

RECEIVED 02/10/2023

NON-TECHNICAL SUMMARY

ENVIRONMENTAL IMPACT ASSESSMENT REPORT

Quarry Development
Kilrainy and Kilrathmurry Townlands, County Kildare

Prepared for: Kilsaran Concrete Unlimited Company

SLR Ref:501-00036-065251
Version No: R0
September 2023



RECEIVED: 02/10/2023

BASIS OF REPORT

This document has been prepared by SLR Consulting Ireland with reasonable skill, care and diligence, and taking account of the manpower, timescales and resources devoted to it by agreement with **Kilsaran Concrete Unlimited Company** (the Client) as part or all of the services it has been appointed by the Client to carry out. It is subject to the terms and conditions of that appointment.

SLR shall not be liable for the use of or reliance on any information, advice, recommendations and opinions in this document for any purpose by any person other than the Client. Reliance may be granted to a third party only in the event that SLR and the third party have executed a reliance agreement or collateral warranty.

Information reported herein may be based on the interpretation of public domain data collected by SLR, and/or information supplied by the Client and/or its other advisors and associates. These data have been accepted in good faith as being accurate and valid.

The copyright and intellectual property in all drawings, reports, specifications, bills of quantities, calculations and other information set out in this report remain vested in SLR unless the terms of appointment state otherwise.

This document may contain information of a specialised and/or highly technical nature and the Client is advised to seek clarification on any elements which may be unclear to it.

Information, advice, recommendations and opinions in this document should only be relied upon in the context of the whole document and any documents referenced explicitly herein and should then only be used within the context of the appointment.

CONTENTS

1.0 INTRODUCTION	5
1.1 Overview	5
1.2 The Applicant	6
1.3 Site Location	6
2.0 DESCRIPTION OF THE DEVELOPMENT	7
2.1 Surrounding Land-Use	7
2.2 Existing Site Access	7
2.3 Existing Site Description	8
2.3.1 Hardrock Quarry Area	8
2.3.2 Sand and Gravel Area	8
3.0 PROPOSED DEVELOPMENT	10
3.1 Construction Phase (Entrance & Access Road Relocation, Ancillary Works and Screening Berm Construction)	10
3.2 Operational Phase (Rock Extraction, Sand Importation, Aggregate Processing & Concrete Production)	11
3.2.1 Proposed Rock Extraction	11
3.2.2 Proposed Fine Aggregate (Sand) Importation	11
3.3 Restoration Phase (Reinstatement to areas of ecological and agricultural after-uses)	12
3.3.1 Hardrock Quarry Area	12
3.3.2 Existing Sand and Gravel / Processing & Manufacturing Area	12
3.4 Aggregate Reserve Assessment	12
3.4.1 Hardrock Quarry Area	13
3.4.2 Fine Aggregate (Sand) Importation	13
3.5 Site Development Works	13
3.5.1 Removal of Topsoil and Overburden Soils	13
3.5.2 Site Screening	13
3.5.3 Site Drainage	14
3.6 Method of Aggregate Extraction from Hardrock Quarry Area	14
3.7 Blasting	14
3.8 Processing Methods	15
3.8.1 Extracted Rock Processing Method	15
3.8.2 Aggregate Processing Method	16
3.8.3 Readymix Concrete Production	16
3.9 Working Hours	17
3.9.1 Hardrock Quarry Area	17

RECEIVED: 02/10/2023

3.9.2	Aggregate Processing Area (including the Readymix Concrete Plant)	17
3.10	Employment	17
3.11	Existing Entrance	18
3.12	Proposed New Entrance	18
3.13	Site Security	19
3.14	Site Roads, Parking and Hardstanding Areas	19
3.15	Wheelwash	20
3.16	Weighbridge	20
3.17	Offices and Ancillary Facilities	20
3.18	Utilities and Services	21
3.19	Fuel and Oil Storage	21
3.20	Waste Management	21
3.20.1	General Waste Management	21
3.20.2	Extractive Waste Management Plan	22
3.21	Proposed Environmental Controls	23
3.21.1	General	23
3.21.2	Bird Control	23
3.21.3	Dust Control	23
3.21.4	Noise Control	23
3.21.5	Traffic Control	24
3.21.6	Litter Control	24
3.21.7	Odour Control	24
3.21.8	Vermin Control	25
3.21.9	Fire Control	25
3.22	Proposed Environmental Monitoring	25
3.22.1	General	25
3.22.2	Dust Monitoring	25
3.22.3	Noise Monitoring	25
3.22.4	Blasting / Vibration	26
3.22.5	Ecological Monitoring	26
3.22.6	Groundwater and Surface Water Monitoring	26
3.22.7	Odour Monitoring	27
3.23	Proposed Landscape Detail	27
3.23.1	Hedgerows/Treelines/Grassland (Phased Removal / Reinstatement)	27
3.23.2	Native Hedge Planting	29
3.23.3	Native Tree Planting	29
3.23.4	Grassland Restoration Area	29
3.23.5	Lagoon Restoration	29

RECEIVED: 02/10/2023

3.24	Proposed Final Restoration Detail	29
3.24.1	Proposed Restoration Scheme	29
3.24.2	Restoration Phasing.....	29
3.24.3	Restoration Elements.....	29
4.0	THE EXISTING ENVIRONMENT, EFFECTS AND MITIGATION MEASURES	32
4.1	Population and Human Health	32
4.2	Biodiversity.....	32
4.3	Land, Soils and Geology.....	33
4.4	Water.....	35
4.5	Air Quality.....	37
4.6	Climate.....	38
4.7	Noise.....	38
4.8	Vibration	39
4.9	Material Assets	40
4.10	Cultural Heritage.....	40
4.11	Landscape.....	41
4.12	Traffic	43
4.13	Interaction of the Foregoing	44
FIGURES		
Figure NTS-1	Site Location Map (1:50,000).....	
Figure NTS-2	Site Location Map (1:10,000).....	
Figure NTS-3	Site Location Map (1:5,000).....	
Figure NTS-4	Existing Site Layout	
Figure NTS-5	Proposed Site layout	
Figure NTS-6	Proposed Landscape Plan	
Figure NTS-7	Proposed Restoration Plan	

RECEIVED: 02/10/2023

1.0 INTRODUCTION

1.1 Overview

This Environmental Impact Assessment Report (EIAR) **Non-Technical Summary** provides supporting information to accompany a planning application to Kildare County Council by Kilsaran Concrete Unlimited Company in respect of the proposed development of the existing hard rock quarry and all existing associated processing, manufacturing and welfare facilities at Kilrainy and Kilrathmurry townlands.

The application site extends to c. 51.6 hectares (and c. 51.7 hectares with the inclusion of the off-site road improvement works¹) and comprises of:

- **P. Ref. 99/2042** (and P. Ref. 16/1246) the previously permitted hard rock quarry area; and
- **P. Ref. 03/2754** the existing permitted sand and gravel extraction / ancillary processing areas.

The application site is indicated on an extract from the 1:50,000 scale Ordnance Survey Discovery series map in **Figure NTS-1**.

The proposed development consists of the following:

- Quarry development and associated processing previously permitted under P. Reg. Ref. No. 99/2042 and ABP Ref. PL09.123207) to include drilling, blasting, crushing and screening of rock; and lateral extension to same, with an overall extraction area of c. 6.2 hectares with no vertical deepening below the existing quarry floor. The appropriate period of planning register reference 99/2042 was extended by order dated 03/02/2017 by P. Reg. Ref. No. 16/1246;
- Importation of up to 35,000 tonnes per annum of processed fine aggregate, principally sand for use in readymix concrete production on site;
- Use of buildings and structures associated with the sand and gravel pit previously granted planning permission under P. Reg. Ref. No. 03/2754 comprising of the crushing, washing and screening plant with associated silt disposal lagoons; readymix concrete batching plant including powerhouse; prefabricated office; weighbridge; workshop building with concrete laboratory and bunded fuel tanks; aggregate storage bays; and one liquid effluent treatment system unit;
- Closure of the existing site entrance with provision of a new site entrance located to the north of the existing entrance; realignment of the main internal site access road from the new site entrance to the central processing area with provision of a new wheelwash system; acoustic fence screening (c.2m in height x 170m in length); and a new screening berm along the western site boundary;
- Restoration of the site lands will be to a combination of beneficial agricultural and ecological after-uses;
- All associated site works within an overall application area of c. 51.7 hectares. The proposed operational period is for 10 years plus 2 years to complete restoration (total duration sought 12 years); and
- Provision is also made for 3 no. sections of road improvements (widening) along the haul route between the site entrance and the R148 regional road. The proposals at the identified locations include for works in the public road and verge that aim to achieve a consistent carriageway width of 6.0m along with provision of verge widening on the inside of the three bends to improve forward

¹ Refer to SLR Planning Drawing 17 for location details of the 3 no. off-site road improvement work areas

visibility and intervisibility for all opposed traffic including traffic generated by the proposed development.

1.2 The Applicant

The planning application and accompanying supporting documentation has been prepared by SLR Consulting Ireland (SLR) on behalf of Kilsaran Concrete Unlimited Company (hereafter referred to as 'Kilsaran' in the EIAR).

Founded in 1964, Kilsaran is a wholly Irish-owned company, whose business is primarily in the production of materials for the construction industry.

The company manufactures paving and walling, pre-mixed dry products, pre-cast concrete, ready-mix concrete, concrete blocks, trowel-ready mortar, aggregates, asphalt and macadam, hard core and fill materials for the Irish and UK markets as appropriate. The company also undertakes surfacing contracts for road construction, building and civil engineering works.

The company now employs over 850 people directly; it operates twelve hard rock quarries and a similar number of sand and gravel pits. Kilsaran manufactures various concrete products from 20 locations, mainly in the east, midlands and south of the country. The company also has three asphalt plants located strategically within extractive sites throughout its operational area.

The company's intention in preparing and applying to extract rock at this location, and import sand is to continue to secure the substantial financial investment by the company in the local area and provide a local source of aggregates to supply their existing readymix concrete batching plant on-site.

1.3 Site Location

The overall land interest is located on the eastern side, and with access onto the L5002 local road in Co. Kildare. The site entrance is approximately 380m southeast of the River Boyne which delineates the boundary between counties Kildare and Meath. The R401 regional road connecting Edenderry (Co. Offaly) to Kinnegad (Co. Westmeath) is approximately 1.5km southwest of the site entrance.

The site, to which this planning application refers, lies entirely within the townlands of Kilrathmurry and Kilrainy townlands in Co. Kildare. The plan extent of the lands under the control of Kilsaran Concrete are outlined in blue on a 1:10,000 scale map of the area, refer to **Figure NTS-2**.

The existing sand and gravel pit and the site entrance are located within the townland of Kilrathmurry, while the existing quarry site is located within the townland of Kilrainy.

2.0 DESCRIPTION OF THE DEVELOPMENT

2.1 Surrounding Land-Use

The application site is located within a generally flat to gently undulating farmed landscape, featuring a mixture of mostly pasture and some arable farmland, as well as several woodlands/mixed forests, equestrian activities and aggregate extraction developments. The field pattern is irregular, with small to medium sized fields and generally defined by mature dense hedgerow vegetation.

The topography of the surrounding land is flat to gently undulating with levels typically ranging from 70 to 90m AOD and including some occasional local highpoints up to c.120m AOD, with the quarry area within the application area being one of these hills. The lowest elevations of just below 70m AOD are along the River Boyne, which traverses the area in a southwest to northeast direction.

The R401 crosses the landscape in a north-south direction, to the west of the site and is located c. 1 km from the site where it crosses the River Boyne at Ballyboggan bridge. The M4 motorway is located c. 2.5 km to the north, in an east-west alignment. A network of minor roads, which are lined with individual and groups of dwellings, connects these strategic roads.

There is no main settlement within the general site area. The nearest large group of dwellings (rural node) is at Clogharinka (Clocha Rince), c. 1.2km to the south of the application site. Larger, more distant, settlements include Edenderry, c. 7km to the south and Kinnegad, c. 6.5km to the north-west.

The River Boyne delineates the boundary between counties Kildare and Meath and is located to the west of the site and flows in a northerly direction from the southwest to the northeast. The river is c. 380m from the existing site entrance at its closest point to the site.

A 220kV overhead powerline traverses the landscape in an east-west direction and is located c. 350m beyond the southern site boundary on the opposite side of the L5004 / L5008 roads. The powerline runs from the West Offaly Power station at Shannonbridge to the Maynooth 220kV substation.

There are several former sand and gravel extraction sites within c. 1km of the site; one immediately west of the site between the L5002 road and the River Boyne in the townland of Ballycowan, one directly east of the application site and Kilrainy Woodland, and one c. 850m to the southwest in the townland of Brackagh.

Adjacent to the disused pit in Brackagh is a greenfield site, for which Kilsaran Concrete recently received a notification decision to grant permission for sand and gravel extraction (dry working) for a period of 9 years (P. Ref. 20/1409). This decision was appealed to An Bord Pleanála and a final decision is pending. It should be noted that any materials extracted at Brackagh will not be used at the existing Clonard concrete batching facility but instead will be used at other Kilsaran facilities throughout the north Leinster region.

There are a number of existing and disused sand and gravel sites further removed from the application site located between c. 2-3km of it in the townlands of Balrinnet, Kilglass and Ballinderry.

2.2 Existing Site Access

The site is accessed from the L5002 local road by an existing established entrance, on the western boundary of the application site.

The site is located approximately 3km south of the L5001 local road junction with the R148 close to Leinster Bridge. The L5002 road, which serves the site, runs from its junction with the L5001 to the north of the site to where it meets the R401 regional road c. 1.5km southwest of the site entrance. The R401 is the regional road linking the towns of Kinnegad to northwest and Edenderry to the south. Other local roads in the vicinity of the site to the east and south are the L5001, L5004 and L5008.

Access to the national road network is via the L5002 and L5001 local roads leading north from the site entrance to the R148 (former N4 national route) just south of Leinster Bridge. From here, the M4 motorway is accessed via Junction 10 at Kinnegad or Junction 9 at Enfield. From here access to the greater Dublin area is along the M4 heading east and towards Mullingar (M4) and Athlone (M6), heading west.

The site entrance was widened previously and consists of a splayed entrance with concrete pillars and metal fencing and gates. The entrance is set-back from the edge of the public road and provides the necessary visibility splays both to the north and the south.

The L5002/L5001 local roads from the existing site entrance to the R148 regional road were previously widened by the applicant at their expense, from an average carriage width of c. 3.7 m to c. 6.2m to facilitate the safe passing of HGV vehicles along this designated section of the haulage route.

2.3 Existing Site Description

The planning application site extends to c. 51.7 hectares (c. 127.8 acres). The general site areas are shown on **Figure NTS-3**, with a more detailed site layout provided in **Figure NTS-4**.

The existing site (within the blue line area) consists of the existing sand and gravel pit development and the hard-rock quarry development areas and include all of the existing ancillary processing and welfare facilities, storage areas, previously restored areas and buffer zones.

Provision is also made for 3 no. sections of road improvements (widening) along the haul route between the site entrance and the R148 regional road. The proposals at the identified locations include for works in the public road and verge that aim to achieve a consistent carriageway width of 6.0m along with provision of verge widening on the inside of the three bends to improve forward visibility and intervisibility for all opposed traffic including traffic generated by the proposed development. The general locations are shown on Figure 1-1, with further details provided in **SLR Planning Drawing 17**.

2.3.1 Hardrock Quarry Area

Expired Planning Ref. 99/2042 (ABP ref. PL09.123207) area on Figure NTS-3

The existing hard rock quarry area is located directly to the east of the ancillary / manufacturing area within the townland of Kilrainy and is accessed through the sand and gravel site.

The quarry site is located within a locally high hill when compared with the generally lower lying surrounding topography. The quarry was previously worked in a southerly direction into the existing hill, using the hill itself to screen the working area thereby by minimising the visual impact of the development on the closest resident properties located mainly to the east, south and west of the quarry.

While planning permission 99/2042 (ABP Ref. PL09.2123207) did not specify a defined datum to limit the extraction depth, Condition 9(1) stated that no quarrying operation shall take place at a level below 1m above ground water level. The Inspectors report on the appeal documentation references a final quarry floor level at 75m – 80m AOD from the documentation submitted with the planning application. Levels across the existing rock quarry extraction area are at c.75-76m AOD. The quarry floor is currently dry above the water table. Planning permission 99/2042 also permitted an extraction rate of up to a maximum of 110,000 tonnes per annum.

2.3.2 Sand and Gravel Area

Extant Planning Ref. 03/2754 (ABP ref. PL09.209480) area on Figure 1-3

The existing sand and gravel pit and the site entrance are located within the townland of Kilrathmurry.

Within the existing sand and gravel area, the main site ancillary and employee facilities are located, which include the site office and weighbridge, parking area, workshop with concrete lab and fuel storage, readymix plant and aggregate processing plant. Also located to the southern side of sand and gravel site area are the closed system silt settlement ponds associated with the existing washing plant, along with stockpiles of processed aggregates awaiting haulage off-site or for use in the on-site concrete plant.

The existing planning permission **03/2754** (ABP Ref. **PL09.209480**), at Condition 5, restricts extraction taking place below a maximum depth of 68m AOD. Levels across the existing sand and gravel extraction area located to the north of the ancillary / processing area vary between c. 68m and c. 80m AOD. The existing permission also permits extraction up to a rate of 250,000 tonnes per annum.

There is an area (c. 5.2 hectares) of the former extraction area which was restored in c. 2020 to an agricultural use and is located between the existing sand and gravel extraction area and the public road. Planning permission **03/2754** is due to expire in January 2024.

3.0 PROPOSED DEVELOPMENT

3.1 Construction Phase (Entrance & Access Road Relocation, Ancillary Works and Screening Berm Construction)

Due to the site being a long established site, there is no requirement for any new site facilities or infrastructure as part of the on-site welfare or aggregate processing operations. All the existing infrastructure such as offices, workshop, weighbridge, processing plant and concrete plant are already in-situ and will be utilised for the duration of the proposed development.

The only construction phase works that would be carried out at on the onset would be the construction of the proposed new site entrance and internal access road with associated new wheelwash, internal security barrier and acoustic screen fencing (c. 170m). A new perimeter screening berm is proposed along the southwest boundary adjacent to residence R3 where the existing wheelwash is currently located.

