# 15

# INTERACTIONS AND INTER-RELATIONSHIPS

# 15 INTERACTIONS AND INTER-RELATIONSHIPS

## 15.1 INTRODUCTION

This chapter of the remedial Environmental Impact Assessment Report (rEIAR) has been prepared by WSP Ireland Consulting Ltd (WSP) for the Hudson Brothers Limited (HBL) Substitute Consent application to An Bord Pleanála (ABP). The Substitute Consent application has been made for the quarrying activities (the Development) located in the townlands at Philipstown and Red Bog, Co. Kildare, (the Site), and is located within the administrative boundary of Kildare County Council, (KCC).

This chapter of the rEIAR describes interactions/inter-relationships between environmental effects in the area surrounding the Development.

### 15.1.1 TECHNICAL SCOPE

The EIA Directive (Directive 2011/92/EU, as amended by Directive 2014/52/EU, together the 'EIA Directive') requires that an environmental impact assessment identifies, describes and assesses in an appropriate manner the significant effects of a project and the significant interaction and in-combination effects of the project. This requires the careful consideration of environmental factors and pathways (direct and indirect) that can magnify effects through the interaction or accumulation of effects.

Environmental factors are inter-related to some degree, and these interactions can exist on many levels. This chapter summarises the primary interactions between the environmental topics and provides a matrix to coherently display them.

The overall objective of the assessment in this chapter is to identify whether remedial measures are required that would not otherwise have been identified in the individual study areas for these interacting effects.

The overall rEIAR Project Team contributed to the compilation of this chapter.

### 15.1.2 GEOGRAPHICAL AND TEMPORAL SCOPE

The assessment directly covers the physical extent of the rEIAR study boundary as shown in Figure 15-1, and the assessment area has been extended as appropriate to identify the relevant interacting effects surrounding the Development.

In the context of the rEIAR, the Site boundary contains lands which form the existing quarry site and some areas which extend beyond the working areas.

The substitute consent (the Planning Application) boundary is shown on the drawing set which accompanies the planning application.

The baseline for this rEIAR has been set to 18 September 2020, and the rEIAR process has assessed environmental impacts from that date to the present. This assessment period equates to approximately three and a half years and is identified as 'short-term' duration (those lasting one to seven years).

