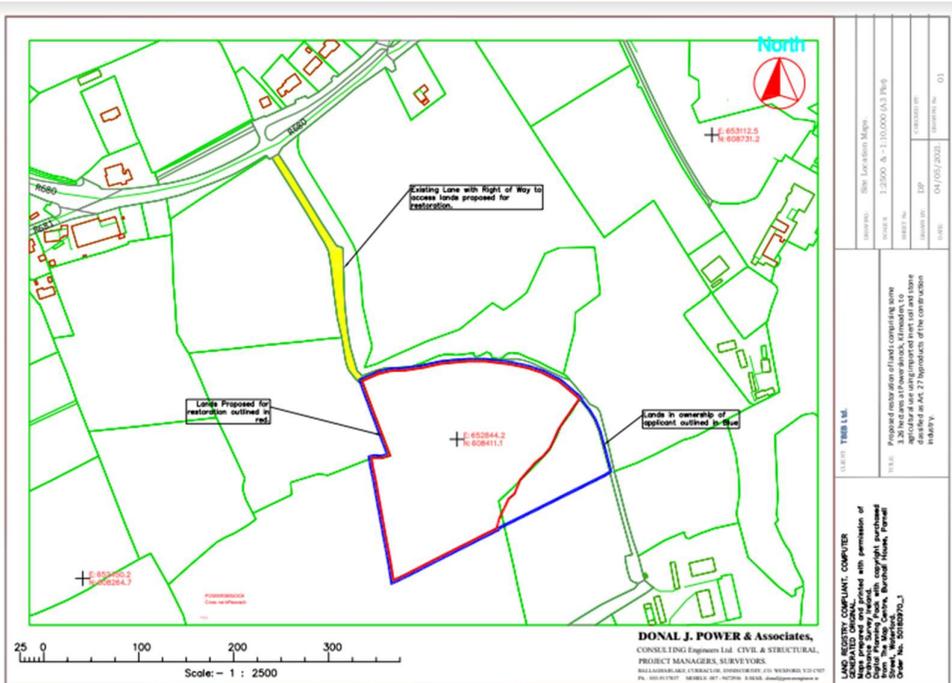
The proposed development provides for the importation of c. 270,000 m<sup>3</sup> of soil and stone by-product to recontour and improve the land over a five year period to restore the quarry and provide upper layers of subsoil and topsoil for land improvement purposes. An average density of 1.8 tonnes/m<sup>3</sup> assumed for tonnage assessment purposes, suggests an import requirement for approximately 486,000 tonnes of inert soil, rock and stones. The proposed end use is agricultural. Final formation levels on completion of the landfilling and restoration works vary on account of the sloped nature of the original, pre-quarrying landform and the surrounding land.

It is envisaged that the maximum annual intake of inert soil, rock and stone at the proposed development site will be of the order of 486,000 tonnes. This equates to an average annual intake of:

- 97,200 tonnes per annum,
- 1,944 tonnes per week (assuming 50 weeks in a working year),
- 354 tonnes per day (assuming 5.5 days in a working week), and
- 36 tonnes per hour (assuming 10 hours in a working day)

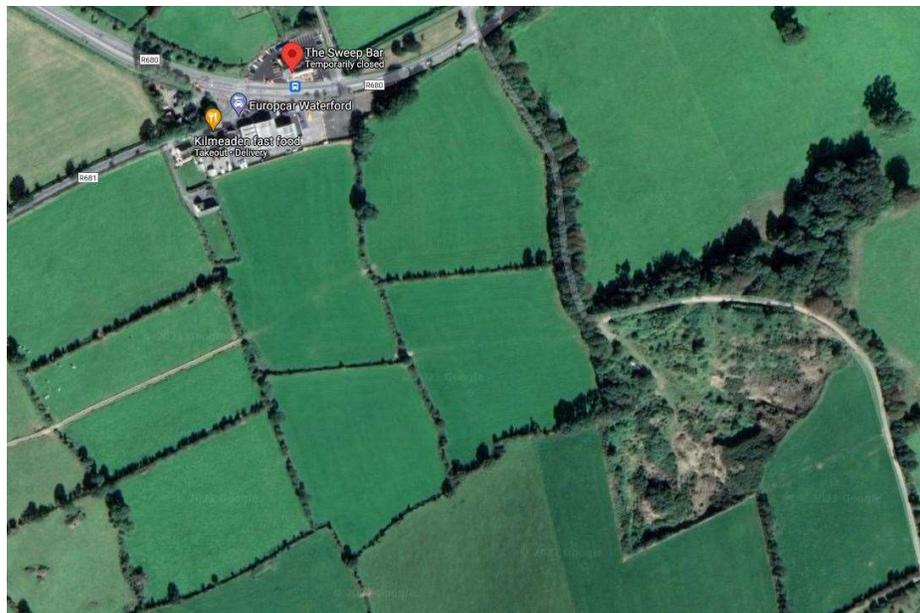
Assuming that each HGV / truck has a carrying capacity of 20 tonnes, this suggests that there will be less than 2 HGV / truck trips generated every hour by the proposed development works. This is equivalent to less than 4 individual HGV / truck movements in or out of the proposed development site every hour.

The proposed development includes a wheel cleaning facility at the entrance to the quarry to ensure that no soil, etc. is trafficked onto the road network. The final, restored landform at the quarry has been developed to produce a slightly domed landform and is shown in the restoration plan and the corresponding cross-sections.



**Figure 1.2 Proposed Development site including access road**

The disused quarry is located off the R680 just south of Kilmeaden village, see below.



**Figure 1.3 Site location (from Google maps).**



### 1.3 SITE HISTORY

The proposed development site was previously operated as a quarry and has been disused for a number of years.

### 1.4 APPLICATION AND THE EIAR PROCESS

Section 32 of the Planning and Development Act 2000 as amended requires that planning permission is required for any development of land, other than exempted development. Section 172 of the Act states that an application for a development which comes with the appropriate scope must be accompanied by an EIAR. Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment, had a transposition date of 16 May 2017 and is, therefore, the relevant legislation for this application. The Directive requires the developer to produce an Environmental Impact Assessment Report and for the relevant authority, or authorities, to carry out an assessment of the potential environmental impacts of the development. The proposed development at Kilmeaden is considered to fall within the scoping for an EIAR, due to the quantity of material proposed to be accepted.

In addition to the EIAR, and in compliance with the provisions of Article 6 of the Habitats Directive, Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, where a proposed plan or project, such as this proposed development, is likely to have a significant effect on a European (or Natura 2000) site, either individually or in combination with other plans or projects, an Appropriate Assessment (AA) must be undertaken by the competent authority. In this case, the competent authority is Waterford County Council. This involves an assessment of whether there is a possibility of the proposed plan or project having a significant effect on a European (or Natura 2000) site. Proposed plans or projects which have no likely appreciable effect on such a site are thereby screened out at this stage in the process. Where screening concludes that there exists potential for significant effects, then the Stage Two, Appropriate Assessment, is carried out and a Natura Impact Statement is produced and considered by the competent authority. Stage One Screening was carried out as part of the project and the Report is provided as part of the 'Biodiversity & Appropriate Assessment (screening)' chapter of the EIAR. The Stage One Screening concluded that there are no likely significant effects on any designated site.

### 1.5 EIAR METHODOLOGY AND STRUCTURE

The EIAR collects and presents relevant information so that the competent authority, or authorities, can complete an environmental impact assessment (EIA) of the likely impacts and effects of the proposed development. The principal objective of the EIA process is that likely and significant environmental effects can be identified and avoided where possible with the ultimate aim being the protection of human health and the environment. Each chapter deals with a specific environmental topic. These chapters describe the systemic analysis of the proposed development in respect to the different environmental topics, provide conclusions as to the likely environmental impacts and propose mitigation measures where appropriate and necessary. Expert guidance, such as documents produced by the Environmental Protection Agency have been incorporated in the production of the EIAR.

### 1.6 CUMULATIVE ASSESSMENT

The cumulative assessment considers the impact of the proposed development in conjunction with other existing or proposed development located nearby or in the vicinity, such that the potential combined environmental impacts can be accurately assessed in the event of the proposed

development proceeding. Cumulative impacts are defined by the EPA as “the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources.” The requirement for cumulative assessment is established in the Directive where Annex IV 5 (e) of 2014/52/EU requires that a description of the likely significant effects of the project be given, where the description “should cover the direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the project”. In the context of an EIAR, cumulative effects can relate to two different aspects of a development. Firstly, the various impacts of a particular project can interact in a manner which causes additional effects, which when taken together are greater than they appear when documented under separate topic headings. Secondly, a project may magnify impacts already associated with other built development. In this proposed development, the cumulative effects are considered in each chapter and examined in section 15.3.

### 1.7 CONTRIBUTORS TO THE EIAR

Nealon Environmental Services Limited have prepared this Environmental Impact Assessment Report, (EIAR), with specialist input from Roger Goodwillie & Associates relating to biodiversity and ecology. The drawings, traffic assessment and engineering input have been provided by Donal J. Power & Associates.

The consultants involved in the preparation of this EIAR are as follows:

Mr Roger Goodwillie, B.A., M.Sc., a full member of the Chartered Institute of Ecology and Environmental management and a practising ecologist for 40 years,

Dr Ted Nealon, B.Sc., M.Sc., Ph.D, environmental geologist with some thirty years experience in environmental management,

Mr Donal Power of Donal J. Power & Associates, an engineer with over fifteen years experience,

### 1.8 DIFFICULTIES ENCOUNTERED

There were no technical difficulties encountered during the preparation of this EIAR. The experience of the project team and the expert guidance documents and similar EIAR’s consulted provided considerable assistance in its production.

### 1.9 VIEWING AND PURCHASING OF THE EIAR

Copies of this EIAR including the Non-Technical Summary and Appendices may be inspected free of charge or purchased by any member of the public during normal office hours at the offices of Waterford County Council, Planning Department, 1st Floor, Menapia Building, The Mall, Waterford, X91 PK15. The EIAR is also available on the Council’s website.

## 2.0 DESCRIPTION OF THE PROPOSED DEVELOPMENT

### 2.1 INTRODUCTION

This chapter of the EIAR describes the principal elements of the proposed development which comprises the importation of some 270,000m<sup>3</sup> of soil and stone to the lands at Powersknock, Kilmeaden, Co. Waterford to restore a disused quarry to agricultural land. It includes a description of the site, the proposed development works and the nature and extent of associated proposed activities. Construction and operational management of the development are described, as are the soil and stone by-product material which will be accepted on the lands.

### 2.2 EXISTING DEVELOPMENT

The development site is a small, c. 3.26ha, disused quarry at Powersknock, Kilmeaden, some 300m south of the village and some 5.0 km west of Waterford City.

The quarry is described in Chapter 10, Biodiversity & Appropriate Assessment (screening), as a relatively shallow quarry excavated in slatey, volcanic rocks which create an acid soil when broken down. Mounds of overburden or other fill occur along the northern edge while excavation has generally been towards the southeast. The highest face is in the SE corner at 3-4m.

Access to the facility is obtained via the R680 road and an access lane to the south of Kilmeaden

### 2.3 PROPOSED DEVELOPMENT

The proposed development provides for the importation of soil and stone by-product to restore a disused quarry to agricultural lands. The proposed development also includes the installation of a vehicle wheel-cleaner and an access barrier at the entrance to the site. The proposed operational hours proposed are 08.00 to 18.00 Monday to Friday and 08.00 to 14.00 on Saturdays for the acceptance of soil and stone material. There will be no works on Sundays or Bank Holidays. It is proposed to import some 270,000m<sup>3</sup> of suitable soil and stone to complete the restoration works for agricultural purposes.

### 2.4 ENVIRONMENTAL CONTROLS

The proposed environmental controls include the installation of a wheel cleaner to ensure that mud and dust are not trafficked onto the public road. It is proposed to seed completed areas as quickly as possible to ensure any dust emissions in dry weather are minimised. Material acceptance and recording procedures will be developed by the applicant for the proper control and recording of all materials accepted at the development site.

### 2.5 CONSTRUCTION PHASE

The main elements of the proposed infrastructural development have been described above. It is estimated that the construction phase will take 4 weeks to complete. The following are the main elements of the construction phase of the proposed development:

- Any required improvements to the access lane,
- Installation of any required advance warning signs on the public road,
- Installation of the wheel-cleaner and access barrier.

### 2.6 ENVIRONMENTAL MONITORING

Environmental monitoring and reporting during both construction and operation phases will be undertaken in accordance with the planning permission granted.

