

Appendix I: Comments regarding the information submitted as part of the application for renewal and variation of IP 0001/06/B dated April 2019.

Reference	ERA Review 23-01-2019	Wasteserv's Reply 15.04.2019	ERA Review 19-06-2019	Wasteserv's Reply 10.09.2019
Form A	Noted.	/	/	/
Form C	<p>C.2.1.7 Considering that most of the cells have been filled up with waste, past odour issues and the envisaged impeding closure of the landfill, a full closure plan indicating the final post-settlement levels is to be submitted (subject to approval of the Planning Authority and other entities as deemed necessary during the consultation phase).</p> <p>C.2.1.32 As built drawings will be required as an Improvement Program Item once construction of the proposed extension is concluded.</p> <p>C.2.2.28 – 29. Comment in Annex 19 below regarding nuisance and health risk assessment refers.</p> <p>C.3.4.4 Comment regarding fire assessment and management in Annex 21 below refers.</p> <p>C.3.4.2.6 Operator is to propose time-frames by when the formal preventive maintenance program shall be submitted and implemented.</p> <p>C.3.4.2.13 With reference to Annex 10, applicant is to indicate time-frames by when the Emergency Response Plan shall be updated to include all the activities at Ghallis landfill.</p> <p>C.2.2.23 The questions raised in the “Assessment of mineral-geosynthetic composite barriers” section are to be further clarified. Should there be confidential issues, applicant is to submit two versions of this section: one with the confidential information which shall be for ERA's and the</p>	<p>A development permit application is being developed for submission during 2019.</p> <p>Noted.</p> <p>See comment regarding Annex 19.</p> <p>See comment regarding Annex 21 & attachment 2 Emergency Response Plan included with this feedback.</p> <p>See attachment 1 Landfill Inspection Procedures included with this feedback.</p> <p>The Emergency Response Plan submitted was already updated (see Rev01).</p> <p>The following sections provide details ref stability concerning the side slope lining system in the short and long-term:</p> <ul style="list-style-type: none"> 1.2.4 Side Slope Lining System Model, 2.1.4 Side Slope Lining System Screening, 2.4 Justification for Modelling 	<p>The Improvement Program will require the submission of a development permit application covering a closure plan by December 2019 and the submission to ERA of a closure plan in accordance with the requirements of S.L. 549.29 by December 2022.</p> <p>/</p> <p>Noted.</p> <p>Below comments on Annex 21 refers.</p> <p>Noted</p> <p>Noted</p> <p>Noted. Form C is to be revised accordingly with these replies and all other comments in this section as part of the consolidated application. Cross-referencing with actual documents shall also be included.</p>	<p>Noted and amended.</p> <p>/</p> <p>/</p> <p>/</p> <p>/</p> <p>/</p> <p>/</p> <p>Revised to include references.</p>

	<p>Regulatory consultee's own use and a non-confidential version for public consultation.</p> <p>C.2.2.26 In view that it is being indicated that flaring is no longer required, applicant is to indicate what safety features are implemented in case of accumulation and migration of landfill gas in such a way to ensure continuous collection and treatment whilst minimising damage to or deterioration of the environment and risk to human health according to S.L. 549.2 Schedule 1 (4).</p>	<p>Approach and Software,</p> <ul style="list-style-type: none"> • 2.5.4 Parameters Selected for Side Slopes Liner Analyses, • 2.6.4 Factor of Safety for Side Slope Lining System, • 2.7.4 Side Slopes Liner Analyses, • 2.8.4 Side Slopes Liner Assessment, • 3.1.4 Side Slope Lining System Monitoring, Appendix H, Appendix E. <p>The application will be updated to correct this statement: flaring is used during CHP downtime. The EMP shall include provisions for monitoring of flare activity.</p>	<p>Noted. Awaiting update.</p>	<p>EMP already updated to include monitoring of flare activity.</p>
Annex 1	<p>With reference to Annex 13, kindly note that:</p> <ol style="list-style-type: none"> 1. In view that a significant quantity of steel shall be used to physically stabilise the landfilled compacted waste, applicant is to provide an estimation of the volume of steel which shall be effectively landfilled whilst utilised for the construction of the proposed containment structures. 2. Plan 2 needs to be updated to indicate how the mineral layer shall have a permeability of K less than or equal to 1.0×10^{-9} m/s. 3. With reference to the shredding of mattresses, whilst it is understood that only mattresses shall be shredded and all resultant waste shall be landfilled, applicant is still to provide: 	<p>The amount of steel used will be 24.6m^3 as stated in the SRA.</p> <p>The SRA is being updated accordingly.</p> <p>See attachment 3 Shredder Specifications included with this feedback.</p> <p>Input streams: Mattresses, (20 03 07); output stream: (19 12 12). The shredder is mobile, and the shredding area moves to accommodate operational</p>	<p>Noted.</p> <p>Noted. This should be revised according to any associated development permit applications.</p> <p>The specifications sheet provided indicates various shredder configurations. Applicant is to indicate which model is operational on site including the maximum mattress processing capacity per day.</p>	<p>/</p> <p>Latest version consistent with development permit provided.</p> <p>Feedback consolidated within application scope. Model previously quoted is the 700/1500 with a throughput of 25t per hour.</p>

	<ul style="list-style-type: none"> • Technical specifications of the equipment used including its maximum processing capacity per day • EWC codes of input and output waste streams. • Plans showing the area to be used for such shredding. 	<p>exigencies (tip face). In the future, mattresses will be directed to the new Multi Material Recovery Facility (MMRF) which shall be built at Hal-Far (adjacent to the CA Site).</p>		
	<p>4. Applicant is to demonstrate how the negative environmental consequences from rigorously compacted waste utilised for the retaining structures and infill shall be reasonably reduced and/or mitigated.</p>	<p>As detailed in the application, wastes will be pre-sorted to eliminate the biodegradable fractions, and ensure the parameters for stability as described in the SRA.</p>	<p>Noted. Pre-sorting biodegradable fractions in mixed waste will be a permit requirement. To note that in exceptional circumstances ERA may consider exceptions.</p>	<p>Noted.</p>
	<p>Applicant is still to submit a plan showing how this activity compares with the latest National Waste Management Plan required by The Waste Regulations, S.L. 549.63 and calculations therein.</p>	<p>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.</p>	<p>Noted.</p>	<p>/</p>
	<p>Clarifications requested to post-settlement heights of the proposed retaining structures are still required, since those submitted through the PDS only address pre-settlement height.</p>	<p>Post-settlement heights are as per attachment 04.</p>	<p>Such heights are to be included in the relevant development permit application and subject to approval by the Planning Authority.</p>	<p>Noted.</p>

