



An Bord Pleanála

Section 37L - EIAR - Non-Technical Summary

Bison Quarries Ltd





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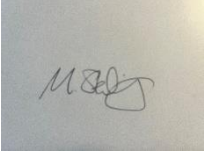
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1 Introduction, Scope and Methodology

1.1 Introduction

WSP Ireland Consulting Ltd. (WSP) have been commissioned to undertake this Environmental Impact Assessment Report (EIAR) to accompany an application for permission for the restoration of a disused quarry through import of clean soil and stone at Coolsickin or Quinsborough, Co. Kildare. This EIAR is submitted on instruction of Bison Quarries Ltd, owner of the lands on which the disused quarry is located who will be the applicant for this Proposed Project.

This EIAR has been prepared in tandem with an rEIAR to accompany an application for substitute consent for the existing quarry by the same applicant, Bison Quarries Ltd (BQL). It is noted that the applicant purchased the lands the subject of this EIAR (the subject lands) subsequent to the cessation of quarrying activities on the Site. Furthermore, the applicant did not operate the historical quarrying activities site. The application site is situated ca. 9 km northwest of Kildare town and ca. 2.7 km north east of Monasterevin.

The planning application boundary (the Application Site) extends to approximately 6.63 ha. and reflects the historic operational site area including the extractable void area of 2.3 ha, which is intended to be infilled with clean soil and stone. The EIA project boundary envelopes an area of approximately 10.62 ha. that encloses previous quarry working areas and intended future development.

Figure 1-1 shows the regional location of the Site, whilst Figure 1-2 provides a depiction of the planning application boundary and the EIA project boundary.