## 2.7 DESCRIPTION OF NATURAL RESOURCES USED

Natural resources consumed during the construction phase will include:

- Diesel fuel for construction machinery,
- Steel for the access barrier and wheel cleaner,
- Concrete for the above.

Natural resources consumed during the operation phase will include:

- Diesel fuel for the on-site plant.

## 2.8 REGULATORY CONTROL

The works will be carried out in accordance with the conditions of the planning permission.

Additional controls relating to Fire and Health and Safety will also be implemented where necessary.

## 2.9 DECOMMISSIONING

It is anticipated that the development will be completed in five years. Decommissioning will include the following;

- Seeding with appropriate grass species,
- removal of any advance warning signs on the public road, and
- removal of the wheel-cleaning facility.

## 2.10 HEALTH AND SAFETY

The proposed development will be designed, constructed and operated in accordance with the requirements of the relevant Health & Safety legislation.

## 3.0 POLICY AND LEGISLATION

### 3.1 INTRODUCTION

This chapter describes the EU and Irish planning, environmental and waste management policies, legislation and plans which are relevant to the proposed development. The chapter also describes the likely contribution of the proposed development to the objectives and targets established by those policies, plans and by the legislation. Recent changes to the requirement of Environmental Impact Assessment Reports by directive 2014/52/EU have been addressed.

### 3.2 PLANNING POLICY AND PLANS

A new national development plan, 'National Development Plan 2018 – 2027', part of Project Ireland 2040, was adopted in 2018. It sets out the proposed national development during this time span.

The current Waterford County Development Plan 2011 - 2017 provided for the development of the County up until end 2017. On 1st June 2014, Waterford City & County Council was established following the amalgamation of Waterford City Council and Waterford County Council. The three existing development plans within the amalgamated Council area, Waterford City Development Plan 2013 – 2019, Waterford County Development Plan 2011 – 2017 and the Dungarvan Town Development Plan 2012 – 2018, had their lifetime extended, as per Section 11A of the Planning & Development Act 2000 (as amended) and remain in effect until the new Regional Spatial & Economic Strategy was adopted by the Southern Regional Assembly, after which a new City and County Development Plan will be prepared.

The Southern Regional Assembly has prepared a Regional Spatial & Economic Strategy (RSES) for the Southern Region which provides a long-term, strategic development framework for the future physical, economic and social development of the Southern Region and includes Metropolitan Area Strategic Plans (MASPs) to guide the future development of the Region's three main cities and metropolitan areas – Cork, Limerick-Shannon and Waterford. The RSES sets out a vision for the Southern Region to:

1. Nurture all our places to realise their full potential,
2. Protect, and enhance our environment,
3. Successfully combat climate change,
4. Achieve economic prosperity and improved quality of life for all our citizens,
5. Accommodate expanded growth and development in suitable locations, and
6. Make the Southern Region one of Europe's most creative, innovative, greenest and liveable regions.

The RSES for the Southern Region came into effect on 31st January 2020. The document states, *inter alia*, "The circular economy and waste minimisation is the focus of the Waste Management Strategy for The Southern Region, 2015 - 2021, which seeks to promote waste prevention and reduce dependency on landfill in line with EU and national policy. Decarbonising waste will also require a change in mind-set, including corporate social responsibility in the use of resources, design, and packaging", see page 135, encouraging the use of Art.27 materials.

The Council has commenced the process of reviewing the current Waterford City Development Plan 2013 – 2019, Waterford County Development Plan 2011 – 2017 and Dungarvan Town Development Plan 2012 – 2018, and preparing a new unitary City and County Development Plan that will shape the future growth of the City and County for the periods of 2022 – 2028.

Waste Action Plan for a Circular Economy, published by the Department of the Environment, Climate and Communications on 04 September 2020 and updated on 16 September 2021 seeks to reduce the environmental and health impacts of waste and improve resource efficiency. The fundamental goal is to achieve a circular economy that avoids unnecessary waste generation and allows for the use of materials as a resource, wherever possible. This in turn minimises the requirement for the extraction of additional natural resources. By-products can play a key role in achieving this

The classification of soil and stone as by-products from the construction and development industry is an essential aspect of the development of a circular economy and requires registration of that material with the Environmental Protection Agency in accordance with Article 27 of European Communities (Waste Directive) Regulations 2011, S.I. No. 126 of 2011.

Article 27 allows an “*economic operator*” to decide, under certain circumstances, that a material is a by-product and not a waste. Article 27 was introduced into Irish law to implement article 5 of the 2008 Waste Framework Directive (2008/98/EU). Economic operators, generally the developer in cases of soil and stone arising from construction, may decide, in accordance with the conditions of article 27, that the substance is a by-product. Decisions made by economic operators under Article 27 must be notified to the Environmental Protection Agency. The Agency is required to maintain a register of notified decisions. The classification of soil and stone from construction development sites, in accordance with the requirements of Art. 27 is an important component of national and EU policies to reduce the quantities waste produced by the construction industry while ensuring that the material is properly handled and utilized. The EPA has produced guidance for such classification. The most recent guidance was published in June 2019, ‘Guidance on Soil and Stone By-products in the context of article 27 of the European Communities (Waste Directive) Regulations 2011’. It is the applicant’s intention to develop procedures to ensure the proper classification, handling and transportation of Art. 27 material for use in the development.

### 3.3 WASTE POLICY AND LEGISLATION

EU and national Waste Policy is based in the requirements of the Waste Framework Directive, ‘DIRECTIVE 2008/98/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 19 November 2008 on waste and repealing certain Directives’, and has three main components in relation to waste management, which are in descending order of importance: -

- Prevent the occurrence of waste,
- Maximize the recycling and recovery of waste,
- Ensure the safe disposal of all residual waste.

The most recent waste management policy document produced in Ireland is ‘A Waste Action Plan for a Circular Economy Ireland’s National Waste Policy 2020-2025. It notes that of the c. 6 million tonnes of Construction and Demolition waste generated annually in Ireland, some 5 million tonnes are soil and stone and refers to the production by the EPA of guidance on soil and stone as a by-product in order to minimise the production of waste. The Plan undertakes to further develop and implement Article 27 classification of suitable materials. This proposed development is in accordance with these stated intentions to encourage the use of Article 27 materials.

### 3.4 RELEVANCE OF THE PROPOSED DEVELOPMENT TO THE ABOVE POLICIES AND PLANS

The various environmental, waste management and planning policies and plans at EU and national level are focused firstly on the prevention of waste and secondly on the reduction of the

environmental impacts of waste generation. All the objectives and targets of the various policies and plans discussed above express and encourage those intentions. Planning, environmental and waste management legislation provide further emphasis by establishing legally binding targets and standards.

The proposed development supports these objectives and intentions by providing a suitable and appropriately authorised development for the use of soil and stone which has been classified as a by-product under Art. 27 and, therefore, contributes to the fundamental objectives of the reduction in quantities of waste being produced and the appropriate handling and use of all materials to ensure environmental protection.

### 3.5 CONSIDERATIONS OF OTHER ASSESSMENTS IN THIS EIAR

As required by EIA Directive 2014/52/EU, this EIAR takes account of results, where available from other assessments required under EU directives to avoid duplication.

#### 3.5.1 THE HABITATS AND BIRDS DIRECTIVE

The Habitats and Birds Directive (92/43/EEC and 79/409/EEC) introduced the requirement for certain plans and project to be subject to an Appropriate Assessment (AA) in order to protect the integrity of the sites within the Natura 2000 network. The proposed project has been subject to an AA Screening, which is the first step in the AA process. The screening statement of the report concluded that the proposed development would not lead to any *“significant adverse effects arising from the proposed development to any European site, whether direct, indirect, or in-combination, to the conservation objectives of the habitats or species for which it was designated. The proposed development does not need to advance in the Appropriate Assessment process.”* The screening statement is included in Chapter 10 – Biodiversity & Appropriate Assessment (screening). Some information on designated sites is included in the Biodiversity section of this EIAR to establish whether population of important species of birds and aquatic organisms were likely to be near the proposed development.

## 4.0 ALTERNATIVES AND NEED FOR THE PROPOSED DEVELOPMENT

### 4.1 INTRODUCTION

This chapter provides a description of the reasonable alternatives that have been examined by the developer. It includes “a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment”, as required by the directive. The Environmental Protection Agency’s (EPA) draft guidelines on Information to be Contained in Environmental Impact Assessment Reports provides considerable guidance on how to study and provide information on the reasonable alternatives to the proposed development. The consideration of alternatives is regarded in the guidelines as the single most effective method of avoiding environmental impacts.

### 4.2 ALTERNATIVES

#### 4.2.1 ALTERNATIVE LOCATIONS

The proposed development site is a disused quarry. The intention of the proposed development is to restore the quarry and improve the lands and, therefore, it is not possible to consider alternative locations.

#### 4.2.2 THE DO NOTHING ALTERNATIVE

If the proposed development does not go ahead the lands will remain in an unrestored state and the necessary improvements for agricultural use will not occur.

#### 4.2.3 USE OF ALTERNATIVE MATERIALS

Three types of materials have been identified which are suitable for the proposed development and the restoration of the quarry to agricultural use. These are: waste materials, i.e., inert soil and stone, Article 27 byproducts comprising soil and stone, and virgin material excavated from other lands specifically to restore the quarry. The third option would result in the development of another quarry or quarries and has therefore been rejected. EU and national waste policies, circular economy developments and climate action proposals all support the use of Art. 27 byproducts over the use of waste and, hence, this option is considered preferable.

#### 4.2.4 CHOSEN OPTION

Having examined the potential alternatives, the developer concluded that the most viable option with the least likely environmental effects and most benefit was to restore the quarry and improve the lands using uncontaminated soil and stone from excavation works ( the primary aim of which is not the production of soil and stone) but is a production residue in accordance with the Guidance on Soil and Stone By – Products in the context of Article 27 of the European Communities 9 Waste Directive) Regulation 2011.

### 4.3 NEED FOR THE PROPOSED DEVELOPMENT

The existing quarry is described in Chapter 10 – Biodiversity & Appropriate Assessment (screening). and, as it exists, with exposures of rock and stockpiles of previously excavated material, is unsuitable for agricultural use and requires restoration.

## 5.0 POPULATION AND HUMAN HEALTH

### 5.1 INTRODUCTION

This chapter presents the identification of potential impacts of the proposed development in the context of population, human health, settlements, land use, employment and other impacts of an economic and social nature. While some discussion may be made on topics such as traffic, noise and dust and their interaction with humans, these topics have been explored in greater detail in other chapters of this EIAR, the detail of which has not been repeated in this chapter.

This chapter relies on data from the following sources:

- site visit information,
- discussions with the landowner, and
- public data from state agencies.

The information gathered describes the environmental 'baseline scenario' and was used to determine the condition, sensitivity and significance of the area in which the proposed development is sited in the context of population and human health, and to determine the likely future receiving environment if the proposed development were not to proceed. The accurate description of the baseline scenario is vital as it is against it that impacts of the proposed development will be considered. The consideration of the proposed development in this chapter allows for a thorough understanding of the project. The establishment of the baseline scenario and the proposed development description forms the two factual foundations of this consideration; the analysis of which results in the identification of the impacts on the environment. The assessment of the impacts posed by the proposed development is the primary function of the environmental impact assessment process. By identifying impacts, the design of the proposed development can be adjusted to eliminate the impacts. Alternatively, the impacts can be avoided, reduced or remedied by way of mitigation.

### 5.2 METHODOLOGY

#### 5.2.1 LEGISLATION AND GUIDANCE

The identification of the potential impacts of the proposed development was carried out according to the methodology specified in the following guidance documents:

- Environmental Protection Agency (EPA) Draft Guidelines on the information to be contained in Environmental Impact Assessment Reports (EIAR), (2017).

#### 5.2.2 CONSULTATION

A pre-application form was submitted to Waterford County Council and a response issued on 03 September 2021, reference, Ref. No. 2021/206.

#### 5.2.3 DESK-BASED STUDY

Information used for baseline environmental data was mostly sourced from internet/public databases and documents making it easier for the information to be reviewed and verified. Sources used in this chapter include:

- The Waterford County Council Development Plan and associated documents,
- CSO – Census Data,
- Aerial/ Satellite imagery.

#### 5.2.4 PROPOSED DEVELOPMENT ANALYSIS

A thorough description of the proposed development is available in Chapter Three.

