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1 NON- TECHNICAL SUMMARY

1.1 INTRODUCTION

WSP Consulting Ireland Ltd (WSP) have been commissioned to prepare this remedial Environmental Impact Assessment Report (rEIAR) to accompany a substitute consent application for consent for an existing quarry with an extraction area of approximately 5 hectares (ha.) located in the townland of Hempstown Commons, Co. Kildare. This rEIAR is submitted on instruction of Shillelagh Quarries Ltd (SQL), owner and operator of this quarry who are the applicant for this substitute consent application.

The SQL operational facility summarily consists of a shale quarry, associated processing plant and offices at Hempstown Commons, County Kildare. The main entrance to their operation is accessed from a local road L6030that accesses the N81. The facility is located approximately 4 km north of Blessington, Co. Wicklow.

The SQL operation is adjacent to another quarry and associated land uses operated by unrelated parties.

It is noted that this rEIAR has been prepared in tandem with an EIAR to accompany an application under Section 37L of the Planning and Development Act, 2000 as amended, for further development of the existing quarry as a quarry by the same applicant.

The quarry, the intended subject of application for substitute consent lies within an established landholding located within the townlands of Hempstown Commons, Co. Kildare. The north of this landholding has been the subject of historic extraction and intended future extraction. To the eastern extent lies the Wicklow and Kildare County boundaries. .

The lands the subject of this rEIAR [the subject lands] at 18.45 ha (EIA boundary) entirely encompasses the substitute consent application area of 10.05 ha. The reserve at this quarry is greywacke rock, overlain by sand and gravel, currently worked to a maximum depth of 210 mAOD. The reserve has traditionally been excavated by blasting and mechanical means, primarily processed by mobile plant at the working face. Excavated material is processed via crushing, screening and grading onsite.