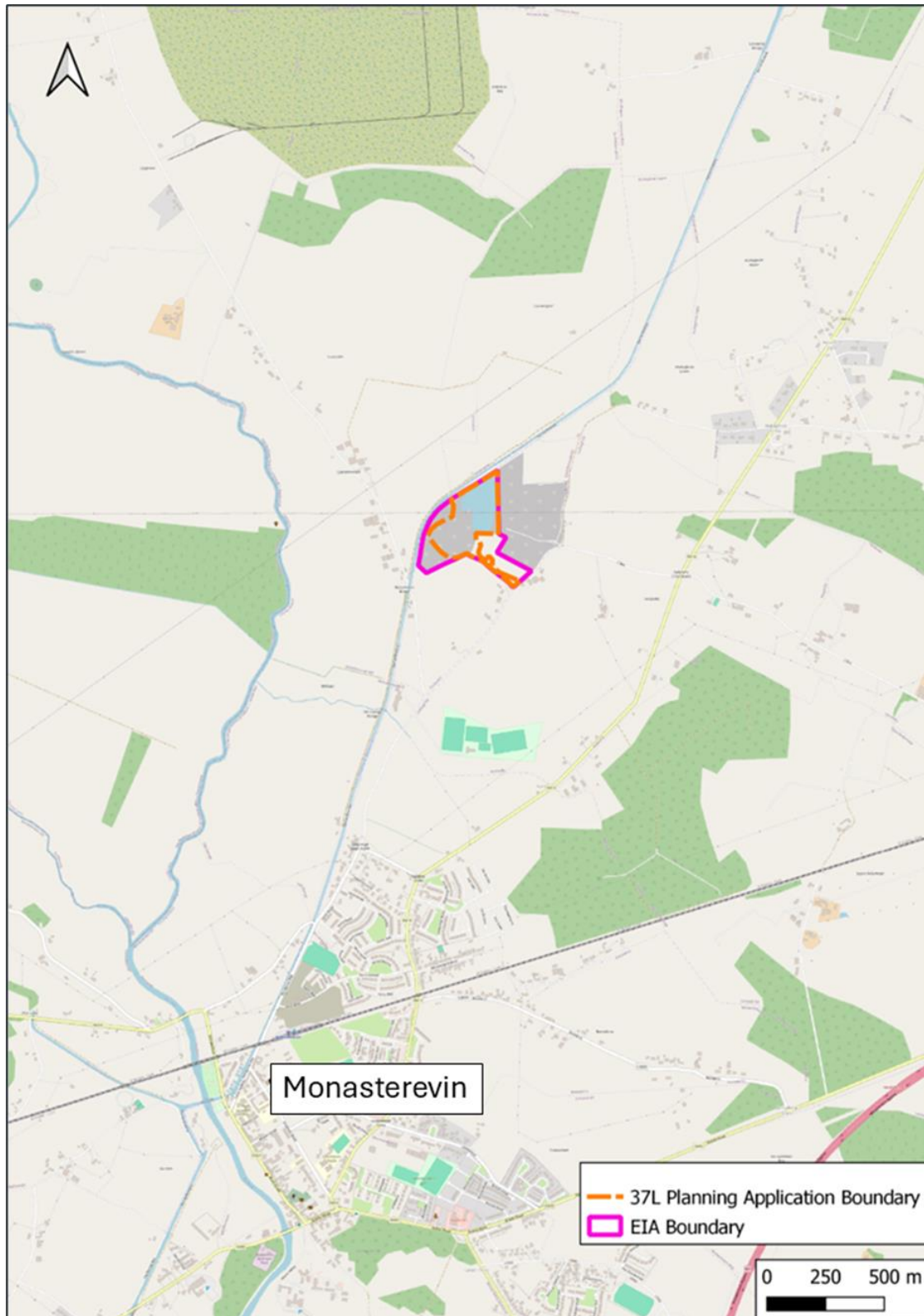


Figure 1-1 - Project Location

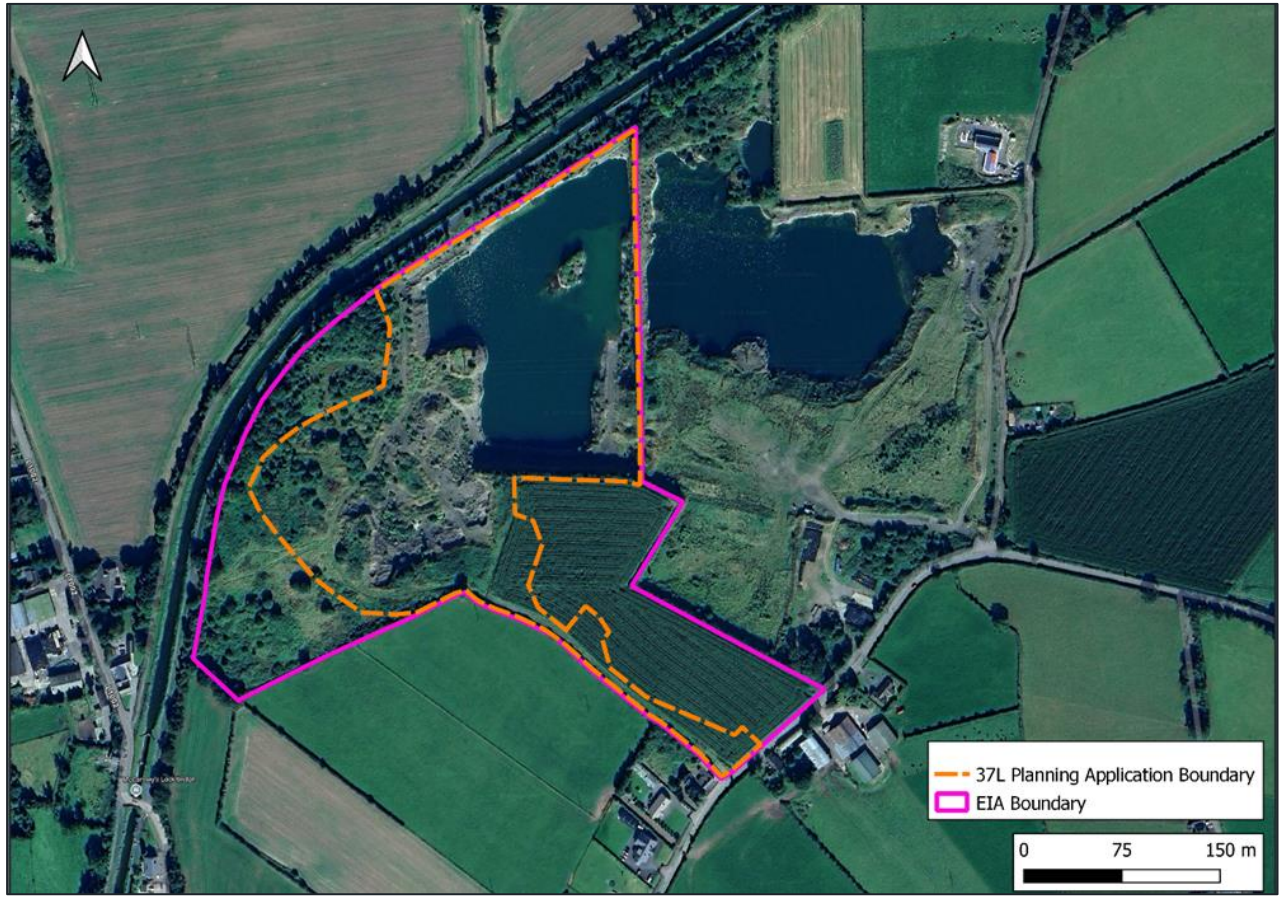


Figure 1-2 - Substitute Consent Application Boundary and EIA Boundary

1.2 The Need for the Development and Consideration of Alternatives

The Proposed Project is located within a rural area and the lands on the Site were historically used for agriculture.

