15.0 INTERACTIONS AND CUMULATIVE IMPACTS

15.1 Introduction

This section of the EIAR has been prepared by Tom Phillips + Associates and deals with likely interactions between effects predicted as a result of the proposed development.

In addition to the requirement under the *Planning and Development Regulations 2001 (as amended)* to describe the likely significant effects of the proposed development on particular aspects of the environment, it is also required to consider the interaction of those effects. As such, these are assessed below.

This section addresses the intra-project significant effects (i.e. those occurring between environmental topics within the project). Inter-project effects (i.e. those which are likely to occur as result of the likely impacts of the proposed development interacting with the impacts of other projects in the locality) have also been considered and it has been established that there are no other known planned / permitted projects that are likely to interact to a significant degree with either the construction or operational phases of the development.

Further detail relevant to the interaction of impacts may be found in the earlier chapters of the EIAR.

15.2 Inter-Relationships/ Interactions

It is noted that all aspects of the environment are likely to interact to some extent and to various degrees of complexity. The likely significant interactions between factors arising from the proposed development are set out in the matrix provided as Table 15.1 below.

Table 15.1: Matrix of Interactions Between Environmental Factors										
	Archaeology, & Cultural Heritage	Population & Human Health	Biodiversity	Land, Soils & Geology	Hydrology / Hydrogeology	Air Quality/ Climate	Noise & Vibration	Landscape & Visual	Traffic	Waste Mgmt
Archaeology & Cultural Heritage				✓						
Population & Human Health					✓	✓	✓	✓	✓	✓
Biodiversity					✓	✓				
Land, Soils & Geology					✓	✓	✓			✓
Hydrology / Hydrogeology										✓
Air Quality/ Climate									✓	
Noise & Vibration									✓	
Townscape & Visual										
Traffic										
Waste Mgmt										

15.2.1 Interaction between *Archaeology & Cultural Heritage* and *Land, Soils & Geology*

The topsoil will be removed which is required to quarry the rock and will be stored at identified locations throughout the quarry. In order to mitigate against such impacts, it is recommended that all ground disturbances, such as topsoil stripping, that are associated with the proposed development, be monitored by a suitably qualified archaeologist.

15.2.2 Interaction between *Population & Human Health* and *Hydrology*

The impact of the proposed development on the hydrology and hydrogeology of the area and on the population and human health of the area is assessed in Chapters 5 and 8 of this EIAR.

In terms of the predicted impact on humans, potential health effects arise mainly through the potential for groundwater contamination and impacts on local wells. Hydrocarbons, in the form of fuels and oils, will be used on-site during aggregate extraction.

In accordance with the Industrial Emissions (IE) Licence (as issued by the EPA) regulating all site emissions and a daily discharge volume of 6,150m3/ is permitted to the Kinnegad River. The application site sits in the catchment of the Kinnegad River, and the natural hydrological regime is thereby retained. The Groundwater quality and discharge quality at the site is considered good and data are returned to the EPA each year in the AER for the IE & IPPC Licences.

A Summary of Mitigation Measures & Residual Impact Assessment is outlined in table 8.19 of Chapter 8, which concludes that the majority of scenarios where impacts may arise are considered unlikely and would result in imperceptible impacts.

15.2.3 Interactions between *Population & Human Health* and *Air Quality and Climate*

The interaction between Population & Human Health and Air Quality & Climate is discussed in Chapters 5 and 9.

The main potential impact on ambient air quality from the current activities will be that associated with deposition of dust generated by excavation, transfer, and processing operations.

The assessment of the potential impact of the fugitive dust emissions arising from all sources at the site is based on the impact of the dust deposition rates in the vicinity of the site. The results of the comprehensive dust deposition monitoring programme carried out at the site since July 2000 clearly show that the existing site activities do not exert an adverse impact as average dust deposition rates are substantially lower than the limits specified in the IED Licence.

There is potential for cumulative impacts on air quality to arise during the construction phase of the proposed nearby solar development1. However, the existing monitoring programme demonstrates that dust and air quality impacts are well within permissible levels and whatever minor emissions may be released during the construction phase of the proposed solar development will not exert a significant adverse impact on air quality in the area even in

[1] Meath County Council Planning Register Ref 22/958

combination with the existing emissions from the cement plant and quarry, which will be unchanged if the proposed quarry deepening proceeds.

15.2.4 Interactions between *Population & Human Health* and *Noise & Vibration*

The interaction between Population & Human Health and Noise & Vibration is discussed in Chapters 5 and 10.

It should be noted that there will be no change to the rates of extraction or to the nearby cement manufacturing process as a result of this proposal. Raw material extraction rates will remain at current levels as will the output of cement product. In particular there will be no change in the frequency or magnitude of blast events.

The impacts associated with the quarry extension will remain the same as the current impacts associated with the operation of the quarry and there will be no change in the noise and vibration impacts associated the quarry operation. There will be no increase in plant or machinery associated with the quarry extension and consequently the current overall level of noise and vibration impact from the quarry will not change.