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

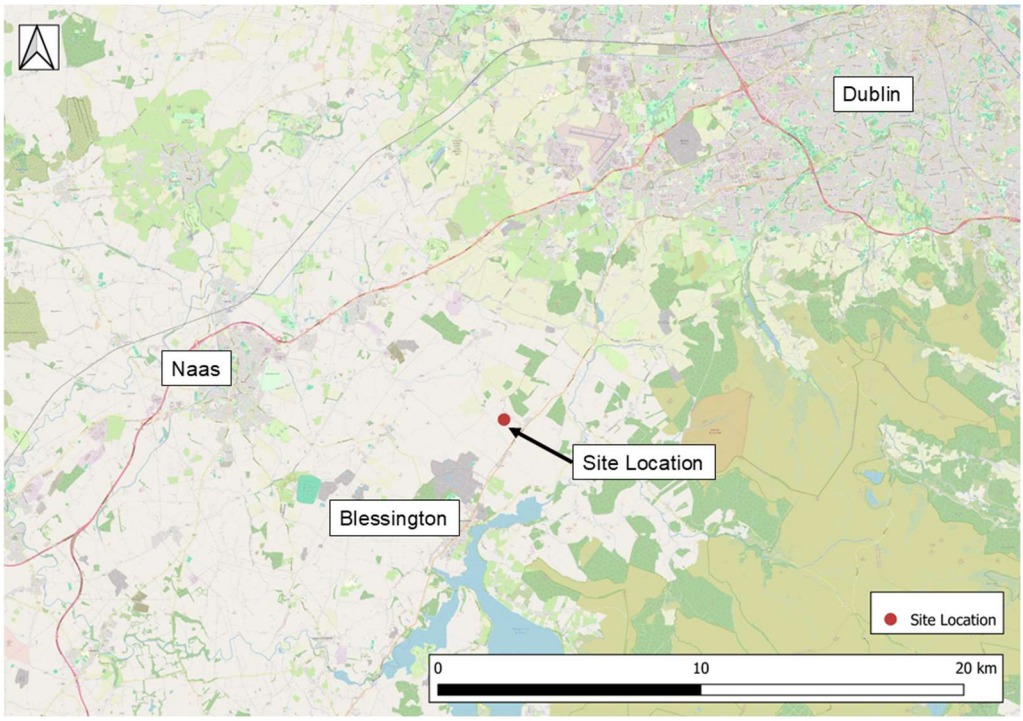

Figure 1-1 - Regional Site Location

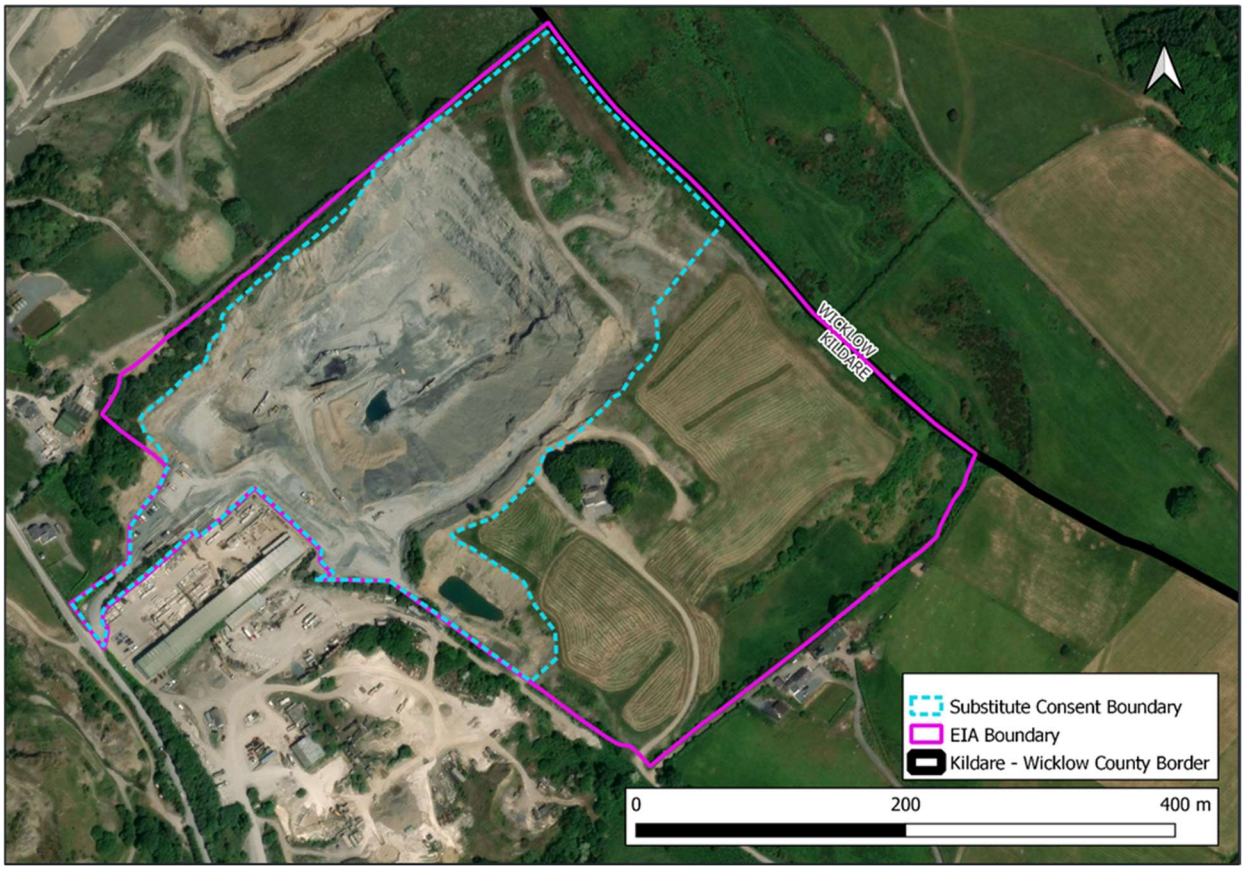

Figure 1-2 - – Substitute Consent application area and the lands the subject of the EIAR

1.2 THE NEED FOR THE DEVELOPMENT AND CONSIDERATION OF ALTERNATIVES

Identification and consideration of alternatives of design and scale for a quarry development, particularly for a continuation of extraction, are limited in scope. The extraction of aggregates is controlled by the availability and quality of the materials (both sand and gravel, and rock) which in turn controls the overall design plan for the quarry.

The greywacke rock reserve at the subject location is of a proven good quality capable of being used for a range of materials in the construction industry. Therefore, the reserve material assumed to be present at the subject site and now extracted provided suitable aggregates for construction purposes.

In considering alternative sites, it is a basic principle that aggregates can only be worked where they naturally occur. The products are generally of low unit value and the most significant cost is transportation. As with all aggregate extraction development the nearer the supply of aggregate to the market, the more economically viable it is and given the nature of aggregate deposits. In this case the Site has the benefit of being strategically located adjacent to the National Road Network (N81). Aligned to this economic situation is the environmental and social preferability of locally sourced aggregates. Aggregates sourced close to their market are preferable to those sourced at more remote locations as this lessens road traffic and associated environmental impacts and economic costs. Socially, the local sourcing of construction aggregate strengthens the local economy through job provision and associated spending and exploits advantages and opportunities inherent in local supply chains.

Aggregates are an essential material for the construction industry and are used in all major development plans (housing, road surfacing, infrastructure etc.). As such, they are of major significance to the overall growth of their local areas and the country and an important economic resource despite fluctuations in levels of construction due to wider economic forces, or events such as the COVID-19 pandemic suspension of construction.

The purpose of this rEIAR 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.

