

NOVEMBER 2017 | Project No. 33.1.13.39.2015.10

ENVIRONMENTAL IMPACT ASSESSMENT REPORT

Non-Technical Summary

For further extraction of a quarry & and all related ancillary site works over an application site area of 21.9 ha. with excavation over an area of 13.6 ha.

To accompany an application for permission for a quarry under S.37L of the Planning & Development Act, 200 (as amended)

Powerstown,
Nurney,
Co. Carlow

On behalf of
Dan Morrissey Ireland Ltd. (In Receivership)

ACRONYMS & ABBREVIATIONS GLOSSARY

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ACRONYMS & ABBREVIATIONS GLOSSARY

AA	Appropriate Assessment
AADT	Annual Average Daily Traffic
ABP	An Bord Pleanála
ACA	Architectural Conservation Area
AOD	Above Ordnance Datum
ARV	Annual Rate on Valuation
ASI	Archaeological Survey of Ireland
BAT	Best Available Techniques
CIE	Coras Iompair Éireann
CFRAM	Catchment Flood Risk Assessment and Management
CORINE	COOrdinate INformation on the Environment
CSO	Central Statistics Office
DMIL	Dan Morrissey Ireland (In Receivership)
ED	Electoral Division
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report (rEIAR remedial Environmental Impact Assessment Report)
EIS	Environmental Impact Statement (rEIS remedial Environmental Impact Statement)
EPA	Environmental Protection Agency
EU	European Union
FRA	Flood Risk Assessment
GSI	Geological Survey Ireland
ha	hectares (1 ha. = 10,000 m ²)
HPC&LG	Housing, Planning Community & Local Government
IPCC	Integrate Pollution control
ITM	Irish Transverse Mercator
JOTT	Jont Option to Tax
Km	kilometres
LVIA	Landscape and Visual Impact Assessment
m ²	square metres (also: sqm)
NAV	Net Annual Value
NHA	Natural Heritage Area (pNHA proposed Natural Heritage Area)
NIAH	National Inventory of Architectural Heritage
NIS	Natura Impact Statement (rNIS remedial Natura Impact Statement)
NPWS	National Parks and Wildlife Service
NRA	National Road Authority (Now TII Transport Infrastructure Ireland)
pa	per annum (per year)
PCVE	Pre-contract VAT enquiries
TOB	Transfer of Business
RMP	Record of Monuments & Places
SAC	Special Area of Conservation (cSAC candidate Special Area of Conservation)
SA	Small Area
SAPS	Small Area Population Statistics
SPA	Special Protection Area (pSPA proposed Special Protection Area)
SMR	Sites and Monuments Record
EIAR	Environmental Impact Assessment Report (rEIAR Remedial Environmental Impact Assessment Report)
P&D Act	Planning & Development Act, 2000 as amended

1.0 INTRODUCTION

This is summary in non-technical summary of Environmental Impact Assessment Report [EIA] prepared to accompany an application for permission for further quarrying and ancillary site works at Powerstown, Nurney, Co. Carlow.

This rEIA is submitted on instruction of the receivers of the entire assets and undertakings of Dan Morrissey (Irl) Limited [DMIL] appointed June 2014. DMIL is

This rEIA is therefore on behalf of Dan Morrissey (Irl) Limited (In Receivership) [DMIL] as the owner and / or occupier of lands located at Clonmelsh and Garyhundon and Powerstown, Nurney Co. Carlow which extend to about 170 ha. in on contiguous unit, a significant proportion of which are in use for aggregate extraction, namely sand and gravel and limestone.