The new entrance is proposed to be located c. 230m north along the L5002 from the existing site entrance. It will consist of a splayed entrance with the necessary visibility sightlines of 160m in both directions from a set-back distance of 3m from the carriageway edge.

The new entrance will be hard surfaced to tie into the existing road carriageway and will be constructed with a gradient fall back into the site away from the public road to prevent any surface water being allowed to enter the public road. Further details are provided in Kilsaran Planning **Drawing KC2E** / EIAR Chapter 14 – Traffic.

From the new site entrance, the new internal access road will run in a southerly direction directly to the existing central processing / manufacturing area and terminate at the existing weighbridge. The new internal road will be hard surface paved at the entrance area and for its full length.

The new (replacement) wheelwash will be installed on the outbound carriageway of the road and will be set back c. 100m from the site entrance. Adjacent to the wheelwash and set back c. 80m from the site entrance, an automatic barrier will be installed, should there be a requirement for HGV trucks to queue while awaiting access to the site and where there will be no HGV's stopped or waiting on the public road.

It is further proposed to install an acoustic fence, set back c. 3m to the northern side of the new access road for a distance of c. 170m from the site entrance into the site to provide acoustic screening for residence R4 of HGV traffic entering and exiting the site along the new access. The acoustic timber fencing will be c. 2m in height and will be constructed with high quality boards in such a way that eliminates gaps that sound can easily travel through.

Following completion of construction of the new entrance and access road, the existing site entrance and access road will be closed and the existing wheelwash removed and replaced with a new system adjacent to the new entrance as noted above. The existing entrance pillars and metal fencing will be removed and a new hedgerow will be installed to secure the site boundary at the former entrance location and which will tie in with the existing hedgerows either side of the existing entrance. The former hard surface entrance area and access track will be removed and replaced with soil to assist in vegetation growth in restoring this corner of the site. This along with the new hedgerow will prevent any site surface water from leaving the site at this location onto the public roadside verge and subsequently the Annagh stream.

Closure of the existing entrance and relocation of the existing internal access road to the north east will have the benefit of moving the HGV traffic away from the closest residence to the west of the site. This residence is referenced as (R3) in **Figure NTS-5**. The current road configuration sees HGV traffic come within 30m of this residence. The revised road configuration will increase the distance between the house and the access road to more than 300m. A new screening berm (c. 100m in length) will be placed along the western boundary in the location of the existing internal access road and wheelwash. This will further provide screening of the site with

residence R3. The closest residence to the proposed new entrance will be R4, being located c. 210m northeast. The proposed new acoustic fence will be located between the new entrance access road and R4.

Section 4.12 of this NTS report includes details of three small areas along the existing haul route that will be subject to improvements at the outset of works. The works will include limited hedgerow / existing boundary removal and replacement, along with road surface improvement and strengthening works to specifications set by Kildare County Council.

It is anticipated that the construction stage works as outlined above would be carried out within a 6-month period. It should be noted that rock extraction, importation of processed fine aggregate, principally sand and production operations would be ongoing in tandem with the above-mentioned development works.

3.2 Operational Phase (Rock Extraction, Sand Importation, Aggregate Processing & Concrete Production)

3.2.1 Proposed Rock Extraction

The proposed operational phase will see rock extraction carried out within an overall extraction area of c. 6.2 hectares as shown on **Figure NTS-5**, which represents a slight increase (of c. 0.7 hectares) in the footprint of the quarry from that permitted by P. Ref. 99/2042. The additional quarry footprint area is along the northern section of the 99/2042 footprint and within the existing quarry site previously disturbed by site operations.

The existing quarry was previously permitted to extract to a depth of c. 75.1m AOD and most of the current floor is at or around this level. It is proposed that there will be no vertical deepening below the level of 75.1m AOD, as part of this planning application with the quarry to be worked laterally until the final extraction footprint of 6.2 hectares is achieved.

The existing quarry working area is currently dry above the water table with no requirement to de-water the quarry void to maintain dry operations. Maintaining extraction at the current level of c. 75.1m AOD will ensure that dry-working extraction operations continue for the duration of the proposed development.

The proposed operational period for extraction is for 10 years, with a proposal to increase the extraction rate from that previously permitted by P. Ref. 99/2042 of 110,000 tonnes per annum to a maximum of 250,000 tonnes per annum.

Extraction will be carried out in the same format as previously practiced, by way of blasting, crushing and screen of the rock.

It should be noted that further assessment of the rock at depth beneath the existing quarry floor is ongoing. Any future proposal to extract this rock would be subject a separate planning application.

3.2.2 Proposed Fine Aggregate (Sand) Importation

Sand and gravel deposits within the existing planning permission area 03/2754 (ABP Ref. PL09.209480) are almost exhausted and this planning permission is due to expire in January 2024.

In order to be able to continue the crucial supply of concrete from the existing batching plant and with no on-site supply of sand and gravel currently available, it is proposed to import fine aggregate, principally sand from external sources for use in the concrete batching plant.

The existing permitted extraction rate of sand and gravel from the site is 250,000 tonnes per annum. If importation of the fine aggregate is permitted, it is proposed that the rate would be up to 35,000 tonnes per annum.

When combined with the processed aggregates from quarry extraction, the overall maximum aggregate handling rate will be 285,000 tonnes per annum, reduced from 360,000 tonnes when both rock and sand & gravel were being extracted and processed at the site.

3.3 Restoration Phase (Reinstatement to areas of ecological and agricultural after-uses)

Upon the cessation of extraction operations, it is proposed to return the site to a combination of beneficial agricultural and habitat after-uses.

The only material requirements in respect of the planned restoration scheme are those topsoils and subsoils already present on site at the quarry extension area or those which were previously stripped and stockpiled within the existing operational site area.

Please note it is not proposed to import material onto the site for restoration purposes. All the topsoil previously stripped from the existing quarry / sand and gravel pit areas has been retained on site and will be used in restoration proposals.

3.3.1 Hardrock Quarry Area

Most of the restoration works within the quarry area will be carried out on permanent completion of extraction works. As most of the site will be used for extraction and processing purposes it is not feasible to restore any significant parts of the quarry void at an earlier stage. However, it is proposed that all existing grass and scrub areas which have established along the site boundaries will be protected and retained, as much as possible.

Upon the cessation of rock extraction operations, it is proposed that the ultimate restoration of this area will be to a natural habitat area with cliff faces and ledges retained and allowed to naturally colonise with plant species and providing suitable habitat for nesting birds.

3.3.2 Existing Sand and Gravel / Processing & Manufacturing Area

Where feasible, restoration of exhausted and redundant areas will be carried out at the earliest opportunity. This is achievable in the existing sand and gravel pit areas where extraction operations have ceased.

Within the existing sand and gravel site, an area of c. 5.2 hectares has previously been reinstated to agricultural lands with the works completed in 2020. The restored area is shown on **Figure NTS-4** and is located between the public road site boundary and the central processing and manufacturing area.

It is further anticipated that an additional area of restoration to agricultural lands (c. 2.5 hectares) can be carried out to the west of the existing restored area as shown on **Figure NTS-5** when the existing entrance and access road is extinguished. It is expected these works would be completed by Year 2.

As most of the remainder of this element of the site will be used for processing, manufacturing, storage and ancillary purposes it is not feasible to restore any additional areas until operations cease fully within this area.

3.4 Aggregate Reserve Assessment

A detailed topographical survey of the site has been undertaken by Kilsaran (refer to **Figure NTS-4**). The survey data was used to produce a 3D digital terrain model using a quarry design software package called LSS. In preparing the design, standard criteria were adopted with regard to face heights and bench widths, stand-offs to the site boundaries etc. for the quarry extraction area.

3.4.1 Hardrock Quarry Area

The total recoverable reserve of rock from within the proposed final extraction area is in the region of c. 2.5 million tonnes. This is based on a final extraction design to the previously permitted depth of c. 75.1m AOD and within the proposed extraction footprint of c. 6.2 hectares.

3.4.2 Fine Aggregate (Sand) Importation

As outlined earlier, no further sand and gravel extraction is proposed at the site as part of this planning application. Instead, it is proposed to import up to a total of 350,000 tonnes of fine aggregate (35,000 tonnes per annum), principally sand for use in readymix concrete production on site Duration of Extraction

The existing site consists of an existing sand and gravel pit development and an existing hard rock quarry development. The 99/2042 hard rock quarry permission has expired, but when operational, the combined processing volume from the quarry and sand/gravel pit totalled 360,000 tonnes per annum (110,000 tonnes per annum at the quarry and 250,000 tonnes at the sand and gravel pit).

This planning application seeks to lower the overall volume to 285,000 tonnes per annum, and to split the output, with 250,000 tonnes per annum extracted from the onsite hard rock quarry, and up to 35,000 tonnes per annum of imported fine aggregate to the site.

Based upon the annual output from the onsite quarry development above, gives an overall extraction life of 10 years. It is proposed that importation of the fine aggregate would be concurrent with the proposed rock extraction duration of 10 years.

An additional 2 years will be required to carry out final restoration and associated after-care works and combined with the proposed extraction life of 10 years, gives a proposed development life of 12 years.

It is considered that planning permission for the proposed overall development should be commensurate with the life of the reserves. This will ensure the applicant has security for this investment and that the operation is carried out in accordance with proper planning and development guidelines. An adequate quarry life is required to secure an acceptable return on investment, when the costs of continued investment in the site development, mobile crushing / screening plant and the on-going operational costs are considered.

3.5 Site Development Works

3.5.1 Removal of Topsoil and Overburden Soils

The area covered by the final quarry extraction footprint has been mostly stripped of topsoil and overburden materials previously except for small sections of in-situ and stockpiled materials to the south and east of the quarry extraction area. These materials will be relocated within the site before any lateral increase in the footprint takes place.

All soils and overburden materials previously stripped at the site are still present within the site for use in final restoration works. There is no requirement for any soil materials to be removed from the site.

3.5.2 Site Screening

The existing site is generally well screened from the surrounding roads by existing mature hedgerows along all site boundaries and in the vicinity of the site.

Due to the history of extraction workings at the site, there are existing screening berms along the perimeters of the site which are well established with mature vegetation.

It is proposed to construct a new screening berm (c. 100m), to be placed along the western boundary in the location of the existing internal access road and wheelwash. This will further provide screening of the site with the nearest local residences (R1 – R3) to the west

3.5.3 Site Drainage

An existing surface water stream (the Annagh stream) flows along part of the western landholding boundary in the vicinity of the existing site entrance and wheelwash area. There is no surface water drainage infrastructure within the site. Rain falling across the existing site percolates down through the existing ground surface as recharge to groundwater.

The existing quarry area was previously worked dry above the underlying groundwater table. There is no proposed deepening of the quarry as part of this planning application and all rock extraction operations will remain above the water table for the duration of the development.

A hydrological / hydrogeological assessment has been carried out to determine what the requirements are for the proposed development, regarding a water regime. It addresses mitigation measures to eliminate and/or minimise the potential impacts, if any, on surface water and groundwater. These measures will be incorporated into the quarry design and operation, (refer to EIAR Chapter 7 – Water).

3.6 Method of Aggregate Extraction from Hardrock Quarry Area

It is proposed that extraction within the quarry area will be implemented in the same fashion as previously carried out at the site as follows:

- soils / overburden where required, will be stripped in advance of rock blasting in accordance with the quarry development plan;
- rock material will be extracted using conventional blasting techniques. Prior to drilling, the quarry face will be surveyed to ensure a safe and efficient blasting. Drilling will be carried out in accordance with the blast design. Finally, the holes will be filled with bulk emulsion explosives and the blast carried out. All blasting is and will be carried out in accordance with the health & safety regulations, and environmental guidelines for the sector;
- the fragmented rock will initially be processed using mobile crushing and screening plant located at the blasted quarry face within the quarry void area;
- The aggregate products will be stored in stockpiles located within the quarry for direct sale to the market or transferred to the central processing area within the existing sand and gravel pit site for further processing and use in the concrete batching facility on site.

The proposed extraction plan sees the quarry area being developed over a duration of 10 years (based on an annual extraction rate of c. 250,000 tonnes per annum).

The proposed extraction scheme will see the existing quarry faces pushed further to the south and east, that being the quarry extraction limit as previously permitted under the P. Ref. 99/2042 permission. A proposed minor extension to the 99/2042 permission area over an area of c. 0.7 hectares is proposed to the northern side of the quarry void within an area previously disturbed by quarry operations. The total quarry footprint area proposed is c. 6.2 hectares and to a final depth of c. 75.1m AOD.

3.7 Blasting

Industry standard blasting techniques have been used previously to fragment the stone prior to primary processing (crushing and screening) within the existing quarry site. This technique will be utilised at the site for

any future blasts. On average, 35,000 – 45,000 tonnes of fragmented rock are produced per blast at the quarry.

Based on the previously permitted output of 110,000 tonnes of rock per annum equated to 2-3 blasts per year. Based on the proposed annual extraction rate of 250,000 tonnes per annum, blasting will be carried out on average 5-7 times per year.

It is proposed to increase the frequency of blast occasions at the site only and not increase the intensity of individual blasts, thereby keeping the existing blast procedures and methodology in place, consisting of:

- The drilling pattern is typically 110mm diameter vertical holes drilled at c. 4m burden and spacing to full face height;
- Bulk emission explosives are used to charge the holes;
- Delivery and placement of explosives is carried out by Irish Industrial Explosives under supervision of a blast engineer;
- There is no proposed change in the blast design and blast methods employed in further developing the quarry beyond the existing footprint.

All previous blasts at the quarry were previously monitoring with blast monitoring results for the period 2018 up to February 2022 (when P. Ref. 22/83 expired) provided in EIAR Chapter 10 *Noise and Vibration*. It is proposed that the existing scheme of blast monitoring be continued should permission be granted for the further development of the quarry.

The previous quarry planning permission (P. Ref. 99/2042) Condition 8 regulated blasting at the site with the requirement to:

- provide advanced notice to the Planning Authority and local residences within 500m of the blast location;
- provide advanced warning signals prior to any blast being carried out;
- carry out monitoring to ensure no blast exceeds a peak particle velocity of 12 millimetres per second and an air overpressure value of 125dB at a frequency of 2 hertz or over.

It is expected that any future grant of planning permission would contain a similar condition in respect to control of blasting at the quarry site area.

3.8 Processing Methods

3.8.1 Extracted Rock Processing Method

The processing methods previously used at the hard rock quarry constituted size reduction through crushing and sizing by screening using mobile plant.

Excavators and mechanical shovels were used to recover blasted rock from the quarry face and transport it to a primary mobile crusher on the quarry floor / bench or the rock was transferred to the main processing plant. The mobile processing plant is relocated within the extraction working area during the life of the quarry development as operational requirements dictate.

Secondary processing plant is located at the sand and gravel site located adjacent to the concrete batching plant and consists of washing, crushing and screening; using modern processing plant to produce a range of aggregates.

It is proposed that the same processing methods will be used should permission be granted for the further development of the quarry. There is no requirement for any additional processing plant than that previously used on site as part of this planning application.

3.8.2 Aggregate Processing Method

The existing aggregate processing methods implemented at the existing site consist of crushing, washing and screening, using the existing processing plant on site, to produce a range of aggregates for use by the company for concrete product manufacturing. The modern plant operates in a closed circuit with the silt disposal lagoons to minimise the need for excessive take of groundwater and to eliminate the need to discharge process water.

Once washed and screened, the aggregates are stockpiled on the pit floor to await transportation to the storage bins at the concrete batching plant on site. A summary description of the production plant is provided below.

It is not proposed to process any sand and gravel under this development proposal. The existing processing plant will be used to process rock from the quarry area only. There is no requirement for any additional processing plant as part of this planning application.

3.8.3 Readymix Concrete Production

The concrete is produced using the following components:

- **Sand & Stone Aggregates:** Sand and gravel materials were previously sourced from the existing site, fine aggregate principally sand will now be imported to site. Rock extracted from the hard rock quarry will continue to be processed at the site to produce a crushed stone aggregate;
- **Water:** water is recycled through the closed water management system and is currently backed up from an existing on-site groundwater supply;
- **Cement & Admixtures:** These materials are transported to the site as demand requires.

The concrete manufacturing process is as follows:

- the aggregates and sand of various grades are fed via the 30-tonne tip-in ground hopper to the inclined transfer conveyor which in turn fills the aggregate storage bins;
- as required aggregates and sand are fed via the variable speed belt feeders, collecting conveyor, inclined feed conveyor to the batching house containing the mechanised concrete pan mixer;
- cement is added via a weigh hopper and auger system fed from one of the two bulk cement silo;
- water and admixtures are also added to the pan mixer in accordance with the mix specifications;
- after sufficient mixing to ensure mix consistency, the mix is discharged via a rubber flexible chute directly into the mounted bottle mixer on the concrete trucks, for delivery to the customer.

The weight of water, admixture, cement and the batching cycles are controlled by computer. Admixtures are compounds which are added to concrete in small amounts to change the properties of the concrete. A typical admixture is added at a rate of 1 litre per cubic metre of concrete. All admixtures are stored in suitably bunded tanks adjacent to the plant.

Water is stored in a water tank adjacent to the plant and is topped up from the water supply within the site as required.

Cement is delivered to the site in bulk tankers and stored in sealed silos. A dust control system is established to control any fugitive emissions from the cement silos. The batching unit is also clad to further eliminate fugitive dust.

The construction industry has an early start time and requires that products such as readymix concrete are delivered into jobs first thing in the morning. It is not possible to deliver such products the day before and store on site overnight because the concrete will set.

Also, once a designated pour commences, say for a large construction project like a bridge deck, it cannot finish until all the concrete has been supplied; with large pours an early start is essential to allow sufficient time for the whole operation.

3.9 Working Hours

It is proposed the development would be carried out in line with operational hours previously associated with the quarry site and those currently permitted at the sand and gravel / batching plant site as outlined below. There is no requirement to make any amendments to these operational hours as part of this planning application.

3.9.1 Hardrock Quarry Area

Condition 6 of P. Ref. **99/2042** stated operational hours for quarrying were 08.00 hours to 18.00 hours Monday to Friday and 08.00 hours to 14.00 hours Saturday, with no operations on Sundays or Public Holidays. Only loading operations for haulage off-site could take place from 07.00 hours.