In this case, the quarry site represents the predominant land asset upon which the developer's companies and employees rely. The developer is a quarry operator and employer who wishes to maintain this asset. The continued quarry use and sustainable further development is contingent on further planning permission to secure future reserve especially as the substitute consent process is restricted to extant development. The reader is reminded that a concurrent Section 37L application with accompanying EIAR is to be submitted for a relatively minor lateral expansion of the easing quarry void to secure the quarry land use and future reserve.

Maintaining the quarry site and adjacent suitable lands as a viable quarry with associated processing plants will ultimately realise the sustainable extraction potential of this extant, established quarry and will maintain those direct and indirect jobs.

2 PROJECT DESCRIPTION

This rEIAR is submitted to support an application for substitute consent in respect of all development carried out on the lands, since the expiration of planning permission register reference 07/443 ABP ref.PL09253338 on the 29 December 2019, other than the remediation works carried out pursuant to Condition 6A of the said planning permission.

The planning history for Development at the Site is described in detail within section 2.6 of Chapter 2 (Project Description) of the rEIAR submission, and details how the requirement to seek substitute consent was served.

2.1.1 SUBSTITUTE CONSENT APPLICATION AND EIA PROJECT BOUNDARY

The substitute consent planning application unit extends to approximately 10.05 ha. and includes the extracted area of the quarry which was carried out pursuant to Kildare County Council (KCC) Planning Reference Number 07/443; ABP Ref. PL09.233338 and other areas of work in surrounds to this area, along with the development of 2 No. soakaway areas to the south of the site.

As noted at the outset, the application for substitute consent to which this rEIAR accompanies is to be made concurrent with an application for further development of quarry under Section 37L. The 37L application is also to be accompanied by an EIAR. In view of this rEIAR and the EIAR being concurrently prepared for much of the same operational lands it is submitted that a single EIA project boundary for the purposes of assessment by experts of works past and proposed is consistent and will facilitate EIA of each development within the same EIA project envelope.

The EIA project boundary envelopes an area of approximately 18.45 ha. that encloses previous quarry working areas, current workings and intended future workings.

The EIA project boundary is therefore larger than the associated planning application units in order to capture the currently proposed substitute consent and Section 37L application boundaries and associated infrastructure.

3 POPULATION AND HUMAN HEALTH

Section Purpose

Section 3 of the rEIAR provides an assessment of potential effects of the continued operation of the Site on the surrounding human environment, ecology and biodiversity. 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 Hempstown Commons, Co. Kildare. The study area for this assessment has been determined as the EIA site boundary and a 500 m area around this. The study area is located within the Rathmore 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 18 no. residential dwellings were found to be within 500 m of the EIA boundary; also 3 no. non-residential premises were also identified. The number of residential and non-residential receptors within the study area over the assessment period has not changed. The number of residences is based on a field survey, a review of the aerial photography and DCCAE Eircode mapping.

Potential Effects During the Assessment Period and Mitigation

With the application of mitigation measures it is considered that the development did not give rise to significant adverse effects to the surrounding human environment during the assessment period of 29 December 2019 to present. A slight positive effect on local employment was identified during the assessment period.

4 ECOLOGY

Section 4 of the rEIAR provides an assessment of potential impacts of the continued operation of the Application Site on ecological receptors (called important ecological features (IEFs)). This assessment included consideration of both potential effects from the Application Site and cumulative effects of plans and projects in the surrounds of the Application Site.

Methodology

The impact assessment has examined survey data gathered before the assessment period (in 2019) and compared it with survey data gathered recently (August-December 2024). Surveys covered habitats and protected/notable fauna on lands within the existing quarry pit as well as in the surrounding landscape. Publicly available species records from within 5km of the Application site were examined, and the onsite habitats were assessed for their potential to accommodate protected or notable species identified. The assessment has also used historical aerial imagery and environmental emissions monitoring data to help determine the types of effects likely to have occurred.

Existing Conditions

It was found that quarry operations had expanded to the southwest and southeast, and later to the northeast. Monitoring results for groundwater, surface water, noise, vibrations and dust emissions all indicated that works at the Application Site during the assessment period did not result in deleterious impacts to the surrounding environment and indicated that there had been no perceptible shift in baseline conditions as a result of these works.

Habitat assemblages in 2024 were found to be broadly similar to those reported in 2019. However, it was noted that ca. 0.08ha of scattered trees, 0.62ha of scrub, and 0.16ha of improved grassland was lost during the assessment period.

The surveys also found evidence of, or suitable habitat for, the following protected/notable species:

- Two potential badger setts;
- Hedgerows/treelines and scrub were considered suitable for hedgehog, pygmy shrew, and Irish hare, for which public records had been submitted from within 5 km of the Site;
- Suitability for nesting peregrine falcon and kestrel on the upper quarry faces;
- Sand martin burrows near the main soakaway;
- Suitability for breeding amphibians in the overflow soakaway; and
- Suitable habitat for common lizard.

Potential Effects During the Assessment Period

Significant impacts were identified as a result of habitat loss (scrub and scattered trees), encompassing impacts to the habitats themselves, as well as the fauna for which they are important (in this case, breeding birds, reptiles and small mammals). All impacts were significant at a local scale only.

