

Attachment 4-3-6-Maximum Waste Accepted Calculations

1. Waste Recovery Capacity

The volume of material to be extracted from the proposed extension to the quarry has been calculated by AGECE Consulting Engineers based on 3-D modelling. The modelling indicates that there are c. 846,000 cubic metres (c. 1,354,400 tonnes) of material to be extracted within the proposed extension area. The quarry is proposed to be fully restored to the original landform therefore the restoration volumes will equate that of the extraction. Restoration shall be undertaken via the recovery of waste (inert soil - LoW Code 17 05 04) to the facility which shall be used as backfill within the quarry void. The density of the extracted sand and gravel have been assumed to be similar to that of the imported fill (inert waste) estimated at 1.6 tonnes/m³. Accordingly, the total capacity for recovery of inert soil at the facility is estimated as c. 846,000 cubic metres (c. 1,354,400 tonnes).

The above quantity calculations exclude the upper 3.3m of soil at the site comprising of topsoil (0.3m thick) and sandy subsoil (3m thick). These shall be retained on-site for use in restoration works as detailed in Section 3 (Non-Waste Storage below).

The initial 3 years of the proposed quarry operations will comprise extraction activities only which is not a licensable activity and does not form part of the waste licence application. The waste licence application relates to the recovery of inert soil for use as fill in the quarry void which will commence in about year 4 of the facility operations. The staged commencement of extraction and restoration allows time for a sufficient area of the quarry floor to be made available for filling, and which will allow working area for extraction and filling operations to be carried out with minimal interference from either operation.

The maximum proposed extraction output rate from the quarry has been estimated as 100,000 tonnes per annum. Based on consultations and projection of market requirements from developers, the predicted annual rate of inert soil available for the proposed quarry void filling is estimated as 80,000 tonnes.

Based on the above annual extraction and filling rates, the operation of the proposed quarry is estimated at about 20 years. The latter 5-years of operations will be filling only as the remaining

proposed quarry void is filled with inert soil. Table 1 below indicates Predicted Annual Extraction and Filling Quantities and timeframes for both quarry and waste recovery (filling) activities.

Table 1: Predicted Annual Extraction and Filling Quantities

Year	Extraction Quantity (tonnes)	Extraction Volume (m ³)	Recovery/ Filling Quantity (tonnes)	Recovery/ Filling Volume (m ³)
1	100,000	62,500	No filling	No filling
2	100,000	62,500	No filling	No filling
3	100,000	62,500	No filling	No filling
4	100,000	62,500	80,000	50,000
5	100,000	62,500	80,000	50,000
6	100,000	62,500	80,000	50,000
7	100,000	62,500	80,000	50,000
8	100,000	62,500	80,000	50,000
9	100,000	62,500	80,000	50,000
10	100,000	62,500	80,000	50,000
11	100,000	62,500	80,000	50,000
12	100,000	62,500	80,000	50,000
13	100,000	62,500	80,000	50,000
14	54,400	34,000	80,000	50,000
15	Extraction ended	Extraction ended	80,000	50,000
16	Extraction ended	Extraction ended	80,000	50,000
17	Extraction ended	Extraction ended	80,000	50,000
18	Extraction ended	Extraction ended	80,000	50,000
19	Extraction ended	Extraction ended	80,000	50,000
20	Extraction ended	Extraction ended	74,400	46,500
Total	1,354,400	846,500	1,354,400	846,500

Notes:

- (1) Density of sand and fill (inert waste) assumed at 1.6 tonnes/m³
- (2) The predicted extraction and filling rates will vary depending on market demands.

It can therefore be concluded that the maximum annual inert waste soil accepted at the facility will be 80,000 tonnes with a total capacity of 1,354,400 tonnes for the overall the lifetime of the proposed development.