Extraction carried out between 2000-2006 in the north of the Application Site has significantly reduced the agricultural potential of the lands. Prior to extraction activities the lands had long been used for agricultural purposes and the Proposed Project seeks to restore the agricultural potential of the quarried lands.

The quarry void represents a hazard to human health. Although a security gate and safety signage are erected at the Application Site (and BQL do not provide permission for the general public to access the lands within their ownership), the Application Site has an established history of public trespass that predates BQL's purchase of the lands. Members of the public are known to access the lands in the north of the Application Site where the disused quarry is located for activities such as dog walking and swimming.

Aside from being private lands, the terrain within the Application Site and the nature of the quarry void makes the lands unsuitable for public amenity use. The quarry void contains collected waters to a depth of approximately 9m with sub vertical quarry faces extend below the water line and bounding the waterbody particularly to the north and east sides of the void.

Infilling of the void and contouring of the historical quarry working areas will effectively remove hazards to human health associated with landform created by historical extraction activities (e.g. remove drowning hazard from quarry void, remove falling from height hazard from quarry faces).

The restoration of the lands will provide improved access to ESB poleset no. 74 of the Newbridge to Portlaoise 110kV transmission line. See discussion in Chapter 13 Material Assets of this EIAR for further detail.

1.2.1 Alternative Designs Considered at the Subject Site

In this instance the Proposed Project is to restore quarried lands created by a historical quarrying project at the Application Site that ceased operation in 2006. Therefore, there is no alternative for site selection.

The design of the final ground levels within the fill area has been constrained by surrounding land levels, surface water drainage, and the proposed final land-use (tillage). The final proposed ground levels seek to tie in with the ground level of surrounding lands and surface water drainage regime, promoting watershed primarily to the north of the Application Site.

The progressive phasing of the construction seeks to avoid dewatering of the quarry void and therefore avoids any environmental and ecological impacts associated with dewatering activities.

The design seeks to use existing internal haul routes within the north of the Application Site, which remain following closure of the historical quarry, to minimise the requirement from importing additional construction material to Site.

The footprint of the temporary facilities has been located outside of the most ecologically sensitive parts of the Site, with no works proposed on lands in the ownership of BQL in the west area of the EIA Boundary, outside of the Application Site.

The purpose of this EIAR is to assess the site with regard to experienced / potential impacts on the environment, and to recount / propose measures to avoid, reduce or remedy undesirable potential impacts, as appropriate.

2 Project Description

A full description of the Proposed Project is provided in Chapter 2 (Project Description) of this EIAR. A high-level summary of the proposed development is provided below.

The Proposed Project consists of the restoration of lands through the import of approximately 720,000 tonnes clean soil and stone as by-product (non-waste) from development sites to infill a disused historical quarry and raise ground levels to tie in with ground levels of surrounding land.

Restoration of the lands will be to agricultural grassland, an artificial waterbody, and a hedgerow habitat with the lands returned to their pre-extraction agricultural use.

The proposed duration of infilling is 10 years depending on market conditions for the anticipated acceptance of clean soil and stone, and a further three years for the completion of final restoration activities.

The Application Site is located in the townland of Coolsickin or Quinsborough, Co Kildare. The Application Site is accessed by a privately-owned access road connecting to a local road (L7049).

The following temporary facilities will be installed and maintained during the life of the Proposed Project:

- office and fully serviced welfare facilities;
- weighbridge and associated portacabin;
- closed-system wheel wash;
- Six parking bays;
- Two waste inspection bays and 1 no. bunded waste quarantine area; hardstanding area (vehicle movement and storage);
- surface water drainage infrastructure from hard standing and discharge to ground, including 2 no. interceptors and 2 no. soakaways;
- Security features, including security gates and fencing; and
- Power supply. It is intended that approval will be sought for a connection to the ESB Network for the office and fully serviced welfare facilities. Diesel generators will be used to power mobile lighting, if required.

