GHALLIS NON-HAZARDOUS WASTE LANDFILL
Application for Variation of IPPC permit IP 0001/06/C for the proposed recontouring of the Ghallis landfill to increase height and maximise void space

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Cover image from Google Earth (2017)

Introduction & Non-Technical Summary

1. The Ghallis Non-Hazardous Landfill consists of an engineered landfill facility for the disposal of non-hazardous wastes, and forms part of the EcoHive complex at Maghtab. The latter is dedicated to the disposal needs of all non-hazardous waste streams generated in Malta, or to the diversion of waste streams to recovery or recycling processes in other permitted facilities.

2. This facility was designed as a disposal facility that implements the requirements of Directive 1999/31/EC on the landfill of waste as transposed by Legal Notice 168 of 2002 Waste Management (Landfill) Regulations. The landfill facility was originally approved for development by PA 04834/04 after an Environmental Impact Assessment process. Various development permits on site were required to permit various modifications and upgrades as part of a Master Plan for the Maghtab Environmental Complex, which was assessed via an update to the original EIS (GF 00121/06).

3. Construction of the landfill proceeded in phases consisting of independent cells; the latter were certified via Construction Quality Assurance reports that were prepared during the construction of each cell. The engineering specifications were derived from the results of hydrogeological, landfill gas and stability risk assessments, to ensure that operations at the installation would not result in an adverse effect on the surrounding environment. Each cell has its own leachate collection/extraction system, and a gas extraction system is connected to a central gas management facility.

4. The operations of this facility were originally permitted on the 6th April 2007 through the issue of the integrated pollution prevention and control permit IP001/06/A; the latest renewal of this permit was decided on 6th March 2020 through the issue of IP001/06/C.

5. At present, the construction of the final cell is completed, and the gas extraction system that was the subject of the IPPC permit renewal in 2013 is being implemented. The latest IPPC variation also approved the recontouring of the eastern side of the landfill, in an effort to gain void space. This project involves the use of compacted waste, using lining materials and engineered reinforcement, to create a free-standing, retaining wall. The retaining wall would not involve any interventions in the old Maghtab landfill, and would provide the Ghallis landfill with a capping layer as required by the Landfill Directive 1999/31/EC. These engineering works would extend the Ghallis landfill life time by around 9 to 12 months, by increasing void space by circa 300 - 350,000m^3. Implementation of the project is being carried out by *geom. Ciro Frisoli & C. S.a.s.*, an Italian company specialised in landfill engineering, and that owns the patents pertaining to the technologies that allow the construction of such retaining walls in landfills.

6. The selection of the technology used in this variation has followed studies presented in SLR (2016) *Ghallis Non Hazardous Landfill – Landfill Optimisation of Void Space Assessment*. This study considered the following 4 options:

   i. by increasing the height of the final restoration contours;
   ii. by increasing the footprint of the landfill beyond the currently proposed scheme;
   iii. by improved waste compaction; and
   iv. by altering the containment design at the perimeter slopes (vertical lining system).

7. The measures described above were intended to extend the lifespan of the Ghallis non-hazardous landfill to 2022. Nevertheless, given the restricted landfill void space available, further measures to gain landfill void space are necessary. The development of a landfill cell at the site previously designated as a hazardous waste is the subject of a parallel project proposal. The option of extending the landfill over the Maghtab landfill footprint was not considered favourably, and expanding the landfill westwards is not being considered.

8. This application for variation seeks the competent authority's consent for the recontouring of the Ghallis landfill to increase height and maximise void space. Operations of the non-hazardous landfill would continue as approved under IP001/06/C, with the only change being efforts to increase compaction. Besides treatment of mattresses through shredding, other waste loads such as furniture, wood, etc. will also be treated in the same manner.

9. This variation should be considered as part of an ongoing effort to upgrade the Ecohive Complex in a holistic manner. Besides the planned development of a Waste to Energy plant and an Organic Processing Plant, the following projects are currently in the pipeline, or under development, to ensure appropriate management of the landfill facility:

   - The implementation of **leachate management** solutions;
   - The **improvement of pre-treatment facilities** by providing a Skip Management Facility for skip loaders and other wastes not suitable for the bulky line;
   - Small scale MRF (MN-AD);
   - MMRF (Hal-Far); and
   - A holistic review of the Maghtab Environmental Complex hydrology and water management, to upgrade and optimise water management on site.

10. The National Waste Management Plan required by The Waste Regulations, S.L. 549.63 sets various targets for waste management that aim '*to reduce the generation of waste and to increase source separation so as to promote recycling and reduce landfilling*'. Wasteserv has implemented various management and infrastructure projects – that are not within scope of this IPPC permit - that are aimed towards achievement of the above targets.

Scope of the application

12. This application for variation seeks the competent authority's consent for the recontouring of the Ghallis landfill to increase height and maximise void space.
Also included is a minor change in boundary of the Ghallis landfill. This consists of the (top of the) Zwejra Reservoir, which shall now form part of MN boundary (to be used as the reception area of the small MRF). A site plan, showing this detail, is provide in Annex 03. Otherwise, operations of the non-hazardous landfill would continue as approved under IP001/06/C.

13. The application for renewal includes the following documentation (as annexes), to facilitate review of implementation of permit requirements and operations:

- Form A
- Form C
- Annex 1 – Project Description Statement
- Annex 2 – Improvement Programme Status
- Annex 3 – Plans & Drawings
- Annex 4 – EIA documents
- Annex 5 – Restoration Revised Report, incl. SRA
- Annex 6 – Environmental Monitoring Programme
- Annex 7 – Hydrological Risk Assessment
- Annex 8 – Site Management System
- Annex 9 – deliberately left blank
- Annex 10 – Emergency Response Plan
- Annex 11 – EMS
- Annex 12 – Certification of Incorporation
- Annex 13 – permits
- Annex 14 – Site Report

ANNEX 1: Project Description Statement

ANNEX 2: Improvement Programme of IP 0001/06/C

ANNEX 3: Plans & Drawings

ANNEX 4: EIA documents

ANNEX 5: Revised Restoration Report, Stability Risk Assessment

ANNEX 6: Environmental Monitoring Programme

ANNEX 7: Hydrological Risk Assessment

Annex 8 – Site Management System

Annex 9 – ~~Draft Closure Plan~~

Annex 10 – Emergency Response Plan

Annex 11 – Environmental Management System

Annex 12 – Certification of Incorporation

Annex 13 – Permits

Annex 14 – Site Report