ATTACHMENT-4-7 BEST AVAILABLE TECHNIQUES (BAT) ASSESSMENT

TABLE OF CONTENTS

1 BEST AVAILABLE TECHNIQUES (BAT) BACKGROUND

Best Available Techniques (BAT) was introduced as a key principle in the IPPC Directive, 96/61/EC. This Directive has been incorporated into Irish law by the Protection of the Environment Act 2003.

Best available techniques is defined in Section 5 of the Environmental Protection Agency Acts, 1992 to 2007, and Section 5(2) of the Waste Management Acts 1996 to 2010 as the "most effective and advanced stage in the development of an activity and its methods of operation, which indicate the practical suitability of particular techniques for providing, in principle, the basis for emission limit values designed to prevent or eliminate or where that is not practicable, generally to reduce an emission and its impacts on the environment as a whole".

The proposed facility will not be a landfill i.e. it will be a waste recovery, not a waste disposal activity. Regardless, BAT for the activity is taken to be best represented by the guidance given in the EPA Guidance Note on Best Available Techniques for the Waste Sector: Landfill Activities (2011), insofar as it relates to the backfill activities at this facility.

The approach taken will be the most effective in achieving a high general level of protection of the environment having regard to the way the facility is located, designed, built, managed, maintained, operated and decommissioned.

1.1 BAT HIERARCHY

The BAT hierarchy extracted from the guidance document is reproduced below. The emphasis of the BAT hierarchy is on pollution prevention techniques rather than treatment.

The IPPC Directive 2008/1/EC and the Environmental Protection Agency Acts 1992 to 2007 (Section 5(3)), require the determination of BAT to consider in particular the following, having regard to the likely costs and advantages of measures and to the principles of precaution and prevention:

(i) Use of low-waste technology.
(ii) Use of less hazardous substances.
(iii) Furthering of recovery and recycling of substances generated and used in the process and of waste, where appropriate.
(iv) Comparable processes, facilities or methods of operation, which have been tried with success on an industrial scale.
(v) Technological advances and changes in scientific knowledge and understanding.
(vi) Nature, effects and volume of the emissions concerned.
(vii) Commissioning dates for new or existing activities.
(viii) Length of time needed to introduce the best available techniques.
(ix) Consumption and nature of raw materials (including water) used in the process and their energy efficiency.
(x) Need to prevent or reduce to a minimum the overall impact of the emissions on the environment and the risks to it.
(xi) Need to prevent accidents and to minimize the consequences for the environment, and

(xii) Information published by the Commission of the European Communities pursuant to any exchange of information between Member States and the industries concerned on best available techniques, associated monitoring, and developments in them, or by international organisations, and such other matters as may be prescribed.

2 ENVIRONMENTAL MANAGEMENT SYSTEM

Roadstone Limited has an accredited Environmental Management System (EMS) in respect of rock extraction and aggregate production activities in addition to waste recovery activities at a number of locations across the State.

Roadstone proposes to implement and update its existing EMS in due course to incorporate any additional mitigation measures and management procedures which may be necessary at Midleton Quarry to:

- Mitigate specific impacts and emissions arising from the proposed waste recovery activities;
- Implement best practice for environmental management and control of the waste activities at the site.

An environmental monitoring programme is currently in place at the quarry.

The site-specific EMS will:

- Identify, plan for and establish the necessary procedures, objectives and targets in association with financial planning and investment to safeguard the environment
- Identify the:
    - structure and responsibility for environmental management at the facility
    - levels of training, awareness and competence of individuals at the facility
    - stakeholder and community engagement processes and actions
    - documentation and procedures and environmental management processes that assure compliance with environmental legislation
- Ensure that environmental responsibilities and risks for Roadstone Limited are monitored and measured, that records are kept and maintained and that actions are implemented.

The EMS will be put in place with continued environmental monitoring of noise, dust, surface and groundwater on site.

It will also incorporate strict waste acceptance procedures to ensure that only inert soil and stone material is accepted and placed on site.

The EMS will also cover:

- Energy consumption and efficiency;
- Efficient use of raw materials;
- Managing unavoidable waste in line with the principle of the waste hierarchy.

3 RISKS TO THE ENVIRONMENT

The BAT Guidance notes that risks to the environment are primarily associated with emissions from an activity. These include:

- Emissions to atmosphere.
- Discharge of polluting matter, effluent to waters.
- Noise.
- Waste.

The underlying objective of BAT is to eliminate or reduce emissions from processes. Emissions, and hence environmental pollution, can be eliminated or reduced by:

- Proper design of the facility.
- Effective management of the facility.
- The selection of appropriate processes, technologies and facility operations.

The BAT guidance examines potential emissions from landfilling activities to air, water and land. The aspects relevant to the proposed inert soil recovery facility have been considered.

3.1 POTENTIAL EMISSIONS

Potential emissions to air include:

- Dust from deliveries, waste and operational activities
- Vehicle emissions

Potential emissions to groundwater include:

- Suspended solids
- Fuels / oils

Potential Nuisance Related and Other Emissions:

- Noise
- Mud on public roads

The only activities to be conducted at the Midleton Soil Recovery Facility are the acceptance and recovery of inert soil and stone, including temporary storage pending final use. No hazardous waste will be accepted at the facility. There will be no processing of the incoming waste materials other than extraction of inappropriate materials.