#### 5.2.5 RECEIVING ENVIRONMENT ANALYSIS

To accurately describe the receiving environment the information used must be sufficient in both quality and quantity; this has been informed by the scoping process. The data has been sourced from published sources and appropriate methods used in its collection. Much of the data has been sourced from state agencies and other bodies and is available through the internet; this has contributed towards the transparency of the assessment. The information used has been analysed to ensure it can be used to accurately provide the description of the baseline scenario. The receiving environment is described in terms of:

- context (e.g.: location),
- character (e.g.: land use, infrastructure),
- significance (e.g.: proximity to sensitive receptors); and
- sensitivity (e.g.: Receptor type – residential, commercial, heavy industry).

Information from the studies carried out in the production of this EIAR has also been relied upon. The surrounding land use in the area was surveyed by accessing aerial imagery from the Ordnance Survey of Ireland (OSI). The transport impacts of the proposed development have been assessed in greater detail in Chapter 8 of this EIAR.

#### 5.2.6 IDENTIFICATION OF POTENTIAL IMPACTS

The identification of impacts is based on the study of the two foundational factors namely the baseline scenario and the proposed development. This EIAR has focused on the identification of likely and significant effects of the proposed development. To ensure that the process is consistent, the impacts identified have been described using the descriptive terminology provided in the EPA Draft Guidelines. The significance of impacts has been gauged by assessing the sensitivity and significance of the existing environment and the description of the impact. In terms of land use, the potential impacts of the proposed development were identified by examining the receiving environment and the characteristics of the proposed development. Specifically, the assessment focused on the potential for the proposed development to stimulate or inhibit the potential for development on surrounding lands and therefore encourage or prevent social or economic development.

### 5.3 RECEIVING ENVIRONMENT

#### 5.3.1 LAND USE

The surrounding areas are characterised by farmland with some residential properties.

#### 5.3.2 POPULATION AND EMPLOYMENT

The surrounding area has a relatively low population density with the exception of the village of Kilmeaden which is located some 0.75km to the northwest of the proposed development.

#### 5.3.3 AMENITY AND TOURISM

There are no recreational lands or lands of high amenity adjacent to the proposed development. The lands to the immediate east of the proposed development site are zoned Tourism. However, the proposed development site is bounded by trees which will ensure that the proposed development does not impact on the adjoining lands.

#### 5.3.4 HEALTH AND SAFETY

The facility does not pose any health and safety risk to the general public as members of the public are not permitted access to these agricultural lands.

#### 5.3.5 TRANSPORT INFRASTRUCTURE

Road access is considered adequate and suitable for the purposes of the proposed development, see Chapter 8 and the report on traffic and transportation.

#### 5.3.6 DO NOTHING SCENARIO

Should the development not be carried out, there will be no direct or indirect impacts on the population, settlements, land use, employment, economic activity or amenities of the local area. However, the agricultural and economic benefits associated with the proposed development will not be realised.

### 5.4 PROPOSED DEVELOPMENT

The proposed development will consist of the importation of soil and stone by-product to restore the quarry and improve the lands for agricultural purposes. A more detailed description of the proposed development is outlined in Chapter 3 of this EIAR.

### 5.5 POTENTIAL IMPACTS

#### 5.5.1 LAND USE

The proposed development will improve the land for agricultural purposes. It will not have a significant adverse impact on surrounding residential, agricultural or commercial land uses. The activity will not adversely influence existing economic activities in the region or the potential for the creation of commercial development on surrounding lands. The proposed development will have a positive impact in improving the usability of the land.

#### 5.5.2 EMPLOYMENT AND POPULATION

The proposed development will have little or no impact on employment and population in the area.

#### 5.5.3 AMENITY AND TOURISM

No designated recreational areas or tourist attractions are located in the proposed development site and, therefore, it will have no significant impacts on amenity or tourism potential. The lands to the east of the proposed development site are zoned Tourism but the proposed development site is screened from those lands by trees which are protected and therefore the proposed development will have no significant impacts on amenity or tourism potential of the surrounding areas.

#### 5.5.4 HEALTH AND SAFETY

The proposed development poses no health and safety risk to the general public as public access to the lands is prevented. All work taking place during the construction and operational phases of the proposed development will take place in accordance with the Safety, Health and Welfare Act 2005 (No. 10 of 2005) and all relevant statutory instruments made under the act. Health and Safety impacts will be neutral.

#### 5.5.5 TRANSPORT INFRASTRUCTURE

The proposed development will result in an increase in traffic movements of HGV's to and from the facility. The traffic impacts and mitigation measures are assessed in greater Chapter 8 and the stand-alone report of this EIAR.

#### 5.5.6 EMISSIONS

There is a potential that the proposed development may create additional dust emissions in the event of extended dry periods of weather. In such cases, dust minimisation methods, such as the use of a bowser and sprinkling system will be employed to ensure that environmental nuisance is avoided.

#### 5.6 MITIGATION MEASURE

In addition to the use of dust suppression methods, the proposal also includes the use of a wheel-cleaner on the site to ensure that mud is not trafficked onto the public road. These mitigation measures will adequately prevent and minimise impacts. It is deemed that no further mitigation measures are required.

#### 5.7 CONCLUSION

The proposed development will have no significant adverse impacts on population or human health, owing to the nature of the proposed development design, the location of the lands and the mitigation measures outlined. The proposed development will have a permanent positive impact of creating additional improved agricultural land in this rural area.

## 6.0 AIR QUALITY AND CLIMATE

### 6.1 INTRODUCTION

This chapter presents the consideration of the proposed development in terms of air quality and climate. In the area of air quality, the factors to be examined are:

- Dust, and
- Vehicle emissions.

The issue of vehicle emissions is also associated the effects such emissions can contribute towards in relation to climate change. The information gathered to determine the environmental ‘baseline scenario’ was used to gauge the condition, sensitivity and sign of the environmental features pertinent to the topic of air quality and climate and to determine the likely future receiving environment in the absence of the proposed development. The consideration of the proposed development in the context of air quality and climate and a review of the overall proposed development has allowed for a thorough understanding of the project. The establishment of the baseline scenario and the proposed development description form the two factual foundations of this EIA; the analysis of which results in the identification of the likely impacts. By identifying impacts the design of the proposed development can be adjusted to eliminate the impacts. Alternatively, the impacts can be avoided, reduced or remedied by mitigation. The process has been advised by the scoping process to ensure impacts which are both likely and significant are identified. The information is displayed in as concise a way as possible to ensure that this chapter of the EIAR is only as detailed as is required.

### 6.2 METHODOLOGY

#### 6.2.1 LEGISLATION AND GUIDANCE

The following guidance documents have been used in the preparation of this chapter:

- Environmental Protection Agency (EPA) Revised Guidelines on the Information to be Contained in Environmental Impact Statements (2017), and
- Quarries and Ancillary Activities Guidelines for Planning Authorities (2004) Department of the Environment, Heritage and Local Government.

#### 6.2.2 PROPOSED DEVELOPMENT ANALYSIS

A full description of the proposed development is available in Chapter Three. As part of this consideration it was necessary to examine the proposed development in terms of air quality and climate. This involved:

- an assessment of the proposed development lands and surrounding areas, and
- a review of the proposed development land use/ activity;

#### 6.2.3 RECEIVING ENVIRONMENT ANALYSIS

To accurately describe the receiving environment the information used must be sufficient in both quality and quantity; this has been informed by the scoping process. Where possible, the data has been sourced from published sources and appropriate methods used in its collection. Much of the data has been sourced from state agencies and other bodies that make data available through the internet; this has contributed to the transparency of the process. The sufficiency of the information used has been analysed to ensure it can be used to accurately provide a full comprehension of the baseline scenario.

#### 6.2.4 DESK-BASED STUDY

The determination of the baseline conditions was carried by desk-top research and relied on the following sources of information;

- Met Eireann data,
- Ordnance Survey Ireland – Contour Data, and,
- EPA air monitoring data.

The Met Eireann information was used in conjunction with OSI contour maps to determine the micro-climate at the proposed development site, in particular the interaction between the site and wind.

#### 6.2.5 ASSESSMENT OF IMPACTS

The assessment of impacts is based on the study of the baseline scenario and the proposed development. To provide context for the likely significant effects, a likely worst-case scenario has also been identified. To ensure that the process is consistent, the effects identified have been described using the descriptive terminology provided in the EPA Draft Guidelines. The significance of impacts has been gauged by determining the sensitivity and significance of the existing environment and the description of the impact.

The potential impact of dust from the proposed development was assessed. The impact of vehicular emissions on the existing environment was determined by considering the traffic and transportation report and its assessment of the likely impacts of the increased traffic.

### 6.3 EXISTING ENVIRONMENT

#### 6.3.1 CLIMATE

##### 6.3.1.1 CLIMATE OF IRELAND

Ireland's climate is defined as a temperate oceanic climate. The main factors of Ireland's climate are an abundance of rainfall, mild winters and warm summers with temperature extremes limited or rare. Ireland is subject to maritime air associated with the Gulf Stream and its extension the North Atlantic Drift; a warm, fast flowing ocean current which flows from the Gulf of Mexico and Southern Florida across the Atlantic to Europe. The prevailing winds blow from the southwest owing to the influence of the gulf stream. Rainfall is more predominant on the south west and western coasts. However, the entire island has an abundance of rainfall. January and February are the coldest months with temperatures being generally slow to rise through spring. On clear days with low wind speeds in March it is not uncommon for afternoon temperature to reach 18 degrees Celsius, however such events are short lived with night-time temperatures being low. Frost is common inland. In late June high air pressure over the North Atlantic and low pressure over continental Europe leads to westerly air flow and a corresponding rise in humidity and precipitation. Thunderstorms are not uncommon during these months. By late August/Early September cold air from the North moves over the Atlantic. Humid air is exposed to periods of cooling which leads to Fog in low lying areas. Warm afternoons are common in September-Early October. In October/November westerly winds from the Atlantic Ocean pass over moderately warm seas on the South/West frontier resulting in the formation of rain which can be heavy. Late Summer through autumn is generally the period of the year when former tropical depressions mix with North Atlantic depressions to produce storms which can be quite severe, ranging from 10-year to 100-year storm events. These events are rare; however, they are likely to increase in occurrence and severity, according to climate change research. December is characterised by low temperatures and an abundance of rainfall. Large snow events are rare and can be missing from weather patterns for

several years at a time for the majority of the island, with the exception of mountainous areas. Snow, sleet and hail generally occur between late December and late February.

#### 6.3.1.2 MICRO-CLIMATE

The micro-climate is the climate in the immediate local area of the proposed development. It can differ from the climate of the region/county owing to local factors such as topography, large water bodies, abundance/lack of manmade surfaces, vegetation cover and soil type. The extent of a microclimate can range from a couple of meters (caves, pools, shaded areas...) to several square kilometres (towns, valleys hill sides etc).

#### 6.3.2 VEHICULAR EMISSIONS

Ireland is divided into 4 air quality monitoring zones as follows:

- Zone A – Dublin,
- Zone B – Cork City,
- Zone C – Large Towns e.g. Celbridge, Letterkenny, Galway,
- Zone D – Rest of Ireland (rural/small towns).

The proposed development is located within Zone D where the air quality is generally defined as 'Good'.

#### 6.3.3 DUST

Dust is a natural element of all environments on land. Dust is to be found regardless of human activities. However, human activities, especially those involving machines or hard surfaces, generally lead to an increase in dust deposition levels. The deposition of soil and stone can lead to increased quantities of dust in the event of a prolonged dry period of weather.

#### 6.3.4 CLIMATE CHANGE RISKS

Climate change has the ability to impact on the weather systems experienced in Ireland. An increase in the occurrence and severity of ex-tropical storms will lead to heavy downpours of rain and high wind speeds. Climate change will likely lead to more frequent periods of drought, resulting in an increase in air-borne dust.

### 6.4 POSSIBLE IMPACTS

#### 6.4.1 DUST

The proposed development may lead to an increase in dust present within the environs of the lands.

#### 6.4.2 VEHICULAR EMISSIONS ON AIR QUALITY

The effects arising from the increase in traffic volumes at the proposed development are not considered to be significant.

#### 6.4.3 CLIMATE CHANGE RISKS

The likely impact of extreme weather conditions caused by Climate Change may increase the periods of dry weather in which dust will be generated from the proposed development.

### 6.5 MITIGATION MEASURES

#### 6.5.1 CLIMATE

All vehicles will be serviced and maintained in accordance with the manufacturer's guidance to prevent unnecessary exhaust emissions.

