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Environmental Impact Assessment Report (EIAR) – Non-Technical Summary Volume 1

Continuance of Use & Extension to Ballyburn Pit

Dan Morrissey & Co.

(Plazamont Ltd.)

Ballyburn Upper, Gorteenvacan, Knockbane, Castledermot, Co. Kildare

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Form ES - 04

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Environmental Impact Assessment Report (EIAR) – Non-Technical Summary

Volume 1

Continuance of Use & Extension to Ballyburn Pit

Dan Morrissey & Co. (Plazamont Ltd.)

Ballyburn Upper, Gorteenvacan, Knockbane, Castledermot, Co. Kildare

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1 INTRODUCTION

Malone O'Regan Environmental ('MOR Environmental') was commissioned by Dan Morrissey & Co. (trading as 'Plazamont Ltd.'), hereafter referred to as the 'Applicant', to prepare an Environmental Impact Assessment Report ('EIAR') in support of a planning application to Kildare County Council ('KCC').

1.1 General

This Non-Technical Summary ('NTS') document (Volume 1) provides a summary in non-technical language of the information within the main text of the EIAR that is contained in Volume 2, while the supporting technical documents are presented in Volume 3 – Appendices. It should be noted that the phrase "not significant" is a term which usually means that the activity referred to will result in notable changes to the environment but without significant consequences.

This Environmental Impact Assessment Report ('EIAR') reviews the possible effects associated with the continued use of established infrastructure and the extension of the extraction area at an existing sand and gravel pit and subsequent restoration using sitewon materials and clean uncontaminated soil and stone imported to site (henceforth referred to as 'the Proposed Development').

The sand and gravel pit is known as Ballyburn Pit (planning reference number 05/2091 and PL09.220222) and is located at Ballyburn Upper, Gorteenvacan, Knockbane, Castledermot, Co. Kildare (henceforth referred to as 'Ballyburn Pit' or 'the Pit').

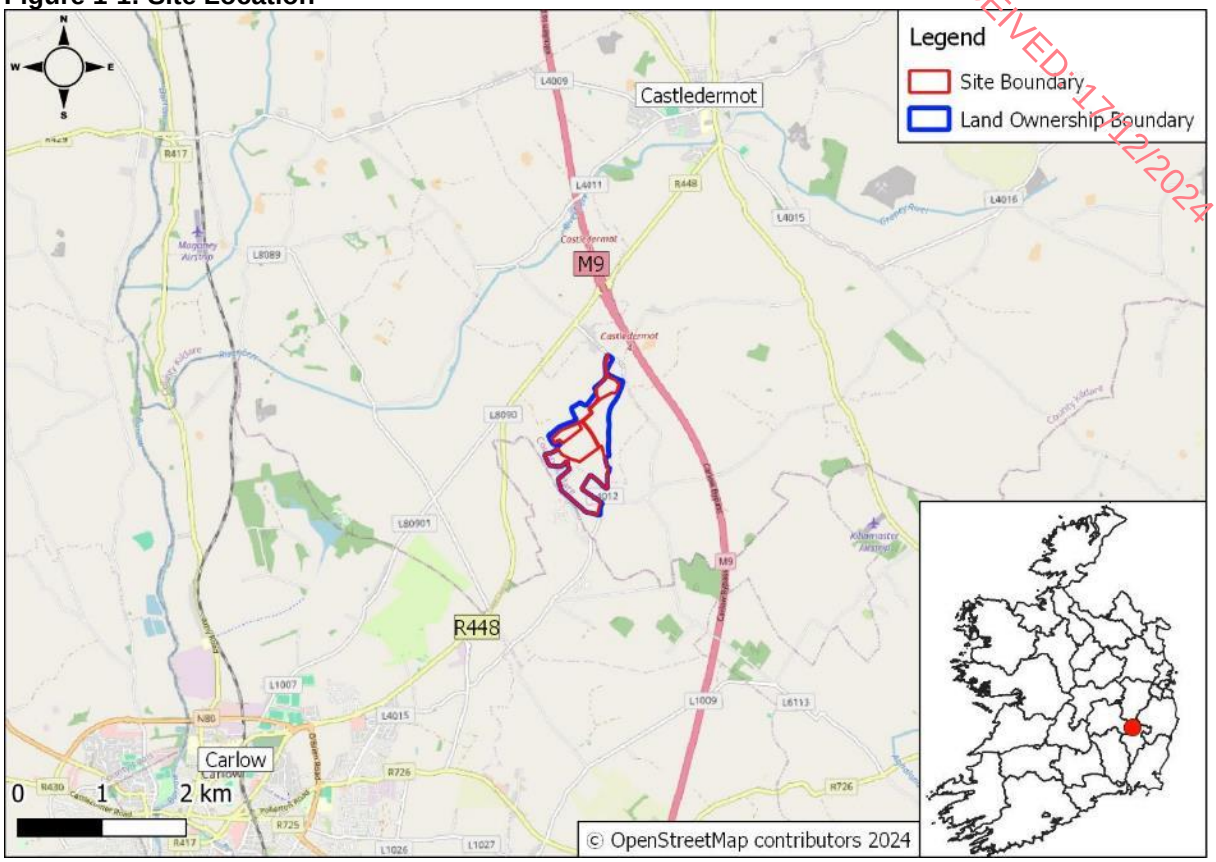
The Proposed Development will be located on land covering an area of ca. 37.8 hectares ('ha') within the Applican't existing landholding, situated in the townlands of Ballyburn Upper, Gorteenvacan, Knockbane Castledermot, Co Kildare (Ordnance Survey Ireland Grid Reference ITM 676667 681155), refer to redline boundary presented in Figure 1-2 below for ('the Site'). The Site is located ca. 4.3km south-southwest of Castledermot town, Co. Kildare and ca. 4.0km northeast of Carlow Town. The Site is suitably serviced by the M9, which is 0.8km from the entrance via the road (Refer to Figure 1-1 for context).

The proposal does not aim to increase the pit's production rate but seeks to access more high-quality sand and gravel from the extension lands to a final depth of 71m above ordnance datum ('m OD'), which is above the winter groundwater table. This will ensure that extraction activities are dry and are avoiding interactions with groundwater.

The plan also includes restoring the Site after extraction by filling it with circa ('ca') 1,125,000 tonnes ('t') of clean, uncontaminated soil and stone from by-product materials[1]. This restoration process will contribute to the local circular economy by creating a location for excess soil materials to be reused in a productive manner.

[1] The environmental objective of by-product is to beneficially use excess uncontaminated soil and stone which will no overall adverse impacts on the environment or human health.

Figure 1-1: Site Location



1.2 Overview of Site and Context

The Proposed Development is comprised of:

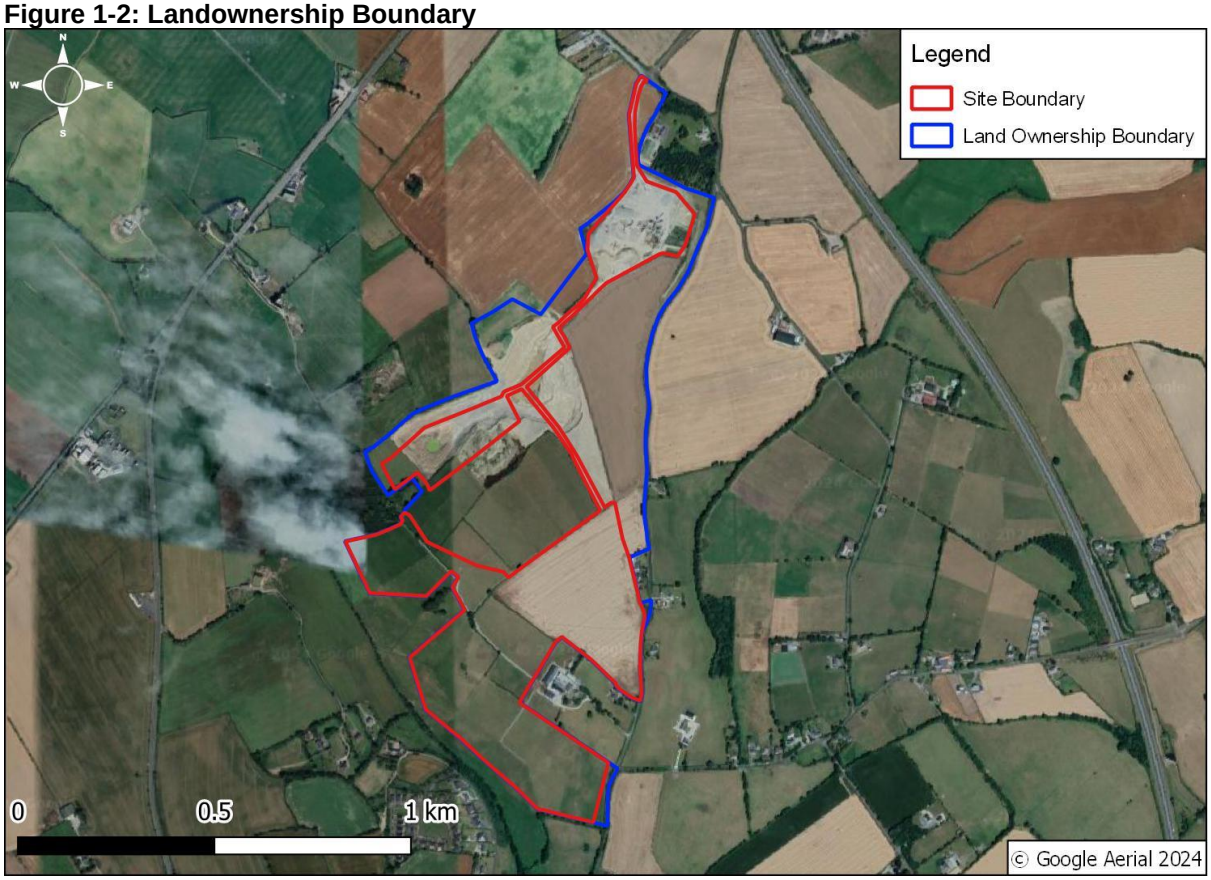
- Continuance of use (05/2091):
  - Transport corridors (including wheelwash, weighbridge etc.); and,
  - Processing area and all associated equipment.
- Extension Lands:
  - Extraction of sand and gravel.