15.2.5 Interactions between *Population & Human Health and Waste*

The Interactions between Population & Human Health and Waste are discussed in Chapters 5 and 11.

Waste management is an integral part of the applicant's Environmental Management System (EMS), which is accredited to ISO 14001, the Environmental Standard for Environmental Management Systems. Part of Breedon's Environmental Policy commits them to 'promote improvements in energy efficiency and resource usage while having due regard for sustainable development and waste minimisation'. The core principles of their waste management strategy are:

- to prevent and minimise waste at source
- to reuse waste where possible by returning it to the production process
- to segregate and store any wastes that cannot be reused
- to dispose of any waste in an environmentally sensitive manner that cannot otherwise be recycled or recovered.
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The impact assessment in Chapter 11 demonstrates that waste will continue to be managed in accordance with all local, regional and national waste management legislation and in accordance with the requirements of the IE Licence. This interaction is described as neutral for the operational phase and is quantified as imperceptible.

15.2.6 Interactions between *Population & Human Health and Traffic*

The Interactions between Population & Human Health and Traffic are discussed in Chapters 5 and 12.

The development will not result in an increase in traffic volumes or operations at the existing quarry site. Therefore, the impact on population and human health through effects on air quality or otherwise in the vicinity of the site will be negligible

15.2.7 Interactions between *Biodiversity* and *Air Quality*

In relation to the interaction of emissions to atmosphere from the proposed development with flora and fauna, Table 9.3.2 sets out Air Quality Standards for the protection of vegetation and ecosystems. This assessment has shown that the emissions generated from the development are very limited and do not have potential to generate a significant adverse impact on the local ecosystems including birdlife and wildlife. Air Quality in the area is good as shown in Section 9.4.3 and the Air Quality Standards will not be exceeded as a result of the development thereby ensuring that no significant adverse impact on ecosystems arises. This interaction is described as neutral and quantified as Not Significant.

15.2.8 Interactions between *Land, Soils & Geology* and *Air Quality,*

The interaction between land, soils and geology, and Air Quality is detailed in Chapters 7 and 9.

The movement of bedrock by blasting and mechanical means can give rise to increased dust emissions. However, as outlined in the Air Quality and Climate chapter the assessment of the potential impact of the fugitive dust emissions arising from all sources at the site is based on the impact of the dust deposition rates in the vicinity of the site. The results of the comprehensive dust deposition monitoring programme carried out at the site since July 2000 clearly show that the existing site activities do not exert an adverse impact as average dust deposition rates are substantially lower than the limits specified in the IED Licence.

15.2.9 Interactions between *Land, Soils & Geology* and *Noise and Vibration*

The interaction between land, soils and geology, and Noise Vibration is detailed in Chapters 7 and 10.

The operation of plant associated with extraction and haulage can give rise to increased noise emissions. However, the impacts associated with the quarry extension will remain the same as the current impacts associated with the operation of the quarry and there will be no change in the noise and vibration impacts associated the quarry operation. There will be no increase in plant or machinery associated with the quarry extension and consequently the current overall level of noise and vibration impact from the quarry will not change.

15.2.10 Interactions between *Land, Soils & Geology* and *Hydrology*

The interaction between land, soils and geology, and Noise Vibration is detailed in Chapters 7 and 8.

The extraction of bedrock can impact upon surface and groundwater quality and flow patterns. Table 7.19 outlines the potential impact from this activity as resultant changes in unsaturated thickness resulting in change in groundwater vulnerability classification as well as deteriorations in groundwater quality. The significance of this effect is classified as imperceptible and the probability as unlikely.

15.2.11 Interactions between *Land, Soils & Geology* and Biodiversity

The extraction of bedrock can impact upon biodiversity and cause disturbance to habitats in the area.

Table 7.19 outlines the potential impact from this activity as mobilisation and migration of suspended solids and Sediment deposition in channels resulting in disruption to sensitive riverine habitats. The Significance of this is considered t be Imperceptible while the probability is unlikely.

15.3 Cumulative Impact

The potential for cumulative impacts arising from the construction phase of the proposed nearby solar development[2] has been identified and addressed. Minor emissions that may be released during the construction phase of the proposed solar development will not exert a significant adverse impact on air quality in the area even in combination with the existing emissions from the cement plant and quarry, which will be unchanged if the proposed quarry deepening is permitted. It is therefore not envisaged that any significant cumulative impacts will result.

Following a review of the Meath County Council planning system database, no other significant permitted or planned projects have been identified in the area.

Given the nature of the development proposed, no significant impacts are envisaged arising from cumulative impacts with other projects.

15.4 'Do Nothing' Scenario

If the proposed development does not proceed, there will be no cumulative impacts arising.

15.5 Mitigation And Monitoring Measures

It is not proposed that any mitigation or monitoring will be undertaken specifically in relation to cumulative impacts.

[2] Meath County Council Planning Register Ref22/958