The Proposed Project site entrance and private access road will be upgraded and realigned. These will be retained following to completion of the Proposed Project.

3 Population and Human Health

Section Purpose

Section 3 of the EIAR provides an assessment of potential effects of the quarry restoration at the Site on the surrounding human environment. This assessment included consideration of both potential effects from the Site and cumulative effects of other extractive or sizable industries in the surrounds of the Site.

Setting and Existing Conditions

The application site located in the townland of Coolsickin or Quinsborough in Co. Kildare. The study area for this assessment has been determined as the EIA site boundary and a 500m area around this. The study area is located within the Quinsborough Electoral District. Potential effects on the surrounding human environment, within the study area, has been assessed under the following headings:

- Populations;
- Economic patterns (activity and employment);
- Amenity;
- Land-use; and
- Human health and Health and safety.

A total of 28 no. residential dwellings were found to be within 500 m of the EIA boundary. The number of residences is based on a field survey, a review of the aerial photography and DCCAE Eircode mapping.

Potential Effects and Mitigation

It is concluded that the quarry restoration activities at the Proposed Project will not cause any significant adverse effects to the human environment surrounding the Proposed Project.

4 Ecology and Biodiversity

Section Purpose

The Application Site has been assessed for its potential to result in significant impacts to important ecological features (IEFs). The impact assessment has examined survey data gathered between 2023-2024 and relevant desktop resources. Aerial imagery and environmental emissions monitoring data have also been used to inform conclusions as to the types of impacts likely to occur from the Proposed Project.

Potential Effects and Mitigation

It was found that significant impacts can potentially occur from habitat loss and the associated disturbance on fauna for which this habitat is important.

Mitigation, compensation and enhancement measures have been proposed in the form of reinstatement of habitats through a Restoration Plan, adherence to biosecurity guidelines, and pre-works checks of suitable nesting habitats which are to be lost. The implementation of these measures will result in the identified impacts being either negated or reduced to an insignificant impact. No other impacts were identified, from the Application Site alone, nor cumulatively with other plans or projects.

5 Land, Soils and Geology

Section Purpose

Section 5 of the EIAR provides an assessment of potential effects of the quarry restoration at the Site on the surrounding land, soils and geology. This assessment included consideration of both potential effects from the Site and cumulative effects of other extractive or sizable industries in the surrounds of the Site.

Setting and Existing Conditions

The site is on lands at Coolsickin or Quinsborough, Co. Kildare. Regionally, the nearest town is Monasterevin which is approximately 2.5 km to the south of the site. The site comprises lands which has historically been used for quarrying activities.

Land use in the south of the EIA boundary are agricultural (tillage) and include a private access road. The lands in the north of the EIA boundary comprise a disused quarry and associated stockpile areas created by historical extraction activities understood to have been carried out over 2000-2006. The lands surrounding the Site can be characterised as rural in nature, with land uses in the area being agricultural and single-house residential.

Soils onsite prior to activities within the extraction area are mapped as lake alluviums. The subsoils underlying the Site are composed of gravels derived from Limestones and till derived from Limestones. Information from site investigations indicate that the sands and gravels of the drift thicken to the west of the Site, with the thickness ranging from ca. 6 m to the east of the Site, to ca. 11.5 m to the northwest of the Site.

The bedrock underlying the site is of the Allenwood Formation, which is described as consisting of pale-grey generally massive shelf limestones and their dolomitised equivalents.

There are no designated County Geological Sites located within the study area.

There have been no landslides recorded within 1 km of the site and there are also no karst features in this area. The Radon Map for Ireland (EPA, 2023) indicates that the Site and study area are located in an area where 1 in 5 homes are estimated to have high radon levels.

It is noted that the risk of instability of soils and/or bedrock which would result in a partial collapse of material can occur in any quarry environment. However, it is noted that the quarry is disused.

Potential Effects and Mitigation

Three main sensitive receptors were identified in the impact assessment of the site: mineral or aggregate reserves, land (soil/sub-soils) at and immediately adjacent to the Proposed Project and human health (workers during works phase activities). These are classified as of low, negligible, and high sensitivity respectively.

No geological heritage sites have been identified as part of the baseline. Therefore, the impacts to, and effects on, geological sites were not considered in this assessment.

The main potential impacts and associated effects considered were as follows:

- Soil erosion or compaction resulting from plant movement;
- Stockpile stability;
- Importation of materials that could be unsuitable for the intended after-use;
- Restriction of future extraction at the Site by infilling the disused quarry void;
- Activities or events during the construction phase that might impact land quality (e.g. leaks and spills from machinery or stored material and substances, or discharges); and
- Mobilisation of existing contamination in soils by construction works (e.g. during works phase soils stripping) should there be historical contamination at the Proposed Project, which could impact workers and land quality.