The Proposed Development will use existing transport routes within the Ballyburn Pit area to manage the movement of materials both on-site and off-site. These established routes include well-defined infrastructure that supports efficient transport operations associated with the Pit.

A designated processing area within the Ballyburn Pit is equipped with modular mobile screening equipment and associated infrastructure including settlement ponds for treating water prior to reuse in the screening process. This area will handle the processing, washing, and screening of aggregates sourced from the quarry's planned extension area. Together, this and the connecting routes cover circa ('ca.;) 5 hectares ('ha'). Additionally, there is a soil importation area within the central part of the Ballyburn Pit ca. 4ha. This area has previously been used for extraction. Clean, uncontaminated soil and stone by-products will be brought to this site to help store sufficient soil for future restoration efforts. This space will temporarily store these materials before they are used in restoration work across the Site. This area of the site is ideally located as it is enclosed on three sides, ensuring any temporary stockpiles are not exposed and are also located away from receptors

The proposed quarry extension area covers ca. 28.6ha of primarily agricultural land located to the south of the Applicant's existing property. This "Greenfield" land has no prior development history. It was originally part of the 2005 planning application (05/2091), but due to the planning authority's request to review environmental standards and technology changes over time, this land was not permitted for extraction. This EIAR and associated documentation provides the planning authority with the ability to review the potential effects associated with the extension into these lands against the latest environmental standards and technology available.

Figure 1-2: Landownership Boundary



1.3 Applicant

The Applicant, Dan Morrissey & Co. (Plazamont Ltd.), is an established business and supplier of aggregates and concrete to the construction industry. Plazamont Ltd. Trading as Dan Morrissey & Co. is run by the Morrissey family. The family has been synonymous with quality and quarrying in the southeast region for three generations. Dan Morrissey first started quarrying in Ballycrogue Co. Carlow in the 1930s, and the business has grown and developed exponentially since. The Applicant is one of the biggest independent suppliers of aggregate materials in the Irish construction industry.

The Applicant's principal business is the extraction, processing and supply of construction materials to the construction industry around Ireland. The Applicant produces sand and gravel used for producing a wide range of high-specification aggregates, including concrete aggregates and road-making materials (asphalt sand). These high-specification aggregate products are made to a wide range of aggregate standards.

1.4 Environmental Impact Assessment Report ('EIAR')

This EIAR has been prepared in accordance with all relevant legislative and best practice guidelines in support of the planning application.

1.5 Consultation

As part of the Environmental Impact Assessment, a non-statutory consultation document was issued to all relevant stakeholders inviting their comments on the Proposed Development on 08th November 2023. All of the responses received were considered throughout each stage of the design of the Proposed Development and the Environmental Impact Assessment process. Table 1-1 below outlines the consultees who responded and where their responses were taken into consideration in Volume 2 of the EIAR.

Table 1-1: Consultee Responses to the Proposed Development

Consultee	Date of Response	Method of Response	Topics Raised	Relevant Chapter
Department of Housing	08/11/23	Email	N/A	N/A
Inland Fisheries Ireland	13/11/23	Email	IFI concerns relating to this proposed extension will include the potential for the discharge of deleterious matter to surface waters from operations on-site and potential impacts upon quantity/quality of ground/surface waters from operations here.	Chapter 5: Population and Human Health Chapter 6: Biodiversity Chapter 8: Water
Health and Safety Authority ('HAS')	25/11/23	Email	N/A	N/A
Office of Public Work ('OPW')	10/11/23	Email	No Comment	N/A
Transport Infrastructure Ireland ('TII')	17/11/23	Email	TII notes the proposed site is in proximity to the M9, at a location on the network. Therefore, there may be road safety considerations that are required to be considered in any subsequent application.	Chapter 13: Traffic and Transport

2 PLANNING CONTEXT & NEED FOR THE PROPOSED DEVELOPMENT

2.1 Ownership of Lands

The Site is situated in lands, under the Applicant's ownership, which totals 72.7ha (refer to Figure 1-2 above).

2.2 Planning History at the Site

Prior to Ballyburn Pit receiving planning permission (05/2091 & PL09.220222), it was a "greenfield" Site (i.e. lands with no known previous development).

The planning history of the Ballyburn Pit has been reviewed and is outlined in Table 2-1 below.

Table 2-1: Relevant Planning History of the Quarry

Planning Reference	Development	Decision	Grant Year
05/2091 PL 09.220222	Sand & gravel pit facility on 69.7 hectares, of which 52.7 hectares is the extraction area. The Proposed Development is for phased extraction of sand and gravel using conventional excavation techniques, processing of the material using mobile crushing, screening and washing plant (with mobile closed circuit water treatment unit and silt storage lagoons) and continuous restoration of the extraction area to beneficial agricultural after use. The development also includes a concrete block making facility, two concrete batching plants, a dry mortar manufacturing plant (3,419 square metres),a concrete recycling unit, storage of processed aggregates, an ESB substation (26square metres), office facilities including canteen and washroom facilities (226 square meters), a workshop (900 square metres), a Puraflo proprietary effluent treatment system and percolation area, bunded fuel storage tanks, new vehicular access including wheel wash and two weighbridges, a weighbridge office (195 square meters), car and truck parking area, hydrocarbon interceptors for treatment of surface water drainage prior to disposal on-site, construction of topsoil and overburden storage area and landscaped screening berms, final site restoration and all other associated site works and ancillary activities.	Granted	08/08/2007 30/06/2014

Initial planning for the quarry was granted in 2007 in which the existing Ballyburn Pit operates, and it is set to expire in August 2031. There were a number of items in the permission which were never implemented (such as the dry mortar manufacturing plant, extraction area reduced etc.).

2.3 Planning Policy Context

The planning context of the Proposed Development has been considered in terms of all national, regional, and local planning contexts.

The National Planning Framework ('NPF') lays out plans to manage more balanced growth between the major Irish cities (Dublin, Cork, Galway, Limerick and Waterford) and Ireland's rural communities. The National Development Plan ('NDP') also outlines the intent to invest in public infrastructure and housing. Both the NPF and the NDP will require significant quantities of aggregate to deliver new infrastructure. The Irish Concrete Federation released a report stating that in order to meet the growth targets within the National Planning Framework and the National Development Plan, '1.5 billion tonnes of aggregates' are required.

The Regional Spatial and Economic Strategy ('RSES') for the Eastern Midlands Regional Assembly ('EMRA') is the regional tier of government and sits in the middle tier between the

local government and government department. The RSES includes a spatial and economic strategy for the region and identifies the strategic importance of the aggregate industry in achieving its goals.

Given that the Site is located within Kildare, the County Development Plan 2023-2029 ('CDP') was reviewed. The CDP include objectives which relate to the extractive industry alongside meticulous guidelines to ensure responsible quarry operations. These guidelines encompass considerations such as noise pollution, dust emissions, water quality preservation, and landscape conservation, which have been considered as part of this assessment. The CDP also identifies the targets for the provision of housing, education, health and other public infrastructure projects, providing insight into the current and future demand for aggregates in the county.

