Attachment-4-8-1-Operational Report

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1. Introduction

This report provides a description of the activities and operations at the facility. This includes details of the plant, methods, processes, ancillary processes, abatement, recovery and treatment systems and operating procedures for the activity.

While the activity of extraction/ quarrying of sand and gravel does not form part of the licence application, this activity will operate concurrently with the restoration of the quarry via waste recovery to which this licence application relates. Reference to the extraction/ quarrying of sand and gravel, where relevant, has therefore been include within this report.

2. Restoration/ Waste Recovery Operations

The main operation of the proposed waste recovery facility is the recovery of inert soil waste. The inert soil shall be used as backfill material in the quarry void in order to restore the original landform of the site. This process will include the following units of operation:

- Stockpiling/ Storage of Stripped Topsoil and Overburden;
- Waste Classification Verification/ Quality Control
- Delivery & Receipt of Waste;
- Onsite Storage; and,
- Filling of Quarry Void.

Chronological details of these operations are provided below. A Process Flow Chart for the waste recovery activity is illustrated in Figure 1.

2.1 Stockpiling/ storage of stripped topsoil and overburden

Existing overburden (consisting of the topsoil and subsoil) stripped during quarrying activities at the facility and extracted materials not transported off site shall be stockpiled/ stored onsite for restoration of the quarry void. These materials will be stockpiled at appropriate locations on site and used in reinstatement works when required.

2.2 Waste Classification Verification/ Quality Control

In order to ensure the soil arriving at site is inert and meets waste acceptance criteria, a number of quality control procedures will be followed.

The material used to fill the quarry void will be an inert soil imported from pre-approved external greenfield sites. The source of all imported inert soil shall be identified in advance and subject to basic characterisation testing, insofar as is practicable, to confirm that the soil can be classified as inert. Basic characterisation shall be carried out by the supplier of the inert soil and all certification shall be provided as part of acceptance of the imported inert soil at the proposed facility. Records of the documentation and certificates supporting the classification of imported soil shall be maintained by the applicant.

All contractors for haulage of inert soil to site shall hold appropriate valid permits and licences in accordance with waste management legislation. All waste recovered to site should be transferred to the site under chain of custody or waste dispatch dockets. A copy of these documents shall be provided to a facility operator on arrival at the facility.

2.3 Delivery & Reception of Waste/ Process Control

Waste delivery vehicles shall enter the site via the L-7003-1 County Road. The quantities of waste delivered/recovered to site shall be recorded at the weighbridge which will be located inside the facility entrance. Records shall be maintained and monitored by the Applicant to ensure annual acceptance limits are not exceeded.

All loads shall be recorded at the weighbridge on entry to the facility. All inert soil imported to the facility shall be visually inspected insofar as practicable prior to being unloaded. Where the load is identified to contain physical contamination, the soil shall not be permitted to be unloaded and shall be rejected from site.

Following preliminary inspecting and documentation checks, the delivery vehicles shall proceed along the access road to the filling area or designated storage area as directed by the facility operator. The filling area will be the current location where active restoration is taking place. The soil shall be offloaded under the direction of a facility operator. The unloaded inert soil will be visually inspected by suitably experienced site personnel to ensure that there is no extraneous, non-hazardous or hazardous material within the inert soil, that would render it unacceptable for use in the restoration.

Where the imported soil is found to contain extraneous, non-hazardous or hazardous material then it will be reloaded onto the delivery vehicle or segregated and removed to a quarantine area for closer

inspection and classification. A detailed record shall be kept of all such inspections. Should inspections and/or subsequent testing indicate that the imported soil is non-inert and cannot be accepted and used for restoration purposes, the soil will be returned to the supplier or placed in skips and covered pending removal off-site by permitted waste collectors to a suitably licensed/permitted waste disposal or recovery facility.

In addition to the above, a representative sample shall be collected by a suitably qualified person from one in every 500 imported loads of inert soil accepted at the site and subjected to compliance testing. This test shall be used to confirm that the accepted soils are inert and comply with acceptance criteria.

2.4 Filling Operations

Restoration will be carried out progressively as the quarry void becomes available for filling.

The inert soil will be moved into position for filling by bulldozer. As the fill is inert, there is no requirement for lining of the quarry void prior to filling. Fill will be laid directly onto the quarry floor. Filling will be carried out in stable benches with the following typical geometry:

- Bench height up to 7.5m;
- Bench face inclination 1v:1.5h;
- Flat section of bench at least 10m wide between successive bench faces; and,
- Filling will be compacted by passage of dumper and other plant.

To ensure a stable fill, the filling geometry will be altered to suit the engineering characteristics of the imported inert soil, as visually assessed by suitably experienced site staff. For example, where the imported inert soil is notably weak (say wet) then the soil will be placed in thin layers on lower benches.

Filling will commence at the quarry floor and will proceed upwards in suitable benches until the imported inert fill surface level is within approximately 3.3m of the original ground surface. Once the filling has reached this level, the sandy subsoil stripped from the quarry surface will be placed over the inert fill to form a 3m thick capping layer. The topsoil, also stripped from the quarry surface, will then be placed over the sandy soil to a thickness of approximately 0.3m.