Known design, construction management and environmental management mitigation measures were accounted for in an assessment of initial impacts and effects. Where additional mitigation measures could be incorporated to reduce the initial impacts and effects, these were identified and included in an assessment of residual impacts and effects.

In summary, the significance of residual effects on soils and geology (and on human health from soils and geology) resulting from the different potential sources of change are predicted to be no higher than *slight* adverse and, therefore, **Not Significant** in terms of this assessment.

6 Water

Section Purpose

Section 6 of the EIAR provides an assessment of potential effects of the quarry restoration at the Site on the surrounding water environment. This assessment included consideration of both potential effects from the Site and cumulative effects of other extractive or sizable industries in the surrounds of the Site.

Existing Conditions

The Application Site falls within the boundaries of the Water Framework Directive (WFD) Barrow Catchment and Barrow Sub-Catchment. It is located in the WFD Bagenalstown Upper Groundwater body which is generally described as regionally important.

The site is mostly situated within the WFD River Sub-Basin Figile with a river sub basin divide in the southeast portion of the Site where the site lies within the River Sub-Basin Barrow.

The closest surface water feature to the Application Site is the Grand Canal, which runs adjacent to the northwest EIA boundary and is designated as The Grand Canal proposed Natural Heritage Area (pNHA). The River Figile is located approximately 0.5 km west of the Application Site where it flows from north to south. Approximately 0.8 km north of the Application Site is a tributary (Ummeras Beg) of the River Figile. There is also a small stream (Old Grange) approximately 0.6 km to the south of the Site which is culverted beneath the Grand Canal. Further southwest of the Application Site (approximately 1.6 km) is the River Barrow and River Nore Special Area of Conservation (SAC) (Site Code: 2162), which starts at the confluence of the River Figile and River Barrow. It is likely that any surface water flows within the vicinity of the Site will flow towards the northwest, towards the River Figile.

The River Figile is classified as being of good quality status based on its physio-chemical and biological quality.

The Grand Canal is constructed above ground level, with the top of the embankment at approximately 5 m above original ground level. The Grand Canal Barrow Line is likely to be lined by a low permeability layer and have negligible influence on the groundwater level. Surface water from the canal may leak into the ground and percolate into the groundwater table through defects in the liner but is generally considered to be hydraulically disconnected from the underlying groundwater body.

It is considered likely that rainfall across the application site infiltrates into the naturally permeable ground which lies beneath the application site and surrounding area and ultimately recharges the underlying groundwater table, or collects in the quarry void. Any run-off from the Site would likely be absorbed by a dense hedgerow / treeline and a strip of grassland which separates the Site from the Grand Canal.

There are no surface watercourses on the Application Site. Groundwater and rainfall collect in the disused quarry void to a depth of approximately 9 m. There is no surface water discharge off-site from the waterbody within the disused quarry void. Laboratory analysis of the water quality of the collected waters in the void indicate that it is of good quality and is not connected to any ongoing source of pollution.

There have been no recorded flood events at or near the application site. With the understanding that the quarry waterbody is well connected to the groundwater, there is no indication of flooding from the waterbody itself.

Published groundwater vulnerability maps indicate that the groundwater vulnerability beneath the Site is largely classified as Extreme. However, groundwater vulnerability may be higher in areas of exposed bedrock (created by historical quarry activities onsite) due to there being no overburden protection to the bedrock aquifer.

The groundwater in the sand and gravel deposits at the application site is not classified by the GSI as a gravel aquifer. The site is underlain the Allenwood Formation which is classified as a 'Rkd' regionally important aquifer – karstified (diffuse).

Sand and gravel deposits are reported in the borehole logs across the Site. However, this is not mapped as part of the Monasterevin gravel aquifer west of the site. It is possible that a higher fines/clay content in the sand and gravel beneath the Site result in lower permeabilities of the unit. Due to the heterogeneity of the aquifer material, perched groundwater is likely to exist where lenses of sand, clay and gravels units are present.

The groundwater levels and quality in the subsoils underlying the application site were monitored at four boreholes during between March to August 2024.

Groundwater level data from the Application site suggests groundwater flow direction in the vicinity of the application site is to the southeast, which is at odds to the topography and location of the River Figle. It is possible that the water levels beneath the Site are responding to abstractions to the southeast although impact is slight

Groundwater quality results recorded exceedances of Nitrate in one borehole (BH1). The likely source of this was nearby agricultural activities (i.e. effluent and fertiliser application to agricultural land).