2.4 Need for the Proposed Development

The NPF2040 sets a target of sustainable growth of Ireland's rural communities, with approximately 50% of the projected population growth to 2040 intended to take place outside of the five major Irish cities (Dublin, Cork, Galway, Limerick and Waterford). Of this 50%, a minimum of 30% (15% of total population growth) is planned to take place within the existing built-up footprint of current settlements. The projected growth requires new infrastructure, including housing, schools and other public services and transport networks. The Regional policy seeks to make efficient use of the Region's natural resources and to carry out major developments within the framework of national policy. From a local sense, the ambitious goals set by KCC with respect to housing, education, and public infrastructure will not be attainable without a sufficient source of suitably situated quality aggregates. Even within the context of a circular economic model, this will require substantial quantities of raw materials, including aggregates, and the intended rural growth means that the market for building materials will have a strong regional and local element. The scarcity of sand in the midland and eastern region adjacent to major population centres increases the importance of supplies from the Proposed Development. The extension will allow Ballyburn Pit to continue at previous production rates and enable the company to compete on a secure footing for the anticipated 15-year lifetime of the extended quarry. Not only will the Proposed Development provide a valuable resource to the construction market, but the Proposed Development will also offer a beneficial end point for surplus clean, uncontaminated soil and stone material arising from local and regional construction projects. The Ballyburn Pit has supported the economy of the local area through direct employment of up to 28 staff. However, the very limited reserves available within the area originally permitted means that without the Proposed Development, it is unlikely to be able to maintain these employment levels, and closure would likely follow with the loss of jobs and valuable reserves.

3 DESCRIPTION OF THE PROPOSED DEVELOPMENT

The Proposed Development will consist of the following components:

- The continuance of use of existing site infrastructure, including all processing equipment, machinery, entrance, office/welfare facilities, carpark, wheel wash, weighbridge, haul routes and other ancillary infrastructure;
- The extension of the Site to known quality reserves in the south (ca. 28.3ha). The extraction of this extension area will result in a pit floor at ca. 71m OD, which is above the winter water table. The applicant intends to extract ca. 1.7million m^3 of aggregates or ca. 3,060, 000t over the lifetime of the project; and,
- The importation of 1,125,000t of clean, uncontaminated soil and stone by-product materials to complement overburden originating from the Site during the restoration process (which will be restored to between 73/74m OD).

The Site covers an area of ca. 37.8 hectares ('ha') in size. Ballyburn Pit has an existing permitted output of up to 500,000 tonnes of aggregates per annum. The Proposed Development will not seek an amendment to the existing permitted traffic levels and will be able to operate the off-site transportation of aggregates and importation of clean, uncontaminated soil and stone by-product within these permitted levels of traffic.

An overview of the timelines associated with the Proposed Development are as follows;

- Construction Phase (6 months cumulatively);
- Operational Phase (includes extraction and importation of clean and uncontaminated soil and stone by-product) (14 years); and,
- Restoration Phase (6 months).

Planning permission is being sought for 15 years (up to 6 months for the Construction Phase, 14 years for the Operational Phase and 6 months for the Restoration Phase).

3.1 Construction Phase

The Construction Phase relates to the preparation of the agricultural fields located in the extension lands for sand and gravel extraction activities. Works will include the:

- Installation of silt fencing;
- Removal of overburden under archaeological supervision;
- Creation of soil embankments and berms along the Site boundaries;
- Seeding of embankments;
- Creation of haul roads between all operational areas of the Site; and,
- Installation of security fencing to prevent unauthorised access to the Site.

Ballyburn Pit and the operations associated with it are well established. The Proposed Development will operate in a similar manner. The extraction area will maintain a minimum buffer with adjoining lands of ca. 10 m to provide an area of minimal disturbance around the Site. This extraction buffer will be used for the siting of the berm and security fencing. The berm will be constructed from overburden stripped as part of the preparation works in the extension lands. The berm will be ca. 4m wide and 2m high and will be constructed along the periphery of Zone A1, A2, B1 and B2. The berms will be planted with grass sward species to ensure the soil is protected and stabilised for future use during the final site restoration works.

The plant required at this phase will primarily consist of a bulldozer, articulated dumper and excavator. This phase will result in an exposed sands and gravels, which is suitably prepared for extraction. The planting of the soil embankments as described will commence upon the development of the berms in order to stabilise the slopes and ensure that they blend into the local environment.

The Site will be accessed via the haul roads linking the Site to Ballyburn Pit, which itself only has a single point of access (see section 3.4.8 below). Access will be gated and secured when activities are not occurring. It is proposed that security fencing will be positioned around designated zones, with the installation of fencing and appropriate signage along boundaries with third parties.

The construction phase (Site preparation) will be completed over a 6-month period cumulatively (i.e., for each phase). Construction will be carried out by existing Ballyburn Pit employees. Working hours for the construction phase will be the same as the working hours for the Pit:

- Monday to Friday 07:00 - 18:00, stripping of overburden will only occur between 08:00-18:00;
- Saturday 08:00 – 14:00; and,
- Sunday/Bank Holiday Closed.

Workers will utilise established welfare facilities within the existing Ballyburn Pit.

3.2 Operational Phase

Sand and gravel will be excavated and transported via dump trucks prepared for processing. Processing will consist of washing/screening by the modular mobile plant followed by transportation, either directly to market or stockpiled within the existing Ballyburn Pit. The aggregate will be graded as per market demand.

The following mobile equipment will be used during the Operational Phase of the Proposed Development:

- One (1) x Excavator;
- Two (2) x Loading Shovels;
- Two (2) x Wheel Loader; and,
- One (1) x Processing and screening Plant.

The operational phase will be divided into four (4. No) phases and will result in the existing ground level across Zones being extracted down to 71m OD. The operational phase will also include the importation of 1,125,000 t of clean, uncontaminated soil and stone by-product for land purposes. This material will be imported to the Site and temporarily stored in the soil importation area of the Site, which is situated in the western area of the existing extraction area (covering an area of ca. 4 hectares). This area will also be used for visual inspection of incoming loads with an area maintained for quarantine when circumstances require such an area.

Figure 3-1 below presents the phasing scheme for the upper and lower elevations, as well as the western area for restoration, which is described here:

Phase 1

The first phase will commence in Zone A1. Topographical maps within Zone A1 indicate 73 m OD is the highest point within the extraction area. The applicant will extract the sand and

gravel deposits in the north-western portion of the Site down to the established quarry floor, reducing the existing ground level to ca. 71m OD.

Once extraction of Zone A1 is completed the area will be progressively restored with imported clean uncontaminated soil and stone by-product materials and site won overburden to ca. 73/74 m OD. This phase will run concurrently with phase 2.

Phase 2

While extraction activities are occurring within Zone A1, the applicant will commence site preparation works (Construction Phase) in Zone A2 of the extension lands, following the methodology described above.

Once these lands have been prepared, extraction activities associated with phase 2 can commence. Topographical maps within Zone A2 indicate that ca. 83m OD is the highest point within the extraction area. Extraction activities associated with this phase will reduce the existing ground level to ca. 71m OD. Aggregates will be transported back to the existing Ballyburn Pit for further processing via the existing haul route on the eastern periphery of the Site. However, as the ground level is reduced, new temporary haul routes will be constructed to maintain connectivity with the existing pit infrastructure. This phase will run partly in concurrence with Phases 3 and 4.

Once extraction of Zone A2 is completed the area will be progressively restored with clean, uncontaminated soil and stone by-product materials and site-won overburden to a level of ca. 73/74 m OD.

Phase 3

Phase 3 will seek to extract the deposits in the southern portion of Zone B1. Topographical maps within Zone B1 indicate that ca. 83 m OD is the highest point within the extraction area. New temporary haul routes will be constructed to maintain connectivity with the existing Ballyburn Pit infrastructure as Phase 1 and Phase 2 are progressively restored. Phase 3 will run in partial concurrence with phases 2 and 4.