Annex 2	<p>The below questions were not addressed through submissions dated October 2018:</p> <p>Submission of environmental management system (EMS):</p> <ol style="list-style-type: none"> 1. With reference to the list of reference documents referred to in Page 2 of the “Emergency Preparedness and Response”, these are to be submitted to the Authority for review. Furthermore a number of these documents are not being considered as critical in page 6. Information on how these are treated is to be provided. 2. In view of past fire incidents, applicant is to provide a proposal for the regular monitoring of temperatures from within the landfilled waste mass and any additional measures put in place following these incidents. 3. Operator is to submit a copy of the “MEC QP04 Waste Processing Procedure” with details of how such document is managed in accordance with section 6 (Records) of the “MEC EP 03_Non-hazardous...” document. Applicant is to clarify whether this is the same document submitted as part of the EMS and referred to as “MEC QP01”. This document is to indicate that the tip face controller shall do the necessary checks to ensure that no unauthorised waste is landfilled and take the required actions accordingly including but not limited to the removal of unauthorised waste to 	<p>See attachment 05 Incident Management Procedures included with this feedback. The table at the end of each procedure (where the documents are referred to) indicates which <u>forms</u> are retained. This implies that only forms are featured in such tables.</p> <p>Thermographic imaging has been commissioned to evaluate this aspect, in lieu of the visual observations which had been applied previously. The results of this imaging will be used to determine the most appropriate frequency for such monitoring.</p> <p>The reference to QP01 was a typographic error that has been corrected in the attached version. “Controlled Document 103a Environmental Monitoring Programme for the Non-Hazardous Engineered Waste Landfill at” and “Ghallis Controlled Document 103c Ghallis & Zwejra Monitoring Plan” highlight the procurement processes for environmental monitoring services.</p>	<p>Noted.</p> <p>The monitoring frequency of thermal imagery is to be provided along with associated action plans.</p> <p>While documents submitted are noted, it is submission entitled “Communication Flow 12.03.2019” which describes how it shall be ensured that no unauthorised waste is landfilled.</p>	<p>/</p> <p>Frequency shall be once a year. Thermographic Imaging Report is enclosed in Annex 18.</p> <p>Procedures of interest and Communication Flow are enclosed in Annex 17.</p>
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	<p>appropriate designated area and keeping of such records. Similarly details of how these documents: “Controlled Document 103a Environmental Monitoring Programme for the Non-Hazardous Engineered Waste Landfill at” and “Ghallis Controlled Document 103c Ghallis & Zwejra Monitoring Plan” are being managed, is also required.</p>			
4.	<p>With reference to Annex 07-Leachate Management Plan and “MEC EP 06 Leachate Management”, operator is to indicate how the temporary leachate collection points shall be designed in a manner to be away from the cell liner’s edge and in a manner to prevent contamination to the surrounding environment.</p>	<p>Given that the cell lining has been laid down and all leachate collection points are distant from the liner edge, this matter is no longer considered to be a risk. Thus this procedure is redundant.</p>	Noted.	/
5.	<p>With reference to MEC QP01 Waste Processing Procedure, operator is to indicate how the daily cover will be removed at the start of daily operations at the tipping face.</p>	<p>Daily cover is being removed by mechanical means.</p>	Noted.	/
6.	<p>Operator shall also indicate how the following requirements of the Landfill Regulations shall be achieved:</p> <ul style="list-style-type: none"> • An increased level of pre-treatment of waste prior to landfilling including but not limited to plans with time-frames of how the Malta-North MBT shall operate at full capacity, • How the most appropriate treatment option and adequate selection of waste streams shall be applied prior to landfilling, 	<p>The Malta North plant and the Sant Antnin MTP are the pre-treatment being applied to the waste prior to landfill. Given the accident at Sant Antnin, treatment capacity has been compromised, with the result that pre-sorting of wastes prior to landfilling is not carried out for all landfilled wastes. The shortfall in capacity needs to be considered in the context of current initiatives to divert recyclables and biodegradable wastes away from landfill. It is expected that the upcoming update to the national waste management plan – due to expire in 2020 – shall include further measures to deviate further volumes of such wastes away from landfill, from both the municipal and</p>	<p>Noted. Above comment related to biodegradable waste (Annex 1 replies) refers.</p>	/

	<ul style="list-style-type: none"> Stabilisation of the organic fraction of the waste to be landfilled. <p>7. Kindly re-submit a general site plan clearly marking (and labelling) all areas within the installation to provide:</p> <ul style="list-style-type: none"> a more clear understanding of the status of infilling of the landfill highlighting areas with remaining void space, the amount of void space (and remaining lifetime) in each area, and differentiating between pre-settlement and post-settlement profiles for both the existing permitted landfill and proposed extension. 	<p>industrial sectors. Development of the plan, in conjunction with current plans for further expansion at Malta North, are essential for the definition of the capacity needed, as is a clearer definition of the required phasing of the Sant Antnin decommissioning; the above are expected to be presented for endorsement through established procedure.</p> <p>A combination of increased treatment capacity, facilitated by current initiatives for segregated collection of biodegradable wastes, are considered sufficient for stabilisation of the organic fraction of wastes prior to landfill.</p> <p>See attachment 12 Site Plan included with this feedback. Void space calculation done in March (of 2019) indicates that remaining volume is 813,000m³.</p>	<p>Applicant is still to provide a plan differentiating between pre-settlement and post-settlement profiles for both the existing permitted landfill and proposed extension.</p>	<p>See Annex / folder titled Plans.</p>
Annex 3	<p>1. Operator is to propose practical communication means between the weighbridge and tip face officer including suitable communication equipment and operating procedure.</p> <p>2. Whilst noting replies to Question No. C.3.4.2.8 of the IPPC application Form C, operator is still to submit a training program indicating</p>	<p>See attachment 07 Communication Flow included with this feedback.</p> <p>See attachment 08 Competence Matrix included with this feedback.</p>	<p>Noted.</p> <p>Noted.</p>	<p>/</p> <p>/</p>