Compensation and Enhancement

Compensation and enhancement have been proposed in the form of reinstatement of trees and scrub habitat, which is to be bolstered through increasing species diversity through planting of native

species. The provision of new habitat will restore suitable habitat for breeding birds, reptiles and small mammals.

It was considered that following the implementation of the compensation and enhancement measures described, that significant residual impacts could be negated entirely, with no significant effects.

5 LAND, SOILS AND GEOLOGY

Section Purpose

Section 5 of the rEIAR provides an assessment of potential effects of the continued operation of the Site on the surrounding land, soils and geology, during the study period of 29 December 2019 to present, December 2024. 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 Hempstown Commons, Co. Kildare, along the Kildare/Wicklow border. Regionally, the nearest town is Blessington which is approximately 4 km to the southwest of the site. The site comprises lands which are currently used for quarrying activities.

The site is comprised of a quarry void to the north east of the site boundary where the rock material is subject to extraction, two soakaway ponds to the southeast of the site where water from the base of the quarry void is pumped to and an eastern area where material is stockpiled and stored.

The main land use changes identified during the study period were the extension of the quarry void by 0.4 hectares and the installation of the two soakaway ponds. The land use for lands around the development has remained largely unchanged during the assessment period.

There are limited soils remaining in the existing extraction area due to extraction activities carried out onsite under the previous planning permission. The subsoils underlying the Site are composed of gravels derived from Limestones. Glacial and fluvial deposits (known locally as the Blessington Gravels) are generally thick in the area, with deposits commonly greater than 30 metres in thickness, into the base of the valleys. Information from site investigations indicate that the sands and gravels of the drift thicken to the south of the Site, towards the base of the valley.

The bedrock underlying the site is of the Pollaphuca Formation, which is described as consisting of course, graded greywackes, medium grey in colour, and dark grey shales.

The site is located entirely within the Slate Quarries (KE004) County Geological Site, which is described as a series of quarries on the hillside and the primary rock type is Silurian slates of the Slate Quarries Formation. Although it should be noted that extraction at the quarry during the assessment period has been of the greywackes of the Pollaphuca Formation, not the Slate Quarries Formation.

There have been no landslides recorded within 1 km of the site and there are also no karst features in this area. The EPA lists the site as being within an area of ‘High’ radon potential, where 1 in 10 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.

Potential Effects During the Assessment Period and Mitigation

Four 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 Development, human health (workers during operation) and geological heritage. These are classified as of low, low, high and medium respectively.

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

- Land contamination from site operations
- Health of works in contact with contamination
- Change in land use by the advancement of the extraction area
- Removal of topsoil at the Site
- Removal of bedrock at the Site
- Destabilisation and/or subsidence of unconsolidated soils, sub-soils or rock faces
- Changes to designated CGS site

Given the implementation of embedded mitigation measures that are implemented as routine on the site, it is considered that there is limited potential for contamination to lands from leaks and/or spills. No spills or leaks have been recorded onsite by the applicant during the assessment period.

Extension of the extraction area during the assessment period increased the quarry area by approximately 0.3 ha. Furthermore, two soakaways were installed to the south of the quarry pit in the assessment period. This land was within site boundary and was not used for agriculture at the beginning of, or within the review period and any removed topsoil from these activities has been stored on site.

The nature of the development involved the removal and storage of soil; however, it is noted the soils have not been transported off-site. By the nature of quarrying, the greywacke bedrock was removed with quarrying, which resulted in a direct and irreversible impact on the Site. However, the removed material has a medium to high resource potential and will be used in future construction projects.

The site is located in an area of low seismic activity there were no geotechnical incidents, which would include collapse of a wall or surface, recorded over the review period.

The site is located within Slate Quarries County Geological Site (CGS)(KE004). The management / promotion of this site states ‘to include these working quarries as a CGS in no way is intended to limit the operations, but simply to mark their value as a place to see local geology well exposed, and to make the powerful connection between geology and people’s everyday lives.’ It should be noted that the quarry is located entirely on private lands owned by the applicant. Furthermore, there are limited viewpoints into the quarry from surrounding public lands (.e.g. local roads) with views of bedrock exposures within the quarry largely restricted due to local topography and hedge/treelines. Therefore, it is considered that the operations at the Site have not negatively impacted the CGS management objectives.

The assessment concludes that the existing site has not given rise to significant adverse effects on the land, soil or geology at or surrounding the site during the assessment period of 29 December 2019 to present, December 2024.

6 WATER

Section Purpose

Section 6 of the rEIAR provides an assessment of potential effects on the water environment from the continued operation of the Site, during the study period (December 2019 to present, December 2024). This assessment includes consideration potential effects from the Site with appreciation of existing and proposed mitigation measures.