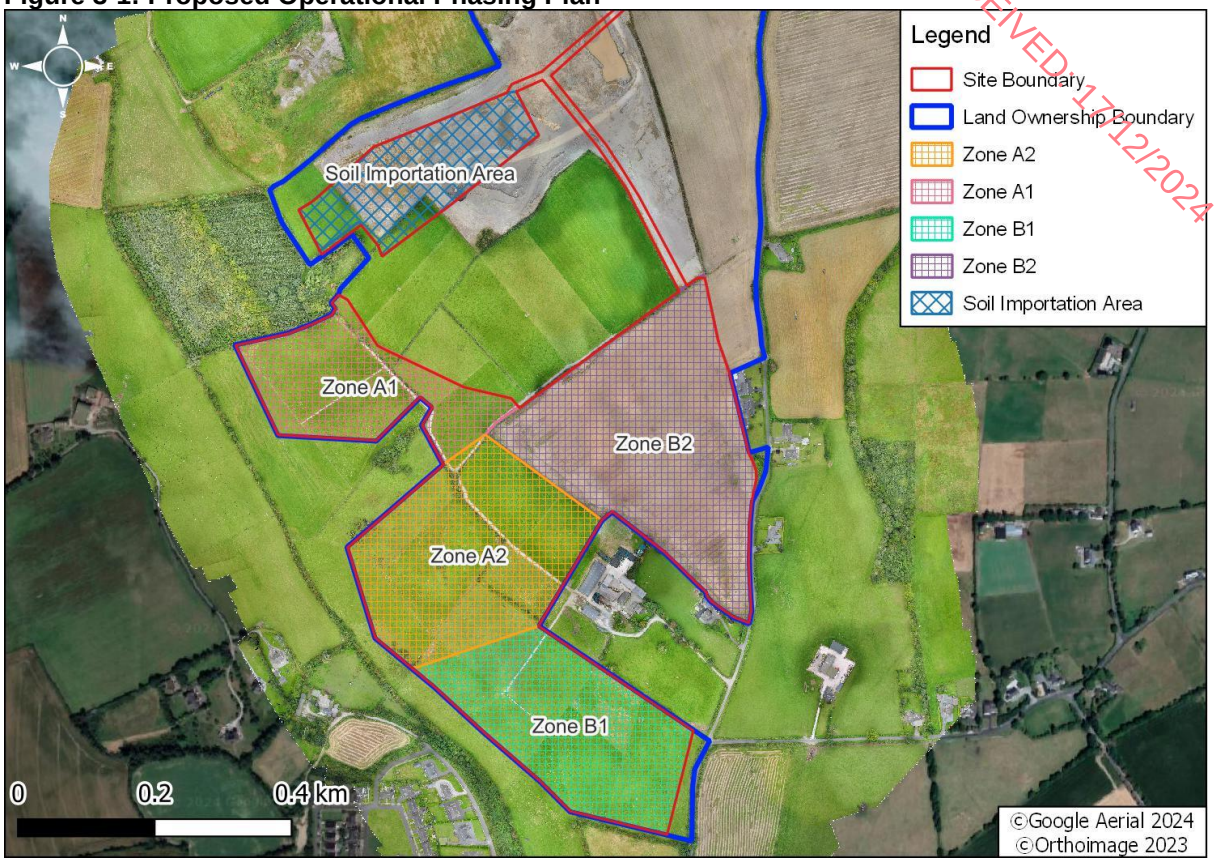
Once extraction of Zone B1 is completed the area will be progressively restored with imported greenfield soil and stone by-product materials to a level of ca. 73/74 m OD.

Phase 4

Phase 4 will seek to extract aggregate deposits within Zone B2. Topographical maps within Zone B2 indicates ca. 81 m OD is the highest point within the extraction area. This phase will be the final phase of the extension lands.

This phase will provide the final zone of extraction which will be restored for the re-establishment of historic contours and agricultural fields prior to extraction activities occurring. Once extraction of Zone B1 is completed the area will be progressively restored to a level of ca. 73/74m OD.

Figure 3-1: Proposed Operational Phasing Plan



3.2.1 Operational Hours and Staffing

The operational hours for the Proposed Development will align with the current operational hours of Ballyburn Pit which are:

- Monday to Friday 07:00 to 18:00; with extraction occurring only between 08:00 – 18:00;
- Saturday 08:00 to 14:00; and,
- Sunday & Public Holidays closed.

The existing Ballyburn Pit supports ca. 28 full time employees arising from on-site personnel, hauliers, and maintenance personnel. The Proposed Development will not result in a change to employment.

3.2.2 Drainage

There are no new permanent structures proposed for the Site, therefore there will be no change to the existing drainage regime.

The main sources of water that arise at the Site are mainly attributed to surface water runoff and wastewater from the processing area. Lagoons are already in place on-site to treat any water from the processing area.

The Ballyburn Pit extract materials from above the water table. Drainage is further assessed in Chapter 8 – Water (Hydrogeology and Hydrology).

3.2.3 Transport

As noted, the Proposed Development does not represent an intensification of activities but rather an extension of activities. As such, the Proposed Development will operate within the bounds of existing permitted traffic numbers.

Table 3-1 provides an overview of the predicted quantities of materials exported and imported to the Site.

Table 3-1: Overview of Predicted Quantities of Materials Exported / Imported

Exported Quantities of Materials and Average Daily Trips	
Total Exported/Imported Material (tonnes per annum)	500,000
Quantity (tonnes per day - 250 operational days / year)	2,000
Outbound HGV trips per day (average 25 tonnes per load)	84
Light vehicles (staff) trips outbound per	8

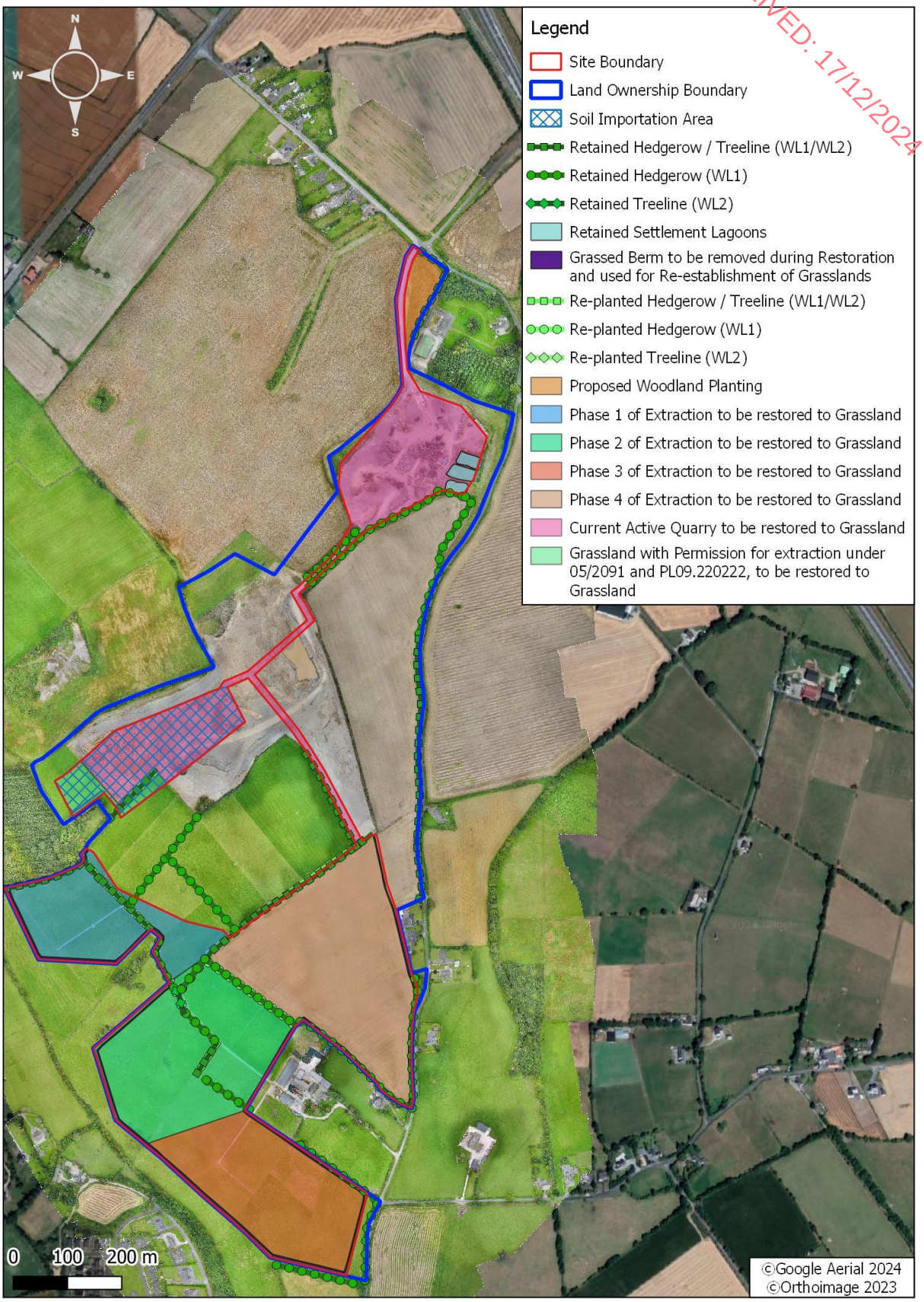
3.3 Restoration Phase – Site Closure

The restoration will be done in line with a Restoration Plan, which is submitted with this planning application. The restoration will comprise of placement of the overburden (from the berms) and subsequent seeding to establish a habitat similar to that which existed prior to the historic quarrying.

