

This Report has been cleared for submission to the Director by Programme Manager, Marie O'Connor

Signed: 

Date: 12/02/2020



**OFFICE OF ENVIRONMENTAL
SUSTAINABILITY**

**INSPECTOR'S REPORT ON A WASTE LICENCE APPLICATION,
LICENCE REGISTER NUMBER W0299-01**

TO: DIRECTOR

FROM: Eoin McCaffrey

DATE: 12 February 2020

Applicant/Licensee: Roadstone Limited

CRO NUMBER: 11035

LOCATION/ADDRESS: Garryhesta Pit, Knockanemore, Ovens, County Cork.
The facility is located in a rural area.

APPLICATION DATE: 20/12/2018

**CLASSES OF ACTIVITY
(WASTE MANAGEMENT
ACT 1996 AS AMENDED):**

R5 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 (excluding temporary storage (being preliminary storage according to the definition of 'collection' in section 5(1)), pending collection, on the site where the waste is produced).

European Directives/Regulations relevant to this assessment are listed in Appendix 2 of this report.

ACTIVITY DESCRIPTION/BACKGROUND: The applicant proposes to restore a quarry through the recovery of waste soil & stone and river derived dredge spoil. The proposed maximum annual intake is 300,000 tonnes of waste soil & stone and river derived dredge spoil. Accordingly, the proposed total volume of material required to restore the quarry is 2,296,877 tonnes (including material required for final profiling).

Types of waste accepted: Soil and stone and river derived dredge spoil.

- Soil and stone other than those mentioned in 17 05 03 (LoW code 17 05 04)
- Dredging spoil other than those mentioned 17 05 05 (LoW code 17 05 06)

Additional information received: Yes (21/10/2019 and 06/11/2019)

No of submissions received: One

EIAR submitted: Yes (20/12/2018)

NIS submitted: Yes (28/10/2019)

Site visit: 22nd November 2019

Site notice check: 6th February 2019

1. Activity description/background

Roadstone Limited is the current owner of the site. The facility is an exhausted section of a larger sand and gravel quarry located approximately 1.5km to the west of Ovens, within the townland of Knockanemore, Co. Cork. The site is in the valley of the Bride River, approximately 7km west of the centre of Ballincollig, and 15km west of the centre of Cork City. The facility application boundary covers an area 7.9 hectares and will sit within the north-western section of the existing Roadstone quarry boundary which covers an overall area of 77.2 hectares as shown in Figure 1. The quarry has been in operation at the site since the 1940's and while much of the quarry has been worked-out, it continues to operate at a production rate of 350,000 tonnes per annum depending on market demand. The proposed site infrastructure will comprise a weighbridge, wheel wash, waste inspection area, covered waste quarantine area, site office, refuelling area, small car park, silt trap and oil interceptor, and soakaway. A constructed wetland was proposed as part of drainage infrastructure but has been excluded from the Recommended Decision (RD) as it is not included in current planning permission for the proposed facility (ref: 18/05155). The facility layout is shown in Figure 2. The backfilling of the quarry void will facilitate the restoration of the site to 59mOD on the northern side of the quarry and 50mOD on the southern side, and its return to agricultural use. Backfilling has not commenced to date and no waste licences or permits have issued in relation to the site.

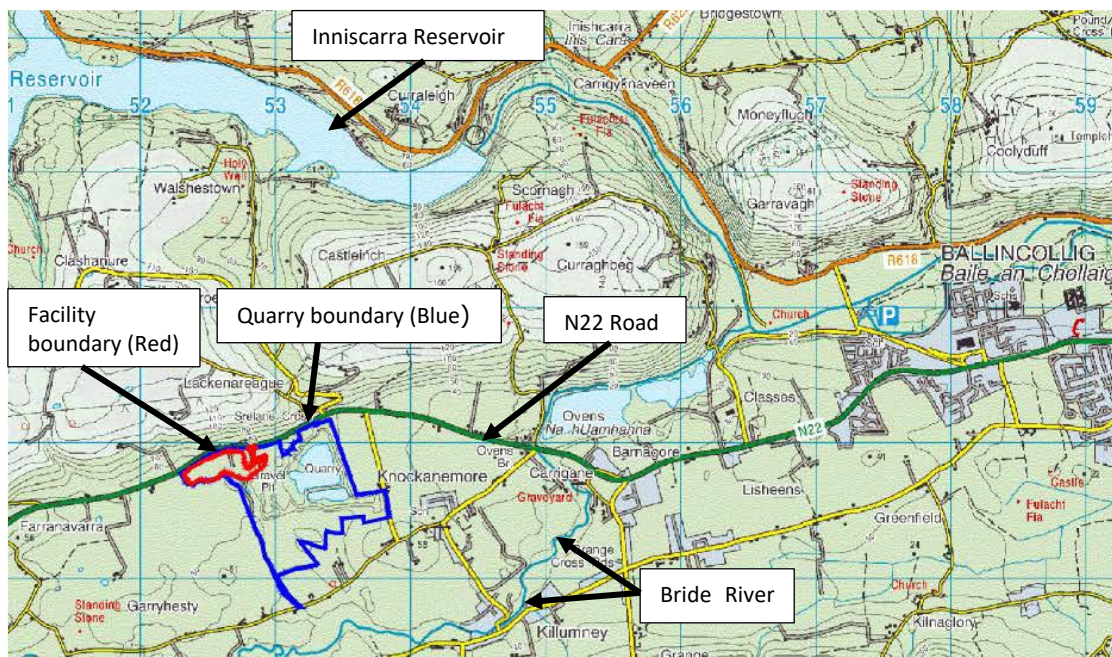


Figure 1: Location and extent of facility

To facilitate the backfilling and restoration work, the infill area will initially be levelled prior to acceptance of any inert material. A temporary sump and percolation area positioned in the eastern side of the pit will allow all runoff water collected within the pit to recharge to ground. No fuel or oil will be stored on site. A double skinned mobile fuel tanker will be brought to site as required, with all refuelling onsite to take place in the designated refuelling area connected to the oil interceptor. No vehicle servicing will take place on site, with daily routine checks on plant and machinery for leaks and greasing of bearings carried out as necessary in the designated refuelling area.

The applicant was granted a number of planning permissions for activities within the site, as detailed in Section 3 of this report.

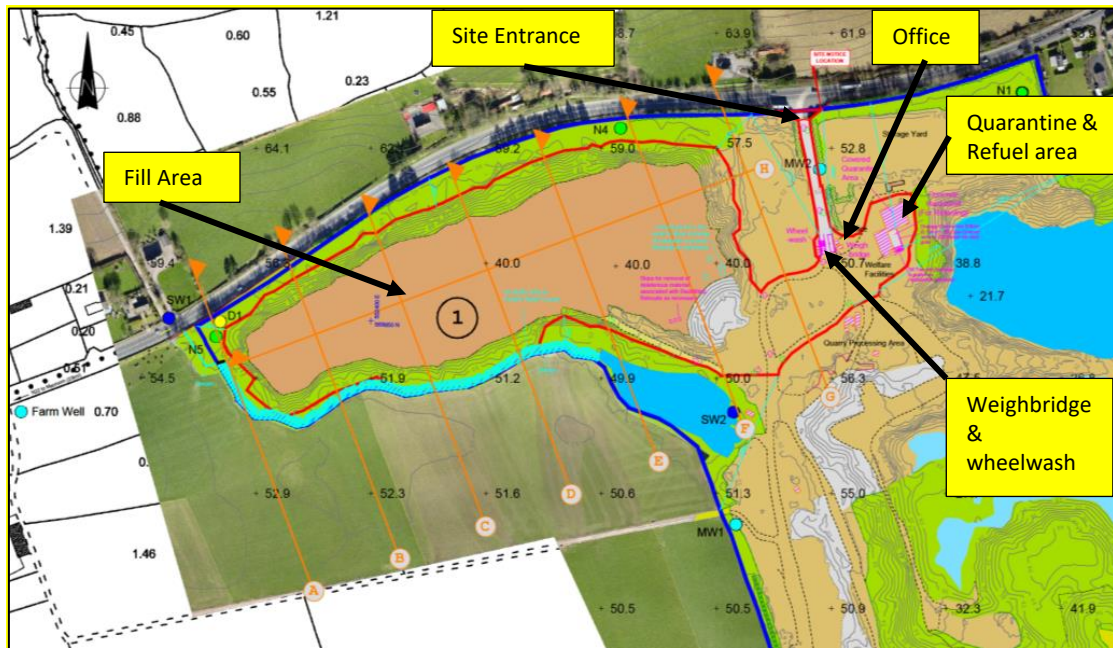


Figure 2: Layout of proposed facility

2. Best Available Techniques

The facility is not a landfill (it is a soil recovery project which is a waste recovery activity and not a waste disposal activity), but BAT for the activity is best represented by the following two Agency Guidance Notes; Best Available Techniques for the Waste Sector: Landfill Activities (2011); and Best Available Techniques for the Waste Sector: Waste Transfer and Materials Recovery (2011), insofar as they relate to the activities at the facility.

I have examined and assessed the application documentation and I am satisfied that the site, technologies and techniques specified in the application and as confirmed, modified or specified in the attached Recommended Decision comply with the requirements and principles of BAT. I consider the technologies and techniques as described in the application, in this report, and in the RD, to be the most effective in achieving a high general level of protection of the environment, having regard as may be relevant, to the way the waste facility is located, designed, built, managed, maintained, operated and decommissioned.

3. Planning Permission, EIAR and EIA Requirements

3.1 EIA Screening

The licence application was submitted to the Agency after 16th May 2017, the date for transposition of Directive 201/52/EU amending the 2011 EIA Directive. The Directive has not, however been fully transposed into legislation to date. In accordance with the advice on administrative provisions in advance of transposition contained in the Department of Housing, Planning and Local Government Circular Letter PL1/2017, it is proposed to apply the requirements of Directive 2014/52/EU.

The application was accompanied by an Environmental Impact Assessment Report (EIAR) as requested by the Agency, in accordance with the provisions of Schedule 5 of the Planning and Development Regulations 2001, as amended.

The activity is a type of project specified in Schedule 5, Part 2 of the Planning and Developments Regulations 2001 as amended:

11 (b) Installations for the disposal of waste with an annual intake greater than 25,000 tonnes not included in Part 1 of this Schedule.