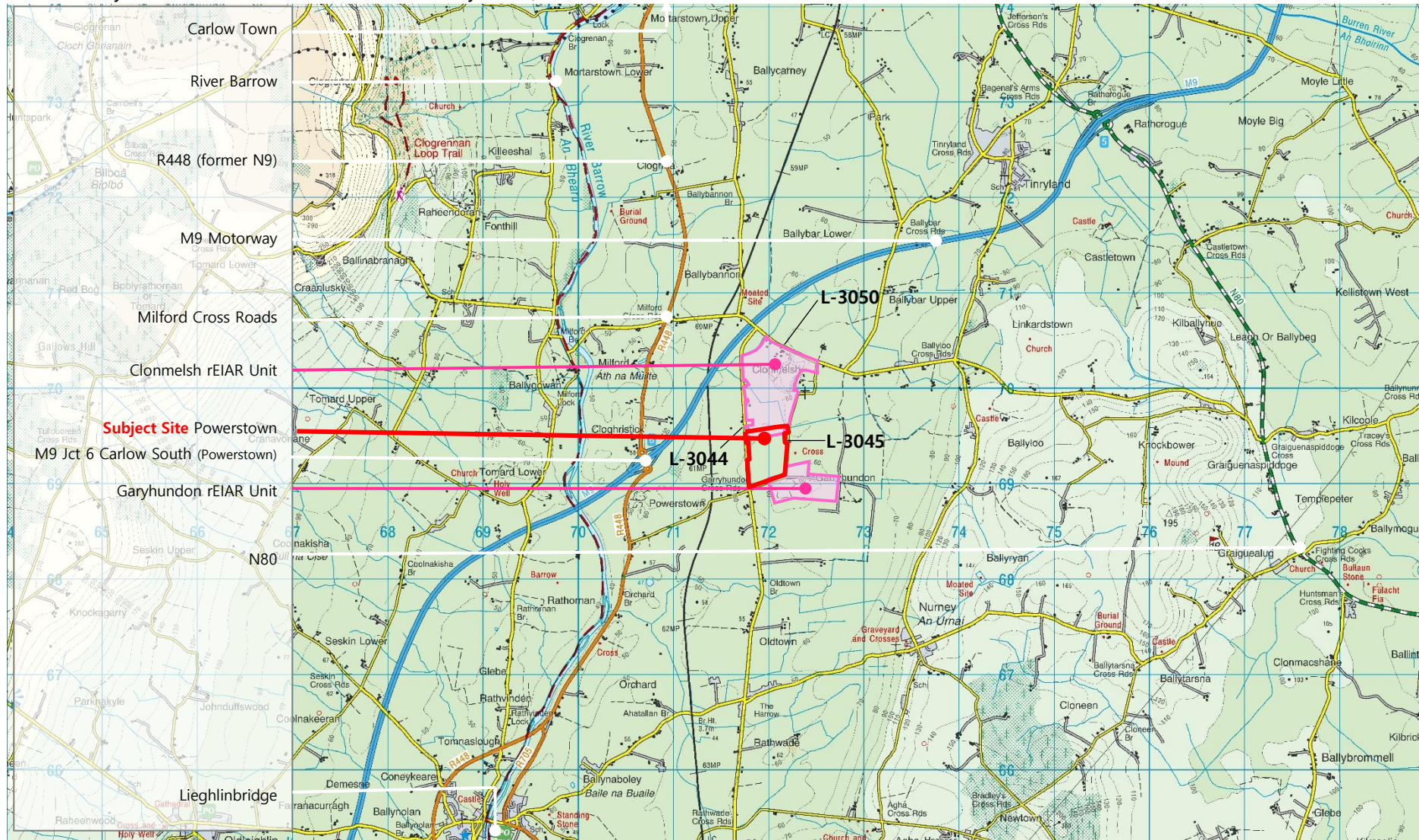
The proposed development is designed in such a manner as to be a continuation of an extant quarry void located in Clonmelsh, Nurney, Co. Carlow. For this reason, the southern face of that quarry is included in the current application site area.

2.0 BRIEF DESCRIPTION OF SITE & PROPOSED DEVELOPMENT

The lands the subject of this EIA [the subject lands] encompass the application area of approximately 21.9 ha. at the centre of a landholding in the control of the applicant of just under 170 ha. The subject lands are located approximately 7.5km directly south of the centre of Carlow town and a little over a kilometre north west of junction 6 of the M9. The subject lands occur in the townland of Powerstown in the Electoral Division [ED] of Nurney, County Carlow at ITM [Irish Transverse Mercator] Easting 671856, Northing 669302 and 52°46'1.88"N, -6°56'6.56"W. See figure 1.1 for strategic site location.

- The proposed continued extraction site is to extend from the existing southern face of the quarry at Clonmelsh, Nurney, Co Carlow itself the subject of an existing application for substitute consent to An Bord Pleanála under ref. ABP-300034-17.
- The proposed continued extraction site is further bounded by local roads on its remaining 3 sides. The L3045 bounds the site to the east and south and the L3044 to the west and further south.
- The proposed continued extraction area is estimated to hold approx. 10M tonnes of limestone reserve to be extracted in 4 phases over 2 benches to a final proposed excavation depth to match that of the existing quarry at Clonmelsh, Nurney, Co. Carlow at 25AOD.
- Ancillary site works do not include new access to public roads or services as it is intended to continue to use the existing facilities and access at the plant area at Clonmelsh, Nurney, Co. Carlow itself the subject of a concurrent application for substitute consent to An Bord Pleanála under ref. ABP-300037-17.
- Extraction rates will be in line with market demand. Current extraction is at a rate of 180,000 to 200,000 tonnes per annum and is expected to remain at this rate for the short term with uplift thereafter. Extraction rates have been declared at maximum rates of 1M tonnes per annum in previous submissions by former operators of the quarry.
- Therefore a life of at least 20 years is sought in the application for further extraction of a quarry under S.37L of the Planning & Development Act, 2000 (as amended) [P&D Act].

Figure 1.2 Site Location Map Indicating Subject Site location in Powerstown relative to Extant Quarry void over two other townlands Clonmelsh & Powerstown (On Discovery Series Tile OS2616_D)
 Ordnance Survey Ireland Licence No. EN0086117 © Ordnance Survey Ireland / Government of Ireland



2.1 Phased Quarry Plan

The estimated limestone reserve is to be extracted in 4 phases over 2 benches to a final proposed excavation depth to match that of the existing quarry at Clonmelsh, Nurney, Co. Carlow at 25AOD.

Phase 5 of the proposal is restoration that has had regard to the restoration concept masterplan submitted as part of the rEIAR for substitute consent applications ABP-300034-17 (Quarry) and ABP-300037-17 (Plant Area). The entire of the overburden material identified at 3.2.4 above is to be retained on site for final restoration but in the interim is to be used to form bunds around the western, eastern and southern boundaries of the subject site inside the mature hedgerows of the subject lands, also to be retained. The hedgerows with planted bunds behind will act as a visual screen to the proposed quarry workings from the public roadway for the operational lifetime of the quarry.