3.9.2 Aggregate Processing Area (including the Readymix Concrete Plant)

Condition 4 of P. Ref. **03/2754** states on-site operations associated with the proposed development shall be carried out only between 07.00 hours to 18.00 hours Monday to Friday and 07.00 hours to 14.00 hours Saturday, with no operations on Sundays or Public Holidays. The condition notes that extraction of sand and gravel is limited to 08.00 hours to 18.00 hours Monday to Friday and 08.00 hours to 14.00 hours Saturday.

3.10 Employment

The concrete batching plant is a key piece of infrastructure which provides a critical supply of concrete to the development sites within the north Kildare and wider mid-East region.

The future development of proven aggregate reserves at the site is considered essential to ensure Kilsaran meets the demands of the market(s) which have built up over the past 20 years in the region, including supply, to the local construction industry and infrastructure projects and Local Authorities.

Development of the site is consistent with the policies set out in the National Planning Guidelines for the sector; the National Planning Framework, EMRA Regional Spatial and Economic Strategy and the Kildare County Development plan which recognise the requirement for:

- a secure supply of construction aggregates and related products is necessary for the continued development of the region;
- proven aggregate reserves need to be safeguarded for future extraction;
- 'Best environmental management practice' to be implemented within quarry developments.

The proposed development will secure the continued employment of 11 people directly on-site, with 5 full-time Kilsaran truck drivers and up to 5 truck owner-drivers/hackers associated with the aggregate haulage aspect of the development.

The readymix concrete batching operation will continue to provide employment for the 2 people at the plant with a total of 8 company mixer truck drivers and 1 owner-driver.

Therefore, the proposal will secure the continued employment of 32 people for the duration of the extraction / processing development i.e., 10 years. Some additional employment (albeit at a much reduced number) would be required for the follow on 2-year restoration period.

3.11 Existing Entrance

The existing site entrance is located on the L5002² local road to the west of the application site and has good, splayed visibility in both directions. The existing site is accessed over a purpose-built access road running for a distance of c. 600m from the site entrance to the weighbridge and site office area. The existing site entrance serves the Kilsaran facility only and provides access to both the sand and gravel pit and the quarry.

Condition 10 of the previous quarry planning permission (**99/2042**) specified that the traffic route for quarry traffic was between the site entrance and the former N4, now the R148. No such restriction applies to the development of the readymix, or sand and gravel operations permitted under P. Ref. **03/2754**.

The existing entrance consists of large metal lockable gates bound on either side by large recessed and splayed fencing to allow for adequate sightlines in both directions for traffic exiting the site.

The L5002/L5001 local roads from the existing site entrance to the R148 regional road were previously widened by the applicant at their expense, from an average carriage width of c. 3.7 m to c. 6.2m to facilitate the safe passing of HGV vehicles along this designated section of the haulage route.

3.12 Proposed New Entrance

As noted previously it is proposed to close the existing site entrance and provide a new site entrance located to the north of the existing entrance.

The new entrance is proposed to be located c. 230m north along the L5002 from the existing site entrance. It will consist of a splayed entrance with the necessary visibility sightlines of 160m in both directions from a set-back distance of 3m back from the carriageway edge. The entrance will be sufficiently wide to allow for safe passing of two HGV's.

The new entrance will be hard surfaced to tie into the existing road carriageway and will be constructed with a gradient fall back into the site away from the public road to prevent any surface water being allowed to enter the public road. Further details are provided in Kilsaran Planning **Drawing KC2E** / EIAR Chapter 14 – Traffic.

From the new site entrance, a new internal access road will run in a southerly direction directly to the existing central processing / manufacturing area and terminate at the existing weighbridge. The new internal road will generally be c. 6m in width and will be hard surface paved at the entrance area and for its full length into the site.

The new (replacement) wheelwash will be installed on the outbound carriageway of the road and will be set back c. 100m from the site entrance. Adjacent to the wheelwash and set back c. 80m from the site entrance, an automatic barrier will be installed, should there be a requirement for HGV trucks to queue while awaiting access to the site and where there will be no HGV's stopped or waiting on the public road.

It is further proposed to install an acoustic fence, set back c. 3m to the northern side of the new access road for a distance of c. 170m from the site entrance into the site to provide acoustic screening for residence R4 of HGV traffic entering and exiting the site along the new access. The acoustic timber fencing will be c. 2m in height

² As shown on EPA mapping: <https://gis.epa.ie/EPAMaps/>

and will be constructed with high quality boards in such a way that eliminates gaps that sound can easily travel through. Further details of the proposed fencing are provided in EIAR Chapter 2, **Appendix 2.A**.

3.13 Site Security

The existing boundaries of the site are securely fenced with a combination of stock-proof fencing and mature hedgerows. The site boundaries will continue to be inspected on a regular basis and maintained as required under the Mines and Quarries Legislation.

Previously stripped soil will be used to create a physical barrier along a section of the western application boundary near the existing wheelwash adjacent to residence R3. Appropriate warning signs will be displayed at visible locations along the boundary at appropriate intervals.

Likewise, the existing wash water lagoons are appropriately fenced, signed and buoyancy aids provided.

The new site entrance to the site will have lockable gates to prevent unauthorised access outside of the working hours.

Following completion of construction of the new entrance and access road, the existing site entrance and access road will be closed and the existing wheelwash removed and replaced with a new system adjacent to the new entrance as noted above. The existing entrance pillars and fencing will be removed and a new hedgerow will be installed to secure the site boundary at the former entrance location and which will tie in with the existing hedgerows either side of the existing entrance. The former hard surface access track will be removed and replaced with soil to assist in vegetation growth in restoring this corner of the site. This along with the new hedgerow will prevent any site surface water from leaving the site at this location onto the public roadside verge and subsequently the Annagh stream.

3.14 Site Roads, Parking and Hardstanding Areas

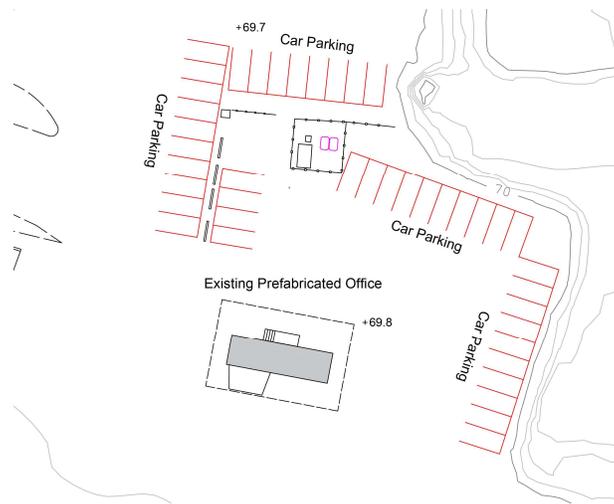
Internal access roads are provided within the existing site, running from the site entrance to the weighbridge office facility and onto the concrete and processing plants and the sand and gravel and quarry extraction voids.

There is an existing designated car parking area already available for employees and visitors adjacent to the site offices. The car park is segregated from the rest of the site and is of sufficient size to accommodate c. 42 cars, as detailed in **Plate 1** below and on Kilsaran Planning **Drawing KC2B**.

To the north of the carparking area is the dedicated HGV truck parking area.

A hardstanding area is provided at the existing concrete batching plant and workshop area.

Plate 1
Carparking in vicinity of Site Office



3.15 Wheelwash

There is currently a wheelwash present at the site, refer to **Figure NTS-4** for the existing location. The distance from the site entrance to the wheelwash is c. 160m along a paved and hardcore internal site road.

As part of the proposed new site entrance and access road outlined above, a new wheelwash will be installed on the outbound carriageway of the access road and will be set back c. 100m from the new site entrance.

The applicant proposes to install a powered wheelwash with a water-bearing wash unit with splash guard walls, recycling tank and pump control system. Typical details of the type of system proposed are provided in EIAR Chapter 2, **Appendix 2-D**.

A new sprinkler system will be installed along the new internal access road and will be operated by manual switch. The new entrance is located away from adjacent residents and can in the unlikely event of a breakdown of the sprinkler system be wetted using the onsite mobile loading shovels.

Periodic sweeping of the internal paved areas and along the public road at the proposed new entrance will be carried out by a contract road sweeper and this arrangement will be continued for the duration of operations on site.

In the event of material being spilled on the public road the operator will ensure that spilled material is removed from the road surface in a safe and timely manner as soon as they notice or are notified that a spillage has arisen.

3.16 Weighbridge

To track and record the amount of material entering and leaving the site, all HGV traffic will be directed across the existing weighbridge located adjacent to the site office as shown on **Figure NTS-4**.

3.17 Offices and Ancillary Facilities

Ancillary to the sand and gravel pit operations (P. Ref. 03/2754) on site are facilities including a prefabricated office, weighbridge, wheelwash, employee and visitor car park, a waste water treatment unit, a workshop building including laboratory for the use in quality testing of the readymix concrete manufactured on site and banded fuel storage tanks.

The existing facilities are proposed to be utilised for the duration of the development. No additional offices are planned as part of this planning application.

There is no requirement for any additional buildings, structures or ancillary facilities as part of this planning application.

3.18 Utilities and Services

The site is served by an existing on-site well which supplies water to the site for washing and serving toilets. Drinking water will continue to be sourced from bottled water brought to site.

The site is served by mains electricity from the ESB's national grid to power the processing plants and site office, workshop, weighbridge etc.

Effluent from toilet facilities is treated using an existing septic tank and proprietary effluent treatment system.

There is no proposed change to the existing services supplying and servicing the site as part of this planning application.

3.19 Fuel and Oil Storage

Diesel fuel is currently stored in fuel tanks within mass-concrete bunds inside the existing workshop. There is an NS10 Enviroceptor Forecourt Separator at the diesel filling point to deal with any drips/spills associated with the filling operation. Details of the fuel interceptor are provided in EIAR Chapter 2, **Appendix 2-E**.

Spill kits are provided on site and periodic spill kit training is carried out for staff.

3.20 Waste Management

3.20.1 General Waste Management

Kilsaran Concrete Unlimited Company as a member of the Irish Concrete Federation commits themselves to the principles of the Federations Environmental Code. The code states:-

"ICF members will minimise production of waste and where appropriate consider its beneficial use including recycling. They will deal with all waste in accordance with the relevant legislation and other controls in place, including using waste contractors with valid Waste Collection Permits"

Potential waste produced and the measures used to control it are described as follows:-

- **Scrap metal** – these materials are chiefly produced from the maintenance of the possessing plants and can cause a nuisance if allowed to build up in an uncontrolled manner. There is a designated scrap metal area located to the north of the quarry void. The build-up of scrap will be controlled by the regular removal by licensed scrap metal dealers.
- **Used Oil and Oil Filters** – any waste oil/oil filters that may arise from servicing of plant will be removed from the site by a licensed waste contractor.
- **Used Batteries** – similarly, all used batteries will be removed from site for collection and recycling by a licensed waste contractor in accordance with the Waste Management Regulations.
- **Domestic Style Waste** (Canteen Waste) – domestic waste generated at the offices and employee's facility will be collected by a licensed waste collection contractor.
- **Note:** overburden stripped from above the extraction area and silt produced during the washing process are not considered waste. They are an essential component of the restoration programme. These materials are required for the reshaping and landscaping.

3.20.2 Extractive Waste Management Plan

Almost all products and by-products arising from the aggregate processing will have commercial value. Any waste materials from the site will be stored, collected, recycled and/or disposed of in accordance with any requirements of Kildare County Council.

In Ireland, the management of extractive waste is regulated by the Waste Management (Management of Waste from the Extractive Industries) Regulations 2009 (SI No. 566 of 2009). Under these Regulations, quarry operators are required to prepare an Extractive Waste Management Plan (EWMP) which outline the plans and procedures for minimisation, treatment, recovery and disposal of extractive wastes, having regard to the principle of sustainable development.

The Extractive Waste Management Plan for the Clonard site is provided in EIAR Chapter 2, **Appendix 2-B** and a summary provided below.

Description of the Waste Generating Operation

There is no intention on behalf of Kilsaran to discard, where possible, any material extracted from the site. The principle aim of this extractive waste management plan is to prevent waste production which is in accordance with Section 5(2)(a) of the 2009 Regulations.

Extracted Material will fall into the following categories:

Soil and Sub-soil (Overburden) Stripping

This material is excavated to expose the underlying bedrock.

- **Topsoil** – any topsoil stripped will either be used to construct perimeter visual/noise screening mounds or be placed directly back into previously extracted areas as part of the restoration scheme.
- **Sub-soil (Overburden)** – this material will be dealt with in a similar manner to the Topsoil listed above.

Rock Extraction Material

Rock is extracted from the quarry face using commercial explosives, the blasted rock pile is processed through size reduction (crushing) and size classification (screening) to produce a suit of saleable aggregate products. Aggregates awaiting haulage off-site are stored temporarily in individual stockpiles, which are maintained in order to ensure stability, minimal visual intrusion and minimal environmental impact.

Aggregate Processing

Currently, the material is processed through size reduction (crushing), washing to remove silt and size classification (screening) to produce a suit of saleable aggregate products. With the exception of the fine silt material all the excavated sand and gravel is processed to produce various aggregate and sand products, which are stored temporarily in individual stockpiles, which are maintained in order to ensure stability, minimal visual intrusion and minimal environmental impact.

Washing Fines – The fixed aggregates processing plant operates a closed circuit washing cycle where silt fines are washed out of the aggregates being processed and are allowed to settle out of the wash water in a series of constructed lagoons. Once settled the clear water is recycled back to the washing plant.

The settlement ponds are cleaned out on a regular basis to ensure adequate capacity within the ponds to allow sufficient retention time to ensure adequate settlement of fines. All material removed from the settlement ponds is temporarily stored to allow natural outflow of retained moisture. Following this short storage period the material is put to a variety of operational or restoration uses within the site, namely:

- Construction of visual screening or noise attenuation berms, and/or construction safety berms alongside haul roads or under quarry faces.

- Washing fines are also placed directly back into previously extracted areas as part of the progressive restoration scheme prior to the replacement of sub and topsoil.

3.21 Proposed Environmental Controls

3.21.1 General

Extraction, processing and ultimately restoration activities at the application site require several environmental controls to eliminate or minimise the potential nuisance to the public arising from the extraction and processing operations. The environmental control measures to be implemented at the site are outlined in the following sections.

Any additional control measures, over and above those outlined below, which may be instructed on foot of the proposed planning application, will also be implemented.

3.21.2 Bird Control

As the process of rock extraction is free of putrescible (food / kitchen) waste, site activities are unlikely to attract scavenging birds such as gulls and crows for the duration of works. Accordingly, it is not intended to implement any specific bird control measures at the site.

3.21.3 Dust Control

In dry, windy weather conditions, site activities may give rise to dust blows across and beyond the planned development site areas. To control dust emissions, the following measures will be implemented:-

- water will be sprayed from a tractor drawn bowser on dry exposed surfaces and stockpiles (paved roads, unsealed haul roads and hardstand areas);
- areas of bare or exposed soils will, insofar as practicable, be kept to a minimum through ongoing and future phased restoration;
- any newly constructed screening berms / soil storage areas will be grassed at the earliest opportunity;
- emission of fugitive dust from machinery such as the crushing plant has, and will continue to be minimised by utilising dust suppression and by locating the primary mobile crushing plant within the quarry extraction area;
- all HGV's exiting the site will be routed through the wheelwash. This will minimise the transport of fines by HGVs over the access / egress road and the public road network;

The amount of dust or fines carried onto the public road network will be further reduced by periodic sweeping of internal paved site roads and surrounding public roads as required.

3.21.4 Noise Control

Potential noise generating sources could arise from operations within the quarry and from the crushing and screening plants, mobile plant such as the loading shovels and from the haulage fleet both within and outside the site.

The potential for noise generation from the application area is significantly reduced by the existing perimeter screening mounds, vegetation and within the quarry area by working within the hill and utilising the hill itself for natural screening; refer to **Figure NTS-4**.

Further noise mitigation through the provision of an acoustic screening fence along the northern side of the new internal access road for a distance of 170m will also be provided.

Kilsaran has and will continue to implement / evaluate a full range of noise mitigation measures at the quarry in accordance with the DoEHLG (2004) Quarries and Ancillary Activities: Guidelines for Planning Authorities, and the EPA (2006) Environmental Management Guidelines for Environmental Management in the Extractive Industry, refer to EIAR Chapter 10 – Noise & Vibration.

3.21.5 Traffic Control

The existing site entrance onto the L5002 road has historically been shown to function satisfactorily at its present location.

Notwithstanding this, it is proposed to close the existing entrance and relocate it further to the north along with provision of a new internal access road. This will have the benefit of moving the HGV traffic away from the closest residence to the west of the site. This residence is referenced as (R3) in **Figure NTS-5** and in other chapter figures of the EIAR.

A similar restriction regarding the quarry truck haulage route that applied under the previous quarry permission **99/2042** could be imposed if deemed appropriate by the Planning Authority. Local access for delivery of readymix concrete south of the site entrance (i.e., left out of the new entrance) is essential to facilitate supply of concrete to the local market.

The proposed new entrance detail is provided in Planning **Drawing KC2A** and **KC2E**. Sightlines of 160m will be achievable in both directions at the new entrance for vehicles exiting the site. Revised advance warning signing on the public road will be erected on the approaches to the site access taking account of the new location.

Kilsaran utilises a fleet management platform from MotionMetrics, an Irish owned company that provides the latest bespoke technologies in fleet management tools to improve efficiencies across Kilsaran's vehicle fleet.

MotionMetrics brings together critical information, from fleet telematics, vehicle CCTV, vehicle checks, maintenance and tachograph management through to route planning to assist in the day-to-day management of its entire fleet of trucks.

Kilsaran is currently using the FleetMetrics, VisionMetrics, TachoMetrics and CheckMetrics products which allows our managers real-time visibility of all our vehicles.

The system improves driver behaviour, promotes eco-driving and enforces route restrictions.

In the event of an incident, it can be ascertained instantly where liability lies, which facilitates a speedy resolution across all parties, including the insurance companies. Meanwhile the drivers feel better protected by having evidence available.

3.21.6 Litter Control

As the proposed development will be largely free of litter, the daily operational activities are unlikely to give rise to problems with windblown litter. Accordingly, there is no requirement to implement any specific litter control measures at the site.