Local residences have private water wells for water supply and maintain individual septic tanks for wastewater treatment.

Potential Effects and Mitigation

Potential impacts of the Proposed Project have been assessed and it is considered that the main potential impacts and associated effects relate to:

- Surface water (quarry pit) contamination from sediment loading during construction into the adjacent waterbody leading to change in groundwater quality that may support surface water;

- Importing of material during construction that could be unsuitable and could lead to leaching of contamination to the land and then into groundwater and surface water downgradient of the Proposed Project;
- Events during works phase that might impact land quality (e.g. leaks and spills from machinery or parked plant/vehicles) that could have a feasible pathway to groundwater and surface watercourses that are downgradient of the Proposed Project;
- Direct recharge from the quarry void into the groundwater body to be reduced upon filling;
- All material will be inspected and quarantined prior to use in infilling of void;
- There is limited connectivity between groundwater and surface water in the area. Surface water runoff from hardstanding installed for the Proposed Project will be discharged to ground via interceptor and soakaway;
- The water level will be allowed to stabilise with the addition of material. The water level is already 5m below ground level so there is a reduced risk of spillage;
- Any leaks, from machinery or parked plant/vehicles are likely to be minor;
- Fill material used will be sized to match that of the bedrock aquifer and allow recharge.
- Groundwater level and quality monitoring are proposed for the construction phase of the Proposed Project; and
- Surface Water quality monitoring is proposed for the construction phase of the Proposed Project.

7 Air Quality

Section Purpose

This EIAR chapter has assessed the potential impacts of the Proposed Project which have been assessed in the context of relevant national and local air quality legislation, policy and guidance.

Potential Effects and Mitigation

The possible sources of emissions to air have been identified as mineral dust (including PM₁₀) associated with the quarry restoration activities, emissions of dust, PM₁₀ and PM_{2.5} from trackout and emissions of NO_x, PM₁₀ and PM_{2.5} from plant and NRMM.

The assessment has shown that mineral dust emissions from the Proposed Project, are likely to result in a slight adverse impact on Grand Canal pNHA and on sensitive human receptors within 400m prior to the implementation of appropriate mitigation measures. Following the implementation of the mitigation measures (outlined above) the impact is likely to be imperceptible (negligible) and are considered to have no significant effect.

Emissions from trackout have also been assessed. Prior to the implementation of appropriate mitigation measures there is a low risk of impacts on dust soiling and there is a negligible risk of impacts to human health. Following the implementation of the mitigation measures described above and good site practices, the impact of dust, PM₁₀ and PM_{2.5} generated are expected to be not significant.

Emissions from plant and NRMM used on site have also been assessed. Prior to the implementation of appropriate mitigation measures the impact on sensitive human receptors within 200m is likely to be slight adverse although this reduces to an imperceptible (negligible) impact following the application of appropriate mitigation measures and are considered to have no significant effect.

8 Climate

Section Purpose

Section 8 of the EIAR provides an assessment of potential effects of the quarry restoration at the Site on the surrounding climate. This assessment included consideration of both potential effects from the Site and cumulative effects of other extractive or sizable industries in the surrounds of the Site.

Setting and Existing Conditions

The site is on lands at Coolsickin or Quinsborough, Co. Kildare. The current climate at the site is temperate maritime. The closest Met Éireann station is located at Carlow Oakpark approximately 36 km to the south of the site.

Potential Effects and Mitigation

The main receptors that could be affected by changing climate due to the Proposed Project were identified and potential effects were assessed in line with the approach identified in European Commissions (2016) 'Climate Change and Major Projects' assessment guidance.

The assessment concludes that the combination of the Site's climate 'Sensitivity' and 'Exposures' have shown, overall, that the Site is at a Low risk from climate hazards, which is considered to be **Not Significant** in terms of this assessment.

9 Noise and Vibration

Section Purpose

This assessment has considered potential noise and vibration impacts associated with the proposed restoration operations of the quarry on the amenity of residents at existing nearby properties.

The assessment has comprised a desk study to determine an appropriate study area and identify potentially sensitive receptors, characterisation of the baseline noise environment, prediction of worst-case operational phase noise levels and evaluation against appropriate criteria.