The intention for the Site is to restore the land to its historic agricultural use, which will involve reinstating the historic field boundaries where appropriate; refer to Figure 3-2 below for context.

A multi-species sward will be sown within the agricultural grassland on-site. Multi-species grass swards include grasses, legumes and herbaceous species, these swards not only provide sources of minerals, protein and energy for livestock, but the inclusion of nitrogen-fixing legumes will result in a reduced requirement for fertiliser application in future and the increased diversity of plants will benefit local invertebrates and foraging wildlife. The applicant has set aside a piece of land for biodiversity enhancement in the northern area, which will be planted to create a mixed woodland. The settlement lagoons will be retained when quarrying has finished at the Site, which will provide suitable habitat for wetland and waterbirds, as well as amphibians.

Figure 3-2: Restoration Phase Map



4 ALTERNATIVES CONSIDERED

Schedule 6 of the Planning and Development Regulations, 2001 (S.I. No. 600 of 2001) requires an EIAR to contain:

> *"A description of the reasonable alternatives studied by the person or persons who prepared the EIAR, which are relevant to the Proposed Development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the Proposed Development on the environment."*

This chapter assesses the alternative options considered by the Applicant when deciding to progress the Proposed Development and outlines the following alternative considerations:

- Location / layout; and,
- Use.

4.1 Alternative Location

The Applicant holds a landbank within the Ballyburn area which encompasses the existing Ballyburn Pit (refer to blueline in Figure 1-2).

As discussed in Section 2.4.2 in the EIAR, the location of extractive industries is limited to where aggregates occur. As a finite resource, a proposed quarry/pit or quarry/pit extension must look at a range of environmental and commercial issues such as:

- The presence of the required aggregate;
- Contamination with other rock or soils;
- Its depth below the surface;
- Presence of groundwater;
- Access to necessary haulage routes;
- Proximity to markets; and,
- Historical unauthorised activities.

Within the local market area, there are limited sites that meet the above criteria. The extension lands represent a prime example of viable reserves positioned adjacent an established pit with suitable infrastructure. The cost of moving the operation to another greenfield site would be prohibitive from a cost perspective and would represent a misuse of valuable resources (leaving those within the extension lands in situ). One of the Site's many advantages is that it is in close proximity to the suitable transport infrastructure, allowing ease of transport throughout the county and the wider region.

There was consideration given to an alternative layout, which could have resulted in the movement of the established infrastructure from its current position. However, this would have resulted in additional land take, finance, labour and time for no benefit to the environment or the local population. Moreover, the established infrastructure was a major contributing factor when Ballyburn Pit won 'Quarry of the Year' in 2021.

4.2 Alternative Use – Do Nothing Scenario

A 'do-nothing' scenario would restrict the Applicant to their existing planning for the Ballyburn Pit. This would involve the continued operation of the quarry until the sand and gravel reserves within the permitted extraction area are exhausted. The original rehabilitation plan submitted under planning reference 05/2091 (ABP PL09.220222) would be implemented after operations have ceased on-site.

A 'do-nothing' scenario would result in a shorter lifespan for the quarry and, subsequently, a shorter employment period for staff locally. Furthermore, available and economic aggregate reserves would be left in situ, representing a misuse of valuable resources for the county and wider region.

5 POPULATION AND HUMAN HEALTH

A desk-based study was carried out to characterise the environment in relation to the human population, including the receiving population, population changes over time, employment levels and human health indicators. Information from the Central Statistics Office ('CSO') was analysed according to guidance from the Institute of Public Health ('IPH'), in particular the Health Sensitivity Conceptual Model. The sensitivity of the local population to any potential impacts was deemed to be low.

The Proposed Development has been a provider of employment during the working life of the Pit. The Proposed Development is not a health-related project and will not create additional specific demands on the local health infrastructure.

The effect of the Proposed Development on the population and local economy in terms of direct employment can be considered long-term and neutral. However, if the Proposed Development is refused permission, the loss of jobs at the existing pit would have a negative moderate effect on a local scale. The effects on the local and regional aggregate supply can be considered as long-term, positive and moderate in a local sense. The residual effect in terms of human health within the local population will be 'imperceptible' to 'not significant' and long-term.

6 BIODIVERSITY

A comprehensive suite of ecological surveys and assessments, based on best practice guidance, were conducted at the Site. The assessments considered the full life cycle of the Proposed Development, including the construction phase, operational phase, and restoration phase. The Site was assessed by suitably qualified MOR Environmental ecologists. After the initial walkover, it was not considered necessary to undertake ecology surveys within the built-up portion of the pit containing the wheel wash, carpark, weighbridge and main Site entrance. This area will not be altered as a result of the Proposed Development and is considered to be of low-negligible biodiversity value.

There are no designated ecological sites within the Site boundary. However, the Palatine stream is located ca. 30m from the Site, and this watercourse has a hydrological connection to the River Barrow and River Nore Special Area of Conservation ('SAC').

A combined Stage One: Appropriate Assessment Screening Report and Stage Two: Natura Impact Statement ('NIS') has been prepared in support of this planning application. The NIS concluded that the Proposed Development, either alone or in combination with other plans or projects, will not result in any significant adverse effects on any Natura 2000 site or any of their designated features of interest following the implementation of appropriate mitigation measures.

6.1 Habitats

The principal habitats recorded on-site during the field surveys comprised of active quarries, fields of improved agricultural grassland, spoil and bare ground, scrub and arable crops.

The principal habitat within the Site boundary was active quarries, comprised of Ballyburn Pit. Outside of active quarries, agricultural grassland was the most common habitat on-site. One field within the site boundary was used for arable crop planting. The majority of the fields within the site boundary were bordered by hedgerow / treelines, and hedgerow / treelines traversed

through some fields within the Site also. A very small area of scrub was identified on a slope within one of the fields in the south of the Site. The settlement lagoons within the active quarry are also included in the Site boundary. Spoil and bare ground habitat was present in the form of a small access track between the agricultural fields onsite.

The Proposed Development will result in a change in land use from agricultural grassland and cropland to an active pit. Loss or disturbance to improved agricultural grassland fields, arable crops, spoil and bare ground and / or scrub habitats was not considered to be significant given the low ecological value of these habitats. Mitigation measures have been included to ensure the protection of any species utilising these habitats (refer to Section 6.2 below). Historic hedgerow / treelines will be reinstated as part of the restoration plan for the Site, and the Site will be restored to grassland suitable for agriculture and grazing. Additionally, a small area of woodland planting created during the construction phase will partially compensate for the removal of vegetation onsite.

6.2 Species

The habitat survey identified two trees on-site with features suitable for roosting bats. Additionally, the sections of hedgerow and hedgerow / treelines traversing and bordering areas in the Site were deemed suitable for foraging and commuting bats. Two dusk emergence and activity surveys took place onsite to survey the trees for bat emergence and assess the levels of bat activity on-site. The targeted bat surveys undertaken on-site did not identify any bats roosting within these trees, and moderate to high levels of foraging and commuting bats were recorded. A full bat report can be found within Appendix 6-1 of the EIAR.

A targeted otter survey was undertaken along the Palatine stream located to the southwest of the Site. One otter print was found adjacent to this stream, and it is considered that this stream provides suitable foraging and commuting habitat for otter. However, the onsite habitats are unsuitable for otter. Mitigation measures have been included in the EIAR to ensure that no adverse impacts occur to otter as a result of elevated noise levels or water quality impairment.

During the habitat survey, common bird species were noted on-site, and multiple sand martin nest holes were identified within the active Ballyburn Pit, on the north, northeast and southwest edges of the Pit.

Multiple rabbits, rabbit prints and small mammal holes were identified within the active quarry and the agricultural grassland / arable cropland habitats. Fox prints were also observed onsite, and it is considered that these species regularly forage and commute throughout the Site. The on-site habitats are not considered to be suitable for badger, pine marten or hedgehogs, but the habitats surrounding the Site including scrub and woodland are considered suitable breeding foraging and commuting habitats for these species.

Taking the above into account, the Proposed Development may result in some disturbance to wildlife in the area. Therefore, specific mitigation measures have been included for the protection of bats, birds, otter and terrestrial mammals.

No plant species protected under the Flora Protection Order were recorded within the Site, and no regulated high-impact invasive species were identified. However, biosecurity considerations and measures to prevent the introduction of invasive species on-site during the soil and stone importation will be implemented for the duration of the works.

7 GEOLOGY AND SOILS

Geophysical and drilling Investigations undertaken at the Site show that the proposed extraction area lies within generally good quality competent sand and gravel.