	<p>how the employees will be provided with adequate training to ensure that no unauthorised waste streams are landfilled in accordance to their duties.</p> <p>3. With reference to section 3.3.48 – Operator is to submit waste composition analysis in accordance with Condition 3.15.1 of IP 0001/06/B i.e. “...waste composition This may include a copy of the waste acceptance test certificates of different waste streams carried out in different years since 2013.</p>	<p>Waste fractions greater than 5% are sewage sludge – see attachment 09 Leachability Analysis included with this feedback.</p>	<p>Whilst noting the submitted analysis for sludges and grit from the sewage treatment plant, kindly note that the condition requires testing of any type of specific waste stream which is being accepted at the landfill that exceeds the 5% by mass of the total percentage of incoming waste. This is required in accordance with Section 1.2 of Council Decision 2003/33/EC Council Decision of 19 December 2002 establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC.</p> <p>This requirement emanates from Article 11 and Annex II of the Landfill Directive 1999/31/EC and Section 1.2 of the Council Decision 2003/33/EC, which establishes that compliance testing is to be periodically carried out to waste that has been deemed acceptable for the landfill.</p> <p>Such compliance testing shall consist at least of a batch leaching test and shall be carried out at least one a year.</p>	<p>Analysis submitted as part of Annex 18.</p> <p>The procurement for the further studies shall be carried out within 6 months of the permit; results by following 6 months.</p>
	<p>4. With reference to section 3.5, further to the requirements of the Environmental Monitoring Plan, applicant is to provide the results concerning Hydrogen Sulphide and Methane gas concentration at the weighbridge for year 2016. In case the contingency plan would have been triggered, ERA is to be informed accordingly of the actions and associated time frames. Furthermore, an indication by when the PM2.5 instrument shall be suitably repaired and</p>	<p>Section 3.5 refers to 2012 data. As per the current EMP (Dec 2014) this monitoring was no longer required and hence no data is available for 2016. (These parameters are currently being monitored from Point 2 – Coast Road area (H₂S only) and Point 7 – Bahar ic-Caghaq area as per Table 6.2 of the current EMP.)</p> <p>PM 2.5 equipment is in working order and monitoring sessions are being carried out on a monthly basis as per EMP requirements (Table 6.2) as from April 2018.</p> <p>It is to be noted that a new proposal for ambient air monitoring was submitted to</p>	<p>Noted.</p>	<p>/</p>

	<p>calibrated to be in good working order, is to be provided in line with the requirements of Para. 6.13 of the EMP.</p>	<p>ERA as part of the new Consolidated EMP. Ms. Ritianne Stellini Galea from ERA sent the following comments (email dated 21st January)</p> <p><i>Following further internal consultations, ERA considers that the offsite monitoring requirements for ambient air pollutants are not required. However the operator is requested to make efforts to minimise emissions from the relevant sources to the extent possible by implementing relevant abatement techniques.</i></p> <p>This statement also includes monitoring from the weighbridge as confirmed by Ms. Ritianne Stellini Galea in a separate email (dated 1st February).</p>		
	<p>5. With regards to recommendation No. 48 of the Noise Monitoring Report dated June 2014, applicant is to submit the results of daytime monitoring of point N1. Should this not be available operator is to indicate time-frames, by when such results shall be submitted.</p>	<p>These are being submitted annually in the Raw data sheets and Annual Environmental Reports as per the excel sheet in attachment 10 Monitoring Data included with this feedback.</p>	Noted.	/
	<p>6. As indicated in the last Environmental Monitoring Program, the odour survey shall be “carried out a minimum of twice a day by a member of staff that does not work at the operational area (people tend to become “accustomed” to smell, such that their perception is less acute than that of other people)”. This shall apply for both the operational phase and the closure phase. Further information on who shall conduct this monitoring is required.</p>	<p>Currently personnel located at the offices in a controlled environment is conducting this monitoring on a daily basis; results are being reported in the Odour Monitoring Log which is provided annually to ERA.</p>	<p>Without prejudice to any further revisions to the Environmental Monitoring Program required by the ERA, an external contractor shall conduct such odour monitoring on a quarterly basis.</p>	Noted.
	<p>7. In view that in Annex 3 there is no mention of pre-treatment of</p>	<p>LFG is treated straightaway in the LFG-powered generator or flared. No pre-</p>	<p>With reference to “attachment 10 monitoring data” dated February 2019, and the</p>	<p>Installation of the catalytic converter is being discussed with contractor. Given procurement</p>