In accordance with Section 40(2A) of the Waste Management Act 1996 as amended, the Agency must ensure that before a licence or revised licence is granted, the application is made subject to an environmental impact assessment (EIA), where the activity meets the criteria outlined in Section 40(2A)(b) and 40(2A)(c). In accordance with the EIA Screening Determination, the Agency has determined that the activities are likely to have a significant effect on the environment, and accordingly is carrying out an assessment for the purposes of EIA.

3.2 Planning Status

A number of planning applications have been made by the licensee for the area within the facility boundary and the wider quarry area. Details of these previous planning applications and permissions have been provided in the licence application form.

Planning permission ref: 18/05155 was granted by Cork County Council on the 22/11/2018 for the restoration of part (6.7 ha) of the existing Garryhesta quarry through the importation of soil and stone and river derived dredging spoil. The licensee has submitted the EIA report associated with planning application 18/05155.

Having regard to the examination of environmental information provided to the planning authority and in particular EIAR, and the submissions from prescribed bodies and observers in the course of the application, the planning authority considered the likely significant direct and indirect effects of the proposed development in reaching its planning decision. I have had regard to the Planning Report and the decision reached by the planning authority in undertaking its Environmental Impact Assessment of the activity.

3.3 Content of EIAR and licence application

I have considered and examined the content of the licence application, the EIAR and other relevant material submitted with it. Further information was sought from the applicant on the following issues:

1. Indirect emissions to groundwater
2. Stormwater discharges
3. Air emissions ambient monitoring point locations
4. General site operations
5. Natura Impact Statement

On receipt of further information from the applicant, all of the documentation received was examined. I consider that the EIAR complies with the provisions of Article 5 of the 2014 EIA Directive when considered in conjunction with the additional material submitted with the application when supplemented by my assessment as contained in this report.

3.4 Environmental Impact Assessment Directive

Having specific regard to EIA, this inspector's report as a whole is intended to identify, describe and assess for the Agency the likely significant direct and indirect effects of the proposed activity on the environment, as respects the matters that come within the functions of the Agency, for each of the following environmental factors: population and human health, biodiversity, land, soil, water, air and climate, the landscape, material assets and cultural heritage.

This inspector's report addresses the interaction between those effects and the related development forming part of the wider project. The cumulative effects with other developments in the vicinity of the activity have also been considered, as regards the combined effects of emissions. In addition, the vulnerability of the activity to risks of major accidents and/or disasters has been considered. The main mitigation measures proposed to address the range of predicted significant effects arising from the activity have been outlined. This inspector's report proposes conclusions to the Agency in relation to such effects.

In preparing this inspector's report I have considered and examined the licence application, Register Number: W0299-01, and the supporting documentation received from the applicant; the EIAR; the submission received; the documents associated with the assessments carried out by Cork County Council Planning Section, and the issues that interact with the matters that were considered by that authority and which relate to the activity.

While the environmental factors have been considered throughout my entire assessment, the following table identifies, for ease of reference, the sections of this report where each environmental factor has been predominantly discussed.

Table of Environmental Factors

Environmental Factor	Addressed in the following Sections:
Population and Human Health	Emissions to Air, Discharges to Water and Ground, Noise, Waste, Accidents and Cessation, and Other matters relating to EIA
Biodiversity	Emissions to Air, Water and Ground, Noise, Waste Generation, Accidents and Cessation, Interactions of the Foregoing.
Soil/Land	Discharges to Water and Ground, Use of Resources, Accidents and Cessation, Interactions of the Foregoing
Water	Discharges to Water and Ground, Waste Generation, Use of Resources, Accidents and Cessation, Appropriate Assessment.
Air	Emissions to Air, Noise, Waste Generation, Accidents and Cessation
Climate	Emissions to Air, Use of Resources,
Landscape	Other matters relating to EIA, Landscape, Material Assets, & Cultural Heritage
Material Assets	Use of Resources, Waste Generation, Other matters relating to EIA, Landscape, Material Assets & Cultural Heritage

Environmental Factor	Addressed in the following Sections:
Cultural Heritage	Other matters relating to EIA, Landscape, Material Assets & Cultural Heritage

3.5 Consultation with Competent Authorities

Consultation was carried out between Cork County Council and the Agency under the relevant section of the Waste Management Act as amended. Cork County Council, in response to the Agency, had no observations on the licence application and EIAR.

4. Submissions

There was one submission made on this application.

While the main points raised in the submission are briefly summarised in the table below, the original submission should be referred to at all times for greater detail and expansion of particular points.

The issues raised in the submission are noted and addressed in this inspector's report and the submission was taken into consideration during the preparation of the Recommended Decision.

Name & Position:	Organisation:	Date received:
Mr. Declan Hamilton, Principal Environmental Health Officer	Health Service Executive (HSE) – South,	04 February 2019
Issues raised: Dust: The HSE identify that dust will be one of the main emissions from the soil recovery operation. They acknowledge that an Environmental Monitoring Programme is already in place at the quarry for monitoring dust in compliance with planning permissions QR19 06/11798	Agency response: All relevant impacts from dust have been assessed in this report. The following measures are proposed by the applicant to minimise/prevent dust generation: The installation of a fixed water spray systems and mobile water bowsers are to be deployed where required. Mature screening berms are maintained at the facility. A speed limit is to be enforced on site and all internal haul roads are to be maintained. It is considered that the measures as set out in the RD are adequate to control dust at the facility and include: Condition 6.12 specifies measures for control of dust.	

	<p>Condition 3.10 requires a wheel wash to be installed and maintained.</p> <p>Condition 5.3 – requires the licensee to ensure that activities shall not interfere with amenities beyond the boundary.</p> <p>Schedule C.6 requires dust deposition monitoring.</p>
<p>Water/Hydrology/Geology:</p> <p>The HSE identify that the main risk to groundwater is from the storage of hydrocarbon liquids. The HSE acknowledges that mitigation is proposed in the EIAR, that infilling will take place only when groundwater level is at or below the base of the pit, and accidental spillages are dealt with in the EIAR by providing mitigating measures including hard stands and drainage to oil interceptors.</p>	<p>Agency response:</p> <p>The following measures are proposed by the applicant to minimise/prevent groundwater contamination:</p> <p>There will be no fuels or oils stored on site.</p> <p>Hardstanding, silt traps and oil interceptors will be installed as per planning permission.</p> <p>There will be no servicing of vehicles on site.</p> <p>The applicant has an emergency response procedure in place to respond to hydrocarbon spills.</p> <p>Specific risks to Groundwater are discussed fully in Section 6 of the IR below. It is considered that the measures as set out in the RD are adequate to control and monitor discharges from the facility and include:</p> <p>Condition 3.17 requires silt traps and interceptors for storm water from refuelling and car park areas.</p> <p>Condition 8.11 requires vehicle and machinery refuelling to take place in designated areas protected against spillage run-off.</p> <p>Condition 6 requires a groundwater monitoring programme to be put in place.</p> <p>Schedule A.2 waste acceptance criteria to be applied prior to waste acceptance at the facility.</p> <p>Schedule C.2 and C.7 details stormwater and groundwater monitoring requirements.</p>

	<p>Condition 9 requires an emergency response procedure to be put in place.</p> <p>Condition 3.16 requires containment booms to be stored on site.</p>
<p>Noise & Vibration:</p> <p>The HSE states that:</p> <ul style="list-style-type: none"> • The main source of noise and vibration from the facility will be from truck movements into and out of and through the facility, from tipping and placing and grading of material on site from trucks and bulldozers. • Condition 32 of planning QR19 06/1178 PL04.225332 requires noise levels to not exceed specific levels. <p>The HSE requires the applicant to carry out due diligence to put in place sufficient mitigation measures so as not to breach this condition.</p>	<p>Agency response:</p> <p>As the main source of vibration at the facility will be from truck movements within the facility, tipping of material and grading of material, it is considered any likely vibration impacts from this activity at nearby residences will be negligible.</p> <p>Noise emissions are fully discussed in Section 7 below. It is considered that the measures as set out in the RD are adequate to control noise emissions and include:</p> <p>Condition 6.12 requires the implementation of adequate measures to control noise from the facility.</p> <p>Schedule B.4. specifies noise emission limits and requires no clear audible tone or impulsive component at noise sensitive locations during night-time.</p> <p>Schedule C.5. requires noise monitoring at noise sensitive locations (NSLs).</p> <p>Condition 6.13 requires a noise survey to be carried out.</p>
<p>Population and Human Health:</p> <p>There are a number of residences within 250 and 500m of the proposed Soil Recovery Facility (SRF) and 10-20 commercial addresses registered within 1KM. The HSE states that dust, noise and water are the main environmental factors that could impact negatively on the receptors. The HSE acknowledges that as the site is part of an existing sand and gravel pit, once appropriate mitigation measures are put in place negative impacts are not envisaged to be significant.</p>	<p>Agency response:</p> <p>The potential impacts on Population and Human Health from dust, water and noise are addressed thoroughly in sections 5, 6, and 7 of this IR, and furthermore in sections 8 (Waste Generation) and 10 (Accident Prevention and Cessation).</p> <p>The site visit on 22nd November 2019 confirmed local residences along the N22 Primary Road as the nearest sensitive receptors. There were no commercial activities observed operating within close proximity to the facility.</p> <p>The RD includes a number of conditions to address potential significant impacts:</p>

	<p>Condition 3.17 – silt traps and interceptors.</p> <p>Condition 6.12 – dust and noise controls.</p> <p>Condition 8.14 – waste acceptance procedures.</p> <p>Condition 9 – emergency response procedure.</p> <p>Condition 6.13 – requires a noise survey to be carried out.</p> <p>The RD ensures that only inert soil and stone and dredge material can be accepted.</p>
<p>Pest Control:</p> <p>The HSE acknowledge that as only inert soil and stone and dredge material will be imported onto site, the risk of attracting vermin and birds is low and so specific actions are not required for consideration</p>	<p>Agency response:</p> <p>Only inert soil and stone and river derived dredge spoil are to be accepted on site. Condition 5.5 requires the licensee to ensure any vermin associated with activities do not impair the environment beyond the boundary of the facility.</p>

5. Emissions to Air

This section addresses the following:

- Greenhouse gases and climate impact
- Fugitive dust
- Odour

5.1 Greenhouse Gases and Climate Impact

Climate change is a significant global issue which affects weather and environmental conditions (air, water and soil) which consequently affects human resources (human beings) and amenities (material assets and cultural heritage) as well as biodiversity and habitats (flora and fauna). Climate change is caused by warming of the climate system by enhanced levels of atmospheric greenhouse gases (GHG) due to human activities.

