

Non-Technical Summary

Noel Lawler Sand & Gravel Ltd - Waste Licence Application

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NON-TECHNICAL SUMMARY

1. INTRODUCTION

The following Non-Technical Summary (NTS) has been provided in accordance with the requirements of Article 12 (1) (u) of the Waste Management (Licensing) Regulations, S.I. 395 of 2004, as amended.

Noel Lawler Sand & Gravel Ltd. (Lawler Ltd) intend to apply to the Environmental Protection Agency (EPA) for a waste licence for the development and operation of a soil recovery facility on lands at Portersize, Ballitore, Co. Kildare (Irish Grid Reference: E281145, N195234).

It is proposed to import approximately 1,299,791m³ or 2,339,624 tonnes of inert soil and stone material for the infilling and restoration of an existing and future quarry void with inert soil and stone over an area of approximately 18.95 hectares. It is proposed to return the land to a beneficial use (agriculture).

The proposed infilling of the quarry void with inert soil and stone will require a Waste Management Licence (WML) in accordance with the Fourth Schedule of the Waste Management Act 1996 (Office of the Attorney General 1996), as amended.

A copy of the Environmental Impact Assessment Report (EIAR) will be submitted to the Agency with the Waste Licence Application. A planning history for the Site is included in EIAR Section 2.2 of Chapter 2.

2. BACKGROUND TO THE PROPOSED DEVELOPMENT

A sand and gravel quarry has existed at the current Lawler Quarry site in Portersize, Ballitore, Co. Kildare since at least October 1964. The subject site is located approximately 13km east of Athy and 9.7km northwest of Baltinglass, in a predominantly rural setting with the surrounding area characterised by open countryside and tillage lands with typical patterns of rural one-off housing.

The site currently comprises a worked-out sand and gravel pit and existing quarry infrastructure including internal roads, site office (portacabin), weighbridge, wheel-wash and welfare facilities. Five settlement ponds (partially infilled) are located in the northwest of the site. An aggregate processing area (wet and dry sorting) is located in the central area of the existing quarry void along with a number of closed system/recycling washing lagoons and aggregate stockpiles. A partially vegetated raised bund exists along the northern site perimeter.

The planning application boundary area measures approximately 34.25 hectares which is contained within a landholding in the control of Lawler Ltd., which measures approximately 65.2 hectares. The existing quarry void measures approximately 10.74 hectares. The proposed development being applied for under this current waste licence application includes for the infilling and restoration of the existing and future quarry void, over an area of approximately 18.95 hectares (extent of current permitted extraction boundary).

The existing operational Lawler Ltd. quarry is permitted under Kildare County Council planning reference no. 07/723 and An Bord Pleanála reference no. 09.226857. The planning permission for the quarry extraction was extended by four years to 31st December 2021 under planning reference no. 17/1107 (extension of duration).

A planning application for the infilling and restoration of the quarry void at the existing site was submitted to Kildare County Council in November 2020. The application included an EIAR and Natura Impact Statement (NIS).

In response, Planning permission was subsequently granted by Kildare County Council on 14th July 2021 (Pl. Ref 20/1329), subject to 29 conditions, the majority of which relate to protection of the environment.

The current proposal is for the acceptance of up to 100,000 tonnes of inert soil/stone (non-hazardous) per annum, recovered from construction and demolition sites in the region. No processing, grading or alteration of this material is proposed, other than spreading and compaction in the existing quarry void.

The site and proposed activities do not come under the EC (Control of Major Accident Hazards involving Dangerous Substances) Regulations, 2006.

3. PLANNING & WASTE MANAGEMENT POLICY

The Department of the Environment, Climate and Communications published its 'Waste Action Plan for a Circular Economy' in early September 2020. This new national waste policy will inform and give direction to waste planning and management in Ireland over the coming years. The proposed development by Lawler Ltd. provides a beneficial route for the re-use of inert waste soil and stone in the restoration of the site to return the land to agricultural use.

The Eastern Midlands Region Waste Management Plan, 2015-2021, was launched in May 2015 in compliance with the European Commission's waste framework legislation. The purpose of this Plan is to set out the strategy, policies and actions required to manage waste in a safe and compliant manner in the Eastern Midlands Region Region.

The 2015 Plan notes that construction and demolition waste is primarily collected by private authorised collectors in the region, with stone and soil accounting for 68% of this waste collected. As such, the 2015 Plan notes that it is imperative that construction and demolition waste plans for developments are put in place and enforced, and furthermore, there are appropriate processing facilities in place to increase reuse, recycling and recovery in this particular waste stream.

The Kildare County Development Plan 2017 – 2023 (CDP), incorporates the aims, objectives, policies and guidelines to provide for the proper planning and sustainable development of County Kildare. Relevant to the Lawler Ltd. site, one of main mandatory objectives of the CDP is the, '*provision of infrastructure including transport, energy and communication facilities, water supplies, waste recovery and disposal facilities, wastewater facilities and ancillary facilities*'.

The CDP aim for public and utility infrastructure within County Kildare is set out within Chapter 7 of the Plan as follows, '*To develop, protect, improve and extend water, waste water and flood alleviation and environmental services throughout the county in conjunction with other statutory bodies and to prioritise the provision of water services infrastructure to complement the overall strategy for economic and population growth and to achieve improved environmental protection.*'

The proposed quarry restoration is consistent with the policies and objectives set out in the Kildare County Development Plan 2017 - 2023. The restoration of an existing facility to a beneficial use (agriculture) that has a proven operational record, represents the sustainable use of resources and infrastructure of the existing quarry facilities. The EIAR (attached to this application) demonstrates that the proposed restoration can be carried out without adverse impacts on the environment.