In the unlikely event that any litter waste is identified, it will be immediately removed off-site to an authorised waste disposal or recovery site.

3.21.7 Odour Control

As the rock extraction and processing activities at the site will not include biodegradable materials, they will not therefore emit odorous gases, hence site activities will not give rise to odour nuisance. Accordingly, it is not intended to implement any specific odour control measures at the site.

3.21.8 Vermin Control

As the proposed development will be free of putrescible (food / kitchen) waste, on-site activities will not attract vermin (rats) for the duration of the extraction or subsequent restoration operations. Accordingly, no specific vermin control measures will be implemented at the site.

3.21.9 Fire Control

As the proposed development will be free of flammable and biodegradable materials which could create a fire or explosion risk, on-site extraction and processing activities will not present a fire risk for the duration of operations. Accordingly, there is no requirement to implement specific fire control measures at the site

In the unlikely event that a fire does occur, the local fire station in Edenderry (c. 7km to the south) will be contacted and emergency response procedures will be implemented. Fire extinguishers (water and foam) will be provided at the welfare facility to deal with any small outbreaks which may occur.

3.22 Proposed Environmental Monitoring

3.22.1 General

As part of the environmental management system (EMS), Kilsaran has implemented a comprehensive environmental monitoring programme at Clonard in compliance with the various planning permissions granted previously by Kildare County Council and An Bord Pleanála on the operation of both the quarry and the sand and gravel operations.

Environmental noise, ground/surface water, blast, and dust monitoring are carried out on a regular basis and have demonstrated that the quarry, pit and ancillary facilities have not had any significant adverse effects on the surrounding environment. A copy of the EMS manual is provided in EIAR Chapter 2, **Appendix 2-C**.

Limit values for environmental emissions arising from the site activities are identified by the existing/expired consents from the Planning Authority. Environmental sampling, monitoring and testing is generally undertaken by external consultants as and when required. Records of environmental monitoring and testing are held on-site and forwarded to the Local Authority as required.

3.22.2 Dust Monitoring

Dust monitoring is already carried out at the overall site under the requirements of Condition 10 of P. Ref. 03/2754 (PL09.209480) and previously by Condition 5 of P. Ref. 99/2042 (PL09.123207).

Monitoring is regularly carried out at five locations around the permitted site (**D1 – D5**). The results have shown compliance with the requirement of the planning permissions, details of which are provided for the period 2019-2023 (April) in **Chapter 8** of the EIAR.

The dust monitoring gauges are located close to sensitive receptors located beyond the site boundary. It is proposed that the existing dust monitoring stations will remain in place for the duration of extraction and processing operations at the site, as shown in EIAR Chapter 2, **Figure 2-7**.

The provision of additional monitoring locations if deemed necessary by the Planning Authority should planning permission be granted can be provided as necessary.

3.22.3 Noise Monitoring

Noise monitoring is already carried out at the overall site under the requirements of Condition 9 of P. Ref. 03/2754 (PL09.209480) and previously by Condition 7 of P. Ref. 99/2042 (PL09.123207).

Monitoring is regularly carried out at five locations around the permitted site (N1 – N5). The results have shown compliance with the requirement of the planning permissions, details of which are provided for the period 2019-2023 (April) in **Chapter 10** of the EIAR.

The noise monitoring locations are located close to sensitive receptors located beyond the site boundary. It is proposed that the existing noise monitoring stations will remain in place for the duration of extraction and processing operations at the site, as shown in EIAR Chapter 2, **Figure 2-7**.

Baseline monitoring and experience from similar types of development indicate that, subject to implementation of appropriate mitigation measures (as described in **Chapter 10** of the EIAR), the development can comply with the noise threshold limit of 55 dB(A) recommended in the EPA (2006) environmental management guidelines for the sector. The mitigation measures are in accordance with the 'best practice / mitigation' measures described in Section 3.2 of the DoEHLG (2004) guidelines.

3.22.4 Blasting / Vibration

All future blasts carried out at the quarry will be monitored to confirm vibration and air overpressure is within the acceptable range for extractive activities and comply with any planning conditions imposed on the development. The vibration monitoring will continue to be undertaken at the three designated locations around the quarry footprint (B1 – B3) used for monitoring under the previous grant of planning permission 99/2042, as indicated in EIAR Chapter 2, **Figure 2-7**. The applicant has included an additional blast monitoring location (B4) adjacent to residences R15/R16 to the southwest of the quarry area also shown on **Figure 2-7**. Additional monitoring stations can also be established periodically off-site at adjoining residential properties at the request of their owners.

Ground-borne vibration and air overpressure will be measured utilising portable seismographs, located at nearby residences (subject to the owner's agreement). Air overpressure will be measured utilising a calibrated microphone, incorporated into the seismograph. Each seismograph shall be calibrated in accordance with the manufacture's requirements.

Vibration monitoring locations shall be reviewed and revised where and as / when necessary. The results of the vibration monitoring shall be submitted to Kildare County Council on a regular basis for review and record purposes.

3.22.5 Ecological Monitoring

Given the history of extractive activities at the site and the absence of any rare or protected species across the application site, it is envisaged that there will be no requirement for ecological monitoring or reporting for extraction or restoration operations.

3.22.6 Groundwater and Surface Water Monitoring

The following monitoring activities will be carried out to demonstrate that the development is not having an adverse impact on the surrounding environment.

- Groundwater levels in boreholes (21-CL-01 to 21-CL-06, W3 and W4) will be monitored on a monthly basis for the duration of the proposed development;
- Regular groundwater quality monitoring (quarterly) of nearby private wells (provided consent is given) to demonstrate the development is not having any adverse impacts on private water supplies;
- The water quality in the adjacent stream will be monitored on a quarterly basis for the duration of the proposed development. Suggested parameters are outlined in Chapter 7 of the EIAR; and

REQUIRED: 02/10/2023

- The groundwater quality in all on-site boreholes and one off-site borehole (if permission is granted by owner) will be monitored on a quarterly basis for the duration of the proposed development. Suggested parameters are outlined in Chapter 7 of the EIAR.

3.22.7 Odour Monitoring

As the materials to be extracted / processed at the site are not organic or biodegradable and will not therefore emit odorous gases, the on-site activities will not give rise to odour nuisance. Accordingly, no provision has been made for odour monitoring at the site.

3.23 Proposed Landscape Detail

A number of landscape works will be carried out in conjunction with the commencement of the proposed development, i.e. extraction of rock within the quarry area, as shown on the Landscape Plan in **Figure NTS-6**.

Figure NTS-6 indicates the tree/shrub/hedgerow vegetation, which will require removal to facilitate the proposed development. Should planning permission be received, the affected trees are deemed to be exempt from requiring a felling licence in line with the Forestry Act 2014.

A number of landscape works will be carried out in conjunction with the commencement of the quarry extension as shown on the Landscape Plan in **Figure NTS-6**.

Figure NTS-6 also indicates the tree/shrub/hedgerow vegetation, which will require removal to facilitate the new access road. Should planning permission be received, the affected trees are deemed to be exempt from requiring a felling licence in line with the Forestry Act 2014.

3.23.1 Hedgerows/Treelines/Grassland (Phased Removal / Reinstatement)

It is proposed to remove 310m of internal hedgerows and tree lines, as well as some individual or small groups of shrubs, within the site on to facilitate the proposed development works at the new site entrance and to facilitate the quarry extraction expansion.

To facilitate the required sightlines at the proposed new entrance a total length of 215m of existing hedgerow will be removed and a new replacement hedgerow of the same length will be planted at the earliest opportunity behind the new boundary line. The new hedgerow will include feathered trees at 200-250cm height, for some immediate impact and will be planted at 5m centres. In addition, some blocks of native trees will be planted along the access road, in the vicinity of the site entrance to provide additional screening and further compensate for the existing trees / hedgerows to be removed. The area of scrub and native tree planting to be provided is greater than twice the area than that which is to be lost, with 7,280m² being planted to replace 3,200m².

For clarity, details of hedgerow and vegetation removal are provided in **Table 1**³ below and details of hedgerow and vegetation replacement are provided in **Table 2**.

Table 1
Details of Hedgerows / Vegetation to be Removed

Location	Length (m)	Area (m ²)	Details
Within Quarry Area			

³ Details as provided in response to Item 5(A) of the request for further information on planning application 22/83

Location	Length (m)	Area (m ²)	Details
1 Hedgerow to east of quarry void	80m		Consisting of mix of hawthorn and ash
2 Scrub area to south and east of existing quarry void		3,200m ²	Consisting of individual / small groups of hawthorn and scrub
To Facilitate New Site Entrance			
3 Hedgerow along public road	215m		Consisting mostly low/maintained hawthorn, ash and hazel including c.15 tall / mature ash trees in poor condition
4 Internal hedgerow to facilitate new internal access road	15m		Consisting of one elder or hawthorn
Total	310m	3,200m²	

Table 2
Details of Proposed Planting / Vegetation Reinstatement

Type of Planting	Length (m)	Area (m ²)	Details
Landscape Phase (on commencement of the proposed development)			
1 Hedgerow	215m		Replacement of the existing hedgerow along the public road behind the required sightlines, with a diverse native hedge mix
2 Native tree planting		3,750m ²	3 blocks of a native tree mix to be planted in the vicinity of the new entrance and access road to provide for additional screening to residence R4
3 Native tree planting		300 m ²	1 block of a native tree mix to be planted to close off the existing site entrance
4 Native tree planting		900 m ²	1 block of a native tree mix to be planted on new screening berm along western boundary in vicinity of residence R3
5 Willow/Alder/Reed planting		650m ²	To be planted along the edge of the settlement lagoons to augment their natural colonisation
6 Scrub Planting		1,680m ²	Native scrub mix to be planted in between the existing scrub to the south of the quarry.
Total	215m	7,280²	
7 Grassland		25,000	In addition, 2.5 hectare area for restoration to agricultural grassland within 1 year following closure of existing entrance

All hedges planted as part of the proposed landscape planting plan will be comprised of native and typically occurring species present in the local vegetation and/or hedgerows in Co. Kildare. All of the hedgerow/tree/shrub planting would be carried out on commencement of the proposed development.

The proposed planting consists of diverse native hedgerow and tree/shrub mixes, which will be of interest to pollinators and birds and will increase the habitat linkages within the site and with surrounding hedgerows and woodland areas.

3.23.2 Native Hedge Planting

A native hedge will be planted approximately 5m behind the sightlines required at the new site entrance. This hedge will replace the existing hedgerow, which will have to be removed to facilitate same. The proposed hedge mix includes Feathered Trees at a height of 200-250m for some immediate impact and to compensate the loss of approximately 15 mature ash to some extent.

3.23.3 Native Tree Planting

Blocks of native trees will be planted in a number of locations, i.e. at the new site entrance, to close off the existing site entrance, along the hedge which is crossed by the new access road and on the proposed screening berms. The planting will augment the screening of the existing boundary vegetation and will soften the appearance of the proposed berm. It will also provide cover for mammals and birds, thereby also contributing to the ecological enhancement of the site.

3.23.4 Grassland Restoration Area

Within one year of the access road being moved to its proposed new location, the area covering and surrounding the existing access road will be broken up, levelled, covered with topsoil (from storage on site) and restored to agricultural land. The same techniques, which have been previously employed in the restoration of the area to the north-west of the processing area, will be used.

3.23.5 Lagoon Restoration

Parts of the existing silt lagoons are beginning to dry out and will be left to be recolonised by locally occurring scrub species. In order to kick-start this natural recolonisation it is proposed to plant a mix of willow, alder and reed along the driest sections of the lagoons, all of which are able to cope with the initially wet ground conditions. This planting will be carried out within one year of commencement of the proposed development.

3.24 Proposed Final Restoration Detail

3.24.1 Proposed Restoration Scheme

The proposed site will be restored to a combination of agricultural land and natural habitat, both of which are beneficial after uses, in line with the 2006 EPA Guidelines - Environmental Management in the Extractive Industry (Non-Scheduled Minerals). The restoration scheme and detail is shown on the restoration plan in **Figures NTS-7**. A two-year period following completion of all extraction works is being requested to carry out final restoration of the site.

3.24.2 Restoration Phasing

Restoration Phase 1 will be carried out as soon as the area along the existing access road, which is to be closed off, is restored to agricultural land. Restoration Phase 2 will be carried out on completion of all extraction works.

3.24.3 Restoration Elements

Agricultural Land

The pit floor areas and majority of the processing area will be restored to agricultural land. Any pit faces below 1m in height will be smoothed out to tie into the adjoining land and also restored to agriculture. The respective areas will be cleared, levelled, covered with subsoil and topsoil and restored to agricultural land, using the same techniques, previously employed in the restoration of other areas throughout the site. Pit faces above 1m in height will be re-graded to slopes less than 27° (i.e. 2:1, H:V).

Hedge Planting

Native hedges will be planted in a number of locations crossing the large grassland restoration areas, in order to compensate the loss of previously removed hedgerows, and further increase the connectivity of habitats within the site, also contributing to the ecological enhancement of the site.

Natural Regeneration

The settlement lagoons will be left to fully dry out naturally and to be colonised with scrub species. This will be aided by the willow-alder-reed mix planted in parts of the lagoons during the landscape phase. The quarry void will be cleared and also left to natural regeneration.

Natural regeneration is a viable restoration tool, as can be seen in the south-western corner of the application area, where a settlement lagoon was previously located and which is now completely covered over with grass and scrub species. An area surrounding the settlement ponds will also be left for natural regeneration, as a buffer to the adjoining restored agricultural land.

Hardrock Quarry Area Restoration

The ultimate restoration of the quarry site is to a natural habitat area, which is a beneficial after use listed in the EPA Guidelines: 'Environmental Management in the Extractive Industry' (2006). A section of the northern end of the site, outside of the quarry void area and adjacent to the sand and gravel area will be returned to an agricultural pasture area.

Most restoration works within the quarry area will be carried out on permanent completion of extraction works. As most of the site will be used for extraction and processing purposes it is not feasible to restore any parts of the quarry void at an earlier stage.

The restoration works will be carried out in accordance with the EPA Guidelines (2006). Further ecological advice will also be incorporated into the restoration process based on up to date best practice and conditions at the site to facilitate optimal habitat value in the area for biodiversity.

Geological Survey of Ireland (GSI)

Access will be allowed to quarry faces by appropriate scientists (upon request and with due regards to Health and Safety requirements) during quarrying to check for interesting new stratigraphies / relationships as they might become exposed and to establish if the quarry is worthy of recognition post extraction and through aftercare / restoration planning. The upper faces of the quarry will be left exposed on cessation of the extraction works.

General Restoration Works

The proposed final restoration scheme will be achieved by the following measures:

- all stockpiles and processing plant to be removed from site;
- all hard standing areas (except for the access road) to be broken up/deep ripped and re-graded;
- all overburden stored within the site to be spread on the areas to be restored to pastureland and covered with any available topsoil;
- the areas to be restored to grassland will be seeded with a suitable grass and wildflower mix in the first available season following the completion of the re-grading works and placing of topsoil. Soil cultivation and sowing specifications to be as per manufacturer's instructions;
- native hedgerows to be planted within the site to provide linkage and increase the biodiversity potential of the site;
- all existing boundary fences and hedgerows will be retained to ensure that the site is secure.

Site Management and Supervision

The applicant will clearly define the management responsibility for the site restoration work and will ensure that this person has the necessary information (from the planning application) and authority to manage the whole restoration process. Relevant staff will be briefed on the scheme and will be adequately supervised / controlled. A system of record keeping for the key restoration activities will be put in place.

As the applicant is a long-established mineral extraction operator, it has ample experience and expertise in implementing mineral restoration programmes.

Long Term Safety and Security of Quarry

All components of the barrier system of the site consisting of existing mature boundary hedgerows, fences and walls will remain in place after extractive/ processing operations have ceased.

As the quarry void will be restored to natural habitat use containing quarry faces, secure fencing will be provided around the perimeter of the extraction area. Existing hedges surrounding the development will be gapped up and thickened where required. These combined with the secure and locked entrance gates to the development will prevent unauthorised third-party access.

Long Term Surface Water and Groundwater

The surface water will percolate to ground. There will be no requirement for any active long-term surface water or groundwater management at the site. Natural percolation to ground either through the bedrock of the quarry or through the restored areas of the site will occur.

Decommissioning of Plant and Machinery

Redundant structures, plant equipment and stockpiles will be removed from site on permanent cessation of extraction activity. Machinery and buildings will either be utilised by Kilsaran on other sites or be sold as working machinery or scrap.

All fuels or oils stored on site will be removed by a licenced contractor and there will be no potential for fuel or oil to cause long-term water pollution following completion of extraction activities.

The waste water treatment unit within the existing site will be decommissioned, emptied by a licenced waste contractor and removed from the site to eliminate any risk of groundwater contamination by sewage.

Aftercare and Monitoring

There will be no on-going requirement for monitoring noise or dust after extraction, processing and manufacturing operations have ceased.

Establishment maintenance for the hedge planting will continue for two years following the completion of the planting works (minimum 3 maintenance visits per year; i.e., spring, summer and autumn). This will include weed control, replacement planting where required and the adjustment/removal of tree ties and spiral guards.

4.0 THE EXISTING ENVIRONMENT, EFFECTS AND MITIGATION MEASURES

4.1 Population and Human Health

The Environmental Protection Agency guidelines in relation to environmental impact assessment (2022) indicate that the consideration of human health and population relates to employment, human health and amenity. For the purposes of environmental impact assessment, human health is considered in the light of the relevant topics or 'pathways' addressed by the EIAR, such as noise, air and water, and in the light of established, acceptable limits for exposure.

The application area is situated entirely within the townlands of Kilrainy and Kilrathmurry and is located within the Electoral Division of Kilrainy.

The small settlement of Claremount/ Clogharinka (Co. Kildare) is located 1.2km to the south. The larger settlements of Edenderry, Co. Offaly and Kinnegad, Co. Westmeath are located 7km to the south and 6.5km to the northwest respectively; refer to **Figure NTS-1**.

The application site is surrounded by mostly agricultural land that is interspersed with wooded areas, former sand and gravel pits, one-off housing and agricultural buildings.

The closest residential dwellings to the application area include three dwellings in the vicinity south of the existing site entrance, and groups of houses along the roads to the south, west and north boundaries. EIAR **Figure 4-1** identifies residential properties, facilities and farm buildings within the locality and shows 250m, 500m, and 1km offsets from the application boundary.