Potential Effects and Mitigation

Noise from the Proposed Project has been predicted for one construction scenario; for proposed daytime operations during the construction phase. The modelled scenario followed a highly conservative approach to determine the likely 'worst-case' noise levels at NSRs. Predicted noise levels are well within the daytime levels recommended by the EPA Environmental Management Guidelines. Predicted noise levels from the construction phase infilling activities for the modelled scenario have been found to be 'Not Significant'.

Noise impacts from the Proposed Project have been predicted to be 'Not Significant'.

10 Cultural Heritage

Section Purpose

Section 10 of the EIAR provides an assessment of potential effects of the quarry restoration at the Site on archaeology and cultural heritage. This assessment included consideration of both potential effects from the Site and cumulative effects of other extractive or sizable industries in the surrounds of the Site.

Setting and Existing Conditions

This environmental impact assessment report has identified that there are no designated heritage assets within the Site. There are however 10 designated heritage assets within a 1km study area around the Site, including four Recorded Monuments (HA1, HA2, HA9 and HA10), and six architectural assets on the National Inventory of Architectural Heritage (NIAH) (HA3, HA4, HA5, HA6, HA7, HA8). There is also a non-designated heritage asset (HA11) that borders the northern edge of the Site.

Quarrying activity was undertaken on the Site between 2001-2006, thereby indicating that the Site is disturbed. Therefore, there is considered to be no potential for sub-surface archaeological remains within the Site. Accordingly, any archaeological potential arising from chance finds have been scoped out of this assessment.

Potential Effects and Mitigation

This environmental impact assessment report is intended to assess the potential significant effects on any cultural, archaeological and architectural heritage assets, which may have occurred, are occurring or can reasonably be expected to occur because of the restoration works at the quarry, located in the townland of Coolsickin or Quinsborough.

There are no known archaeological, architectural or cultural heritage assets within the Site and the Proposed Project would have neutral beneficial impacts on three heritage assets, due to improvements in the setting of heritage assets through removal of the quarry in views from the heritage assets; and therefore, no significant adverse impacts.

11 Landscape and Visual

Section Purpose

Section 11 of the EIAR provides an assessment of potential effects of the proposed quarry restoration of the Site on Landscape and Visual Impact.

This assessment included consideration of potential effects on the landscape and visual resource can reasonably be expected to occur because of the proposed quarry restoration carried out by the applicant. 23

Potential Effects and Mitigation

The Proposed Project will give rise to Medium-term landscape and visual effects in the mid to low range of significance and with a negative quality during the Construction Phase. This is due to the movement of vehicles and machinery and presence of temporary stockpiles during construction phase. Once the Application Site is restored to agricultural farmland reflecting the prevailing surrounding land use the infilled quarry will give rise to positive landscape and visual effects.

Based on the assessment of landscape and visual effects contained herein, it is considered that the proposed Ballykelly Quarry restoration will not give rise to any significant effects in EIA terms.

12 Traffic and Transport

Section Purpose

Section 12 of the EIAR provides an assessment of potential effects of the proposed quarry restoration of the Site on Traffic and Transport.

Potential Effects and Mitigation

Junction models were built for two junctions: the Site access and Ballykelly Cross. Whilst the percentage increase on existing traffic flows through these junctions exceeded the threshold for further detailed capacity analysis, outputs from the junction capacity modelling software shows that the traffic generated across the period of assessment offers no detrimental impact on the operating capacity of either junction.

The proposed upgrades to the existing site access have been assessed for visibility with splays indicating that all provisions are within standard and offer no adverse safety arrangements during the construction phase of the Proposed Project. The proposed upgrades have also been assessed from an accessibility perspective with vehicle swept path analyses confirming suitability of the new junction design.

With the employment of the mitigation measures outlined in Chapter 12 of the EIAR, which includes the submission of a Construction and Traffic Management Plan/Plans, it is considered that there will be no significant residual effects as a result of the Proposed Project.

13 Material Assets

Section Purpose

Section 13 of the EIAR provides an assessment of potential effects of the quarry restoration at the Site on material assets in the vicinity of the site. This assessment included consideration of both potential effects from the Site and cumulative effects of other extractive or sizable industries in the surrounds of the Site.

Material assets are physical resources in the environment, which may be of human or natural origin. The objective of the assessment is to ensure that these assets will be used in a sustainable manner with respect to the Proposed Project.