Finished restoration will be to the original landform topography as surveyed in July 2017 by Coastway Surveys Ltd using laser-scanning techniques as commissioned by the applicant. The final restoration level will include a small allowance for overfilling (approximately 0.5m) to cater for any potential settlement of the fill.

Given the end-use of the restored quarry, which is a return to agricultural land, it is considered that there is no requirement to engineer the placed fill.

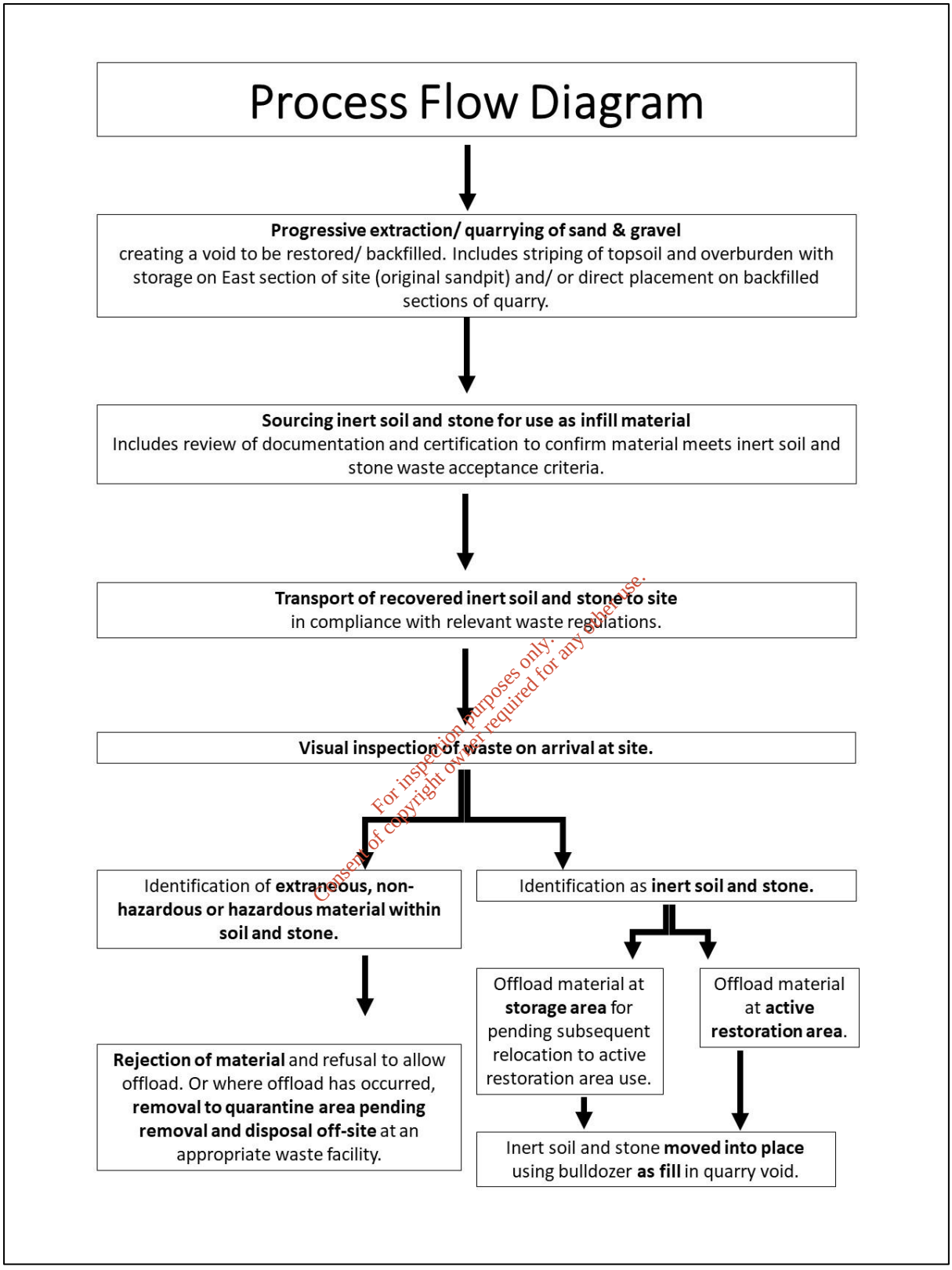

Figure 1: Process Flow Diagram for Quarry Restoration/ Waste Recovery

3. Restoration Timeframes

The initial 3 years of the proposed operations at the facility will comprise extraction only. Restoration activities will commence in approximately year 4, which allows time for a sufficient area of the quarry floor to be made available for filling, and which will allow working area for extraction and filling operations to be carried out with minimal interference from either operation.

During restoration the fill (inert soil) will be placed initially in the southeast corner of the proposed quarry void and thereafter within the eastern side of quarry void as extraction progressively moves westward. By the end of year 14 extraction works will be complete and an approximately 300,000 m^3 void space will remain which will be progressively filled over the following 5 years.