Mitigation measures to be adopted during the proposed extraction/processing development will relate primarily to minimising any impacts of the project on surrounding sensitive receptors (primarily associated with noise, dust and traffic). These measures are discussed in the following chapters of the EIAR:

- Chapter 6 – Land Soils and Geology
- Chapter 7 – Water
- Chapter 8 – Air Quality
- Chapter 10 – Noise & Vibration
- Chapter 13 – Landscape
- Chapter 14 – Traffic

It is considered that with the implementation of the mitigation measures outlined in Chapters 6, 7, 8, 10, 13 and 14 of the EIAR, there will not be any significant impact on population and human health of the surrounding area.

4.2 Biodiversity

The potential effects of the proposed development on habitats and species have been assessed.

A desk study has been undertaken to inform the assessment, involving collecting information on sites designated for nature conservation and protected species. The potential zone of influence that is considered to be proportionate and appropriate for the proposed development has been set at 2 km. A zone of influence for protected/designated area has been set at 7 km. There are no watercourses within the Site, however the Annagh Stream runs adjacent to the western boundary of the Site.

Kildare County Council's website was accessed for information on relevant planning policy while the planning portal was accessed for information on other proposed or permitted developments within the Site and immediate surrounding area.

Other sources of information were also used such as aerial and Environmental Protection Agency maps, Birds of Conservation Concern in Ireland (BoCCI), published by BirdWatch Ireland and the RSPB NI, which is a list of priority bird species for conservation action on the island of Ireland, Wildlife Acts (1976 - 2018), the Red List of Terrestrial Mammals (Marnell *et al.*, 2009) and the EU Habitats Directive 92/43/EEC. The development design drawings and the project description provided within other chapters of the EIAR also informed the desk study. The chapters of the EIAR reviewed during the desk study include Chapter 7 Hydrology, Chapter 8 Air Quality and Chapter 13 Landscape. The Natura Impact Statement prepared for the development was also reviewed during the desk study.

The proposed hard rock quarry development, importation of fine aggregates (principally sand), and all existing associated processing and welfare facilities at Kilrainy & Kilrathmurry, Clonard, Co. Kildare will result in localised effects on the ecology of the Site.

There will be no effect on sites designated for nature conservation as a result of the proposed development. There will be a loss of some areas of scrub, hedgerows and treelines within the site as a result of the proposed development. These habitats will be replaced as part of the phased landscape and restoration plan of the proposed project. The replacement planting will result in a net increase in the amount of hedgerows and trees. The habitats within the Site are commonly occurring, widespread and resilient.

Five amber listed bird species were recorded within the Site. No badger or otter were observed, or activity noted within the Site boundary.

Mitigation measures for hedgerow, treeline, birds, bats and badger have been recommended as part of the proposed development. For otter, pine marten and red squirrel no mitigation is required.

The residual effects of the development after mitigation would not be significant.

4.3 Land, Soils and Geology

The assessment is based on a desk study of the site / surrounding area using published geological data, a site walkover of the lands and available information provided to SLR by Kilsaran. This section describes the receiving environment at and in the immediate vicinity of the site.

The proposed development includes for drilling, blasting, crushing and screening of rock; and lateral extension to same, with an overall extraction area of c. 6.2 hectares with no vertical deepening below the existing quarry floor. Additionally, the application includes for the importation of processed fine aggregate, principally sand for use in readymix concrete production on site. The existing aggregate processing regime will be used at the site which includes crushing, washing, and screening plant with associated silt disposal lagoons as well as the continued production of concrete. Site facilities consist of the readymix concrete batching plant including powerhouse prefabricated office, weighbridge, and workshop building with concrete laboratory, banded fuel tanks, aggregate storage bays and one liquid effluent treatment system unit. The restoration of the application site lands will be to a combination of beneficial agricultural and ecological after uses

Available desktop information relating to the site included bedrock, subsoil and soil datasets, site photographs and information from boreholes undertaken in 2021.

Land can be considered to be a resource with a beneficial use to society, for example agricultural land use, extractive industry land use or urban residential land use. Unnecessary land take may result in the loss of this resource which has the potential to have adverse social and economic consequences for society.

The Teagasc soil mapping for the Irish Forestry Soils (IFS) mapping project, indicates that the soils in the proposed extraction area (IFS Code 22) comprise Rendzinas and Lithosols which are shallow well drained soils

derived mainly from calcareous parent material, i.e., carboniferous limestone. The soils at the site have formed on the well-drained sand & gravel subsoils.

The soils mapping also indicates lacustrine type soils (IFS code 56) beneath the forested area to the east of the site. To the south of the site there is an area of Grey Brown Podzolics which are deep well drained soils. To the east of the west of the site there are alluvium soils (IFS code 51) associated with the Annagh River.

The GSI 1:100,000 Geology Map Sheet 16 (2018) for Kildare and Wicklow indicates that the majority of the existing site is underlain by Carboniferous Limestone from the Edenderry Oolite Member with Carboniferous Limestone and Shale from the Lucan Formation along the northern side of the site and a small section of Waulsortian limestones in the south-eastern corner of the site.

Bedrock is exposed at the existing quarry area and this proposal will involve the further extraction of bedrock from the proposed overall quarry footprint of c. 6.2 hectares.

Within the application site itself, three boreholes were drilled in 2021 for groundwater monitoring and were drilled into the bedrock along the landholding site boundary.

The borehole locations are shown in EIAR Chapter 6, Figure 6-4 and a copy of the logs are included in **Appendix 6-A** of the same EIAR chapter.

The GSI IGH programme was consulted, see EIAR Chapter 6, **Appendix 6-D** for details, with the consultation response from the GSI provided in EIAR **Appendix 6-E**.

The current county development plan for Kildare (2023-2029) lists the site at Ballykane Hill as a Site of Geological Importance. **Policy BI P10** of the Development Plan states that the Council will:

‘Maintain and protect the conservation value of geological sites of national or local importance and seek the sustainable management of the county’s geological heritage resource as listed in Table 12.7’

The County Geological Site report for Ballykane Hill states that:

‘The abandoned quarry is on private property and unsuitable for general promotion without appropriate arrangements agreed with the landowners. However, it is understood that local schools have used it over many years to seek fossils and look at geology in the field.’

The existing historic quarry exposures which have been used to view the geology at the Ballykane Hill site, and the reason for the CGS designation, are relatively small and located along the south western side of Ballykane Hill.

The proposed quarry void extension will provide additional exposures into the geology at the Ballykane Hill CGS showing a greater geological sequence than is otherwise visible in the existing historic quarry exposures. At other Kilsaran sites, the applicant have agreed access to their sites for the GSI to record and log the geology as and when requested by the GSI and Kilsaran will accommodate the GSI at this site also.

Following the restoration of the site initial monitoring will be required over a period of two years to ensure that the restored site is successful and that the remaining quarry faces are stable.

The extraction of rock material at the site is a tied land use activity, as it is dependent on the location and suitability of the rock deposit, which may be considered to be a natural resource. The proposed development will result in a loss of the rock resource at this location.

Soils will be managed on site in line with best practice national guidelines. A specific Soil Management Plan will be developed for the site which will ensure best practice measures are implemented at the site with regard to any requirements for the stripping, transport and storage of the soils for future use.

The soils at the site will be stored in accordance with best practice to preserve the structure and integrity of the soils. With this mitigation measure in place, it is considered that there are no significant residual impacts with respect to land, soils or geology.

Operations at the site will adhere to the appropriate Health and Safety Authority guidelines and this will limit the potential for unplanned events such as instability of quarry faces or instability in adjacent lands.

4.4 Water

The area covered by the final quarry extraction footprint has been mostly stripped of topsoil and overburden deposits except for small areas of in-situ soils and stockpiled materials. The subsoils in the local area comprise of clays and sand and gravel deposits.

The proposed development site is underlain by oolitic limestones of the Edenderry Oolite Member with some massive Waulsortian Limestone in the southeast and dark limestones and shales of the Lucan Formation in the north.

The proposed development site is located within the Boyne Catchment of the Eastern River Basin District. More locally, the proposed development site is located within the Boyne Sub-Catchment. There are several surface water bodies in close proximity to the proposed development site. These include: the Annagh and Ballinlig streams. All watercourses eventually discharge into the Boyne River.

Under the Water Framework Directive (WFD) classification, all watercourses in the vicinity and immediately downstream of the proposed development site are of moderate status based on their physio-chemical and biological quality.

There are no recorded flood events at or near the site, nor is there any potential flooding.

The surface water quality in the Annagh Stream is generally of good quality except for Coliforms. The presence of Coliforms reflects human impacts in the stream catchment.

The subsoil sands and gravels in the local area form part of the Kilrathmurry Groundwater Body (GWB). This gravel aquifer is underlain by the Trim GWB. Both GWBs are classified as having a "Good" status under the WFD classification. These deposits have been largely removed from the proposed development site.

The groundwater vulnerability at the proposed development site ranges from High where permeable soils and subsoils remain to Extreme where rock is exposed at the surface in the existing quarry void.

There are seven boreholes on-site and in the surrounding lands. 5 no. boreholes are in bedrock (one is assumed) and 3 no. boreholes are in the sand and gravel aquifer.

Groundwater samples were undertaken by CLS Laboratories in March 2023. Total coliforms and faecal coliforms were above the level of detection of the laboratory in at 2 no. locations. Sulphate was elevated at 1 no. location within the sand and gravel aquifer. Manganese, aluminium and barium were also elevated in some of the bedrock and sand and gravel boreholes.

There are a large number of wells within the vicinity of the proposed development site, including private wells, ESB wells, Public Water Supply wells, County Council wells, and Group Water Supply Scheme wells.

Based on the receiving environment investigation, the following receptors have been identified:

- Downstream surface water quality in the adjacent streams (Annagh, Kilr and Ballinlig streams) and in the Glash and Boyne rivers;
- The Boyne River and associated SAC and SPA;
- The Boyne River salmonid waters;
- Locally important gravel aquifer / Kilrathmurry GWB;
- Locally important bedrock aquifer / Trim GWB; and
- Groundwater supply wells in the surrounding lands.

Due to the local hydrogeological regime, with high rates of groundwater recharges (associated with the permeable subsoils and exposed bedrock), groundwater will be the main sensitive receptor.

In terms of surface water receptors, no direct hydrological links exist between the proposed development site and downstream receptors. Surface water runoff rates at the proposed development site are low and the primary link between the site and downstream surface water course is via lateral groundwater flow.

Potential impacts on the identified receptors related to the proposed development may arise from a reduction in water quality (groundwater and surface water) from suspended solids, reduction in water quality in domestic water supplies, accidental fuel leakages/spillages, release of wastewater or cement based products.

No deepening of the quarry below the surrounding water table is proposed, therefore there is no requirement to discharge groundwater from the development site into the local surface water system.

Mitigation measures will be put in place at the site to prevent a reduction in the quality of the local water environment. The main mitigation with respect to groundwater quality will be employed during the operational phase with the employment of best practice mitigation measures with respect to oil usage and refuelling of plant and machinery. Overall mitigation measures at the site will include:

- All plant and machinery will be serviced before being mobilised to site;
- Refuelling will be completed in a controlled manner using drip trays (bundled container trays) at all times;
- Only designated trained operators will be authorised to refuel plant on site and procedures and contingency plans will be set up to deal with emergency accidents or spills;
- Measures will continue to be taken to ensure that all diesel fuel/oil storage will be in bundled fuel tanks in the existing workshop building to prevent contamination of groundwater and refuelling takes place on the hardstand area with any run-off directed to the hydrocarbon interceptor;
- A spill kit including high absorbency mats and pig tails will be available on site to be used in the event of a hydrocarbon spill;
- Periodic spill kit training will be undertaken by staff members;
- The proposed new site entrance and access road will be hard paved to prevent the generation of suspended solids and will slope into the site to prevent surface water from flowing onto the adjacent road and entering the local surface water network. Water from the site entrance will be directed back into the site, draining towards a new proposed French drain to be located immediately to the south of the new site access road. The French drain will direct water towards a new suitably sized soakaway which will discharge to ground;
- Suspended solids generated from the processing of material on-site will be mitigated against through the use of a closed circuit cycle where silt is allowed to settle in constructed settlement lagoons before the water is recycled back to the processing plant. The settlement ponds will be regularly cleaned and once dry the material will be used in the restoration of the site;
- A programme of groundwater quality monitoring will be implemented; if there is a deterioration in levels and quality as a result of construction related activities then measures to manage and reduce fines in any runoff will be implemented;
- The existing measures with respect of wastewater (septic tank and Bord na Mona Puraflow treatment system) and water at the concrete batching plant will be continued to be implemented at the proposed development site; and
- The Environmental Management System (EMS, a copy is provided in EIAR Chapter 2, **Appendix 2-C**) will continue to be implemented at the site.

The following monitoring activities will be carried out to demonstrate that the development is not having an adverse impact on the surrounding environment.

- Groundwater levels in all on-site boreholes (21-CL-01 – 21-CL-06 and W3) and one off-site (W4) will be monitored on a monthly basis for the duration of the proposed development;
- Regular groundwater quality monitoring (quarterly) of nearby private wells (provided consent is given) to demonstrate the development is not having any adverse impacts on private water supplies;
- The water quality in the adjacent stream will be monitored on a quarterly basis for the duration of the proposed development; and
- The groundwater quality in all on-site boreholes and one off-site borehole (if permission is granted by owner) will be monitored on a quarterly basis for the duration of the proposed development.

With the proposed mitigation measures in place there will be no significant residual impacts on the identified groundwater and surface water receptors.

4.5 Air Quality

An assessment of potential fugitive dust emissions from the proposed development has been undertaken. The assessment takes into consideration the potential sources, surrounding receptors, and the pathway between source and receptor in order to assess the magnitude of risk of impact without mitigation measures in place.

The main focus of the assessment is the potential impact on sensitive receptors from fugitive dust emissions from the following activities:

- soil stripping, earthworks, and topsoil stockpiling (site preparation and restoration works, new road construction);
- trafficking by onsite machinery and heavy goods vehicles (HGVs) over paved / unpaved surfaces;
- handling and processing of excavated rock;
- transfer, end-tipping and stockpiling of aggregates;
- construction and operation of concrete production plant;
- trafficking by heavy goods vehicles (HGVs) over paved / unpaved surfaces;
- landscaping and final restoration activities.

There are approximately 26 sensitive receptors identified within 500 metres of the planning application area and which were assessed in detail, as they are considered to have a potential greater risk of dust impact.

In the absence of any mitigation measures, the risk of impact from dust emissions was insignificant -to-acceptable at 22 of the receptors and slight adverse at 4 receptors.

A number of mitigation measures are proposed to minimise the generation / migration of fugitive dust and to ensure that the extraction, processing and restoration operations comply with the threshold values. These mitigation measures are in accordance with the 'best practice / mitigation' measures for the sector.

With the range of mitigation measures to be implemented at the site, the risk of dust impact is reduced to insignificant to acceptable at all 26 receptors within 500m.

A comprehensive monitoring programme will continue to be implemented at the site to confirm that the site will operate within the recommended dust deposition emission limit values set out in best practice guidelines for the sector.

The operations at Clonard, with the range of mitigation measures proposed, will not have a significant dust deposition impact on human receptors. Kilsaran Concrete Unlimited Company will monitor and evaluate and implement a large range of mitigation measures at the site to minimise the generation / migration of fugitive dust.

4.6 Climate

An assessment of Climate has been undertaken. The assessment takes into consideration the evolving baseline, climate hazards, project vulnerability, and GHG emissions.

The following issues are addressed separately:

- climate change legislative framework/policy context;
- analysis of evolving environmental baseline trends;
- identifying climate change concerns in relation to proposed development;
- assessing effects;
- identifying mitigation measures;
- identifying monitoring and adaptive management.

The following analysis was carried out:

- likelihood analysis of a climate hazards;
- climate hazard impact analysis;
- sensitivity of project to climate hazards;
- exposure of the project to current and future climate hazards;
- vulnerability analysis of project to climate hazards.

Based on the project vulnerability assessment, measures to improve the resilience of the project to extreme rainfall, flash flood, storms, and winds are required.

Based on the scale and extend of the proposed development at Clonard, GHG emissions are assessed as not making a significant contribution to the global atmosphere.

Mitigation measures in the context of climate change shall include increasing the adaptive capacity of the development on an ongoing basis with a view to reducing vulnerability and increase resilience of the development.

In terms of GHG emissions Kilsaran Concrete Unlimited Company shall adopt a GHG monitoring and reduction programme at Clonard.

4.7 Noise

To determine the noise impact generated by the proposed development, SLR Consulting Ireland carried out a noise prediction assessment, whereby the levels of noise were calculated at the nearest noise sensitive receptors (residences). Noise modelling software was used to develop three noise models for various operational scenarios on site:

- **Model A:** Existing Quarry operations with plant movements between the quarry and the existing processing plant area included.
- **Model B:** HGV movements on the relocated Site Access.

- **Model C:** Processing plant area.

In the assessment the impact of operational quarry noise upon residential receptors is determined with reference to the EPA publication Environmental Management Guidelines for Environmental Management in the Extractive Industry (Non-Scheduled Minerals), and the Air Quality Technical Advisory Group (AQTAG) – Guidance on effects of Industrial Noise on Wildlife. Both these documents recommend a daytime (08:00–20:00) limit of LAeq (1h) of 55 dBA.

The modelled assessment shows that during normal site operations the noise limit of 55dB(A) is met at all receptors with no impact predicted.

A further noise assessment of site queuing traffic was undertaken to assess the potential impact of queuing traffic on the internal site road from the site entrance to the proposed internal barrier. The results of the assessment demonstrated that at the four nearest residences there would be no overall increase in the ambient noise levels due to queuing traffic, should it arise.

The existing mitigation measures will also continue to be implemented as part of the proposed development to minimise the generation / migration of noise and to ensure that the rock extraction, importation of sand operations, processing activities, readymix concrete production and restoration operations comply with the threshold values described above.

Additional mitigation measures are proposed, such as a new screening berm along the western site boundary in the vicinity of residence R3, the provision of an acoustic sound barrier fence along the proposed new access, hard surfacing of the access road and the provision of an internal barrier behind the acoustic fence to allow trucks to queue off the public road should the need arise. The operations at Clonard, with the range of existing and proposed mitigation measures implemented, will comply with the recommended noise emission limit values for the sector.