Figures 3.1 – 3.5 are a conceptual outline of the proposed phases. The reader is also referred the plans submitted in support of the application for permission for this further extraction.



Figure 3.1 Proposed Extraction Plan Phase 1

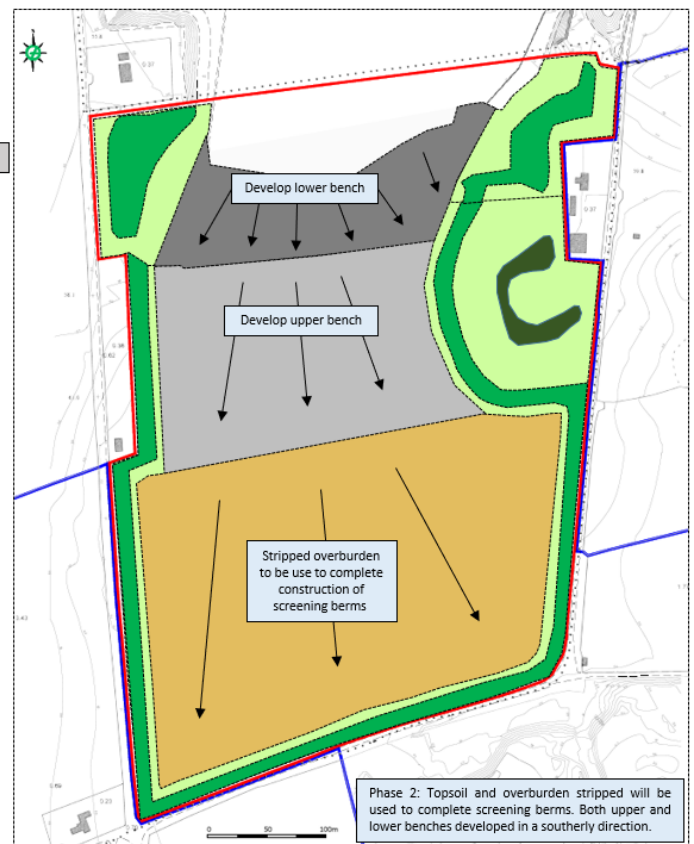


Figure 3.2 Proposed Extraction Plan Phase 2



Figure 3.3 Proposed Extraction Plan Phase 3

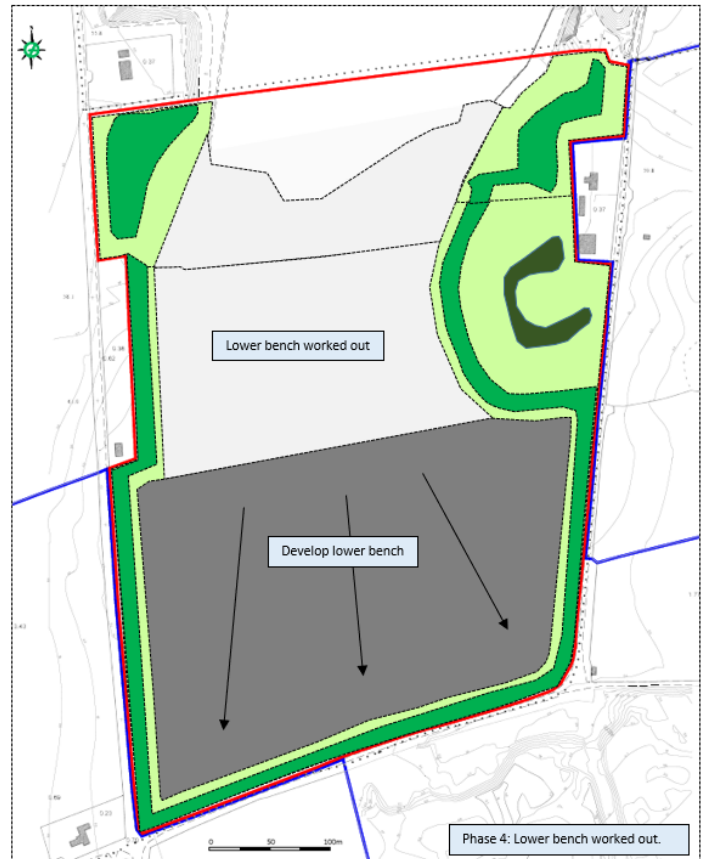


Figure 3.4 Proposed Extraction Plan Phase 4

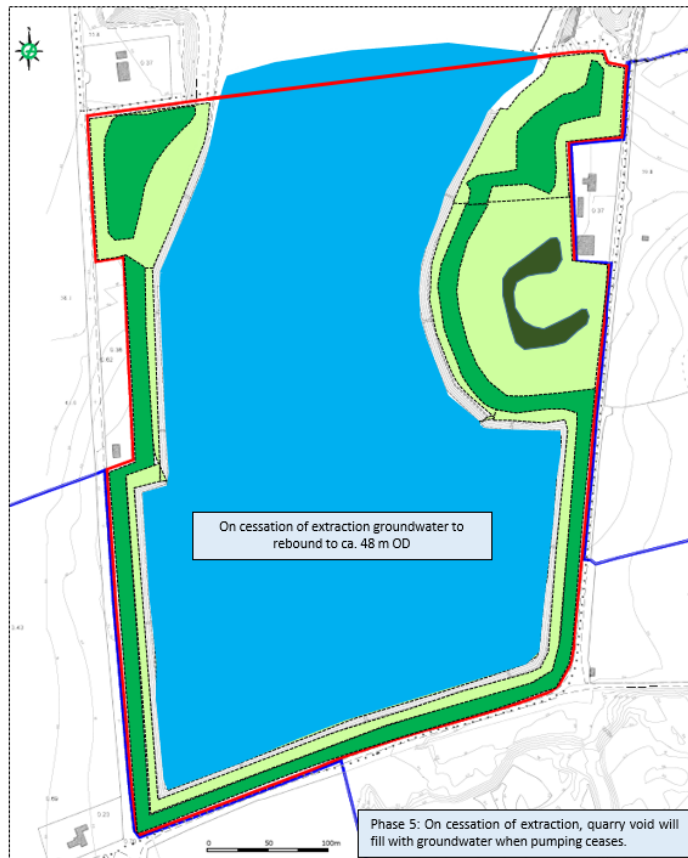


Figure 3.5 Proposed Restoration (Extraction complete)

3.0 REQUIREMENT FOR EIAR & CONCURRENT rEIAR

The requirement for an Environmental Impact Assessment [EIA] process arises from European Union [EU] Directives required to be adhered to by member States and transposed into national laws. The latest version of the Directive is the 2014 EIA Directive.

The type and extent of the proposed extraction use requires an EIAR as Schedule 5 of the Planning and Development Regulations require environmental impact assessment [EIA] for quarries with an extraction area over 5ha. And the applicant must prepare an EIAR to aid EIA. EIA is performed by the competent authority.

The application for permission sought in this instance is under S.37L of the P&D Act. Such an application is made direct to An Bord Pleanála only where a substitute consent for a quarry after S.261A determination is made.

In this instance an application for substitute consent for a quarry has been made (ABP-300034-17 (Quarry)) alongside another (ABP-30037-17 (Plant Area)) at Clonmelsh & Garyhundon, Nurney, Co. Carlow. Those applications for substitute consent are accompanied by a combined remedial EIAR [rEIAR].

The Bord will consider both the substitute consent and S.37L applications simultaneously and their decision will be informed by EIA.

3.1 Concurrent remedial Natura Impact Assessment [rNIS] & Accompanying Natura Impact Assessment [NIS]

In summary, the location and characteristics of the development proposed, alongside previous Screening for Appropriate Assessment [AA] and rNIS for lands associated with the current site, combine to indicate an AA requirement and thus, as a precautionary measure, an NIS has been prepared to accompany the application for further extraction of an extant quarry alongside this EIAR. The companion NIS is submitted to aid the Bord in AA should they determine AA is required.

3.2 The Need for the Development and Consideration of Alternatives