Based on the schematic modelling of the site progressive restoration to finished surface level should be underway by end of year 5 of quarry operations with final restoration of the facility completed by year 20. Drawings 7.1 to 7.4 attached illustrates the extraction and filling sequence for the proposed development.

4. Quantities & Capacity

The subject site at Ballinrooaun, Screen, Co. Wexford, is approximately c. 8.45 hectares and comprises part of the existing sand and gravel quarry (to be used for storage). This also includes part of the haul access road to the existing quarry. The extended quarry area will have an extraction/restoration area of circa (c.) 5.83 ha (including breakthrough area from existing quarry). The volume of material to be extracted and restored from the proposed extension to the quarry has been calculated by AGEC Consulting Engineers. The calculations indicate that there are c. 846,000 cubic metres (c. 1,354,400 tonnes) of material to be extracted and restored within the proposed extension area.

The above quantity calculations exclude the upper 3.3m of soil at the site comprises topsoil (0.3m thick) and sandy subsoil (3m thick) that will be stored on site and used as capping in the progressive restoration works following placement of imported inert soil. Topsoil and subsoil stripped during the initial 4- 5year period of operations at the facility are proposed to be stored onsite in bunds (topsoil) and with the existing quarry void (subsoil). The volume of topsoil to be stored onsite is estimated as 5,250m^3 (8,400 tonnes) and the volume of sandy subsoil to be stored onsite is estimated as 525,00m^3 (84,000 tonnes).

The predicted annual rate of inert soil available for the proposed quarry void filling is estimated as approximately 80,000 tonnes over a 17-year period.

Further details regarding quantity and capacity calculations are provided within Attachment 4-3-4-R and D Activity Capacity Calculations, Attachment 4-3-6-Max Waste Accepted Calculations and Attachmen-4-3-7-Waste Storage Capacity Calculations of the licence application.

5. Hours of Operation

Hours of operation at the facility shall be in compliance with those permitted under planning decision (ABP-301615-18) for the proposed quarry extension. Permitted operation hours are from 08.00 hours and 18.00 hours Monday to Friday and 09.00 hours and 13.00 hours on Saturday. No operations are permitted on Sunday or public holidays.

6. Plant

The following plant are proposed to be used in the restoration of the quarry:

- 1 no Bulldozer to move, place and grade imported fill;
- 1 no. tracked excavator for contouring and landscaping; and,
- Tractor and water bowser for dust suppression.

7. Site Access and Access Road/ Traffic Control

The proposed development will be accessed via the local road L-7003-1. The site access id located approximately 1 kilometre from the village of Screen, Co. Wexford. The L-7003-1, also known as St. Cyprian's Villas, is a narrow (4.5 metres wide), two-way rural road which connects Screen, to the west, with the R742 regional road to the east. As is the case with the majority of rural roads, no footpaths or street lighting are present, and the road is subject to an 80 km/ h posted speed limit. There is a number of laybys on the L-7003-1 between the quarry and the village of Screen, installed to accommodate traffic associated with the existing quarry, and which provide adequate passing opportunities for HGVs accessing the site. A 'Quarry Entrance Ahead' warning sign is located approximately 100 metres in advance of the western approach to the quarry access.

There is an existing hard surfaced access road providing access from the L-7003-1 to the existing quarry which will also serve the proposed development. This road has recently (June 2019) been surfaced with tarmacadam from the entrance at the L-7003-1 to the turning area located adjacent to the

northwest corner of the proposed extraction area. From here the access road is constructed of hardcore into to the existing quarry. There are 2 no. passing lanes along the access road. The private access road is approximately 4.7 metres wide along its length, however it flairs to approximately 19 metres in width at its intersection with L-7003-1. The majority of the access road will remain unchanged; however, the alignment of this haul route will change over time to access the different phases of the development. Parking will be provided on-site for 3 staff cars.

The imported soil will be transported by trucks onto site along the dedicated on-site haul route. Trucks exiting the site also use the wheel wash facility which is constructed close to the junction between the access road and the L-7003-1.

All heavy goods vehicle traffic transporting inert soil to site will approach Screen from the R741, from either the north or south depending on their starting point. Upon arrival at the priority junction with the R741, traffic will head south towards Screen for approximately 1.3 kilometres. At Screen village traffic will turn left onto the L-7003-1 and travel east for approximately 1km to the site access junction. Vehicles will turn right onto the site access road. Traffic will exit the site via the same route.

The existing site access junction and local road network has the capacity to cater for the small volume of vehicle movements envisaged as a result of the development proposal. This has been demonstrated by the existing quarry site which operates at an identical intensity to that currently proposed. As a result, traffic generated by the proposed development at the existing site access junction will be considerably below the junction's capacity. Impact on the performance of the local road network is anticipated to be insignificant. Mitigation of the proposed development's traffic impacts is not therefore deemed necessary.

Further details with regard to traffic are provided within Chapter 12 of the EIAR (Attachmnet-6-3-6-EIAR-Planning-Nov-2017).