In June 2019 the Irish Government released the 'Climate Action Plan, 2019'. The Plan outlines the current state of play across key sectors in Ireland and charts a course towards decarbonisation targets. A number of Key Actions (135, 136, 137, & 144) in relation to Waste and the Circular Economy is to engage with the industries involved and transform waste management to circular economy practice, set binding targets, review waste policy and legislation, establish new waste prevention programmes and regional waste management plans, and explore opportunities to establish "End of Waste" criteria for certain wastes.

Assessment and mitigation

The movement of heavy goods vehicles (HGVs) delivering waste to the facility and movement from the facility will generate greenhouse gases. The operation of vehicles and machinery within the facility (spreading and grading of waste) will also generate greenhouse gases.

The proposed activities are not activities listed in Schedule 1 of the European Communities (Greenhouse Gas Emissions Trading) Regulations 2012 and this activity will not require a GHG Emissions Permit.

With regard to reducing the climate impact of the facility, the RD requires an energy efficiency audit and an assessment of resource use efficiency to be undertaken in accordance with Condition 7.

It is considered that the likelihood of accidental emissions occurring which could impact on climate is considered low in light of measures outlined in the "Prevention of Accidents" Section 10 below and also the conditions in the RD.

5.2 Fugitive Dust

Fugitive dust generation is associated mainly with vehicle movements arriving at and departing from the facility and spreading and grading of waste within the facility.

Dust arising from the activity could have the potential to deposit beyond the site boundary, causing nuisance for those living nearby and potentially affect habitats located close to the site boundary.

Assessment and mitigation

Dust from the facility is the main potential emission to air that could affect air quality. The main sources that have potential to generate dust are:

- HGV's arriving at and leaving the site;
- Movement of vehicles on internal haul roads; and
- Unloading, spreading and grading of waste.

There have been no dust complaints recorded at the Garryhesta quarry since 2016. Quarterly dust deposition monitoring is carried out for the Garryhesta quarry as conditioned in previous and current planning permissions. Monitoring results for 2017 and 2018 were submitted as part of the application and demonstrated that there were no exceedances of the dust deposition emission limit value of 350 mg/m²/day beyond the quarry boundary.

Dust monitoring is currently undertaken at three quarry boundary locations, D1, D2, and D3 (See Figure 4 of the Appendix). The applicant has proposed to move the monitoring locations due to overgrowth and inaccessibility of sites and add a fourth location (D4) along the southern boundary of the quarry. The RD requires dust deposition not to exceed emission limit values and requires monitoring to be carried out at any additional locations as required by the Agency.

Mitigation measures proposed by the applicant include:

- Installation of a fixed water spray system and deployment of a mobile water bowser where required during periods of dry/windy weather;
- Installation of a wheel wash for all vehicles exiting the facility;
- Road sweeper to be deployed as required, to suppress dust on internal and entrance roads of the facility;
- Reclaimed areas are to be seeded at the earliest possible opportunity;

- Screen berms are to be maintained at the facility boundary;
- Internal haulage roads to be maintained in good condition; and
- Vehicle speeds to be controlled on internal haulage roads.

The RD requires the following: dust control measures to be put in place; a limit on ambient dust deposition beyond the facility boundary; and, continuous monitoring of ambient dust deposition (Schedule B and C).

Condition 5.3 requires the licensee to ensure that dust associated with the activity does not result in the impairment of, or an interference with, amenities or the environment beyond the facility boundary.

Condition 6.12.1 requires the licensee to take adequate steps to control fugitive emissions including dust from the facility.

Fugitive dust emissions arising from the activity could have the potential to deposit beyond the site boundary causing nuisance for those living nearby and potentially affecting habitats close to the site boundary. However, the likelihood of accidental fugitive dust emissions is considered low in light of the measures outlined above and measures outlined in Section 10 'Prevention of Accidents' below.

5.3 Odour

There will be no odorous waste accepted at the soil recovery facility as only inert soil and stone and dredging waste will be accepted. Therefore, there is no potential for odour emissions from the waste activities.

Assessment & mitigation:

There have been no environmental complaints relating to odour at the Garryhesta site since 2016. Odour is not expected to be an issue due to the fact that no odorous waste will be accepted at the facility. No specific mitigation measures are proposed. However, Condition 8.14 of the RD will require the implementation of waste acceptance procedures to prevent the acceptance of unauthorised wastes (including contaminated waste) at the facility. Condition 5.3 of the RD requires that no emissions, including odour, shall result in the impairment of, or an interference with amenities or the environment beyond the facility boundary.

Accidental odour emissions could occur if odorous waste is accepted at the facility, causing odour nuisance beyond the facility boundary. However, the likelihood of accidental odour emissions occurring is considered low in light of waste acceptance limitations, the measures outlined in 'Prevention of Accidents' Section 10 below and in light of the proposed conditions relating to odour emissions discussed above.

EIA on Emissions to Air:

For the purposes of EIA, the environmental factors potentially affected by the main emissions to air include: population and human health, biodiversity, air and climate.

Based on the above assessment of the facilities emissions to air, the direct, indirect and cumulative effects have been identified, described and assessed, and are detailed below.

Direct and indirect effects:

Should emission levels cause an exceedance of Air Quality Standards (AQS), this could have potential implications for population and human health, air quality and biodiversity

beyond the facility boundary. The above assessment of the facility's potential fugitive dust, odour and GHG emissions, indicates that air emissions from the facility under normal operation are not likely to cause a significant direct effect on the above environmental factors. It is also considered that no secondary or indirect effects are likely as a result of these air emissions from the facility.

Cumulative effects

The facility will occupy a small area within the larger Garryhesta quarry and is in a rural location, with approximately 10 dwelling residences within 250m of the proposed facility. Land use in the surrounding area is largely agricultural and quarrying, with a scattered rural pattern of residential dwellings along the N22 Primary Road running along the northern boundary of the site.

Dust arising from the neighbouring Garryhesta quarry activity has potential to generate significant dust emissions and deposition beyond the facility boundary. No air dispersion modelling was provided but dust monitoring for current quarry operations demonstrates that current activities on site do not cause exceedances of dust deposition limits beyond the quarry boundary. There is potential for a cumulative impact from fugitive dust emissions from the facility together with the quarry operations, but ambient monitoring indicates there will be no exceedances. Therefore, it has been determined that fugitive dust emissions from the facility will not significantly affect local air quality, individually or cumulatively.

The operation of plant machinery and HGV's will inevitably produce quantities of greenhouse gases. However, any discussion on GHG emissions must be extended to national and global climate impact. It cannot be concluded that emissions of plant machinery and HGV's at the facility will not contribute to climate change. However, given the small quantity of climate altering substances that could be released from the activity, I am satisfied that the operation of the activity is not likely to have a significant effect on climate change.

6. Discharges to Water and Ground

This section addresses the following:

- Emissions to ground/groundwater
- Storm water discharges

6.1 Discharges to Ground/Groundwater

6.1.1 Process emissions to Ground/Groundwater

There are no process emissions to ground/groundwater at the facility.

6.1.2 Storm water discharges to Ground/Groundwater

There is no existing stormwater drainage network at the site. Currently runoff from the existing roads, roofing and hardstanding areas percolates to ground nearby. Rain water falling in the pit area currently recharges to ground.

The applicant proposes to manage all storm water (rain water) in the pit area of the site by allowing it to percolate through the sands and gravels, recharging to ground via a temporary sump. The applicant proposes to discharge clean storm water from roof and entrance road areas to ground via a silt trap and soakaway (DL2), and to discharge potentially contaminated stormwater from a small carpark and refuelling area to ground

via a silt trap, full retention oil interceptor, and soakaway (DL1) (See Figure 3 in the Appendix Titled "Site drainage layout plan"). The proposed facility will utilise existing quarry welfare facilities (toilets and holding tank) which are located within the facility boundary and will cater for approximately four people. A wheel-wash is proposed to be installed as part of site infrastructure with all wheelwash water to be recycled through settlement chambers.

Assessment and mitigation

Rainwater falling on the pit floor and run-off from the valley sides into the pit will be collected on the pit floor, routed to a temporary sump within the pit area, and allowed to recharge to ground. There will be no discharges to surface waters from the proposed infill area and all storm water will recharge to ground. Deposit of non-conforming waste in the pit area could potentially affect soil and groundwater quality.

The groundwater body in which the site is located is called the 'Ballincollig GWB' (IE_SW_G_002) and has been assigned "Good Status" and is reported to be "Not at Risk". GSI mapping has classified the mudstones, sandstones and Devonian Old Red Sandstones, which underlie the application site as a locally important gravel aquifer – Li (bedrock which is moderately productive only in Local Zones). The total area of the gravel aquifer is mapped at approximately 10.3km² and extends approximately 11km west of Ballincollig at a width of up to 2km. Based on GSI mapping the application site has been classified as having a "High" groundwater vulnerability rating (>3m of high permeability subsoil over bedrock) with most of the soils within the site and overall quarry landholding having been removed to facilitate sand and gravel extraction. Soils found to overlay the proposed infill pit consist of dark brown, slightly gravely, sandy silt/clay (as recorded at borehole locations MW1 and MW2).

Small ponding areas of water occur on the pit floor during periods of heavy rain as observed during the site inspection (See Figure 5 in the Appendix). The applicant advised that the water level can rise approximately 3.5m above the lowest level within the pit. Should this area of the pit flood to the previous high-level mark, the displacement of this volume of water as a result of infill works would have a negligible impact on the local groundwater levels. Infilling of the pit area will only take place with clean uncontaminated soil and stone and river derived dredge spoil. Condition 8.14 requires waste acceptance procedures to be put in place, with Schedule A.2 of the RD setting out waste acceptance criteria for backfill material.

A wheel-wash is to be installed at the entrance to the site, with all vehicles required to pass through the wheel-wash on exiting the site to reduce dust beyond the facility boundary. There will be no discharges of wheel wash water from the facility and Condition 3.10.2 requires that all wash water shall be recycled through a series of settlement chambers.

There will be no sanitary effluent discharge from the facility. It is proposed that all sanitary waste will be collected in an existing holding tank located within the facility boundary and will be removed from site as required by authorised waste collectors.

The table below gives details on the facility's storm water discharges to ground/groundwater; the sources of potential contamination of these discharges, the type of on-site abatement (if any), as well as details of the receiving groundwater.