Site Setting and Existing Conditions

The Site is on land at Hempstown Commons, Co. Kildare, along the Kildare/Wicklow border. The Site comprises lands that are currently used for quarrying activities.

The Site comprises of a quarry void in the northern part of the Site, where the rock extraction occurs. Two soakaway ponds (large soakaway and small overflow) are located in the southern part of the Site, where water from the base of the quarry void is pumped to.

The main land use changes identified during the review period were the extension of the quarry void by 0.4 hectares, the deepening of the quarry floor (by up to ~22 m) and the installation of the two soakaway ponds. The land use for lands adjacent to the development have remained largely unchanged during the review period, being mainly agricultural.

Glacial and fluvial deposits are commonly greater into the base of the valleys in the area. Site investigations indicate that the glacial sands and gravels thicken towards the south of the Site (to a maximum of 9 m), towards the base of the valley. The bedrock underlying the Site is the Pollaphuca Formation, which consists of course graded greywackes and dark grey shales.

There is a catchment divide to the north of the Site, which closely follows a northeast trending ridgeline. The Goldenhill river is located within 1.2 km to the southeast of the Site and flows south to the Poulaphouca Reservoir. The Poulaphouca Reservoir is located approximately 2.8 km to the south of the Site and is designated as a Special Protection Area (SPA) and National Heritage Area (NHA). It is likely that any surface water flows within the vicinity of the Site will flow towards the Goldenhill river, based on the catchment divide. The Red Bog SAC is located approximately 1.2 km southwest of the Site and is a similar elevation to the southern boundary of the Site.

Baseline and Subsequent Conditions

Both the Goldenhill river and Poulaphouca Reservoir are classified as ‘good’ under the WFD (2016-2021) Status.

Sampling of surface water quality from the large soakaway pond shows that nitrate and nitrite exceeded the GTV and AA-EQS in 2024 on two occasions. The source of the nitrate and nitrite is likely to be from agricultural processes and run-off from the farmed fields.

Arsenic exceeded the GTV and AA-EQS in all months that sampling was undertaken; August, September and October 2024. These exceedances indicate that there are naturally elevated concentrations of arsenic in the seepage collecting in the quarry void, which are then transferred to the soakaway pond (SW01). Elevated groundwater arsenic concentrations have been found to be associated with poorly productive greywacke or shale bedrock aquifers, similar to the Pollaphuca Formation in the study area.

There are five existing monitoring wells monitoring groundwater levels and quality on the Site (GW1 to GW5). Groundwater levels are generally stable throughout the review period, which is reflective of the isolated nature of the groundwater within fractures of the bedrock greywacke and shale. However, there does appear to be a reduction in water levels in response to periods of reduced rainfall across some of the monitoring wells.

The GTV threshold for arsenic was exceeded at GW4 and at the Wheelwash borehole, although at significantly reduced concentrations in comparison to those for the soakaway ponds. Elevated arsenic concentrations are interpreted to be naturally occurring. Other exceedances were for barium (naturally occurring in bedrock) and for nitrate (in GW1 and GW5 in close vicinity to farmed land).

The conceptual section for the Red Bog indicates that it is highly unlikely that there is any hydraulic connectivity between the quarry void and the Red Bog, due to being situated in different groundwater bodies. The conceptual section for the Poulaphouca Reservoir SAC indicates a potential linkage (although likely limited) between the soakaway ponds and the Goldenhill river, which in turn feeds the reservoir.

The Site water balance indicates that the majority of the discharged water recharges the groundwater in the Poulaphuca Formation bedrock beneath the soakaway ponds and possibly the quarry void.

Potential Effects During the Assessment Period and Mitigation

Five sensitive receptors were identified in the impact assessment of the site; surface water (Poulaphouca Reservoir SAC and Goldenhill River), groundwater resources, infrastructure and local abstractions. The Poulaphouca Reservoir SAC and Goldenhill River were ranked as having the highest sensitivities (High and Medium respectively).

The main potential impacts considered were as follows:

- Changes in groundwater or surface water quality due to excavation or dewatering
- Changes in surface water or groundwater quality or quantity from discharges/infiltration from the soakaway and overflow ponds
- Changes in surface water or groundwater quality from wastewater generated by on-Site welfare, holding tank and wheel wash facilities, uncontrolled material storage or hydrocarbon leaks
- Increased flooding risk due to elevated rainfall

Embedded mitigation measures were in place over the review period, which reduced the potential effects to the water environment. It is noted that there were a number of mitigation measures that were proposed in the 2019 EIAR that have not been put in place. Further mitigation is proposed for lining of the soakaway ponds to prevent discharges to the gravels and sands and install of a monitoring well in the sands and gravels down gradient of the soakaway ponds, to reduce potential effects.

The impact magnitude combined with the sensitivities of the identified receptors gives adverse effects that are mostly imperceptible or slight. Human health has not been considered as the changes to quality for the local abstractions have been assigned an imperceptible level of effect.