8. Quarry Safety and Security

There are a number of safety and security measures in place for the existing quarry operations. In this regard, fences are located and regularly maintained along the boundary of the site to the north with the adjoining landholding, thereby discouraging inadvertent access to the quarry.

9. Drainage Infrastructure

9.1 Surface Water Drainage Infrastructure

As is the case with the existing quarry operation, there will be no need for drainage infrastructure owing to the good permeability of the underlying and surrounding subsoil. Due to the high percolation rates of the exposed subsoil it is anticipated that no surface water runoff will be produced within the excavation area of the proposed quarry extension.

Runoff from storm water is rarely observed at the existing quarry and agricultural fields given the drainage afforded by the sand and gravel base. Rainfall infiltrates immediately and during extreme rainfall events there may be small ponds formed which soon after drain away. Based on past experience with the existing quarry, the main potential sources for surface water ponding to occur are:

- Along the haulage road, where silt laden runoff would be generated as a result of the passage of trucks and machinery; and,
- Mounds of material stockpiled for restoration purposes.

These can be easily addressed by cleaning out the areas where silt material accumulates and by ensuring that the heaps of material for restoration are stockpiled in an appropriate manner. Clean imported soil and subsoil will be brought on site for restoration purposes. Depending on their nature (clay, silt, sand, gravel, etc.), there will be the potential for surface water runoff to be generated within the excavated area. Given the good soil infiltration rates obtained, any surface water generated during restoration work will drain toward the more permeable sand and gravel subsoil surrounding and underlying the proposed area for excavation. Chapter 8 Hydrogeology and Geology of the EIAR (Attachmnet-6-3-6-EIAR-Planning-Nov-2017) provides further details regarding the hydrogeology and drainage of the site.

9.2 Site Services

There shall be no discharges to ground from site services or infrastructure.

In terms of site services, there are no permanent built structures proposed as part of the proposed development with the exception of a Wheelwash and weighbridge. A small portacabin approximately (approximately 3m x 3m) shall be used as a site office. There is no mains water supply or foul water drainage serving the site. Persons employed on site use the facilities available at the Applicants family

farm yard located to the west of the site opposite the site entrance and this will continue for the proposed development.

Spent wash water from the wheel wash is proposed to be diverted to a holding tank for subsequent offsite disposal by a suitable waste contractor. Design details for the upgrade to the wheel wash to include a holding tank are to be confirmed.

It is anticipated that less than two loads of waste delivered to the facility per annum would be quarantined prior to off-site disposal. Where waste is quarantined it shall be placed in suitable containers/ skips and/or over to prevent stormwater runoff from the quarantine area becoming contaminated. Due to the small volume of waste anticipated to be stored in the quarantine area, the proposed control measures to prevent contamination of runoff, and the short duration of the holding period for the material, it is considered that retention of stormwater from this area would be unwarranted.

10. Storage Conditions

The following raw materials used on site, intermediates and products associated with the activity of recovery of inert waste are summarised below:

- Input: Fill material – inert soil material will be accepted from greenfield sites only;
- Intermediates: Fuel– Diesel will be the main fuel to the site to power site machinery. Electricity from the the farm at Kelocon House (property of the applicant, Mr. Sean Kelly) will supply the wheel wash. Solar panels will supply power to the weighbridge and site office;
- Intermediate: Water –The groundwater water supply from the family farm will feed the wheel wash at the entrance of the facility and to fill a water bowser used for dust suppression on an “as need” basis;
- Product: Waste: site office waste;
- Product Waste: spent wash water and sediment from wheel wash;
- Product: Waste: quarantined imported waste deemed not appropriate for use as infill.

Details of the storage conditions for the above are detailed below. Further details of storage capacities are provided with in Attachment-4-3-1-Storage of Waste and Other Materials, Attachment-4-3-4-R and D Capacity Calculation and Attachment 4-3-7-Waste Storage Capacity Calculations.

10.1 Storage of Stripped Topsoil and Overburden

Topsoil and overburden (sandy subsoil) stripped from the extraction area over the initial 4 to 5 year period of the quarrying activity will be stored on site. The sandy subsoil will be stored within the floor of the existing quarry, with topsoil stored in bunds along the southern boundary of the proposed quarry extension site. These materials shall be used for the final restoration of the quarry void during years 15 to 20 of the facility operations. The soil bunds will be sown with grass in order to promote stability and minimise soil erosion and dust generation.

Topsoil and overburden stripped during years 5 to 14 shall be used within the restoration area avoiding the requirement to store these materials onsite. The sandy subsoil and topsoil capping layers will be placed as soon as practical onto the inert fill surface to minimise the length of time the quarry void is visible. The topsoil will be sown with grass in order to promote stability and minimise soil erosion and dust generation.

10.2 Storage of Imported Fill Material

It is expected that there will be minimal stockpiling and storage of imported inert soil. It is proposed that under normal circumstances that imported inert soil shall be unloaded at the filling area and used immediately in restoration works. The filling area will be the current location where active restoration works are taking place at the time.