### 6.5.2 DUST

During the operational phase dust suppression equipment, i.e. a mobile douser, will be available on the site and will be used in the event that excessive dry weather periods result in the generation of significant quantities of dust.

## 6.6 RESIDUAL IMPACTS

### 6.6.1 CLIMATE AND AMBIENT AIR

The increased vehicle movements will lead to an increase in exhaust emissions in the area. However, given the scale of the proposed development and the nature of the receiving environment, any impact on climate and ambient air quality resulting from the proposed development will be imperceptible.

## 6.7 CONCLUSION

Due to the design of the proposed development, there will be no significant adverse impacts on air quality and proposed mitigation measures adequately address the potential impacts from the proposed development. It has been deemed that the proposed development will have no likely significant adverse effects on air quality and climate.

## 7.0 TRAFFIC AND TRANSPORT

### 7.1 INTRODUCTION

This Transportation Assessment (TA) addresses the Traffic/ Transportation issues arising from the proposed application to import materials, over a 5 year period, to allow the restoration of an existing disused quarry and its improvement to agricultural land.

In describing the Receiving Environment and the Proposed Future Environment, this report addresses the following aspects of the proposed development:

- The Relative Small Scale of the development and very low traffic volumes generated in the context of the quiet rural road network,
- Location of the development on a lightly trafficked rural road,
- Traffic & Transportation impact,
- Capacity of the proposed vehicular access arrangement to accommodate the worst-case development traffic flows,
- The availability of DMRB Compliant site access sight lines commensurate with the measured speeds,
- Capacity of the Existing Road Network,
- Adequacy and safety of the existing roads and junctions locally, within the area of influence,
- Impact upon the adjacent roads.

### 7.2 EXISTING CONDITIONS & DEVELOPMENT PROPOSALS

The site is bound to the north, south, east and west by grassed farmlands. The lands are accessed by way of a long established wide laneway leading from the local road classified as the R680. The R680 is a significant Regional road and comprises a single carriageway road, generally approximately 5.5m to 6m in width with grass verges, and is abounded by hedgerows. The R680 is generally in good conditions.

The majority of material for use in the restoration of the quarry is expected to arise in the area of Waterford City to the east of the proposed development site and the N25 and R680 are expected to be the principal routes used to access the site.

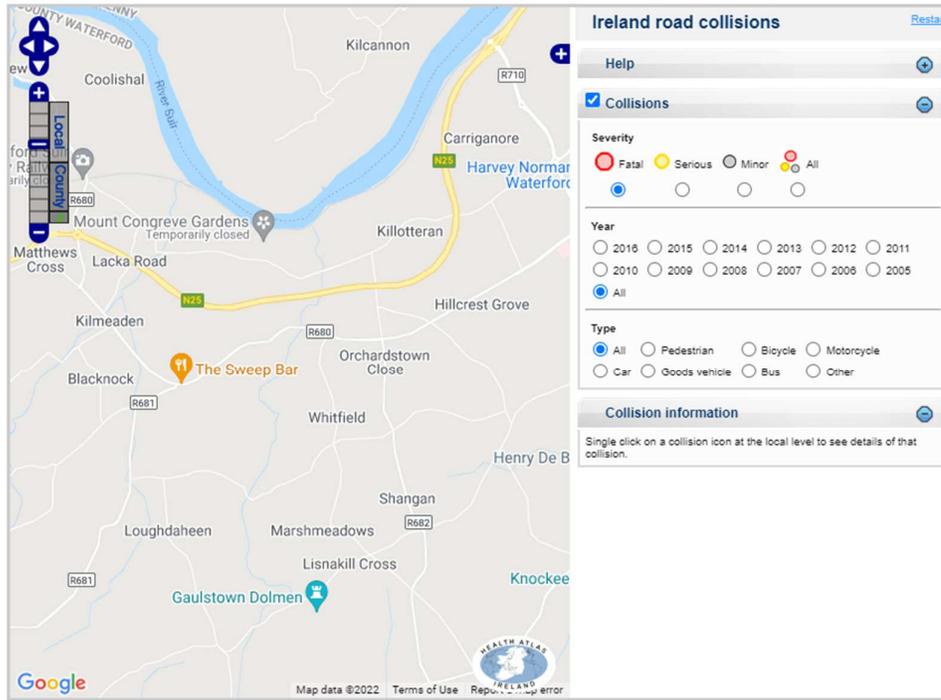
A review of the Road Safety Authority (RSA) online collision database indicates that there are no significant accidents on the stretch of road network at the site between 2005 and 2016. An extract from the RSA on-line collisions record is included below as Figure 7.1.

# Map of collisions

## A map of road collisions in Ireland.

The map below illustrates the location of fatal and injury road collisions in recent years at a national and local level.

Collisions can be categorised according to severity, year, and type.



**Figure 7.1** Extract from RSA Map of Collisions

The access lane lies within the 50km speed zone for Kilmeaden village and has sufficient existing sightlines, see Figure 7.2 below.



**Figure 7.2** – Existing access lane entrance and sightlines

### 7.3 TRIP GENERATION, ASSIGNMENT & DISTRIBUTION

The Trip Rate Information Computer System (TRICS) database is ordinarily used to ascertain vehicular trip generation associated with the use of any particular site. This generally represents industry standard practice for Transportation Assessments in Ireland in the case of other more traditional forms of commercial development where clear traffic generation characteristics are not either readily available or easy to calculate.

In this case however, the traffic generated through the planned importation of fill over the proposed 5 year lifespan of the facility is readily and accurately calculated. The proposed development provides for the importation of c. 270,000 m<sup>3</sup> of soil and stone by – product to recontour and improve the land over a five year period to restore the quarry and provide upper layers of of subsoil and topsoil for land improvement purposes. An average density of 1.8 tonnes/m<sup>3</sup> assumed for tonnage assessment purposes, suggests an import requirement for approximately 486,000 tonnes of inert soil, rock and stones.

It is envisaged that the maximum annual intake of inert soil, rock and stone at the proposed development site will be of the order of 486,000 tonnes. This equates to an average annual intake of:

- 97,200 tonnes per annum,
- 1,944 tonnes per week (assuming 50 weeks in a working year),
- 354 tonnes per day (assuming 5.5 days in a working week), and
- 36 tonnes per hour (assuming 10 hours in a working day)

Assuming that each HGV / truck has a carrying capacity of 20 tonnes, this suggests that there will be less than 2 HGV / truck trips generated every hour by the proposed development works. The Equivalent Worse Case Truck Movements is 4 individual HGV / truck movements in or out of the proposed development site per hour.

It is clear from this assessment that the proposed development generates very low volumes of traffic, 2 trucks per hour one-way, being equivalent to 5 Car-Equivalents per hour (one car equivalent arriving every 10 minutes) and that the levels of traffic generated by the fill operations that the introduction of the proposed development will have an absolutely negligible and unnoticeable impact upon traffic conditions locally with 5 car equivalents (or 2 truck movements per hour being unnoticeable)..

### 7.4 CONCLUSIONS

This Transportation Assessment Report assesses the traffic and transportation impact of the proposal to import materials, over a 5 year period, to allow the restoration of the disused quarry at Powerknock, Kilmeaden.

This report demonstrates that the proposed development will have a negligible impact upon the established local traffic conditions and can easily be accommodated on the road network without any significant improvements.

We conclude that there are no significant Operational Traffic Safety or Road Capacity issues that prevent a positive determination of the application by Waterford County Council.

No difficulties were encountered compiling this report.

## 8.0 NOISE AND VIBRATION

### 8.1 INTRODUCTION

An assessment of the potential noise and vibrational impacts of the proposed development is based on the following:

- The existing environment; rural working farmlands with an operational quarry located to the north-east, and
- The proposed development which consists of the importation of soil and stone over a period of five years to restore the quarry and improve the agricultural quality of the land.

### 8.2 STUDY METHODOLOGY

The general assessment methodology of the potential noise and vibrational impacts that the proposed development will have on the receiving environment has been prepared in accordance with the relevant guidelines:

#### 8.2.1 NOISE ASSESSMENT METHODOLOGY

The baseline noise environment in the vicinity of the proposed development site comprises of ongoing noise from farmland machinery.

### 8.3 EXISTING ENVIRONMENT

The subject site is existing farmland as described in Chapter 2.

### 8.4 POTENTIAL IMPACTS OF THE PROPOSED DEVELOPMENT

The proposed development will result in noise from vehicles delivering soil and stone to the development lands and the placement of those materials on the land using mechanical equipment. However, the noise will be similar to existing noise from ongoing farm operations and, as such, is considered to be unlikely to impact the local receiving noise environment or on local residential properties or on human health.

### 8.5 CUMULATIVE NOISE IMPACTS

In accordance with Schedule 6, Part 2(c) of the Planning and Development Regulations 2001-2018, this section has considered the cumulative impact of the proposed development in conjunction with existing adjacent development and future development in the vicinity of the subject site. This section relates to the cumulative impact on the subject site itself and on surrounding sites. The European Commission's report of May 1999 'Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions' defines cumulative impact as follows: "Impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project". The potential and predicted impacts of the operational phases of the proposed development have been individually assessed. It is considered that there will be short term minor negative cumulative impacts associated with the development when considered with existing farm noise impacts and impacts from the adjacent quarry.

### 8.6 DO NOTHING IMPACT

If the existing lands remains as they are, there shall be no impact on the receiving noise environment.

## 8.7 REMEDIAL AND MITIGATION MEASURES

### 8.7.1 GENERAL NOISE MITIGATION MEASURE

The following noise management measures shall be implemented at the site from the outset of site activities to control and manage noise levels during the construction phase of the proposed development:

- Adherence to operational hours, and
- Ban on idling of vehicle engines,
- No breaking of stone or other material.

## 8.8 MONITORING

Noise monitoring shall be implemented if required by the planning permission.

## 8.9 DIFFICULTIES ENCOUNTERED IN COMPILING THE REPORT

There were no difficulties encountered in compiling this section of the EIAR.

## 9.0 BIODIVERSITY & APPROPRIATE ASSESSMENT

### 9.1 INTRODUCTION

This chapter of the EIAR has been prepared by Mr Roger Goodwillie B.A., M.Sc. who has worked for over 40 years as an ecologist. Under Article 6(3) of the Habitats Directive a screening for ‘appropriate assessment’ of projects must be carried out to determine if significant effects are likely to arise to Natura 2000 sites. This assessment is carried out by the competent authority, in this case Waterford County Council. The AA Screening report is presented xxx

The purpose of this report is twofold: to describe the disused quarry as it now is and evaluate its ecological interest and also to examine the proposed development for possible ecological impacts on the integrity of the Natura 2000 network, in particular on the nearby SAC – the Lower River Suir (Site Code 2137).

It was visited in October 2021 by Roger Goodwillie B.A., M.Sc., a full member of the Chartered Institute of Ecology and Environmental management and a practising ecologist for 40 years. As well as recording the flora, signs of animals, birds and insects were looked for at all times.

### 9.2. DESCRIPTION OF AREA

The quarry is a relatively shallow one, set in slaty, volcanic rocks which create an acid soil when broken down. Mounds of overburden or other fill occur along the northern edge while excavation has generally been towards the southeast. Today the highest face is in the SE corner at 3-4m. In other directions excavation has extended more gradually or been subsequently obscured so that the NE and SW sides slope evenly to the top surface of the surrounding fields or, along the northern edge, a peripheral roadway.



**Figure 9.1 Aerial photo of site showing gorse patches (yellow green)**

### 9.3 HABITATS & VEGETATION

All the habitats consist of exposed rock and disturbed ground and are colonised to a varying extent by vegetation. They would be classified as exposed siliceous rock (ER1 in Fossitt 2000), spoil and bare ground (ED2) and recolonising bare ground (ED3). Although some areas have been stable for several years there is little soil development and the substrate dries out regularly during the summer. The plant species are therefore subject to change.