Stormwater discharge point (to ground) details

Emission Reference	Proposed / Existing	Monitored parameters (monitoring frequency)	Trigger levels established (Y/N)
DL-1	Proposed	Visual (daily); pH, conductivity, total suspended solids, (weekly), Monthly – diesel range organics, petrol range organics, total petroleum hydrocarbons, mineral oil.	N - required by RD
DL-2	Proposed	Visual (daily); pH, conductivity, total suspended solids (weekly).	N – required by RD
Drainage areas:	DL1: Car park and refuelling area DL2: Roof and site entrance road		
Abatement:	DL1 – Silt trap and Class I Full retention oil interceptor, soakaway (required by RD). DL2 – Silt trap and soakaway.		
Discharging to:	On site discharge to ground via soakaway.		
Automatic diversion in place:	No		

The main potential emissions to ground will be accidental spillages during refuelling of plant on site or leaks from vehicles and machinery. The applicant has proposed that no servicing of plant or machinery will take place on site. The RD requires that plant and machinery refuelling and maintenance operations (routine checks for leaks or greasing of bearings) shall take place as necessary in a designated area. Schedule C.2.3 requires that stormwater discharge points DL1 and DL2 are visually inspected (daily) and monitored for total petroleum hydrocarbons and other parameters.

According to GSI mapping there are no groundwater protection zones for existing public water supplies or group water schemes mapped within 7km of the proposed facility site. The closest public water supply is Coachford PWS (Code 0500PUB3203) which is approximately 7.5km to the northwest of the site and the facility is not located within the zone of contribution of this source. There is one registered well 500m northeast of the facility and one farm well located 280m west of the infill area. Both wells are located upgradient of the proposed facility and so their groundwater catchment is likely to be elevated ground north of their respective wells. The company has determined the groundwater flow direction as easterly, with the nearest downstream private dwelling located 1.3km to the east of the soakaway.

There are no Groundwater Dependent Terrestrial Ecosystems (GWDTE) in the area of the proposed facility. The proposed facility is located within the WFD Surface Water Body of Bride (Lee)_050 which is assigned a "High Status" and is "Not at Risk". The proposed facility will not discharge to surface water and so there is no direct connectivity to this surface water body or the nearest designated site, Cork Harbour SPA (004030), 20km to the east. Potential indirect connectivity to this designated site is via groundwater flow to the River Bride (2km) which flows downstream to the River Lee and the SPA. Section 13 Appropriate Assessment below deals with potential connectivity and impact on designated sites.

There is no water abstraction proposed at the facility. The majority of water to be used at the facility will be for dust suppression measures. This water will be sourced from a lagoon located in the main Garryhesta quarry, outside the facility boundary. In accordance with the *European Union (Water Policy) (Abstractions Registrations) Regulations 2018*, the Garryhesta quarry is registered (R00139-01) for the abstraction of 25 cubic meters of water or more each day for quarry operations. The facility will utilise a portion of the water abstracted in the quarry to supply its dust control infrastructure. A small amount of mains water will service the welfare facilities on site.

Groundwater Monitoring

Groundwater monitoring well drilling took place in October 2017 and 4 no. monitoring wells were installed at the site (MW01 – MW04 - See Figure 4 in the Appendix). MW01 is 250m southwest of the soakaway; MW02 is 100m northwest of the soakaway; and MW03 and MW04 are greater than 500m southwest of the main infill area. Sampling of the farm well was also completed as part of baseline groundwater monitoring. It is proposed to continue farm well sampling as part of the groundwater monitoring requirement under the licence.

Based on drilling the groundwater level below the proposed soakaway area is expected to be approximately 30 meters below ground level. The groundwater flow across the facility is in an easterly direction towards the River Bride.

Groundwater testing for a full suite of parameters was carried out for MW01, MW02 and the farm well and compared against European Communities Environmental Objectives (Groundwater) Regulations 2010 (S.I. 9/2010). Dissolved metals were found to be below relevant groundwater threshold values with the exception of manganese in MW02. The elevated manganese level was attributed to variations in local geology and groundwater flow. Nitrate levels were detected as slightly elevated at MW02 and the farm well with ammonia levels slightly elevated at MW02 only. These elevated levels were considered likely due to agricultural practices such as fertiliser/slurry spreading on surrounding lands and private septic tank/wastewater treatment units in dwellings north of the site (upgradient). All water samples recorded a BOD of less than 1mg/l and there were no hydrocarbons detected in any of the three wells tested.

Hydrogeological Risk Assessment

The proposed discharge of stormwater to ground is considered an indirect discharge to groundwater. A Tier-2 hydrogeological risk assessment to identify the potential impacts of the proposed discharge of treated stormwater runoff to ground was submitted on 21/10/2019 with a revised assessment submitted on 06/11/19. The assessment was prepared with reference to the EPA's guidance document "*Guidance on the Authorisation of Discharges to Groundwater*" (December 2011). The assessment aimed to:

- examine and demonstrate that the site has sufficient infiltration capacity to physically accept the treated stormwater runoff;
- demonstrate the site has adequate attenuation potential to limit the loading of hydrocarbons to groundwater; and
- predict the potential impact on groundwater quality.

The risk assessment was reviewed by Conor Quinlan, hydrogeologist with the groundwater section of the Agency. The review concluded that the risk assessment was carried out in accordance with Agency guidance and was conservative in nature. Following this review, I am satisfied that the site has sufficient infiltration capacity to

accept the treated stormwater, that the interceptor and soakaway are adequate to ensure there will be no potential impact on groundwater quality, and compliance with Interim Guidance Values (IGV's) for hydrocarbons would be achieved.

Mitigation

Condition 3.17 requires that all storm water from car park and refuelling area shall pass through a silt trap and Class I full retention interceptor before discharging to the soakaway.

Condition 3.12 requires storm water management infrastructure to be capable of prevention of discharge of contaminated water to ground. Schedule C.2.3 requires discharges to be visually inspected (daily) and monitored for petroleum hydrocarbons and other parameters.

Condition 6.19.2 requires annual assessment of groundwater monitoring results against the requirements of the European Communities Environmental Objectives (Groundwater) Regulations 2010 (S.I. 9/2010). The RD requires groundwater monitoring to be carried out on a quarterly basis.

Condition 6.19.1 requires additional groundwater monitoring wells both upgradient and downgradient of the proposed soakaway to be installed prior to the commencement of operations at the facility.

The RD requires an accident and emergency response procedure to be put in place (Condition 9) and adequate containment booms to be kept on site (Condition 3.16).

Condition 2 of the RD requires an adequate maintenance programme to be put in place to negate and pre-empt any leaks and defects and also requires procedures to be implemented to ensure corrective and preventative action is taken should the requirements of the licence not be fulfilled.

Condition 8.11 requires all refuelling and machinery maintenance to take place within designated areas protected against spillage.

Condition 6.8 of the RD requires integrity testing of bunds, storage tanks and pipework (underground) shall take place prior to use.

The RD contains standard conditions in relation to the storage and management of materials and wastes on site. The controls pertaining to accidents and emergencies are addressed in Section 10 "Prevention of Accidents" below. These measures will help control any impacts which could occur should any mitigation measures fail.

EIA on Emissions to Ground

For the purposes of EIA, the environmental factors potentially affected by stormwater discharges to ground include: water, soil, biodiversity, and population and human health. Based on the above assessment of the facility's discharges to ground, the direct, indirect and cumulative effects have been identified, described and assessed, and are detailed below.

Direct and indirect effects

All rainwater falling in the pit area will be allowed percolate to ground via a temporary sump. Should contaminated waste be deposited on site it could potentially affect the quality of soil and groundwater. Should an accidental emission occur, e.g. a fuel spill in

the refuelling area it has the potential to discharge through the stormwater emission point. This could have the potential to affect soil, groundwater quality, aquatic habitats and aquatic biodiversity downstream of the site should it enter a surface water body.

The hydrogeological risk assessment for the discharge of stormwater to ground shows the proposed treatment system can negate any discharges of environmental significance. The risk assessment has taken consideration of the European Communities Environmental Objectives (Groundwater) Regulations 2010. It is considered that any direct and indirect effects as a result of the storm water discharges to ground will not be significant and will be controlled by the proposed infrastructure and adherence to the conditions of the RD.

Cumulative effects

The facility is located in a rural location approximately 7km from the nearest large populated area, Ballincollig. The storm water emissions consist of rain water recharging to ground in the pit area and water run-off from roofs, access road, car park and refuelling area. The overall quarry is the main activity within the vicinity of the facility that is a potential source of significant emissions to ground. This sand and gravel quarry has been largely worked out with activities on site confined mainly to the south of the site and consist of the processing and transport (via conveyor belt system) of aggregate.

Therefore, it is considered there will be no significant cumulative impact from storm water discharges to ground from the proposed activity and any other activities/developments in the area.

I am satisfied that there will not be significant effects on groundwater quality, soil, biodiversity or population and human health or any other aspect of the environment arising from the operation of the activities when operated in accordance with the conditions of the RD.

7. Noise

The facility is located approximately 7km west of Ballincollig, with the nearest small settlement, Farran Village approximately 2km to the west. Lands surrounding the site are predominantly agricultural and industrial (quarry operations). The nearest noise sensitive receptors to the proposed facility are a handful of dwellings between 50m to 180m from the facility along the N22 National Primary Road. In total there are approximately 10 dwellings within 250m of the proposed facility. The facility is bounded to the west, south and east by agricultural lands with the N22 National Primary Road running directly adjacent to the northern boundary of the site for approximately 500m and a local road located 900m to the east.

Assessment

The main sources of noise at the proposed facility will include HGV vehicle movements in and out of the site, unloading of material, and plant machinery movement within the facility spreading and grading infill material. Given the nature of these operations, impacts from vibrations are not considered likely. The northern boundary of the site is well screened from the N22 Primary Road and from outside views with established mature planting. There are no previous noise complaints recorded by the applicant since 2016 against quarry activities.

As part of previous planning permissions, quarterly noise monitoring surveys are required to be carried out at noise sensitive locations (NSLs) (previously agreed with

Cork County Council) around the overall Garryhesta quarry boundary. Noise monitoring is carried out at five quarry boundary locations, N1, N2, N3, N4 and N5 (see Figure 4 of the Appendix). Historical noise monitoring data from Q3 2013 through to Q3 2017 and a full noise monitoring survey report for Q3 2017 were provided as part of the application.

The results of the noise monitoring data provided demonstrate that noise levels are consistently within daytime noise emission limits of 55dB(A)(L_{Af}) at two of the five monitoring locations (N1 and N3). At the three remaining noise monitoring locations (N2, N4 and N5) the noise levels were found to exceed day-time noise emission limits. The survey identified that activities within the quarry were negligible at all monitoring locations and that traffic from the main N22 Primary Road was the predominant background noise observed at the monitoring locations. Results from monitoring points N4 and N5 located along the northern boundary of the proposed facility demonstrate that dwellings along the N22 Primary Road consistently experience sound levels in excess of 80dB(A) due to this traffic.