The subject site is part of an asset of a company that is in Receivership. The aim of the receivership process is to maintain and realise the value of this asset which only lies in maintaining the subject site and associated lands status as a quarry notwithstanding that remaining reserve extraction will be contingent on a greater improvement in the construction market that has begun to occur. Maintaining the subject site and adjacent lands as a viable quarry with associated processing plants will ultimately realise the sustainable extraction potential of the subject lands and maintain those jobs which existed at the time of administration (2014) when the reduced demand for aggregate and aggregate products had already seen a reduction in the number of direct jobs.

4.0 STRUCTURE & CONTENT OF EIAR

Taking the definition of an EIS as in the Planning & Development Act 2000, as amended together with that by reference to Articles 3 and 5 of the 2014 EIA Directive this EIAR is:

An environmental impact assessment report of the direct and indirect significant effects, if any, on the environment, which can reasonably be expected to occur because the proposed development the subject of the application for planning permission consent is carried out. The report is prepared to aid An Bord Pleanála in environmental impact assessment.

This EIAR is prepared in accordance with the aforementioned EIA Directives, the Planning and Development statutes and government guidance on EIA. The contents of this EIAR including baseline data, anticipated potential environmental effects and mitigation measures have been entirely informed by preceding and subsequent planning and license applications and

outcomes related to the subject lands, including the rEIAR supporting current applications for substitute consent.

The EIAR has been systematically organised to provide the following Information:

Section 1 Context and Requirement for rEIAR	1.0 Introduction
Section 2 A description of the existing environment.	2.0 Description of the Site & Receiving Environment
Section 3 A description of the project.	3.0 Description of the Project
Sections 4 to 13 Identification of likely significant impacts during construction and operation of the development and a description of mitigation measures to avoid, reduce and, if possible, remedy significant adverse impacts.	4.0 Population & Human Health
	5.0 Biodiversity
	6.0 Land, Soils & Geology
	7.0 Water & Hydrogeology
	8.0 Air Quality & Climate
	9.0 Noise & Vibration
	10.0 Material Assets & Traffic
	11.0 Cultural Heritage
	12.0 Landscape
Section 14 Sets down the cumulative and in combination significant effects of the project and considers expected effects deriving from the vulnerability of the project to risks of major accidents and/or disasters that are relevant to the project concerned.	13.0 Interactions

Table 1.1 Summary Information contained within an EIAR & Chapter Headings of this rEIAR

Alternatives are examined by reference to locations, designs and processes, as appropriate.