#### 9.3.1 STABLE AREAS

The most stable areas occur along the southern margin and on an isolated part of the eastern end (see photo on previous page). Here gorse *Ulex europaeus* and young trees of eared willow *Salix aurita*, downy birch *Betula pubescens*, Contorta pine *Pinus contorta* and Sitka spruce *Picea sitchensis* are establishing themselves on formerly (1995) open ground. Spaces between the trees carry a skin of lichens, especially *Cladonia pyxidata*, or mosses *Pogonatum aloides*, *Polytrichum juniperinum* with a scatter of higher plants such as

Wood sage	<i>Teucrium scorodonia</i>
Foxglove	<i>Digitalis purpurea</i>
Catsear	<i>Hypochaeris radicata</i>
Slender St John's wort	<i>Hypericum pulchrum</i>
Sweet vernal grass	<i>Anthoxanthum odoratum</i>
Shield fern	<i>Polystichum setiferum</i>
Birdsfoot trefoil	<i>Lotus corniculatus</i>
Creeping cinquefoil	<i>Potentilla reptans</i>



Figure 9.2 Common vegetation in the quarry

### Colonisation by woody plants in SW corner

Locally there are patches of wall pennywort *Umbilicus rupestris*, sheep's sorrel *Rumex acetosella* or heath groundsel *Senecio sylvaticus*. Single bushes of Irish whitebeam *Sorbus hibernica* and the small-leaved *Cotoneaster integrifolius* also occur.

In its lower sections this community changes with an increase in the sand fraction of the soil. It then appears as a grassy stand of sweet vernal grass *Anthoxanthum odoratum*, common bent *Agrostis capillaris* and crested dogstail *Cynosurus cristatus* with some glaucous sedge *Carex flacca*, compact rush *Juncus conglomeratus*, centaury *Centaureum erythraea* and red clover *Trifolium pratense*.

### 9.3.2 REST OF QUARRY

The more disturbed areas have a weedy community benefitting from soil disturbance and topsoil addition. The most extreme case occurs on the western side where newly deposited soil is covered by

Broad-leaved dock	<i>Rumex obtusifolius</i>
Spear thistle	<i>Cirsium vulgare</i>
Prickly sow-thistle	<i>Sonchus asper</i>
Orache	<i>Atriplex patula</i>
Wild turnip	<i>Brassica rapa</i>
Charlock	<i>Sinapis arvensis</i>
Redshank	<i>Persicaria maculosa</i>
Dyer's rocket	<i>Reseda luteola</i>
Marsh woundwort	<i>Stachys palustris</i>
Fool's parsley	<i>Aethusa cynapium</i>



Figure 9.3 Growth of tall herbs on topsoil, looking NE

Elsewhere there is a mix of some of these species with others requiring a lower nutrient level. Prickly ox-tongue *Helminthotheca echoides* and yellow wort *Blackstonia perfoliata* are a feature of more open places while a single plant of the newly introduced narrow-leaved groundsel *Senecio inaequidens* was also seen. Scarlet pimpernel *Anagallis arvensis*, knotgrass *Polygonum aviculare* and scutch *Elytrigia repens* are abundant everywhere, as are

Ribwort plantain	<i>Plantago lanceolata</i>
Creeping bent	<i>Agrostis stolonifera</i>
Corn poppy	<i>Papaver rhoeas</i>
Scentless mayweed	<i>Tripleurospermum inodorum</i>
Coltsfoot	<i>Tussilago farfara</i>
Nipplewort	<i>Lapsana communis</i>
Early vetch	<i>Vicia sativa</i>
Black medick	<i>Medicago lupulina</i>

Bushes of butterfly bush *Buddleja davidii* and grey willow *Salix cinerea* are distributed through most of the site while rose-bay *Chamerion angustifolium* is spreading at the eastern end. There is also an extensive colony of large bindweed *Calystegia silvatica* covering the most recently excavated section in the south centre (as below).



**Figure 9.4 Bindweed covering the main excavation**

No water occurs on site except for rainwater ponding along the roadways. This introduces another habitat of mud and shallow water and spike-rush *Eleocharis palustris*, water speedwell *Veronica anagallis-aquatica*, toad rush *Juncus bufonius* and celery-leaved buttercup *Ranunculus sceleratus* respond to this.

A stable area east of the entrance supports winter heliotrope *Petasites fragrans* and Japanese knotweed *Reynoutria (Fallopia) japonica*, a major part of which has been killed, as seen below. A few shoots remain however and there is also the related giant knotweed *Reynoutria sachalinensis* on the outside, close to a former entrance to the site. It again is an invasive alien subject to Regulations (SI 477/2011).



**Figure 9.5 Current entrance to site with Japanese knotweed colony to right**

#### 9.4 SURROUNDING HABITATS

The quarry is located in agricultural surroundings with fields of grass in all directions. A trackway along the northern side gives access to farm buildings above. The track is overhung by a belt of trees (mapped as Powersknock Wood) which consists of oak, beech, sycamore, wild cherry and Turkey oak, with infill by blackthorn *Prunus spinosa* and holly *Ilex aquifolium*. Wood sage *Teucrium scorodonia*, foxglove *Digitalis purpurea* and germander speedwell *Veronica chamaedrys* are prominent on the bank below.

## 9.5 FAUNA

There was no evidence of resident mammals on site apart from the rabbit (in the SW quarter) though foxes are very likely to visit regularly. Records of badger, fox and pine marten (NBDC data) show that these species have been seen about 1km away to the NE while hares are recorded to the west. Small species are likely to include hedgehog, wood mouse and pygmy shrew.

There is suitable bat feeding habitat on the periphery of the site but no likely roosting places.

The birds seen were linnet, buzzard, jackdaw, dunnoek, wren, blackbird, robin. Whitethroat are likely breeders in the summer and stonechat could also occur; both are recorded from the appropriate 10km grid square (Balmer et al. 2013).

The visit in October did not coincide with butterfly-flying periods and only small copper, small tortoiseshell and speckled wood were seen.

## 9.6 EVALUATION

The habitat of much of the site has little ecological interest; its vegetation is made up of a community of plants and insects which are frequent in disturbed soils and abandoned land and contains several introduced species. However, where bedrock is exposed there is the slow development of a heathy habitat with a good range of acid-loving plants. None of these are rare and they would occur on many of the rocky knobs that are a feature of East Waterford.

All disused quarries develop significant biodiversity as compared to farmland and this site could be thought of as of medium value in this context.

## 9.7 APPROPRIATE ASSESSMENT

### 9.7.1 INTRODUCTION

Appropriate assessment was introduced by the EU Habitats Directive as a way of determining if a planned project is likely to have a significant effect on the integrity of one of the Natura 2000 sites so far designated (i.e. the candidate SAC's and SPA's), or their conservation objectives. In this case there are four Natura sites within 15km of the site which are shown on the map at end. They are:

Name of site	Site Code	Distance
Lower River Suir	2137	2.1
Tramore dunes and backstrand SAC	0671	7.0
Tramore Backstrand SPA	4027	7.0
Mid-Waterford coast SPA	4193	7.9

In the Irish context the assessment has been interpreted as a four-stage process. Firstly, a screening exercise (Stage 1) determines if a project could have significant effects on a Natura site. If it does or the situation is unclear a Natura Impact Statement (Stage 2) which may include mitigation measures is provided to the regulatory authority. Examples of significant effects are a loss of habitat area, fragmentation of the habitat, disturbance to species using the site and changes in water resources or quality. If such negative effects come to light in the assessment, alternative solutions are investigated by the proponent (Stage 3) and modifications made unless the project is deemed to be

driven by ‘imperative reasons of overriding public interest’ in its current form. In this case Stage 4 then deals with compensatory action.

The following guidance documents have been used in the screening process:

- Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities (DEHLG 2009, Revised February 2010).
- EU Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC (EC, 2007).
- Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (EC, 2002).
- Managing Natura 2000 Sites: The provisions of Article 6 of the ‘Habitats’ Directive 9. (EC 2000).
- Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities. Circular NPW 1/10 and PSSP 2/10.
- Guidelines for Good Practice Appropriate Assessment of Plans under Article 6(3) Habitats Directive (International Workshop on Assessment of Plans under the Habitats Directive, 2011).
- Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC.
- The Status of EU Protected Habitats and Species in Ireland 2013 (Department of Arts, Heritage and the Gaeltacht, 2013). 2/43/EEC (EC, 2000.)
- Court of Justice EU Case C-323/17. Directive 92/43/EEC Article 6(3) — Screening in order to determine whether or not it is necessary to carry out an assessment of the implications, for a special area of conservation, of a plan or project — Measures that may be taken into account for that purpose.
- Appropriate Assessment Screening for Development Management OPR Practice Note PN01. March 2021

#### 9.7.2 PROJECT DESCRIPTION

The project is to fill the quarry void with inert material derived as a by-product from building or other work in the vicinity. The material will be produced as an integral part of other development work and will not require processing on this site.

A wheel-wash will be installed for trucks leaving the site and fuel will be stored in bunded containers.

Biosecurity measures will be employed during the operation to avoid the spread of existing non-native invasive species plants or the introduction of any new ones. The donor sites should supply a statement that all material is ‘invasives-free’.

Any hired equipment and machinery used on site should be treated with an approved biocide / cleaning agent prior to its arrival on site. The NRA guidelines *'The Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads'* (2010) will be followed for the project.

### 9.7.3 SCREENING OF NATURA SITES

The site is in the catchment of the Lower River Suir though it has no watercourse or direct link to the river. A possible pathway exists for sediment dropped on local roads to get to the SAC but once in the quarry surroundings, this is most unlikely. As mentioned, there is no significant water ponding or overflow and all drainage percolates into the substrate.

Both of the Tramore Natura 2000 sites and the Mid-Waterford coast have their own catchments separate from Kilmeaden and there is no possibility of impacts on them from the site in question.

#### **Lower River Suir SAC**

This site contains excellent examples of a number of Annex I habitats, including the priority habitats alluvial forest and Yew woodland. The site also supports populations of several important animal species, some listed on Annex II of the Habitats Directive or listed in the Irish Red Data Book. The presence of two legally protected plants (Flora (Protection) Order, 1999) and the ornithological importance of the site adds further to the ecological interest and importance.

The most important or qualifying features are items listed in the Annexes, i.e.

[1330] Atlantic Salt Meadows

[1410] Mediterranean Salt Meadows

[3260] Floating River Vegetation

[6430] Hydrophilous Tall Herb Communities

[91A0] Old Oak Woodlands

[91E0] Alluvial Forests\*

[91J0] Yew Woodlands\*

[1029] Freshwater Pearl Mussel (*Margaritifera margaritifera*)

[1092] White-clawed Crayfish (*Austropotamobius pallipes*)

[1095] Sea Lamprey (*Petromyzon marinus*)

[1096] Brook Lamprey (*Lampetra planeri*)

[1099] River Lamprey (*Lampetra fluviatilis*)

[1103] Twaite Shad (*Alosa fallax*)

[1106] Atlantic Salmon (*Salmo salar*)

[1355] Otter (*Lutra lutra*)

The interests that are relevant to this site are solely aquatic animals – the white-clawed crayfish, river and brook lampreys, Atlantic salmon and otter. There is some development of [1330] Atlantic Salt Meadows and [1410] Mediterranean Salt Meadows downstream around Little Island but at too great a distance to be affected by any potential outflows.

None of the other features occurs on or within range of impacts from the site and they are not potentially at risk from the project.

#### 9.7.4 CONSERVATION OBJECTIVES

##### **SAC**

Each of the above interests has conservation objectives listed in NPWS (2011). Broadly these may be expressed as follows:

1. To maintain the Annex I habitats for which the cSAC has been selected at favourable conservation condition,
2. To maintain or restore the Annex II species for which the SAC has been selected at favourable conservation condition.

The favourable conservation condition of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future
- the conservation status of its typical species is favourable.

The favourable conservation condition of a species is achieved when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

#### 9.7.5 POTENTIAL EFFECTS

The development site is 1.8km from the nearest part of the designation but there is no drain or ditch linking the two.

The only way inert material could reach the river is through road drainage on the R680 if this is discharged to one of the local streams.

#### 9.8. CONCLUSION OF SCREENING

Screening suggests that the possibility of road deposits of sufficient size or regularity to influence the ecology of the River Suir is so remote as to be insignificant.

For this reason it is concluded that there is no likelihood that the proposed project will give rise to significant negative effects on the integrity of the Lower River Suir SAC or any of the Natura 2000 network. The development will not compromise the attainment of the conservation objectives of these sites.

This holds for the project by itself or in combination with other projects in the vicinity.

#### 9.9 DIFFICULTIES ENCOUNTERED IN COMPILING

No difficulties were encountered in compiling this study.

## 9.10 REFERENCES

DEHLG. 2009. Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities (Revised February 2010).

European Commission. 2000. Managing Natura 2000 Sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC. Office for Official Publications of the European Communities, Luxembourg.