The assessment concludes that the operations at the Site have not given rise to significant adverse effects on the water environment during the assessment period of December 2019 to present, December 2024.

7 AIR QUALITY

Section Purpose

Section 7 of the rEIAR provides an assessment of potential impacts associated with the operation of the Proposed Development on dust soiling and local air quality between 29 December 2019 and the current time. The assessment included consideration of both potential impacts from the Proposed Development alone and the cumulative impacts associated with the operation of the Proposed Development in combination with nearby sources.

A qualitative assessment of impacts of mineral dust and particulate matter (PM10) derived from the quarrying activities has been undertaken in line with the Institute of Air Quality Management (IAQM); 'Guidance on the Assessment of Mineral Dust Impacts for Planning'. A qualitative assessment of the impact of plant and non-road mobile machinery (NRMM) has also been undertaken commensurate the IAQM's 'Guidance on the Assessment of Dust from Demolition and Construction'.

The impacts have been assessed in the context of relevant national, regional and local air quality policies.

Baseline and Subsequent Conditions

Baseline air quality conditions have been determined from a combination of boundary dust monitoring data collected at the Proposed Development monitoring data gathered from 2020 to 2023 together with EPA monitoring data for nitrogen dioxide (NO2) and particulate matter (PM10 and PM2.5). Concentrations of all pollutants are well below the relevant standards. Wind speed and direction data indicative of the prevailing conditions within the study area have been obtained from the Met Éireann station at Casement Aerodrome, Baldonnell, County Dublin, approximately 10km north-northeast of the Proposed Development; these have been used to inform the mineral dust assessment.

Potential mineral dust emissions associated with quarry workings are:

- Movement of full and empty trucks along haul roads;
- Stripping of subsoil and overburden;
- Loading and movement of overburden to dump areas;
- Blasting and rock breaking;
- Extraction of materials;
- Loading of materials;
- Unloading of overburden for restoration; and
- Wind erosion at dump areas and exposed faces.

- **Potential Effects During the Assessment Period and Mitigation**

Mineral dust impacts are not expected beyond 400m from the EIA boundary, therefore all receptors (human sensitive and non-sensitive) within this distance have been considered. Emissions of oxides of nitrogen (NOX) and particulate matter from site plant and NRMM have the potential to increase NO2, PM10 and PM2.5 concentrations at sensitive human receptors within 200m of the EIA site boundary. Impacts associated with both have been assessed as imperceptible (i.e., negligible) and no significant effects are anticipated.

Mitigation measures to minimise the potential impacts from the Proposed Development have been consistently in place throughout the operation of the Proposed Development, no further measures are required.

8 CLIMATE

Section Purpose

Section 8 of the rEIAR provides an assessment of potential effects of the continued operation of 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 application site is located in the townland of Hempstown Commons, Co. Kildare. The site is located within an area that has been historically used for quarrying. The current climate at the site is temperate maritime.

Potential Effects During the Assessment Period and Mitigation

Potential climate impacts can be generated through the following processes at the site:

- Impacts of climate change on the development, including the sensitivity, exposure and the overall vulnerability of the development to impacts from relevant climate hazards; and
- Impacts of the development on the climate.

The assessment and combination of the site's climate 'Sensitivity' and 'Exposures' have shown, overall, that the site is at a low risk from climate hazards. Adaptions have been inbuilt into the site as the area of extraction is the most exposed to potential climate impacts. Good site management in terms of groundwater monitoring and the good management of site excavations and run-off management during very extreme rainfall or flooding events have been incorporated into the design and operation of the quarry site. The overall impact from climate hazards at the site is considered to have been imperceptible and is therefore effects are considered to be not significant

The development is not considered to be of a sufficient scale to have had the potential to impact the regional or local climate in any significant manner. The site has not had any significant effects on local prevailing weather conditions, nor has the site increased the potential of flooding in the surrounding area. Quarry operations during the assessment period had the potential to result in a loss of soil organic carbon in form of CO^2. Given the small area of stripping that occurred, the liberation of soil organic carbon and impact on the climate is considered to be imperceptible.

Overall, the impacts of the development on the climate are considered to be not significant.

9 NOISE AND VIBRATION

Section Purpose

This section of the rEIAR has considered historical noise and vibration impacts associated with the quarry. The assessment has comprised characterisation of the baseline noise and vibration environment, adoption of appropriate evaluation criteria, prediction of noise levels at identified NSRs, evaluation against adopted criteria and specification of appropriate mitigation.

Setting and Existing Conditions

A programme of regular noise monitoring was undertaken by the quarry operator, from the years 2020 to 2024. Measured noise levels due to operation of the quarry were not in exceedance of daytime target levels. Exceedances that occurred at monitoring position 2 were found to have been caused by road traffic and operational noise from neighbouring developments.