In order to extract the sand and gravel in the extension area, topsoil and overburden will be removed as part of the Proposed Development. This material will be stored separately and

will be reused to construct 2m high berms and soil embankments around the periphery of the Site. These embankments will be seeded to preserve its integrity for future use in the restoration phase as part of the Restoration Plan.

Hydrocarbons, in the form of fuels and oils, will be used during extraction works to fuel plant/machinery. However, the volumes will be small in the context of the scale of the project and will be handled in accordance with best practice mitigation measures. The operation of the Ballyburn Pit includes existing management for the control of hydrocarbons and chemical and these already minimise as far as possible the risk of spillage that could lead to ground contamination.

The highest standards of site management will continue to be maintained, and utmost care and vigilance will be followed to prevent accidental contamination or unnecessary disturbance to the Site and surrounding environment during the operation of the Proposed Development.

The potential residual effects associated with land, soils and geology contamination and subsequent health effects are not significant.

The Proposed Development comprises importing ca. 1,125,000 tonnes of uncontaminated soil and stone by-product material to restore the proposed extraction areas. This material will pose a very low contamination risk as no harmful contaminants will be present. In addition, this material will not contain either organic matter or liquids that will form a source of organic contamination. All imported material will be subject to soil acceptance criteria in accordance with the most up-to-date policies and guidelines. The land will be restored to a level of ca. 73/74m OD and covered in available topsoil from the perimeter berms and will be replanted for agricultural use.

The final restoration of the quarry void is seen as a positive effect with respect to land, soils and geology.

8 WATER

The Site is located within the Barrow surface water catchment (Hydrometric Area 14) of the South Eastern River Basin District ('SERBD').

On a more local scale, the Proposed Development Site is located in the Lerr River sub-catchment (Lerr_SC_010) and 2 no. sub-basins, the Lerr_030 to the north where the existing pit lies and the Palatine Stream_010 river sub-basin where the majority of the extension works are proposed. A tributary of the Palatine Stream (Barnhill East, EPA Code: 14B69) runs south near the eastern Site boundary and feeds into the Palatine Stream approximately 500m south of the Site.

The Palatine Stream itself flows in a north-westerly direction to the west of the Site and feeds into the River Lerr. The River Lerr continues west and discharges into the River Barrow approximately 5km from the Site.

There is no direct hydraulic connection from the Site to any of the nearby watercourses in the vicinity. Currently a wash water treatment plant is in use at the Site, dedicated for the operation of the modular mobile washing plant. The wash water treatment plant removes fine materials and comprises a dewatering unit and a clean water storage tank. 95% of the wash water is recycled throughout the washing process. The silt arising from the washing process is stored temporarily in two storage lagoons in the north of the Site. These silty fine materials are used in the continuous restoration processes in worked out areas of the pit. There is no existing or proposed direct surface water connections between the Site and the River Barrow and River Nore SAC. The only possible hydraulic connections are via small rates of surface water runoff and via vertical migration through the unsaturated zone in the gravel aquifer followed by lateral migration and discharge into the Lerr River. The Oak Park proposed Natural Heritage Area

('pNHA') is remote from the Site. Therefore, there is no hydrogeological connection to the Site and therefore, it cannot be impacted by the Proposed Development.

The bedrock geology underlying the Site is classified by the GSI (www.gsi.ie) as a Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones ('Ll'). It is thought that regional groundwater flows toward and discharges to the River Barrow. The aquifer is most likely to discharge to the river via baseflow through the riverbed. Groundwater flow is likely to be westwards towards the Barrow River and along any local preferential flow paths in faults or fractures.

The Site is underlain by a Locally Important Aquifer which can be considered very sensitive to impact. The primary risk to groundwater at the Site will be from hydrocarbon spillage and leakage. This is a common potential impact on all development sites (such as road works and industrial sites). All the infill materials will be clean uncontaminated soil and stone material. Potential contamination sources will be carefully managed at the Site during all phases of the Proposed Development through appropriate mitigation measures. Given the location of the Site and following a review of information in relation to flood risk, no sensitivity in respect of flooding has been identified at the Site.

There are several wells in the local area and these mapped wells are mainly located to the south of the Site towards the village of Palatine. The current operation and extraction activities are not seen to have had any impacts on any downgradient local wells. In addition, no dewatering or additional groundwater abstractions are proposed. Therefore, no impacts on groundwater quantity (levels or flows) are expected.

The Proposed Development comprises importing approximately 1,125,000 t of uncontaminated soil and stone by-product material to aid restoration. Infilling with inert soil and stone will pose a very low risk to groundwater quality regardless of the vulnerability rating as no harmful contaminants will be present. In addition, inert soil and stone will not contain either organic matter or liquids that will form a source of organic contamination. All imported material will be subject to soil acceptance criteria in accordance with the latest guidelines, regulations and policies.

The Proposed Development will have no proposed discharge and therefore, the potential for increased effects on downstream surface water quality will not occur. Due to the relatively small-scale nature of the Proposed Development and the lack of significant residual effects from the development that would affect the wider environment, there will be no significant cumulative impacts either on the local groundwater environment. There will be no significant cumulative effects on downstream designated sites.

9 AIR QUALITY

The main potential effects on air quality from the Proposed Development are dust emissions, which could give rise to the following effects:

- Disamenity due to dust deposited on surfaces, which leads to 'soiling'; and,
- Increased concentrations of dust particles suspended in the air (PM_{10}).

A disamenity dust risk assessment was completed in accordance with the Institute of Air Quality Management's ('IAQM') Guidance on the Assessment of Mineral Dust Impacts for Planning. This assessment aimed to determine the risk of impact from dust soiling on properties (or receptors) in the vicinity of the Site.

In brief, the risk assessment followed the source-pathway-receptor concept. The assessment quantified the likely emissions from the source (the Proposed Development), identified the pathway effectiveness (frequency of wind >5.5m/s) and determined the distance / orientation of receptors to the source. Following the analysis, it was determined that there was a low risk

of dust soiling occurring at all ten receptors and one ecological receptor in the absence of mitigation. The potential dust soiling at these receptors has the potential to have a slight adverse effect. Therefore, a number of site-specific mitigation measures were identified. The implementation of these measures reduces the risk of dust soiling occurring at these receptors from low to negligible.

Increased concentrations of dust particles in the air (PM_{10}) can affect human health. Therefore, the methodology outlined by the IAQM guidelines was followed to determine the risk of increased PM_{10} particles in the air arising from the Proposed Development. In brief, primarily due to the relatively low background concentrations of PM_{10}, it was determined that there was little risk of process contributions from the Proposed Development, leading to an exceedance of the annual mean objective of Air Quality Standards.

Monitoring of dust deposition around the periphery of the extension lands is recommended. These will be an additional three monitoring locations to complement the existing locations at the Pit.

Based on the receiving environment, type and intensity of activities (associated with the Proposed Development), and the mitigation measures to be implemented, the residual effects on human health will be not significant and considered to be negligible.

Based on the receiving environment, type and intensity of activities (associated with the Proposed Development), and the mitigation measures to be implemented, the residual effects on receptors from disamenity dust will be not significant.

10 CLIMATE

The potential effects of the Proposed Development on climate primarily stem from releasing greenhouse gas ('GHG') emissions. Additionally, the assessment considered the potential effects of current and future climate change on the Proposed Development.

During a typical Operational Year, assumed to be 250 days, it was calculated that the Proposed Development would be responsible for approximately 2,401 tonnes of carbon dioxide equivalent (CO_{2e}). These emissions were distributed as follows:

- The Proposed Development is expected to use 382,766 litres of diesel per annum to fuel the on-site plant. Total Scope 1 emissions equate to approximately 1,021 tonnes of CO2e from plant operating on-site annually. Based on the calculation of these Scope 1 emissions, the Proposed Development would contribute ca. 0.0003% to Ireland's First National Carbon Budget (2024 to 2025) and ca. 0.003% to Ireland's Second National Carbon Budget (2025 – 2030);
- The Proposed Development is expected to use 50,115kWh of electricity annually, equating to approximately 15.1 tonnes of CO2e from electricity consumption. Based on the calculation of these Scope 2 emissions, the Proposed Development would contribute ca. 0.0001% to Ireland's first sectoral emission ceiling for the Electricity sector (2024 to 2025) and ca. 0.0004% to Ireland's second sectoral emission ceiling period (2025-2030); and,
- The total scope emissions equate to approximately 1,365 tonnes of CO2e from vehicles associated with the Proposed Development. Based on the calculation of the Scope 3 emissions, the Proposed Development would contribute ca. 0.003% to Ireland's First National Carbon Budget (2024 to 2025) and ca. 0.02% to Ireland's Second National Carbon Budget (2025 – 2030).