During the site visit on the 22/11/2019, I observed the predominant noise at the proposed facility was the N22 Primary Road with quarry activities (conveyor belts transporting aggregate material) barely audible. The monitoring results and site visit indicate that background noise emissions originate from the N22 Primary Road.

The applicant submitted a noise prediction exercise to calculate the level of noise that will arise from the facility at the nearest noise sensitive receptor. The nearest noise sensitive residence is located on the opposite side on of the N22 Primary Road close to the main entrance to the facility. A "worst case" scenario of a bulldozer operating at the closest planned position to the susceptible residence (approximately 50 meters away) was considered. The prediction model applied a conservative reduction in noise emissions of 10dB allowing for the mature natural screening currently in place at the quarry boundary. The result of the model indicate that the combined noise levels at the nearest susceptible residences for a "worst case" scenario is 53dB_{L_{Aeq}} which is below the current daytime emission limits value of 55dB(A). The RD allows for daytime hours of operation only, between 0700 hrs and 1800 hrs Monday to Friday, and between 0700 hrs and 1400 hrs on Saturday.

Mitigation:

The company propose the following mitigation measures to minimise noise impacts:

- Maintain the established mature planted screening along the site boundary with the N22 Primary Road and provide temporary screening where necessary.
- Enforce a speed limit of 15km/hr on all internal haul roads to reduce noise from traffic on-site.
- All plant and machinery will be turned off when not in use and all machinery used on site will be CE certified for compliance with EU noise control limits.
- All internal haul road gradients will also be kept low to reduce engine and braking noise.

The RD requires the following:

- The RD requires noise management measures to be put in place.
- Condition 2 of the RD includes the reduction of noise emissions to be implemented as part of the Environmental Management System (EMS).
- The RD requires a noise survey to be carried out as required by the Agency. Monitoring is to be carried out at locations identified in the application and any additional locations decided by the Agency.

- Schedule B.4 of the RD requires the facility to adhere to standard noise emission limits.

EIA on Noise Emissions:

For the purposes of EIA, the environmental factors potentially affected by noise emissions from the activity include population and human health and biodiversity. Based on the above assessment of the facilities noise emissions, the direct, indirect and cumulative effects have been identified, described and assessed and are detailed below.

Direct and indirect effects:

Noise generated by the activity could have the potential to cause nuisance for those living in the vicinity of the facility or potentially effect noise sensitive species near the facility. The RD requires the noise limits to be met at noise sensitive locations. The noise monitoring for the Garryhesta quarry found that road traffic noise from the N22 Primary Road is the dominant noise and significantly impacts on noise sensitive residences in the area. Current quarry operations were found to be barely audible at most monitoring locations and noise prediction modelling for the facility demonstrated that the worst-case scenario for facility operations will be below the daytime noise limit value of 55db(A).

The likelihood of accidental noise emissions occurring is considered low taking account of the measures and conditions discussed above and the measures outlined in Section 10 Prevention of Accidents. I consider that direct significant effects and indirect effects as a result from the activity are unlikely.

Cumulative effects:

The soil recovery facility will occupy a relatively small section of the sand and gravel pit at Garryhesta quarry (7.9ha of a total 77.2 ha). The quarry already has a noise monitoring programme in place and these monitoring results demonstrate that quarry activities, are barely audible and do not contribute significantly to measured noise levels beyond the site boundary. The monitoring demonstrates that the area surrounding the quarry and proposed facility is dominated by noise from the N22 National Primary Road. Residences along the N22 Primary Road typically experiencing noise levels of 80dB(A) during daytime hours due to passing traffic. There have been no noise complaints recorded by the Garryhesta operations since 2016.

Using a conservative scenario, a noise prediction model submitted as part of the application demonstrates that combined noise levels from the facility and quarry operations at the nearest noise sensitive residence will be 53dB(A) which is within daytime noise limits. Therefore, it is considered that the cumulative effects will be largely due to traffic noise, and cumulative noise levels from the facility and quarry operations are not considered to be significant.

8. Waste Generation

The operation of the facility will result in the generation of small quantities of non-hazardous and hazardous wastes which will be segregated at source.

Assessment and mitigation:

The activity does not produce significant quantities of waste. A range of non-hazardous waste will be generated at the facility including: packaging waste (cardboard, plastic), office waste (paper), kitchen & canteen waste, welfare facilities sludge, timber, plastic and metals.

The following hazardous waste streams will be generated at the facility in small quantities: greases and oils from machinery maintenance, interceptor sludge removal.

Any waste removed from the pit area will be placed in skips and will be removed to the designated quarantine area as part of the waste acceptance procedures on site. All waste generated on site will be transported and recovered/disposed off-site in accordance with National and European Legislation.

- The RD requires that disposal or recovery of waste off-site shall only take place in accordance with the appropriate National and European Legislation and protocols.
- There are standard conditions in the RD pertaining to the storage and management of waste generated by the activity.
- The Environmental Management System is required to include the prevention, reduction and minimisation of waste and shall include waste reduction targets.
- If dealt with in accordance with the conditions of the RD, the management of waste generated at the facility will be in accordance with the requirements of Section 29 (2A) of the Waste Management Acts as amended.

EIA on Waste Generation:

For the purposes of EIA, the environmental factors potentially affected by waste generated by the activity include: population and human health, biodiversity, material assets, air and water. Based on the above assessment of waste generated by the activity, the direct, indirect and cumulative effects have been identified, described and assessed, and are detailed below.

Direct and indirect effects

Accidental emissions could occur if waste generated on site is not managed or stored correctly as it may lead to litter or pollution issues on the site or on adjacent sites. The likelihood of accidental emissions occurring due to waste management is considered low taking into account of the measures and conditions discussed above and the measures outlined in Section 10 'Prevention of Accidents'. The controls in the RD in relation to waste will prevent the occurrence of possible direct or indirect negative effects on the environment.

Cumulative effects:

The controls in the RD in relation to waste management will prevent the occurrence of possible negative effects. Therefore, significant cumulative effects on the environment from the generation of wastes by this facility and other developments are not likely. I am satisfied that there will be no significant cumulative effects on the environment from the generation of waste by this facility and other developments.

9. Use of Resources

The applicant has provided a comprehensive list of resources consumed at the facility; these are listed in the application form.

The operation of the facility involves the consumption of water, diesel oil and electricity. The estimated annual consumption quantities are given below.

Resource	Quantity per annum
Electricity	20,000 kWh
Water – wheel wash & dust suppression systems	1,000 m ³ (1,000m ³ extracted from surface water from onsite quarry lagoon)
Water – potable	50 m ³
Fuel Oil (Diesel)	31 m ³

Assessment and mitigation

The use of natural resources by the activity will not be significant. Water abstraction will be from the existing quarry surface water (lagoon) with a small volume of potable water supplied by mains required for onsite welfare facilities. Fuel will be required for the bulldozer in operation on site spreading and grading the infill material.

Condition 7 of the licence provides for the efficient use of resources and energy in all site operations. This condition also requires an energy audit to be carried out and repeated at intervals as required by the Agency.

Hazardous Material

There is a risk of fuel spillages that could cause groundwater pollution. Condition 8.11 requires that all refuelling and ongoing maintenance of vehicles is carried out in designated areas that are protected against spillage and runoff. No fuels are planned to be stored on site with a refuelling tanker to be deployed to site as required. These measures address a number of key provisions of the Groundwater Directive (2006/18/EC), namely that hazardous substances should not be allowed to enter groundwater and will ensure compliance with European Communities Environmental Objectives (Groundwater) Regulations 2010, S.I. No. 9/2010.

10. Accidents and Cessation

This section addresses any likelihood of accidents at the facility as well as measures required to protect the environment in the event of closure of the activity.

10.1 Prevention of Accidents

Potential accidents & measures for prevention/limitation of consequences	
Potential for an accident or hazardous/emergency situation to arise from activities at the facility	<ul style="list-style-type: none"> - Acceptance of contaminated material - Spillage/leak due to accident on site - Spillage/leak due to diesel refuelling - Fugitive dust and noise from site operations

Potential accidents & measures for prevention/limitation of consequences	
	<p>Due to the non-hazardous and inert nature of the waste to be accepted at the facility, the risk of adverse effects on human beings and the environment as a result of an accident is low.</p> <p>Risk of fire is considered low as no fuel or flammable liquids/materials will be stored on site.</p>
Preventative/Mitigation measures to reduce the likelihood of accidents and mitigate the effects of the consequences of an accident at the facility	<ul style="list-style-type: none"> - Implement waste acceptance procedure to prevent acceptance of unauthorised and contaminated waste at the facility. - Class I full retention interceptor on storm water drain from car park and refuelling area. - Routine inspection of silt-traps and hydrocarbon interceptor. - Provision of maintenance programme and integrity testing of bunding and pipelines. - Provision of spill kits/containment booms (condition 3.16). - Dust suppression system including automated sprinkler system, mobile water bowser, wheel wash and road sweeper. - Regular maintenance plan to be put in place.
Additional measures provided for in the RD	<ul style="list-style-type: none"> - Accident prevention and emergency response procedure requirements (Condition 9). - Storm water discharge points to be visually monitored daily (Schedule C). - Integrity of tanks & underground pipes to be assessed every 3 years and maintenance carried out as required (Condition 6). - Environmental Management System to be put in place (EMS) (Condition 2.2.1). - Implement a preventative maintenance programme (Condition 2.2.2.8). - Employ a suitably qualified and experienced manager (Condition 2.1.1). - Ensure sufficient staff training (Condition 2.1.2).

Assessment & Mitigation

The risk of accidents and their associated consequences, and the preventative and mitigation measures listed in the table above, have been considered in full in the assessments carried out throughout this report.

The facility will not be subject to additional controls for major accident prevention and emergency response as specified in Directive 2012/18/EU (Seveso III) as the facility does not store dangerous substances of significant quantities.

Condition 9 of the RD requires procedures to be put in place to prevent accidents with a possible impact on the environment and to respond to emergencies so as to minimise the impact on the environment.

It is considered that the conditions of the RD and the mitigation measures proposed will significantly reduce the likelihood of accidental emissions occurring and limit the environmental consequences of an accidental emission should one occur.