Likely significant effects are identified, described as direct, indirect, secondary, cumulative; by duration short, medium and long-term, permanent and temporary; and by type positive and negative, as appropriate.

The remainder of this summary follows the order of the environmental factor chapters of the EIAR.

4.1 Chapter 4.0 Population & Human Health

Ultimately, all the effects of a development on the environment will impinge upon human beings, directly and indirectly, positively and negatively.

Having regard to existing and draft EIA guidance and the characteristics and context of the lands the subject of this EIAR this chapter aims to identify the likely significant impacts that the development has and may have on Land-use, Settlement Patterns, Employment, and Human Health for population groups identified as relevant to the lands.

Two population groups have been identified as likely to experience effects from the quarry and plant area land-uses the subject of this EIAR:

1. The local non-EIAR population. This is the existing and planned population of the area including residents and related groups having a connection to the area by occasional or habitual presence e.g. workers, students and visitors.
2. The EIAR population. This is the non-indigenous population consisting of the employees and related service providers of the lands the subject of this EIAR. This population group includes the employees and related service providers.

Potential likely significant felt / anticipated effects of the rEIAR development on each of the receiving environment headings are then set out, followed by a description of mitigation measures proposed in order to avoid, reduce, and if possible, remedy significant adverse impacts where those effects are identified to be negative.

The companion chapters of this EIAR define and assess the predicted impact of the development and set out mitigation measures from the perspective of discreet environmental factors and include matters of cultural, archaeological and natural heritage. Where it is determined that the assimilative capacities of those environmental factors including air, water, geology,

soils and landscape are sufficient, with mitigation measures, to accommodate the development without significant negative impacts it is considered that the human health will be protected. However, for this assumption to be drawn the mitigation measures set out in each chapter of the EIAR must be implemented.

Mitigation specifically set down in this chapter arise elsewhere but are considered to have particular import to the identified populations include;

- Design mitigation as set out in Chapter 3.0 to protect the residential amenity of the eastern dwelling by providing a set back of 100m is a direct, negative, permanent and not significant impact.
- A minimum setback of 20m from the outer ring of RMP CW12 202 is set down as mitigation measure at Chapter 11.0 of this EIAR. Chapter 3.0 and submitted drawings indicates a more generous setback of 50m from this feature.
- A conceptual restoration plan is provided at Chapter 3.0 and on submitted drawing no. 5 which follows the conceptual restoration masterplan submitted with the previous rEIAR consisting of flooding the void and creating diverse habitats at upper levels.

The implementation of the mitigation measures as set out in the EIAR conclude the following residual impacts:

- The removal of the site from agricultural land to a quarry and processing land use is the significant, permanent, adverse impact.
- The restoration of the lands to amenity lake is a residual, positive, and slight impact.

4.2 Chapter 5.0 Biodiversity

The assessment presents a summary of ecological features which are likely, or have the potential to be affected by the proposed extractive extension works within arable habitat south of the Clonmelsh Quarry.

A combination of desktop information and the site walkover which included comparative notes on the surrounding was used to assess the Site. A Natura Impact Statement (NIS) has been carried and is included in the application. The NIS concluded that no significant impacts are likely to occur at the Natura 2000 sites as a result of the proposed development.

It is considered in the water impact assessment, that the current water treatment processes in place at Site have been sufficient to treat the water discharge to surface water quality standards. It is proposed that mitigation measures adopted at the adjacent quarry will be adhered to at the Application Site to ensure that no adverse environmental impacts will occur to the habitats, species, hydrology and underlying hydrogeology as a result of the proposed activities.

When cumulatively considering the mitigation, compensation and enhancement measures outlined within this section it is considered that a net gain for biodiversity will be afforded over the long term (closure and post closure life of the quarry). Many new species may appear during the evolution and eventual closure of the Site. As natural succession and planned restoration takes place, a variety of different habitats will occur. This will provide important habitat for a variety of species. Peripheral woodland and scrub will eventually develop adjacent to large waterbodies providing structural ecological connectivity.

4.3 Chapter 6.0 Land, Soils & Geology

Twelve trial pits were excavated within the Application Site in 2010. Trial pit logs recorded at this time noted the composition of overburden to be variable. These were predominantly composed of a mixture of clay-rich small stone till, coarse limestone gravel and a sandy, poorly cohesive till.

The soils at the Application Site are defined by the Geological Survey of Ireland (GSI) as shallow well drained materials (BminSW) in the Renzinas, Lithosols Soil Group. The GSI define subsoils as Glaciofluvial sands and gravels derived from a limestone material (GLs). The GSI's bedrock 1:500,000 map show that the regional geology of the area is mainly comprised of marine shelf and ramp facies; argillaceous bioclastic limestone and subsidiary shale. The local geology 1:100,000 map identifies that the Site area is underlain by The Ballysteen Formation, which is described as a dolomitised dark-grey muddy limestone. The lithology of the formation in this area notes that much of the Ballysteen Formation in Carlow and mid-Kilkenny is dolomitised. The dolomitisation has not destroyed the original limestone fabrics.