	<p>gas following collection, kindly indicate what measures will be in place to ensure adequate pre-treatment. In addition, reference is made to the connection of the gas mains to the existing Gas Treatment Plant. Kindly provide further information regarding the latter. Also clarify capacity of the CHP plant, and provide the results of the air monitoring of the pre-treated and/or exhaust gas in accordance with the approved Environmental Monitoring Program.</p> <p>Kindly also indicate a tentative date for (i) the commencement of construction works (ii) implementation of the new gas collection system. Kindly make sure that all construction works are carried out in accordance with relevant permits issued by the Planning Directorate.</p>	<p>treatment is needed however WSM may filter LFG through an active carbon element if elevated amounts of silicate compounds are found in the LFG. The latest results are included in attachment 10 Monitoring Data included with this feedback.</p> <p>A schedule of works will be provided to ERA once the relative contract procedures are concluded; these will be provided to ERA.</p>	<p>exceedance in the NOx concentration from the CHP plant, operator is to propose time-frames by when the catalytic converter abatement system referred to in the report shall be commissioned. Further information is to be provided on how the gas mains shall be connected to the existing Gas Treatment Plant, the combustion capacity of the LFG-powered plant and any available results for the LFG prior to treatment. Operator is reminded to submit the rated thermal input (MWth) for all combustion plants on site.</p>	<p>processes, deadline is set to Q4 2020.</p> <p>For Thermal Rated Input of the CHP is 0.47 MW where rated power is 0.18 MW and effective electrical efficiency is 38.54%.</p>
	<p>8. With reference to section 3.5.6 – Applicant is to justify why monitoring results for BH3 were not provided and if it is envisaged that further monitoring might not be possible.</p>	<p>BH3 is located offsite next to a cow farm. In 2012 it was damaged and was not restored since it always resulted as being dry in previous years. It is to be noted that as agreed with ERA other boreholes are being added. Details of the new boreholes shall be included in the updated EMP.</p>	<p>Noted. Kindly provide tentative timeframes for conclusion of contracts.</p> <p>Noted.</p>	<p>Tender ‘WSM 64/185/2018 Tender for consultancy services if a landfill gas engineer for the updating of the Maghtab and Ghallis Gas Infrastructure network’ is in the process of being awarded. The consultation eventually provided will feed in other tasks.</p> <p>/</p>
	<p>9. With reference to section 3.5.8 – In view that the “Three mobile litter nets” seem to be inadequate and for the recent months were not being used, applicant is to describe the current litter control measures and any other future alternatives which are being</p>	<p>Additional litter nets are being procured, and cleaning activities at the site perimeter are being increased.</p>	<p>Applicant is to provide time-frames by when the additional litter nets shall be installed.</p>	<p>Given procurement process, target date completion is Q2 2020.</p>

	<p>considered.</p> <p>10. With reference to section 3.5.9. It is being understood that the hazardous waste containment proposed in Annex 10 shall be used within the designated quarantine area. Further to this applicant is to submit a plan showing how such an area shall be accessible by all types of waste carrier vehicles making use of the facility and that it can store any waste which is not permitted to be landfilled. Such an area needs to be designed in a manner to contain any spillages that might occur during handling of such waste. This shall include details such as: bunding calculations and design, SOPs, and types and quantity of spill response equipment. The quarantine shall need to be covered and protected from the elements.</p> <p>11. With reference to section 3.5.10 - With reference to recurring odour issues on site and with reference to recent discussions applicant is to propose an alternative leachate management plan to the current recirculation and to re-contour the site and ensure that the permitted pre-settlement levels are not exceeded. This is being requested since the use of the deodoriser is not sufficient in controlling odour as agreed with Wasteserv.</p>	<p>The quarantine area is used only by Wasteserv personnel, and access to third parties is restricted to ensure proper control and security over the area.</p> <p>The quarantine area has an integrated bund which is designed specifically for storage of liquid wastes, and is also roofed to prevent capture of rainwater.</p> <p>Wasteserv is currently in the process of identifying the technologies required for treatment of leachates. To this end, the following study SLR (2016) <i>Ghallis Non Hazardous Landfill: Leachate Management and Disposal Options Report</i> was commissioned to determine the options that were available – see attachment 11 included as part of this feedback.</p> <p>Consideration of the leachate parameters highlighted the need for more detail with respect to the design of appropriate leachate treatment solutions, with the result that Ing. Marco Cremona has been contracted to assist in the identification of solutions that will result in pilot trials. Permitting processes related to leachate treatment infrastructure are planned for 2019, with initial pilot trials being scheduled for 2020.</p>	<p>Noted.</p> <p>While leachate managing plan is noted, Applicant is still to propose alternative odour abatement measures to the current use of deodoriser.</p>	<p>/</p> <p>Wasteserv is currently awaiting for the delivery and installation of misting system. Tender of interest is: WSM 018/055/2018 Tender for the Supply, Delivery and Installation of Fixed Odour Suppressing System. Target Date Completion: July 2019. SDS enclosed in Annex 24.</p>
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	<p>12. With reference to section 3.11 – Reporting</p> <p>Applicant to note that the following monitoring data for year 2017 is missing:</p> <p>a) Landfill gas and groundwater monitoring boreholes: BH3 & BH5</p> <p>b) Groundwater Monitoring: BH3, MBH5, 2041 & 00574. Exceedances in the following quarterly averages were also noted:</p> <ul style="list-style-type: none"> - Ammoniacal Nitrogen: BH1 & BH4 - Cadmium: BH1, BH2, BH4 & 2130 - Nickel: BH1 	<p>a) BH 3 – Borehole damaged (refer to point 8) BH 5 – Damaged in 2014 and eventually removed due to the construction of the MNWTP</p> <p>b) BH 3 – refer to point 8 MBH 5 - removed in 2014 due to the Coast Road project 2041 – no longer sampled; owner of borehole 2041 could no longer be reached after mid-2015 00574 – WSM attempted to contact the owner of this borehole several times however we never got a reply As agreed with ERA a new private borehole located at the Maghtab Shooting Range shall be included. In addition, a new borehole will be drilled close to the north (eastern) boundary where MBH5 used to be. Details of the new boreholes shall be included in the updated EMP. Information regarding these exceedances has been provided in the Ghallis AER 2017, as reproduced hereunder: Potential sources of Ammoniacal nitrogen in groundwater mainly include; agricultural practices through the application of nitrogenous fertilizers on arable land, leaking sewers and cesspits, and human or animal waste effluent. The elevated value of Ammoniacal nitrogen in BH 1 and BH 4 is most likely to be derived from cultivated soils and manure. A high nickel value was recorded in BH 1 during Quarters 1 and 4 resulting in a high quarterly average which exceeded the control and/or trigger level. The presence of nickel in groundwater is essentially tied to natural processes such</p>	<p>With reference to the proposed monitoring from the borehole at the Maghtab Shooting Range, and should applicant consider it necessary to monitor other external sources of pollution, these are to be included in the revised EMP together with any associated access agreements with third parties.</p> <p>In view that leachate recirculation is increasing pollutant concentration over time, applicant is to propose an alternative leachate treatment/disposal system by the end of 2019 for implementation in year 2020.</p> <p>Whilst understanding that the presence of Ammoniacal Nitrogen can be attributed to the activities mentioned by WSM. However, with regards to the exceedance in Cadmium, as per The 2nd Water Catchment Management Plan for the Malta Water Catchment District 2015 – 2021, the presence of Cadmium was never detected in the groundwater of Malta (pg 257). Thus, the exceedances detected are highly likely to be related to the landfill activities in the area.</p>	<p>Updated maps and info will be included in the EMP (being discussed with ERA).</p> <p>Additional monitoring is highlighted in Form C, and is being included in the EMP. Third party access agreements to be discussed in the EMP forum which is progressing in parallel to this application.</p> <p>Refer to paragraph 13 of Introductory Document about treatment proposals.</p> <p>The presence of Cadmium is not clearly understood. Leakage of leachate would result in higher levels of pollution more comparable with leachate parameters and levels. Alternative pollution from other sources cannot be excluded e.g. fertilisers using phosphorus additives from North Africa tend to be contaminated with Cadmium. Similarly, mobilisation of pollution from the old Maghtab landrise cannot be excluded. In this regard, a wider baseline study of the entire valley system would be required. A proposal for such study can be submitted to the Authority within 12 months of permit issuance.</p>
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	<p>c) On Site Surface Water: Exceedances in the following parameters were highlighted.</p> <ul style="list-style-type: none"> - Ammoniacal Nitrogen - Arsenic (except for SW 2) - Cadmium - Chromium - Copper (except for SW 2) - Nickel - Lead 	<p>c) As extracted from the Ghallis AER 2017:</p> <p>The surface water samples are very subjective due to their nature in itself. For example; Ammoniacal Nitrogen in water which in essence is a reflection of the level of ammonia present, varies due to various factors. While actual rain water is not expected to have any, the detected presence would be a result of dissolution into the puddles from ammonia already present on the ground or from any fresh airborne deposits directly into the puddles. The same applies for the other parameters listed. Moreover, the locations of the sampled puddles though not identical are quite close; hence one cannot exclude the factor location. Due to the lack of appropriate fixed collection points it is difficult to collect surface water leading to the possible contamination of the sampling equipment with landfill material collected with the run-off. Moreover, leachate contamination cannot be excluded given that the perimeter surface water collection system is designed to collect all run-off from the landfill and no other surface watercourse are present in the vicinity of the site. Throughout the year surface water was only collected during one quarter making it difficult to determine a trend in the results obtained.</p>	<p>With regards to surface water monitoring, WSM to ensure that appropriate fixed collection points are established.</p>	<p>Noted.</p>
	<p>d) Leachate monitoring: Whilst</p>	<p>d) As extracted from the Ghallis AER</p>		