Setting and Existing Conditions

Material Assets in the vicinity of the Site comprise of built services and infrastructure, such as:

- Electricity network utilities - the site is traversed by the grid via an overground high voltage line (Newbridge to Portlaoise 110kV transmission line 110 kV). Overground medium voltage lines supported by poles are located in a southeast to northwest orientation in the western area of the site;
- Gas infrastructure (not in the area);
- Telecommunications network – service maps indicate a transmission line is present within the EIA boundary in the northern section of the application site. However, this infrastructure was not observed to be present within the application site during a walkover carried out on 8 March 2024;
- Local water supplies and foul water network (assumed not on site);
- Surface water drainage infrastructure - there are no existing public surface water networks within the site; and
- Waste management - No waste is generated on the Site as limited activities currently take place on the lands.

Potential Effects and Mitigation

In summary, the significance of residual effects on material assets resulting from the Proposed Project are predicted to be no higher than slight adverse and, therefore, Not Significant in terms of this assessment.

14 Major Accidents and Disasters

Section Purpose

Section 14 of the EIAR provides an assessment of potential effects Proposed Project on Major Accidents and Disasters. This assessment included consideration of both potential effects from the site and cumulative effects of other extractive or sizable industries in the surrounds of the site.

The consideration of major accidents and disasters seeks to assess the relevant accidents and disasters which a development is vulnerable to, and the relevant accidents and disasters that a development could give rise to. These unforeseen and unplanned events are to be assessed on the risk of their occurrence.

Setting and Existing Conditions

Due to Ireland's geographic location, it is less vulnerable to natural disasters such as earthquakes and tsunamis than other regions across the globe. With regards to natural disasters, severe weather events such as flooding pose the greatest threat to Ireland. However, there have been no previously recorded flood events within the Proposed Project's EIA boundary.

No extraction activities have occurred on the Site since the closure of the historical quarry operation in 2006. The collect waters in the quarry void space that formed following the closure of the historical quarry represent a potential hazard to human health (e.g. drowning). Safety signage is affixed to the security gate that is the single authorised access to the disused quarry.

Potential Effects and Mitigation

This assessment considers the potential impacts and effects of the Proposed Project on major accidents and disasters.

The sources of impacts that have the potential to effect major accidents or disasters relating to the proposed Project were identified as geotechnical hazards, physical hazards, chemical hazards, external accidents, and flooding. The potential effects were assessed for the construction phase of the Proposed Project

It is predicted that the Proposed Project will not result in accidents or disasters that are deemed to be 'Major'. It is considered that the Proposed Project would have no effect on the surrounding environment in regard to major accidents and disasters. No mitigation measures or monitoring is proposed as a result of this assessment.

15 Interactions

Section Purpose

This assessment summarises the primary interactions and inter-relationships and provides a matrix to coherently display the interactions of these disciplines. The overall objective of this assessment is to identify whether additional remedial mitigation is required that would not otherwise have been identified in the individual study areas for these interacting or cumulative effects.

Interactions of EIA study topic areas are typically displayed visually in a matrix table which identifies potential interactions which are likely to occur between the various disciplines. This table, from Chapter 15 of the EIAR, has been reproduced in Table 15-1. A '✓' in a box identifies the potential interacting disciplines where a relationship exists.

Cumulative and In combination effects with third-party developments were assessed and no significant effects were identified.

Table 15-1 - BQL s.37L Environmental Interactions, (X = No Interaction; ✓ = Potential Interaction).

Interaction	Population & Human Health	Ecology and Biodiversity	Land, Soils & Geology	Water	Air Quality	Climate	Noise and Vibration	Cultural Heritage	Landscape & Visual	Traffic & Transport	Material Assets	Major Accidents & Disasters
Population & Human Health		X	✓	✓	✓	X	✓	X	✓	✓	✓	✓
Ecology and Biodiversity.			✓	✓	✓	X	✓	X	✓	X	X	X
Land, Soils & Geology				✓	✓	X	X	✓	✓	X	X	X
Water					X	X	X	X	X	X	X	X
Air Quality						X	X	✓	X	X	X	X
Climate							X	X	X	X	X	X
Noise and Vibration								X	X	X	X	X
Cultural Heritage									✓	X	X	X
Landscape & Visual										X	X	X
Traffic & Transport											X	X
Material Assets												X
Major Accidents & Disasters												

16 Schedule of Mitigation and Monitoring

The purpose of this chapter is to collate the mitigation and monitoring measures identified in the EIAR that are considered necessary to protect the environment during construction and restoration phases of the Proposed Project.

Where appropriate, environmental monitoring activities have been proposed for the construction and restoration phases. Monitoring will take place after the consent is granted for the Proposed Project to provide assurance that aspects of the design and management are functioning as intended and therefore not generating significant effects.



Town Centre House
Dublin Road
Naas
Co Kildare

wsp.com

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