To account for unforeseen circumstances, it is proposed that a maximum quantity of 5,600 tonnes of imported soil may be temporarily stored within the existing quarry void, if required. Soil will be stored in stockpiles on the North section of the existing quarry floor as indicated in the Attachment-3-1-Site Plan. Appropriate abatement systems will be followed to minimise impacts associated with the storage of this material, namely, to include dust suppression and runoff management. As soon as practicable, soil temporarily stored within the existing quarry void shall be moved to the active restoration and used as fill.

10.3 Storage of Fuel

As with the existing operation, refuelling of vehicles and vehicle maintenance will not take place on the quarry floor but offsite on a dedicated hard standing area located in the nearby farm. Fuel storage is also located offsite in the nearby farm and consists of a bunded area with a double skin tank.

10.4 Storage of Wash Water

It is proposed to upgrade the existing wheel wash at the facility to include a holding tank for spent wash water. Spent wash water from the wheel wash shall be diverted to the holding tank for subsequent offsite disposal by an appropriate waste contractor or as agreed with the EPA. Construction details of the holding tanks shall be agreed with Wexford County Council and/ or the EPA prior to installation.

10.5 Storage of Office Waste

Waste arising from the site office/ weighbridge shall be disposed of in domestic refuse and recycling bins. It is expected that quantities of waste generated from the office will be minor.

10.6 Storage of Quarantine Waste

Where imported inert soil is found to contain extraneous, non-hazardous or hazardous material then it will be segregated and removed to the quarantine area for closer inspection and classification.

The quarantine area will be located on the North section of the site as indicated on Site Plan. The quarantine area comprises a concrete hard standing, separated into 4 no. bays by walls approximately 3m in height. Each bay is 6m in length and 10m wide, giving a total area for storage of approximately 240 square meters (720 cubic meters)/ 1,152 tonnes). It should be noted however it is anticipated that less than 2 loads/ per annum (<40 tonnes) of waste will be quarantined.

Quarantined material will be returned to the supplier or placed in skips and covered pending removal off-site by permitted waste collectors to a suitably licensed/permitted waste disposal or recovery facility in accordance with relevant waste regulations.

11. Waste Quarantine & Inspection Areas

A number or waste inspection areas shall be located on site, including at:

- the unloading area at the active restoration area;
- the storage area within the existing quarry; and,
- the quarantine area.

Waste quarantine and inspections procedures are outlined in Section 2.2 above and Attachment-4-3-5-Waste Acceptance Procedure.

12. Emissions

During operations at the facility there will be no significant point sources of emissions associated with the proposed development. The proposed activities at the facility are however consider likely to give rise to fugitive dust emissions and noise emissions. These and other minor emissions to air and potential emissions associated with the operations at the facility are also considered below.

12.1 Noise Emissions

As extraction and backfilling (waste recovery) activities will operate concurrently the cumulative noise impact from these activities have been assessed for the proposed development. Noise associated with the proposed development is likely to be generated by a number of sources, including mobile sources such as cars, trucks and excavators, and stationary sources such as screening plant associated with extraction activities. As acoustic energy spreads through the atmosphere from the source to the receiver, noise levels will attenuate (decrease) depending on ground absorption characteristics, atmospheric conditions, and the presence of physical barriers (e.g., quarry faces, walls, building façades, berms).

As part of the EIAR for the facility for the proposed development, an assessment was undertaken of potential noise impacts on surrounding sensitive receptors associated with the proposed development. The assessment concluded that predicted ambient noise levels (i.e. development and background noise combined) at noise sensitive locations are below the Planning permission and EPA guide limit of 55 dB for sites licensed by it under IPC/IED regulations. Noise sources will not be operational during evening or night-time hours as defined by EPA guidance.

12.2 Fugitive Emissions-Dust

Fugitive emissions include emissions from non-point source and diffuse sources. It is anticipated that airborne dust will be generated during restoration activities and this will be the primary, potential impact upon local air quality from of the proposed development. As extraction and backfilling (waste recovery) activities will operate concurrently the cumulative noise impact from these activities have been assessed for the proposed development. Operations which will likely cause the generation of dust are as follows:

- The movement of machinery on-site;
- Earth stripping and excavation operations;
- Filling, grading and levelling operation; and,
- Stockpiling, internal movement and transport of materials on and off site.

As part of the EIAR for the site a baseline dust assessment was undertaken using monitoring data from the existing quarry from 2013 to 2015. As operations will remain closely similar, it is considered that dust emissions at the existing site are representative of dust emissions which will arise during operations at the proposed development. The findings of the assessment noted that no dust monitoring result recorded on-site during this period exceeded the TA Luft limit of 350 mg/m^2/day and all results were significantly below this threshold.

12.3 Minor Emissions - Air

Emissions below the mass emission threshold may be considered as minor emissions. Emissions may also be considered minor by the virtue of their source.

Pollutants that will arise from vehicle exhaust emissions associated with the proposed development include carbon monoxide, VOC's, nitrogen oxides, and PM10. It is anticipated however that these pollutants will arise in negligible quantities. Due to the small number of vehicles which will be utilized during the proposed development, the impact on climate during operations at the facility are deemed to be negligible.