4.8 Vibration

Blasting-induced vibration is impulsive and transient in nature. A typical blast consists of a number of drilled blast holes into which are placed explosive charges. The charged holes are detonated individually by use of detonators each with different delays.

The main reason for complaints from blast-induced vibration is usually attributed to the fear of damage and/or nuisance rather than actual damage or nuisance itself. The human body is very sensitive to vibration; this can result in concerns being raised at vibration levels well below the threshold of cosmetic damage to buildings or the levels stated in the existing planning conditions.

The frequency of blasts is dependent on market demand. The duration of a blast in terms of noise is of short duration, similar to a clap of thunder.

A number of previous mitigation measures were in place to minimise disturbances due to blasting from the quarry area when it was operational. These mitigation measures were in accordance with the ‘best practice / mitigation’ measures for the sector. Blasting is carried out by a qualified “shotfirer”. The blast design is reviewed on a regular basis and modified where necessary to ensure compliance with groundborne vibration limits.

All previous blasts were monitored, with records kept detailing the results of vibration, air over pressure, and the blast design as part of the environmental monitoring programme implemented at the quarry.

A review of the blast monitoring results from 2018-2022 indicate compliance with the DoEHLG (2004) / EPA (2006) recommended threshold limits for groundborne vibration of 12 mm/sec (peak particle velocity) and for air overpressure of 125 dB (Lin) with a 95% confidence limit.

The comprehensive monitoring programme implemented at the site confirms that the hard rock quarry previously operated, and if extraction operations commence again, will continue to operate within the recommended groundborne vibration and air overpressure emission limit values set out in best practice guidelines for the sector.

4.9 Material Assets

Material Assets include the built services such as electricity, telecommunications, gas, water supply infrastructure and sewerage. Material assets also cover roads and traffic.

The existing site has an electricity supply via an existing mains supply and sub-station on site. This connection will continue to provide the principal energy source for the overall site.

The existing site-based staff are contactable via fixed landline and mobile phones. Internet connections to the site office is currently provided by a mobile network, facilitating access to email.

An existing effluent treatment system is located within the existing site to service the current workforce. Permission was granted under P. Ref. No. 03/2754 / ABP Ref. PL09.209480.

An existing potable water supply from groundwater is provided at the site. This provides the water required to provide adequate water services to facilitate the ancillary facilities, dust suppression and wheel wash operations on the application site. Drinking water is and will continue to be sourced from bottled water brought to site.

Review of the 'dial before you dig' website from Gas Networks Ireland was carried out as part of the baseline review. There are no gas supply mains within the vicinity of the site. The closest high pressure gas line to the site runs in a general east-west direction c. 6km north of the site. The closest medium pressure gas line is c. 7.5km northeast of the site near Longwood, Co. Meath.

A 220kV overhead powerline traverses the landscape in an east-west direction and is located c. 350m beyond the southern site boundary on the opposite side of the L5004 / L5008 roads. The powerline runs from the West Offaly Power station at Shannonbridge to the Maynooth 220kV substation.

The Irish Water website (www.water.ie) indicates that there are no public water supply zones in the vicinity of the site and so it is assumed that all residential properties in the area are served by private water supplies.

The EPA mapping web viewer indicates that there is no waste water treatment facility in the vicinity of the site and so it is assumed that all residential properties in the area are served by private septic tanks. The closest public sewage treatment works is located to the south at Clogharinka.

The proposed operations at the application site will not have a significant effect on material assets of the surrounding area.

4.10 Cultural Heritage

The archaeological and cultural heritage assessment for the EIAR was carried out by Dr. Charles Mount who is a Member of the Institute of Archaeologists of Ireland and has more than thirty years of cultural heritage assessment experience. He holds M.A. and Ph.D. degrees in archaeology as well as a professional diploma in EIA and SEA Management.

The application area has already been assessed and previously permitted under P. Reg. Ref. No. 99/2042 and ABP Ref. PL09.123207, P. Reg. Ref. No. 03/2754 and P. Reg. Ref. No. 16/1246. This proposal is entirely within the footprint of the previously permitted and developed areas and therefore no additional site visit is required.

There are no known items of cultural heritage, monuments or buildings of heritage interest known from the application area.

There will be no direct or indirect impacts on any known items of archaeology, cultural heritage or buildings of heritage interest in the application area or the vicinity.

No direct or indirect impacts warranting specific mitigation were identified during the course of the cultural heritage assessment.

4.11 Landscape

A landscape and visual impact assessment (LVIA) of the proposed development was completed in accordance with accepted guidance. It is approximately 6.5km south-east of Kinnegad and 7km north of Edenderry. The boundary with County Meath, which follows the River Boyne, is located c.380m to the north-west of the existing site entrance.

A study area for the LVIA was identified, with the help of a zone of theoretical visibility (ZTV) map, as an area of up to 2km to the south-east and east and up to 3km in all other directions surrounding the application area. The generally flat/gently undulating topography, containing abundant screening vegetation was also taken into account. It should be noted that the site survey revealed that the visual envelope, i.e., the area from where the application area is actually visible, is much smaller than the study area.

The ground levels within the existing site development are varied and range from 66m above Ordnance Datum (AOD) at the existing site entrance to 116m AOD at the top of the southern quarry face. The levels within the processing area range from 67-74m AOD, the silt lagoons from 66-78m AOD and the existing sand and gravel pit (including restored areas) from 69-73m AOD. The existing quarry floor is at c. 75-76m AOD and an overburden storage area to the north-east of the quarry reaches just under 100m AOD. The two agricultural fields along the north-western boundary slope gently towards the local road from 70-65m AOD.

The application area is located within a landscape, dominated by agricultural land, with most fields under pasture, as well as some arable fields. Several blocks of conifer plantations/mixed forests break up the agricultural land within 3km to the north-east and south-west of the application area. The topography of the surrounding land is flat to gently undulating with levels typically ranging from 70 to 90m AOD and including some occasional local highpoints. This includes a highpoint of 119m AOD at Kilrainy, within 1km south-east of the application area and the highpoint of 106m AOD at Clogharinka, as well as the highpoint in the south-eastern corner of the site, which was formerly 119m AOD (as indicated on the OSI 1:50,000 mapping). The lowest elevations of just below 70m AOD are along the River Boyne, which traverses the study area in a south west to north east direction.

The application area is fully located within the North-Western Lowlands Landscape Character Area (LCA). This comprises the generally flat landscape covering the north western tip of County Kildare, along the boundaries with Co. Meath and Co. Offaly. This LCA is classed to be of low sensitivity, i.e., *“Areas with the capacity to generally accommodate a wide range of uses without significant adverse effects on the appearance or character of the area.”*

Within 400m to the northwest of the application area, across the River Boyne the County Kildare North-Western Lowlands LCA is adjoined by the County Meath South West Lowlands LCA 15, which is classed as being of medium landscape sensitivity. Considering the sensitivity assessments of the two LCAs, as well as the absence of significant landscape designations in the vicinity of the application area and abundance of agricultural fields & hedgerows, the sensitivity of the landscape receptors (i.e., the local landscape character and the affected landscape elements consisting of agricultural fields and hedgerows / treelines / scrub areas) was assessed as low. The small local hill upon which the existing quarry is located was also identified as a landscape receptor. Since this hill does not form a distinct landscape feature, its overall sensitivity to change was also assessed as low.

Hedgerow and tree planting will be carried out at the new site entrance to compensate the section of hedgerow which will need to be removed to facilitate the sightlines. Parts of the existing sand and gravel pit

site will be restored on a phased basis and the remainder of the site on completion of all extraction works. The pit floor and processing/storage areas will be restored to an agricultural land use, with associated hedgerow planting. The quarry void and the area surrounding it, as well as the existing settlement lagoons and adjoining ground will be left for natural regeneration.

The changes within the application area will be perceived from a limited area surrounding the site and will not result in the introduction of new elements into the landscape. The reduction in height of part of the hill on which the quarry is situated, will be a continuation of the previously permitted extraction works. Considering the existing hill does not form a distinct focal point in the local landscape, its lowering will not result in the removal of a characteristic landscape element.

Overall, the proposed development will not be prominent and will not notably change the composition/balance of the landscape. The duration of the development is 10 years (plus an additional 2 years for restoration). Combining these factors with the low sensitivity of the landscape receptors, the effect on these receptors was assessed as minor to negligible. This will reduce to negligible on completion of the extraction works and when the site is fully restored to an agricultural and natural habitat after use.

The application area, in particular the existing sand and gravel extraction and processing areas, is screened by intervening topography and vegetation in most views from publicly accessible viewpoints within the study area. There are a limited number of viewpoints along the local roads within 1km surrounding and up to 2.5km to the south-west and north-west of the development site where parts of the application area are visible. Road users and local residents were identified as the only visual receptors, which are assessed as having low and medium sensitivity to changes to their views, respectively. As the affected local roads are infrequently used and there are a limited number of private properties with views, the number of visual receptors is low.

In most of the limited number of available views, parts of the existing quarry and/or the small hill it is located on are visible. The small hill will be lowered in those views, resulting in a largely linear skyline, which will tie in with the ridgeline adjoining the site. As a result, the visibility of the existing quarry will be reduced. The visible changes will be completed during the first half of the proposed development, i.e., within c. 5 years. The visible parts of the quarry typically take up small sections in the background of available views. Taking all of these factors into account, the visual effects on the views of the quarry were assessed as minor or less.

Along an approximately 400m long section of the local road adjoining the application area to the west, the changes associated with the relocation of the site entrance will be visible. The removal of the existing hedgerow will open up views into the neighbouring field across which the new access route will be routed. The existing and proposed extraction works, and the processing area will however be screened by intervening topography and vegetation. Once the proposed new hedge and tree planting matures, the views along the road will return to a state similar to the existing views. While the changes will be openly visible at a close distance along one side of the road, the construction works will be carried out in a short timeframe (i.e., a number of months). The views into the neighbouring field would remain open for much of the operational stage (i.e. 5-10 years), by which time the new roadside hedgerow and separate blocks of tree planting would have matured enough to block views into the neighbouring fields views again. Considering the low number of visual receptors and their low sensitivity (no properties located along the affected section of the road), the visual effects on the views of the works at the site entrance were assessed as minor.

All visual effects will reduce to negligible or less on completion of the extraction and restoration works, as the visibility of the quarry will continue to reduce as the rock faces will weather with time and become partially colonised with grass and scrub species and there will be no reminder of the previously present hill. Also, the vegetation along the site entrance will have matured to provide ample screening.

In summary, the proposed operations at the application site will not have a significant effect on landscape and visual receptors, designated landscapes, protected views or outdoor recreational areas.

4.12 Traffic

Traffic & Transportation Planning Consultants, Trafficwise Ltd. have prepared Chapter 14 of the Environmental Impact Assessment Report (EIAR) which provides an evaluation of the potential traffic generation of the permitted development at the existing site, and this is compared with the existing 2019 operation and with the forecast potential traffic scenario arising from the proposed development.

Manufacturing facilities currently in operation at the site include a concrete manufacturing facility (readymix). Ancillary facilities at the overall include the office, weighbridge, canteen, toilets and bunded fuel storage areas.

Readymix concrete trucks, aggregate haulage trucks and cement tankers have been associated with transporting and delivering materials to and from the existing facility since after 2004 when planning permissions for extraction of materials and manufacture of value-added products at Kilrathmurry Sand and Gravel Pit were granted under Kildare County Council Planning Ref. No. 03/2754 (PL09.209480).

Traffic surveys show that traffic using the local road network in the area is predominately composed of private cars accessing one-off housing and local amenities although there is a very modest background HGV content. Traffic volumes on the receiving road network serving the quarry are considered relatively light.

Local Road L5002/L5001 between the site and R148 is a single lane carriageway. The metalled carriageway surface varies in width measuring approximately 6m over the primary haul route to the R148. Accommodating a verge varying in width up to 4m on either side, save for in the vicinity of the M4 overbridge there are generally no centreline road markings but there are road edge markings as is typical of the regional road network. The road is subject to a posted speed limit of 80kph.

The haul route was widened as part of the grant of planning permission under Kildare County Council Ref. No. 97/1731 and confirmed under subsequent permissions Ref. Nos. 03/2754 and 99/2042 (PL09.123207).

The road surface of the haul route L5002/L5001 is in general considered to be in a good state of repair. It is noted that the carriageway in the vicinity of the existing site access and to the west was observed to be in a good state of repair relative to the general condition. The carriageway locally shows no significant signs of serious structural defects and there is no evidence of variable edge settlement. Traffic surveys show that the predominant flow of traffic from the existing development is to and from the north of the site.

Notwithstanding the above, it is proposed to provide 3 no. sections of road improvement along the haul route between the site entrance and the R148 regional road. Subject to agreement with Kildare County Council and subject to the appropriate licences the proposals at the identified locations include for works in the public road and on third party lands that aim to achieve a consistent carriageway width of 6.0m whilst also implementing verge widening on the inside of the three bends to improve forward visibility and intervisibility for all opposed traffic including traffic generated by the proposed development.

The road widening at the improved areas will incorporate full depth construction to the standard specification of Kildare County Council and will be subject to final overlay across the full road width of the improved/widened section thus resulting in a consistent and uniform road surface. Road markings will accord with the requirements of the Traffic Signs Manual. The overall scheme design will be agreed with the Planning Authority at the detailed design stage. Based upon a site meeting with Kildare County Council engineers it is understood that road improvement works will incorporate appropriate advance warning and advisory signing both at the development site access and at local constrictions.

The character of the area in general is rural. The L5002 and L5001 haul road is relatively straight, and the site access is located on a straight and level section of the road. The splayed existing entrance is flanked by palisade fencing. The overall quarry site has a road frontage of approximately 500m along which there are no footways. The verges either side of the access are generally narrow with vegetation extending to the road edge in many places.

Notwithstanding that the existing site access on the L5002 has historically been granted permission and has been shown to function satisfactorily in its present location, as part of the planning application it is proposed to discontinue the use of the existing quarry site access in favour of a relocated access designed in accordance with TII Publication DN-GEO-03060. The proposed new access affords improved geometry together with the provision of visibility sightlines that accord with current national roads design standards. The proposed development works include not only the construction of the proposed new site entrance and internal access road with associated new wheelwash, internal security barrier but also include the erection of acoustic screen fencing and additional perimeter screening berm to the southwest which will assist to mitigate noise arising from traffic accessing the site.

There are currently a number of advance warning signs on the southbound approach located 100m, 200m and 400m in advance to the site access. It is proposed that, in combination with the proposed relocation of the access, new advance signs will be erected with the agreement of the Local Authority. The suggested layout will show a standard junction ahead warning sign which indicates to drivers which side of the road the entrance is on. It is proposed to augment the sign with an information plate reading 'Quarry Entrance 200m'. If the Planning Authority considers it worthwhile a second set of similar signs can be placed at 100m distance from the site access. The size of the signs and the details of legend size etc. will be designed in accordance with the Traffic Signs Manual and the precise location agreed with the planning authority.

The existing access and the receiving road are lightly trafficked and will continue to be lightly trafficked in the context of the ultimate capacity of the simple priority access arrangement. The relatively low levels of network and development traffic can be appreciated from a review of the traffic count data together with the graphical analyses and network flow analyses respectively. The existing quarry traffic does not give rise to capacity issues at local junctions and there are unlikely to be capacity issues arising at the existing site access or the junctions on the haul route as a result of the proposed development.

The TTIA has been made based on a proposed rate of extraction of aggregates at 250,000 tonnes per annum; importation of fine aggregates, principally sand at 35,000 tonnes per annum and manufacturing 30,000m³ of concrete, which are predicted to generate an average of 60 HGV trips per day. . The average daily HGV trip generation will potentially reduce from 74 HGV or by approximately 20% from the pre-existing levels.

Of the aggregates extracted at the development a certain proportion is exported directly and a portion is used on-site to produce readymix concrete.

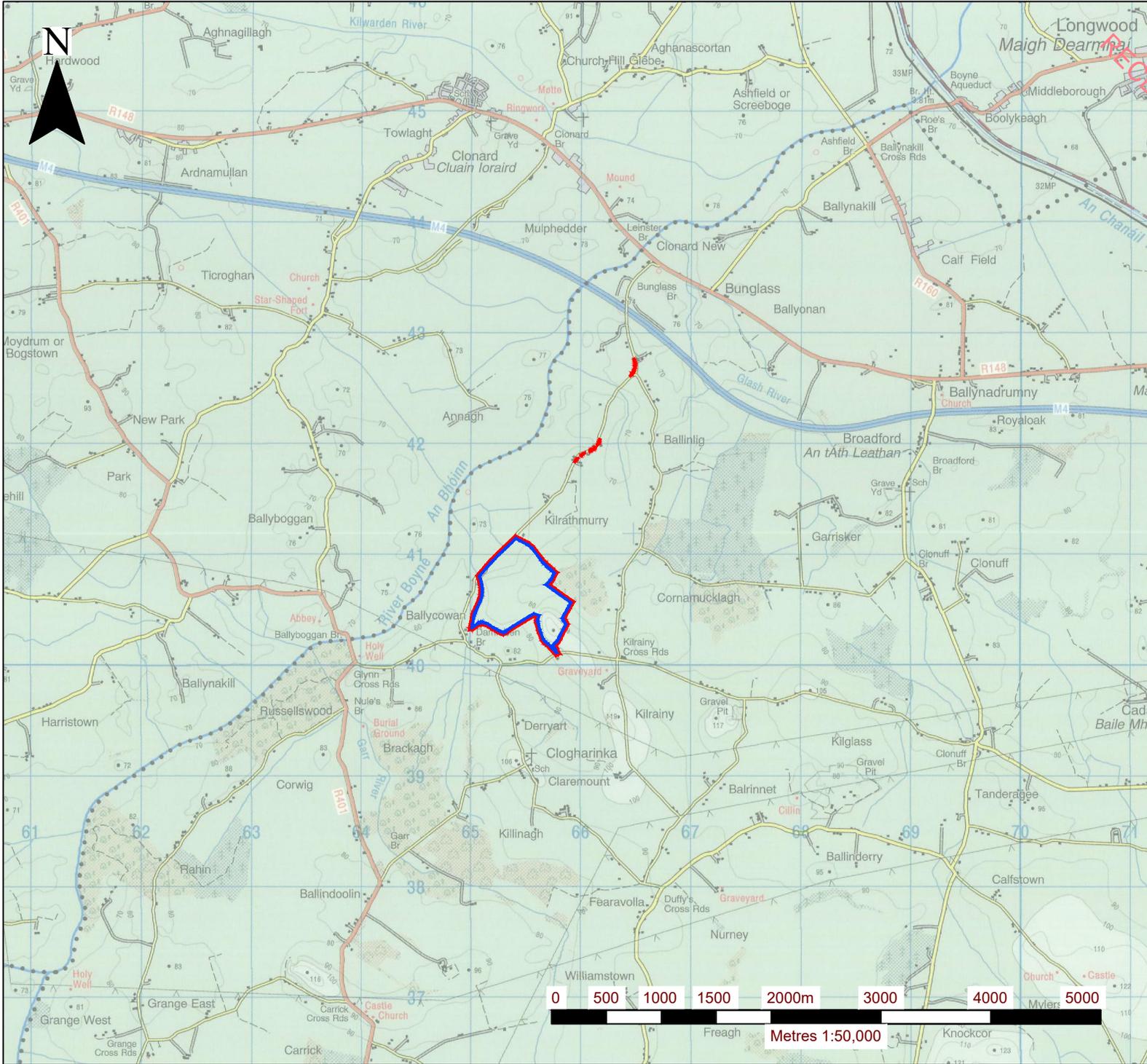
4.13 Interaction of the Foregoing

The interactions of the various potential impacts and mitigation measures have been covered, where applicable, under the relevant chapters within the EIAR.