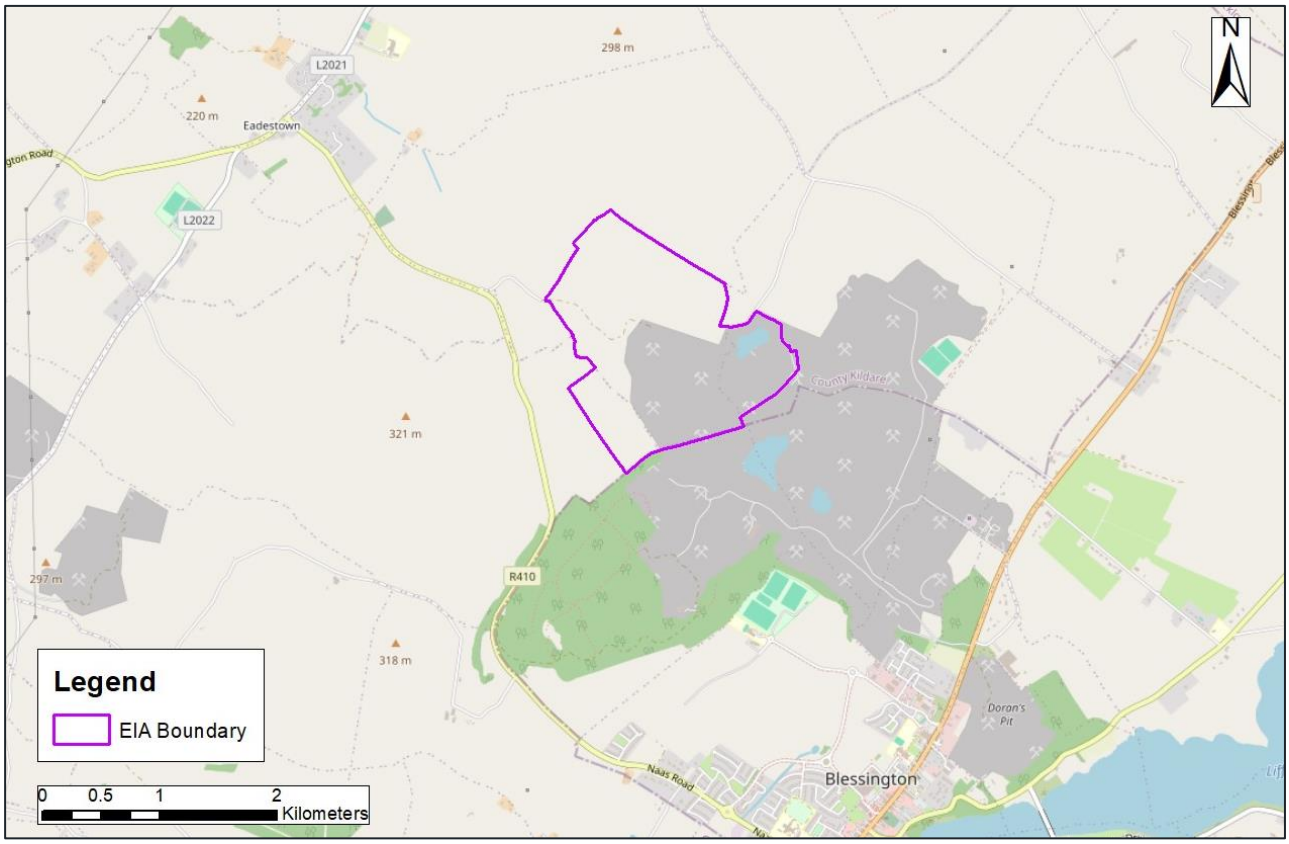


**Figure 15-1 - Location of the Site (EIA site boundary).**

### 15.1.3 DEVELOPMENT DESCRIPTION

The lands the subject of this rEIAR extend to 95.8 ha. The Development, the subject of the substitute consent application, consists of a quarry over an area of 71.9 ha. with a current maximum working depth of approximately 188 mAOD.

Both sand and gravel, and rock is extracted on the Site. The rock reserve consists of sandstone (greywacke) and is extracted by mechanical means. Blasting has not taken place on the Site during the assessment period. The excavated rock material is processed on the quarry floor by mobile crushing, screening, and associated plant before being stockpiled into specific graded aggregate stockpiles. Crushed rock aggregate is transported to market by road going trucks.

Sand and gravels are extracted by mechanical means using excavators and are transported to the fixed processing plant. These excavated sands and gravels are washed, screened, and processed through the fixed closed-circuit aggregate processing plant, located in the eastern part of the Site. Processed sand and gravel is stockpiled adjacent to the aggregate plant prior to being transported to market by road going trucks.

Excavation into the sands and gravels and bedrock remained above the water table, with no requirement for dewatering (as discussed in Chapter 6.0 Water).

## 15.2 METHODOLOGY

This assessment has been made with reference to the 'Guidelines on the information to be contained in environmental impact assessment reports', published by the EPA in May 2022 (EPA,

2022 Guidelines). These guidelines were issued by the EPA to facilitate compliance with the EIA Directive.

The descriptive terminology used follows a 'matrix approach' to environmental assessment which is based on the characteristics of the impact (magnitude and nature) and the value (sensitivity) of the receptor. The terminology and method have been summarised in Chapter 1, (Introduction, Scope and Methodology) of this rEIAR.

For the assessment of interacting effects, a matrix has been provided in Table 15-1 identifying through professional judgment the specific topics within the rEIAR where the effects potentially interact/inter-relate with each other.

**Table 15-1 - HBL Substitute Consent Environmental Interactions, (X = No Interaction; ✓ = Potential Interaction).**

| Interaction | Pop. & Human H. | Ecology & Biodiver. | Land, Soils & Geology | Water | Air Quality | Climate | Noise & Vibration | Cultural Heritage | Landscape & Visual | Traffic & Transport | Material Assets | Major Acc. & Dis |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pop. & Human H. | | X | X | ✓ | ✓ | X | ✓ | X | ✓ | ✓ | ✓ | ✓ |
| Ecology & Biodiver. | | | ✓ | ✓ | ✓ | X | ✓ | X | ✓ | X | X | X |
| Land, Soils & Geology | | | | ✓ | X | X | X | ✓ | X | X | X | X |
| Water | | | | | X | X | X | X | X | X | X | X |
| Air Quality | | | | | | X | X | ✓ | X | X | X | X |
| Climate | | | | | | | X | X | X | X | X | X |
| Noise & Vibration | | | | | | | | X | X | X | X | X |
| Cultural Heritage | | | | | | | | | ✓ | X | X | X |
| Landscape & Visual | | | | | | | | | | X | X | X |
| Traffic & Transport | | | | | | | | | | | X | X |
| Material Assets | | | | | | | | | | | | X |
| Major Acc. & Dis | | | | | | | | | | | | |

### 15.2.1 POPULATION AND HUMAN HEALTH

During the assessment period of September 2020 to present, quarry activity effects on population and human health had potential to interact with water, air quality, noise, traffic and transport, landscape and visual, material assets, and major accidents and disasters.