4. CLASSES OF ACTIVITY

The Class(es) of Activity as specified in the Third and Fourth Schedule of the Waste Management Act, 1996 (as amended), are as follows:

Table 1 Class(es) of Activity Fourth Schedule of WMA Act, 1996

Fourth Schedule	
Class	Description
R5 (Principle Activity)	Recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials.
R13	Storage of waste pending any of the operations numbered R1 to R12

5. DESCRIPTION OF THE PROPOSED DEVELOPMENT

Site Location

The site is located in the townland of Portersize, which is approximately 1.5km to the southeast of Ballitore, Co. Kildare. The site comprises a quarry void area which has been used for sand and gravel extraction since at least 1964. The Irish Grid Reference co-ordinates for the approximate centre of the site is E281145, N195234. The site is accessed from an existing entrance off the R747 Regional Road. The R747 travels between Baltinglass, Co. Wicklow to the southeast and the M9 Motorway, which is approximately 3.25km to the west of the site.

Site Description

The proposed development being applied for under this waste licence application includes for the infilling and restoration of the existing and future quarry void over an area of approximately 18.95 ha (extent of current permitted extraction boundary).

The site currently comprises a worked-out sand and gravel pit which has been partially re-colonised with vegetation. The northern perimeter of the site is dominated by mixed conifer woodland which screens the quarry void from surrounding residential receptors. The eastern and southwestern site boundaries contain areas of improved agricultural grassland and scrub. The site topography ranges from 110m ordnance datum (mOD) at its lowest point in the quarry void to a high point of 135mOD at the southern site perimeter.

Site Activities

It is proposed to import approximately 1,299,791m³ or 2,339,624 tonnes of inert soil and stone material for the infilling and restoration of an existing and future quarry void with inert soil and stone over an area of approximately 18.95 hectares. As per the current granted Kildare County Council planning

permission (Pl. Ref 20/1329) conditions, a maximum of 100,000 tonnes of material may be imported per annum.

The proposed development also includes the following restoration measures:

- Infill, grading and restoration of two settlement ponds, totalling 1.065 ha (two settlement pond areas in NW of site approx. 0.788 and 0.277 ha).
- Restoration of three smaller ponds, totalling 0.44 ha, in order to provide an area of aquatic habitat (three ponds are approx. 0.321, 0.0835 and 0.0358 ha).
- Planting of a raised soil bund with native tree species, along northern site boundary (planting area approx. 0.48 ha).
- Grading of a pre-existing soil mound at the site entrance (approx. 1.11 ha).
- Development and management of an artificial sand martin nesting site, to replace the existing nesting location identified in the soil mound at site entrance.
- Construction of a soil quarantine shed (approx. 180m² in area, 15m height), inspection area and re-fuelling area (hardstanding) located north of the existing site office (approx. 400m² hardstanding area).
- Associated minor works to include site access road improvements (resurfacing), upgrade of drainage infrastructure including new fuel/oil interceptor and surface drains on hardstanding, refurbishment/repair of existing site office and weighbridge.

There will be a phased restoration of the quarry void working from the base of the void vertically building up soil and stone. The material will be spread in layers, each of approximately 1 to 2 m depth, up to the required ground contour level. During site restoration works the upper surface of the backfilled materials will be graded to ensure surface water run-off falls to drains and swales located around the perimeter of the infill area as it is being backfilled.

Following completion of the infilling works, topsoil will be placed (approximately 300 mm depth) and the soils will be rolled and reseeded with grasses to bring the site into agricultural use.

The proposed development will utilise the existing quarry infrastructure including internal roads, site office (portacabin), weighbridge, wheel-wash, welfare facilities and other ancillaries to complete the works.

Waste Acceptance Procedure

The following procedures will be established by Lawler Ltd. to ensure that only suitable material is accepted and deposited in the quarry void, in accordance with both the planning permission and waste licence, together with any conditions attached to either.

Waste Site Pre-Approval Procedure

- All hauliers must hold a valid waste collection permit which shall be presented to the facility prior to transportation of material onto site.
- Waste Acceptance Criteria (WAC) results and all site investigation and laboratory reports (samples taken as per procedure below) shall be presented to the facility for review prior to material acceptance.
- For sources of material, if WAC testing results are not provided; Lawler Ltd. personnel will undertake a site visit to the donor site and take soil samples for WAC testing.
- If the material is deemed suitable for acceptance, then the customer will be informed in writing and notification will be given for presentation at on-site verification. Additionally, a Lawler Ltd. New Site Notification sheet must be completed by a competent person and reviewed by Lawler Ltd. A Lawler Ltd. chain of custody booklet shall also be issued to the site.

Waste Intake Sampling Procedure

An invasive species risk assessment will be carried out by appropriately skilled persons. Visual and olfactory analysis and site visits carried out to donor sites if necessary.

Waste Inspection Procedure

The Waste Inspection Procedure describes the inspection process of all material imported to the site for deposition in the quarry void. It provides a list of visual and olfactory signals for refusal such as material with a strong decomposing odour or containing hydrocarbons indicated by iridescence sheen on water, odour, or discolouration.

Waste Acceptance and Rejection Procedure

- Each consignment arriving at the facility will be inspected to ensure it complies with what was agreed in the pre-approval stage.
- All loads in and out of the facility shall be weighed and issued with a docket providing the type of waste and customer details.
- Any material which does not comply at the pre-approval stage will be rejected. Any loads which have been tipped and subsequently found to be unsuitable will be reloaded and directed off site or to the quarantine area pending collection by the customer.
- If ongoing testing of material returns concentrations above specified parameter concentrations, the consignment containing the elevated parameter will be excavated and returned to the customer. Intake of the material will only resume if both the site and 'B' sample are within the acceptance limits and sampling will increase if necessary. If a second sample exceeds any parameter, then acceptance will permanently cease from that site.

Waste Intake Log Sheet

A Waste Intake Log Sheet shall be filled out by the weighbridge clerk and signed by the driver for all loads in and out.

The site-specific procedures will ensure the material deposited is safe and suitable for importation. Imported waste shall not be processed in any capacity on site. If material arrives to site and is deemed to be unsuitable for depositing in the quarry void it will be refused, or if necessary to retain that material at a quarantine area until such a time that it is ready to be transported elsewhere for disposal as appropriate.

Trucks will be weighed upon arrival at the site at the proposed onsite weighbridge. Following inspection of documentation in line with the acceptance procedures, the material will be visually inspected and sampled if necessary.

