

## ATTACHMENT G1 – RESOURCE USE AND ENERGY EFFICIENCY

### Raw Materials and Substances

The waste recovered at the Huntstown waste facility generally comprises inert soil and stone. No process related raw materials, chemicals, solid or liquid wastes intermediates or products etc. are consumed or generated by the waste recovery activities at the facility. In the absence of any putrescible waste at the facility, there will be no requirement to use rodenticides and insecticides to control vermin and insects.

The only material requirement in respect of the approved restoration scheme is the excess inert soil, stone and rock waste which is used in backfilling the quarry void(s). It is envisaged that these materials will be generated by construction and development related activities in Dublin City, North and West County Dublin and the Greater Dublin Area generally.

The total volume of soil and stone required to backfill and restore the voids at the North Quarry and West Quarry is 5,025,000m<sup>3</sup>. The backfilled materials will be subject to a degree of compactive effort (by tracked bulldozer) and materials placed at the bottom of the quarry will be further compacted by the weight of overlying material.

No construction or demolition waste will be imported to, or accepted at, the waste recovery facility. In the absence of any 'End of Waste' criteria for recycled (or secondary) aggregates, it is currently envisaged that no recycled construction and demolition waste (produced from intermixed concrete, brick, block, tiles etc.) will be imported (over the initial period of operations at least) for construction of temporary internal haul roads over backfilled clay materials and as such, only 'virgin' aggregate will be imported to the facility initially for haul road construction purposes. This is likely to change in the future once end of waste criteria for recycled aggregate have been published by the Environmental Protection Agency (EPA).

An estimate of the material quantities required to complete backfilling of the North Quarry and West Quarry at Huntstown Quarry is provided below:

**Table G1  
Material Requirements**

Material	Quantity (tonnes)	Source
Inert subsoil, stones and rock	9,400,000 tonnes	Imported
Stockpiled soil	95,000 tonnes	In-situ
Aggregate	20,000 tonnes	Imported
Topsoil (150mm)	30,000 tonnes	Imported

### Energy Consumption

The operation of the facility will consume a relatively minor amount of electrical power / energy, principally on account of lighting and heating at the site office, weighbridge office, canteen and staff welfare facilities and use of pumping equipment at the quarry floor and proposed wheelwash facility. The amount of electrical energy consumed at the facility (in its own right) is expected to be broadly similar to that consumed by a small quarry operation, of the order of 2,500 kW per week. Assuming a 10-year operating period, the total consumption of electricity (in the absence of any improvement in efficiency) would be of the order of 1,250,000kW (or 1.25MW).

Earthworks equipment placing and compacting the imported soil and stone will be powered by diesel fuel. Refuelling of all mobile plant (bulldozers / mechanical excavators) will take place on-site over impermeable (sealed) concrete surfaces at the proposed fuel storage tanks or using double skin bowsters.

Assuming that inert waste is imported, placed and recycled at the application site for 50 weeks each year over a 10 year period (500 weeks), the diesel fuel consumed by the placement, compaction and recovery of inert waste and ancillary activities (based on consumption as other recovery facilities) is assessed as follows:

	<b>Fuel Consumption</b>	<b>Fuel Consumed</b>
<b>Waste Placement and Compaction</b>		
Bulldozer (x2)	2100 litres / week	1,050,000
Mechanical Excavator	500 litres / week	250,000
<b>Other</b>		
Site Vehicles (1 No.)	50 litres / week	25,000
<b>Total Fuel Consumption</b>	<b>2650 litres / week</b>	<b>1,325,000 litres</b>

Note that the assessed fuel consumption is based on the following assumptions :

- (i) there will no improvement in fuel efficiency of mechanical plant and site vehicles over the operational life of the facility
- (ii) no alternatives to diesel fuel will become commercially available over the operational life of the facility.
- (iii) soil waste intake to the facility is not at the maximum permitted level each year, and the average intake is of the order of 1m tonnes per annum.

The proposed placement, compaction and recovery of approximately 9,550,000 tonnes of inert materials over an assumed 10 year operating period is therefore estimated to consume a total of 1,325,000 litres of diesel fuel.

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