ATTACHMENT H1 WASTE TYPES AND QUANTITIES

This Waste Licence Application provides for the restoration of a former quarry in the townland of Fassaroe, Bray, Co. Wicklow using in-situ and imported inert soils and small quantities of recycled inert construction and demolition waste (for haul road construction). It also provides for continuation of established C&D waste recycling activities at the same site.

Clean, inert soil and stone is likely to be sourced from greenfield development sites. Intermixed soil, stones and inert construction waste (concrete, block and brick) will be sourced from re-development sites or from utilities excavations in urban areas.

The total void space to be backfilled and restored is approximately 375,000m^3. As the application site is zoned for development in the future, the backfilled materials will be subject to significant compactive effort in order to densify them and reduce the potential for long-term settlement. A target compaction density of 2.0t/m^3 is therefore assumed for tonnage assessment purposes, giving a requirement for approximately 750,000tonnes of inert soil and/or subsoil.

Of the total inert soil requirement, approximately 65,000m^3 (130,000 tonnes) will be sourced from soil stockpiles and screening berms around the existing quarry void, principally behind the crest on the eastern side. All remaining inert materials to be used in the restoration of the application site will be imported from external development or construction and demolition work sites

In addition to the above, a relatively small quantity of secondary aggregate produced on site will be required to construct temporary haul roads across and through the site as the backfilling works proceed.

The duration of backfilling activities at the quarry void will largely be dictated by the rate at which approximately 620,000 tonnes of externally sourced inert soil and stone is imported to the site. There are many factors which will influence this in turn, including, but not limited to,

- Availability of acceptable inert materials at construction sites
- Prevailing economic climate
- Construction industry output
- Project location, scale, duration and distance from the facility
- Logistical and/or programming constraints at sites generating inert materials
- Climatic conditions (reduced construction activity in wet weather)
- Availability of hauliers
- Disruptions along the existing local and national road network
- Capacity of earthmoving plant to place and compact materials
- Waste inspection / weighbridge processing constraints

In light of these and other variables, calculation of intake rates and duration is not an exact science. At the present time, assuming 50 working weeks in each calendar year, 5.5 days per working week and 10 hours per working day, it is estimated that the rate of importation of inert materials to the quarry void could vary between 100,000 tonnes and 550,000 tonnes per annum (the maximum equivalent permitted by the recent planning permission issued by Wicklow County Council).

The corresponding duration of backfilling activities could therefore vary from just over 1 year to 7.5 years. Assuming an average importation rate of 200,000 tonnes/year, the expected duration of quarry backfilling activities will be just over 3 years.

The Applicant estimates that up to 20,000 tonnes of inert construction and demolition will be accepted and/or processed at the waste recovery facility waste each year. It is envisaged that some of the recovered inert secondary aggregate will be re-used in-situ in the construction of internal haul roads and hardstanding areas. Any excess material recovered at the facility will be exported off-site for re-use as secondary aggregate on construction projects.

The inert materials to be accepted at the site for use in backfilling / recovery activities are identified by their European Waste Catalogue reference number below

EWC Code	Description
17 01 01	Concrete
17 01 02	Bricks
17 01 03	Tiles and ceramics
17 01 07	Mixture of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06
17 05 04	Soil and stones other than those mentioned in 17 05 03
17 05 06	Dredging spoil other than those mentioned in 17 05 05
17 09 04	Mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 aqnd 17 09 03
20 02 02	Soil and stones

The estimated annual quantities to be recovered are indicated for the five year period 2009-2013 below :-

Year	Inert soil / stones for recovery (tonnes / annum)	C+D waste for recovery (tonnes / annum)	Total annual quantity of waste (tonnes / annum)
2009	100,000 (e)	20,000 (e)	120,000 (e)
2010	200,000 (e)	20,000 (e)	220,000 (e)
2011	200,000 (e)	20,000 (e)	220,000 (e)
2012	120,000 (e)	20,000 (e)	140,000 (e)
2013		20,000 (e)	20,000 (e)

Note (e) = estimate

Note that an estimated 2.5% to 5% of the volume of inert soil placed at the facility will comprise organic rich topsoil capable of sustaining vegetation growth. This material will be stockpiled as required and used for progressive restoration of the former quarry.

ATTACHMENT H2 WASTE ACCEPTANCE PROCEDURES

The proposed waste acceptance procedures to be implemented as part of the quarry restoration and waste recovery scheme are outlined in Section 2.4 of the Environmental Impact Statement.

Further detail is provided in the Outline Waste Handling and Acceptance Plan reproduced in Appendix 2.1 of the EIS.

ATTACHMENT H3 WASTE HANDLING PROCEDURES

The proposed waste handling procedures to be implemented as part of the quarry restoration and waste recovery scheme are described Section 2.4 of the Environmental Impact Statement.

Further detail is provided in the Outline Waste Handling and Acceptance Plan reproduced in Appendix 2.1 of the EIS.