Compared to the sectoral emission ceiling from the first carbon budget based on two years of operations (2024 and 2025), total emissions would contribute ca. 0.001% to the overall budget. Across the period associated with the Second National Carbon Budget (2026 to 2030), the

total operational phase emissions associated with the Proposed Development is predicted to contribute ca. 0.006%.

Due to GHG emissions' low contributions to the relative sectoral emission ceiling and national carbon budgets, the Proposed Development's effects on climate are determined as "not significant."

A Climate Change Risk Assessment was conducted following the Government of Ireland's Annex B Guidelines to determine the potential effects of modern and future climate change on the Proposed Development. The assessment determined the potential risk of the Proposed Development to potential hazards such as Droughts, Flooding, Extreme Rainfall and Wildfires, to assess the risk of the Proposed Development to these hazards. Based on the frequency and the perceived impact of these hazards on assets associated with the Proposed Development, it was perceived that the risk to the Proposed Development from these hazards is those already assessed by the local council's climate vulnerability assessment. Considering the nature of the hazards and their recognition in the Kildare County Council Climate Change Risk Assessment, the effects of climate change on the Proposed Development were considered "not significant".

11 ACOUSTICS (NOISE AND VIBRATION)

A comprehensive noise and vibration impact assessment was conducted based on best practice guidance, both statutory and non-statutory noise impact assessment criteria for the Proposed Development during its Site Preparation, Operational and Restoration phases.

Under the Environmental Noise Directive ('END'), noise emissions from the motorway M9 was reviewed in the context of the publicly available prepared Strategic Noise Mapping. The review, combined with noise monitoring undertaken in June 2023 and January 2024, indicated that the local acoustic environment was influenced by traffic noise from the R448, M9 and surrounding road network, activities occurring within Ballyburn Pit, and domestic animals and birdsong near the Site.

A detailed assessment was undertaken of potential noise emissions that could arise during the different phases. To assess the likely noise effect, a review of the locality was conducted to identify noise and vibration sensitive receptors. This process identified nine Noise Sensitive Receptors ('NSRs'), which were named NSR01-NSR09, all of which are domestic homes/properties.

As detailed in Section 3, the Construction phase will be completed prior to aggregate operations within the site. This phase was assessed against typical construction noise standards, namely BS5228-1.

The proposed construction stage works will be within standard limits for preventing construction-related noise nuisance, as outlined in BS5228-1, at the majority of the NSRs. Two NSRs (NSR04 and NSR05) will require standard quarry construction mitigation measures to be followed to ensure compliance, such as avoidance of idling engines, a noise monitoring and response programme, ensuring all plant is maintained and in good working order.

The primary construction activities will be a short-duration effect, occurring over a period of approximately 6 months. However, key elements of construction will be significantly shorter. Likely and significant effects were not identified in the construction stage noise assessment.

Operational noise modelling was conducted using iNoise v2024 software. The noise model incorporated the Site-specific noise sources and the layout of the local environment but did not incorporate ambient sources (e.g., road traffic). The model assumed all sources were fully operational for the full working day. The outputs of the modelling were then added to the measured ambient background levels, as per best practice, to ascertain the likely future sound

environment. This ensures the assessment accommodates the cumulative as well as project specific, effects on the NSRs.

Two scenarios were modelled, one to represent the extraction operation and a second to represent the infill operation. The predicted noise levels at NSRs, during the operational phase of the Proposed Development will be below the typical noise nuisance values as per the Department of the Environment Heritage and Local Government 'Quarries and ancillary activities: Guidelines for Planning Authorities' 2004 and the Environmental Protection Agency's 'Environmental management guidelines: Environmental management in the extractive industry (non-scheduled minerals) 2006'.

In addition to setting limit criteria, an assessment based on the likely change to the acoustic environment arising from the operational phase works commencing was undertaken. This used the methodology outlined within the Institute of Acoustics and the Institute of Environmental Management and Assessment guidance, 'Guidelines for Environmental Impact Assessment', 2014.

All NSRs are deemed to have an effect as per the Institute of Acoustics ('IOA') / Institute of Environmental Management and Assessment ('IEMA') guidelines. Within this methodology, the character of the existing environment of the Proposed Development must be considered. The Proposed Development will operate similarly to current site activities, with some operations moved to nearby lands historically identified during the previous planning application as a future reserve. While a slight increase in sound is expected, it will remain below standard noise nuisance levels, will be similar in nature to existing on-site activities, and is unlikely to cause behaviour changes. Likely and significant effects were not identified in the operation stage noise assessment.

During the Restoration Phase of works, the noise will be associated with planting marginal and emergent vegetation appropriate to the environment. Much of this work will occur within the proposed extraction area and will require a tractor. It is not anticipated that this phase will produce noise in exceedance of construction limit guidelines. Likely and significant effects were not identified in the restoration stage noise assessment.

Mitigation on noise during construction will include:

- Site Preparation works will be designed to avoid noisy work outside the hours of: Monday to Friday 7:00 to 19:00; and Saturday 07:00 to 13:00;
- Work occurring outside these hours will be subject to tighter construction stage noise limits, as per BS5228 (Section 11.2.1.1 of the EIAR);
- Nomination of a responsible person to accept and respond to complaints;
- Ensuring all plant and equipment is serviced and in good repair;
- Inclusion of response procedure to noise complaints and noise breaches;
- Avoidance of plant or equipment left idling; and,
- Noise monitoring program during construction phase works.

Following mitigation, the residual construction stage effect is deemed to be imperceptible and short-term.

Mitigation on noise during operation will include:

- All plant (fixed and mobile) is maintained to a high standard to reduce any tonal or impulsive sounds;
- Vehicle speeds will be kept below 20km/hr within the Site;

- All plant is throttled down or switched off when not in use; and,
- Internal routes are reduced in gradients and routed to minimise noise emissions from vehicles on-site.

Following mitigation, the residual operational stage effects is deemed to be negligible negative, local, and reversible during the main operational phase of works. Likely and significant effects were not identified in the noise assessment.

It is proposed, during operation that noise monitoring will occur within the Proposed Development and reported to the Competent Authority. General activities onsite will be acoustically monitored with a site-specific noise limit, measured or calculated to NSR of Daytime $L_{Aeq,1hr}$ 55dB.

12 CULTURAL HERITAGE

Impacts on the archaeological, architectural, and cultural heritage of the Site and the surrounding area arising from the Proposed Development were assessed. The assessment consisted of :

- Baseline Studies; and,
- Assessment of the Site.

The Kildare County Development Plan 2023-2029 is the statutory plan detailing the development objectives / policies of the local authority. The plan includes objectives and policies, relevant to this assessment.

Baseline studies of the Site consisted of using existing written and graphical information to identify the likely context, character, significance, and sensitivity of the known or potential cultural heritage, archaeological and structural resources. A detailed investigation of the archaeological and historical background of the Site, the Landholding and the surrounding area extending 1km from the development boundary was undertaken. A field inspection was also carried out on the 21st September 2023 to identify and assess any known archaeological sites and previously unrecorded features and portable finds within the Site.

There are no structures listed in the Record of Protected Structures located within the Site. The Record of Protected Structures ('RPS') in the Kildare County Development Plan 2023-2029 and the Carlow County Development Plan 2022-2028 were reviewed as part of the baseline study for this EIAR chapter. The review established that there are no structures within the Site. There are thirteen structures in the study area listed in the Record of Protected Structures. The closest RPS externally to the Site is a water pump (RPS CW226) that is located ca. 0.5km south of the Site. This and the remaining structures listed in the RPS are considered to be too far distant to be directly or indirectly impacted by the Proposed Development.

The National Inventory of Architectural Heritage (NIAH), maintained by the Department of Housing, Local Government, and Heritage, was examined on August 22nd, 2023, as part of the baseline study for this section of the EIAR. The review established that no additional structures within the Site or the study are listed in the NIAH.

On the 19th of September 2023 fieldwork was carried out to identify any additional unlisted upstanding structures in the vicinity of the Site. This involved assessing all upstanding structures that are marked on the 1909 edition of the six-inch Ordnance Survey mapping within 100m of the Site. There are three of these structures in this area (see Chapter 12 in EIAR). None of these structures are of special architectural interest.

Examination of the Record of Monuments and Places for Counties Kildare and Carlow indicated that there are no Recorded Monuments located in the Site (see Fig. 12-1 in EIAR).

The closest Recorded Monument externally to the Site is that of a church KD040-031---- (see Appendix 12-1). This is described in the Record of Monuments as:

KD040-031---- *Ballyhade Church*

The site of this monument is located c.240m east of the Site. The monument is no longer upstanding and will not be directly or indirectly impacted by the Proposed Development.