	<p>noting comment on LCP 1-3, 7, 9-11, exceedances (above control and/or trigger Level) in the parameters are also noted;</p> <p>Arsenic: All LCPs except for LCP 8</p> <p>Cadmium – LCP 4</p> <p>Chromium – All LCPs</p> <p>Copper – All LCPs except for LCP 8</p> <p>Nickel – LCP 6</p> <p>Ammoniacal Nitrogen – All LCPs except for LCP 8</p> <p>Chloride – All LCPs</p> <p>With regards to Landfill gas and groundwater monitoring boreholes and Groundwater Monitoring missing data, this is not the first reporting year which were not monitored. No justifications were provided.</p> <p>Waste Acceptance data:</p> <p>WSM declared EWC 20 01 38 (wood other than that mentioned in 20 01 37) as input, with no indication of its fate. Further information on its fate is required.</p>	<p>2017:</p> <p>The majority of the leachate at Ghallis is being re-circulated. It is therefore expected that the contamination within the leachate being monitored is exceeding the control and trigger levels. Other than that since the same leachate is being re-circulated there, in some cases there is an increase of concentration over time.</p> <p>With regards to LCP 6 and LCP 8, sampling was only done during one quarter as otherwise both leachate points were dry. Moreover, given that some samples were collected after several weeks of lack of heavy rainfall (especially for the last session) some of the wells dried up; in fact most of these leachate collection points had water levels at the deep ends of the wells hence there was not enough rainfall to permeate through the ground to dilute leached pollutants.</p> <p>With regards to <i>Landfill gas and groundwater monitoring boreholes</i> and <i>Groundwater Monitoring</i> missing data please note that justifications were provided in both the AERs and related raw data sheets for the years (mainly 2014) where a particular borehole was damaged/removed. It was assumed that MEPA took note of these and hence these justifications were not provided in the subsequent years.</p> <p>Wood (20 01 38) is indicated in AER for 2017. Given the lack of suitable alternative disposal options, this material was landfilled.</p>	<p>Whilst understanding that recirculation of leachate would yield exceedances of control/trigger levels, such exceedances have been recorded on an annual basis. WSM have now proposed to commence a pilot study on leachate treatment (2019 – 2020), with no actions taken for past exceedances. Furthermore, ERA still requires details on corrective actions required by the EMP approved as part of IP 01/06/B.</p> <p>Justifications in AERs were noted, however follow up actions are to be addressed through the new EMP being discussed with the Authority.</p> <p>When comparing this reply to declarations provided in the AERs, certain discrepancies emerge. (i.e. landfilling vs recycling). Kindly clarify the issue.</p>	<p>Refer to paragraph 13 of Introductory Document about treatment proposals.</p> <p>Noted.</p> <p>Wood was landfilled given lack of viable alternative treatments.</p>
Annex 5	1.1 Permitted Activities – With regards to the proposed shredding mattresses and any other waste streams which could be shredded, applicant is still to submit the associated equipment	See attachment 3 Shredder Specifications included with this feedback.	Applicant is to clarify which shredder model is operational on site including its daily maximum processing capacity.	See paragraph 17 of Introductory Document (Scope).