The imported material shall be deposited in such a manner as to achieve the proposed final profile as per the Restoration Plan.

6. RAW & AUXILIARY MATERIALS AND ENERGY USE

Raw materials and energy that will be used at the site include:-

- > Diesel for plant and machinery;
- > Electricity;
- > Water.

The existing fuel storage on the site consists of two above-ground steel diesel fuel storage tanks; one 3,600 litre (L) tank and one 1,800 L tank, located to the north of the wheel-wash. These tanks are constructed on sealed concrete surfaces and bunded to provide a storage volume equivalent to 110% of the tank storage volume. Both of these tanks are to be removed prior to the start of the infill operations in 2022. No fuel, oil or other hydrocarbons will be stored on the site.

A dedicated re-fuelling area is proposed to be constructed on the new concrete hardstanding, adjacent to the soil inspection area. Vehicles and plant will be refuelled by a truck or mobile bowser as appropriate. An oil/fuel interceptor and catch-drains will be included in the hardstand construction, and appropriate bunding provided around the fuel tanks. All vehicle re-fuelling operations will take place in this designated area.

7. ENVIRONMENTAL SETTING

Based on the Geological Survey Ireland (GSI) subsoils map (www.gsi.ie) and the EPA published soils map (www.epa.ie), the site is underlain by Limestone Sands & Gravel, Sandstone & Shale Till and Limestone Till. The subsoils encountered during the ground investigation are similar to the overburden exposed on the quarry sides, i.e. poorly sorted SAND and GRAVEL with occasional horizons of SAND or SILT dominated layers.

Based on the GSI bedrock map (www.gsi.ie), the majority of the site (which includes all of the proposed infill area) is underlain by Kipperkevin Formation which comprises greywacke and shale, while the northwestern corner of the site is mapped to be underlain by the Carrighill Formation which consists of calcareous greywacke, siltstone and shale.

Based on the GSI mapping, the groundwater in the area of the site has mainly a 'High' groundwater vulnerability rating. This does not account for the extraction at the site which has reduced the thickness of sand and gravel within the extraction footprint. Based on the drilling undertaken at the site, a High rating is applicable to the south of the extraction area and an Extreme vulnerability rating is applicable to the north of the extraction area. Backfilling the site with inert material could be viewed as a good approach to lowering the vulnerability rating, i.e. provide better aquifer protection in the long term. The EPA has concluded that the groundwater within the aquifer can presently be classified as being of 'Good' status. The groundwater underlying the site is classed as been 'Not at risk'.

The site is not located in a groundwater Source Protection Areas based on GSI records. There are no mapped Public Water Supplies or Group Scheme wells in the area of the site (NFGWS registered group schemes). There are 12 no. GSI mapped wells within 2km of the proposed development site. The closest mapped GSI wells to the site are to the east/southeast which is up-gradient to the site in terms of groundwater flow direction. The other mapped GSI wells, which are located at least 1km to the northwest, are not hydrologically connected to the site as they are within a separate groundwater catchment to that of the proposed site.

The site is located in Greese River (Greese_SC_010) surface water catchment. The Greese River flows in a southerly direction approximately 500m to the west of the site. The site itself drains to the Crookstown Stream which flows westerly along the northern boundary of the site prior to merging with the Greese River approximately 500m downstream of the site. The EPA/WFD river water body quality status for the Greese River upstream and downstream of the site is “Poor” and “Moderate” respectively. The Crookstown Stream has been given a “Moderate” status.

There are no known areas of soil contamination on the site. During the site walkovers and site investigation, no areas of contamination concern or contaminated soils were identified. The walkover also included areas where machinery and plant is located, and no areas of particular contamination concern were noted or observed.

8. ENVIRONMENTAL IMPACT ASSESSMENT REPORT

An EIAR will be submitted to the EPA with the application. Pertinent information has been summarized below. Likely significant effects have been included in Table 2 below.

Flora and Fauna

The flora and fauna of the subject site were assessed by means of a desk study of published information pertinent to the site and surrounding area and by field surveys of the site including habitat, bird and mammal surveys and general observation work.

The closest designated site to the proposed development site is Ballycore Rath proposed Natural Heritage Area which is located approximately 0.5km to the south of the site. There is no groundwater or surface water connectivity between this designated site and the proposed development. The only downstream designated site that is hydrologically connected to the proposed development is the River Barrow and River Nore Special Area of Conservation (SAC) [002162], which is located approximately 16km downstream of the site. Hydrological connectivity to this SAC is via the Crookstown Stream adjacent to the northern site boundary, which is a tributary of the Greese River located approximately 500m to the west of the site boundary. The Greese River is a tributary to the River Barrow and River Nore SAC.

The majority of the existing quarry excavation area consists of *Active quarries and mines (ED4)* and *Building and artificial surfaces (BL3)*. Some undisturbed areas of the quarry void were classified as *Recolonising bare ground (ED3)*. Within the eastern portion of the quarry there is a small area of *Dry meadows and grassy verges (GS2)*. The active quarry is bordered to the south, east, and west by *Improved agricultural grassland (GA1)* bordered by *Treelines (WL2)* and *Hedgerows (WL1)*.

Various artificial settlement ponds occur within the quarry boundary and are classified as *Other artificial lakes and ponds (FL8)*. A tributary of the River Greese, the Upper Crookstown Stream, drains the land within and surrounding the north of the quarry. This has been classified as *Eroding/upland rivers (FW1)*. A planted (*Mixed*) *conifer woodland (WD3)* occurs outside the north of the quarry void and is dominated by Sitka spruce (*Picea sitchensis*) and Norway spruce (*Picea abies*). None of the habitats recorded within the proposed development site conform to habitats listed under Annex I of the EU Habitats Directive.

No potential for direct or indirect effects have been identified on any designated sites of National or International importance. Provided that the proposed development is operated in accordance with the design, best practice and mitigation that is described within this application, significant impacts on ecology are not anticipated.

Land, Soils and Geology

Limestone sand and gravels are mapped in the central area of the site with sandstone and shale tills on the east and west of the site with limestone tills on the north-western section of the site. The underlying bedrock is SHALE.