According to the GSI Spatial Resources the adjoining quarry immediately to the north of the Application Site is a Geological Heritage area, as the carboniferous limestones of the Ballysteen Formation are well exposed in the quarry of the Application Site. Prior consultation with the GSI for that area has noted that the exposure of the Ballysteen Limestone in this part of Ireland significantly adds to the knowledge and geological understanding of the area.

The most significant residual effect arises in the loss of 'land' by the removal of the geological reserve and incapability of the site to be returned to agricultural land use.

The materials to be extracted will be used as raw materials in the construction industry, which is considered an acceptable use of the resource. The proposed extraction of the limestones on the Site is considered an important aggregate resource but not an unusual geological unit and no geological importance or heritage value is attributed to them. In the long-term, there will be no deleterious effects on the remaining aggregate bedrock or groundwater in the quarry.

4.4 Chapter 7.0 Water & Hydrogeology

The Application Site at Clonmelsh is directly adjacent to an existing quarry void and will be quarried in a southerly direction to a depth of +25 m OD (the depth of the adjacent quarry).

On a regional scale the Site is located in the catchment area of the River Barrow (Hydrometric Area 17 of the South Eastern River Basin District), in a valley that lies between the foothills of the Leinster Mountains to the east and the Castlecomer Plateau to the west.

From Carlow to beyond Bagenalstown, the valley is ca. 6.5 km wide, with natural ground levels at the Site varying from between 55 and 65 m OD. The Site itself undulates gently towards the River Barrow (to the west), which flows in a southerly direction towards Waterford Harbour.

There 4 No. drainage features (streams) within close proximity to the Site, with the Clonmelsh Stream flowing westwards towards the Powerstown Stream along the northern boundary of the Site. The development of the Application Site will necessitate the re-routing of the Clonmelsh Stream in a clockwise direction around the proposed quarry extension to join the stream where it currently flows in the south-west corner of the existing quarry site.

Re-routing (and lining) of part of the Clonmelsh Stream will help to provide increased biodiversity, and ensure that quality and quantity of flow be provided throughout the seasons to the Powerstown Stream, as the current diversion of the stream is understood to 'leak' into the underlying sands and gravels that overly the limestone bedrock. It is proposed that the diverted section of the stream will be lined with a 200 mm thickness of low-permeability clay and overlain with a substrate of unsorted gravels of varying thickness (up to a maximum of 100 mm) to encourage biodiversity.

The final route of the diversion and diversion design will only take place following consultation and agreement with the Inland Fisheries Ireland.

Four surface monitoring locations SW01, SW02, SW03 and SW04 are monitored on a quarterly basis as part of the adjacent quarry's discharge licence monitoring regime (DL7/233). SW01-SW03 are located on the Clonmelsh Stream and SW04 is located on the Garyhondon Stream. Surface water monitoring results recorded between 2007 and 2017 have periodically

noted elevated nitrates and ammonia levels in SW01, SW02 and SW03 which is likely due to agricultural activities. Nitrate levels in the local streams are also elevated, however the quarry discharge is noted to dilute the nitrate levels in the streams.

Any waters falling on the Site will utilise the adjacent quarry's water management system, which allows for 25 mg/l suspended solids and nitrates in terms of quality, and 2,000 m³/d in terms of volume to be discharged from the Site (Discharge Licence (DL7/233)). It is proposed that the discharge from the enlarged quarry footprint will be maintained within current limits, with winter working of the quarry at higher bench levels and summer working taking place at lower bench levels. In the case of a storm event occurring, excess water will be 'stored' in the quarry void until such time as it can be safely discharged within the limits of the discharge licence.

The bedrock aquifer underlying the Site has been characterised as 'Rkd', a regionally diffuse karstified bedrock aquifer with good development potential, however the results of investigations undertaken at the site do not confirm this. A shallow cone of drawdown has developed in the bedrock and sands and gravels in response to dewatering of the adjacent quarry. The oval shape of the cone of depression reflects the general shape of the quarry void and indicates a relatively low permeability in the bedrock.

The overlying Quaternary deposits of sands and gravels have been classified as a regionally important gravel aquifer 'Rg', although with limited value due to the highly variable nature of the deposits. The water-table is generally found less than 2 m below ground level within these sands and gravels and the main importance of this aquifer is in providing storage, and allowing recharge to the underlying limestone bedrock aquifer. Groundwater vulnerability at the Site has been defined as 'High'.

Groundwater in the bedrock and sand and gravels are considered to be in hydraulic conductivity in the Site area and are unconfined. The principal hydraulic boundaries in the area are the Leinster Granite to the east and the River Barrow to the west.

Given the proposed level of activity at the Application Site, as long as mobile plant (and any other machinery brought on site) is properly maintained it is considered very unlikely that hydrocarbon pollution will become an issue at the Application Site.

Quarrying activities are not anticipated to have had a significant impact on third party wells within the vicinity of the Site as the groundwater monitoring and previous consultation with residences with wells has demonstrated that the bedrock aquifer is saturated within a short distance of the quarry void and no problems have been reported with the water supply. As a result of not having an effect on groundwater wells in close proximity to the Site, it is unlikely that the quarry has had an effect on the River Barrow, located ca. 1.5 km to the west.