	<p>specifications, and method statement including containment measures.</p> <p>1.2 With reference to the current operational situation at the MBT, applicant is indicate how clean/ raw wood waste entering the Ghallis non-hazardous landfill shall be pre-treated with the most appropriate treatment option according to Regulation 8 of the Landfill Regulations, 2002.</p> <p>1.9.3 Applicant is to indicate how a contingency plan for management of landfill gas has been implemented.</p> <p>Above comment on quarantine area and associated covering refers.</p> <p>Above comment on waste composition, analysis in Annex 3 refers.</p> <p>6.2, 6.3, 6.4 – Above comment on staff training refers.</p>	<p>The treatment process at the Malta North plant are the most appropriate treatment option, though the capacity here is not adequate given the current scenario. It is envisaged that the eventual commissioning of the MMRF plant at Hal Far and the Waste to Energy plant shall address this shortfall.</p> <p>This is being treated using the CHPs.</p> <p>Noted.</p> <p>Noted.</p> <p>Noted.</p> <p>Noted.</p>	<p>Noted.</p> <p>Noted.</p> <p>-</p> <p>Above comment on waste composition analysis is still to be addressed.</p> <p>-</p>	<p>/</p> <p>/</p> <p>-</p> <p>See comments above logged for Annex 3 (above in this document).</p> <p>-</p>
Annex 6	<p>With reference to the summer 2018 fire incident, kindly submit the Schedule 1 notification required by the current permit.</p> <p>Applicant is to provide a site layout plan indicating the proposed location of the quarantine area.</p> <p>Below comment on Leachate Management refers.</p> <p>The installation of the rudimental or new MRF at SAWTP is not covered by the current permit or in any application for variation. Operator shall address accordingly in this separate process.</p>	<p>This will be submitted under separate correspondence.</p> <p>See attachment 12 Site Plan included with this feedback.</p> <p>See relative comments below.</p> <p>Operations (current or future ones) at Sant' Antnin Waste Treatment Plant (SAWTP) shall be addressed via IPPC process of the same plant.</p>	<p>Noted.</p> <p>Noted.</p> <p>Below comments refer.</p> <p>In view that such facilities are quoted as one of the pre-treatment methods for waste entering the Ghallis Landfill certain aspects may be relevant to this application. Thus, applicant is to provide an alternative proposal in accordance with Regulation 8.(1) of S.L. 549.29.</p>	<p>/</p> <p>/</p> <p>/</p> <p>Wasteserv being an operator of last resort is in contact with the ministry to consolidate the waste management plan for coming years such that it is in position to build local infrastructure.</p>
Annex 7	ERA notes the revised Leachate	Wasteserv is currently in the process of	Noted, regular updates will be requested	/

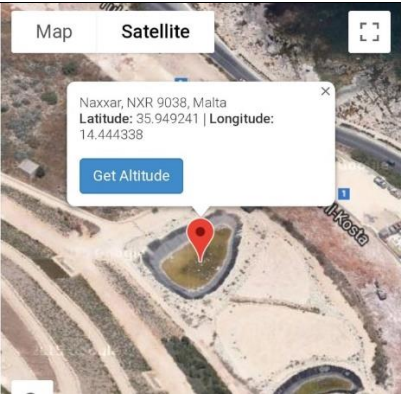
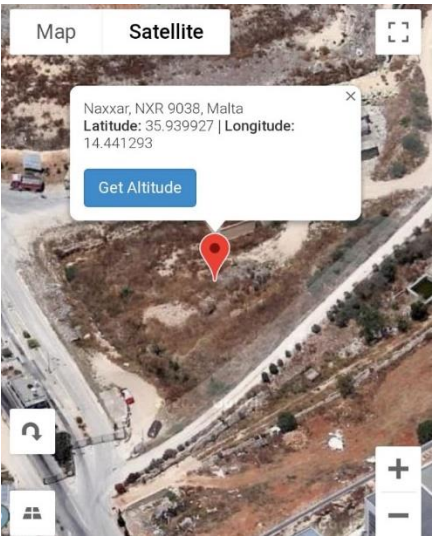
	<p>Management plan, particularly that “Permitting for such a facility is planned for 2019, with deployment of a pilot project commencing in 2020” With reference to recent inspection reports, the submitted draft closure plan and the proposal for extension, applicant is still to provide a long-term technical proposal for leachate management on site including time-frames and any clearances required from other Competent Authorities. Any such reports are to be immediately submitted to ERA for further assessment and consultation with other competent entities prior to their implementation.</p> <p>In view that it appears that the leachate head trigger level has been exceeded in LCP 11 and 12, operator is to propose a plan of how such levels shall be reduced.</p> <p>Further to the above this is also a requirement of the Waste Management (Landfill) Regulations, S.L. 549.29.</p>	<p>identifying the technologies required for treatment of leachates. To this end, the following study SLR (2016) Ghallis Non Hazardous Landfill: Leachate Management and Disposal Options Report was commissioned to determine the options that were available. Consideration of the leachate parameters highlighted the need for more detail with respect to the design of appropriate leachate treatment solutions, with the result that Ing. Marco Cremona has been contracted to assist in the identification of solutions that will result in pilot trials.</p> <p>Permitting processes related to leachate treatment infrastructure are planned for 2019, with initial pilot trials being scheduled for 2020.</p>	during the application process.	
Annex 8	<p>Operator is to provide time-frames by when both diesel fuel tank and dispensing systems shall be duly registered in accordance with the relevant requirements of the Regulator for Energy and Water Services.</p> <p>The location of such proposed diesel tanks and refuelling areas is to be submitted on an updated layout plan including details of impermeability.</p> <p>Since, any potentially contaminated run-off from refuelling areas is to be directed to an adequately designed oil-water interceptor constructed in accordance to EN 858, applicant is to provide a drainage plan with such arrangements. This shall indicate how any potentially contaminated run-off shall be kept separate from clean rainwater at all times and the final</p>	<p>Registration process is under way.</p> <p>See attachment 12 Site Plan included with this feedback.</p> <p>Noted.</p>	<p>Noted, The permit will address such a requirements.</p> <p>Information on how the refuelling area surrounding the diesel tank is rendered impermeable in such a way to prevent any accidental spills or leaks from escaping to the surrounding environment is still to be provided. This shall be designed in such a way so as to keep clean rainwater separated from potentially contaminated run-off at all times.</p> <p>Should these infrastructural elements not be in place kindly provide a timeframe by when these shall be executed.</p>	<p>/</p> <p>Further details and specifications are provided in Annex 8. Limited vehicles use this tank.</p> <p>ADM ST06 Diesel Refuelling Procedure (which is currently in draft state) and photos of fuel pump are also included; to note flooring, fence on one side and roof.</p>