The subsoils encountered during the drilling investigation are similar to the overburden exposed on the quarry sides, i.e. poorly sorted SAND and GRAVEL with occasional horizons of SAND or SILT dominated layers. The drilling investigation shows that the overburden depth decreases to the east/southeast which is consistent with topography (i.e. decreasing overburden depth with elevation).

There are no known areas of soil contamination on the site. During the site walkovers, no areas of contamination concern were identified. The walkover also included area where machinery and plant is located, and no areas of particular contamination concern were noted or observed.

There will be a phased restoration of the quarry void working from the base of the void vertically building up soil and stone. The material will be spread in layers, each of approximately 1 to 2 m depth, up to the required ground contour level. If required, the layers will be compacted using the dozer which is spreading the material.

The inert nature of the proposed material for importation means no negative effects on land, soils, geology or human health will occur. Best practice measures will be employed regarding fuels and oils. Once restoration works are completed, the site will be reinstated to deliver high quality restoration and long-term agricultural benefits.

An assessment of the operational stage has been completed, along with a cumulative assessment for this stage. An assessment of the potential health effects in relation to soils and geology has also been undertaken. Based on the above, and with implementation of the outlined mitigation measures, no significant impacts on human health and the soils and geology environment are predicted to occur.

Hydrology and Hydrogeology

Chapter 7: Hydrology and Hydrogeology of the EIAR provides a description of the existing hydrogeological and hydrological environment for the proposed development site and an assessment of the likely impacts associated with the operational phases of the project. Where required, appropriate mitigation measures to limit any identified significant effects to hydrology and hydrogeology are recommended.

The hydrology and hydrogeology aspects of the site have been characterised using both desk study and site investigation information. An initial site walkover and baseline mapping was undertaken in January 2020. Site investigations and baseline monitoring of surface water and groundwater was completed between April and August 2020.

Regional and Local Hydrology

Regionally the proposed site is located in the Barrow River surface water catchment within Hydrometric Area 14 of the South-Eastern River Basin District (SERBD).

On a more local scale, the proposed site is located in Greese River (Greese_SC_010) surface water catchment. The Greese River flows in a southerly direction approximately 500m to the west of the site. The site itself drains to the Crookstown Stream which flows westerly along the northern boundary of the site prior to merging with the Greese River approximately 500m downstream of the site.

Most recent data (2017) show that the upstream EPA monitoring location is given a Q rating of 3 (Poor Status) and the downstream location a Q rating of 3-4 (Moderate).

Site Drainage

There are no natural drainage features or manmade drains within the site. The majority of the rainfall landing on the site infiltrates into the underlying sand and gravel deposits. There are 3 no. lagoons (closed network) located in the central area of the on-site and these are used for the recycling of water used in aggregate washing. There is a manmade pond located on the northwest of the site, adjacent to the Crookstown Stream (from which the pond draws water), from which water is occasionally pumped to maintain water levels in the 3 no. washing lagoons. These lagoons will be infilled as part of the proposed development.

There is a bored well (W1) located next to the manmade pond which is also used to top-up the washing lagoon. There are 4 no. additional ponds located on the northwest of the site, two of which are partially infilled. There are no surface water discharges from the site.

Details concerning proposed drainage upgrade works (to a French drain) at the site entrance road junction with the R747 have been submitted and approved by Kildare County Council.

Drinking water is sourced from the quarry operators private well (PW1) which is located close to the site entrance.

It is proposed to manage wastewater from the staff welfare facilities in the site office building by means of a sealed storage tank, with all wastewater being tankered off-site by a permitted waste collector to a licensed wastewater treatment plant. It is not proposed to treat wastewater on-site.

Flood Risk Identification

Based on available information including from the OPW's flood hazard mapping, CFRAM Preliminary Flood Risk Assessment (PFRA) maps, Department of Environment, Community and Local Government on-line planning mapping and historical mapping (i.e. 6" & 25" base maps), there is low potential risk of flooding at the development site.

Hydrogeology

The sand and gravels which overlie the SHALE in the area of the site have not been classified by the GSI as an aquifer, as the deposits appear to be relatively thinner and isolated (by till deposits) from the more extensive Narraghmore Locally Important Gravel Aquifer, which is located ~0.6km to the west of the site.

The groundwater level monitoring carried out between June and September 2020 showed that the sand and gravels are unsaturated at least during the summer and autumn months. During this monitoring period the groundwater levels across the site typically varied between approximately 95mOD (@ MW1) and 127m OD (@ MW3). Based on the measured groundwater levels, the local groundwater gradient (flow direction) is westerly/north-westerly towards the Crookstown Stream.

Based on available Geological Survey Ireland (GSI) mapping, the groundwater in the area of the site has mainly a 'High' groundwater vulnerability rating. This does not account for the extraction at the site which has reduced the thickness of sand and gravel within the extraction footprint. Based on the drilling undertaken at the site, a 'High' rating is applicable to the south of the extraction area and an 'Extreme' vulnerability rating is applicable to the north of the extraction area. Backfilling the site with inert material could be viewed as a good approach to lowering the vulnerability rating, i.e. provide better aquifer protection in the long term.

There are no mapped Public Water Supplies or Group Scheme wells in the vicinity of the proposed development (NFGWS registered group schemes).

There are 12 no. GSI mapped wells within 2km of the proposed development site. The closest mapped GSI wells to the site are to the east/southeast which is up-gradient to the site in terms of groundwater flow direction. The other mapped GSI wells, which are located at least 1km to the northwest, are not hydrologically connected to the site either as they are within a separate groundwater catchment to that of the proposed site.

A well survey undertaken for houses within 250m of the proposed site identified 5 no. private wells (PW1 – PW5). These private wells are located along the public road to the south/southeast of the proposed site and are therefore up-gradient of the site with regard groundwater flow. PW1 is the drinking water supply well to the quarry and proposed development.

Receptor Sensitivity

The primary risk to surface water in the vicinity of the site would be from potential oil/fuel leaks and spills. There are however no proposed direct discharges to water courses.