4.5 Chapter 8.0 Air Quality & Climate

In order to establish any impacts from the proposed quarry related activities that could occur at the Application Site and its environs, previous dust monitoring carried out at the adjacent quarry operation has been assessed. This assessment includes five dust monitoring locations which have been operated since February 2007, a sixth location since August 2010 and a seventh which was established in May 2012.

Monitoring of the seven dust monitoring locations from February 2007 to June 2017 shows the Site practices to be in general compliance with the Department of Environment, Heritage and Local Government (2004) recommended threshold limits. Eleven monitoring exceedances (or 2.7% of total monitoring records) were recorded during the monitoring periods which equates to an overall slight to imperceptible impact from the adjacent activities to the local environment. The proven site practices and mitigation measures at the existing quarry and will be adopted and adhered to at the Application Site, thereby resulting in no detrimental effect from dust on the local environs due to the proposed development.

Monitoring at the existing quarry and Application Site will continue to be carried out in accordance with Environmental Management in the Extractive Industry (2006), and Quarries and Ancillary Activities, Guidelines for Planning Authorities (Department of Environment, Heritage and Local Government, 2004).

The Site is not considered to be of sufficient scale to have had the potential to impact the regional or local climate in any significant manner. In addition, the operation of plant and traffic movements at the Site have had imperceptible effects on atmospheric CO₂. In the longer term, on completion of the site restoration, the concentration of airborne dust would be expected to be reduced from present day levels as the result of covering and seeding of exposed, un-vegetated soil surfaces. This will most likely constitute a minor positive impact for the local environment.

4.6 Chapter 9.0 Noise & Vibration

In order to establish any impacts from the proposed quarry related activities that could occur at the Application Site and its environs, the noise emissions and current site practices were assessed for the adjacent quarry development. This includes monitoring events from five designated noise monitoring locations.

The principal potential noise impact arising from the proposed activities, is nuisance from extraction and restoration activities. Noise sources that relate directly to the proposed activity will include a variety of mobile and fixed plant. In addition, the drilling of blast holes will take place on site.

Noise monitoring undertaken between February 2008 and June 2017 show a number of exceedances occurred at the Site. It was determined by SLR in their reporting that the exceedances were mainly due to external traffic noise sources on the adjacent public roads and M9 motorway as shown by the elevated LA₁₀ readings. An additional survey carried out on 05 March 2010 to assess the background noise levels arising from traffic on the external road network (when the quarry was not operational), noted similar results to the fully operational facility. Taking into account the external traffic noise sources, SLR noted that the noise monitoring results indicate that the noise emissions from the adjacent quarry practices have complied with the daytime noise threshold limit of 55 dB(A), measured at 'sensitive locations' recommended in Quarries and Ancillary Activities: Guidelines for Planning Authorities (DoEHLG, 2004). The overall noise impact as a result of the extraction activities has been not significant and it is considered that there has been no detrimental effect from noise at the Application Site on the local environs.

Vibration monitoring undertaken at three locations from January 2009 to April 2009 recorded no exceedances in peak particle velocity for the adjacent quarry activities. Air overpressure exceeded the limit on two occasions, however it has been noted that this indicates a compliance within 95% confidence limit. All blasts are monitored, with records kept detailing the results of vibration, air over pressure, and the blast design as part of the Environmental Management System (EMS) implemented at the quarry. It has been reported that the scope of the blast monitoring has been reviewed annually, and assessed if amendments have been required in light of prior results.

Monitoring at the existing quarry and Application Site will continue to adhere to appropriate guidance from DoEHLG – Quarries and Ancillary Activities: Guidelines for Planning Authorities (2004) and the EPA Guideline Document for Extractive Industries (2006).

4.7 Chapter 10.0 Material Assets & Traffic

The objective of this chapter is to identify and assess the significant effects that have occurred, are occurring or can be reasonably expected to occur in respect of material assets and the existing road network.

In order to meet the objective of this Chapter, to identify and assess the significant impact the EIR development may have on material assets and the existing road network the baseline is established for each of the infrastructure services

(material assets) required to be used in the development. An assessment of the significant effects on each follows with recommended mitigation measures where appropriate.

It is noted that in relation to roads and traffic that a Traffic and Transposition Assessment [TTA] has been prepared to identify, assesses and mitigate significant effects. The objective of the TTA is to examine the traffic implications associated with the continuation of existing extraction works at Clonmelsh quarry into lands at Powerstown in terms of its integration with existing traffic in the area. The TTA determines and quantifies the extent of trips generated by the development, and the impact of operational performance of such trips on the local road network.

The TTA relies on the discerned and observed traffic generation submitted with the rEIAR in order to develop thresholds of observed and expected traffic generation. In this regard, the observed extraction rate of Clonmelsh quarry in 2017 was 180,000 to 200,000 tonnes.

As outlined at Chapter 2.0 of this EIAR the subject site contains no built development and no development beyond extraction and associated landscaping in the form of screening bunds during the operational phase of development (Phases 1 to 4 at Chapter 3.0) and restoration (Phase 5 at Chapter 3.0) is proposed.