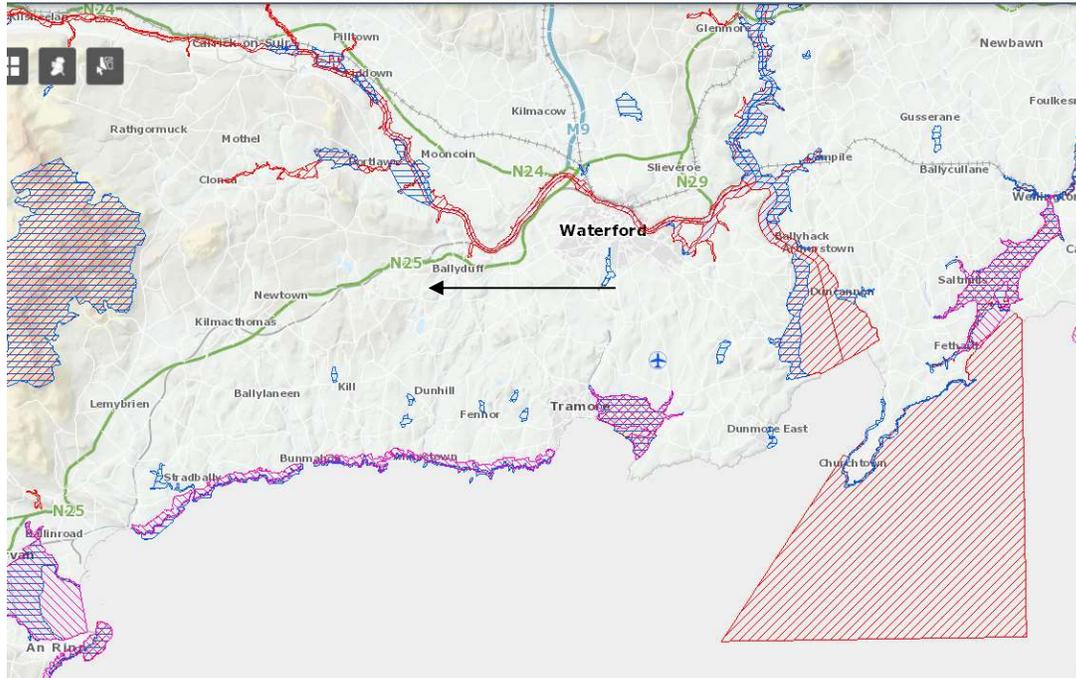
European Commission. 2002. Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC. Office for Official Publications of the European Communities, Luxembourg.

European Commission. 2007. EU Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC. Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the Commission. IEEM. 2006.

Fossitt, J.A. 2000 *A guide to habitats in Ireland*. Heritage Council

Guidelines for Ecological Impact Assessment in the United Kingdom. Institute of Ecology and Environmental Management.

NPWS (2017) Conservation Objectives: Lower River Suir SAC 002137. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs



**Figure 9.6 Location of site in relation to Natura 2000 sites within 15km (red hatching)**

## 10.0 LAND, SOIL, GEOLOGY AND HYDROGEOLOGY

### 10.1 INTRODUCTION

This chapter describes land, soils, geology and hydrogeology at the proposed development facility and identifies the impacts that the proposed development may have. The aims of this examination are to:

- obtain baseline environmental data for the proposed development facility,
- analyse the proposed development,
- consider the effects the proposed development will have on the receiving environment,
- propose mitigation measures to avoid, reduce and remedy effects,
- outline residual effects that remain after mitigation, and
- propose a system of monitoring, if necessary.

The proposed development is to be located within the landholding owned by the landowner. This chapter should be read in conjunction with the proposed development description available in chapter 3, the layout plans and other relevant planning documents. In addition to the above, this chapter relies on data from the following sources:

- site visit information,
- public data from stage agencies, and
- information from previous reports compiled in relation to the proposed development site.

The information gathered to determine the environmental ‘baseline scenario’ is used to describe the condition, sensitivity and significance of the environmental features pertinent to the topic of land, soil, geology and hydrogeology, and to determine the likely future receiving environment in the absence of the proposed development. The accurate description of the baseline scenario is vital as it is against it that impacts of the proposed development will be considered and the results of environmental monitoring will be compared. The description of the proposed development in the context of land, soils, geology and hydrogeology, and a review of the overall proposed development has established the two factual foundations which allow for the identification of effects. The assessment of impacts on the environment as a result of the proposed development is the primary function of the environmental impact assessment process. By identifying impacts the design of the proposed development can be adjusted to eliminate the impacts. Alternatively, the impacts can be avoided, reduced or remedied by mitigation. The scoping process has contributing to ensuring that impacts which are both likely and significant are identified. During the scoping process, consideration was given to the requirement for an intrusive field study. The conceptual site model (CSM) developed as part of the process did not indicate any significant impacts on land, soil, geological or hydrogeological features. In developing the CSM, it was determined that information available from various public sources and previous studies relating to the current installation at the proposed development site provided sufficient information. Therefore, an intrusive investigation was not carried out. The source – pathway – receptor model was relied on extensively throughout the works and provided a basis for the identification of potential impacts.

### 10.2 METHODOLOGY

#### 10.2.1 GUIDANCE

This chapter has been prepared using the recommendations set out in the draft EPA ‘Guidelines on the Information to be contained in Environmental Impact Assessment Reports’. The following guidance documents are relevant to this chapter of the EIAR:

- Environmental Protection Agency (EPA) Revised Guidelines on the Information to be Contained in Environmental Impact Statements (2017), and
- Guidelines for the preparation of Soils, Geology and Hydrogeology Chapters of Environmental Impact Assessments, IGI, (2013).

The following sources of information have been used during the preparation of this chapter:

- Teagasc Soil Map and Database,
- CORINE landcover Data,
- Geological Survey of Ireland Maps and Databases,
- Ordnance Survey of Ireland – Aerial Imagery,
- Waterford Waste Action Plan for a Circular Economy, published by the Department of the Environment, Climate and Communications on 04 September 2020 County Council Groundwater Protection Plan, and
- WFD Water Maps.

## 10.2.2 CONCEPTUAL SITE MODEL DEVELOPMENT

A conceptual site model was developed to allow for an analysis of the proposed development when sited in the existing environmental conditions. This involved a review of the baseline environmental conditions and the proposed development design.

### 10.2.2.1 ANALYSIS OF RECEIVING ENVIRONMENT

The data has been sourced from published sources and appropriate methods used in its collection. Much of the data has been sourced from state agencies and other bodies which is available through the internet; this has ensured transparency. To describe the existing conditions at the proposed development site a desk top study was undertaken to obtain the information available pertinent to the land, soils, geology and hydrogeology of the area. Ordnance Survey of Ireland and Google Maps aerial imagery from 1995-2018 was examined to assess the previous and current land use. EPA Corine data was reviewed to examine broad land cover groups and a survey was undertaken to map land use in the immediate vicinity of the proposed development. Most of the information available from public sources was geospatial data in the form of maps and databases. The relevant information was downloaded and input to 'QGIS', a desktop geographic information system (GIS) application that supports the viewing, editing, and analysis of geospatial data. The data was transposed onto a map of the proposed development site and surrounding area for examination. The data relevant to soil was obtained from the Teagasc soil map. A profile datasheet from Teagasc was also obtained which contained information relevant to the soil type at the proposed development location. Sub-soil data was also obtained from the Teagasc database which classifies the subsoils of Ireland into 16 themes, using digital stereo photogrammetry supported by field work. The Geological Survey of Ireland's (GSI) bedrock 1: 100,000 data were used to examine the bedrock in the immediate area of the proposed development. This map was also used to determine whether there was bedrock at or near the surface at the proposed development site in conjunction with the aquifer vulnerability data. The groundwater was examined using the GSI aquifer vulnerability data. The shapefiles in this data represent bedrock aquifers.

Groundwater Vulnerability is a term used to represent the intrinsic geological and hydrogeological characteristics that determine the ease with which groundwater may be contaminated by human activities. Groundwater vulnerability maps are based on the type and thicknesses of subsoils (sands, gravels, glacial tills (or boulder clays), peat, lake and alluvial silts and clays), and the presence of karst features. Groundwater is most at risk where the subsoils are absent or thin. All land area is assigned one of the following groundwater vulnerability categories:

- 'X' – Rock at or near the surface (Most Vulnerable)
- 'E' – Extreme
- 'H' – High
- 'M' – Moderate
- 'L' – Low (Least Vulnerable)

The Geological Survey of Ireland (GSI) maps data was used to determine whether the proposed development site was situated within or near sites of geological significance.

### 10.2.3 ASSESSMENT OF IMPACTS

The consideration of potential impacts is based on the study of the baseline scenario and the proposed development. This EIAR has focused on the likely and significant effects of the proposed development on the environment. To provide context for the likely significant effect a likely worst-case scenario has also been identified.

### 10.3 PROPOSED DEVELOPMENT

The proposed development covers an area of c. 3.26 hectares of a disused quarry and will involve the importation and use of some 270,000m<sup>3</sup> of soil and stone.

### 10.4 RECEIVING ENVIRONMENT/BASELINE DESCRIPTION

#### 10.4.1 LAND

The proposed development site is a disused quarry described in detail in Chapter 10.

#### 10.4.2 SOILS AND SUBSOILS

The distribution of soil types near the proposed development site is shown on Figure 10.1, which relies on data obtained from the Teagasc soil map. The soil map indicates that the soil in the area is a loamy drift. The soil association present are referred to as Kill, Kr, a fine loamy drift with igneous & metamorphic stones and Clonroche, Cl, a . The boundary between the two soil types occurs at or near the northern boundary of the proposed development site.

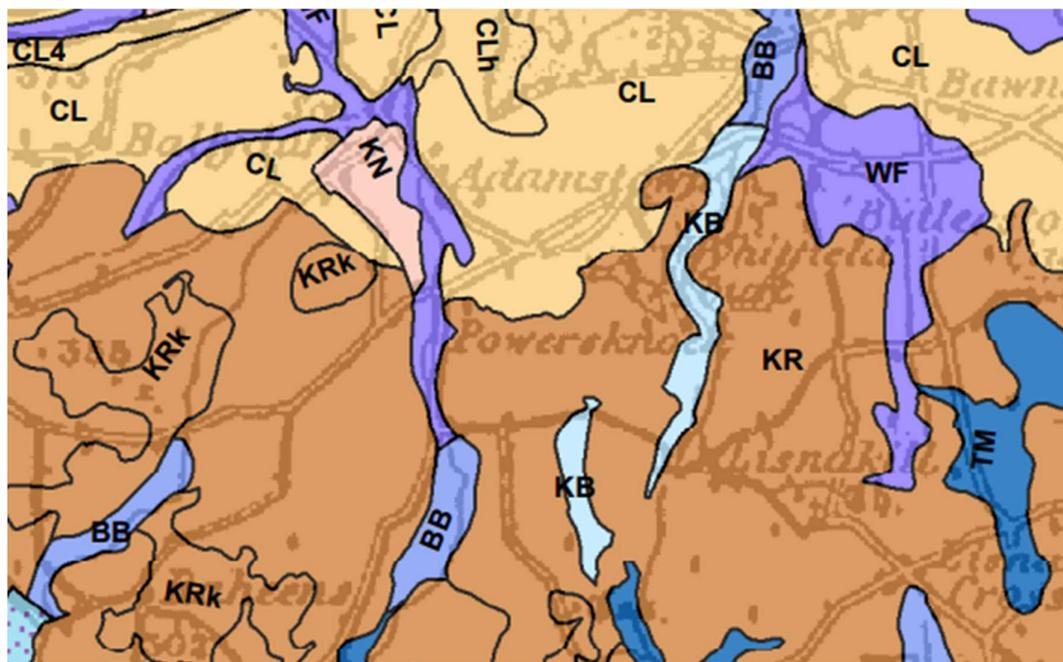


Figure 10.1: Soils association of the Powersknock area (from Teagasc maps).

They are both defined as Brown Earth's, i.e., well-drained soils possessing rather uniform profiles with little differentiation into horizons. The B horizon represents weathered parent material produced by physical and chemical alterations, and lacks accumulations of iron, aluminium or carbon translocated from the horizon above. Generally some leaching has taken place resulting in the translocation or removal of exchangeable constituents notably calcium and magnesium, (see SOILS of Co. WATERFORD by J. Diamond and P. Sills National Soil Survey of Ireland, Teagasc, 2011).