The primary risk to groundwater (and therefore the wells in the vicinity of the site) would be from hydrocarbon spillage.

Mitigation measures will ensure that potential contamination sources and suspended sediments are to be carefully managed at the site during the operational phase of the development. Therefore, with the implementation of the outlined mitigation measures in Chapter 7, no significant impacts on hydrology and hydrogeology are predicted to occur.

With respect to potential health effects, there will be best practice controls in place to ensure any potential sources of contamination on the site will be managed appropriately and the volumes present will be small in the context of the scale of the project. The potential residual impacts associated with groundwater contamination and subsequent health effects are negligible.

Due to the lack of significant residual impacts from the proposed development that would impact the wider environment, there will be no significant cumulative impacts to water and hydrogeology resulting from this project, and other local existing developments, projects and plans.

Air and Climate

The site is located in a rural area, approximately 1.5 km to the southeast of Ballitore, Co. Kildare. The primary land-use in the vicinity of the site comprises a mix of agricultural land and one-off housing.

The Environmental Protection Agency (EPA) has designated four Air Quality Zones for Ireland:

- > Zone A: Dublin City and environs
- > Zone B: Cork City and environs
- > Zone C: 16 urban areas with population greater than 15,000
- > Zone D: Remainder of the country.

These zones were defined to meet the criteria for air quality monitoring, assessment and management described in the Framework Directive and Daughter Directives. The site of the proposed development lies within Zone D, which represents rural areas located away from large population centres.

The air quality in the vicinity of the proposed development site is typical of that of rural areas in the east of Ireland, i.e. Zone D. The EPA publishes Air Monitoring Station Reports for monitoring locations in all four Air Quality Zones. Data is available for Newbridge, Co. Kildare, in the report, 'Ambient Air Monitoring At Newbridge, Co. Kildare 1st October 2009 to 24th May 2010'. This monitoring location lies within Zone C however, which comprises urban areas with populations greater than 15,000. Lower measurement values for all air quality parameters would be expected for the proposed development site as it lies in a rural location, within Zone D.

More recent data is also available for Ozone at the Bray monitoring station which is located approximately 50km to the northeast of the site. Similar measurement values for ozone would be expected for the proposed development site as it also lies in a rural location, within Zone D.

County Kildare has a temperate oceanic climate, resulting in mild winters and cool summers. The Met Éireann weather station at Casement Aerodrome is the nearest weather and climate monitoring station to the proposed development site, located approximately 40km to the northeast of the site. The wettest months are October and December, and February is usually the driest. July and August are the warmest months with average temperatures of 15.7° Celsius.

Dust Monitoring

The extent of dust generation at any site depends on the type of activity undertaken, the location, the nature of the dust, i.e. soil, sand, etc., and the weather. In addition, dust dispersion is influenced by external factors such as wind speed and direction, and/or periods of dry weather.

Emission limit values for dust have been set out in Condition 19 of the existing quarry site planning permission (An Bord Pleanála PL 09.226857, Kildare County Council Pl. Ref. No. 07/723). The emission limit values for dust is set at 350 mg/m²/day averaged over 30 days when measured at the boundary of the site. These emission limit values are in accordance with EPA guidelines contained in 'Environmental Management in the Extractive Industries' (2006) and the DECC guidelines, 'Quarries and Ancillary Activities, Guidelines for Planning Authorities' (2004).

Baseline Dust Monitoring

MKO conducted one round of dust monitoring to provide an updated baseline for the site and to be used for the purposes of the EIA. Samples were collected at three fixed locations at the site (DM01, DM02 and DM03) over a 30-day sample period.

The results show that total depositional dust levels measured at DM01, DM02 and DM03 were below the 350 mg/m²/day limit value over the monitoring period. The maximum reported value for total dust was 28.39 mg/m²/day at DM02. The reported inorganic particulate fraction (that fraction representative of site quarry activity) was 4.94 mg/m²/day at DM02.

It is noted that the inorganic particulate fraction from all three samples was reported significantly below the 350 mg/m²/day limit value.

Potential impacts from the proposed development are described in Chapter 8: Air & Climate of the EIAR. Where a negative impact was identified, the appropriate mitigation measure is also described in this section of the EIAR and will be put in place to ensure that there will be no adverse impacts on air quality and climate.

Noise and Vibration

A baseline noise assessment was undertaken by Damian Brosnan Acoustics in March 2020 on behalf of Lawler Ltd. There are no noise receptors on the proposed development site itself. Two dwellings lie immediately adjacent to the site access road, one of which lies adjacent to its junction with the R747. Including these, there are 19 detached dwellings within 500 m of the proposed development site boundary.

Outside the proposed development site boundary, the surrounding land use is agricultural in character. However, the soundscape is entirely dominated by road traffic noise, chiefly due to R448 traffic which is relatively level and straight at this location, resulting in elevated traffic speeds and open propagation. Other roads including the R747 see intermittent traffic throughout the day. A baseline noise survey undertaken in the surrounding area on 5th March 2020 confirms the dominance of traffic noise. Noise emissions from existing quarry operations are slightly audible at some receptors.

Minor enabling works will be required to facilitate the proposed development. Noise levels attributable to these at surrounding receptors will be lower than the 65 decibel (dB) criterion recommended by BS5228-1:2009. It follows that construction phase noise impacts will be neutral, imperceptible and temporary.

It is proposed to import inert soil and stone to the site. The proposed finished topography will follow the surrounding terrain. At all receptors, the averaged total noise emissions from all construction sources occurring during any one-hour period throughout the project will be lower than identified criteria. At two dwellings adjacent to the site access road, impacts will represent a continuation of existing impacts associated with the existing sand and gravel quarry. No change will arise here, and thus effects will remain as at present.

At all other dwellings, the proposed development will give rise to neutral impacts and effects, increasing to slight negative at two dwellings served by the cul-de-sac to the east towards the end of the project when operations occur in the southeast part of the site. Emissions will be inaudible or barely audible at worst. No cumulative impacts are predicted.