The historical hours of operation related to the excavation and processing of material between 08:00 - 18:00, Monday to Friday and between 08:00 - 14:00 on Saturdays. During the hours of 07:00 – 08:00 activities were limited to loading and transporting of processed material. No activities were conducted on Sundays or public holidays.

Potential Effects During the Assessment Period and Mitigation

Operational noise from the quarry has been predicted for two operational scenarios, 2020 daytime & operations, and 2024 daytime operations. All modelled scenarios followed a highly conservative approach to determine the likely 'worst-case' noise levels at NSRs. Despite this approach the predicted historical noise levels are well within the daytime levels recommended by the EPA Environmental Management Guidelines – Environmental Management in Extractive Industry. Predicted noise levels from quarry operations for all modelled scenarios have been found to be 'not significant'. Vibration monitoring undertaken from 2020 to present resulted in no exceedances in the specified vibration limits. The probability of adverse comments due to blasting activities was low, and measured air overpressure levels were substantially lower than the levels which would see structural damage to windows.

No significant noise or vibration impacts have been identified throughout the assessment period of the quarry.

10 ARCHAEOLOGY AND CULTURAL HERITAGE

Section Purpose

Section 10 of the rEIAR provides an assessment of potential effects of the continued operation of the Site on archaeology and cultural heritage. This assessment included consideration of potential effects on the cultural, archaeological and architectural heritage resource, which may have occurred, are occurring or can reasonably be expected to occur because of quarrying and restoration carried out by the applicant.

Setting and Existing Conditions

The quarry is located in the townland of Hempstown Commons, Co. Kildare and the scope of the assessment comprises a study area of 500m from the quarry which has been chosen to capture sufficient baseline data to robustly assess direct impacts from changes within the setting of known heritage assets. It also establishes the local archaeological and historical context, providing an understanding of the historical development of the quarry and the surrounding landscape.

There are two heritage assets within the 500m study area comprising two Cists, one of which was inscribed by Rock Art.

Potential Effects During the Assessment Period and Mitigation

There are no known heritage assets within the quarry that would have been impacted upon by the quarrying activity, therefore there are no direct physical impacts on heritage assets.

The heritage assets within the study area are located approximately 400 to 450 m away from the edge of the quarry. There are no direct views into the quarry and the rural setting of the heritage assets has been retained, with minor industrial activity from the quarry and adjacent works present in some views. The impacts from the quarry are assessed as No Change, resulting in a Neutral significance of effect on all three heritage assets.

There are no effects assessed between 29 December 2019 and present day and no mitigation recommended.

11 LANDSCAPE AND VISUAL

Section Purpose

Section 11 of the rEIAR provides an assessment of potential effects of the continued operation of the Site on Landscape and Visual Impact.

This assessment included consideration of potential effects on the landscape and visual resource, which may have occurred, are occurring or can reasonably be expected to occur because of quarrying and restoration carried out by the applicant.

Setting and Existing Conditions

Landscape character is described in terms of the following:

- Landform and drainage;
- Vegetation land use;
- Centres of population and houses;
- Transport routes; and
- Recreation and public amenities.

The existing operational quarry has been in use since the mid 1900's, while the (broader) Application Site comprises lands that are currently used for quarrying activities. The site is accessed via a privately-owned laneway connecting to a local/third class road, the L6030.

A precast concrete manufacturing facility is located adjacent to the west of the Application Site and shares a roadside entrance with Shillelagh Quarries. The boundaries of the application site mostly comprise of hedgerows and areas of scrub.

The study area is made up of two distinctive characters. There is a hill range running northeast-southwest through the study area which separates County Wicklow (i.e. east of the range) from County Kildare (i.e. west of the range).

There are population centres located approximately 3-4km away, with Naas approximately 9km to the west.

The most notable transport route in the study area is the N81; a national road connecting the M50 (i.e. suburban Dublin) with Tullow in County Carlow. There are a couple of regional roads in the study area, but otherwise the study area is populated with a network of local/third class roads serving the local community.

There is a reservoir in proximity to the site and the Wicklow Mountains located approximately 6km away, with these sites designated as Areas of Outstanding Natural Beauty, with walks and scenic drives around these areas.

Potential Effects During the Assessment Period and Mitigation

From the assessment, it is considered that there are no significant effects to the landscape in the wider study area, in terms of the quarry site during the 2019 study period.

The only notable change within the quarry, since 29 December 2019, have been the increased depth of the quarry floor by a further 15m AOD and a 0.4ha increase in the quarried area to the south east and south west which is not considered to be a significant effect in EIA terms.

With regards to visual effects, 16 no. comparative viewpoints were assessed that show the condition of the quarry at the beginning of the substitute consent period and the present day. Although there are some minor changes to the working quarry faces and the stockpile around the edge of the quarry void, these can be seen from some of the viewpoints but are not considered a material change to the visual impact of the site.