10.2 Cessation of activity

A site closure plan was submitted as part of the licence application. The scope of the plan includes a range of measures to be employed upon cessation of the activity. These include:

- Removal of all redundant structures and plant on cessation of soil recovery activity.
- Removal of all wastes for recovery/disposal.
- Removal of all plant for reuse, resale, or scrap.
- All residues containing fuels, oils or other contaminants to be removed by authorised contractors for recovery/disposal. Cesspit tank and welfare facilities to be removed so no potential for fuel oil or sewage to cause long term water pollution following cessation of activity.
- All hardstanding areas to be broken up and recovered for use as secondary aggregates.
- Site to be restored to facilitate agricultural after use like that which existed prior to extraction works.
- Ongoing environmental monitoring after final recovery operations have ceased. Final site inspection to take place six months after site closure to ensure final site restoration scheme implemented is functioning and progressing as required.

Mitigation:

- Condition 10 of the RD requires the proper closure of the activity with the aim of protecting the environment. This includes the requirement to decommission, render safe or remove for disposal/recovery, building, plant or equipment, or any waste, materials or substances that may result in environmental pollution.
- Under Condition 12 the Agency may amend the licence at any time to require the putting in place of a financial provision to incorporate costings for Closure and/or Environmental Liabilities Risk Assessment. This may be implemented in the event of an incident that creates a significant residual environmental liability or where the environmental risk profile changes on site.

EIA on Accidents and Cessation

For the purposes of EIA, the environmental factors potentially affected by accidents and cessation of the activity include material assets, population and human health, soil, land, air, water and biodiversity. Based on the above assessment of accidents and cessation, the direct, indirect and cumulative effects have been identified, described and assessed, and are detailed below.

Direct and indirect effects:

Accidental emissions are addressed in this report (sections on air, water, noise, waste generation, use of resources, prevention of accidents). It is considered that the conditions of the RD and the mitigation measures proposed will significantly reduce the likelihood of accidental emissions occurring and limit the environmental consequences of an accidental emission should one occur.

Based on the contents of the EIAR and the nature of operations at the facility it is considered that the activity is not likely to lead to residual issues upon eventual closure of the site. I am further satisfied that there will not be significant effects on the environment from cessation of the activity provided the measures specified in Condition 10 of the RD have been correctly implemented.

Cumulative effects:

It is considered very unlikely that environmental impacts would occur at neighbouring developments, concurrent with accidents or closure at the installation, that would give rise to significant cumulative effects on the environment.

11. Other matters relating to EIA

11.1 Effects on landscape, material assets and cultural heritage

(a) Cultural effects including archaeology and architecture

An archaeological and architectural assessment was completed by the applicant. There are no recorded monuments, protected structures, architectural conservation areas, National Inventory of Architectural Heritage (NIAH) structures or NIAH historic gardens within the proposed development area. There are four structures not currently included in the NIAH Record of Protected Structures but recorded on the NIAH building survey within 1km of the facility. There are two NIAH historic gardens within 1km of the facility. There are four records of monuments and places (RMP) within 1km of the facility. The closest of these is a single storey (dormer house) built c. 1900 approximately 350m from the facility.

Any loss of archaeological or architectural heritage could impact negatively on population and human health. These matters are dealt with in the decision of the planning authority to grant planning permission for the developments on site and are not controlled by the Agency. The planning authority has considered the effect to be acceptable.

(b) Landscape, visual and cultural effects

The facility is located in rural area which is mostly agriculture in nature, located 7km from the nearest large urban population. Any disturbance of the landscape or the cultural heritage of an area has the potential to impact on human beings and their enjoyment of the surrounding area. A working quarry has been in operation at the site since the 1940's. The proposal to recover soil and stone at the facility will take place within an existing quarry, using existing site and public road infrastructure, and will return the site back to original-like state.

These matters are dealt with in the decision of the planning authority to grant planning permission for the developments on site and are not controlled by the Agency. The planning authority has considered the effects to be acceptable.

(c) Material Assets

Material assets is taken to mean roads, built services and waste generation. The site is accessed via the main N22 Primary Road which connects to Ballincollig, 7km to the east. Traffic movement on site consists of car, light goods vehicles and heavy goods vehicles (truck and trailer soil deliveries). The operational effect of the soil recovery acceptance at the facility is a long term and imperceptible increase (1.8% on Peak Hour Volume) in HGV traffic movements to and from the facility. There are sufficient supplies of electricity and water to serve the requirements of the development.

These matters are dealt with in the decision of the planning authority to grant planning permission for the development on site and are not controlled by the Agency. The planning authority has considered the effect to be acceptable. I am satisfied that there will not be significant effects on material assets from the operation of the activity, as respects the matters that come within the functions of the Agency.

No mitigation measures have been proposed in relation to (a), (b) and (c) above.

12. Environmental Impact Assessment

12.1 Statutory Provision

This EIA has had regard to the information provided by the applicant, received through consultation, written submission, as well as considering any supplementary information where appropriate and includes the licence assessment completed in this Report.

I have carried out an examination, analysis and evaluation of the information provided by the applicant, including the EIAR, received through consultation and written submission, as well as considering any supplementary information, where appropriate. A summary of the submission made by a third party has been set out at Section 4 of this report.

Having regards to the requirements of the EIA Directive 2014/52/EU, I am satisfied that:

- (i) The environmental effects arising as a consequence of the activity have been satisfactorily identified, described and assessed in accordance with the requirements of Article 3;
- (ii) The information contained in the EIAR has been prepared by competent experts and complies with the provisions of Article 5;
- (iii) The EIAR contains a non-technical summary in accordance with the requirements of Article 5;
- (iv) The public have been given early and effective opportunity to participate in the environmental decision-making procedure.

12.2 Alternatives

Article 5(1)(d) of the Directive 2014/52/EU requires:

(d) a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment;

Annex IV of the Directive (Information for the EIAR) provides more detail on 'reasonable alternatives':

2. A description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.

The matter of alternatives is addressed in the EIAR (Chapter 2). Reclamation of the quarry site is required as a condition of planning permission (Ref: QR19 06/11798 & PL04.225332). The reinstatement of the void using inert material, and the environmental gain derived therefrom, constitutes the principal qualification of the application site. In addition, the licensee assessed the advantageous and strategic location of the site, which is in a rural area with direct access via the N22 Primary Road, and can therefore serve the needs for recovery of inert soils and stones and river derived dredge spoil sourced from across much of Cork County. In this regard, I consider that the matter of the examination of alternatives has been satisfactorily addressed.

12.3 Likely Significant Direct and Indirect Effects

The likely significant direct and indirect effects of the development are considered in this inspector's report under the following headings, after those set out in Article 3 of the EIA Directive 2014/52/EU:

- a) population and human health;
- b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC;
- c) land, soil, water, air and climate;
- d) material assets, cultural heritage and the landscape;
- e) the interaction between the factors referred to in points (a) to (d).

12.3.1 Population and Human Health

Overall Conclusions

The likely significant direct and indirect effects of the development on population and human health have been identified, described and assessed in Sections 5, 6, 7, 8 and 10 of this Report. I have examined all the information on population and human health, provided by the applicant, received through consultation, written submission as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures proposed and through the conditions of the Recommended Decision. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of population and human health.

12.3.2 Biodiversity

Overall Conclusions

The likely significant direct and indirect effects of the development on biodiversity have been identified, described and assessed in Sections 5, 6, 7, 8, 10 and 13 of this Report.

I have examined all the information on biodiversity provided by the applicant, received through consultation, written submission, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures proposed and through the conditions of the Recommended Decision. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of biodiversity.

12.3.3 Land and Soil

Overall Conclusions

The likely significant direct and indirect effects of the development on land and soil have been identified, described and assessed in Sections 5, 6, 9, 10 and 11 of this Report. I have examined all the information on land and soil provided by the applicant, received through consultation, written submission, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures proposed and through the conditions of the Recommended Decision. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of land and soil.

12.3.4 Water

Overall Conclusions

The likely significant direct and indirect effects of the development on water have been identified, described and assessed in Sections 6, 8, 9 and 10 of this Report. I have examined all the information on emission to storm water discharges and emissions to ground and groundwater provided by the applicant, received through consultation, written submission, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures and through the conditions of the Recommended Decision. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of storm water discharges and emissions to ground or groundwater.

12.3.5 Air (including odour and noise)

Overall Conclusions

The likely significant direct and indirect effects of the development from emissions to air have been identified, described and assessed in Sections 5, 7, 8 and 10 of this Report. I have examined all the information on air provided by the applicant, received through consultation, written submission, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures proposed and through the conditions of the Recommended Decision. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of air, noise or odour.

12.3.6 Climate

Overall Conclusions

The likely significant direct and indirect effects of the development under the heading climate have been identified, described and assessed in Section 5 of this Report. I have examined all the information on climate provided by the applicant, received through consultation, written submission, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures proposed and through the conditions of the Recommended Decision. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of climate.

12.3.7 Landscape, Material Assets and Cultural Heritage

Overall Conclusions

The likely significant direct and indirect effects of the development under the heading's material assets, cultural heritage and the landscape have been identified, described and assessed in Sections 8, 9, 10 and 11 of this Report. I have examined all the information on material assets and cultural heritage and the landscape provided by the applicant, received through consultation, written submission, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures proposed. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of material assets, cultural heritage and the landscape.

12.4 Interactions of the foregoing

I have considered the interaction between population and human health, biodiversity, land, soil, water, air, climate, landscape, material assets, cultural heritage and the interaction of the likely effects identified throughout this report. The interaction between factors as a result of the operation of the facility is summarised below:

Population and human health and biodiversity

Potential impacts may arise due to noise, emissions to air, soil and groundwater. As demonstrated in earlier parts of this report such effects are not considered significant.

Water, soil, biodiversity and population & human health

The acceptance of unauthorised waste and accidental discharges or spillages may directly and indirectly effect soil, groundwater, surface water quality downstream, aquatic habitats and aquatic flora and fauna. As demonstrated in earlier parts of this report such effects are considered not to be likely or significant.

Overall Conclusions

I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures proposed and through the conditions of the Recommended Decision. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of the interaction between the foregoing environmental factors.

12.5 Cumulative Effects

Overall Conclusion

The cumulative effects of the development have been identified, described and assessed in this report. I have examined all the information provided by the applicant, received through consultation and written submission. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the Recommended Decision.

12.6 Vulnerability of the Project

The Seveso Directive and Regulations are not applicable at the facility. The risks of accidents associated with the activity are dealt with in Section 10 of this report. Consequently, no specific mitigation measures have been proposed in relation to these effects.