12.4 Potential Emissions

Potential emissions are emissions which only operate under abnormal process conditions. The following sources of potential emissions have been identified for the proposed development in the event of operation system failures:

- Contaminants leaching to ground (underlying soils/subsoils), groundwater and groundwater fed receptors (namely surface waters) as a result of contaminated imported soil being placed within the quarry during restoration;
- Accidental spillages of hydrocarbons during refuelling of vehicles resulting in risk to ground, groundwater and groundwater fed receptors;
- Discharge of silt-laden surface runoff from site resulting from soil stripping, and exposed stockpiles of topsoil, overburden and imported fill;

- Contaminated surface water runoff from the quarantine area; and,
- Discharge of contaminated and/or silt-laden wash water from wheel wash.

It is considered that the impact of operations at the facility on the environment will be minimal due to the control measures which are proposed to combat the effect of the above environmental nuisances and to avoid potential emissions. Strict adherence to the conditions of the Planning Permission and EPA Licence, good management practises, control over individual procedures, and maintenance of abatement systems are essential to ensure the site will not impact on receptors in the area.

13. Abatement Systems

As quarrying activity will operate concurrently with the restoration of the quarry, abatement processes have been designed with consideration to both activities to manage any potential combined effects.

13.1 Pollution Prevention

The main potential source of pollution associated with the proposed development is from refuelling activities. The below sets out pollution prevention procedures proposed to be implemented at the facility.

- An area specially designed for refuelling of vehicles and other machines is located offsite in the farm yard. The runoff from this area shall be discharged through an oil separator, which will collect any spillages of hydrocarbons. This oil separator shall be emptied on a regular basis;
- Refuelling on site shall however be limited to the mobile screener and the tracked excavator as these would not be able to reach the refuelling point on a regular basis. All other vehicles shall be refuelled on a dedicated hard standing area offsite as mentioned above;
- No petroleum-based products or chemicals shall be stored at the facility. Fuel and chemical storage will be within the bunded compound in the farm yard (i.e. offsite) as is the case with the existing operation;
- A double skinned mobile fuel bowser (U.N. and ADR approved for transport of fuel by road) shall be used to deliver fuel to the mobile screener on site. The refuelling area shall always be

situated away from the South-Eastern corner of the proposed site area, i.e. where the aquifer vulnerability would be the highest;

- Drip trays shall be used beneath the fill point during refuelling operations in order to contain any spillages that may occur. Wherever possible, drip trays shall be fitted to or placed under the mobile screener; The absorbent material inside the pan will keep liquids in place without spilling or getting knocked over;
- An Emergency Response/ Spill Kit shall be stored near the mobile screener to clean up any spillages/leaks and prevent petroleum-based products from reaching groundwater. The operators shall be fully trained in the use of this equipment;
- Funnels shall be supplied as part of the equipment associated with the bunded mobile fuel tank to help prevent spills during refuelling. The bowser shall also be equipped with a spill response kit on board;
- No maintenance of vehicles or machinery shall take place on the quarry floor. Maintenance shall take place off-site on a dedicated hard standing area located in the nearby farm yard;
- As is the case for the existing quarry, there shall be no wastewater treatment plant on site. Toilet facilities are provided at the nearby farm owned by the applicant; and,
- The proposed quarry extension shall operate at a minimum of 5m above the water table of the underlying sand and gravel aquifer at all times to provide protection of the groundwater.

13.2 Overburden removal and storage

The following abatement processes are proposed to minimise soil erosion and silt-laden-runoff from the proposed facility:

- Land shall only be stripped as required in order to limit the length of time soil is exposed to erosion thereby restricting the generation of silt in surface runoff;
- Where possible, the land shall be stripped in dry weather to reduce nutrient loss, sustain soil condition and reduce the generation of silt-laden runoff;
- All bare/disturbed surfaces shall be reinstated, and soil mounds shall be re-vegetated as rapidly as possible in order to reduce erosion and restrict silt generation in water. The slope of the soil storage mounds shall be minimised, and their general shape should be in a manner as to avoid any potential for water ponding;
- As the sandpit is being worked, land shall be restored in order to reduce any potential for surface runoff;

- Replacement of topsoil and restoration of the site will reduce the vulnerability of groundwater beneath the site on closure; and,
- Dust suppression can also be achieved as required at the north face of the quarry via a sprinkler system, which shall consist of a water tank to be connected directly to an existing pipe currently used to provide water for the cattle.