Landscape and Visual

The Landscape & Visual assessment is based on desk study of the study area, field surveys of the site and surrounds and the use of photographs from representative viewpoints of the site. The landscape of the area is described in terms of its existing character, which includes a description of the physical and visual character, landscape values and the landscape's sensitivity to change. The potential impacts in both landscape and visual terms are then assessed, including cumulative impact.

As part of the assessment, photos were taken to represent a variety of potential views of the proposed development within 5km of the site. The choice of photo locations is influenced by both the views available and the type of viewer. These include photo locations on regional and local roads at varying distances from the site. Care was taken to provide photos from various elevations, distances and orientations.

The site comprises one quarry void area of approximately 10.74 ha, with the site topography ranging from 120m above ordnance datum (mAOD) at its lowest point in the quarry void to a high point of 138mAOD at the southern site perimeter. This area's dominant landscape characteristics are the undulating landform and the field patterns as defined by hedgerows and tree lines.

Landscape Effects

The landscape effects of the proposed development are described in relation to both effects on the wider landscape character and effects on the landscape of the site. The changes to the physical landscape due to the proposed development, when viewed from the surrounding areas, will be very minor in nature.

The proposed development has been designed to blend into its surrounding agricultural landscape. The minor re-grading of overburden stockpiles, reinstatement of hedgerows and native woodland planting as part of the void infill and restoration, will enhance the local landscape.

The overall likely landscape effect of the proposed development is considered to be low.

Visual Effects

The site of the proposed development is in most places well screened (by topography and vegetation/woodland) from the surrounding areas in general. The proposed development will not change any vista in the surrounding area as the development will take place in the existing quarry void. The magnitude of change from the five viewpoints selected was considered minor as much of the proposed development will be screened by local topography and vegetation. Predicted effects arising from the operational phase will have a Long-term, Imperceptible to Not Significant, Neutral to Positive visual impact.

Archaeological & Cultural Heritage

Chapter 11: Archaeological and Cultural Heritage assesses the impact of the proposed development on the archaeological and cultural heritage of the surrounding area. The assessment was based on GIS based mapping followed by a desktop analysis of all baseline data and a comprehensive programme of field inspection of the EIAR site boundary.

Constraints within the Application Site Boundary

No recorded monuments, National Monuments, Record of Protected Structures (RPS) or National Inventory of Architectural Heritage (NIAH) structures are located within the proposed development boundary. No direct impacts to any of these cultural heritage assets will therefore occur.

Direct and Indirect Effects

The sub-surface archaeological potential of the areas quarried to date is such that excavation and quarrying activities have removed the topsoil and the strata at which archaeological features would occur thus eliminating any further archaeological potential. A number of green areas remain within the extraction area boundary however and any further excavation/quarrying in these areas relates to previous planning permissions granted (07/723 and ABP SL09.226857 and 17/1107).

The effects of the construction phase (construction of inspection shed) and operational phase (restoration work by introduction of soils and stone) is such that all potential sub-surface archaeological features would be deemed to have been removed by the time the quarry will be ready for restoration.

Cumulative Effects

No cumulative effects at either the construction or operational phase of the project will occur since no negative effects were identified as a result of the proposed development in its own right. A number of nearby projects were considered when assessing cumulative effects many of which relate to one-off rural housing and agricultural buildings in the immediate vicinity.

Material Assets

Traffic and Transportation

The purpose Chapter 12: Traffic and Transport is to assess the traffic related effects of the proposed development within the study area road network.

The study area includes the existing site access located on the R747 and the 3 kms section of the R747 and R448 leading to the M9 motorway. Estimates of future traffic volumes on the study area road network were made for the proposed year when the existing quarry extraction will be replaced by the proposed quarry restoration, year 2022, and 20 years hence (2042).

Traffic forecasts were determined using observed traffic counts undertaken in September 2020, and national traffic growth forecasts produced by Transport Infrastructure Ireland in May 2019. The proposed quarry restoration is forecast to generate less traffic than the existing extraction, resulting in a net reduction of 14 HGV trips to / from the site per day.

During the 20 year restoration process background traffic levels will grow in accordance with national traffic forecasts. A link capacity assessment of the R747 and the R448 was undertaken with the route between the quarry and the M9 established to operate well within capacity up to the future year 2042. An assessment of the quarry access junction on the R747 was also undertaken, which was established to continue to operate well within capacity up to the year 2042. Some minor improvements to the site access junction are proposed, including junction markings and with signage warning of HGV

movements. These improvements will enhance road safety for both traffic accessing / egressing the site and for general traffic on the R747.

It is concluded from this assessment that the proposed quarry restoration on the existing Lawler Quarry site will be adequately accommodated by the existing road network during the 20-year restoration period.

Services

There will be no operational phase impacts or associated effects on water and wastewater networks associated with the proposed development. The proposed development is likely to result in additional electricity usage at the site, however, the impact will be negligible.

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Table 2 Noel Lawler Sand & Gravel Ltd. – Likely Significant Effects of Proposed Soil Recovery Facility

Environmental Factor	Likely Effects Identified	Brief Description of Effect	Mitigation Measures Proposed to Control Effects
Soil & Geology Surface Water and Groundwater Flora and Fauna	Potential oil/fuel spills and leaks.	There is the potential for accidental spills / leaks of oils to occur from vehicles during delivery and handling of imported material and from refuelling operations, resulting in contamination of soils and groundwater. <i>For inspection purposes only. Consent of copyright owner required for any other use.</i>	<ul style="list-style-type: none"> ➤ Refuelling will be completed at a dedicated refuelling area. ➤ Drainage from the refuelling area will be routed through a full retention hydrocarbon interceptor and then a soakaway prior to final discharge to ground. ➤ All plant and machinery will be serviced off-site. ➤ No fuel or oil will be stored on the site. ➤ Drip-trays will be used for fixed or mobile plant such as pumps and generators in order to retain oil leaks and spills. ➤ Only designated trained operators will be authorised to refuel plant on site ➤ Procedures and contingency plans will be set up to deal with emergency accidents or spills; and, ➤ An emergency spill kit with oil boom, absorbers etc. will be kept on-site for use in the event of an accidental spill.
Soil & Geology	Potential contamination from	There is the potential for imported material to be contaminated with either unsuitable organic matter or	<ul style="list-style-type: none"> ➤ Sourcing material that is proven to be inert prior to transport to the site.