As noted at section 10.2:

- No built development beyond extraction are proposed on the subject lands
- The movement of the Clonmelsh stream as assessed at Chapter 7.0 of this EIAR is considered as a secondary, permanent effect on this surface water material asset. As the function of the stream will remain in place during operation and after closure phases of the development this effect is considered not significant and neutral.
- The subject lands are not currently oversailed by telecommunications or power lines. No access to either is required as part of the development as all plant, machinery and communications on the subject site will be mobile as set out at Chapter 3.0 of this EIAR. No anticipated effects.
- Existing staff welfare facilities at the plant area in Clonmelsh will be used by site staff obviating the requirement for waste or potable water management proposals. No anticipated effects.

The TTA at Appendix 10.1 assesses traffic at opening year (2018) and + 5 and +15 years in accordance with TII guidance and in accordance with the predicted reserve lifespan of the proposed extraction site of around 20 years.

Link and junction capacity analysis in the TTA find that the extant local road (L3050) access at Clonmelsh and associated junctions have sufficient capacity to continue to accommodate the proposed development traffic. As the traffic expected to be generated replaces that which currently arises there is no significant direct effect on the baseline traffic environment.

4.8 Chapter 11.0 Cultural Heritage

This report was carried out to assess the impact on the cultural heritage landscape of a proposed extension to an existing quarry in the townland of Powerstown, Co. Carlow. The site is currently in use for tillage and contains two archaeological monuments a ring ditch and the site of an enclosure. Previously a geo physical survey of the site identified the layout of the enclosure and a number of other features. These were fully excavated in 2008 and preserved by record (Licence 08E0960). In order to prevent any damage to the ring ditch a fenced exclusion area should be established. The development has not impacted directly on any building listed in the National Inventory of Architectural Heritage.

4.9 Chapter 12.0 Landscape

The development the subject of this EIAR consists of further extraction of a quarry and all related ancillary site works over

an application site area of 21.9 ha. with excavation over an area of 13.6 ha at Powerstown, Nurney, Co. Carlow ('the Site').

After section 1.4.1 of this report this Chapter is a summary of potential landscape and visual effects of the Clonmelsh quarry lateral extension into Powerstown. It focuses on effects of the broad land unit in advance of a detailed Landscape and Visual Impact Assessment [LVIA] being undertaken following detailed quarry design.

This is an outline of the potential effects of the proposed scheme considered against the 2017 baseline conditions, including the concept restoration plan which forms part of the Clonmelsh and Garyhundon rEIAR (the subject of substitute consent applications ABP-300034-17 (Quarry) and ABP-300037-17 (Plant Area)).

Phase 5 of the proposed quarry described and depicted at Chapter 3.0 is the proposed restoration plan for this EIAR. This plan is also separately submitted as drawing no. 5 and has been prepared by Golder & Associates. This Restoration Plan is based on the concept restoration plan that formed part of the Clonmelsh & Garyhundon rEIAR.

There would be both beneficial and adverse impacts upon landscape fabric as a result of the proposed development. Overall the effect upon landscape fabric would not be significant.

The impact of the works upon landscape character would be very limited, due primarily to the screening effects of hedgerows and tree cover across the landscape. No significant effects would occur as a result of the proposed development.

No significant effects would occur at any of the protected viewpoints, prospects or scenic routes which are designated within the Development Plan.

There are very few dwellings within close proximity to the site and from each one visibility towards the site is limited by existing vegetation. No significant effects would occur from dwellings.

No significant effects would occur from roads (including those) which pass the site, or from the only recreational route in the area, the Barrow Way.

In summary, the landscape and visual effects of the proposed development would be limited in extent and degree, and would not be significant.

4.10 Chapter 13.0 Interactions

The proposed development is to use plant and welfare facilities for which substitute consent is sought. There will be no significant cumulative impact from this aspect of the proposal as the quarrying proposed and considered in this EIAR is to secure reserve to continue aggregate extraction and processing at Clonmelsh, rather than add to it and thus increase usage and predicted impacts.

All environmental factors are inter-related to a greater or lesser extent depending on the location, scale and type of development.

In this instance the further quarrying of an extant quarry unit into agricultural lands is proposed.

Each section of the EIAR identifies likely significant effects, described as direct, indirect, secondary, cumulative; by duration short, medium and long-term, permanent and temporary; and by type positive and negative, as appropriate.

The comprehensive assessments undertaken as part of this EIAR have revealed that there is an overriding residual significant negative environmental impact by the permanent removal of the original agricultural land cover and the geological layer beneath. This removal of land has been identified as a negative impact at Chapter 4.0, 6.0, 11.0 (recorded monument to be preserved by record) and 12.0.

The restoration of the lands will mitigate to some extent the direct negative visual impacts albeit that there are no significant public viewpoints into the subject site. Restoration is presented at Drawing no. 5 submitted with the planning application, described in Chapter 3.0 and considered at Chapter 12.0 of this EIAR. Conversely, in the Do Nothing scenario the extant economic reserve will not be extracted or processed, the associated quarry employment and socio-economic history will be permanently lost which would be a direct, negative and permanent impact. The proposal is for the extraction of the reserve that this location and therefore it is identified as a significant direct, positive, long-term impact at Chapter 4.0.

Each of the environmental factors assessed in this report and their primary interactions are set out in the EIAR. Please have regard to the mitigation measures and significant impacts identified at each section of the EIAR as the report aims to demonstrate that all aspects of the EIAR requirement have been met and all mitigation measures have either been implemented in the development design or are committed to in the event of the approval of the proposal that this EIAR accompanies.