The vulnerability of the facility to natural disasters has been examined. Flooding was considered to be the only potential natural disaster relevant to the facility. Climate change impacts such as heat waves, droughts, extreme rainfall, storms and winds, landslides and rising sea levels could impact negatively on populations and human health, biodiversity, land, soil, water, air material assets, cultural heritage and landscape. The only potential impact of climate change on the facility is the potential of flooding to occur.

A flood risk assessment was submitted with the EIAR. OPW Flood Risk Assessment Maps show that the proposed development site is not located within any fluvial flood zone and there have been no reoccurring flood incidents in the area of the proposed site. The EIAR states there is no risk of pluvial flooding (i.e. rainfall ponding) at the site as all rainfall landing in the pit percolates through the pit floor into the underlying sands and gravels. No mitigation measures have been proposed in the RD.

Conclusion:

The vulnerability of the project to risks of major accidents and/or disasters has been identified, described and assessed. I have examined all the information provided by the applicant, received through consultation, written submission, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the Recommended Decision.

12.7 Reasoned Conclusion on the Significant Effects

Having regard to the examination of environmental information contained above, and in particular to the content of the EIAR and supplementary information provided by the applicant, and the submissions from the planning authority, and third party in the course of the application, it is considered that the significant direct and indirect effects of the activities on the environment are as follows:

- Fugitive dust emissions;
- Noise emissions;
- Accidental leakages or spills; and
- Discharge of storm water to ground.

Having assessed those potential effects, the Agency has concluded as follows:

- Fugitive dust emissions will be mitigated through: imposing dust deposition values at the boundary; and implementing monitoring, maintenance and control measures;
- Noise emissions will be mitigated through: imposing daytime, evening-time and night-time noise limits at noise sensitive locations; implementation of monitoring, maintenance and control measures;
- Accidental leakages or spills will be mitigated through inspection and maintenance of bunds, tanks and pipework, and accident and emergency requirements specified in the licence; and
- Discharges to ground will be mitigated through: operation of abatement equipment, implementing monitoring, maintenance and control measures; requirements to comply with Environmental Objectives (Groundwater) Regulations 2010 as amended, and implementation of waste acceptance procedures.

Having regard to the effects (and interactions) identified, described and assessed throughout this report, I consider that the monitoring, mitigation and preventative measures proposed will enable the activity to operate without causing environmental pollution, subject to compliance with the licence.

Accordingly, if the activity is carried out in accordance with the RD and the conditions attached, the operation of the activity will not cause environmental pollution. The conditions of the RD and the mitigation measures will significantly reduce the likelihood of accidental emissions occurring and limit the environmental consequences of an accidental emission should one occur.

13. Appropriate Assessment

Appendix 1 lists the European Sites assessed, their associated qualifying interests and conservation objectives along with the assessment of the effects of the activity on the European Sites.

A screening for Appropriate Assessment was undertaken to assess, in view of best scientific knowledge and the conservation objectives of the site, if the activity, individually or in combination with other plans or projects is likely to have a significant effect on any European Site. In this context, particular attention was paid to the European Sites at Cork Harbour SPA (004030), and Great Island Channel SAC (001058).

The activity is not directly connected with or necessary to the management of any European Site and the Agency considered, for the reasons set out below, that it cannot be excluded, on the basis of objective information, that the activity, individually or in combination with other plans or projects, will have a significant effect on any European Site and accordingly determined that an Appropriate Assessment of the activity was required, and for this reason determined to require the applicant to submit a Natura Impact Statement.

This determination was been made based on the following: There is potential hydrological connectivity from groundwater to surface water via the River Bride, a tributary of the River Lee which flows to the Cork Harbour SPA (004030), and Great Island Channel SAC (001058).

An Inspector's Appropriate Assessment has been completed and has determined, based on best scientific knowledge in the field and in accordance with the European

Communities (Birds and Natural Habitats) Regulations 2011 as amended, pursuant to Article 6(3) of the Habitats Directive, that the activities individually or in combination with other plans or projects, will not adversely affect the integrity of any European Site, in particular Cork Harbour SPA (004030), and Great Island Channel SAC (001058), having regard to their conservation objectives and will not affect the preservation of these sites at favourable conservation status if carried out in accordance with this recommended decision and the conditions attached hereto for the following reasons:

- Storm water from roof areas and the entrance road will discharge to a silt trap and soakaway. Storm water from areas with potential for contamination (car park and refuelling area) will discharge to silt trap, oil interceptor, and soakaway.
- Condition 5 of the licence requires that no specific emissions from the facility shall exceed the emission limit values set out in *Schedule B: Emission Limits*. *Schedule C: Control and Monitoring* also sets out the monitoring requirements for emissions to air and storm water emissions.
- Noise limits of 55dB(A) (daytime), 50dB(A) (evening) and 45dB(A) (night-time) shall apply at noise sensitive locations. For night-time there shall be no clearly audible tonal or impulsive component at the facility boundary.
- While there is potential for accidents and unplanned releases from the facility, accidental emissions will not impact on the qualifying interests of any of the European sites, in light of the nature of the potential accidental emissions, and the measures and controls in the Recommended Decision.

In light of the foregoing reasons no reasonable scientific doubt remains as to the absence of adverse effects on the integrity of those European Sites Cork Harbour SPA (004030), and Great Island Channel SAC (001058).

14. Fit & Proper Person Assessment

The Fit & Proper Person test requires three elements of examination:

Technical Ability

The applicant has provided details of the qualifications, technical knowledge and experience of key personnel. The licence application also includes information on the on-site management structure. Roadstone Limited holds a number of waste licences issued by the EPA for the backfill and restoration of quarry voids with inert soil and stone and have experienced management and operational staff in place. It is considered that the applicant has demonstrated the technical knowledge required.

Legal Standing

Neither the applicant nor any relevant person has relevant convictions under the Waste Management Act 1996, as amended, or under any other relevant environmental legislation.

Financial Provision

The licence category and proposed facility was assessed for the requirements of Environmental Liabilities Risk Assessment (ELRA), Closure, Restoration and Aftercare Management Plan (CRAMP) and Financial Provision (FP), in accordance with Agency guidance. Under this assessment it has been determined that ELRA, costed CRAMP and FP were not required.

Condition 10.2 of the RD requires the review of a Closure, Restoration and Aftercare Management Plan (CRAMP), uncosted, within six months of the grant of the licence. In accordance with EPA guidance, there is no need to require the preparation of an Environmental Liability Risk Assessment or the making of financial provision. This is based on the fact that only non-hazardous, inert wastes will be deposited at the facility, the environmental risk posed is low and restoration activities will cease, aftercare excepted, within eight to ten years.

Fit & Proper Conclusion

It is my view, and having regard to the provisions of section 40(7) of the Waste Management Act 1996 as amended, and the Conditions of the RD, that the applicant can be deemed a Fit & Proper Person for the purpose of this application.

15. Cross Office Consultation

I consulted with Conor Quinlan (OEA Groundwater expert) regarding discharge of storm water to ground. I consulted with Ewa Babiarczyk and Fergus O'Regan (OES Inspectors) in relation to licencing conditions. I consulted with Marian Doyle (OES Inspector) in relation to Appropriate Assessment.

16. Charges

The annual enforcement charge recommended in the RD is **€5,088**, which reflects the anticipated enforcement effort required and the cost of monitoring.

17. Recommendation

The RD specifies the necessary measures to provide that the facility shall be operated in accordance with the requirements of Section 40(4) of the Waste Management Act 1996, as amended, and has regard to the AA and EIA. The RD gives effect to the requirements of the Waste Management Act 1996 as amended and has regard to submissions made.

I recommend that a Proposed Decision be issued subject to the conditions and for the reasons as drafted in the RD.

Signed



Eoin McCaffrey

Procedural Note

In the event that no objections are received to the Proposed Decision on the application, a licence will be granted in accordance with Section 43(1) of the Waste Management Act 1996 as amended, as soon as may be after the expiration of the appropriate period.

Appendices

Appendix 1: Assessment of effects of activity on European sites and proposed mitigation measures.

Site Code	Distance/ Direction from Facility	Qualifying Interests (* denotes priority habitat)	Conservation Objectives	Assessment
Cork Harbour SPA (004030)	17.35km	Birds A004 Little Grebe Tachybaptus ruficollis A005 Great Crested Grebe Podiceps cristatus A017 Cormorant Phalacrocorax carbo A028 Grey Heron Ardea cinerea A048 Shelduck Tadorna tadorna A050 Wigeon Anas penelope A052 Teal Anas crecca A054 Pintail Anas acuta A056 Shoveler Anas clypeata A069 Red-breasted Merganser Mergus serrator A130 Oystercatcher Haematopus ostralegus A140 Golden Plover Pluvialis apricaria A141 Grey Plover Pluvialis squatarola A142 Lapwing Vanellus vanellus	<i>NPWS (2014) Conservation objectives for Cork Harbour SPA [004030]. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, and the Gaeltacht.</i>	<p>The Cork Harbour SPA is located approximately 17.5km from the facility. The only potential connectivity is via groundwater and then surface water. Potential impacts on the SPA assessed include impacts due to stormwater emissions.</p> <p><u>Emissions to Water:</u></p> <p>Potentially contaminated storm water from the facility will be directed to a silt trap, Class I full retention oil interceptor, before discharging to ground via a soakaway. The main potential for impact would arise from accidents and unplanned releases from the facility resulting in contaminated discharges to groundwater, which have a potential hydrogeological connection to the River Bride (2km east) which flows to the River Lee and into Cork Harbour and could affect the habitats and species directly or could affect the water dependant prey on which the qualifying species depend.</p> <p>It is considered that the impact on the SPA will not be significant subject to compliance with the conditions of the recommended decision and in particular, implementing the following mitigation measures required in the recommended decision: monitoring of storm water emissions, bunding and integrity testing and installation of hydrocarbon interceptors (Refer to Section 6 storm water discharges of this report).</p>

Site Code	Distance/ Direction from Facility	Qualifying Interests (* denotes priority habitat)	Conservation Objectives	Assessment
		A149 Dunlin Calidris alpina A156 Black-tailed Godwit Limosa limosa A157 Bar-tailed Godwit Limosa lapponica A160 Curlew Numenius arquata A162 Redshank Tringa totanus A179 Black-headed Gull Chroicocephalus ridibundus A182 Common Gull Larus canus A183 Lesser Black-backed Gull Larus fuscus A193 Common Tern Sterna hirundo A999 Wetlands and waterbirds		
Great Island Channel SAC (001058)	23.65km	Habitats 1140 Mudflats and sandflats not covered by seawater at low tide 1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	<i>NPWS (2014) Conservation Objectives: Great Island Channel SAC [001508]. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.</i>	The Great Island Channel SAC is located approximately 23.65km from the facility. The only potential connectivity is via groundwater and then surface water. Potential impacts on the SAC assessed include impacts due to stormwater emissions. <u>Emissions to Water:</u> Potentially contaminated storm water from the facility will be directed to a silt trap, Class I full retention oil interceptor, before discharging to ground via a soakaway. The main potential for impact would arise from accidents and unplanned releases from the facility resulting in contaminated discharges to groundwater, which have a potential hydrogeological connection to the River Bride (2km east) which flows to the River Lee and into Cork Harbour and could affect the habitats and species directly or could affect the water dependant prey on which the qualifying species depend.