Environmental Factor	Likely Effects Identified	Brief Description of Effect	Mitigation Measures Proposed to Control Effects
<p>Surface Water and Groundwater</p> <p>Flora and Fauna</p>	<p>unsuitable imported soil and stone.</p>	<p>liquids, or other contaminants, that may pose an environmental hazard to soil/groundwater.</p> <p style="color: red; text-align: center; transform: rotate(-45deg); font-style: italic;">Consent of copyright owner required for any other use.</p>	<ul style="list-style-type: none"> ➤ Pre-agreed source sites for inert material ensuring; no pollutants, unauthorised material, invasive species. ➤ Regular checks of incoming loads to ensure suitability of imported material. ➤ The site will be operated under an Environmental Management System. ➤ All required pollution prevention measures will be implemented at the site. ➤ The operator will prepare and implement an Emergency response procedure. ➤ The operator will complete environmental monitoring, including local groundwater and surface water monitoring; ➤ A phased restoration of the site will be implemented, and end with the closure of site. ➤ The operator will have a documented recording procedure for all material entering the site; and, ➤ No unauthorised dumping of waste will be allowed at the site.

Environmental Factor	Likely Effects Identified	Brief Description of Effect	Mitigation Measures Proposed to Control Effects
<p>Air & Climate</p> <p>Human Beings</p>	<p>Vehicle exhaust emissions; dust emissions.</p>	<p>Waste material will be delivered to the site by road going vehicles that have the potential to generate exhaust emissions.</p> <p>Dust can be generated from many on-site activities such as traffic movements and unloading of imported material.</p> <p style="color: red; transform: rotate(-45deg); opacity: 0.5;">Consent of copyright owner required for any other use. For inspection purposes only.</p>	<ul style="list-style-type: none"> ➤ The hardstanding/roads adjacent the site will continue to be regularly inspected by the Site Manager for cleanliness and cleaned as necessary. Any hardstanding areas/site roads with the potential to give rise to dust will be regularly watered, as appropriate, during dry and/or windy conditions. Water bowser movements will be carefully monitored, as the application of too much water may lead to increased runoff. ➤ The transport of material, which has significant potential to cause dust, will be undertaken in tarpaulin-covered vehicles. ➤ A wheel wash facility will be installed on site and all vehicles required to pass through the wheel wash on exiting the site. ➤ Following reinstatement, the area will be reseeded to facilitate immediate revegetation of the site and prevent dust generation. ➤ All plant and machinery will be maintained in good operational order while onsite. ➤ All plant and shall be stored in the dedicated compound area. ➤ All machinery and plant will be maintained in good operational order while on-site, minimising any emissions that are likely to arise. These measures will minimise any effect that the development might have on climate in the long-term.



Environmental Factor	Likely Effects Identified	Brief Description of Effect	Mitigation Measures Proposed to Control Effects
Human beings	Potential noise emissions from plant and traffic.	A number of items of plant are proposed that have the potential to generate noise. Vehicle movements on public roads have the potential to generate noise.	<ul style="list-style-type: none"> ➤ Plant used on-site will be maintained in accordance with manufacturer specifications. In particular, exhaust silencers will be maintained in a satisfactory condition. ➤ Communication through plant horns will be prohibited. ➤ Unnecessary revving of truck engines will be prohibited. ➤ Specific mitigation is warranted with respect to potential impulsive emissions, and two measures are proposed here by the applicant: (i) Site haul roads will be maintained in a satisfactory condition, and free from surface defects that may generate rattles in empty truck bodies, and (ii) Tailgate slap during tipping events will be prevented by using rubber stops or powered tailgates.

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9. POTENTIAL EMISSIONS AND ABATEMENT

Potential emissions associated with the waste activities at the facility include dust, noise and poor-quality surface water runoff.

Dust and Emission Control

The following mitigation measures will be implemented at the site:

- The hardstanding/roads adjacent the site will continue to be regularly inspected by the Site Manager for cleanliness and cleaned as necessary.
- Any hardstanding areas/site roads with the potential to give rise to dust will be regularly watered, as appropriate, during dry and/or windy conditions. Water bowser movements will be carefully monitored, as the application of too much water may lead to increased runoff.
- The transport of material, which has significant potential to cause dust, will be undertaken in tarpaulin-covered vehicles.
- A wheel wash facility will be installed on site and all vehicles required to pass through the wheel wash on exiting the site.
- Following reinstatement, the area will be reseeded to facilitate immediate revegetation of the site and prevent dust generation.
- All plant and machinery will be maintained in good operational order while onsite.
- All plant and shall be stored in the dedicated compound area.

In periods of extended dry weather, dust suppression may be necessary in operational areas and along access roads to ensure dust does not cause a nuisance.

Noise Control

The following general mitigation measures will be in operation at the site:

- All plant on-site will be maintained in accordance with manufacturer's recommendations. In particular, exhaust and silencer systems will be maintained in a satisfactory condition.
- All restoration plant and equipment to be used on-site will be modern equipment and will comply with the European Communities (Construction Plant and Equipment) (Permissible Noise Levels) Regulations.
- Any plant introduced to the site will not be excessively noisy. Where possible, noise data provided by suppliers will be consulted.
- Keeping site access and haul roads level and in good repair to reduce the potential for vibration from lorries.
- Tailgate slap during tipping events will be prevented by using rubber stops or powered tailgates.
- Communication through plant horns will be prohibited.
- Unnecessary revving of truck engines will be prohibited.
- Monitoring of noise may form part of the restoration environmental management system, as per planning conditions.

Surface Water

The following mitigation measures will be put in place to attenuate and treat any surface water runoff:

- A natural buffer exists of approximately 100m exists between the Crookstown Stream and the proposed infill area. The permeability within this region will remain high, with a recharge coefficient of approximately 80%. This provides a soakage area for surface waters which may arise.
- Runoff from the infilled pits will be directed into newly constructed drains and swales situated along the perimeter of the infill areas;
- Settlement ponds will be constructed down gradient of the drainage routes. These ponds will not be lined, the low permeability subsoil currently at the site will allow any surface water to recharge to groundwater;
- Any sediment which settles at the base of the ponds will be removed at regular intervals to maintain the permeability of the ponds; and,
- There will be no net change in runoff/recharge rates from the site.