	discharge point of such separator. Any new connections to the public sewer are to be cleared by the WSC.			
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Annex 9	1.	Point no. 2.2.4 should also include reporting of environmental incidents to ERA.	Noted.	Point no. 2.2.4 to be updated accordingly in consolidated IPPC application.	Update of this document will be carried out as part of the closure development permit application.
	2.	Expected time-frames by when a detailed full closure plan including the technical data related to each capping layer ensuring protection of the surrounding soil and groundwater.	See comments for C2.1.7.	Noted.	/
	3.	Existing ponds (outside the landfill permit boundary) which are currently being used for surface water management to prevent direct discharge to coastal waters are to be included in a revised site boundary plan and detailed layout plan.	See attachment 12 Site Plan included with this feedback.	Noted. In view of the high pollutant concentrations observed in on-site surface water monitoring reports, applicant is to provide time-frames by when such ponds shall be adequately rendered impermeable so as to prevent contamination of the surrounding environment.	Please refer to Annex / folder titled Plans. Deficiencies of previous sampling points (that is, directly from the tipping face) highlighted. As built drawings of silt ponds are enclosed in Annex / folder titled Plans.
	4.	Further technical details on how the proposed capping layers described in sections 3.1 and 3.2 shall achieve the material type and thickness required in regulation 3.3 of Schedule 1 in S.L. 549.29. Therefore the material must be impermeable and not subject to alteration (geotechnical properties) under conditions of increased water content and temperature.	Kindly note that this closure plan predates this application, and such details are being updated to reflect current requirements and to update such details. This will be managed in parallel with the development permit process for this capping.	These details are to be submitted to the satisfaction of the Authority by December 2020.	Noted.
	5.	With regards to the leachate and groundwater monitoring parameters, these may only be revised following a specific approval by ERA following submission of a justified proposal by the operator.	This entry is being tackled via consolidated EMP for Maghtab Complex.	Applicant to submit a revised consolidated EMP for Maghtab Complex as instructed through the Compliance and Enforcement process.	Noted.
	6.	Site boundary and identification codes of the leachate collection points on	Kindly note that these codes reflect past codes that have since been superseded by updates.	Such updates are to be included in a revised consolidated IPPC application for inclusion in the permit.	Refer to Annex / folder titled Plans.

	<p>layout plans in annex 8 are to match those in the Environmental Monitoring Program dated June 2014.</p>			
7.	<p>In view of repeated exceedances of trigger levels associated with leachate management particularly related to heavy metals, operator is to submit an alternative proposal to the current leachate recirculation practice. Furthermore, operator is to trigger the contingency plan for any such exceedance including but not limited to the execution of a series of actions to further analyse, identify the source, and control the situation to rectify the levels of that particular pollutant.</p>	<p>See comments relative to Annex 7. Such plans will require reconsideration of trigger levels and contingency plans, where the latter will depend on the technologies selected.</p>	<p>Noted. The leachate treatment proposal shall be submitted as described in Annex 7 above. Until such revised trigger levels are considered by ERA, the permit will make reference to the levels indicated in the latest approved EMP.</p>	<p>Noted.</p>
8.	<p>The Environmental Monitoring Program is to be updated to include new leachate monitoring points associated with cells constructed following the approval of the EMP.</p>	<p>See ERA comments on Annex 3 point 12.</p>	/	/
9.	<p>Expected time-frames and phases by when completion monitoring for leachate as referred to in the Environmental Monitoring Program shall be provided together with an indication of the proposed concentration levels.</p>	<p>See ERA comments on Annex 7, and Annex 3 point 7.</p>	<p>Applicant to confirm whether and how the leachate monitoring points referred to in Annex 3 point 12 shall cover the proposed “Frisoli” extension project.</p>	<p>Current leachate collection points are adequate to collect leachate; no additional collection points are deemed necessary given that extension shall take place at the slanting side.</p>
10.	<p>As indicated in the last Environmental Monitoring Program, the odour survey shall be “carried out a minimum of twice a day by a member of staff that does not work at the operational area (people tend to be become “accustomed” to</p>	<p>See ERA comments on Annex 3 point 6.</p>	<p>It is being understood that method for completion monitoring for leachate and associated control and trigger levels are submitted as part of the closure plan by December 2019.</p>	<p>Noted.</p>

	<p>smell, such that their perception is less acute than that of other people)". This shall apply both for the operational phase and the closure phase. Hence, operator is to submit the names of the people performing such surveys and the location of their normal place of work.</p>			
11.	<p>With regards to the proposed on-site surface water monitoring applicant is to clarify why the determinant "NH3-N" has been replaced with "NH4 N". Furthermore, monitoring frequency of surface waters is to be conducted at least in accordance with the requirements of Schedule 3.3 of the Landfill Regulations, 2002.</p>	<p>Transcription error in Closure plan draft; NH3-N is being monitored as per the current EMP requirements.</p>	<p>ERA comment on Annex 3 point 6 refers.</p>	/
12.	<p>With reference to Para "6.2 Surface Water Treatment and Disposal", applicant is to provide the geo-reference coordinates on an updated layout plan of such discharge point.</p>	<p>Surface water is currently being monitored on a quarterly and annual basis as specified in the EMP (Dec 2014). In the new consolidated EMP draft sent to ERA in August 2018 it was suggested that in the absence of adequate surface water features, this monitoring should be discontinued. ERA had no comments regarding this however following internal discussions a new proposal shall be sent to ERA as summarised below:</p> <ul style="list-style-type: none"> Ghallis – quarterly and annual sampling from the silt pond (to point out that in this case surface runoff would be collected from Maghtab as well) 	<p>Noted.</p> <p>Kindly note that the submitted "Maghtab site plan" in Annex 12 indicates 3 silt ponds at Ghallis which are not included in the EMP or in IP/01/06/B. Applicant is thus to provide the geo-reference coordinates of each such silt point, include its monitoring in a revised EMP and provide details on how it is constructed in such a way to prevent potentially contaminated effluent from contaminating the surrounding environment.</p>	<p>/</p> <p>Only 1 slit pond is of interest. The other 2 silt ponds collect run-off mainly from the old Maghtab dump. That is why, Wasteserv is proposing the use of the indicated silt pond.</p> <p>Reference to the silt ponds, please refer to Annex / folder titled Plans.</p>

