

4.3 Calculation of Capacity

Upload a document that sets out how you calculated the capacity for each recovery and disposal activity selected in the table above.

1. Dredge Volumes/Waste Volumes

The dredge volume i.e. waste volume was calculated using AutoCAD Civil 3D by overlaying the proposed works onto existing bathymetric and topographic data.

The inner harbour was divided into five areas with varying proposed dredge depths as follows:

1. Trawler basin and entrance channel: -4mCD
2. Swing mooring area: -3mCD
3. Marina: -2.5mCD
4. Marina approach channel: -2.5mCD
5. Marina Surround: 1m depth.

The sum of dredge material was calculated at 240,000m³. This includes allowances for: bulking up of the material due to the dredging operations and the addition of a binder, bathymetric survey tolerances, re-siltation and dredging tolerances. Prior to these allowances the volume of material in situ above the design dredge depth was estimated to be 190,000m³. It is however, considered prudent to apply for a waste licence for the 240,000m³ volume.

The following screenshots are taken from AutoCAD Civil 3D. They show the proposed dredge areas and the reclamation area (6).

Figure 1: AutoCAD screenshot



2. Reclamation Area Volume/Capacity

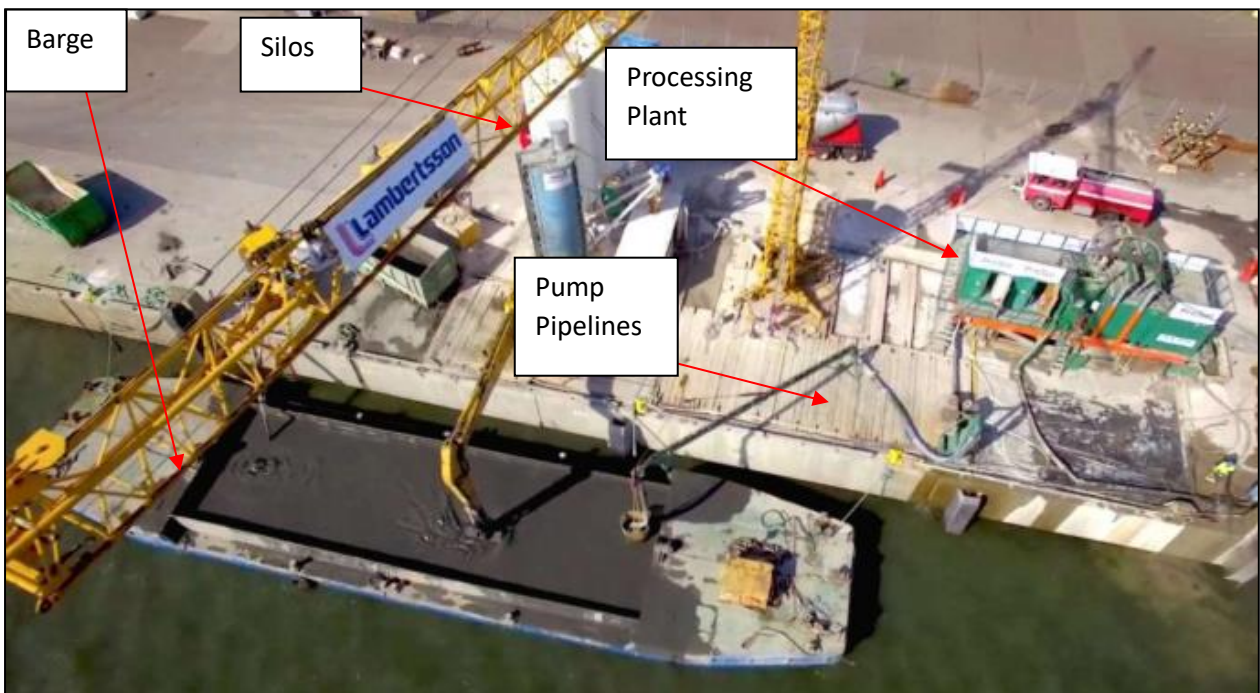
The volume of the void within the reclamation area boundary was as above calculated using AutoCAD Civil 3D by overlaying the proposed works onto existing bathymetric and topographic data, and making allowances for the perimeter embankment fill and other fill that is required within this boundary.

The reclamation area was sized appropriately to take all of the dredge material.

3. Treatment/Processing Capacity

Treatment of dredge spoil will be carried out using discrete treatment units. There could be a maximum of two treatment units. This would be a decision for the main contractor. Each unit would have a daily handling capacity of 500-600m³ or 900-1080T per day.

Figure 2: Example dredge spoil treatment unit.



4. Recovery and Disposal Activities

R05 - Recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials.

The calculation for the capacity of 240,000m³ is given above under Section 1.

The maximum quantity of waste to be accepted per annum of 300,000T is calculated based on a likely daily rate of 1080T per day x 250 working days per year rounded up to 300,000T.

R11 - Use of waste obtained from any of the operations numbered R 1 to R 10

The daily capacity of 2160T allows for the possibility of two treatment units operating on a given day.

The maximum quantity of waste to be accepted for this activity per annum of 300,000T is calculated based on a likely daily rate of 1080T per day x 250 working days per year rounded up to 300,000T.

R13 - Storage of waste pending any of the operations numbered R 1 to R 12 (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)".

The daily capacity of 2160T allows for the possibility of a single days' worth of dredge material to be stored within the facility prior to treatment.

The maximum quantity of waste to be accepted for this activity per annum of 300,000T is calculated based on a likely daily rate of 1080T per day x 250 working days per year rounded up to 300,000T.