13.3 Imported Soils and Subsoils

To minimise any effect on the underlying soils/subsoils from contamination as a result of contaminated imported soil being placed within the quarry during restoration, the following mitigation measures shall include:

- Fill material shall be an inert soil imported from suppliers at pre-approved external sites;
- The source of all imported inert soil shall be identified in advance of transport to site;
- The inert soil shall comprise subsoil that will contain soil. No peat, topsoil, contaminated soils or non-hazardous waste will be accepted;
- Inert soil shall be subject to basic characterisation testing by the supplier in advance, insofar as is practicable, to confirm that the soil can be classified as inert;
- Records of imported inert fill shall be maintained by the Applicant;
- Where the provenance and proof of an inert soil arriving at the proposed quarry site cannot be proven then that soil shall not be accepted, and the soil shall not be permitted onto site;
- All imported inert soil shall be visually inspected prior and following unloading by suitably experienced site personnel prior to being used as fill. Visual inspection shall be for the purpose of ensuring no physical contamination or extraneous, non-hazardous or hazardous material is present within the inert soil, that would render it unacceptable for use in the restoration;
- Where inert soil is found to be unacceptable then it will be segregated and removed to a quarantine area for closer inspection and classification;
- Unacceptable fill shall be returned to the supplier or placed in skips and covered pending removal off-site by permitted waste collectors to a suitably licensed/permitted waste disposal or recovery facility;
- A detailed record shall be kept of all such inspections of materials moved to the quarantine area;
- Compliance testing of representative samples shall be undertaken from one in every 500 imported loads of inert soil accepted at the site; and,

- Quarry workings shall be at least 5m above groundwater table to minimise potential for leaching of any potential contamination.

13.4 Surface Water Drainage

Measures proposed to minimise impacts on surface water drainage and runoff from site include the following:

- Any ponding water that is be generated within the excavation and/or the haulage road shall be mitigated by the scrapping off the silts that create the ponding conditions in the first place. These silts can be stockpiled and reused as part of the restoration plan;
- Spent wash water from the wheel wash shall be diverted to a holding tank for subsequent offsite disposal by a suitable waste contractor; and,
- Water levels within the holding tank shall be regularly monitored to ensure the capacities of the tank are not exceeded, ensuring no accidentally discharges occur.

13.5 Dust Suppression

Measures proposed to minimise the potential for airborne dust generation on-site include the following:

- Speed limits of 15 km/h shall be enforced on-site to minimize dust generation associated with traffic movement;
- The spraying of haul routes, stockpiles and equipment with water during periods of dry and windy conditions shall take place to minimize dust generation. This will be achieved by spraying the ground using a dedicated clean water bowser and spray bar pulled by a tractor. The bowser can be filled on an “as need” basis when conditions demand it;
- Visual inspections of the site, the site boundary, the site entrance/exit and haul routes shall take place on a daily basis to ensure that there is no build-up of dusty material;
- A pumped water wheel and underbody washing facility shall be installed at the entrance to the quarry to minimize the deposition of material at the site exit or local access roads;
- A fixed sprinkler system shall be installed at the exit gate to dampen down dry loads leaving the site, where required;
- Road sweeping shall take place as appropriate to minimise the build-up of dust on haul routes and the potential for airborne dust generation;
- HGV’s shall be covered in tarpaulin to prevent dust emissions from the back of HGV’s;

- It is proposed to situate stockpiles in such a manner to ensure minimum exposure to the wind and away from sensitive receptors; and,
- Dust suppression can also be achieved as required at the north face of the quarry via a sprinkler system, which shall consist of a water tank to be connected directly to an existing pipe currently used to provide water for the cattle.

13.6 Noise

Noise from the facility shall be managed in accordance with the British Standard BS 5228 – 1: 2009 & A1:2014: *Code of Practice for Noise and Vibration Control on Construction and Open Sites: Noise*. The following measures can be applied to reduce noise levels associated the proposed development:

- The strategic placement of stockpiles between sources and receivers shall reduce noise levels being directed towards sensitive receptors;
- Noise damping to minimise resonant noise associated with plant, equipment, body panels, cover plates etc. shall be used. Damping techniques consist of the application of a special resonance damping material to plant surfaces to dissipate vibrational energy before it can build up and radiate as sound;
- Noise caused by vibrating plant components shall be reduced by proper balancing, through the use of rubber pads, springs or bellows in mounting plant or equipment. (i.e. vibration isolation) or through the mechanical fixing of plant parts (i.e. tightening of loose components, fixing of resilient support/material between surfaces in contact);
- Noise caused by friction in conveyor rollers shall be reduced through the timely application of lubrication;
- Regular visual inspections and maintenance of plant components shall reduce noise levels associated with loose, defective or damaged plant or equipment; and,
- Works shall be limited to normal site operating hours detailed in Section 5 above.

13.7 Monitoring

In accordance with planning condition 17(a) for the proposed development, monitoring of groundwater, surface water, noise, ground vibration, and dust deposition levels shall be undertaken at monitoring and recording stations. Monitoring plans shall be agreed with the EPA and Wexford County Council prior to the start of the work. Monitoring results shall be submitted to the planning authority and EPA on an annual basis for groundwater, surface water, noise and ground vibration. Notwithstanding this

requirement, all incidents where specified levels exceed the EPA and Wexford County Council shall be notified within two working days.

Monitoring locations and stations are indicated in Attachment-3-1-Site Plan.