The Clonroche association is described as, *"The profile is characterised by a brown (ochric) A horizon and a weathered B horizon that lacks illuvial materials. The soil is classified as a Brown Earth; a representative profile is classified as a Typic Dystrudept (USDA, 1999), but a pH range from 6.2 to 7.5 in subsoil samples implies that Dystric Eutrudepts also occur in the Clonroche map unit. The soils are well drained. Texture is loam to clay loam; the mean clay content found in the topsoil (0–100 mm depth) was 29% and clay content ranged from 23% to 36%. At 400–500 mm depth, mean clay content was slightly less (25%), and the content ranged from 19% to 30%. The free iron contents in the topsoil (0–100 mm depth) and subsoil (400–500 mm depth) are the highest for any series in the county; the mean contents are 3.0% (topsoil) and 3.1% (subsoil); a value of 5.0% was found in the B horizon of the representative profile shown below. It is likely that the high free iron content, and possibly other sesquioxides, contribute to the friable consistence and durable structure of the soil. The solum is predominantly 300–600 mm deep. The available water capacity is very high and tends to compensate for the shallow solum. Although the air capacity of the representative profile is low, the soil is classified as well drained because it lacks morphological evidence of water logging and structure is durable and moderately well developed."*

The Kill association is described as, *"Typically, a brown A horizon overlies a thin weathered B horizon, or it may directly overlie the C horizon. The soil is classified as a Brown Earth (Typic Dystrudept). Weakly developed spodic horizons occur sporadically, and were estimated by a systematic random sample to be present in 14% of soil profiles. Profile II below represents these inclusions; spodic materials extend to less than half the pedon, which is classified as a Spodic Dystrudept. The solum, which consists of the A and B horizons, is on average 50 cm deep and ranges from 30 to 80 cm. The C horizon generally has a distinctive yellowish hue, which differentiates the Kill series from those derived from shale or sandstone. The Kill series is well drained. Structure is weak to moderate in the A horizon and becomes massive in the C horizon. Texture is loam to silt loam; clay is typically 20% in the A horizon and decreases slightly with depth. Silt content is generally about twice the clay content and ranges up to 58%. The cation exchange capacity (CEC) of the C horizon, where the influence of carbon is small, is similar to that found in the C horizon of soils derived from shale or sandstone. This implies that the mineralogy of the volcanic soils may not be substantially different and are unlikely to contain appreciable amounts of allophane. Stones are few to common in the surface A horizon; stone content generally increases with depth, and many or abundant stones may be present in the C horizon. Stone picking has been carried out extensively in the area; the resulting pattern of stone distribution is irregular and unpredictable, and so it was not possible to distinguish different phases on the basis of stoniness. It was observed during fieldwork that the shallow to bedrock inclusions, which occur within the map unit, were the most likely to show evidence of drought in an exceptionally dry year."*

#### 10.4.3 BEDROCK

The Ordovician rocks reflect a complex interaction of sedimentation, volcanic activity and tectonism, which were associated with the margins of the Iapetus Ocean, which bisected Ireland. Ordovician sedimentary and volcanic rocks originally formed in belts roughly parallel to the Iapetus continental margins, which were aligned roughly NE-SW. Later deformation has commonly emphasised the original orientation. The Ordovician rocks exposed were formed in a marine environment, and many

are fossiliferous (Graham, 2001). The proposed development site lies in the area of bedrock referred to as O2s, the Duncannon Group, shale, siltstone and slate.

The tract between the Waterford to Dungarvan road (N25) and the south coast is underlain predominantly by rocks of the Duncannon group. This is a complex group characterised by the abundance of intermediate to acidic volcanic rocks and rests unconformably on rocks of the Ribband Group, which includes the Kilmacthomas Formation. The group forms a NE to SW trending belt from near Arklow although the prominent NE to SW trend is partly due to later deformation (Graham, 2001). This group was formed in Co. Waterford in the middle to late Ordovician; it comprises volcanic rocks, sedimentary successions, and near-surface intrusions, which together represent a submarine volcanic arc formed at the Avalonian continental margin above the subducting Iapetus Ocean.

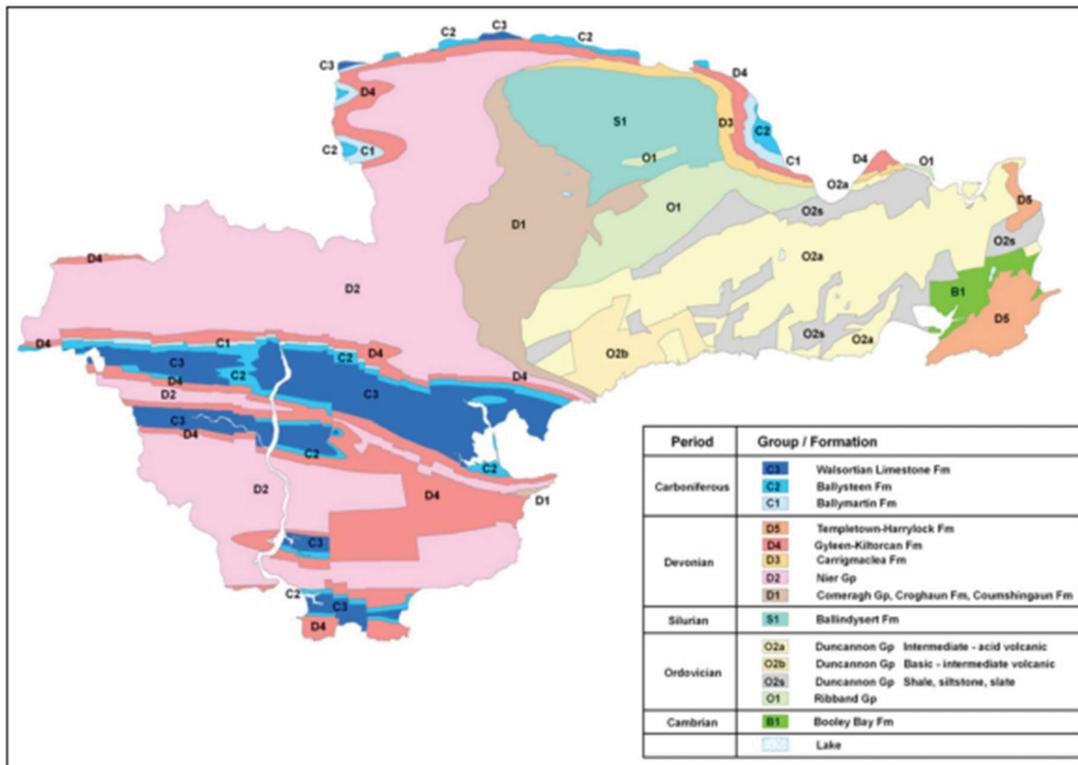


Figure 10.2 Bedrock geology of County Waterford.

#### 10.4.4 GROUNDWATER

The permeability of rocks in the Duncannon Group depends on the degree of fracturing. The rhyolitic igneous rocks, the stronger rocks in the group, tend to be the most permeable. The sedimentary rocks in the Duncannon Group are probably similar to Lower Palaeozoic sediments in general; the aquifers are likely to be generally unproductive with moderately productive aquifers only in local zones. Nevertheless, the soils overlying the shaly rocks that are on the northern and southwest margin of the group (Ross and Ballyhack members, Tramore Shale Fm) are predominantly well drained (Chapter 3) and probably reflect the permeability developed within the top few metres of fractured or weathered rock. Most of the land overlying the area mapped as volcanic is well drained, but a significant amount of the land is poorly drained. Because of the intricate geological pattern,

the relative influence of topography compared to shale inclusions in the bedrock on the genesis of poorly drained land is unclear. Due to the nature of the quarry, much of the bedrock is exposed, see description and photographs in Chapter 9. The lack of any evidence of groundwater indicates that the rocks are classified as unproductive in aquifer terms and, therefore, the proposed development provides little risk of any negative environmental effects on the groundwater regime in the area.

#### 10.4.5 GEOLOGICAL HERITAGE

There is no evidence of any geological heritage sites in the locality of the proposed development.

#### 10.4.6 LIKELY FUTURE RECEIVING ENVIRONMENT/ DO NOTHING SCENARIO

An analysis of the Waterford County Council website and that of An Bord Pleanála did not show any planned developments near the proposed development site or any developments likely to have an impact on soil, geology and hydrogeology at the proposed development site. If the proposed development does not go ahead (do nothing scenario) the existing baseline conditions as described above will remain.

#### 10.5 POTENTIAL IMPACTS

No excavations are proposed during the development. The thickness of topsoil and subsoils will be increased and the quality of the topsoil improved by the importation and use of soils and stone. This will have the additional benefit of improving groundwater protection in the area as the thickness of the overburden increases.

#### 10.6 MITIGATION MEASURES

The proposed development has embraced 'mitigation by design', i.e. the proposed development will enhance the protection of groundwater. Therefore, further mitigation is not required as there are no likely impacts of significance.

#### 10.7 MONITORING

No monitoring is considered necessary.

#### 10.8 SUMMARY AND CONCLUSION

The description outlined in this chapter has demonstrated that the proposed development will not impact on land, soil, geology and hydrogeology. There are no likely significant negative impacts from the proposed development on land, soil, geology or hydrogeology. The likely impacts are positive with enhance protection of the groundwater. No difficulties were encountered during these investigations.

## 11.0 SURFACE WATER

### 11.1 INTRODUCTION

This chapter presents a description of the potential environmental impacts of the proposed development in terms of surface waters. The topic of water is intrinsically linked to land, soils, geology and hydrogeology which are addressed in the Chapter 10 of this EIAR and to the discussion of habitats in Chapter 9.

The aims of this chapter are to:

- describe baseline data, relative to water, for the proposed development site,
- analyse the proposed development in terms of water,
- describe the potential effects the proposed development will have on water,
- propose mitigation measures to avoid, reduce and remedy those effects,
- outline residual effects that remain after mitigation, and
- propose a system of monitoring.

This chapter relies on data from the following sources:

- site survey data,
- public data from stage agencies, and
- site surveys.

The information gathered to assess the environmental 'baseline scenario' was used to outline the context, condition, sensitivity and significance of the environmental features pertinent to the topic of water and to determine the likely future receiving environment in the absence of the proposed development.

### 11.2 METHODOLOGY

#### 11.2.1 LEGISLATION AND GUIDANCE

The identification and consideration of the potential impacts of the proposed development on water was carried out according to the methodology specified in the following guidance document:

- Environmental Protection Agency (EPA) Revised Guidelines on the Information to be Contained in Environmental Impact Statements (2017).

#### 11.2.2 DESK-BASED STUDY

Information used for baseline environmental data was mostly selected from publicly available databases and documents making it easier for the information to be reviewed and verified. Where information that is not readily available online was used it has been listed in the appendices of this EIAR document. Sources used in this chapter were:

- Office of Public Works (OPW) flood event mapping,
- Catchment Flood Risk Assessment and Management (CFRAM) and Preliminary Flood Risk (PFRA) Map data,
- EPA Water Framework Directive Monitoring Programme,
- The Planning system and Flood Risk Management (OPW/ Dept. E, H&LG), and
- Notes from site visits.

#### 11.2.3 FIELD SURVEY

A site visit was undertaken by Mr Roger Goodwillie as part of his ecological assessment of the disused quarry. Mr Goodwillie records that the site is in the catchment of the Lower River Suir

though it has no watercourse or direct link to the river. There is no significant water ponding or overflow and all drainage percolates into the substrate.

### 11.3 IDENTIFICATION OF IMPACTS

The absence of any waterways on or adjacent to the proposed development site means that there is no risk of adverse environmental effects arising from the proposed development on surface waters.

### 11.4 CONCLUSION

No difficulties were encountered during these investigations. The proposed development will not result in any significant negative impact to surface waters.

## 12.0 LANDSCAPE AND VISUAL IMPACT

### 12.1 INTRODUCTION

This chapter has been prepared to assess the effects on the appearance and character of the local environment arising from the proposed development. It analyses the existing landscapes features, character and significance and the aspects of the proposed development that may result in impacts. The assessment of the impact the development may have on the landscape is done with a focus on the sensitivity of the landscape and sensitive receptors in the area. The main features of the surrounding environment were identified through site visits and desktop research.

### 12.2 METHODOLOGY

#### 12.2.1 DATA GATHERING

The identification of sensitive receptors was done by examining aerial photography to identify neighbours and routes in the area. The Waterford County Council Development Plan and associated documents were reviewed for information relating to the sensitivity of the landscape.

### 12.3 BASELINE CONDITIONS

The proposed development comprises a small disused quarry surrounded by agricultural lands some 0.75km to the south-east of Kilmeaden Village. The area is rural in nature with an operational Roadstone quarry to the north-east. There are no high amenity areas close to the site and no sensitive views were identified.