Potential effects to the human environment from Site activities may have potentially included impacts on water which may have affected groundwater quality in local wells. Potential impacts to human health may have arisen from dust generating activities on the Site and increases in concentrations of airborne particles and nitrogen dioxide due to plant emissions. Impacts to human health from excess noise and vibration on site may have potentially resulted in direct effects to site workers and also annoyance and effects on mental health in the surrounding residential receptors.

Visual impact during the assessment period may have potentially related to the effect of the Development on specific views and on the general visual amenity experienced by people.

Site activities during the assessment period may have had the potential to impact or cause disruption to local services or utilities.

Major accidents and disasters which have the potential to occur on site may have impacted employees on site and people in the site surrounds, including residential receptors.

These interactions have been considered in the relevant chapters of this rEIAR: Chapter 3 Population and Human Health, Chapter 6 – Water, Chapter 7 – Air Quality, Chapter 9 – Noise and Vibration, Chapter 11 – Landscape and Visual, Chapter 12 – Traffic and Transport, Chapter 13 – Material Assets, and Chapter 14 – Major Accidents and Disasters.

In summary, these assessments have identified that such interacting effects with the human environment are **not significant**.

### 15.2.2 ECOLOGY AND BIODIVERSITY

During the assessment period there was potential for interacting effects between ecology and biodiversity and land, soils and geology, water, air quality, noise and vibration and landscape and visual.

Adverse impacts to the soil, water and air environment would have had the potential to deteriorate habitat quality both on and off-site.

Similar to human receptors, impacts from excess noise and vibration on Site may have potentially resulted in stress to some species and effects on biodiversity and habitats surrounding the Site.

Elements of the Development have altered landscape features permanently including grassland areas where nesting birds may have been present, and as such there has been the potential to cause stress to these species.

These interactions have been considered in the relevant chapters of this rEIAR: Chapter 4 – Ecology and Biodiversity, Chapter 5 Land, Soils and Geology, Chapter 6 – Water, Chapter 7 – Air Quality, Chapter 9 – Noise and Vibration and Chapter 11 – Landscape and Visual.

In summary, these assessments have identified that such interacting effects with the surrounding ecology and biodiversity are **not significant**.

### 15.2.3 LAND, SOILS AND GEOLOGY

During the assessment period there was potential for interacting effects between soil and geology, water, and cultural heritage.

Excavated materials have arisen as a result of the stripping of soils and the removal of sand and gravel in the progression of the Development during the assessment period. This progression is estimated to be approximately 1.5 ha. The excavation of rock took place in the existing void at previously developed rock faces. Activities on the overall Site had the potential to cause changes in the underlying water environment and in the areas where soil was stripped had potential to damage undiscovered cultural heritage features.

These interactions have been considered in the rEIAR in Chapter 5 – Land, Soils and Geology, Chapter 6 – Water, and Chapter 10 – Cultural Heritage.

In summary, these assessments have identified that the interacting effects with land, soils and geology and water and cultural heritage are **not significant**.

### 15.2.4 CULTURAL HERITAGE

During the assessment period there was potential for interacting effects between cultural heritage and air quality, and landscape and visual impacts.

Stripping of soils and extraction activities which generated dust could have holistically affected the setting of cultural heritage assets within the wider study area. Also, alterations in the landscape and visual amenity of the Site had the potential to impact the value of recorded monuments and also unrecorded features.

No potential vibration interaction with cultural heritage assets has been identified as blasting did not take place during the assessment period.

These interactions have been considered in Chapter 5 – Land, Soils and Geology, Chapter 7 – Air Quality, and Chapter 9 – Cultural Heritage.

In summary, this assessment in the rEIAR has identified the above interacting effects as **not significant**.

## 15.3 CONCLUSIONS

It has been concluded that there were no significant interactions between any of the various environmental topic areas as a result of previous operations within the Development lands, and surrounding study area.