Site Code	Distance/ Direction from Facility	Qualifying Interests (* denotes priority habitat)	Conservation Objectives	Assessment
				<p>It is considered that the impact on the SAC will not be significant subject to compliance with the conditions of the recommended decision and in particular, implementing the following mitigation measures proposed in the recommended decision: monitoring of storm water emissions, bunding and integrity testing and installation of hydrocarbon interceptors (Refer to Section 6 storm water discharges of this report).</p>

Appendix 2: Relevant European (and international) legal instruments

The following Irish and European and international legal instruments are regarded as relevant to this application assessment and have been considered in the drafting of the Recommended Decision.
Waste Management (Licensing) Regulations, 2004, as amended (S.I. 395/2004)
Environmental Impact Assessment (EIA) Directive (85/337/EEC, as amended)
Habitats Directive (92/43/EEC) & Birds Directive (79/409/EC)
Environmental Liability Directive (2004/35/CE)
Waste Framework Directive (2008/98/EC)
Groundwater Directive 2006/118/EC
Air Quality Directives (2008/50/EC and 2004/107/EC)
EC Environmental Objectives (Groundwater) Regulations, 2010 (S.I. No. 9 of 2010)

Appendix 3: BREF documents and National BAT notes relevant to this assessment

National BAT notes	Publication date
BAT Guidance Note – Waste Sector (Landfill Activities)	December 2011
BAT Guidance Note – Waste Sector (Waste Transfer and Materials Recovery)	December 2011

List of Waste codes

'List of Waste' (LOW) Code	LOW Description, before treatment
17 05 04	Soil and stone other than those mentioned in 17 05 03
17 05 06	Dredging spoil other than those mentioned in 17 05 05

Maps/drawings

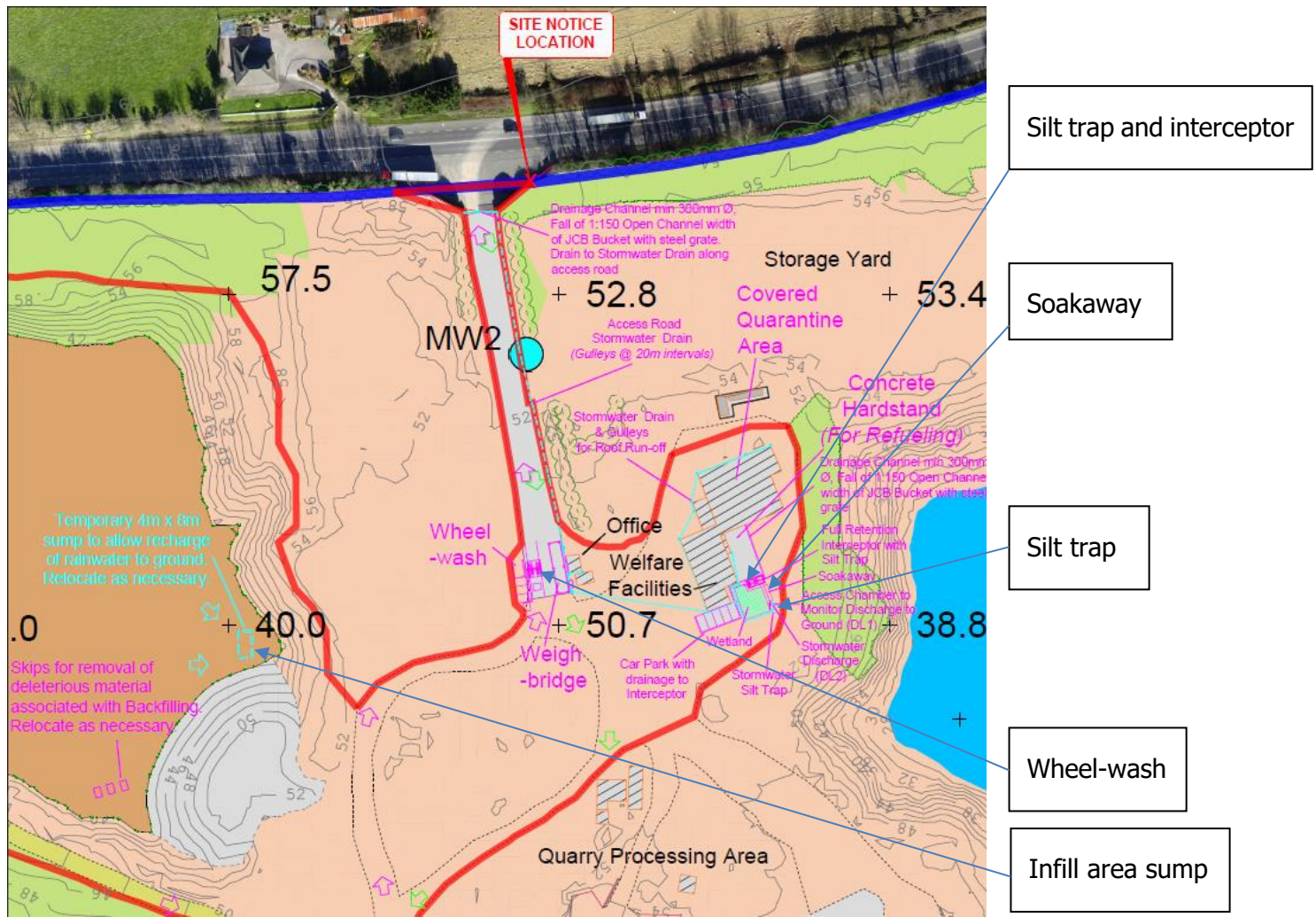


Figure 3: Site drainage layout plan

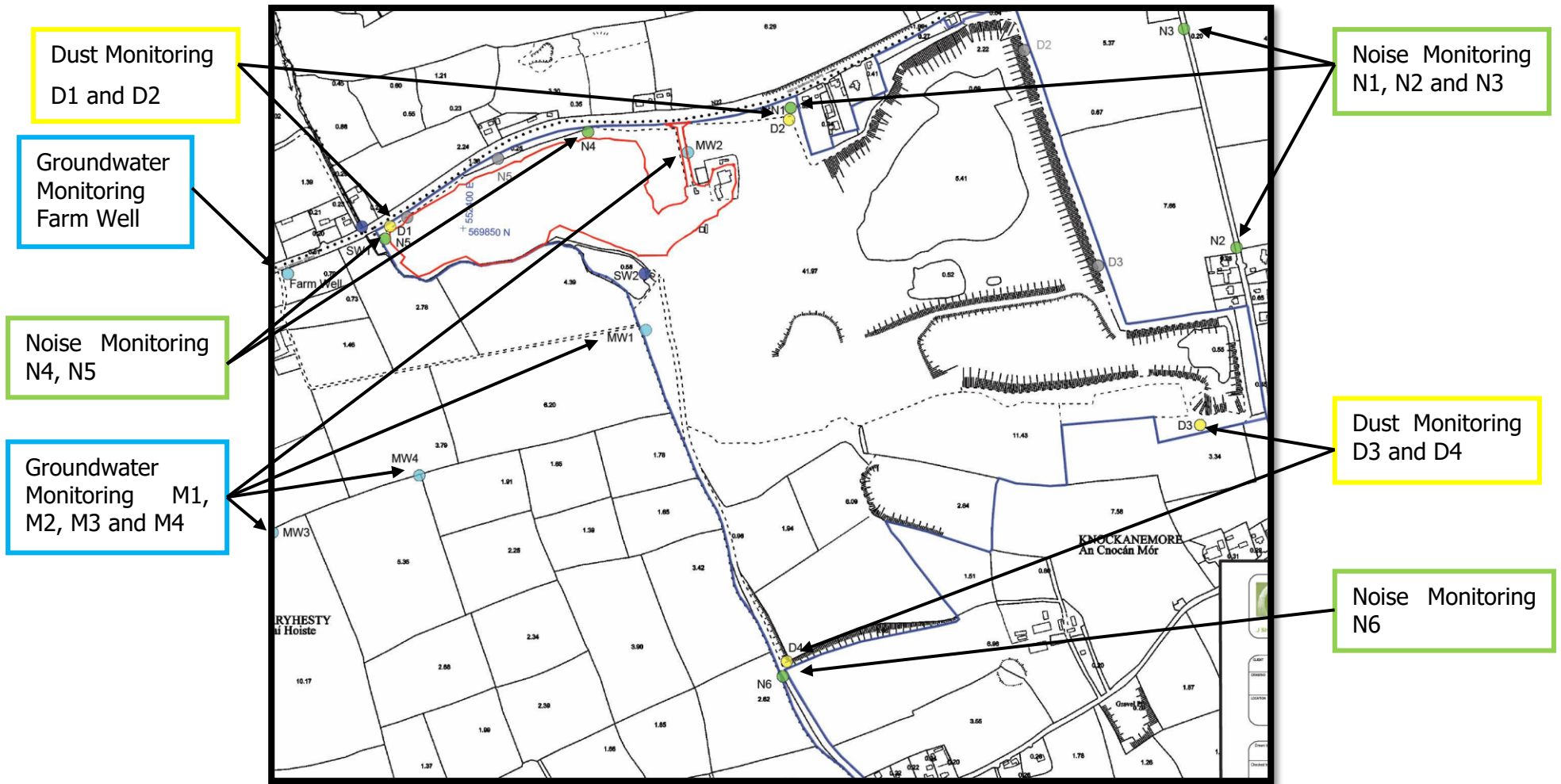


Figure 4: Environmental Monitoring Plan



Figure 5: Rainwater accumulation on quarry floor during site visit.