RECEIVED: 02/10/2023

FIGURES

Figure NTS-1	Site Location Map (1:50,000)
Figure NTS-2	Site Location Map (1:10,000)
Figure NTS-3	Site Location Map (1:5,000)
Figure NTS-4	Existing Site Layout
Figure NTS-5	Proposed Site layout
Figure NTS-6	Proposed Landscape Plan
Figure NTS-7	Proposed Restoration Plan



NOTES
 Extract from Ordnance Survey 1:50,000 Ordnance Survey Discovery Series Map No.49
 Ordnance Survey Ireland Licence No. CYAL50316488
 (c) Ordnance Survey Ireland and Government of Ireland

LEGEND

-  APPLICANTS LAND INTEREST BOUNDARY (c. 51.6 ha)
-  SITE APPLICATION AREA c.51.6 ha
TOTAL APPLICATION AREA c.51.7 ha (Site & Road Works)

Kilsaran
 ideas taking shape

SLR 

SLR CONSULTING IRELAND
 7 DUNDUM BUSINESS PARK
 WINDY ARBOUR
 DUBLIN 14
 T: +353-1-2964667
 F: +353-1-2964676
 www.slrconsulting.com

KILSARAN CONCRETE UNLIMITED COMPANY
 E.I.A.R NON-TECHNICAL SUMMARY

QUARRY DEVELOPMENT AT
 KILRATHMURRY & KILRAINY
 TOWNLANDS, CO. KILDARE

SITE LOCATION MAP

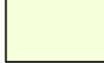
FIGURE NTS-1

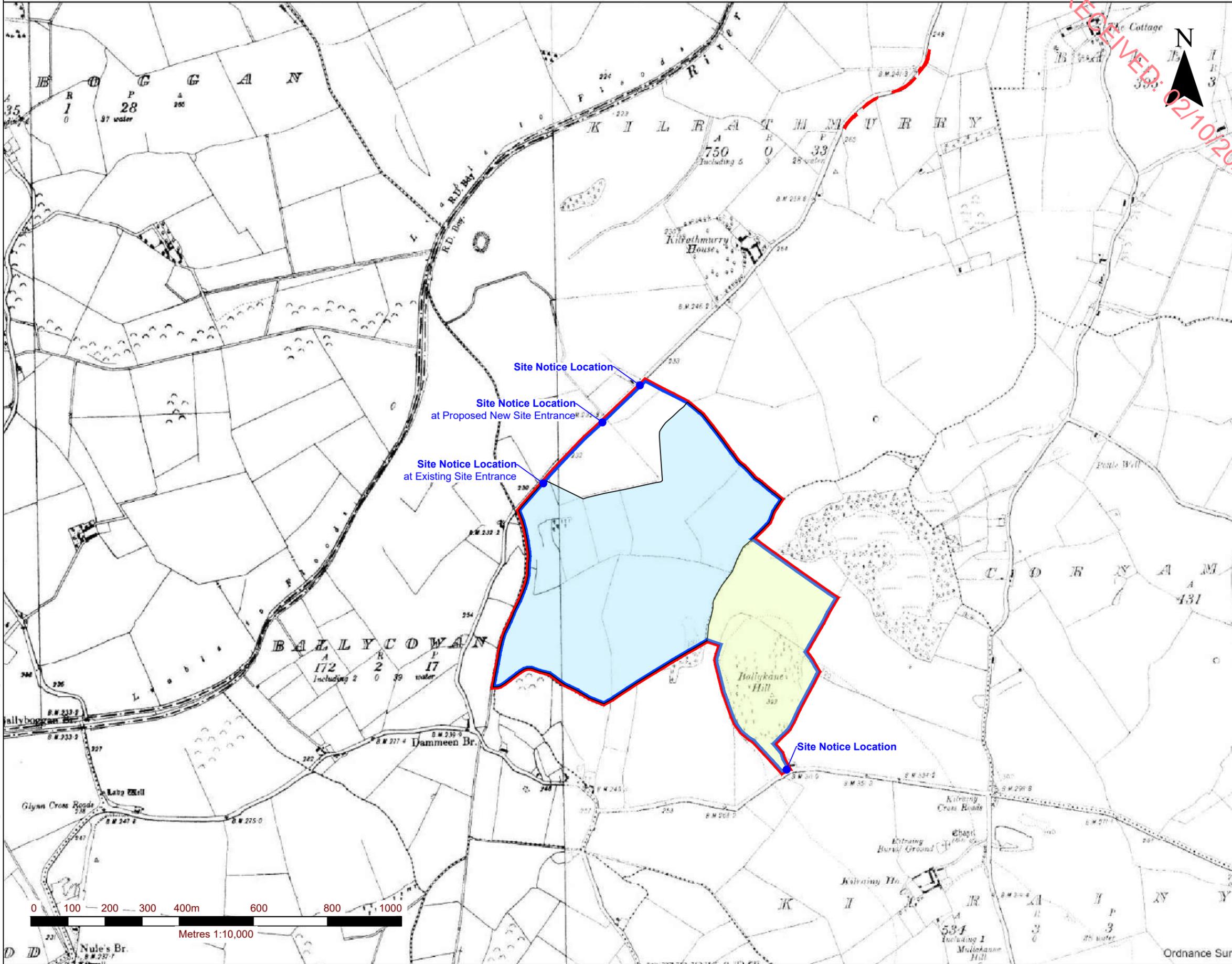
Scale
 1:50,000 @ A4

Date
 SEPTEMBER 2023

Last Edition 6 Inch Map

NOTES
 Extract from Ordnance Survey 6 Inch Raster Map Sheets No. KE002, KE003, MH046+046A, MH047
 Ordnance Survey Ireland Licence No. CYAL50316488
 (c) Ordnance Survey Ireland and Government of Ireland

- LEGEND**
-  APPLICANTS LAND INTEREST BOUNDARY (c. 51.6 ha)
 -  SITE APPLICATION AREA c.51.6 ha
TOTAL APPLICATION AREA c.51.7 ha (Site & Road Works)
 -  EXISTING SAND & GRAVEL SITE AREA P.Ref. 03/2754
 -  EXISTING QUARRY AREA P. Ref. 99/2042 (P.Ref. 16/1246)



SLR
 global environmental solutions
 SLR CONSULTING IRELAND
 7 DUNDRUM BUSINESS PARK
 WINDY ARBOUR
 DUBLIN 14
 T: +353-1-2964667
 F: +353-1-2964676
 www.slrconsulting.com

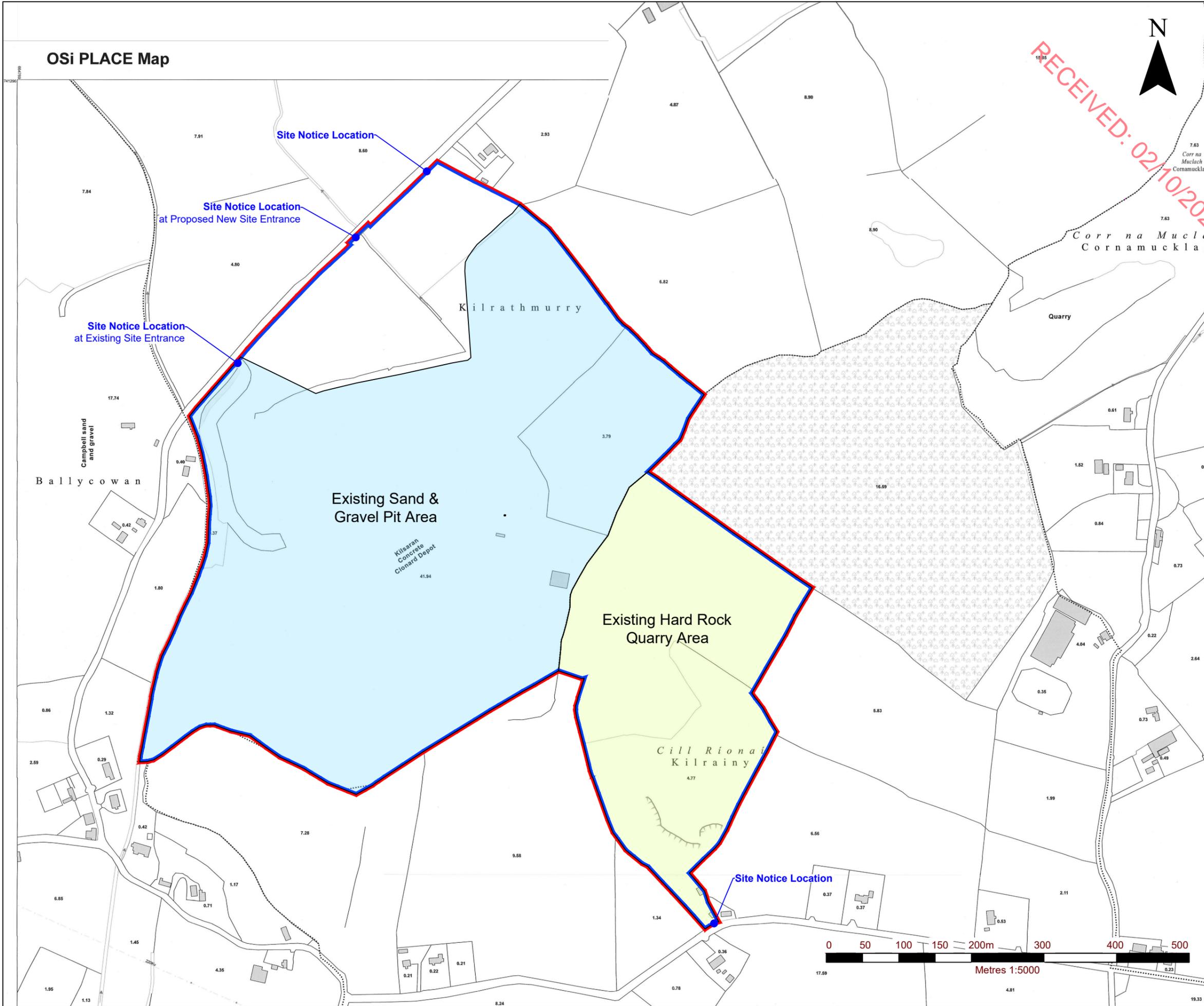
KILSARAN CONCRETE UNLIMITED COMPANY
 E.I.A.R NON-TECHNICAL SUMMARY
 QUARRY DEVELOPMENT AT
 KILRATHMURRY & KILRAINY
 TOWNLANDS, CO. KILDARE

SITE LOCATION / SITE NOTICE PLAN
FIGURE NTS-2

Scale: 1:10,000 @ A3
 Date: SEPTEMBER 2023

00036.065251.Clonard.EIAR.Fig1-2.Site Location 10000.dwg

OSi PLACE Map



RECEIVED: 02/10/2023

NOTES
 Extract from Ordnance Survey 1:5000 Sheets 3119 & 3051
 Ordnance Survey Ireland Licence No. CYAL50316488
 (c) Ordnance Survey Ireland and Government of Ireland

LEGEND

	APPLICANTS LAND INTEREST BOUNDARY (c. 51.6 ha)
	SITE APPLICATION AREA c.51.6 ha
	TOTAL APPLICATION AREA c.51.7 ha (Site & Road Works)
	EXISTING SAND & GRAVEL SITE AREA P.Ref. 03/2754
	EXISTING QUARRY AREA P. Ref. 99/2042 (P.Ref. 16/1246)

00036.065251.Clonard.EIAR.Fig1-3.Site Location 2500.dwg

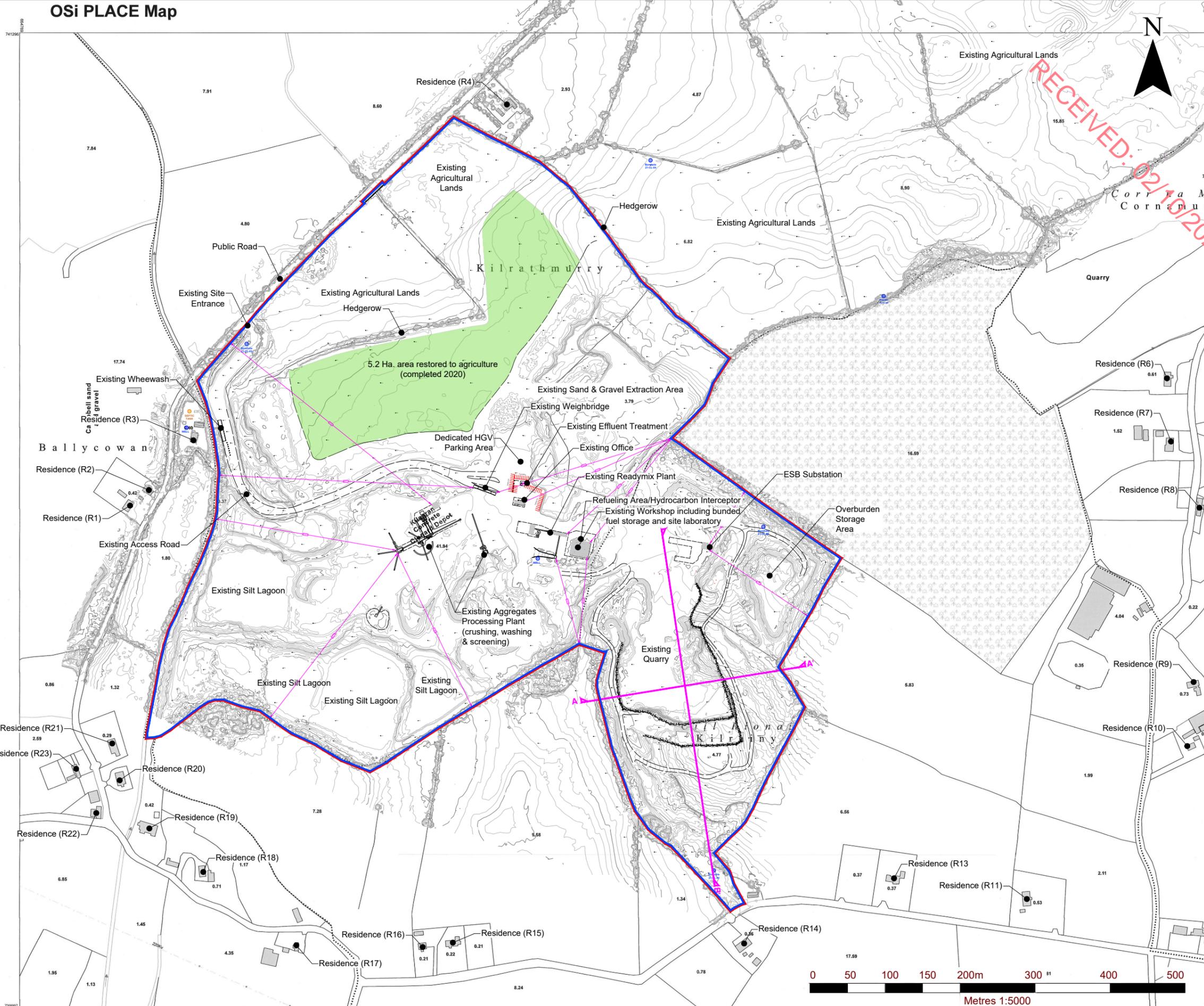


SLR global environmental solutions
 SLR CONSULTING IRELAND
 7 DUNDUM BUSINESS PARK
 WINDY ARBOUR
 DUBLIN 14
 T: +353-1-2964667
 F: +353-1-2964676
 www.slrconsulting.com

KILSARAN CONCRETE UNLIMITED COMPANY
 E.I.A.R NON-TECHNICAL SUMMARY
 QUARRY DEVELOPMENT AT
 KILRATHMURRY & KILRAINY
 TOWNLANDS, CO. KILDARE
SITE LOCATION / SITE NOTICE PLAN

FIGURE NTS-3
 Scale 1:5,000 @ A3
 Date SEPTEMBER 2023

OSi PLACE Map



NOTES
 Extract from Ordnance Survey 1:5000 Sheets 3119 & 3051
 Ordnance Survey Ireland Licence No. CYAL50316488
 (c) Ordnance Survey Ireland and Government of Ireland

- LEGEND**
- APPLICANTS LAND INTEREST BOUNDARY (c. 51.6 ha)
 - SITE APPLICATION AREA c.51.6 ha
TOTAL APPLICATION AREA c.51.7 ha (Site & Road Works)
 - AREA RESTORED TO AGRICULTURAL LANDS IN 2020 (c.5.2 HECTARES)
 - CONTOURS
 - BUILDINGS / STRUCTURES
 - CROSS SECTION LOCATIONS
 - INTERNAL SITE HEDGEROWS