Management of surface water from the entrance road, inspection area, the wheelwash area, the car park and ancillary buildings will be directed through silts traps, an oil interceptor and constructed wetland soakaway, which will provide a buffer zone for suspended sediment. Runoff from the refuelling area will also be drained via a full hydrocarbon interceptor and then routed to the soakaway via the wetland area.

During the restoration works the upper surface of the backfilled materials will be graded to ensure surface water run-off falls to drains/swales situated around the perimeter of the site.

Ground/Groundwater

The proposed development comprises importing approximately 2,339,624 tonnes (1,299,791m³) of inert soil and stone material over a 20-year period. Infilling of the site with inert material will pose a low risk to groundwater quality regardless of the vulnerability rating as no harmful contaminants will be present. In addition, inert soil and stone will not contain either organic matter or liquids that will form a source of organic contaminants of microbial pathogens, nor provide a substrate to feed microbial pathogens.

10. ENVIRONMENTAL MONITORING

It is proposed that dust, groundwater, surface water and noise monitoring be carried out in accordance with conditions of Planning Permission and the operating conditions of the waste licence.

11. BEST AVAILABLE TECHNIQUES REFERENCE DOCUMENTS

Lawler Ltd. carried out a review of the facility against the Best Available Techniques (BAT) Conclusions in the following guidance documents:

- Conclusions on BAT from the Emissions from Storage BAT Reference Document

An assessment of how the facility will comply with the relevant BAT guidance note has been completed and submitted with the Licence Application (refer to Section 4.7 of the Application).

12. MANAGEMENT OF SITE OPERATIONS

An Environmental Management System (EMS) will be established by Lawler Ltd. for the restoration works, in line with the requirements of ISO 14001:2015, an internationally recognised EMS standard.

The site will be carried out in accordance with the requirements of the EMS. The EMS includes an Environmental Monitoring Programme (EMP) for the monitoring of dust, groundwater, surface water, and noise. The EMP will be revised based upon conditions attached to a WML for the proposed soil recovery facility.

Opening Hours

It is expected that the infilling and restoration works will occur during the following working hours in line with the existing operational conditions of the quarry:

- 07:00 – 18:00 Monday to Friday; and 07:00 - 14:00 Saturdays.
- Closed Sundays, Bank Holidays and other Public Holidays.

Services

The arrangements for services will be the same as for the existing quarry site described below:

- The site is serviced by electrical mains and telecommunications networks.
- Sanitary wastewater from the proposed development will be managed by means of a new sealed storage tank, with all wastewater being tankered off-site by a permitted waste collector to a licensed wastewater treatment plant. It is not proposed to treat wastewater on-site.
- Drinking water and the water supply for the toilets is obtained from an existing on-site private well.

Refueling

A dedicated re-fuelling area is proposed to be constructed on the new concrete hardstanding, adjacent to the soil inspection area. Vehicles and plant will be refuelled by a truck or mobile bowser as appropriate. It is proposed to remove both existing above-ground diesel fuel tanks (one 3,600 L and one 1,800 L) from the site, and no fuel/oil is to be stored on-site, as part of the infill operations.

An oil/fuel interceptor and catch-drains will be included in the hardstand construction design. All vehicle re-fuelling operations will take place in this designated area and vehicles/plant operating on the site will be inspected regularly for leaks. Spill kits will be in place at the re-fuelling area.

Plant Maintenance and Breakdown

The plant and equipment will be subject to a preventative maintenance programme and critical spares will be retained at the site. All plant and machinery will be serviced annually off-site. Regular leak inspections will be completed during the restoration works.

Emergencies

An emergency is an accident/incident that has the potential to result in environmental pollution and harm to human health & safety.

Lawler Ltd. has completed an assessment of the environmental effects of any accidents that may occur. Based on the types of waste that are and will be accepted and the activities carried out, the only accidents that present a significant risk of environmental pollution are accidental spillage of hydrocarbons during refuelling of plant.

Nuisance Control

Pest Control

Proactive measures will be undertaken in conjunction with a professional pest control company and in accordance with existing company procedure to ensure vermin are never allowed to become prevalent on site. This will include the provision of bait stations at all perimeter points to prevent intrusion.

Litter Control

It is proposed to fill the quarry void with inert soil and stone. Therefore, it is not anticipated that the activities on site will give rise to litter problems. In the unlikely event that litter is observed on site, hand-picking will be carried out within 24 hours of the incident and any litter removed.

Odour Control

The material accepted at the site will be inert soil and stone which will be free of biodegradable material and/or organic contamination. Given the absence of organic/biodegradable material, the activities at the Lawler facility are unlikely to give rise to odour nuisance and therefore there is no requirement to implement any specific odour control measures at the facility.

13. REASONABLE ALTERNATIVES

Alternative Location

There is no alternative to the current location as the proposed development in this instance is site specific, is located within an active quarry setting and will also bring previously quarried land back into use. The site is also well placed to serve local markets and the needs of local construction markets and those of neighbouring authorities.

It should also be noted that given that the proposed development site is located on the site of the existing quarry operation, the restoration works will make use of the existing access road, equipment/machinery, site office, weighbridge and wheel wash for the site operations.

Further to this, the environmental assessments undertaken as part of the EIAR have proved that there will be no demonstratable harm to the environment, built or archaeological heritage or human health that cannot be prevented or controlled by mitigation measures.

Alternative Site Layout and Project Design

The area of the proposed development comprises a quarry void currently used for sand and gravel extraction. It is intended to restore the quarry to original land contours and land use. Therefore, there are no possible alternatives to this. In respect of the project design, a specific and considered restoration programme has been designed to protect environmental receptors. There will be a phased restoration of the quarry voids working from the base of the void vertically building up soil and stone.