13.7.1 Groundwater

The groundwater monitoring plan for the proposed development shall include monitoring pre-, throughout and post construction phases. Groundwater quality monitoring of the groundwater monitoring wells shall be carried out in accordance with planning conditions for the development and EPA requirements.

The monitoring parameters currently used as part of the monitoring in the existing quarry include:

- Ammonium
- Chloride
- Conductivity
- Orthophosphates
- Phosphorous (Total)
- Potassium
- pH
- Sodium
- Sulphates
- Total Suspended Solids
- Total Dissolved Solids
- Nitrates
- Total Keldjahl Nitrogen
- Heavy metals
- Total Petroleum Hydrocarbons

This monitoring will help to ensure that the mitigation measures that are in place to protect water quality are working. Visual monitoring should also take place during the excavation phase of the quarry extension for the presence of any groundwater seepage and water ponding and to ensure the effectiveness of the proposed measures to control dust suppression and generation of silts.

It is proposed to undertake monitoring from monitoring well MW3/08 instead of monitoring well MW5/16 as MW3/08 appears to fall within a different groundwater catchment catchment. It is anticipated that monitoring well MW4/09 will have to be abandoned during the lifespan of the proposed quarry activities and this will be replaced by a new monitoring well, located downgradient to the west of the proposed site area.

Monitoring of the groundwater quality shall be carried out at a frequency as agreed with Wexford County Council and the EPA. As a minimum groundwater quality monitoring will be undertake annually at 2 no. monitoring points (upgradient and downgradient).

13.7.2 Surface Water

The groundwater catchment area that encompasses the proposed development appears to be draining toward the Glenbough stream approximately 490m downgradient form the site. As in most of the rivers and streams in Ireland the baseflow of the Glenbough stream is likely to be provided by groundwater. Hence there is an indirect potential impact that any contamination of the groundwater could affect the quality of the Glenbough stream. It is proposed to undertake a baseline assessment of the water quality of the Glenbough stream prior to the start of quarrying activities.

A surface water quality monitoring programme shall be undertaking in accordance with the requirements of the EPA and Wexford County Council.

13.7.3 Soil Infill

A representative soil sample shall be taken from one in every 500 imported loads of inert soil accepted at the site and subjected to a scope of testing (compliance testing) focusing on key contaminant indicators. The test data shall be used to confirm that the accepted soils are inert and comply with inert waste acceptance criteria as set out in EU Council Decision 2003/33/EC or as specified by the EPA or Wexford County Council.

As the tests are proposed for compliance purposes a full waste classification assessment is not deemed necessary. The compliance testing programme shall be undertaking in accordance with the requirements of the EPA.

13.7.4 Dust

A monthly survey and monitoring programme of dust and particulate emissions shall be undertaken to provide for compliance with dust limits as set out within condition 13 of the planning permission for the proposed development.

Condition 13 (a) of the planning permission specifies that dust levels at the site boundaries shall not exceed 350 milligrams per square metre per day, averaged over a continuous period of 30 days (Bergerhoff Gauge).

13.7.5 Noise & Vibration

A monthly survey and monitoring programme of noise and vibration emissions shall be undertaken in order to comply with planning condition 11. Limits for noise emissions as set out within the planning condition 11 as:

- Day 55dB(A) LAeq (30 minutes) (0800 hours to 2200 hours); and,
- Night 45dB(A) LAeq (30 minutes) (2200 hours to 0800 hours).

It is proposed to undertake noise monitoring at 4 no. Monitoring noise sensitive locations.

13.7.6 Laboratory Facilities/Field Testing

Soil, water and dust samples collected for compliance monitoring shall be undertaken in accordance with relevant best practices and industry standards and dispatched in suitable specialist containers under Chain of Custody (COC) requirements to ILAB/ UKAS accredited laboratories within appropriate holding times.

All equipment used to collect in-situ data (e.g. conductivity, noise etc.) shall be appropriately certified and calibrated.

13.8 Residual Impacts

Based on the proposed project design along with the mitigations measures proposed, no residual impacts are predicted as a result of the proposed development.

14. Alternatives

A detailed assessment of alternatives to the proposed development is provided within Chapter 4 of the EIAR completed for the proposed development.

The selection of an alternative location for the proposed development is not applicable, given that the quarry is already in operation and the adjoining lands are considered to have sufficient reserves to continue this operation. The quality of the remaining mineral reserves, as well as the capital investment on site means that the proposed development is not footloose and cannot be accommodated in an alternative location. By continuing extraction from an existing site and extension onto adjoining lands, cumulative impacts are minimised.

Planning conditions for the proposed development specify the original landform must be restored following completion of extraction activities. In the selection of materials for use as backfill the quarry void, inert soil was determined to pose the lowest risk to the environment. The Waste Management Planning Regions have highlighted a lack of treatment capacity for soil & stones. The proposed development shall provide much need capacity for soil and stone recovery in the South-East region and promotes appropriate segregation and recovery of inert waste in the construction and demolition industry.

The backfill of the quarry void via recovery of inert soil will beneficial in the restoration of the original landform of the Screen Hills and returning the habitat of the site similar to that prior to quarrying activities.