SLR
 global environmental solutions
 SLR CONSULTING IRELAND
 7 DUNDRUM BUSINESS PARK
 WINDY ARBOUR
 DUBLIN 14
 T: +353-1-2964667
 F: +353-1-2964676
 www.slrconsulting.com

KILSARAN CONCRETE UNLIMITED COMPANY
 E.I.A.R NON-TECHNICAL SUMMARY
QUARRY DEVELOPMENT AT KILRATHMURRY & KILRAINY TOWNLANDS, CO. KILDARE
EXISTING SITE LAYOUT
FIGURE NTS-4

Scale: 1:5,000 @ A3
 Date: SEPTEMBER 2023

00036.065251 Clonard E.I.A.R Fig 2-1 Existing Layout.dwg

CAPTURE RESOLUTION:
 The map objects are only accurate to the

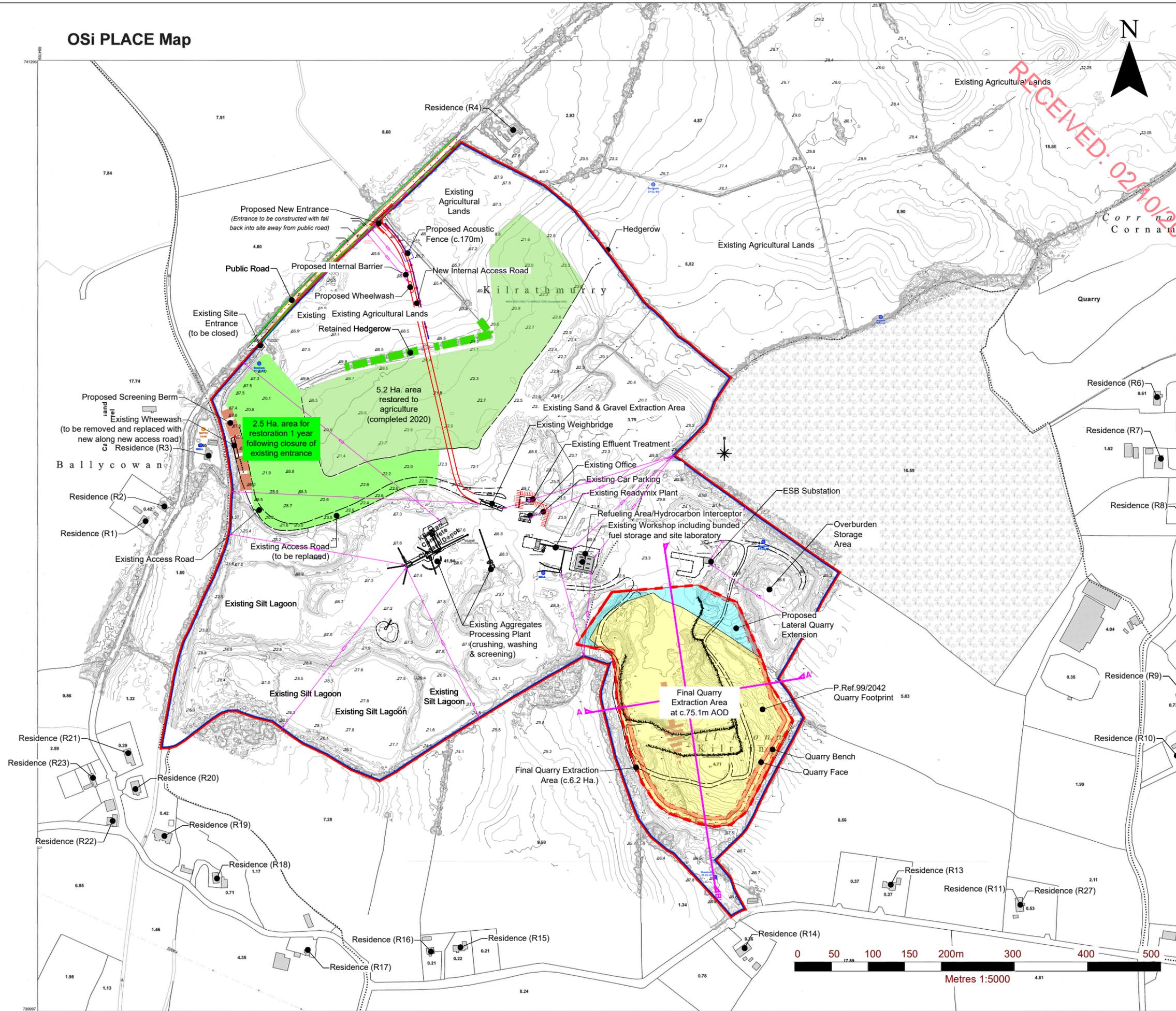
OSi PLACE Map



NOTES
 Extract from Ordnance Survey 1:5000 Sheets 3119 & 3051
 Ordnance Survey Ireland Licence No. CYAL50316488
 (c) Ordnance Survey Ireland and Government of Ireland

- LEGEND**
- APPLICANTS LAND INTEREST BOUNDARY (c. 51.6 ha)
 - SITE APPLICATION AREA c.51.6 ha TOTAL APPLICATION AREA c.51.7 ha (Site & Road Works)
 - AREA RESTORED TO AGRICULTURAL LANDS IN 2020 (c.5.2 HECTARES)
 - AREA TO BE RESTORED FOLLOWING EXISTING ENTRANCE CLOSURE (c.2.5 HECTARES)
 - CONTOURS
 - BUILDINGS / STRUCTURES
 - CROSS SECTION LOCATIONS
 - INTERNAL SITE HEDGEROWS

RECEIVED: 02/10/2023



SLR
 global environmental solutions
 SLR CONSULTING IRELAND
 7 DUNDRUM BUSINESS PARK
 WINDY ARBOUR
 DUBLIN 14
 T: +353-1-2964667
 F: +353-1-2964676
 www.slrconsulting.com

KILSARAN CONCRETE UNLIMITED COMPANY
 E.I.A.R NON-TECHNICAL SUMMARY
**QUARRY DEVELOPMENT AT
 KILRATHMURRY & KILRAINY
 TOWNLANDS, CO. KILDARE**
PROPOSED SITE LAYOUT
FIGURE NTS-5

Scale 1:5,000 @ A3 Date SEPTEMBER 2023

00036.065251 Clonard EIAR Fig 2-2 Proposed Layout.dwg



C. 215m hedge to be removed (160m south and 55m north of entrance), mostly low / maintained hawthorn, ash and hazel, also c. 15 tall / mature ash (of poor condition / structure).

Proposed 215m replacement native hedge planting (behind sightlines)

Proposed 2m tall timber acoustic fence

Agricultural land to be retained

Proposed 3,750m² native tree planting for additional screening

5.2 Ha. area restored to Agriculture (completed 2020)

One elder or hawthorn to be removed to create c. 15m gap along tree line, tall trees to be avoided

Agricultural land to be retained

5.2 Ha. area restored to Agriculture (completed 2020)

Proposed 300m² block of native tree planting to close off existing entrance

2.5 Ha. area for restoration to Agriculture within 1 year following closure of existing entrance

Proposed grassed screening berm with 900m² native tree planting

C. 80m hedge to be removed, including ash and hawthorn

Individual / small groups of hawthorn / scrub to be removed (c. 3,200m²)

Natural recolonisation taking place on former settlement lagoon

Proposed 650m² willow-alder-reed planting along edge of settlement lagoons

All existing boundary vegetation will be retained

Proposed 1,680m² planting in gaps amongst existing scrub



LANDSCAPE SCHEME

A number of landscape works will be carried out in conjunction with the commencement of the proposed development, i.e. the extraction of rock within the quarry area, as described further below and indicated on the plan to the left.

Please note that the plan also indicates the tree/shrub/hedgerow vegetation, which will require removal to facilitate the proposed development. Should planning permission be received, the affected trees are deemed to be exempt from requiring a felling licence in line with the Forestry Act 2014. Please also note that due to the density of some of the vegetation areas and/or small size of some of the affected plants, it is not feasible to identify every individual tree. Many of the trees to be removed are hawthorn, which are exempt from requiring a felling licence. Other species present within each of the affected areas are indicated on the plan.

LANDSCAPE PROPOSALS

Grassland Restoration Areas: Within one year of the access road being moved to its proposed new location, the area covering and surrounding the existing access road will be broken up, levelled, covered with topsoil (from storage on site) and restored to agricultural land. The same techniques, which have been previously employed in the restoration of the area to the north-west of the processing area, will be used.

Native Hedge Planting: A native hedge will be planted approximately 5m behind the sightlines required at the new site entrance. This hedge will replace the existing hedgerow, which will have to be removed to facilitate same. The proposed hedge mix includes Feathered Trees at a height of 2-2.5m for some immediate impact and to compensate the loss of approximately 15 mature ash to some extent.

Native Tree Planting: Blocks of native trees will be planted in a number of locations, i.e. at the new site entrance, to close off the existing site entrance, along the hedge which is crossed by the new access road and on the proposed screening berm. The planting will augment the screening of the existing boundary vegetation and will soften the appearance of the proposed berm. It will also provide cover for mammals and birds, thereby also contributing to the ecological enhancement of the site.

Lagoon Restoration: Parts of the existing silt lagoons are beginning to dry out and will be left to be recolonised by locally occurring scrub species. In order to kick-start this natural recolonisation it is proposed to plant a mix of willow, alder and reed along the driest sections of the lagoons, all of which are able to cope with the initially wet ground conditions. This planting will be carried out within one year of commencement of the proposed development.

Scrub Planting: Scrub species will be planted in gaps between existing patches of scrub, to provide additional screening in views from the south.

Refer to Planning Drawing 7A for the details on all proposed planting mixes.

PLANTING NOTES

Tree Planting: The proposed tree and hedgerow mixes contain locally occurring native species. Except for a small percentage of feathered trees along the site entrance, all stock is proposed to be supplied as transplants at 60-120cm height, as this type of stock is known to establish more successfully compared to larger stock. All plant handling, planting and establishment works will be carried out in accordance with current best practice and will take place in the appropriate planting season (e.g. bare-root planting: November to March only) and in favourable weather conditions.

Aftercare: Establishment maintenance will be carried out for 2 years following the planting works (minimum 3 maintenance visits per year; i.e. spring, summer and autumn). This will include weed control, replacement planting where required and the adjustment/removal of spiral guards.

All planting and maintenance works will be carried out by a suitably qualified landscape contractor.

NOTES

Aerial photography dated June 2021, provided by Kilsaran Concrete Unlimited Company

LEGEND

- APPLICANTS LAND INTEREST BOUNDARY (c. 51.6 ha.)
- SITE APPLICATION AREA c.51.6 ha
- TOTAL APPLICATION AREA c.51.7 ha (Site & Road Works)
- PROCESSING/STORAGE/OFFICE AREAS TO BE RETAINED FOR THE DURATION OF THE DEVELOPMENT

TREE REMOVAL

- HEDGEROWS / TREES TO BE REMOVED TO FACILITATE THE PROPOSED DEVELOPMENT

LANDSCAPE PROPOSALS

- AREA TO BE RESTORED TO AGRICULTURAL LANDS WITHIN ONE YEAR OF THE RELOCATION OF THE ACCESS ROAD
- NATIVE HEDGE PLANTING ALONG PUBLIC ROAD, TO REPLACE HEDGE REMOVED FOR SIGHTLINES
- PROPOSED 2M HIGH TIMBER ACOUSTIC FENCE ON NORTH / EAST SIDE OF NEW ACCESS ROAD
- GRASSED SCREENING BERM WITH NATIVE TREE PLANTING ON OUTER SLOPES
- NATIVE TREE PLANTING (AT OLD AND NEW SITE ENTRANCE AND TO CLOSE GAP IN EXISTING HEDGEROW)
- WILLOW-ALDER-REED PLANTING ALONG SOME EDGES OF THE SETTLEMENT LAGOONS
- SCRUB PLANTING AMONGST EXISTING SCRUB



SLR
SLR CONSULTING IRELAND
7 DUNDRUM BUSINESS PARK
WINDY ARBOUR
DUBLIN 14
T: +353-1-2964667
F: +353-1-2964676
www.slrconsulting.com

KILSARAN CONCRETE UNLIMITED COMPANY
E.I.A.R. NON-TECHNICAL SUMMARY

QUARRY DEVELOPMENT AT
KILRATHMURRY & KILRAINY
TOWNLANDS, CO. KILDARE

PROPOSED LANDSCAPE PLAN

FIGURE NTS-6

Scale 1:5,000 @ A3 Date SEPTEMBER 2023

00036.065251 Clonard EIAR Fig 2-5 Restoration Plan.dwg



RESTORATION SCHEME

The existing sand & gravel pit and processing/storage areas will be restored to agricultural land. The remainder of the site will be restored to a natural habitat. Both are beneficial afteruses, in line with the 2006 EPA Guidelines - Environmental Management in the Extractive Industry (Non-Scheduled Minerals).

RESTORATION PHASING:

Restoration Phase 1 will be carried out as soon as the area along the existing access road, which is to be closed off, is restored to agricultural land. Restoration Phase 2 will be carried out on completion of all extraction works.

RESTORATION ELEMENTS:

Agricultural land: The pit floor areas and majority of the processing area will be restored to agricultural land. Any pit faces below 1m in height will be smoothed out to tie into the adjoining land and also restored to agriculture. The respective areas will be cleared, levelled, covered with subsoil and topsoil and restored to agricultural land, using the same techniques, previously employed in the restoration of other areas throughout the site. Pit faces above 1m in height will be re-graded to slopes less than 27° (i.e. 2:1, H:V).

Hedge Planting: Native hedges will be planted in a number of locations crossing the large grassland restoration areas, in order to compensate the loss of previously removed hedgerows, and further increase the connectivity of habitats within the site, also contributing to the ecological enhancement of the site. Refer to the Hedge Mix below.

Natural regeneration: The settlement lagoons will be left to fully dry out naturally and to be colonised with scrub species. This will be aided by the willow-alder-reed mix planted in parts of the lagoons during the landscape phase. The quarry void will be cleared and also left to natural regeneration. Natural regeneration is a viable restoration tool, as can be seen in the south-western corner of the application area, where a settlement lagoon was previously located and which is now completely covered over with grass and scrub species. An area surrounding the settlement ponds will also be left for natural regeneration, as a buffer to the adjoining restored agricultural land.

GSI request: Access will be allowed to quarry faces by appropriate scientists (upon request and with due regards to Health and Safety requirements) during quarrying to check for interesting new stratigraphies / relationships as they might become exposed and to establish if the quarry / sand and gravel site is worthy of recognition post extraction and through aftercare / restoration planning. The upper faces of the quarry will be left exposed on cessation of the extraction works. Should any of the sand and gravel pit slopes be deemed of interest to the GSI, a section of these will also be retained.

GENERAL NOTES:

Grass Seeding: All grass sowing will take place, whilst suitable weather conditions prevail. The surface preparation and the sowing specifications will be as per the manufacturer's instructions.

Hedge Planting: The proposed hedge mix contains locally occurring native species. All stock is proposed to be supplied as transplants at 40-90cm height, as this type of stock is known to establish more successfully compared to larger stock. All plant handling, planting and establishment works will be carried out in accordance with current best practice and will take place in the appropriate planting season (e.g. bareroot planting: November to March only) and in favourable weather conditions.

Aftercare: Establishment maintenance will be carried out for 2 years following the planting works (minimum 3 maintenance visits per year; i.e. spring, summer and autumn). This will include weed control, replacement planting where required and the adjustment/removal of spiral guards.

All planting and aftercare will be carried out by a suitably qualified landscape contractor.

NATIVE HEDGE MIX

Double row of staggered plants, using 3 plants/metre (30cm between the rows and ca. 33cm between plants. 2,030 lin.m. / 6,090 plants in total. To be planted randomly with no more than 5 plants of the same species in a row. All plants to be protected with spiral guards. Alternatively, the hedgerows can be enclosed by rabbit proof fencing.

No.	Plant Name	Common Name	Height (cm)	Age/Pot Size	%
<i>Transplants</i>					
305	Alnus glutinosa	Common Alder	60-90	1+1	05
1,220	Corylus avellana	Hazel	60-90	1+0	20
1,820	Crataegus monogyna	Hawthorn	60-90	1+1	30
305	Prunus avium	Wild cherry	60-90	1+0	05
1,220	Prunus spinosa	Blackthorn	60-90	1+0	20
610	Rosa canina	Dog rose	40-60	1+1	10
610	Sambucus nigra	Elder	60-90	1+1	10

NOTES
Aerial photography dated June 2021, provided by Kilsaran Concrete

LEGEND

- APPLICANTS LAND INTEREST BOUNDARY (c. 51.6 ha.)
- SITE APPLICATION AREA c.51.6 ha
- TOTAL APPLICATION AREA c.51.7 ha (Site & Road Works)
- AREAS PREVIOUSLY RESTORED TO AGRICULTURAL LAND TO BE RETAINED
- TREE / HEDGE / SCRUB PLANTING CARRIED OUT DURING LANDSCAPE PHASE TO BE RETAINED
- RESTORATION PHASE 1 (TO BE CARRIED OUT ON COMPLETION OF THE RESTORATION OF THE LAND ALONG THE EXISTING ACCESS ROAD TO AGRICULTURAL LAND)
- NATIVE HEDGE PLANTING
- RESTORATION PHASE 2 (TO BE CARRIED OUT ON COMPLETION OF ALL EXTRACTION WORKS)
- AREA TO BE RESTORED TO AGRICULTURAL LANDS
- NATIVE HEDGE PLANTING
- SETTLEMENT LAGOONS AND ADJOINING LAND TO BE LEFT FOR NATURAL REGENERATION
- QUARRY VOID TO BE LEFT FOR NATURAL REGENERATION

Kilsaran
ideas taking shape

SLR
SLR CONSULTING IRELAND
7 DUNDRUM BUSINESS PARK
WINDY ARBOUR
DUBLIN 14
T: +353-1-2964667
F: +353-1-2964676
www.slrconsulting.com

KILSARAN CONCRETE UNLIMITED COMPANY
E.I.A.R. NON-TECHNICAL SUMMARY

QUARRY DEVELOPMENT AT KILRATHMURRY & KILRAINY TOWNLANDS, CO. KILDARE

PROPOSED RESTORATION PLAN

FIGURE NTS-7

Scale: 1:5,000 @ A3
Date: SEPTEMBER 2023