Waste accepted for restoration of the lands will be either

- Temporarily stored pending final recovery
- Directly recovered

The potential generation of wastes onsite will be low. Any wastes that inadvertently enter the site shall be segregated and placed in the quarantine area prior to offsite disposal or recovery at approved facilities.

Any canteen waste arising from the site activities will be appropriately segregated and stored for collection by an authorised waste collector for recycling and disposal at appropriate facilities.

There are limited opportunities to apply BAT with respect to the proposed recovery operations. Consideration is given to control and abatement measures to ensure the facility will continue to operate within accepted emission limit values for this type of operation to prevent and minimise the risks to the environment. The consideration given to compliance with the relevant BAT guidance is presented below:

- There will be no emissions to sewer, surface water and minimal emissions to ground via surface water drainage system for the hardstanding areas.
- The activity will not generate landfill gas or leachate
- Incoming material will be free of biodegradable waste and will therefore not create odours or attract vermin or birds.
- Potential noise and dust emissions will be controlled via prescribed mitigation measures, which will be incorporated into the site Environmental Management System. Due regard was given to the requirements of EPA BAT notes (EPA (2011) BAT Guidance Note on Best Available Techniques for the Waste Sector: Landfill Activities; and EPA (2011) BAT Guidance Note - Waste Sector (Transfer & Materials Recovery)) in assigning mitigation measures.
- Outgoing vehicles will pass through a wheel-wash to prevent soil from being carried out onto the road.
- The facility will not be an intensive energy/water-user.
- There will be controlled fuel management (vehicle fuelling using mobile fuel bowsers on designated refuelling points, no onsite fuel storage) on site.
- Emergency Response Procedures will be incorporated into the Environmental Management System.
- A rigorous Waste Acceptance Procedure will be implemented. Input material will be inspected/tested, where required, prior to delivery to site, to confirm suitability.
- All material-in and material-out will be recorded and summary data reported to the Agency as part of Annual Environmental Reporting obligations.
- The facility will be managed by a competent, experienced, qualified management team with due regard for the local community and for the public.
- An environmental monitoring programme will be implemented that will be in accordance with licence conditions.
- The site will be progressively restored, on a planned and phased basis, in accordance with the site restoration/phasing plan. Final cover and planting will be implemented on the completed phases as soon as practicable.

4 TECHNIQUES FOR PREVENTION AND MINIMISATION OF EMISSIONS

The relevant techniques to eliminate, reduce and control emissions during site operations are described in the following sections.

4.1 POTENTIAL AIR EMISSIONS

The measures proposed to eliminate, reduce and control emissions to air include:

- Provision of water spraying system for dust suppression
- Use of mobile water bowser for areas not covered by the spraying system
- Seeding of areas as soon as they reach restoration levels to limit fugitive dust emissions
- Use of sheltered tipping area in windy conditions

4.2 EMISSIONS TO GROUNDWATER

The measures proposed to eliminate, reduce and control emissions to groundwater include:

- Strict waste acceptance procedures to be in place to prevent any contaminated material being placed on site
- No storage of fuels on site and procedures for managing any spillages
- Refuelling to be undertaken in designated area
- No on-site maintenance of plant
- The uncontaminated surface water from parking and refuelling areas will pass through a full retention oil interceptor and a constructed wetland prior to discharge to the soakaway area.

4.3 POTENTIAL NUISANCE RELATED AND OTHER EMISSIONS

The measures proposed to eliminate, reduce and control emissions nuisance-related and other emissions include:

- Use of equipment that conforms to EU noise standards
- Limiting operational working hours
- Procedures to ensure that vehicles are well maintained and operating efficiently
- Engines to be switched off when vehicles are not in use
- Vehicle movements to be minimised on site
- Regular sweeping of site roads to control any mud
- Use of effective wheel wash equipment on vehicles exiting the site

5 BAT ASSOCIATED EMISSION LEVELS AND COMPLIANCE MONITORING

5.1 POTENTIAL AIR EMISSIONS

Potential emissions to air include fugitive emissions related to dust associated with vehicle movements and placing of material on site.

The proposed emission trigger values are outlined in Table 5.1 below:

Table 5-1: Potential Air Emission Trigger Levels

Parameter	Concentration/Trigger Level
Total Dust Deposition	350 mg/m^2/day

5.2 EMISSIONS TO GROUNDWATER

There are 6 groundwater sampling wells on site. Water quality monitoring is currently being conducted as part of the existing planning consent, details of the proposed water quality monitoring including parameters and trigger levels are outlined in Attachment-9-1-Environmental Management Techniques.

As outlined above, strict waste acceptance procedures will be in place to ensure that only inert soil and stone material is accepted and placed on site.

5.3 POTENTIAL NUISANCE RELATED AND OTHER EMISSIONS

5.3.1 Noise

Noise monitoring will be carried out in accordance with the EPA's Guidance Note for noise. The proposed levels limits are outlined in the

Limits During Working Hours	Limits Outside Working Hours
55 dB(A) LAeq (1 hour) between 07:00 hours and 18.00 hours Monday to Friday and between 07:00 hours and 14:00 hours on Saturdays.	Noise emissions shall not exceed 45 dB(A) LAeq (15 minutes) at any other time outside normal working hours.

5.3.2 Other Nuisances / Emissions

Daily, weekly and monthly inspections of the site and public roads in vicinity of the site shall be undertaken to monitor other potential nuisances or emissions (mud on public road etc).