### 12.4 PROPOSED DEVELOPMENT

The existing hedges, trees, etc. will be preserved. The agricultural nature of the area results in regular ploughing of large fields producing landscapes similar to that which will initially result from the proposed development.

### 12.5 IMPACTS

The impact on views from surrounding areas will be slight and temporary in duration.

### 12.6 MITIGATION MEASURES

Progressive restoration and early seeding will mitigate against any negative impacts on views.

### 12.7 RESIDUAL IMPACTS

There are no significant adverse impacts on the surrounding local area or on the wider area.

## 13.0 ARCHAEOLOGY AND CULTURAL HERITAGE

### 13.1 INTRODUCTION

This chapter presents the impact assessment of the proposed development on features of archaeological and cultural heritage significance. The proposed development is to be located within the landholding owned by the developer in the townland of Powersknock, Kilmeaden, County Waterford.

### 13.2 METHODOLOGY

#### 13.2.1 LEGISLATION AND GUIDANCE

The assessment of the potential effect of the proposed development on the archaeology and cultural heritage was done with consideration of the following legislation, policies and plans:

- The National Monuments Act 1930 to 2004,
- The Planning and Development Act 2000,
- Waterford County Council Development Plan and review,
- European Convention on the Protection of the Architectural Heritage 1997, and
- The Architectural Heritage and Historic Properties Act, 1999.

#### 13.2.2 DESK-BASED STUDY

A thorough search of online databases was conducted to examine the site and the areas adjacent to the site for features of significance. The following databases were referenced:

- Archaeology.ie – A geodatabase of features of archaeological and architectural heritage significance and a review of the list of national monuments,
- Excavations.ie – A database of reports submitted on licensed excavations in the state, and
- Ordnance Survey of Ireland Aerial Imagery was examined to assess modern impacts on the local area prior to the construction of the current installation.

## 13.3 RECEIVING ENVIRONMENT/BASELINE DESCRIPTION

### 13.3.1 ARCHAEOLOGICAL FEATURES

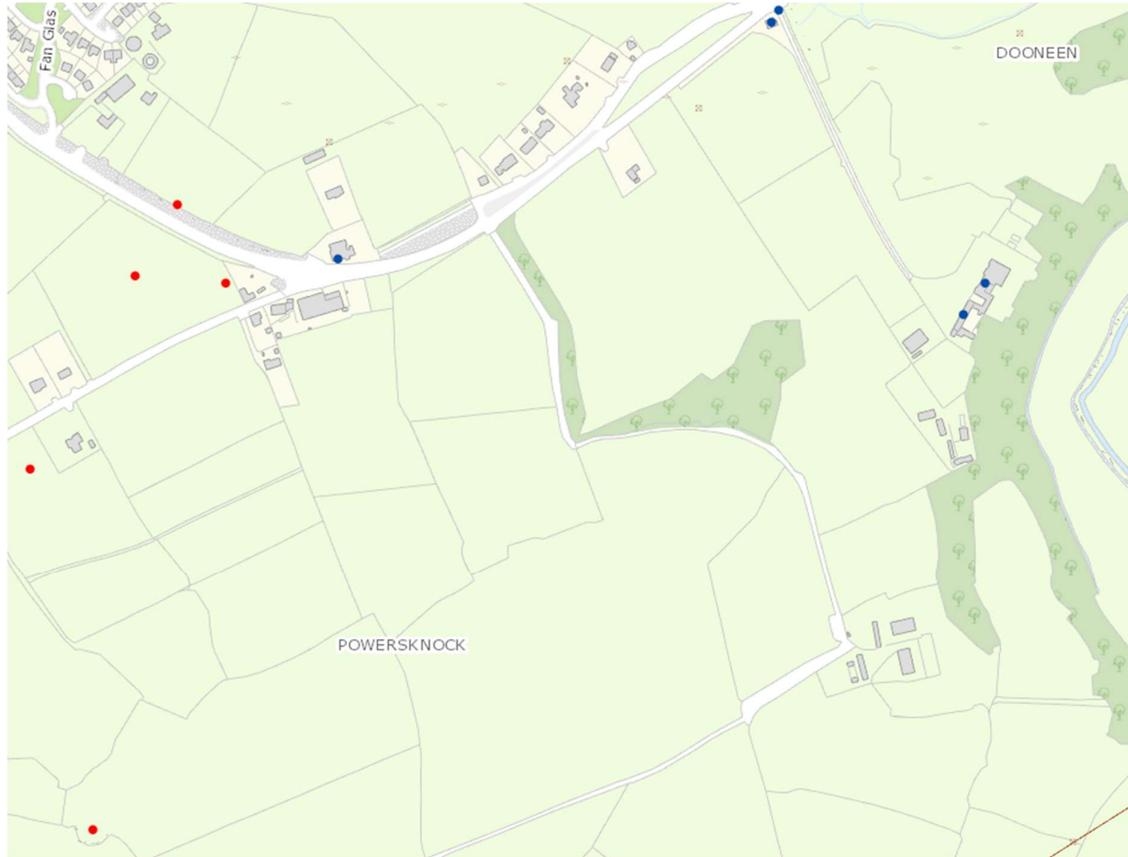
The term ‘national monument’, defined in Section 2 of the National Monuments Act (1930), means a monument, ‘the preservation of which is a matter of national importance by reason of the historical, architectural, traditional, artistic or archaeological interest. There are sites of archaeological interest within 500m of the proposed development. Whitfield Court, a house dating to 1841 and outbuildings, such as a stable building dating to c. 1730 lie some 250m to the north-east of the proposed development site and are screened by trees both adjoining that site, which are protected by a Tree Preservation Order, File. No. 15/71 and by trees which form the perimeter of the house and associated buildings.

### 13.4 POTENTIAL IMPACTS

There is no potential for direct or indirect impacts on known features of importance as there are no such monuments or sites within the proposed development lands and the distance between any such features and the proposed development site is such that any impact is not likely. It is therefore deemed that the impact of the proposed development on recorded features of archaeological or architectural heritage importance will be neutral.

### 13.5 RESIDUAL IMPACTS

There are no residual impacts on Archaeology and Cultural Heritage arising from the proposed development.



**Figure 13.1: Showing locations of archeological interest in the region of the proposed development site at Powersknock, Kilmeaden, County Waterford.**

## 14.0 MATERIAL ASSETS

### 14.1 INTRODUCTION

This chapter presents the potential impacts of the proposed development in terms of material assets. Impacts on various material assets are described in other chapters of this EIAR.

### 14.2 METHODOLOGY

#### 14.2.1 LEGISLATION AND GUIDANCE

The consideration of the potential effect of the proposed development on the material assets was carried out according to the methodology specified in the following guidance documents:

- Environmental Protection Agency (EPA) Revised Guidelines on the Information to be Contained in Environmental Impact Statements (2017);

#### 14.2.2 DESK-BASED STUDY

The information required for the consideration of likely impacts was obtained by a desk-based study of the proposed development, the facility and the surrounding environment. The desktop study consisted of both an analysis of the proposed development and the baseline environmental conditions at the site.

#### 14.2.3 ASSESSMENT OF LIKELY IMPACTS

The identification of likely impacts is based on the baseline scenario and the proposed development. This EIAR has focused on the likely and significant effects of the proposed development on the environment. To provide context for the likely significant effect a likely worst-case scenario has also been identified. To ensure that the process is consistent, the effects identified have been described using the descriptive terminology provided in the EPA Draft Guidelines.

### 14.3 POTENTIAL IMPACTS

The proposed development will not have any negative interaction with agricultural activities in the surrounding hinterland and does not propose any alteration to the road network.

The proposed development will take place within the boundaries of the landholding. As such, there will be no material change of use of the lands nor will there be any impact on use at adjacent lands. There will be no increased demand on the water supply from public mains or on the electricity supply in the area.

### 14.4 MITIGATION MEASURES

There are no significant adverse impacts as a result of the proposed development in terms of material assets. Therefore, mitigation is not required.

### 14.5 CONCLUSION

The material assets located at or near the proposed development are like those typically found in agricultural land. These will not be significantly negatively impacted on as a result of the proposed development. The village of Kilmeaden and its amenities will not be negatively impacted upon.

## 15.0 INTERACTION & CUMULATIVE EFFECTS

### 15.1 INTRODUCTION

This chapter sets down the cumulative and interrelated significant effects of the project. All environmental factors are inter-related to some extent. The directive and relevant guidelines require that an EIAR describe the impacts and likely significant effects on the interaction between principal elements of the environment: Population and Human Health, Traffic, Noise, Biodiversity, Land & Soils, Water, Air, Climate, Material Assets, Cultural Heritage and Landscape. In the production of this EIAR, the inter-dependencies were dealt with in the section of the EIAR which is most relevant. For example, the increase in traffic movement will likely result in an increase in airborne pollutants; this was dealt with in the 'Air Quality and Climate' section of this EIAR, rather than the traffic and transport section, or both.

### 15.2 INTERACTIONS

#### 15.2.1 POPULATION AND HUMAN HEALTH

Traffic and Transport: The impacts on traffic and transport were not found to be of significance and were of similar nature to that currently experienced in the area. Impacts on humans were not found. Levels of noise are expected to be similar to existing agricultural practices. The mitigation measures proposed are sufficient to ensure sensitive receptors are not impacted.

#### 15.2.2 AIR QUALITY AND CLIMATE

Traffic and Transport: There were no significant impacts identified impact on air quality during the construction and operational phases of the proposed development as a result of the increased traffic movements. Dust mitigation measures are proposed in the event that weather conditions require them.

#### 15.2.3 TRAFFIC AND TRANSPORT

Noise and Vibration: There were no impacts identified impact in terms of noise and vibrations as a result of the increased traffic movements or work onsite.

#### 15.2.4 NOISE AND VIBRATION

Biodiversity: The proposed development site and the immediate vicinity of the site are of low ecological importance. It was deemed that there is no likely significant impact on biodiversity, including from noise or vibration sources.

#### 15.2.5 LAND, SOIL, GEOLOGY AND HYDROGEOLOGY

No surface water runoff occurs from the lands and no surface water bodies will be impacted upon.

#### 15.2.6 OTHER INTERACTIONS

No other interactions of potential significance were identified

### 15.3 CUMULATIVE IMPACTS

#### 15.3.1 TRAFFIC AND TRANSPORT

The traffic and transport assessment deemed that the receiving roads are suitable for such traffic.

#### 15.3.2 DUST

The levels of dust emissions are not expected to be significant. Therefore, a cumulative impact from dust emissions has been ruled out.

#### 15.3.3 OTHER CUMULATIVE IMPACTS

No other cumulative impacts of potential significance were identified.

## 16.0 RISK ASSESSMENT

### 16.1 INTRODUCTION

An assessment of the potential significant adverse effects on the environment of the proposed development deriving from its vulnerability to risks of major accidents and/or disasters. 2014 EIA Directive (2014/52/EU) includes a list of issues to be addressed as part of an EIAR and 'Risk Management' is identified as one of those issues. Article 3(2) of the EIAR Directive requires that EIA shall include the expected effects on population and human health, biodiversity, land, soil, water, air, climate, material assets, cultural heritage and landscape deriving from the vulnerability of the project to risks of major accidents and/or disasters that are relevant to the project concerned. The Directive also states that "where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies".

Risk assessment identifies and compiles the expected effects arising from the vulnerability of the project to risks of major accidents and/or disasters that are relevant to the project, in accordance with Article 3(2) of the EIA Directive.

### 16.2 POTENTIAL OF THE PROJECT TO CAUSE ACCIDENTS AND/OR DISASTERS

An assessment of the project indicates that there is little or no potential of the project to cause accidents and/or disasters, including implications for human health, cultural heritage, and the environment.

### 16.3 VULNERABILITY OF THE PROJECT TO POTENTIAL ACCIDENTS AND/OR DISASTERS

An assessment of the vulnerability of the project to potential disasters/accidents, including the risk to the project of both natural disasters (e.g. flooding) and man-made disasters (e.g. technological disasters) concludes that the project is not vulnerable to any such accidents and/or disasters. It is noted that the subject site is not prone to natural disasters. Ireland's geographic position means it is less vulnerable to natural disasters such as earthquakes and volcanoes although in recent times there has been an increase in the number of severe weather events, which poses one of the most common risks.

### 16.4 CONCLUSION

There are no identified potential major accidents and/or disasters that present a sufficient degree of risk resulting in significant negative impacts and/or environmental effects deriving from its vulnerability to such major accidents and/or disasters.

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