		<div data-bbox="940 178 1314 546"></div> <div data-bbox="875 640 1335 709"><ul style="list-style-type: none">• Zwejra – quarterly and annual sampling from reservoir</div> <div data-bbox="881 735 1285 1236"></div>		
13.	With reference to Figure 4.1 and Table 4.1, applicant is to describe and indicate on a layout plan the location of new landfill gas monitoring points “LCP9-11”.	These are to be included in the updated monitoring plan currently being discussed with ERA.	Noted.	/
14.	ERA notes that the submitted site boundary plan does not match with that in IP 01/06/B. Should a modification be proposed, this is to be addressed through a variation of the IPPC application and covered by the necessary development permits. Otherwise, for the processing	Noted – no change in site boundary is being proposed.	Site boundary in IP 01/06/B shall be retained.	/

	<p>of this renewal the site boundary utilised in IP 01/06/B shall be utilised and operator shall ensure that the permitted activities are actually carried out within such permitted site boundary.</p>			
15.	<p>In view of the reporting frequency for the leachate, groundwater and landfill gas monitoring system, the time period of 3 months for remediation is not considered adequate. Such damage should be repaired within a maximum of one month and monitoring redone accordingly.</p>	Noted.	/	/
16.	<p>Construction quality assurance – ‘they will be either repaired or replaced if practicable’ – if not practicable, operator shall propose another sampling point to ERA prior to groundwater monitoring point construction works.</p>	Noted.	/	/
17.	<p>The whole renewal application and any subsequent correspondences used in the IPPC permitting process shall be made available for public consultation. Should any information be considered confidential, operator is to submit another non-confidential version with justification which would be available for public consultation.</p>	Noted – this is being prepared. Certain details such as staff details will be considered confidential.	Noted.	/
	<p>Any reference to MEPA are to be replaced with ERA (Environment & Resources Authority) in any future documentation.</p> <p>Similarly references to “MEPA” and its contact details are to be amended as follows:– ERA - 2292 3500</p>	<p>Noted – unless this reference is to or within a historic document.</p>	-	-

	environmental.permitting@mepa.org. mt – ceu@era.org.mt			
Annex 10	Refer to enclosed regulatory consultation feedback.	/	/	/
Annex 18	<p>As informed by the Compliance and Enforcement Directorate and whilst noting the proposed Environmental Monitoring Program, dated August 2018 by Adi Associates, this has been reviewed and communicated to Wasteserv accordingly through the CED.</p> <p>With reference to C.2.1.27 in Annex 1, the above is to be updated to consider new monitoring (e.g. additional sampling points, pollutants, sampling frequency, methodology etc.) required by the proposed extension.</p> <p>With reference to C.3.3.75 in Form C, applicant is to indicate the new odour emission point downwind from the proposed extension.</p>	<p>Noted.</p> <p>Noted.</p> <p>The new EMP will specify the manner in which the point will be selected (during each monitoring session) which will depend on the prevailing wind direction.</p>	<p>EMP is to be revised accordingly.</p> <p>/</p> <p>/</p>	<p>Noted.</p> <p>/</p> <p>/</p>
Annex 19	<p>With reference to paragraph 2.6, C3.2.1 in Form C, and Table 1.2 of the current permit, applicant is to note that soil, shredded tire chips, construction materials, or geosynthetics shall not be landfilled unless they meet established criteria and procedures for the acceptance of waste at landfills pursuant to Council Decision 2003/33/EC of 19 December 2002 establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC shall be applied. Inert waste may only be used for site engineering or as cover for landfilled waste.</p> <p>With reference to section 3.1 and C.2.2.28 – 29, applicant is to submit health and safety risk assessment</p>	<p>Noted – kindly note that such references are a typological error.</p> <p>See attachment 13 Fire Risk Assessment included with this feedback.</p>	<p>This will be addressed through permit conditions.</p> <p>Noted.</p>	<p>/</p> <p>/</p>

	covering the construction and operation of the “Frisoli” extension project.			
Annex 21	<p>With reference to question C.3.4.4 of Form C, applicant is to update the site management system to consider the fire risk resultant from the proposed expansion. This shall include a proposal for the regular monitoring of temperatures from within the landfilled waste mass.</p> <p>With reference to the proposed odour management measures in Section 15, it appears that landfilling could take place at the current cell and at the “Frisoli” extension project site simultaneously. Whilst also considering any odour generated from the “trimming” exercise as part of the foundation phase, such odour management plan is to be revised in order to adequately manage odour pollution.</p> <p>With reference to section 15.3.10, and Annex 8 a complete closure plan is to be submitted to ERA for approval so that capping would commence immediately following approval.</p> <p>This document is to be amended to replace references to MEPA with either the Planning Authority or the Environment and Resources Authority as applicable.</p>	<p>Noted for inclusion.</p> <p>Noted for inclusion.</p> <p>See comments on closure plan above.</p> <p>Noted – unless this reference is to or within a historic document.</p>	<p>Whilst noting the updated ERP and the contract for thermographic imagery, no reference is made on the frequency and methods of thermographic imagery monitoring and the proposed extension. Any actions which are required from particular results obtained from the thermographic imagery are to be clearly described in order to prevent environmental damage from potential fires.</p> <p>ERA requests for a closure plan above refers.</p>	<p>Frequency shall be once a year.</p> <p>Kindly note that the closure plan will be updated as part of the development permitting process for landfill closure.</p>