12 TRAFFIC AND TRANSPORT

Section Purpose

Section 12 of the rEIAR provides an assessment of potential effects of the continued operation of the Site on Traffic and Transport. This assessment included consideration of potential effects on the Traffic and Transport, which may have occurred, are occurring or can reasonably be expected to occur because of quarrying and restoration to be carried out.

This chapter examines the potential traffic implications associated with the operations at the Site in terms of integration in the area and local roads network from December 2019 to present. This assessment determined and quantified the extent of trips generated by the quarry, and the impact on operational performance of these trips on the local road network.

Setting and Existing Conditions

There is an increase in traffic flows when the quarry is operational.

Site access is via the L6030, with all traffic access via the junction with the N81. It is noted that the junctions are operating under capacity.

Bus stops are located in proximity to the quarry. The quarry employs approximately 6 full-time staff and caters for contracted drivers during periods of high demand. There are currently 6 informal parking spaces within the site adjacent to the site offices.

There is no footpath provision on the N81 surrounding the junction with the L6030, neither is there any crossing provision to link the bus stops though there are areas of hardstanding at bus stops 4060 and 4018 located within 40m of the junction. There are no current cycle lanes or other facilities on the N81, nor are there any bespoke cycling facilities on site.

Potential Effects During the Assessment Period and Mitigation

There are no anticipated elements for Road Safety and effects are considered to be not significant. The site is accessed by HGVs and Car traffic only, with no real scope for staff to access by other means. Additionally, the continued site operations have not highlighted any specific areas of concern.

13 MATERIAL ASSETS

Section Purpose

Section 13 of the rEIAR provides an assessment of potential effects of the operation of the development during the assessment period of 29 December 2019 to present on material assets. This assessment included consideration of both potential effects from the development and cumulative effects of other extractive or sizable industries in the surrounds of the development.

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 have been used in a sustainable manner with respect to operations at the development.

Setting and Existing Conditions

The development is located in the townland of Hempstown Commons, Co. Kildare. The development is located within an area that has been historically used for quarrying.

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

- Electricity network utilities - The development has utilised electricity supplies to the development via the onsite connection to the grid;
- Gas infrastructure (not in the area);
- Telecommunications - Telecommunications network has been used at the site office;
- Local water supplies and foul water network - No changes have been made to the existing water abstraction process onsite. Residential properties local to the development, utilise both private and public water supplies. These residential dwellings use domestic septic tanks systems for wastewater;
- Surface water drainage infrastructure - Surface water at the development infiltrates through the underlying soils. There are no existing public surface water networks within the site boundary. The addition of the two soakaways at the site are considered to have had a negligible impact on surface water drainage infrastructure;
- Waste management infrastructure - Waste from the development is managed by suitable qualified and permitted and licenced contractors; and
- Geological resource - The development has resulted in a permanent loss of the geological resource within the site boundary; and
- Land Resource and Local Agriculture - Within the site during the assessment period an area to the southeast of the site has been replanted as a grassland. This area is not currently used for agricultural purposes.

Potential Effects During the Assessment Period and Mitigation

All effects relating to material assets are considered to be not significant with current practices continuing.

14 MAJOR ACCIDENTS AND DISASTERS

Section Purpose

Section 14 of the rEIAR provides an assessment of potential effects of the continued operation of the site 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, however in view of the retrospective nature of this rEIAR the scope of this section is limited to a rudimentary review of previous operations at the site.

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.

The occurrence of a major geotechnical hazard, fire, explosion or fuel spillage resulting from operations at the quarry development, relating to the control of major-accident hazards involving dangerous substances, has the potential to give rise to a major accident or disaster, immediate or delayed. There have been no events such as these recorded at the development during the assessment period.

Potential Effects During the Assessment Period and Mitigation

Potential risks of major accidents and / or disasters which are inherent to quarrying operations include:

- Geotechnical hazard i.e. collapse of a quarry wall;
- Accident during blasting;
- Fire during operation;
- Accident involving physical hazards such as heavy plant or falls from height;
- Spillage of chemicals or fuels to the ground;
- External major accident affecting the quarry; and
- Flooding.

During the assessment period of 29 December 2019 to the present day, activities at the site have not resulted in accidents or disasters which are deemed to be 'Major', therefore there has been an imperceptible effect (including no effect) of the site activities on the surrounding environment in regard to major accidents and disasters and not significant overall.

15 INTERACTIONS AND INTERRELATIONSHIPS

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 rEIA 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 rEIAR, has been reproduced in Table 15-1. A '✓' in a box identifies the potential interacting disciplines where a relationship exists.

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

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

Table 15-1 – SQL Substitute Consent 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	✓	X	✓	✓	✓	✓
Ecology and Biodiversity.			✓	✓	✓	X	✓	X	✓	X	X	X
Land, Soils & Geology				✓	X	X	X	✓	✓	X	X	X
Water					X	X	X	X	X	X	X	X
Air Quality						X	X	✓	X	X	X	X
Climate							X	X	X	X	X	X
Noise 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												

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