The remaining Recorded Monuments listed in the study area are all considered to be too far distant to be directly or indirectly impacted by the proposal.
There will be no direct or indirect effects on any known items of archaeology, buildings of architectural heritage significance, or cultural heritage in the Site or the vicinity during the construction, operational or restoration phases of the Proposed Development.

However, as a precautionary measure, all soil-stripping in those areas should be monitored by a qualified archaeologist under licence from the National Monuments Service. Any archaeological material identified during monitoring should be preserved by record under licence from the National Monuments Service in advance of development.

13 MATERIAL ASSETS – TRAFFIC

PMCE completed an assessment of the traffic impacts associated with the Proposed Development.

13.1 Traffic Analysis

Following a Traffic and Transport Assessment, both link and junction capacity analysis were undertaken to determine if the Proposed Development would lead to congestion on the local road network. The results of the Link and Junction Capacity Analysis indicate that the local road and local road junctions will continue to operate within capacity for each of the assessment years 2024, 2029, and 2039. Therefore, the risk of congestion within the local road network is imperceptible.

13.2 Road Safety

The impact of the Proposed Development, in relation to road safety and the existing road infrastructure, was also determined to be imperceptible.

14 LANDSCAPE AND VISUAL

This Landscape and Visual Assessment (‘LVIA’) has been prepared to accompany a planning application for the Proposed Development.

This LVIA describes the landscape context of the Proposed Development and assesses the scheme's likely landscape and visual impacts on the receiving environment. Although closely linked, landscape and visual impacts are assessed separately.

Landscape Impact Assessment (‘LIA’) relates to assessing effects of a development on the landscape as a resource in its own right and is concerned with how the proposal will affect the elements that make up the landscape, the aesthetic and perceptual aspects of the landscape and its distinctive character.

Visual Impact Assessment (‘VIA’) relates to assessing effects of a development on specific views and on the general visual amenity experienced by people. This deals with how the surroundings of individuals or groups of people may be specifically affected by changes in the content and character of views as a result of the change or loss of existing elements of the

landscape and/or introduction of new elements. Visual impacts may occur from Visual Obstruction (blocking of a view, be it full, partial or intermittent) or Visual Intrusion (interruption of a view without blocking).

This LVIA adopts an approach that is founded in the following best practice guidance documents:

- Landscape Institute and the Institute of Environmental Management and Assessment ('IEMA') publication entitled Guidelines for Landscape and Visual Impact Assessment, 2013 (GLVIA3);
- Environmental Protection Agency ('EPA') publication 'Guidelines on the Information to be contained in Environmental Impact Statements (2022); and,
- 'Photography and Photomontage in Landscape and Visual Impact Assessment', Landscape Institute Technical Guidance Note 06/2019.

From similar studies, it is anticipated that the Proposed Development is likely to be difficult to discern beyond approximately 3 km and is not likely to give rise to significant landscape or visual impacts beyond approximately 1 km. In the interests of a comprehensive appraisal, a 3 km radius study area is used in this instance.

- Viewshed Reference Points ('VRPs') are the locations used to study the visual impacts of a Proposed Development in detail. It is not warranted to include each and every location that provides a view of a development as this would result in an unwieldy report and make it extremely difficult to draw out the key impacts arising from the Proposed Development. Instead, the selected viewpoints are intended to reflect a range of different receptor types, distances and angles. The visual impact of a Proposed Development is assessed by Macro Works using up to 6 no. categories of receptor type as listed below:
- Key Views (from features of national or international importance) ('KV');
- Designated Scenic Routes and Views ('SR' /' SV');
- Local Community views ('LCV');
- Centres of Population ('CP');
- Major Routes ('MR'); and,
- Amenity and heritage features ('AH').

VRP's might be relevant to more than one category and this makes them even more valid for inclusion in the assessment. The receptors that are intended to be represented by a particular VRP are listed at the beginning of each viewpoint appraisal. There were eight VPRs used in this assessment.

Visual impacts were assessed at eight VRPs, representing various viewing distances, angles and receptor types. The visual receptor sensitivity judgements ranged from Medium to Medium-low. The overall significance of visual impacts was of 'Moderate' significance at the VRP to the southwest and south of the Site (VP3 and VP4), with a Negative quality and a medium-term duration. At all the other viewshed reference points, the impact was deemed to be 'Slight' (VP5), 'Slight-imperceptible' (VP4) and 'Imperceptible' (VP1, VP2, VP7 and VP8). This is principally a consequence of the high degree of existing screening located within the intervening low-lying landscape, which heavily reduces the visual exposure of the Proposed Development.

Regarding landscape impacts, the Proposed Development is considered to have a relatively modest physical impact on the Site as the Proposed Development is contained within the

existing hedgerow network, and the Proposed Development will result in only very minor areas of permanent hedgerow and vegetation removal. This is considered an appropriately sited development in a robust landscape context. Consequently, the impact on landscape character will be of Moderate significance and a Negative quality with a medium-term duration during the operational phase. The impact on landscape character will be of Slight significance and a Negative quality with a medium-term duration during the restoration phase.

Based on the landscape and visual impact judgements provided throughout this LVIA, the Proposed Development is not considered to give rise to any significant landscape or visual impacts and concerning cumulative effects, no significant ones are anticipated.

Based on the landscape and visual impact judgements provided throughout this LVIA, it is considered that the Proposed Development will not give rise to any significant residual impacts. Instead, landscape impacts are not considered to exceed 'Slight' significance, even in the Site's immediate context and residual visual impacts are not considered to exceed 'Slight-imperceptible' significance. In the context of this Proposed Development, it is considered that these residual impacts represent are an acceptable impact on the receiving landscape.

15 MATERIAL ASSETS – NATURAL RESOUCES AND WASTE

This chapter of the EIAR provides a description and assessment of the potential, likely and significant effects of the Proposed Development on natural resources and waste infrastructure. The IEMA guide to: Materials and Waste in Environmental Impact Assessment outlines the following definitions of sensitive receptors:

- Materials: "Consuming materials impacts upon their immediate and (in the case of primary materials) long term availability, this results in the depletion of natural resources and adversely impacts the environment"; and,
- Waste: "The sensitive receptor is landfill capacity. Landfill is a finite resource, and hence – through the ongoing disposal of waste – there is a continued need to expand existing and develop new facilities. This required the depletion of natural and other resources which, in turn, adversely impacts the environment".

The Proposed Development will increase the availability of sand and gravel aggregate (3,060,000 t over the lifetime of the project) for construction activities in the county and region. There is currently a housing supply target of 13,840 housing units for County Kildare to the end of 2031. In the national context, the government are targeting 50,000 residential units per annum for the next five years. According to the Irish Concrete Federation ('ICF'), each residential unit requires ca. 400t of aggregates, each education facility requires 3,000 t of aggregates, and each km of road requires 30,000 t of aggregates. As such, to meet Kildare housing objectives to 2028 there would be ca. 6,000,000t of aggregates required. From a national perspective, there will be ca. 20,000,000 t per annum or 100,000,000t of aggregates over 5 years to meet these goals alone. Moreover, there are 29 education facilities in the pipeline at various stages (i.e. site acquisition, design, and planning of plan, which would require ca. 90,000t of aggregates. There are several road improvement projects in the pipeline for Kildare, which will require significant quantities of aggregates. The Proposed Development will provide a local source of quality aggregates for these vital public infrastructure projects. For context, the Proposed Development would only provide 50% of the aggregates for Kildare's housing needs to 2031, which highlights the enormity of demand for aggregates in Kildare and the country at large. Overall, the effect of the operational phase on material availability is deemed to be moderately positive.

Through the diversion of clean, uncontaminated soil and stone materials to the Site, rather than a waste soil recovery facility, this would free up ca. 5.3% in capacity for these facility

types. The magnitude of the Proposed Development, according to IEMA magnitude assessment, is therefore minor positive.

16 INTERACTION OF ENVIRONMENTAL EFFECTS

In accordance with Environmental Impact Assessment Report ('EIAR') best practice procedures, the cumulative impacts associated with all of the relevant interactions has been addressed in the specific specialist chapters of the main EIAR report (Volume 2).

17 SCHEDULE OF ENVIRONMENTAL COMMITMENTS

As part of the EIAR, all of the mitigation measures arising from each of the individual assessments for all phases were summarised in an overall Schedule of Environmental Commitments that is presented at the end of Volume 2 of the EIAR. Dan Morrissey & Co. (Plazamont Ltd.) are fully committed to implementing all of these commitments. The implementation of these measures will ensure that the Proposed Development will not result in any significant adverse impacts on the receiving environment.